Fishery Management Report No. 15-19

Annual Management Report Yukon Area, 2013

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)

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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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/ This publication has undergone regional peer review.

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ABSTRACT

The 2013 Yukon Area management report summarizes management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries in the Yukon Area of Alaska. The report provides the Yukon Area status of salmon stocks in 2013 with reference to historical data, presents an outlook for the 2014 fishing season, and provides data on the use 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 report further compiles summaries of selected Yukon River projects (complete documentation of these projects and results may appear in separate reports). Fisheries data in this report supersede 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 sections: 1) Salmon Fishery: this section presents a description of the area, fishery resources, and fisheries management practices, and a comprehensive report of the 2013 salmon fisheries, by summer and fall season, and makes comparisons with previous years; 2) Other Marine and Freshwater Finfish Fisheries: this section presents a description of the fishery resources and freshwater finfish fisheries other than salmon, including whitefish *Coregonus* spp. and Arctic lamprey *Lethenteron camtschaticum*; and 3) the Cape Romanzof District Herring Fishery.

Key words Chinook salmon, *Oncorhynchus tshawytscha*, chum salmon, *Oncorhynchus keta*, coho salmon, *Oncorhynchus kisutch*, Pacific herring, *Clupea pallasii*, whitefish, *Coregonus,* Arctic lamprey, *Lethenteron camtschaticum***,** escapement, commercial harvest, subsistence harvest, season outlook Yukon River Salmon Agreement, Yukon River, Yukon Area, Annual Management Report, AMR.

INTRODUCTION

The Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries is responsible for the management of 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 2013.

Data from selected management and research projects are included in this report; more complete documentation of project results are presented in separate reports.

This report is organized into 3 major sections:

1. Salmon Fishery
2. Other Marine and Freshwater Finfish Fisheries
3. Cape Romanzof District Herring Fishery

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).

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 3,190 km (1,980 mi) through Yukon Territory, Canada and Alaska, United States before emptying into the Bering Sea at the Yukon-Kuskokwim Delta. It drains an area of approximately 832,700 km^2 (321,500 mi^2) of which 195,200 mi^2 lies within Alaska. With the possible exception of a few fish taken in the adjacent coastal waters near the mouth, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 97,580 residents), there are approximately 22,230 rural residents in the Alaska portion of the drainage[1], 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 may be allowed along the entire 1,200 mile length of the mainstem Yukon River in Alaska, the lower 225 miles of the Tanana River, and the 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 Lower Yukon Area (Districts 1, 2, and 3) includes the Yukon River drainage from the mouth upriver to a point near Old Paradise Village at river mile 301 (Figures 3, 4, and 5). The Upper Yukon Area (Districts 4, 5, and 6) is that portion of the Yukon River drainage upstream of a point near Old Paradise Village at river mile 301 to the Canadian Border (Figures 6, 7, and 8). Subdistrict 5-D is divided into 3 areas (lower, middle, upper) for management purposes (Figure 9). The Coastal District was established in 1994, redefined in 1996, and is open only to subsistence fishing. Within the "Set Gillnet Only Area" (Figure 10), located along the coastal area of District 1, only set gillnets are allowed during fall season commercial fishing periods. Additional fishing areas include the Fairbanks Nonsubsistence Area (Figure 11) and the Anvik River (Figure 12). The districts and subdistricts are further divided into 28 statistical areas for management and reporting purposes. 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 occur in the Canadian portion of the Yukon River drainage. The Canadian Department of Fisheries and Oceans Canada (DFO) conducts the corresponding fishery management activities. Details about fisheries management in the Canadian portion of the Yukon River drainage can be found in the annual reports published by the Joint Technical Committee of the Yukon River U.S./Canada Panel (JTC).

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 nearly 2,000 miles upstream at the headwaters of the drainage in Canada. Chinook salmon begin entering the mouth of the Yukon River after ice breakup in late May or early June and continue to migrate upriver through mid-July.

Chum salmon returns are made up of 2 genetically distinct runs: an early summer chum salmon run and a later fall chum salmon run. Summer chum salmon are characterized by earlier run timing (entering Yukon River from early June to mid-July), rapid maturation in freshwater, and smaller body size (average weight is approximately 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 (entering Yukon River from

[1] http://labor.state.ak.us/news/2012/news12-03.pdf (Accessed February 2012).

mid-July to early September), robust body shape, and larger body size (average weight is approximately 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. Coho salmon weigh on average about 7 pounds. Coho salmon spawn discontinuously throughout the Alaska 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 and in the Andreafsky River.

Pink salmon enter the lower river from late June to late July. Pink salmon weigh on average about 2 to 3 pounds. They 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 upriver as Fort Yukon (river mile 1,002) (Busher et al. 2009). In the past decade, pink salmon have exhibited an abundance cycle alternating between high and low every 2 years, with high abundance typically observed during 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, Kantishna, Tanana rivers upstream of the confluence with the Kantishna, Anvik, and Gisasa river drainages. Sockeye salmon are annually counted at the Andreafsky River weir.

FISHERIES OVERVIEW

A list of indigenous fishes found in the Yukon Area is provided in Appendix A1. Of the 5 species of Pacific salmon found in the Yukon Area, Chinook, chum, and coho salmon are predominantly harvested in the subsistence, commercial, personal use, and sport fisheries. Arctic lamprey *Lethenteron camtschaticum* and whitefish *Coregonus* spp. are also commercially harvested. Other marine and freshwater finfish are harvested primarily for subsistence use.

Chinook salmon is the most targeted subsistence species by number of fishermen, with total (Alaska and Canada) harvests since 2003 averaging about 50,000 fish (Appendix A13). Restrictions to subsistence fishing opportunity, because of poor Chinook salmon since 2007, have limited their harvest in recent years. Chum salmon (summer and fall) provide the largest subsistence harvest in terms of numbers, with an average Alaska harvest of summer chum salmon since 2003 of 77,000 fish Appendix A14), and an average total (Alaska and Canada) harvest since 2003 of 83,500 fall chum salmon (Appendix A15). Total (Alaska and Canada) coho salmon harvests since 2003 have averaged about 19,000 fish (Appendix A16). Pink salmon are harvested for subsistence primarily in the lower river districts. Even-year subsistence harvests for the entire drainage since 2003 has averaged 6,700 fish (Appendix D5).

Historically, Chinook, summer chum, and fall chum salmon were targeted in the commercial fisheries, while coho salmon were harvested incidentally during fall chum directed fisheries. Since 2009, ADF&G may conduct late season coho salmon directed commercial fishing if certain stipulations are met (such fisheries were prosecuted in 2009–2011). Since 2003,

commercial harvests of Chinook salmon have averaged 23,600 fish (Appendix A13). Chinook salmon harvest has been limited by poor runs during that time. A Chinook salmon directed commercial fishery has not been prosecuted since 2007, and commercial harvest through 2011 was incidental during the summer and fall chum salmon directed fisheries. The commercial sale of Chinook salmon has been prohibited since 2012. Summer chum and fall chum salmon harvests were limited by poor runs in the early 2000s and by poor market conditions in the mid-2000s. Since 2007, salmon markets have been improving. Summer chum salmon commercial harvests since 2003 have averaged 151,800 fish (Appendix A14). As a result of summer chum salmon run timing overlapping with Chinook salmon runs, their harvests have been limited by recent measures to conserve Chinook salmon. Fall chum salmon commercial harvests (Alaska and Canada) since 2003 have averaged 119,00 fish (Appendix A15), while coho salmon harvests since 2003 have averaged 41,200 fish (Appendix A16).

MANAGEMENT

The policy of ADF&G is to manage salmon runs to the extent possible for maximum sustainable yield, unless otherwise directed by ADF&G regulation (*Policy for the Management of Sustainable Salmon Fisheries* [SSFP; 5 AAC 39.222.]). Over the past few decades, ADF&G has managed salmon fisheries in the Yukon Area with the dual goal of achieving desired escapements consistent with the *Sustainable Salmon Fisheries Policy* while at the same time maintaining important fisheries. 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. In order to maintain the subsistence priority and provide for spawning escapements to ensure sustainable yields, Yukon River salmon fisheries must be managed conservatively.

For management purposes, the summer season refers to the fishing associated with the Chinook and summer chum salmon migrations and fall season refers to the fishing associated with the fall chum and coho salmon migrations. 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 subsistence and commercial fisheries are mixed stock fisheries, 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 fishing occurs. Fisheries within the Tanana and Anvik river drainages are managed as terminal areas.

Management of the Yukon River salmon fishery is complex due to overlapping multispecies salmon runs, increasing efficiency of the fishing fleet, allocation issues, the inability to determine stock specific abundance and timing, and the immense geographic expanse of the Yukon River drainage. ADF&G uses an adaptive management strategy that evaluates run strength inseason to determine a harvestable surplus above escapement requirements and subsistence uses. The primary tools used by ADF&G to manage the salmon fisheries are management plans, guideline harvest ranges (GHR) established by the BOF, and emergency order (EO) authority, which is used to implement time and area openings, closures, and mesh size restrictions. Guideline harvest ranges have been established for Chinook, summer chum, and fall chum salmon commercial fisheries throughout the Alaska portion of the drainage (Table 1). ADF&G attempts to manage the commercial salmon fisheries so the harvest in each district or subdistrict is proportional to the respective guideline harvest ranges. Typically, the majority of the coho salmon harvest is incidental to the fall chum salmon fishery and their management is conditional

to the abundance of fall chum salmon. ADF&G does have the option to conduct late season coho salmon directed commercial fishing if certain stipulations are met.

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 projects, and spawning escapement and harvest data. Since 1995, the mainstem sonar project at Pilot Station has provided inseason estimates of salmon passage for fisheries management. The level of subsistence, commercial, sport, and personal use harvests can be adjusted through the use of EOs to control time and area of openings and closures. News releases announcing EOs are broadcast on local radio stations, posted on the ADF&G web site (http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main), broadcast on VHF radio where available, transmitted by fax, and emailed to select communities, processors, buyers, and fishermen. Additionally, most processors and buyers are notified of EOs by telephone.

In 2013, various government and non-government agencies operated projects in the Alaska and Canadian portions of the Yukon Area to obtain the biological information necessary for management of salmon runs (Appendices A20 and A21). The types of monitoring projects operating in the Alaska portion of the drainage include:

1. *Catch and Effort Assessment*: The harvest and effort of commercial, subsistence, personal use, and sport salmon fisheries were assessed for the Alaska portion of the Yukon River drainage. Commercial salmon fishing was monitored from June through October using fish tickets of commercial sales of salmon. In the majority of the Yukon Area, there is no regulatory requirement for fishermen to report their subsistence salmon harvest. The subsistence salmon harvest from communities is estimated through a voluntary survey program. In areas of the drainage with road access, fishermen must obtain subsistence or personal use household permits on which their daily harvest is recorded. Similarly, sport fishing harvest and effort was estimated by Division of Sport Fish using mail-out questionnaires to sport fishing permit holders. Weekly teleconferences were held from June to August by the Yukon River Drainage Fisheries Association (YRDFA) as a forum for fishermen along the Yukon River to interact with ADF&G and federal managers and for the dissemination of fisheries information.

2. *Test Fishing*: ADF&G operated a test fishing project in the lower Yukon River at the South and Middle (Middle and North combined) Mouths. The project utilized set gillnets from late May through July 15 to index the Chinook salmon run. Additionally, test fishing utilized drift gillnets from early June through July 15 to provide an index of Chinook and summer chum salmon, and from July 16 through mid-September for fall chum and coho salmon runs. The test fisheries also provided run timing and age composition information. Finally, a test fish wheel equipped with video monitoring system was used to index passage of salmon and species other than salmon based on catch per unit effort (CPUE) at the area known as "Rapids" between the communities of Tanana and Rampart on the mainstem Yukon River. A test fish wheel was also used to collect CPUE data as part of species apportionment at the Tanana River sonar site based out of Manley Hot Springs.

3. *Mainstem Sonar Projects*: Hydroacoustic equipment was operated in the mainstem Yukon River at 2 locations; near Pilot Station to obtain inseason salmon passage

estimates by species and near Eagle to estimate passage of Chinook and chum salmon into Canada.

4. *Tributary Sonar Projects*: Hydroacoustic equipment was operated in the Anvik River to estimate summer chum salmon escapement, and in the Chandalar and Porcupine rivers to estimate fall chum salmon spawning escapements. A sonar feasibility study on the Tanana River to estimate Chinook, chum and coho salmon was also conducted.

5. *Age, Sex, and Size Composition*: Data were collected from salmon harvested in commercial and subsistence fisheries, as well as test fisheries and escapement projects located throughout the Yukon River drainage. Samples were collected using gillnets, fish wheels, beach seines, weir traps, and carcass surveys. Scales were collected from salmon harvested to determine age composition of the runs. Chum salmon carcass sampling uses vertebra instead of scales for aging because of reabsorption problems. Sex was determined by examining internal reproductive organs or external characteristics. Length was measured from mid eye to tail fork.

6. *Genetic Stock Identification:* Genetic samples were collected from Chinook and chum salmon caught in the select test fisheries throughout the drainage, and Chinook salmon samples are were collected from the subsistence fishery throughout the drainage.

7. *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. Surveys for Chinook and summer chum salmon were flown in July and August. Fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage in October and November. Additionally, aerial surveys were conducted in the Upper Tanana River and Nenana River drainage to estimate fall chum and coho salmon escapement in October and November.

8. *Tower Projects*: Tower counting projects were used on the Chena and Salcha rivers to estimate escapement of Chinook and summer chum salmon from July through August. A tower project was operated on the Goodpaster River in the Tanana River drainage to estimate Chinook salmon escapement during July.

9. *Weir Projects*: Weirs were operated on the East Fork Andreafsky River, Gisasa River, and Henshaw Creek from June to August to estimate Chinook and summer chum salmon escapement.

The Yukon River Chinook salmon run is managed according to the guidelines described in the *Yukon River Chinook Salmon Management Plan* (5 AAC 05.360). The management plan provides for escapement needs and subsistence users while aiming to reestablish the historic range of harvest levels by other users. Additionally, In response to guidelines established in the SSFP (5 AAC 39.222(f)(42)), the BOF classified Yukon River Chinook salmon as a yield concern at its September 2000 work session. A stock of yield concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern" (5 AAC 39.222(f)(42)). The SSFP defines chronic inability as "the continuing or anticipated inability to meet expected yields over a 4 to 5 year period." This determination as a yield concern was originally based on low harvest levels for the

previous 3-year period (1998–2000) and anticipated low harvest in 2001. The classification as a yield concern was continued at the January 2004, January 2007, January 2010, and January 2013 BOF meetings (Schmidt and Newland 2012). Fishing restrictions necessary during poor runs have caused a dramatic decline in commercial harvests since 1998 and decreased subsistence harvests since 2007. Reduced fishing periods were implemented for the subsistence fishery throughout the drainage in 2008, marking the beginning of a trend of more active management for this fishery to conserve Chinook salmon to achieve escapement goals. Even greater restrictions were implemented in 2009, 2011, and 2012. Subsistence fishing time on the mainstem was reduced in all 3 years, and gear restrictions were implemented in 2012, in addition to subsistence fishing closures. Closures and gear restrictions were even more extensive in 2013.

The Yukon River summer chum salmon run is managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan* (5 AAC 05.362). The intent of this plan is to conservatively manage harvests in order to provide for escapement needs and subsistence use as a priority over other consumptive uses such as commercial, sport, and personal use fishing. Since 2001, this management plan has allowed for varying levels of harvest opportunity depending on the run size projection. If the projected run is size is 700,000 to 1,000,000 summer chum salmon and a district, subdistrict, or tributary is projected to meet its escapement goals, then a directed commercial fishery may be opened in the immediate area. When the run size is projected to be greater than 1,000,000 fish based on the Pilot Station sonar project, a directed summer chum salmon commercial fishing may be opened to harvest the available surplus. When the projected commercial harvest range is 0–400,000 summer chum salmon, a specific percentage of harvest determined by the BOF should be allocated by district or subdistrict based on the low end of the established guideline harvest ranges. In 2010, the BOF modified the management plan to allow a commercial harvest of up to 50,000 fish if the run size was between 900,000 and 1,000,000 fish, distributed by district or subdistrict in proportion to the guideline harvest levels.

Directed summer chum salmon commercial opportunity has been provided in 2007 through 2013. Unfortunately, despite harvestable surpluses available in these years, redevelopment of this fishery has been hindered by management strategies taken in response to poor Chinook salmon runs which co-migrate with summer chum salmon.

The *Anvik River Chum Salmon Fishery Management Plan* (5 AAC 05.368.) allows a harvest of the available Anvik River summer chum salmon above spawning escapement goals and to decrease the harvest pressure on non-Anvik River summer chum salmon stocks located in the mainstem Yukon River. Under this plan, the Anvik River may be opened to summer chum salmon commercial fishing if a surplus beyond the escapement goal of 500,000 fish is available. All Chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive. Summer chum salmon were harvested in this terminal area only during the years 1994–1997.

Fall chum salmon runs have been mostly average to above average since 2006 and sufficient for meeting escapement and subsistence needs while providing for a limited commercial harvest (with the exceptions of 2009 and 2010). Management of the Yukon Area fall season commercial salmon fisheries is in accordance with the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 ACC 01.249). The plan sets the threshold number of fall chum salmon needed to prosecute a commercial fishery at 500,000 fish and commercial fishing is generally

allowed only on the surplus above that level. The fall chum salmon plan incorporates the amount of fall chum salmon needed to meet U.S./Canada treaty objectives for border passage and provides guidelines necessary for escapement and prioritized uses. The intent of the plan is to align management objectives with the established escapement goals, provide flexibility in managing subsistence harvests when stocks are low, and bolster salmon escapement as run abundance increases. The sustainable escapement goal (SEG) range for the Yukon River drainage is 300,000 to 600,000 fall chum salmon. There are provisions in the plan to allow incremental levels of subsistence salmon fishing balanced with requirements to attain escapement objectives during low runs.

Coho salmon runs have been below average to average in recent years with escapement and subsistence needs being met. Coho salmon are primarily harvested incidentally during the fall chum directed commercial fishery. The *Yukon River Coho Salmon Management Plan* 5 ACC 05.369 allows a coho salmon directed commercial fishery in the absence of achieving the threshold number of fall chum salmon if a harvestable surplus of coho salmon exists and if a commercial fishery will not have a significant impact on fall chum salmon escapement and allocation.

Finally, under the *Tanana River Salmon Management Plan* 5 AAC 05.367 commercial fishing in Subdistrict 5-A and District 6 is based on the assessment and timing of salmon stocks bound for the Tanana River drainage.

Since 2001, the subsistence fishery has been based on a schedule implemented chronologically by ADF&G and consistent with migratory timing as the run progresses upstream. Subsistence fishing is open 7 days per week until the schedule is established. The subsistence salmon fishing schedule is based on current or past fishing and provides reasonable opportunity for subsistence during years of average to below average runs. The objectives of the schedule are to 1) reduce harvest early in the run when there is a higher level of uncertainty in run assessment, 2) spread the harvest throughout the run to reduce harvest impacts on any particular component of the run, and 3) provide subsistence fishing opportunity among all user groups during years of low salmon runs.

The schedule for subsistence salmon fishing is as follows:

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

(2) Districts 1, 2, and 3: 36 hour periods twice a week;

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

(4) District 6: 42 hour periods twice a week; and

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

ALASKA BOARD OF FISHERIES ACTIONS 2013

The BOF met in Anchorage in January 2013 and made several changes to the regulations pertaining to Yukon Area fisheries. The following is a summary of BOF actions at that meeting:

1. The amounts reasonably necessary (ANS) for subsistence salmon in Yukon Area was reviewed. An ANS range was established for pink salmon (2,100–9,700); no other changes were adopted for other species-specific ranges.

2. Subsistence regulations in Districts 1–3 were amended to allow concurrent subsistence and commercial fishing, and adjustments to be made to closures around commercial fishing periods by emergency order.

3. The *Yukon River Chinook Salmon Management Plan* was amended, requiring protection of the first pulse of Chinook salmon entering the Yukon River. After initiating the pulse closure in Districts 1 and 2, ADF&G may discontinue subsistence fishing closures in Districts 3–6 based upon inseason run assessment.

4. The *Yukon River Chinook Salmon Management Plan* was amended, prohibiting sale of Chinook salmon from the Yukon River drainage unless there is a directed Chinook salmon commercial fishery. Sale of Chinook salmon will be prohibited at the start of the commercial fishing season. ADF&G may allow sale of Chinook salmon by emergency order based upon inseason run assessment.

5. The *Summer Chum Salmon Management Plan* was amended to allow for a directed chum salmon commercial fishery in Districts 1–3 in the Yukon Area during times of Chinook salmon conservation using 5.5 in or smaller mesh size not exceeding 30 meshes in depth. This provides an additional mesh size option to allow opportunity to harvest summer chum salmon.

6. The coastal waters referred to as the Acharon Channel, were opened to commercial salmon fishing. District 1 boundaries were redefined to include the coastal waters adjacent to the south mouth of the Yukon River from Chris Point south to Black River.

7. The *Summer Chum Salmon Management Plan* was amended to allow times when a commercial salmon gillnet permit holder in Districts 1–3 may use dip net and beach seine gear to commercially harvest chum salmon during the summer season. All Chinook salmon caught in dip net and beach seine gear must be returned to the water immediately alive, except that dead Chinook salmon must be recorded on a fish ticket and forfeited to the state. The maximum mesh size was specified to be 4.0 inches for beach seines and 4.5 inches for dip nets. A maximum of 4 dip nets may be used by a commercial salmon gillnet permit holder.

8. At the March 2012 BOF meeting the *Summer Chum Salmon Management Plan* was amended by adding a new section that allows ADF&G to use emergency order authority in Subdistrict 4-A, during times when the commissioner determines that it is necessary for conservation of Chinook salmon, the commissioner may, by emergency order, close the commercial set gillnet fishing season and immediately reopen the season during which a fish wheel may be used. The fish wheel shall be attended at all times while it is in operation, and all Chinook salmon caught must be returned to the water alive immediately.

   During the January 2013 BOF meeting, the emergency order authority to restrict gear to fish wheels only, require fish wheels to be closely attended, and live-release of Chinook salmon during times necessary to conserve Chinook salmon was provided for District 6. Additionally, construction specifications were adopted for commercial fish wheels in Subdistrict 4-A and District 6 to reduce the potential for injury Chinook salmon may incur while being captured and released. Commercial fish wheels must be constructed in a manner that includes the following:

a) basket sides and bottoms consisting of soft mesh material similar to or made of seine web; and,

b) an adjustable or fixed slide or chute that consists of a smooth bottom and closed cell foam lined sides: and,

c) returns Chinook salmon immediately to the water.

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 Alaska 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 U.S. Fish and Wildlife Service (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 ADF&G fishery management is causing subsistence or conservation concerns (Ward and Horn 2003).

Federal subsistence fishing schedules, openings, closures, and fishing methods are established in regulations (Department of Interior 2011). 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, ADF&G regulations can be superseded by a Federal Special Action.

FEDERAL SUBSISTENCE MANAGEMENT ACTIONS

The FSB met in January 2013 to review proposals regarding regulation changes to the Code of Federal Regulations under the Federal Subsistence Management Program on federal public lands within the State of Alaska. The following summary is for informational purposes only and is not intended to detail, reflect, or fully interpret reasons for the FSB's actions. The FSB reviewed 9 proposals that were relevant to federal fishery regulations on the Yukon River and 1 was carried over as a deferred proposal from the 2011 meeting. The FSB removed the permit requirement for the Chinook salmon drift gillnet fishery within the Yukon River Subdistricts 4-B and 4-C; they adopted marking requirements for subsistence harvested fish that are consistent with requirements in ADF&G regulations; and the FSB restricted customary trade of Yukon River Chinook salmon to transactions between those who have a positive customary and traditional use determination under federal regulations for Yukon River Chinook salmon in the Yukon River drainage. The FSB took no action on 6 other proposals dealing with customary trade in the Yukon-Northern Area to allow time for the effects of the initial restrictions to be evaluated.

The Yukon Area federal management staff work closely with ADF&G Commercial Fisheries Division Yukon Area managers, sharing information and coordinating management actions. Many public fisheries related meetings are attended throughout the year by both agencies jointly and individually that are preceded with considerable effort to provide consistent stock information, management strategy expectations, and rational for enacted management actions. ADF&G area managers are the lead agency staff with authority throughout the entire Yukon Area while the federal management authority is primarily limited to overlapping waters adjacent to Federal Conservation Units. During the 2013 fishing season, federal managers issued 53 Streamlining Actions (49 summer; 4 fall) which aligned federal regulations with ADF&G regulations that were established through emergency order authority. Management of the Yukon Area commercial fishery by the department prompted issuance of 10 Federal Memorandums of Concurrence (9 summer; 1 fall). These memorandums documented federal consideration that resulted in concluding ADF&G actions taken in regulating the commercial fishery provided adequate assurances for escapement and federal subsistence needs. No Federal Special Actions were issued during the 2013 season that would be used to implement changes in Federal rules that differ from ADF&G regulations.

CANADIAN YUKON RIVER SALMON FISHERY

DFO has provided annual harvest data from the Canadian portion of the Yukon River drainage since 1962. Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917 and continuously from 1918 to 1947. 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 recreational fisheries for salmon. The aboriginal and domestic fisheries are comparable to subsistence and personal use fisheries in Alaska, although the aboriginal fishery is only open to native people. All of the commercial salmon harvests in Canada occur on the mainstem Yukon River. Canadian salmon harvests in the Porcupine River drainage consist only of an aboriginal fishery.

U.S./CANADA YUKON RIVER PANEL AND TREATY NEGOTIATIONS

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty that would enhance the management coordination of salmon stocks spawning in the Canadian portion of the Yukon River drainage. Reaching a comprehensive long-term agreement posed a formidable challenge through the mid-1990s. In February 1995, an agreement was formalized resulting in an interim Yukon River Salmon Agreement (YRSA). A U.S./Canada Yukon River Panel (Panel) was formed to implement the YRSA. The focus of the Panel was on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage.

In December 2002, the United States and Canada signed a formal YRSA 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. Under the YRSA, the Alaska and Canadian fisheries are managed consistent with conservation objectives that were jointly developed. The Yukon River Panel meets semi-annually 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 2013 season the Panel agreed to 1-year Canadian interim management escapement goal (IMEG) ranges of 42,500 to 55,000 Chinook salmon and 70,000 to 104,000 fall chum salmon, based on the Eagle sonar project (JTC 2014). The agreed upon weir based IMEG range for the Fishing Branch River was a range of 22,000 to 49,000 fall chum salmon; however, the weir did not operate in 2013. The Canadian portion of the Porcupine River is being transitioned to monitoring using sonar operated near the U.S./Canada border. In addition to escapement needs, Alaska is required to share harvestable surpluses of the Canadian run component, with Canada receiving 20% to 26% of the available total allowable catch (TAC) for Canadian-bound Chinook salmon and 29% to 35% of the available TAC for Canadian-bound fall chum salmon.

Canadian Chinook Salmon

Cooperative management of Canadian-origin Yukon River Chinook salmon was based on an agreed escapement goal range for rebuilt stocks of 33,000 to 43,000 fish for many years. This goal was developed from, and was subsequently monitored by, a mark–recapture program located just upstream of the international border on the Yukon River. Since 2005, the parties have developed a new and improved technique, the Eagle sonar project, to assess the abundance of salmon migrating into Canada. Estimates derived from the mark–recapture program were consistently lower than those produced from the sonar project. Based on the disparity between the mark–recapture and sonar project estimates of Canadian border passage, it was inappropriate to continue to apply the longstanding escapement goal based on mark–recapture to escapement estimates derived from the sonar project.

The JTC recommended using the Eagle sonar project in 2008 as the primary assessment tool for the border passage estimate and reviewed the best approach to transition from the mark–recapture based escapement goal to a new goal assessed by the sonar project. Considerable analyses were conducted to construct a new database of stock and recruitment information that was not solely based on mark–recapture estimates. These have included examining the relationships between aerial survey indices (3 scenarios: 3-area index; 4-area index; and a single index) and independent border passage estimates (2 scenarios: Eagle sonar project passage estimates; and passage estimates derived from a radiotelemetry program). A JTC working group reviewed extensive analyses undertaken by Gene Sandone with ADF&G and, after thorough discussion at the March 2008 JTC meeting, made proposals to the JTC as a whole.

The JTC discussed recommendations provided by the *Chinook Salmon Escapement Goal Working Group* for a minimum IMEG in 2008. Although working group members could justify IMEG targets ranging from 45,000 to 50,000, consensus was eventually achieved. The JTC recommended that the Yukon River Panel adopt an IMEG of >45,000 Canadian-origin Yukon River Chinook salmon for 2008, to be assessed using information from the Eagle sonar project. This recommendation was established for 1 year, recognizing that further analysis of a biologically based escapement goal was required and additional factors such as habitat capacity had yet to be incorporated. In 2009, the JTC recommended that the minimum IMEG (>45,000) established for 2008 be used for the second year.

In 2010, the JTC recommended that the IMEG be established as a range to allow for the uncertainty of information from assessment projects. The JTC reached consensus for an upper

bound of 55,000 and the Yukon River Panel agreed to adopt a lower bound of 42,500. The success of achieving this escapement goal was to be assessed using the Eagle sonar estimate minus catches from fisheries occurring upstream of the sonar, namely U.S. subsistence catch near the community of Eagle, Alaska, and the catch data from Canadian fisheries. The *Chinook Salmon Escapement Goal Working Group* will continue to examine other data that may be used in recommending a revised escapement goal for future years. Ongoing analysis includes the use of a habitat capacity approach, which may be useful in improving other analyses.

Canadian Fall Chum Salmon

The upper Yukon River escapement goal specified within the YRSA is >80,000 fall chum salmon. This goal was achieved 18 times within the 31-year period from 1982 to 2012. The DFO fall chum salmon mark–recapture program was conducted from 1982 to 2008[2], while the joint U.S./Canada Eagle sonar program was conducted from 2006 to 2013. The mark–recapture estimates generally agreed with Eagle sonar project estimates when the 2 programs were conducted concurrently. The JTC recommended using the Eagle sonar project as the primary assessment tool for the Canadian border passage estimate starting in 2008.

The upper Yukon River escapement goal was reviewed in 2001 and after considerable analysis of the available data a recommendation was made for a biological escapement goal (BEG) of 60,000 to 129,000 fall chum salmon (Eggers 2001); however, due to concerns over the quality of the data and analytical issues, the BEG recommendation was not accepted during a Pacific Scientific Advice Review Committee (PSARC) review (Tanasichuk 2002).

For 2013, the JTC recommended that the upper Yukon IMEG remain as established in 2010 as a range from 70,000 to 104,000 fall chum salmon. This range was developed as 0.8 to 1.2 times the estimated spawners at maximum sustained yield (86,600), which was derived prior to the returns from the exceptional 2005 spawning escapement of 437,498 fall chum salmon. An update of the spawner-recruit model will need to be conducted to reevaluate the returns that would include 2005. The *JTC Escapement Goal Working Group* will continue to examine other data that may be used in recommending a revised escapement goal for future years.

Fishing Branch River Fall Chum Salmon

The escapement goal specified within the YRSA is a range of 50,000 to 120,000 fall chum salmon to the Fishing Branch River. This goal has been achieved only 10 times since 1974 and only 5 times since 1985. The Fishing Branch River escapement goal was reviewed in 2001 and after considerable analysis of the available data a recommendation was made for a BEG of 27,000 to 56,000 fall chum salmon (Eggers 2001). However, because of concerns over the quality of the data and analytical issues, the BEG recommendation was not accepted during a PSARC review (Tanasichuk 2002).

The inability to reach the goal of 50,000–120,000 fall chum salmon led the JTC to question whether the lack of success was related to an unrealistically high goal. As a result, a *JTC Escapement Goal Working Group* revisited the goal and attempted to address some of the issues raised during the PSARC review. Although there are approaches that can improve data quality and analysis of a BEG, the working group recommended postponing this analysis until the

[2] Mark–recapture estimates were used to determine border passage and spawning escapement estimates from 1982 to 2007.

returns from the high escapement of approximately 121,000 fall chum salmon in 2005 were documented.

Meanwhile, the JTC recommended an IMEG range of 22,000 to 49,000 Fishing Branch River fall chum salmon for 2008–2010. The data were again reviewed with no significant changes stemming from adding additional years. As a result, in 2011, the JTC recommended maintaining the IMEG for an additional 3 years (2011–2013). The IMEG is based on the percentile method of determining a SEG and has been used in Alaska (Clark et al. 2014). The Fishing Branch River SEG analyses incorporates weir counts from 1985 to 2007 (22 years; excluding 1990) and the contrast in these escapements (i.e., the ratio of the highest to lowest count [24:1]). The escapement goal range reflects the approximated 25th and 75th percentiles of the 22 years of weir counts.

The Fishing Branch River weir concluded operations in 2012, and a new sonar project in combination with a radiotelemetry project located near the U.S./Canada border on the Porcupine River is being used to attempt to determine if the Fishing Branch River goal was achieved. The sonar estimate minus the aboriginal harvest from the community of Old Crow provides the escapement to the upper Porcupine River. The radiotelemetry data were used to determine the proportion of the fish bound for the Fishing Branch River compared to other possible spawning locations (JTC 2014); however, since there is concerns for the tagging portion of this study, comparing to the weir goal it is not substantiated. The radiotelemetry project was funded a second year in 2014, in combination with the sonar operations.

AREA SALMON REPORT

ALASKA COMMERCIAL FISHERY

A total of 6 salmon processors and/or catcher-sellers registered in the Alaska portion of the Yukon Area in 2013 (Table 2). The total 2013 commercial harvest for the Yukon Area in Alaska was 0 Chinook, 485,587 summer chum, 238,051 fall chum, and 66,203 coho salmon (Tables 3–7). The 2013 harvest totals compared to the respective most recent 5-year averages (2008–2012) were as follows: summer chum salmon 85% above (Appendix A14); fall chum salmon 63% above (Appendix A15); and coho salmon 44% above (Appendix 16). The commercial sale of Chinook salmon was not allowed in 2013 (or in 2012) because of conservation concerns (Appendix 13). A total of 467 permit holders participated in the commercial fishery compared to the 2008–2012 average of 460 permit holders (Appendix A8). Yukon River fishermen in Alaska received an estimated $3.5 million for their salmon harvest in 2013 compared to the 2008–2012 average of $2.0 million (Appendix A11).

TOTAL YUKON DRAINAGE SALMON HARVEST

The total 2013 harvest for the Yukon River drainage, including Canada, was 13,177 Chinook, 582,199 summer chum, 358,609 fall chum, and 81,069 coho salmon (Table 5). The 2013 estimated total Yukon River drainage harvests compared to the 5-year (2008–2012) averages were as follows: Chinook salmon 71% below average (Appendix A13); summer chum salmon 89% above average (Appendix A14); fall chum salmon 61% above average (Appendix A15); and coho salmon 43% above average (Appendix A16). The subsistence harvest in the Alaska Coastal District (Scammon Bay and Hooper Bay) of 1,542 Chinook, 23,135 summer chum, 149 fall chum, and 287 coho salmon brought the total Yukon River Area harvest to 12,573 Chinook

salmon, 605,334 summer chum, 352,588 fall chum, and 81,203 coho salmon (Appendices A13–A16).

CHINOOK AND SUMMER CHUM SALMON SEASON SUMMARY

ADF&G monitors a suite of assessment projects that provide critical salmon run timing, relative abundance, and stock composition information. Inseason run assessment included test fisheries, sonar passage estimates, subsistence and commercial harvest data, and age, sex, and length (ASL) data. In addition, genetic samples collected were analyzed inseason to investigate stock contribution for both chum and Chinook salmon. Information from multiple projects was corroborated when possible to provide the best run assessment.

Initial assessment in the lower river is critical to implementing an inseason management plan to coordinate fisheries throughout the drainage. Three projects on the lower river provided inseason abundance and timing information: the Lower Yukon test fishery (LYTF), a set net project primarily designed to assess Chinook salmon run timing operated near Emmonak; a summer chum salmon directed drift gillnet test fishery using 5.5 in mesh; and Pilot Station sonar that provided mainstem abundance estimates for Chinook and summer chum salmon. As in recent years, additional drift test fishing was conducted throughout the season in the South Mouth with 8.25 in mesh gillnets for Chinook salmon to provide supplemental run timing and relative abundance information.

Ice break up in the lower river occurred on June 3, which was considerably later than the average break up date of May 23 (Appendix A22). The LYTF was operational at the South Mouth site on June 10 and at the Middle Mouth site on June 13. The first Chinook salmon was caught in both the test fishery and in the lower river subsistence fishery on June 10. In the lower river, the water level continued to be high and the debris load was moderate until the end of June. Test fishing project operations were hindered due to high water and debris and initial assessment of the Chinook salmon run in the lower river was challenging. The LYTF was not effective at monitoring the Chinook salmon run this year. The LYTF concluded operations on July 14, with a cumulative CPUE of 7.41, which was the second lowest on record and well below the historical average of 20.10. The first quarter point, midpoint, and third quarter point were June 23, June 28, and July 1. While the set net test fishery experienced problems during the Chinook salmon run, the drift gillnet project operated at the Big Eddy until July 15 and provided valuable supplemental assessment information for Chinook salmon entering the South Mouth of the Yukon River.

The preliminary cumulative passage estimate at the sonar project located near Pilot Station was approximately 117,000 (Appendix E3) Chinook salmon, which was below the historical average[3] of 145,000 and below the average of 135,000 for years with late run timing[4]. Chinook salmon run assessment analysis was focused on making comparisons to other late run years in order to make informed management decisions. The first quarter point, midpoint, and third quarter point were on June 22, June 25, and July 2, respectively. The first pulse of Chinook salmon was estimated to be approximately 39,000 fish, the second pulse was approximately 8,600 fish, the third pulse was about 17,900 fish, and the fourth pulse was 11,700 fish.

[3] Average includes years 1995, 1997, 1999, 2002–2008, and 2010. The sonar did not operate in 1996 and project difficulties occurred in 2000, 2001, and 2009.

[4] Years with late run timing used for comparison include 1999, 2006, 2010, and 2012.

Approximately 2.7 million (Appendix E3) summer chum salmon passed the sonar project near Pilot Station, which was well above the historical median of 1.9 million for the project. The first quarter point, midpoint, and third quarter point were June 22, June 27, and July 3, respectively. Three large pulses of summer chum were detected with the largest group passing the sonar project from June 21 through June 24 and contained approximately 585,300 summer chum.

Based on the expectation that the 2013 Chinook salmon run could be near the lower end of the preseason projection range, approximately 100,000 fish, a precautionary management plan was initiated early in the season. The regulatory subsistence salmon fishing schedule was implemented in District 1 on May 30 and was chronologically implemented in Districts 2 and 3, consistent with migratory timing. Gillnets were restricted to 6 in or smaller mesh size when the schedule was put in place in these districts. The intent of this action was to allow for harvest opportunity of summer chum salmon while minimizing the overall harvest of Chinook salmon, especially the larger, older females. However, in response to the exceptionally late ice break up, fishermen requested that inseason adjustments be made to this schedule to allow for additional harvest opportunity to target non-salmon species such as sheefish *Stenodus leucichthys*. ADF&G responded by providing additional fishing opportunity prior to the arrival of first Chinook salmon with the reduced mesh size gillnets. Consistent with these changes, implementation of the subsistence salmon fishing schedule in Districts 4–5 were delayed to provide similar early season fishing opportunity to target non-salmon species. At the time the schedule was initiated in these districts, gillnets were also restricted to 6 in or smaller mesh size to conserve Chinook salmon.

Based on inseason assessment information, the Chinook salmon run appeared to be tracking later than average. Consistent with the new regulation requiring the protection of the first pulse of Chinook salmon, a subsistence fishing period was cancelled in District 1 and the northern portion of the Coastal District beginning June 20, and closures were similarly implemented in upriver districts chronologically as the pulse migrated into those areas (Tables 8 and 9). Subdistrict 4-A was divided into a lower and upper section, and Subdistrict 5-D was divided into 3 areas (lower, middle, upper; Figure 9) for management purposes. Dividing the subdistricts into smaller areas improved management precision and flexibility and ensured the full protection of Chinook salmon when the reduced subsistence fishing schedule was implemented.

As the Chinook salmon run progressed, inseason projections indicated that the run was very weak and would likely be insufficient to meet all escapement objectives. Each of the subsequent 3 pulses of Chinook salmon was protected by subsistence fishing closures as they migrated through Districts 1–5. Very limited fishing opportunity was provided in between pulses to allow harvest of chum salmon and other species. During these open subsistence fishing periods, gillnets continued to be restricted to 6 in or smaller mesh size and in the upper river districts, the use of fish wheels was allowed with the stipulation that all Chinook salmon were to be release unharmed. In District 5, where relatively few summer chum salmon were available, subsistence fishing time was reduced even further to avoid offering opportunity that would primarily target Chinook salmon. Unfortunately, the most severe reductions in subsistence fishing opportunity occurred in Subdistrict 5-D, where additional closures were necessary to increase Chinook salmon passage into Canada in an attempt to meet the Canadian IMEG for the Canadian stock.

Conservative management actions were also taken in Yukon River tributaries, in an effort to provide protection for Alaska Chinook salmon stocks. Gillnets were restricted to 6 inches or

smaller mesh size in the Innoko River from June 5 to July 14 and in the Koyukuk River from June 19 to July 26.

In the Tanana River, subsistence salmon fishing was closed to protect the first pulse of Chinook salmon from July 12 to July 14 in Subdistricts 6-A and 6-B and from July 12 to July 15 in the Old Minto Area. A second subsistence fishing period was closed when it became apparent that the escapement goal for the Chena River was unlikely to be achieved. These restrictions were in effect from July 20 to July 25. Additionally, in Subdistrict 6-C, personal use salmon fishing was closed from July 12 to August 5, nearly spanning the entire duration of the Chinook salmon run.

Over the course of the last several years, Yukon River fishermen have exhibited incredible flexibility, complying with short notice changes to subsistence fishing schedules and gear restrictions. ADF&G acknowledges the continued commitment made by Yukon River fishermen to conserve the valuable Chinook salmon resource for future generations. Inseason subsistence harvest reports indicated that some fishermen were voluntarily lowering their Chinook salmon subsistence harvest to protect the weak run, opting to shift their harvest to alternative fish species to provide for their subsistence needs. The vast majority of fishermen reported inseason that they harvested well below 50% of their annual Chinook salmon needs.

SUMMER SEASON COMMERCIAL FISHERY SUMMARY

For the sixth consecutive year, no commercial periods targeting Chinook salmon were allowed in the mainstem Yukon River or in the Tanana River. However, liberal commercial fishing opportunity was provided to target the available surplus of summer chum salmon in Districts 1 and 2, Subdistrict 4-A, and District 6. A suite of strategies were used to conservatively manage these fisheries to minimize the impact to the weak Chinook salmon run which are encountered incidentally. The sale of Chinook salmon was prohibited throughout both the summer and fall season fishery.

Harvest, Effort and Exvessel Value

There were a total of 82 commercial periods (Table 3) in 2013, with majority of commercial harvest occurring in the lower river districts (Tables 3, 6 and 7; Appendices A3–A4, A13–A14, B1–B3, and C4–C13). The total commercial harvest for Districts 1, 2, 4, and 6 combined was 485,587 summer chum salmon, which is 220% above the 2003–2012 average harvest of 151,776 fish (Appendix A4).

A total of 395 permit holders participated in the summer chum salmon fishery, approximately 7% below the 2008–2012 average of 426 permit holders (Appendix A8). The Lower Yukon Area (Districts 1–3) and Upper Yukon Area (Districts 4–6) are separate Commercial Fisheries Entry Commission (CFEC) permit areas. A total of 384 permit holders fished in the Lower Yukon Area in 2013, which was approximately 8% below the 2008–2012 average of 415 permits fished. In the Upper Yukon Area, 11 permit holders fished, which equaled the 2008–2012 average of 11 permits fished. (Appendix A8).

Yukon River fishermen in Alaska received an estimated $1.9 million for their summer chum salmon harvest in 2013 compared to the 2008–2012 average of approximately $1 million (Appendix A11). Lower Yukon River fishermen were paid $0.75 per pound for summer chum salmon (Appendix A10). The estimated average income for Lower Yukon Area fishermen in 2013 was $4,483.

In 2013, Upper Yukon Area fishermen received an average of $0.30 per pound for summer chum salmon sold in the round which was slightly above the 2008–2012 average of $0.27 per pound (Appendix A10). The average income for Upper Yukon Area fishermen that participated in the 2013 fishery was $13,828.

LOWER YUKON DISTRICTS

Utilizing new regulations adopted by the BOF in 2013, ADF&G allowed for the commercial harvest of summer chum salmon using dip nets and beach seines beginning June 18 in District 1 and June 20 in District 2 (Table 3). The intent was to provide for summer chum commercial fishing opportunity even during times when subsistence fishing closures had been enacted to protect Chinook salmon. The impact to Chinook salmon was expected to be minimal as fishermen were required to immediately release incidentally caught Chinook salmon back to the water alive. This was the first time since the reemergence of the Lower Yukon summer chum salmon commercial fishery in 2008, in which commercial fishing began near the first quarter point of the summer chum salmon run when a large volume of fish were available. ADF&G allowed fifteen 12 hour periods in District 1 and 17 periods in District 2 using dip nets and beach seines only, for a combined harvest of approximately 189,000 summer chum salmon, with 928 Chinook salmon reported released. Dip nets were surprisingly successful and accounted for the majority of the summer chum harvest taken with these new gear types. Unfortunately, due to the difficulty of operating beach seine gear in the high water conditions present during the summer season, very few fishermen chose to operate beach seine gear and the limited interest in using this gear quickly waned (Table 3).

As in recent years, the use of gillnet gear was delayed until after the midpoint of the Chinook salmon run to reduce incidental harvest of Chinook salmon. Utilizing another new gear option, the first commercial gillnet period in District 1 took place July 2 and gillnets were restricted to 5.5 in or smaller mesh size, not exceeding 30 meshes in depth (Table 3). This gear option was used for the first 6 commercial gillnet periods in District 1. Additionally, similar to the last several years, commercial gillnet fishing in District 1 was initially limited to the South Mouth only, where the incidental Chinook salmon harvest rates were anticipated to be low. Later in the season, all of District 1 was open to commercial fishing and the gillnet gear restriction was relaxed to 6 in or smaller mesh size (Table 3).

Unfortunately, the strategy of limiting the area open to commercial fishing to minimize the incidental harvest of Chinook salmon is more challenging to implement in District 2. As the Yukon River begins to become more channelized in this area, Chinook salmon are more difficult to avoid when commercial fishing with gillnet gear. Therefore, the use of dip nets and beach seine gear was continued for several more periods before transitioning to gillnet gear in District 2 on July 8. At that time, gillnets were restricted to the traditional, 6 in or smaller mesh size to maximize the summer chum salmon harvest while trying to avoid limiting fishermen participation by restricting the gear further.

During the gillnet portion of the commercial season in Districts 1 and 2, concurrent subsistence and commercial fishing periods were regularly instituted. The intent of these concurrent openings was to streamline commercial and subsistence fishing into a single event, therefore reducing the amount of time that Chinook salmon were susceptible to harvest.

The sale of incidentally caught Chinook salmon was prohibited by EO during the entire commercial fishing season because subsistence fishing had been restricted during the season in

Districts 1-5. This action helped ensure fishermen would not target Chinook salmon during commercial fishing periods, and fishermen could release any incidentally caught live Chinook salmon or use them for subsistence purposes. It was required to report on fish tickets any Chinook salmon caught but not sold. A total of 439 Chinook salmon were reported incidentally harvested in Districts 1 and 2 during the summer season. The prohibition of Chinook salmon sales continued through the fall season. A total of 44 Chinook salmon were caught but not sold in the fall season (Table 3).

The preliminary cumulative summer chum salmon commercial harvest for Districts 1 and 2 combined was 379,143 fish (Table 3). The summer chum salmon harvest was 210% above the 2003–2012 average harvest of 112,299 fish (Appendix A14). Dip net and beach seine harvest was a significant contributor in making the 2013 Lower Yukon summer chum salmon harvest the largest on record since 1989.

UPPER YUKON DISTRICTS

Regulations adopted by the BOF in March 2012 allowed ADF&G to open summer chum salmon directed commercial fishing periods in Subdistrict 4-A during times of Chinook salmon conservation with fish wheels only. A single fish buyer operated in Kaltag during the 2013 season. Commercial fishing began July 1 and fish wheels had to be attended at all times during operations and all Chinook salmon caught in the fish wheels had to be immediately released to the water alive. Additionally, new regulations were adopted in 2013 that detailed construction specifications for commercial fish wheels in Subdistrict 4-A that are intended to reduce the potential for injuring Chinook salmon while being released. After the vast majority of the Chinook salmon run had passed through the area, the requirement that commercial fish wheels must be manned at all times during operations and all Chinook salmon caught in the fish wheels must immediately be released to the water alive was discontinued. A total of twenty-seven 24-hour periods were implemented resulting in a total of 648 fishing hours (Table 5). The cumulative summer chum salmon commercial harvest for Subdistrict 4-A was 100,507 fish, with the majority of the harvest being female (Tables 3, 5, and 6). A total of 108 Chinook salmon were reported as caught and released alive back to the water, and no Chinook salmon were reported to have been kept for subsistence purposes (Table 3).

District 6 was managed using inseason assessment information provided by multiple projects that operated in the Tanana River drainage. A harvestable surplus of summer chum salmon was expected based upon sonar abundance estimates and genetic stock composition information. The first commercial fishing period targeting summer chum salmon occurred on July 19 in District 6 (Table 3). As in Subdistrict 4-A, commercial fishing gear was initially restricted to fish wheels that had to be attended at all times during operations, and all Chinook salmon caught in the fish wheels had to be immediately released to the water alive. These gear restrictions were relaxed on August 4 after the Chinook run in the Tanana River was nearly over. ADF&G scheduled 7 commercial fishing periods and the preliminary cumulative harvest was 5,937 summer chum salmon (Table 3). A total of 102 Chinook salmon were reported as caught and released alive back to the water, and 1 Chinook salmon was recorded on a fish ticket as caught but not sold. No Chinook salmon were allowed to be sold.

The total summer chum salmon commercial harvest for the entire Yukon Area was 485,587 (Tables 6 and 7), which was 220% above the 2003–2012 average harvest of 151,776 fish (Appendix A4).

FALL SEASON COMMERCIAL FISHERY SUMMARY

By regulation the fall season began in District 1 on July 16. Chum salmon captured in the Lower Yukon River test fisheries beginning on that date were considered fall chum salmon. The subsequent transition of upriver districts and subdistricts to the fall season was based on the migration timing of fall chum salmon. Pilot Station sonar began counting chum salmon as fall chum salmon on July 19.

All districts and subdistricts were placed on their regulatory subsistence fishing schedules commensurate with switching over to fall management. Also, upon switching, subsistence fishermen were allowed to use up to 7.5 in mesh gear. The subsistence fishing schedules were as follows: commercial fishing continued in Districts 1 and 2 and subsistence fishing was open 7 days a week except for 12 hours before, during, and 12 hours after commercial openings. District 3 also went to a 7 day a week schedule because no commercial periods were announced. The Innoko River opened to 7 days a week on July 14. The entire District 4 was on a 5 day per week schedule by August 4. Subdistricts 5-A, 5-B, and 5-C went to a 5 day per week schedule effective August 6 (commercial salmon fishing periods were announced in Subdistricts 5-B and 5-C throughout the fall season), and District 6 remained on the normal two 42 hour periods per week for the entire fall season. The Koyukuk River went to 7 days per week on July 26 and the Old Minto area went to their 5 day per week schedule on August 2. Finally the entire Subdistrict 5-D was returned to a 7 days per week schedule by August 14.

Based on a preseason projection of >800,000 fall chum, Districts 1 and 2 started the fall season on a 2 period per week commercial fishing schedule. Through the end of July 4, commercial periods were announced in District 1, and 3 periods were announced in District 2 (Table 4). Approximately 67,000 fall chum salmon and 1,200 coho salmon were harvested during that time.

From July 16 through the end of July, fall chum salmon entry into Yukon River was steady with daily and cumulative passages past Pilot Station sonar comparable to historical medians. However, by the end of July, the approximate first quarter point of the fall chum salmon passage past Pilot Station sonar, fall chum salmon passage numbers were not at expected levels. At that time the cumulative passage of 132,000 was below the historical median passage of 139,000 fish. As the fall chum salmon run progressed into August, passage numbers continued lag below historical passage numbers. The cumulative fall chum salmon passage past Pilot Station sonar on August 5 was 170,000 fish, below the historical median for that date of 236,500 fish. Between August 5 and August 17 no commercial fishing periods were announced in either Districts 1 or 2 to ensure enough fall chum salmon were getting upriver for escapement and subsistence use.

Although several relatively small groups of fall chum salmon entered Yukon River through mid-August, the first substantial pulse of fall chum salmon did not pass Pilot Station sonar until August 14, which is one of the latest dates on record. This pulse was 2 days in duration and consisted of approximately 195,000 fall chum salmon. After this pulse passed the sonar, cumulative counts rose above historical medians and the inseason fall chum salmon run projection was a range between 700,000 and 900,000 fish. Unseasonably hot, dry, and calm weather in conjunction with above average water temperature in the Lower Yukon River may have contributed to the delay of substantial pulses until mid-August.

Commercial fishing resumed in Districts 1 and 2 and continued through the end of August. Attempts were made to align commercial openings with pulses as they entered the river. In between pulses, commercial openings occurred on a set schedule. A second pulse of fall chum

salmon passed the sonar beginning August 18 and was 5 days in duration and was estimated to be approximately 174,000 fall chum salmon. By August 23, the cumulative fall chum passage past Pilot Station sonar of 600,000 fish was above the historical median of 467,500 fish. The inseason fall chum salmon projection at that time was greater than 900,000 fish. A third pulse passed the sonar beginning August 25 and was 3 days in duration. This pulse was estimated to be approximately 65,000 fall chum salmon.

Commercial openings were announced in Subdistricts 5-B and 5-C from mid-August through the first week in October, and commercial fishing occurred in District 6 from mid-August through the end of September.

Coho salmon passage was below average the entire season with only 3 individual daily peaks surpassing the average mark. The largest peak occurred on August 15 and the second largest occurred on August 27 (both peaks approximately 10,000 coho salmon each) and overall timing of coho salmon passage was average. Based on Lower Yukon test fishery, which operated until September 20, no additional pulses were observed.

Coho salmon were harvested incidentally in fall chum salmon directed commercial openings. Because of their high incidental commercial harvest, coupled with below average passage based on test fisheries and Pilot Station sonar estimates, a coho salmon directed commercial fishery in the lower river was not prosecuted in September 2013.

Harvest, Effort and Exvessel Value

There were a total of 43 commercial periods in 2013, with the majority of commercial fishing periods and harvest occurring in Districts 1 and 2 (Table 4). The 2013 total commercial harvest for the Yukon River fall season in the Alaska portion of the drainage was 238,051 fall chum (Tables 6 and 7, Appendix A15) and 66,203 coho salmon (Tables 6 and 7, Appendices A16). The fall chum salmon harvest was the fourth largest since 1993 (Appendix A5), and the coho salmon harvest was the third largest since 1993 (Appendix A6). All salmon were sold in the round, and no salmon roe was sold separately. The average price paid per pound in Districts 1 and 2 (Lower Yukon Area) was $0.75 for fall chum and $1.10 for coho salmon. Both prices were below their respective most recent 5-year (2008–2012) averages (Appendix A10). In Subdistricts 5-B and 5-C and in District 6 (Upper Yukon Area), the average price paid per pound was $0.16 for fall chum and $0.17 for coho salmon. Both prices were below their respective most recent 5-year (2008–2012) averages (Appendix A10). The exvessel value of the total fall season harvest was $1,641,029: $1,179,916 for fall chum and $461,113 for coho salmon (Appendix A11). A total of 443 individual permit holders participated in the 2013 fall chum and coho salmon fishery; 436 in Districts 1 and 2 combined and 7 in Districts 5 and 6 combined (Appendix A8). Participation in Districts 1 and 2 combined was well above recent averages and below average in District 5 and 6 combined.

ALASKA SUBSISTENCE FISHERY

Subsistence Harvest

Fishing closures and gear restrictions were enacted throughout the drainage during the Chinook and summer chum salmon migrations to conserve Chinook salmon. Subsistence and personal use fishing during the fall chum and coho salmon runs was open according to regulatory schedules (Tables 8, 9, 10). A total of 12,568 Chinook, 115,252 summer chum, 113,457 fall chum, 14,523 coho salmon (Table 11), 1,076 pink salmon (Appendix D5), and 258 sockeye salmon (Appendix

D10) were estimated to have been harvested for subsistence in the Yukon Area. The Yukon Area includes the Alaska portion of the Yukon River drainage and the communities within the Coastal District. Harvest estimates included salmon given away by test fishing projects, retained from commercial fisheries for subsistence, and salmon harvested by households with subsistence and personal use permits. An estimated 1,476 households participated in the Yukon Area subsistence and personal use fisheries in 2013 with 45%, 47% and 7% of households using set gillnets, drift gillnets and fish wheels respectively as their primary gear types (Table 11).

Subsistence salmon harvest survey and permit programs collected quantitative information on salmon harvest by species, gear types used to harvest salmon, harvest distribution, miscellaneous species harvest, number of dogs and salmon fed to dogs. Qualitative information was also collected from households about salmon health and quality, subsistence fishing success, and fishery concerns. Subsistence permits are required in portions of the Yukon River Area that are road accessible, including all of the Tanana River drainage and segments of District 5. Personal use permits are required in the non-subsistence area near Fairbanks (Figure 11).

Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the 2013 postseason survey (Cochran 1977). The harvest surveys include salmon retained for subsistence from commercial fishing, which are reported by households as part of their subsistence harvest. The majority of surveyed households (52%) used drift gill nets as their primary gear types. An estimated 40% used set gillnets, 6% used fish wheels, and 3% of households used other gear types such as beach seine or dip net as their primary gear type (Table 11).

A total of 369 subsistence permits were issued in 2013 for the harvest of salmon and nonsalmon species. The number of subsistence fishing permits issued includes those issued for both salmon and non-salmon species and residents of Stevens Village where fishermen may participate in both a permit and/or non-permit required area (Appendix D6). Harvest from the community of Stevens Village is primarily estimated using the subsistence survey program to avoid double counting salmon (Jallen et al. 2012). As of February 24, 2014, 89% of the permits issued were returned and 184 permits reported fishing information (Appendix D6). Information collected annually on the number of dogs owned by permit households and salmon harvested for dogs is included in the annual subsistence salmon harvest report (Jallen et al. 2012).

Households that returned subsistence permits reported harvesting 1,562 Chinook, 2,809 summer chum, 32,874 fall chum, and 5,340 coho salmon (Appendix D6). Salmon harvested commercially and reported as retained for subsistence on fish tickets are added to permit harvests in permit areas. In 2013, 1 Chinook, 96 fall chum, and 1 coho salmon were added to the community harvest totals of Nenana and Fairbanks (Table 11).

The number of permits issued in the Yukon Area permit required areas in 2013 was 4% below the 5-year average (2008–2012) and 3% below the 10-year average (2003–2012). Harvest of Chinook salmon reported on permits was 67% below the 5-year average and 76% below the 10-year average. The harvests of summer chum and fall chum salmon in 2013 were 171% and 16% above the 5-year average for each species and 85% and 27% above the 10-year averages. Harvest of coho salmon was 114% above the 5-year average and 46% above the 10-year average (Appendix D7).

The number of permits issued in the Tanana River subsistence permit required areas in 2013 was 5% below the 5-year average (2008–2012) and equal to the 10-year average (2003–2012).

Harvest of Chinook salmon in Tanana River subsistence fisheries was 59% below the 5-year average and 70% below the 10-year average. The harvest of summer chum salmon was 37% above the 5-year average and 20% below the 10-year average. Harvests of fall chum and coho salmon were 6% and 20% below the 5-year averages and 16% and 38% below the 10-year averages (Appendix D8). These numbers do not include harvests from personal use permits or salmon retained from commercial fisheries for personal use.

In order to monitor and manage the Yukon Area salmon fisheries, ADF&G operates or oversees several test fishing projects within the drainage. Fish harvested during operation of these projects are provided to the local community to supplement their subsistence harvests. In 2013, test fishery projects throughout the drainage provided a total of 898 Chinook, 5,860 summer chum, 2,937 fall chum, and 457 coho salmon to households for subsistence use (Deena Jallen, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication). Residents of the communities of Alakanuk, Emmonak, Eagle, Kotlik, and Pilot Station were the primary recipients of these fish. 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. These totals include 3 Chinook salmon given to residents of the permit community of Eagle from the Eagle sonar project (Deena Jallen, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication). Kwik'pak Fisheries, LLC donated 750 summer chum salmon to the community of Galena; these fish were not added to subsistence harvest totals (Gene Sandone, G. Sandone Consulting LLC, Wasilla; personal communication).

Historic Trends and Amounts Necessary for Subsistence

One method for assessing the relative success of Yukon Area fishermen is to compare the annual drainagewide estimated subsistence harvest to historic averages and to the ANS harvest ranges established by the BOF. ANS ranges of 45,500–66,704 Chinook, 83,500–142,192 summer chum, 89,500–167,900 fall chum, and 20,500–51,980 coho salmon were established in 2001 and outlined in 5 AAC 01.236 (ADF&G 2001). The ANS range of 2,100–9,700 pink salmon was established in 2013 (Newland and Estensen 2013). Except for the harvests of summer chum and fall chum salmon, which were within their ANS ranges, results indicate subsistence harvests of each of the other salmon species in 2013 were below the lower level of their ANS ranges.

Salmon harvest estimates based on survey results indicated the 2013 Chinook salmon subsistence harvest was 22% below the 5-year average (2008–2012) and 44% below the previous 5-year average (2003–2007) (Appendix D1). The summer chum salmon subsistence harvest was 20% above the 5-year average and 25% above the previous 5-year average (Appendix D2). The harvest of fall chum salmon was 23% above the 5-year average and 25% above the previous 5-year average (Appendix D3). Coho salmon harvest was 23% below the 5-year average and 45% below the previous 5-year average (Appendix D4). Overall, the 2013 Yukon Area subsistence salmon harvest of 255,128 Chinook, summer chum, fall chum and coho salmon combined (Appendices D1–D4) was approximately 10% above the 5-year average (2008–2012) of 231,360 fish and 3% above the previous 5-year average (2003–2007). This 10 year period includes years with very low harvests and fishing restrictions, such as closures during the summer season to protect Chinook salmon from 2009 through 2013. The 2013 harvest of Chinook salmon was very low compared to the averages; however, the harvest of fall chum salmon was greater than harvests from the 10-year average and the harvest of summer chum salmon was the second largest from 2003 to 2013.

Of the households that answered survey questions in 2013 about whether their subsistence needs were met, the majority of households reported meeting over 50% of their needs for summer chum (65% of households), fall chum (54% of households), and coho salmon (51% of households). Only 21% of households that responded reported meeting over 50% of their needs for Chinook salmon, which was below each of the 5 years. The percentage of households meeting over 50% of their needs for each species in 2013 was greater than the 5-year average (2008–2012) for chum and coho salmon species (Deena Jallen, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication). Commonly mentioned reasons for not meeting needs included comments that the fishing was closed during the summer season, the run of Chinook salmon was poor, households did not have fishing equipment, regulations and schedules were confusing or hard to follow, fishing periods conflicted with work or were too short, and families could not afford to travel back and forth to fish camps. Households in Galena were severely impacted by spring flooding and many households were unable to fish due to loss of gear or time spent on rebuilding. Many fishermen reported they were unable to fish because they did not have 6 in mesh gear to fish during restricted gear openings. Surveyed households mentioned other factors that contributed to the inability to meet subsistence salmon needs including expenses such as fuel or fishing equipment, river conditions, and health or other personal reasons. Some households commented that they were harvesting and using other salmon and non-salmon species to replace Chinook salmon and that the chum salmon runs were abundant (Deena Jallen, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication).

ALASKA PERSONAL USE FISHERY

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area (Figure 11). Fishermen are required to document their personal use harvest on household permits and return them to ADF&G at the end of the season.

In 2013, 67 personal use salmon permits were issued. As of February 24, 2014, 65 personal use salmon permits were returned and 36 reported fishing in 2013. The reported personal use harvest was 42 Chinook, 138 summer chum, 383 fall chum, and 132 coho salmon (Appendix D6). The number of personal use permits issued areas in 2013 was 3% below the 5-year average (2008–2012) and 4% below the 10-year average (2003–2012). Harvest of Chinook salmon reported on permits was 63% below the 5-year average and 79% below the 10-year average. The harvests of summer chum and fall chum salmon in 2013 were both 55% below the 5-year average for each species, and 45% and 30% below the respective recent 10-year averages. Harvest of coho salmon was 56% below the 5-year average and 53% below the 10-year average (Appendix D9).

ENFORCEMENT

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

In the lower Yukon River, between June 11 and July 14, AWT used a team of 2 officers to patrol Yukon River Districts 1–4 utilizing 2 PA-18 Super Cubs and patrol skiffs located in Emmonak, St. Mary's, and Galena. The Yukon River experienced a poor return of Chinook salmon;

subsequently, ADF&G placed limited gear restrictions and time periods for subsistence fishing. ADF&G did, however, open periods for the commercial harvest of chum salmon using dip net and beach seining in an effort to allow the harvest of chum salmon while allowing the release of Chinook salmon alive. Patrols were spread thin and had limited assets in the middle river communities as Chinook salmon migrated up river. Several of the middle river communities refused to comply with the reduced gear restrictions, and some fishermen were cited. The enforcement actions on the Yukon River involved commercial fishing, subsistence fishing, and boating safety, and resulted in 346 contacts, 51 warnings, 22 citations, and 4 subsistence nets being seized.

In the upper Yukon River, in response to concern from ADF&G staff, who were fielding calls from the public regarding both gear restriction violations and suspected closure violations, AWT from the Fairbanks area conducted a 2-day boat patrol covering the portion of Yukon River from the bridge downriver to the village of Tanana. During the patrol they made 15 contacts and cited 2 fishermen for using oversize gear. A subsequent patrol by float equipped PA-18 from Tanana upriver to the community of Eagle was conducted as the first pulse of Chinook salmon moved through that area. During that patrol, conducted over 2 days, there were no violations detected and relatively few contacts recorded as fishing effort was fairly limited. While contacts were not numerous, AWT felt this was a positive patrol in that resource users were checked in a relatively infrequently patrolled area and compliance was confirmed to be very good overall.

In addition, AWT conducted several patrols of the Tanana River near Nenana during various closures. Patrols were also conducted beyond Nenana to the Tolovona River area and all the way to the community of Tanana at least once. AWT also contacted a few fishermen by boat in conjunction with fall game patrols and in and around boat launches in Nenana. Again, contacts and participation were fairly low, but AWT felt the patrols were worthwhile and will continue them next year. The only citation issued in the Tanana River drainage was for not recording subsistence harvest in the Nenana area. AWT also investigated a claim of unlawful sale of chum salmon roe that they determined was unfounded.

Federal Wildlife Officers and Special Agents from the USFWS patrolled via boat and airplane and rarely found violations. Fishermen, although not happy with the lack of returning Chinook salmon and associated fishing restrictions, displayed understanding and were cordial to law enforcement personnel. In total, Federal Wildlife Officers and Special Agents issued 2 violation notices.

CANADIAN FISHERIES

A total of 2,146 Chinook salmon, 6,170 fall chum salmon, and 153 coho salmon were harvested in the 2013 Canadian commercial, aboriginal, recreational, and domestic fisheries combined (Table 5; Appendices A13, A15, and A16).

Canadian Commercial Fishery

A total of 3,369 fall chum salmon were harvested in the Canadian Yukon River commercial fishery in 2013 (Table 5). A total of 2 Chinook salmon and 2 coho salmon were commercially harvested in 2013 (Table 5). The chum salmon commercial harvest was above the most recent 5-year (2008–2012) average (Appendix A15).

Chinook Salmon Harvest

The lower Canadian commercial fishery area is located downstream of the Stewart River. The most intensive fishing activity and catch monitoring is conducted in this area. Commercial fishermen are legally required to report catches, tag recovery, and associated data.

The inseason Chinook salmon run status indicated that there would not be a sufficient run to support a commercial fishery. As a result, the fishery remained closed throughout the 2013 Chinook salmon season. There were 2 Chinook salmon harvested incidentally during the early fall chum salmon opening in late August (JTC 2014).

The average commercial Chinook salmon catch for the 2003–2012 period, excluding years when the fishery was closed for conservation purposes, was 2,644 fish (JTC 2014). Since 1997, there has been a marked decrease in commercial catch of Chinook salmon in the upper Yukon River as a result of closures and/or very limited fishing opportunities.

Fall Chum Salmon Harvest

A strong return of fall chum salmon resulted in opportunities for commercial fishery openings throughout the fall season. A total of 3,369 fall chum salmon were harvested during 2 commercial fishery openings (JTC 2014). Since 1997, there has been a marked decrease in commercial catches of Upper Yukon River fall chum salmon as a result of a limited market as well as reduced fishing opportunities in some years due to below average run sizes.

The total 2013 commercial fall chum salmon catch of 3,369 fish was 38% below the 2003–2012 average of 5,459 fish and slightly above the 2008–2012 average of 3,012 fish (JTC 2014). Within the 2003–2012 period, the commercial fall chum salmon catch ranged from 293 in 2009, when the run was late and the fishery was closed most of season due to conservation concerns, to 11,931 fall chum salmon in 2005. The fall chum salmon commercial fishery is somewhat of a misnomer as virtually all of the catch is used for what could be termed personal needs; few fish are sold. This situation could change with the recent development of local value-added products such as smoked fall chum salmon and salmon caviar (JTC 2014).

Commercial harvest of coho salmon within the Upper Yukon River drainage is usually negligible. This is thought to be related to a combination of low abundance and limited availability of this species to fisheries due to late migration timing. There were 2 coho salmon harvested, both caught during the third week of September, in the directed chum salmon fishery.

Aboriginal Fishery

Upper Yukon Chinook Salmon

In 2013, as part of the implementation of the Yukon River 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. Before the start of the fishing season, locally hired surveyors distributed catch calendars to known fishermen and asked them to voluntarily record catch and effort information on a daily basis. Interviews were then conducted inseason to obtain more detailed catch, effort, gear, and location information at fish camps or in the community, 1–3 times weekly. In most cases, weekly summaries were completed by the surveyors and e-mailed to the DFO office in Whitehorse. Late or incomplete information was obtained postseason and reviewed by First Nation staff in conjunction with DFO (JTC 2014).

Based on a preseason outlook for a below average run of 49,000 to 71,000 Upper Yukon Chinook salmon, it was prudent to consider that conservation measures would likely be required in all Canadian fisheries. DFO recommended that Yukon First Nations develop individual community harvest plans to address conservation concerns for Chinook salmon. Approaches to reductions in harvest varied, but generally the First Nations accepted the need for conservation and implemented harvest monitoring measures in order to stay below what would be considered a normal harvest (JTC 2014).

In 2013, the Upper Yukon River aboriginal Chinook salmon catch was estimated to be 1,902 fish; including 1,253 fish reported by First Nations and an adjustment of 649 fish to account for 2 communities that did not report their harvest (JTC 2014). This adjustment was derived using recent harvest data averages. The adjusted estimate is 24% of the 8,000 Chinook salmon that would likely be harvested in an unrestricted aboriginal fishery[5] and 57% below the 10-year average (2003–2012) of 4,459 salmon. This represents the lowest harvest of Chinook salmon on record since 1980 (JTC 2014). It should be noted that while some records of catches in the aboriginal fishery do exist from 1961 to 1979, the information is not considered reliable as there was no consistent data collection method in place until 1980 (JTC 2014).

Upper Yukon Fall Chum Salmon

The preseason outlook for Canadian-origin fall chum salmon to the upper Yukon River in 2013 indicated an average to above average run of 226,000 to 288,000 fish. The border passage estimate at this run projection would place Canadian Management in the green zone; therefore, no restrictions were expected in the First Nation fishery. As inseason information became available, it became apparent that the run was strong and would support an unrestricted First Nation fishery. This fishery is managed in a similar fashion to the Chinook salmon fishery using an abundance-based approach (JTC 2014).

The preliminary 2013 fall chum salmon harvest reported in the aboriginal fishery from the upper Yukon River was estimated to be approximately 500 chum salmon and is based on a 10-year average and limited information received to date (JTC 2014).

There was no harvest of fall chum salmon in the Dawson City area in 2013. Average catches of 433 and 460 fall chum salmon were derived from a 7-year harvest study conducted by LGL Limited from 1996 to 2002 in the Pelly and Carmacks areas. Recent information from these 2 communities suggests that interest in fall chum salmon has been significantly reduced since that time (JTC 2014).

Porcupine River Chinook and Fall Chum Salmon

Catch estimates of salmon in the aboriginal fishery on the Porcupine River near Old Crow are determined from locally conducted interviews using the catch calendar and a voluntary recording system described above. Weekly updates reported a season total of 242 Chinook salmon for 2013 (JTC 2014). The 10-year average (2003–2012) was 299 Chinook salmon.

A total of 2,283 fall chum salmon was harvested in the Old Crow aboriginal fishery (JTC 2014), which is 13% below the 10-year average (2003–2012) harvest of 2,625 chum salmon (JTC 2014).

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[5] Interim Basic Needs allocation estimate as established from Yukon River Salmon Harvest study data from 1996 to 2002, excluding years where the fishery was restricted for conservation (1998–2000).

There were 151 coho salmon harvested on the Porcupine River in 2013, compared to the 2003–2012 average of 150 fish (JTC 2014).

Domestic Fishery

The domestic fishery was closed during the Chinook salmon season and opened concurrently with the commercial fishery for 2 openings during the fall chum salmon season. In recent years, domestic fishermen have targeted Chinook salmon, although historically, fall chum salmon were targeted in some years. There was a total reported domestic catch of 18 fall chum salmon in 2013 (JTC 2014). This represents the first recorded catch of chum salmon in the fishery since 2005 when 13 were reported and compares to a long term average of 487 from 1974 to 2013; domestic fishery catches were not recorded prior to 1974 (JTC 2014).

Recreational Fishery

In 2013, in response to early season projections for a poor return of Chinook salmon, the daily catch and possession limits in the recreational fishery were reduced to zero, effective July 19. On August 2, continued low border escapement projections and subsequent reductions in the Aboriginal fishery triggered the closure of the Tatchun River to all angling to allow unimpeded passage of Chinook salmon through this popular fishing site. In addition, an area of the Teslin River from Johnson's Crossing to Muskrat Creek was closed to all angling from August 15 to September 2. This was a new management measure designed to provide for the protection of a local spawning population of Chinook salmon (JTC 2014).

From catch card information received as of this publication, no Chinook salmon were either retained or caught and released in the Yukon River or its tributaries in the 2013 recreational fishery. The average number of retained Chinook salmon catch within the 2003–2012 period was 239 fish (JTC 2014).

For the 2013 season, the daily catch and possession limits of fall chum salmon in the recreational fishery remained at 2 and 4, respectively. There were no reports of fall chum salmon caught (JTC 2014).

ESCAPEMENT

Escapement Goals

BEGs have been established for several Yukon River drainage salmon spawning streams or areas (Appendix E1). ADF&G undertakes a triennial review of salmon escapement goals (EG) in conjunction with the BOF meeting cycle. The EGs developed or modified through this process are primarily presented as ranges. The underlying principle in establishing an EG is that maintenance of average or better spawning escapements which 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 EG ranges 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. Under these policies, ADF&G determines either a BEG or a SEG (ADF&G 2004; Brannian et al. 2006; Conitz et al. 2012). BEG means a level of escapement that provides the highest potential to produce maximum sustainable yield. SEG means a level of escapement known to provide for sustainable yield over a 5- to 10-year period.

Most of the EG 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 (i.e., 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 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, many 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 Anvik River summer chum salmon (Clark and Sandone 2001), East Fork Andreafsky River summer chum salmon (Fleischman and Evenson 2010), 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. In 2010 the most significant change affecting fall chum salmon EGs included changing the Yukon River drainagewide goal from a BEG to a SEG (Fleischman and Borba 2009). At this time, the analysis did not include the component stocks, and they remain listed as BEGs based on Eggers (2001) analysis. The Toklat River goal was also discontinued in 2010.

Most Arctic, Yukon, Kuskokwim (AYK) Region escapement goals were originally set in the late 1970s or early 1980s. These goals were first documented by Buklis (1993) as required under ADF&G's original escapement goal policy signed in 1992. Most BEGs were generally established using a simple escapement averaging methodology based on aerial survey counts. Changes to these goals were adopted in 2001 when BEGs were set for Yukon River fall chum salmon (Eggers 2001), Anvik River summer chum salmon (Clark and Sandone 2001), and Andreafsky River summer chum salmon (Clark 2001). Some of the Chinook salmon goals are now referred to as SEGs because of precision issues inherent to aerial survey methodology. The SEGs for Chinook salmon were developed using historical aerial survey information.

Beginning in December of 2002, ADF&G undertook the first full review of its escapement goals following the adoption of 2001 policies. Recommendations were presented to the BOF in January 2004 and formally adopted by ADF&G in 2005. Because the 2001 and 2004 escapement goals received thorough review, no changes to escapement goals were recommended for the February 2007 BOF meeting. ADF&G completed another review of escapement goals in preparation for the January 2010 BOF meeting. As in previous cycles, the review included formal meetings open to agencies and the public. Draft analyses were prepared and distributed in March 2009, and a final document summarizing the escapement goal review was completed in December 2009 (Volk et al. 2009).

Five Chinook salmon aerial survey goals were converted to escapement goal ranges and formally adopted in 2005, using the method devised by Bue and Hasbrouck[6] (Appendix E1). Current escapement goals for Chinook salmon in the U.S. portion of the Yukon River drainage include aerial survey goals on the West Fork Andreafsky, Anvik, and Nulato (North and South Forks combined) rivers; a weir count goal on the East Fork Andreafsky River; and tower count goals on the Chena and Salcha rivers. At the January 2010 BOF meeting, the escapement goal for East Fork Andreafsky River Chinook salmon was revised to a weir based goal, and the aerial survey

[6] Bue, B. G. and J. J. Hasbrouck. Unpublished. Escapement goal review of salmon stocks of Upper Cook Inlet, Report to the Alaska Board of Fisheries, 2001. Alaska Department of Fish and Game, Anchorage.

escapement goal for Gisasa River Chinook salmon was discontinued (Volk et al. 2009). All other Yukon Chinook salmon goals were retained, and the goals as established or left in place at the 2010 meeting continued to be used in 2011 through 2013.

Current summer chum salmon escapement goals are in place only for East Fork Andreafsky and Anvik rivers. In 2010, the East Fork Andreafsky River weir based goal was revised to a lower bound SEG replacing the BEG range primarily because it would be difficult or undesirable to hold escapements below the upper bound of a range through inseason management actions (Fleischman and Evenson 2010; Appendix E1). Both the East and West Fork Andreafsky River aerial survey based goals were eliminated (Volk et al. 2009).

In May 2011, ADF&G began another escapement goal review cycle to prepare for the January 2013 BOF meeting (Conitz et al. 2012). Data series for Chinook, summer chum, and fall chum salmon were reviewed and updated before and after the 2011 season, and this information was presented at a meeting open to agencies and the public in November 2011. Draft analyses were prepared and presented at a second public meeting on March 1–2, 2012, and following that meeting, formal recommendations and an updated escapement goal report was prepared (Conitz et al. 2012). All existing escapement goals for salmon stocks in the Yukon Management Area were recommended to continue without revision. Reviewing a Yukon River drainagewide summer chum salmon escapement goal is planned for the next BOF cycle meeting.

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 the following:

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.

Genetics

Scale pattern analysis, age composition estimates, and geographic distribution has been used by ADF&G on an annual basis from 1981 through 2003 to estimate stock composition of Chinook salmon in Yukon River harvests. In 2004, the feasibility of using genetic analysis in replacement of scale pattern analysis to assess stock composition was first tested (JTC 2012). Since that time, the development of genetic methods and techniques for Chinook (DeCovich and Howard 2011) and chum salmon stock identification in the Yukon River drainage has been ongoing (Flannery and Wenburg 2013). Salmon stock composition using genetic techniques has been a useful tool for inseason and postseason fisheries management on the Yukon River.

Aerial Survey 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. 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. Recently, helicopters have been used more often to increase accuracy of counts because of the aircrafts' maneuverability, but they are still limited on range and are more costly.

Variability in aerial survey accuracy is dependent upon a number of factors such as weather, 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" that 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.

ESCAPEMENT

Summer Season Escapement

Chinook Salmon

The actual 2013 Chinook salmon run came in at the low end of the preseason outlook. Chinook salmon escapement goals for the West Fork Andreafsky (aerial), Nulato (aerial), and Salcha (tower) rivers were achieved (Appendix E4 and E5). The East Fork Andreafsky River weir Chinook salmon counts were just shy of the escapement goal. Although the East Fork Andreafsky River weir installation was hindered by high water, it is likely few Chinook salmon were missed based upon evaluation of historical run timing. The Anvik and Chena rivers escapement goals were not met (Appendix E5). Season cumulative counts on the Gisasa and Henshaw rivers were below average. The Chena River project operations were hindered by high water conditions for much of the season (Appendix E5).

Most aerial surveys in the lower Yukon River drainage were conducted under good conditions. Ten surveys were rated good. Salmon entering the Yukon River exhibited late run timing. Most surveys on the Lower Yukon River tributaries were conducted at peak spawning, while surveys on the Koyukuk were conducted later than peak spawning.

Escapement on the Chena, Salcha, and Goodpaster rivers was monitored using tower counts. In 2013 the Chena River counts started on July 9 and went through August 4. The first fish was seen on July 15 and 2 days (July 22 and 23) were considered bad viewing conditions, so the moving average estimator was used to estimate passage for those 2 days (James Savereide, Sport Fish Biologist, ADF&G, Fairbanks; personal communication). The Salcha River counts started

on July 10, and that was when the first fish was observed. The last day of counts was August 14. The counts only had 1 day of bad viewing (July 22), and the moving average estimator was used. The Goodpaster counts were from 16 July to 3 August. The first fish was July 17, and the last was August 3. All days were good viewing conditions (Savereide and Huang 2014).

The Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage can be found in Appendices E4 and E5.

A weir was operated on the East Fork Andreafsky River by USFWS, and the estimated passage of 1,998 Chinook salmon was the lowest escapement in the last 5 years (Appendix E5). ASL data were collected from Chinook salmon caught in the weir trap. The estimated age composition was 0.6% age-3, 47.9% age-4, 21.6% age-5, 29.3% age-6, and 0.6% age-7 fish. The sex composition of fish sampled (n = 447) was 40.3% female and 59.7% male (JTC 2014).

No carcass survey was conducted on the Anvik River in 2013.

The Gisasa River weir was operated by USFWS, and the passage estimate was 1,126 Chinook salmon (Appendix E5). ASL data were collected from fish caught in the weir trap. The estimated age composition from scale samples was 0.3% age-3, 28.7% age-4, 30.3% age-5, 39.6% age-6, and 1.2% age-7 fish. The sex composition of fish sampled (n = 459) was 34.1% female and 65.9% male (JTC 2014).

Escapement through the weir operated at Henshaw Creek by the Tanana Chiefs Conference and the USFWS Office of Subsistence Management was estimated at 706 Chinook salmon (Appendix E5). ASL data were collected from fish caught in the weir trap. The estimated age composition from scale samples was 0.7% age-3, 30.5% age-4, 31.1% age-5, 37.4% age-6, and 0.3% age-7 fish. The sex composition of fish sampled (n = 225) was 44.8% female and 55.2% male (JTC 2014).

BEGs have been established for the Chena and Salcha rivers located on the Tanana River, which are the 2 largest spawning tributaries for Chinook salmon in the Yukon River drainage. An estimated 1,653 Chinook salmon were counted at Chena River tower (Appendix E5; Savereide and Huang 2014); however, high water hindered counting at this project for much of the season. Escapement at the Salcha River tower was estimated at 4,941 Chinook salmon, the lowest escapement in the last 5 years (Appendix E5; Savereide and Huang 2014).

ASL data were collected from the Chena and Salcha rivers using carcass surveys conducted by ADF&G and the Bering Sea Fishermen's Association, respectively. The estimated age composition of Chinook salmon in the Chena River was 1.1% age-3, 29.0% age-4, 22.1% age-5, 46.6% age-6, and 1.2% age-7 fish. The sex composition of fish sampled (n = 176) was 40.3% female and 59.7% male (JTC 2014). The estimated age composition of the Chinook salmon in the Salcha River was 1.1% age-3, 11.2% age-4, 15.6% age-5, 69.3% age-6, and 2.8% age-7 fish. The sex composition of fish sampled (n = 179) was 50.3% female and 49.8% male (JTC 2014).

The Eagle sonar project was used to determine the Canadian Upper Yukon River border passage estimate in 2013. The border passage estimate for 2013 was 30,573 Chinook salmon, based on the Eagle sonar project estimate of 30,725 (Jody Lozori, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication) minus an estimated Alaska subsistence harvest upstream of the sonar project site of 152 fish (Appendix E6). After subtracting the Canadian Yukon River mainstem harvest of 1,904 fish, a total of 28,669 Chinook salmon were estimated to

have reached Canadian spawning areas (Appendix E6). The spawning escapement was below the IMEG range of 42,500 to 55,000 adopted by the Yukon River Panel in 2013 (Appendix E1).

In addition to operating the Eagle sonar project, a drift gillnet project was conducted near Six-Mile Bend downstream of Eagle to monitor species composition and to collect biological information, including ASL and genetic samples from fish passing the sonar project site. Significant shallowing on the right bank this season prevented Chinook salmon sample fishing at the traditional site. To continue sampling Chinook salmon on the right bank, an alternate site was selected approximately 1.5 km downstream of the sonar (Jody Lozori, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communication). The estimated age composition of Chinook salmon caught in the drift gillnet project was 4.2% age-4, 27.5% age-5, 63.4% age-6, and 4.9% age-7 fish. The sex composition of fish sampled (n = 265) from the drift gillnet project was 51.7% female and 48.3% males (Shane Eaton, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication).

J. Wilson and Associates conducted the Blind Creek weir project in Canada in 2013, and a total of 312 Chinook salmon were counted between July 24 and August 19 (Appendix E2 and E6). This is approximately 60% of the average 10-year escapement of 519. ASL samples were randomly collected from migrating Chinook salmon throughout the period of weir operation. A total of 149 Chinook salmon (48% of the run) was live-sampled. Of these, 89 (60%) were female, and 60 (40%) were male. The mean mideye to fork (MEF) length of females and males sampled was 806.4 mm and 714.1 mm, respectively. Scale samples are currently undergoing analysis by the Pacific Biological Station fish ageing lab in Nanaimo, British Columbia for DFO Whitehorse (JTC 2014).

The 2013 Whitehorse Rapids Fishway Chinook salmon count of 1,139 was above the 2008–2012 average count of 893 fish (Appendix E6) and 4.0% of the Yukon spawning escapement estimate of 28,669. Of the adult Chinook salmon counted at the Fishway, 764 were of hatchery origin, comprising 67% of the return. The hatchery component included 352 females (46%) and 412 males. The wild component included 226 females (60%) and 149 males. Female Chinook salmon made up 51% of the total run (JTC 2014).

Hatchery personnel collected biological samples from 56 male and 42 female Chinook salmon taken from the Whitehorse Rapids Fishway for broodstock. Additional samples were collected from 1 female and 5 male Chinook salmon carcasses at Wolf Creek. No weirs (Wolf or Michie Creek) were operated in the drainage upstream of the Whitehorse Rapids Fishway in 2013 (JTC 2014).

Summer Chum Salmon

Summer chum salmon escapement was above average in most tributaries in 2013. Summer chum escapement goals for East Fork Andreafsky and Anvik rivers were achieved. Counts at the Gisasa and Henshaw rivers were above average. Salcha River escapement as assessed by tower counts was near average. Escapement on the Chena River was difficult to assess because of environmental conditions. The estimated cumulative passage of 2,747,218 summer chum salmon at the sonar project near Pilot Station, through July 18, exceeded the management threshold of 600,000 summer chum salmon (Appendix E3).

The summer chum salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage can be found in Appendix E7.

The escapement count based on the Anvik River sonar project of 571,690 summer chum salmon was within the BEG range of 400,000 to 800,000 fish (Appendix E7). ASL samples were collected in 2013 by beach seine. The estimated age composition was 0.0% age-3, 28.1% age-4, 70.3% age-5, and 1.6% age-6 fish. The sex composition of the fish sampled (n = 582) was 51.5% female and 48.5% male (JTC 2014).

The East Fork Andreafsky River weir escapement estimate for chum salmon was 61,234 (Appendix E7). ASL data were collected from fish caught in the weir trap. The estimated age composition was 0.0% age-3, 19.7% age-4, 80.1% age-5, and 0.2% age-6 fish. The sex composition of the fish sampled (n = 616) was 48.4% female and 51.6% male (JTC 2014).

The escapement estimate of summer chum salmon through the Gisasa River weir was 80,055 fish (Appendix E7). ASL data were collected from fish caught in the weir trap. The age composition of samples was 0.0% age-3, 25.9% age-4, 63.1% age-5, and 1.0% age-6 fish. The sex composition of the fish sampled (n = 710) was 54.3% female and 45.7% male (JTC 2014).

The escapement estimate of summer chum salmon through the Henshaw Creek weir was 263,746 fish (Appendix E7). ASL data were collected from the weir trap. The estimated age composition from scale samples was 0.0% age-3, 64.0% age-4, 35.9% age-5, and 0.1% age-6 fish. The sex composition of fish sampled (n = 447) was 57.0% females and 43.0% males (JTC 2014).

The Kaltag Creek, Nulato River, and Tozitna River escapement projects did not operate in 2013.

ASL data were collected from the Salcha River using carcass surveys conducted by the Bering Sea Fishermen's Association. Vertebrae were collected for age estimation. The estimated age composition of the summer chum salmon in the Salcha River was 0.0% age-3, 44.4% age-4, 48.7% age-5, and 6.3% age-6 fish. The sex composition of fish sampled (n = 160) was 48.1% female and 51.9% male (JTC 2014).

Fall Season Escapement 2013

Fall Chum Salmon

Historical fall chum salmon escapement information in addition to 2013 escapement results is presented in Appendices E2, E8, E9, and E11. Fall chum salmon are discrete spawners, choosing areas of upwelling and relatively warmer water to incubate their eggs in a shorter time when compared to other species. 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; monitoring projects concentrate on these areas. Current escapement goals for the Yukon River drainagewide and individual portions were developed based on the analysis done by Eggers (2001), with a recent modification of the drainagewide goal from a BEG to a SEG based on Fleischman and Borba (2009).

The Tanana River produces the largest component of the drainagewide fall chum salmon run. Based on abundance estimates from mark–recaptures studies conducted from 1995 to 2007 (Cleary and Hamazaki 2008), the Tanana River drainage contributes 22% to 42% of the overall run, averaging 33%. Estimated escapement in those years averaged 184,000 fall chum salmon with a range of 56,000 fish in 2000 to 373,000 fish in 2005. In 2013, inseason assessment of the fall chum salmon run into the Tanana River drainage monitored run timing and catch at a test fish wheel located near the village of Manley. In addition, subsistence and commercial harvest in

the fisheries were assessed. Mixed Stock Analysis (MSA), based on genetics, was also used to assess the fall chum salmon run into the Tanana River drainage.

Evaluation of the fall chum salmon run to the Delta River, an index tributary of the Tanana River, was based on 9 replicate foot surveys conducted between October 1 and December 4, 2013. The Delta River escapement was estimated to be 31,955 fall chum salmon using the area under the curve method (Table 12). Escapement exceeded the upper end of the BEG range of 6,000 to 13,000. Escapement into the Delta River in 2013 was recorded as the second highest on record in 40 years, only slightly below that observed in 1991. The high population estimate is partly attributed to the relatively warm conditions allowing continued access particularly to the large middle channel (second latest timing behind 1990), while the east and west channels had more normal timing.

The Chandalar River is the second largest component of overall Yukon River drainage fall chum salmon run. Since 1995, the Chandalar River contribution of fall chum salmon has ranged from 22% to 40%, averaging 29%. The project has used various sonar types (split beam 1995–2006 and DIDSON 2007 to present) to enumerate fall chum salmon passage (Melegari 2013a, 2013b). Passage estimates of fall chum salmon have ranged from a low of 66,000 fish in 2000 to 496,000 fish in 2005. In 2013, the project operated from August 8 through September 26 and ended with a cumulative count of 227,023 fish. However, because the project was still passing more than 6,000 fish a day when the project ceased operation, an expansion of passage through October 9 was made. The resulting escapement estimate was 253,041 fall chum salmon (Table 12) and was 22% above the 2008–2012 average of 197,480 fish. The 2013 estimate was well above the upper end of the biological escapement goal range of 74,000 to 152,000 fish. Since 1995, fall chum salmon passage has met or exceeded the BEG in all years except 2000.

Fall chum salmon escapement to the Sheenjek River provides an average contribution of 16% (ranging from 4% to 29% from 1986 to 2012) to the overall Yukon River drainage run. Most of the historical Sheenjek River escapement estimates (pre-2005) were derived from right-bank operations with earlier generations of sonar technology. The Sheenjek River was monitored by sonars operating on both banks from 2005 to 2009 and 2011 to 2012, and estimates of escapement have ranged from 50,000 fish in 2008 to 562,000 fish in 2005 (Dunbar 2010). The BEG range for Sheenjek River is 50,000 to 104,000 fall chum salmon; however, the sonar was not operated in 2013.

An IMEG of 22,000 to 49,000 fish was established for the Fishing Branch River weir for the years 2008 through 2013 (JTC 2014). This goal uses percentiles based on weir data only, excluding all years with extrapolations based on other methods of measurement. The average escapement from 1992 to 2012 was 31,811 fall chum salmon, ranging from 5,057 in 2000 to 119,058 in 2005 (Appendix E9). In 2013, the Fishing Branch River weir was not operated, and monitoring is being transitioned to a sonar assessment project located near the U.S./Canada border. The sonar estimate of 35,615, minus the aboriginal harvest in Old Crow Yukon Territory, resulted in approximately 33,000 fall chum salmon spawners to the upper Porcupine River. At this time the weir based goal is not equivalent to the sonar measurement, so the Fishing Branch River IMEG cannot be assessed.

Mainstem Yukon border passage was estimated using mark–recapture methods until 2006. Since then, the Eagle sonar project has been used as an enumeration technique that should not be affected by gear avoidance or mark recoveries. The fall chum salmon passage estimate at the

Eagle sonar site in 2013 was 200,754 fish for the dates August 19 through October 6. Because of the high passage of fall chum salmon when the project was terminated, the sonar estimate was subsequently adjusted to 216,791 fish through October 18. After subtracting the preliminary Eagle area fall chum salmon subsistence harvest of 12,642 fish from the sonar estimate, the resulting border passage estimate is 204,149 fall chum salmon (Appendix E9). After subtracting the preliminary Canadian harvest (3,887 fish), the resulting escapement of 200,262 fall chum salmon (Table 12) was well above the upper end of the IMEG of 70,000–104,000 fish (JTC 2014). Border passage of fall chum salmon has been monitored by sonar since 2006 and has ranged between 95,000 fish in 2009 and 246,000 fish in 2007, with an average of 172,000 fish (Appendix E9).

Tributary escapement goals are generally met during years of high abundance, particularly those tributaries with the larger components of the run. In 2 of the lowest abundance years (1982 and 2000), none of the fall chum salmon escapement goals were achieved; however, in 1982 exploitation was at 67%, whereas in 2000, exploitation was at 12%, due to very different management practices in those respective decades. The Porcupine River systems, including the Sheenjek and Fishing Branch rivers, have consistently been the weakest contributors to the overall drainagewide run during the past decade. The reason for the difference in productivity is unknown.

Drainagewide run size is calculated postseason using information from monitoring projects such as Chandalar, Sheenjek, and Fishing Branch rivers, and abundance estimates are adjusted for harvest in Mainstem Yukon at the U.S./Canada border and in the Tanana River. Historically (1974–2012) the average drainagewide run size is 873,000 fall chum salmon, which has ranged from 239,000 fish in 2000 to 2,280,000 fish in 2005. From 1974 to 1991, fall chum salmon run sizes alternated consistently between lower even-numbered years and higher odd-numbered years (averaging 700,000 and 1,200,000 respectively). Since 1992, there appears to be a decadal cycle occurring; the fall chum salmon run peaked in 1995 and 2005 and was at lows in the cycles in 1992, 2000, and 2010. Both the record low and record high abundances occurred in the last decade. The 2013 fall chum salmon run could be characterized overall as being above average for both the all-year averages and the odd-numbered year averages from 1974 to 2012.

The total run size minus harvest was used to derive drainagewide escapement. The 2013 escapement estimate of 867,000 fall chum salmon exceeded the upper end of the SEG range of 300,000 to 600,000 fish for the Yukon River drainage. The drainagewide escapement goal has been achieved the last 13 years. The goal was not achieved from 1998 to 2000 even with restrictions to fisheries causing reduction in harvests to between 22% and 32%. Four even-numbered years between 1976 and 1984 also had extremely low escapements (based on current measures) but were mostly caused by high harvests of fall chum salmon, ranging between 56% and 67%. The overall drainagewide goal for fall chum salmon has been achieved 83% of the last 40 years.

Coho Salmon Escapement

Assessment of coho salmon spawning escapement is constrained in the Yukon River drainage because of funding limitations and marginal survey conditions during periods of peak spawning. Historic coho salmon escapement information along with the most current 2013 escapement results are presented in Appendix E11. The coho salmon passage estimate at Pilot Station sonar project does not represent the total return because the project ceased operations on September 7,

before the end of the run. The 2013 preliminary passage estimate of coho salmon at Pilot Station was 84,795 (Appendices E3 and E11). Tributary escapement estimate information was limited to portions of the Tanana River drainage.

Presently, only 1 escapement goal has been established (in 2004) for coho salmon in the Yukon River drainage (ADF&G 2004). The Delta Clearwater River, in the Tanana River drainage, has an SEG range of 5,200 to 17,000 fish (ADF&G 2004). The Delta Clearwater River spawning count was 6,222 coho salmon (Table 12; Savereide and Huang 2014) and was conducted by boat survey on October 24, 2013. This escapement level achieved the lower end of the escapement goal range. Coho salmon escapements in the Nenana River and the upper Tanana River evaluated by aerial surveys were all below average in 2013.

In recent years, a coho salmon run reconstruction index has been developed that adjusts Pilot Station sonar project passage estimates by comparing timing of the next closest monitoring project in the Lower Yukon (river mile 20) using a lag of 3 days in travel time. The Lower Yukon drift gillnet test fishery operated through September 20, 2013 and would have detected late pulses of coho salmon entering the river. Further, commercial and subsistence harvests below the sonar site are included to provide an index of coho salmon abundance for the Yukon River. Subsistence harvest in this area is fairly stable, averaging 3,000 coho salmon annually; however, the commercial harvest can vary drastically (<1,000 to 64,000) depending on management of the fall chum salmon fishery.

All of the data used for run reconstruction of coho salmon is based on the years 1995 and 1997 to present (excluding 2009) because these are the years the mainstem sonar was operational. Note there has not been any way to verify the efficacy of this index similar to the methods available for Chinook and fall chum salmon run reconstruction. This model results in an average of 196,000 coho salmon entering the Yukon River. An index of Yukon River drainagewide escapement is derived from the run reconstruction minus the total harvest of coho salmon providing an average escapement of 145,000 fish. The 2013 coho salmon index of escapement was estimated to be 51,000 fish, which is the lowest in the 17-year dataset. When evaluating the low escapement, it should be noted that the exploitation rate was estimated to be the highest on record at 63%, based on run reconstruction.

2014 SALMON OUTLOOK

Chinook Salmon

The total Yukon River Chinook salmon run was estimated by applying historical average proportions of Canadian-origin fish in the total run to the outlook estimated for the Canadian component of the run. The average proportion of Canadian origin fish in the total run is approximately 50%. The drainagewide run outlook based on the adjusted Canadian-origin model estimate, which attempts to account for low productivity since 2007, is 64,000–122,000 Chinook salmon. Thus, the 2013 Yukon River Chinook salmon run will likely be poor.

Summer Chum Salmon

The strength of the summer chum salmon run in 2014 will be dependent on production from the 2010 (age-4 fish) and 2009 (age-5 fish) escapements, as these age classes generally dominate the run. The total runs during 2009 and 2010 were approximately 1.4 and 1.5 million summer chum salmon, respectively, though tributary escapements were highly variable. However, it is worth noting that poor runs have resulted from large escapements. Yukon River summer chum salmon

generally exhibit strong run size correlations among adjacent years, although it is expected that the 2014 total run in the Yukon River will be below the 2013 run of approximately 3.0 million fish.

The 2014 run is anticipated to provide for escapements, a normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs have provided for a harvestable surplus in each of the last 11 years (2003–2013). If inseason indicators of run strength suggest sufficient abundance exists to allow for a commercial fishery, the commercially harvestable surplus in Alaska could range from 500,000 to 800,000 summer chum salmon. Similar to the last couple years, the actual commercial harvest of summer chum salmon in 2014 will likely be affected by a potentially poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon-directed fisheries.

Fall Chum Salmon

The 2014 run will be comprised of fish returning from the parent years 2008 through 2011. Estimates of returns per spawner (R/S), based on brood year return, were used to estimate production for 2008 and 2009. An auto-regressive Ricker spawner-recruit model was used to predict returns from 2010 and 2011. The point projection in 2014 used the 1974–2007 complete brood year returns applied odd/even maturity schedule for the same time period. The result is a point estimate of 921,000 fall chum salmon. The 2014 run size forecast is expressed as a range from 802,000 to 1,040,000 fall chum salmon. This forecasted run size is above average for even-numbered year run.

The contributing dominate parent year escapements from 2009 and 2010 both exceeded the midpoint of the drainagewide escapement goal range of 300,000 to 600,000 fall chum salmon, while both 2008 and 2011 exceeded the upper end (Appendix E10). All parent years are estimated to be exceeding 1.0 return per spawner. The major contributor to the 2014 fall chum salmon run is anticipated to be age-4 fish returning from 2010 parent year (Appendix E10). The combination of good sized escapements and improved production has produced above average runs since 2011 and appears to be maintaining the trend in 2014.

With this projected fall chum salmon run size, it is anticipated that escapement goals would be met while supporting normal subsistence fishing activities. Commercial harvest could be between 300,000 and 540,000 fall chum salmon.

Coho Salmon

Although there is little comprehensive escapement information for Yukon River drainage coho salmon, it is known that coho salmon primarily return as age-2.1 fish (i.e., 4-year-old fish; age is given in European notation) and overlap in run timing with fall chum salmon. The major contributor to the 2014 coho salmon run will be age-4 fish returning from the 2010 parent year. Based on the run reconstruction index, the 2010 escapement was estimated to be 147,000 coho salmon, which was near average (145,000). In 2010 only a small number of coho salmon directed commercial fisheries occurred, resulting in extremely low harvests. Subsistence harvest of coho salmon was only slightly below average when compared to the last 5 years.

Escapements are mostly monitored in the Tanana River drainage. The Delta Clearwater River (DCR) is a major producer of coho salmon in the upper Tanana River drainage, with comparative escapement monitoring data since 1972. The parent year escapement of 5,867 fish in 2010 was above the lower end of the SEG range of 5,200 to 17,000 coho salmon; however, the survey was

likely conducted early and may not represent a peak spawning count. Coho salmon escapements in 2 of the larger systems of the Nenana River, Richardson Clearwater and Lost Slough, were near average in 2010, but smaller systems were less than half of average. Assuming average survival, the 2014 coho salmon run is anticipated to be average based on escapements observed in 2010. Commercial harvest could be between 40,000 and 80,000 coho salmon caught incidentally in the fall chum salmon directed fishery.

OTHER MARINE FISHERIES AND FRESHWATER FINFISH FISHERIES

SUBSISTENCE AND PERSONAL USE FISHERY

The estimated subsistence and personal use harvest of nonsalmon species in 2013 was 64,781 whitefish *Coregonus* spp. and *Prosopium cylindraceum*, 11,264 northern pike *Esox lucius*, and 15,553 sheefish *Stenodus leucichthys* (Appendix D10). Other species are only reported by total harvest as they are harvested in small amounts or do not occur during salmon season and include a total of 2,115 burbot *Lota lota*, 2,608 Arctic lamprey, 5,221 tomcod *Eleginus gracilis*, 1,435 Arctic grayling *Thymallus arcticus*, 180 longnose suckers *Catostomus catostomus*, 167 Arctic char *Salvelinus alpinus*, and 63,235 Alaska blackfish *Dallia pectoralis* (Appendix D10). Subsistence and personal use catches of freshwater finfish taken under authority of a permit in the Upper Yukon Area are presented in Appendices D7–D9.

Non-salmon species (e.g., pike, sheefish, whitefish, and blackfish) are an important subsistence resource for people in most areas throughout the Yukon River drainage, largely because they are available for harvest all season (Brown et al. 2005; Andersen et al. 2004). Many subsistence users harvest marine and freshwater finfish other than salmon either as incidental bycatch while fishing for salmon or by directly targeting those species. Subsistence users particularly rely on non-salmon species during the winter and spring and when other sources of fish or wildlife are unavailable.

Estimates of non-salmon harvest is poorly understood at a species level throughout the Yukon River drainage, thus a comprehensive assessment of non-salmon harvest and use by species has been identified as a research priority for the Yukon Area (Brown et al. 2011). Information about non-salmon species is collected during the annual ADF&G postseason subsistence salmon harvest surveys but is ancillary to salmon-specific surveys and usually does not include species distinctions. Survey projects have begun to identify whitefish harvest by species in the Koyukuk River drainage and lower-middle communities of Grayling, Anvik, Shageluk, and Holy Cross (Brown et al. 2005; Andersen et al. 2004). In previous years households have commented about harvest of herring and halibut; starting in 2012, households in the Lower Yukon, including the Coastal District, were asked about harvest of these species. Household responses for Pacific herring *Clupea harengus pallasii* include smelt *Osmeridae* spp. and unspecified species; responses for halibut include unspecified flounder *Pleuronectidae* spp. species (Appendix D10).

A variety of fishing methods is used in the main rivers and coastal marine waters to harvest non-salmon finfish. Beach seines are occasionally used near spawning grounds to capture salmon and other species of schooling fish. In the fall and winter months, various designs of traps and fish weirs are used to capture whitefish, blackfish, and burbot. In the winter and spring months, hand lines are used through the ice to take sheefish, northern pike, char, and “tomcod” (saffron cod). A limited number of sheefish are also harvested during the upriver migration of Chinook salmon.

In the spring and early summer, smelt are harvested in the Yukon River Delta area using dip nets. During the fall months, dip nets and "eel sticks" are used to harvest Arctic lamprey in the mainstem Yukon River downstream of Grayling. Whitefish and sheefish are also harvested in fish wheels located in the Upper Yukon and Tanana rivers during salmon fishing.

COMMERCIAL FISHERY

Regulations allow ADF&G to issue permits for the commercial harvest of non-salmon freshwater fish, including whitefish, sheefish, burbot, northern pike, blackfish, and Arctic lamprey, throughout the Yukon and Tanana River drainages. These permits allow for the commercial harvest of species not managed under existing commercial fishing regulations. Permits are issued as limited or experimental permits and operate in discrete time periods throughout the year. Following the decline in salmon runs an interest in non-salmon commercial fisheries emerged on the Yukon River. Despite the strengthening chum salmon returns in recent years, the interest in freshwater fisheries has remained, particularly for Bering cisco and Arctic lamprey.

WHITEFISH FISHERY SUMMARY

Beginning in 2005 there has been an experimental whitefish commercial fishery in the Lower Yukon River. A permit has been issued annually allowing for a combined harvest total of 10,000–15,000 pounds of all coregonid ("whitefish") species in Districts 1 and 2. The species of whitefish for which commercial permits are issued have varied between years. Gear restrictions were implemented in 2007 to reduce the stretch-mesh size from a maximum of 6 inches (allowed in 2005 and 2006) to maximum of 4 inches in effort to target cisco species while reducing harvest on other species such as sheefish and broad whitefish. In response to market preference, commercial permits were used for the specific harvest of Bering cisco, and to a lesser extent least cisco, beginning in 2009. The exact dates of the fishery have varied each year in response to the seasonal movements of whitefish and the river conditions; however, the commercial harvest has generally occurred in the months of September and October. The harvest cap has been based on historical commercial harvest information from 1980 to 1990 of sheefish and other whitefish species in the Lower Yukon Area.

In 2013, 1 permit was issued to Kwik'pak Fisheries for the commercial harvest of whitefish including least cisco, *Coregonus sardinella* and Bering cisco, *Coregonus laurettae*. The permit authorized a maximum harvest of 20,000 cisco (approximately 20,000 lb, using an average weight of 1 lb per fish) in District 1 beginning September 4. The allowable harvest was raised from 15,000 lb, authorized in 2012. The decision to increase the allowable harvest was largely based on new genetic information that indicated the commercial fishery targets almost entirely Yukon origin Bering cisco stocks (Schlei et al. 2013). In previous years, there had been concern Kuskokwim River cisco stocks may have been present in the Lower Yukon delta and susceptible to harvest in this fishery.

The permit also stipulated that fishing gear was restricted to 1 set or drift gillnet up to 150 feet in length with a maximum stretch-mesh size of 4 inches, or 1 hand line/hook and line. Additionally, commercial fishing was prohibited in designated areas around the village of Kotlik. The area closed to commercial fishing included the waters of Apoon pass from its confluence with Caniliut Slough to the northern shoreline of the Apoon Mouth. Encompassed in the closed waters are the Pastolik and Pastoliak rivers.

The commercial fishery occurred from September 17 until September 25, a week later than in 2012. Seventeen fishermen made 53 deliveries totaling 19,442 lbs. of cisco (Appendix F1). The commercial harvest was comprised of 16,901 Bering and 120 least cisco.

The harvest was 56% above the 5-year (2008–2012) average for Bering cisco and 75% below the 5-year (2008–2012) average for least cisco. The price per pound was $1.00, and the estimated harvest value to fishermen was $19,565. The average harvest value for each fisherman was approximately $1,151. The commercial fishing effort consisted of local residents from the Lower Yukon River communities of Emmonak, Alakanuk, and Kotlik. A majority of the harvest occurred around statistical area 334-16, which encompasses the village of Kotlik. Fishermen in this area harvested approximately 82% of the total harvest.

In the Upper Yukon Area, commercial freshwater fisheries targeting whitefish occurred primarily through the late 1970s. Since 1980 there has been sporadic and small quantity commercial harvest of whitefish in the upriver districts. In 2013 no permits were requested, possibly due to high operational costs and limited market interest; however, some whitefish were sold in the commercial salmon fishery. Permit authorization is not required for the sale of whitefish species taken incidentally during commercial salmon fishing in any district. In District 6, whitefish have been taken incidentally to the salmon harvest and sold since the early 1990s. In 2013, a total of 22 whitefish were harvested incidentally and sold (Appendix F3).

Harvest Sampling

Fish harvested in the lower river white fish commercial fishery in September were identified by species at the processing facility in Emmonak prior to shipment. Only Bering ciscos were sampled in 2013. ASL data were collected by ADF&G staff at a processing facility in Anchorage. A total of 587 Bering cisco were sampled. A small incision was made on the ventral side of each specimen to identify reproductive organs. Fork length (tip of snout to fork of tail) was measured to the nearest millimeter. The sample was evenly distributed between males and females. Females were larger than males, 346 mm and 330 mm respectively. Otoliths were collected from all fish sampled and will later be analyzed for age classification.

ARCTIC LAMPREY FISHERY SUMMARY

Beginning in 2003 an experimental commercial Arctic lamprey fishery emerged on the Yukon River. A Commissioner's permit has been issued annually allowing for a harvest total of 5,000 to 44,080 pounds of Arctic lamprey in District 2 and Subdistrict 4-A. The exact dates of the fishery have varied each year in response to run timing; however, the commercial harvest has generally occurred in the mid- to late-November.

Fishing Effort and Conditions

The 2013 Arctic lamprey fishery was monitored by ADF&G staff via phone communications. Community contacts were established with local subsistence fishermen in the villages of Alakanuk, Emmonak, Mountain Village, Pilot Station, Marshall, Russian Mission, Holy Cross, Anvik, and Grayling. Information regarding subsistence fishing effort, harvest rates, local weather, river conditions, and run timing was gathered during these phone calls. Additionally, communications were maintained with the commercial processor in Anchorage and with processor representatives located in the lower and middle Yukon River.

Initial monitoring began in early October with fishermen being contacted in Alakanuk and Emmonak. Fishermen from these Lower Yukon communities, through the support of Yukon Delta Fisheries Development Association (YDFDA), examined the feasibility of harvesting Arctic lamprey with hoop and fyke nets. The intent was to improve harvest efficiency and gain a better understanding of run timing in the Lower Yukon Area using gear types that could be operated when the river was ice free. The traditional fishing method involves cutting holes in the ice with "eel sticks" and using dip nets to catch lamprey. This method was not possible in the Lower River during 2013 due to the lack of suitable river ice. Hoop and fyke nets were operated near the villages of Alakanuk and Emmonak from approximately October 16 to 30. A total of 263 Arctic lamprey were caught during 63 sets (Appendix F4). The fyke nets were more efficient in catching Arctic lamprey compared to the hoop nets. Individual net daily catches ranged from 1 to 5 lampreys for hoop nets and 1 to 67 lampreys for fyke nets. Additionally, 261 whitefish *Coregonus* spp., 45 burbot, and 137 Pacific cod were incidentally caught using the different gear types. The number of nets set each day and the duration of time between net checks varied among the nets fished. While most nets were checked approximately every 24 hours, some nets, due to poor weather, fished for several days between checks.

Based on a typical travel speed of 10–13 miles per day, lamprey detected passing through the Lower Yukon during late October were expected to arrive in Grayling by the end of November. However, upriver communities did not detect any lamprey passage until much later in the season. Above average temperatures throughout October and into early November delayed the formation of river ice throughout much of the lower and middle stretches of the Yukon River, limiting access to traditional fishing sites. No additional lamprey harvest occurred until November 30, when the community of Marshall reported an average to above-average harvest. Based on the successful harvest reports from Marshall, upriver communities were anticipating a late but favorable fishery. The run was tracked as it progressed upriver and subsistence catch reports were consistently described as average to above-average in each of the 4 communities located immediately upriver of Marshall. Arctic lampreys were caught in Russian Mission on December 3–4, in Holy Cross on December 9, in Anvik on December 13, and in Grayling on December 15. Local elders in the area reported that the 2013 lamprey run was about 1 month later than in typical years and 1 of the latest runs in memory.

Based on the November 30 harvest report from subsistence fishermen in Marshall and the commercial harvest which began on December 15 in Grayling, the estimated mean lamprey travel speed was approximately 12 river miles per day.

Additionally, subsistence harvest information is being collected postseason. In early December, ADF&G sent lamprey subsistence harvest surveys to 806 households in the Yukon River communities of Anvik, Grayling, Holy Cross, Marshall, Mountain Village, Pilot Station, Pitkas Point, Russian Mission, and St. Mary's. Results from these surveys will be made available in an annual subsistence harvest report by ADF&G.

Commercial Fishery

In 2013, 1 freshwater commercial fishery permit was issued to Kwik'pak Fisheries allowing a harvest of up to 44,080 lb (20 metric tons) of Arctic lamprey. The permit was valid October 7 through December 15, 2013, or until the harvest limit was reached. The processor established a buying station in Emmonak, Mountain Village, and Grayling; however, commercial fishery operations did not occur in Emmonak or Mountain Village.

Commercial fishermen in Grayling anticipated a favorable fishery based on the successful subsistence harvests that occurred in the downstream communities of Marshall, Russian Mission, and Holy Cross during the first week of December. On December 13, lamprey were caught about 10 miles below Anvik, and commercial fishermen began prospective fishing soon after in the Grayling area. On December 15, commercial fishermen reported harvesting lamprey downstream of Grayling. Some additional fishing effort was reported from December 16 to 19; however, no additional commercial harvest occurred. A total of 11 commercial freshwater permit holders delivered a harvest of 11,613 lbs to the commercial processor. The estimated number of lamprey harvested in the commercial fishery was approximately 45,803[7] (Appendix F2). The buyer paid $1.25 per pound for lamprey, and the estimated commercial value of the fishery was $14,516. The average value per fisherman was $1,320.

Harvest Sampling

A total of 198 Arctic lamprey harvested in Grayling were sampled for sex, length, and weight data by ADF&G in Anchorage. Reproductive organs were identified by making a small incision on the ventral side of each specimen. Total length was measured from the tip-of-snout to the tip-of-tail to the nearest millimeter, and weight was measured to the nearest gram. The average length was 420 mm, and approximately 48% of the lampreys sampled were female. Additionally, reproductive organs from 25 female lamprey were sampled to index sexual condition, gonadosomatic index (GSI). Age composition information was not produced from these samples because ADF&G has no method for aging adult Arctic lamprey.

CAPE ROMANZOF HERRING FISHERY

The Cape Romanzof Herring District consists of all state waters from Dall Point to 62 degrees north latitude (Appendix G1). Pacific herring 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 where spawning habitat consists of rocky beaches and rockweed *Fucus* sp. The arrival of herring on the spawning grounds is influenced by ocean water temperature and ice conditions. Typically, herring appear immediately after ice breakup. Spawning usually occurs between mid-May and mid-June.

Local residents harvest herring in Hooper Bay, Kokechik Bay, and Scammon Bay for subsistence purposes. Additionally, a few fishermen in the Yukon River Delta report harvesting herring along the coast near Black River and Kwiguk Pass for subsistence use. It is speculated that these herring are migrating toward southern Norton Sound. Additionally, some Yukon River Delta residents harvest herring spawn-on-kelp north of Stebbins in southern Norton Sound.

A commercial herring sac-roe fishery was initiated in the Cape Romanzof District in 1980. Since 1993, commercial harvests have ranged from 25 tons in 2004 to 879 tons in 1997 (Appendix G2). The exvessel value of the fishery has ranged from $10,000 in 2001–2004 to $1.1 million in 1986. The number of permit holders participating has ranged from 8 in 2006 to 157 in 1987. The commercial fishery saw an increasing trend in effort, harvests, and value from the inception of the fishery in 1980 until its peak in 1986. Declining market value after 1986 through 1990s kept effort, harvest, and exvessel values below early 1980s numbers, eventually leading to record low

[7] The estimated number of fish harvested is the quotient of the total commercial harvest weight and the average sample weight (121 g) collected from harvests in Grayling in 2013.

harvests and effort in the 2000s. Because of poor market conditions and a lack of commercial interest from buyers, no commercial openings occurred in the district from 2007 through 2012.

Historically, short commercial herring fishing openings have been scheduled around high tide events in the Cape Romanzof District. Beginning with the 2004 season, opening and closing the commercial herring fishery based on tide events was modified by opening fishing in the district on a continuous basis. Opening the commercial fishery on a continual basis was justified based on the reduced commercial fishing effort, limited tendering capacity, and decreased processor interest in the area. Conducting commercial fisheries this way allows fishermen the maximum opportunity to explore the district to find marketable quality of sac roe herring and allows the buyer to direct when fishing will occur based on current harvest information.

2013 SEASON SUMMARY

For the first time since 2006, a registered buyer operated in the Cape Romanzof District. The single buyer was not targeting herring for roe, so roe percentage did not factor into the timing or prosecution of commercial periods. Because the anticipated overall commercial harvest was small, ADF&G's strategy was to open commercial fishing in the district and leave it open until either the guideline harvest range was reached or the buyer ceased operation. The Cape Romanzof District commercial fishery opened on June 12 and closed for the season on June 14. The commercial season could have opened sooner, but the buyer had difficulties getting tenders to the district because of lingering shore-ice. Beginning June 14, high winds and inclement weather hindered fishing efforts. In conjunction with decreasing harvests, the buyer ceased operations after June 14. A total of 54.3 tons were harvested from 11 permit holders in 2013 (Appendix G2). Price paid per ton was $150, and the approximate exvessel value of the 2013 harvest was $8,000 (Appendix G2).

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 herring harvest questionnaires were not mailed out in 2011 or 2012. Harvest of herring (Appendix G3) was not estimated for those years. Beginning in 2012, residents of Scammon Bay and Hooper Bay were asked to report their subsistence harvest of herring during the Yukon Area postseason subsistence harvest surveys. Households reported a subsistence harvest of 9,082 herring in 2013; however, due to lack of species identification these reports may have included non-herring species (Appendix D10). Presently, there is no means of estimating the subsistence harvest of herring by Chevak residents.

STOCK STATUS

Because of turbid water in the Cape Romanzof area, it is typically 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. Qualitative spawn deposition surveys were conducted from 1992 through 2003 (Bue et al. 2011). Although these surveys were discontinued in 2004 because of budget limitations, ADF&G continues to make periodic observations of herring biomass and spawn deposition. An observation flight was flown over the Cape Romanzof District in 2013. Herring

biomass was observed within Kokechik Bay; however, the herring biomass was not quantified. No spawn was observed.

VARIABLE MESH GILLNET TEST FISHERY

Test fishing with variable mesh gillnets was conducted from 1978 to 2006 to determine distribution, timing and relative abundance of spawning herring, and to collect samples for age, sex, size, and relative maturity information (Bue et al. 2011). Due to the recent lack of market interest a test fishery has not occurred at Cape Romanzof since 2006.

HERRING OUTLOOK 2014

Projections of herring abundance in the upcoming year are made annually. Estimates of survival rates are applied to age-specific estimates of herring escapement to project the number of herring which will survive until the next year. Assumptions of age-specific recruitment rates are used in combination with age-specific abundance to project the number of herring of each age that will recruit to the fishery for the first time (Wespestad 1982). Projections of abundance are converted to units of biomass using data on mean weights at age from the current year. In cases where age-specific abundance or mean weights were not empirically measured, projections from the previous year were applied.

The 2014 projected biomass for the Cape Romanzof District is expected to be 2,904 tons, and the minimum biomass threshold is 1,500 tons. Based on the *Bering Sea Herring Fishery Management Plan* (5 AAC 27.060), the exploitation rate shall not exceed 20% of the estimated biomass. Therefore, the allowable harvest is 959 tons.

A commercial buyer is anticipated to be available in 2014. If a commercial market develops, ADF&G will monitor the fishery. Inseason assessment of stock abundance will be determined using information collected from test fishing, commercial harvest rates if available, herring distribution, age composition, and, if possible, aerial surveys. Commercial fishing periods will be determined by the amount of fishing effort present and roe quality. ADF&G will likely open the fishery on a continuous basis until the quota is landed or there is no longer market interest. Commercial fishing may be opened when it is determined that marketable percentage of sac roe herring and a commercial buyer is present. Fishermen are encouraged to bring more than 1 mesh size of gillnet if they are available. The quality of roe is dependent on size and maturity of the herring, thus it would benefit fishermen to have some flexibility. It is important that fishermen, buyers, and ADF&G obtain the highest roe recovery possible.

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TABLES AND FIGURES

Table 1.–Guideline harvest ranges and midpoints for commercial harvest of Chinook, summer chum, and fall chum salmon, Yukon area, Alaska, 2013.

District or Subdistrict	Chinook salmon guideline harvest range [a]					
	Lower		Midpoint		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 2,250	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

District or Subdistrict	Summer chum salmon guideline harvest range [b]					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 251,000	62.9	503,000	62.9	755,000	62.9
3	0 to 6,000	1.6	12,500	1.6	19,000	1.6
4A [c]	0 to 113,000	28.2	225,500	28.2	338,000	28.2
4B, C	0 to 16,000	3.9	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	3.2	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]						

District or Subdistrict	Fall chum salmon guideline harvest range [e]					
	Lower		Midpoint		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 to 1989.

[c] 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 salmon and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

Table 2.–Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2013.

Commercial operation (Processing location/buying station)	Product	District
Coastal Villages Seafoods LLC 711 H Street #200 Anchorage, AK 99501 (Black River)	Fresh Salmon Frozen Salmon Salmon Roe	1
Kwik'pak Fisheries 1016 West Sixth Avenue, Suite 301 Anchorage, AK 99501 (Emmonak/St. Mary's)	Fresh Salmon Frozen Salmon Salmon Roe	1 and 2
Yukon River Gold LLC. PO BOX 4347 Bellingham, WA 98227 (Kaltag)	Fresh Salmon Frozen Salmon Salmon Roe	4
Interior Alaska Fish Processors 2400 Davis Rd. Fairbanks, AK 99709 (Fairbanks, Yukon Bridge, Nenana)	Fresh/Frozen Salmon Salmon Roe Salted/Brined Salmon Smoked Salmon	5 and 6
Aquatech 6221Petersburg St. Anchorage, AK 99705 (Nenana)	Fresh Salmon Frozen Salmon Salmon Roe	6
David Dausel P.O. Box 80291 Fairbanks, AK 99708 (Fairbanks)	Fresh Salmon	6

Table 3.–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, 2013.

District 1

Period	Starting time	Start date	Ending time	End date	Hours fished	Gear type [a]	Mesh size	Number of fishermen	Chinook salmon: Number caught and released	Chinook salmon: Number caught but not sold	Summer chum salmon: Number	Summer chum salmon: Pounds	Summer chum salmon: Avg wt
1	12:00 PM	6/18	12:00 AM	6/18	12	DN/BS		12	30		1,583	10,063	6.4
2	6:00 PM	6/19	3:00 AM	6/20	9	DN/BS		21	17		2,378	14,819	6.2
3	12:00 PM	6/20	12:00 AM	6/20	12	DN/BS		36	49		4,356	26,968	6.2
4	12:00 PM	6/21	12:00 AM	6/21	12	DN/BS		40	21		5,623	35,036	6.2
5	12:00 PM	6/22	12:00 AM	6/22	12	DN/BS		53	29		6,101	37,928	6.2
6	12:00 PM	6/23	12:00 AM	6/23	12	DN/BS		64	37		5,671	35,189	6.2
7	12:00 PM	6/24	12:00 AM	6/24	12	DN/BS		56	14		6,121	37,248	6.1
8	12:00 PM	6/25	12:00 AM	6/25	12	DN/BS		76	33		12,699	76,888	6.1
9	12:00 PM	6/26	12:00 AM	6/26	12	DN/BS		66	43		9,375	55,283	5.9
10	8:00 AM	6/27	8:00 PM	6/27	12	DN/BS		37	8		4,020	23,470	5.8
11	12:00 PM	6/28	12:00 AM	6/28	12	DN/BS		65	12		6,419	37,476	5.8
12	12:00 PM	6/29	12:00 AM	6/29	12	DN/BS		33	1		1,755	10,375	5.9
13	12:00 PM	6/30	12:00 AM	6/30	12	DN/BS		21	6		1,467	8,303	5.7
14	8:00 AM	7/1	8:00 PM	7/1	12	DN/BS		22	0		1,642	9,341	5.7
15	8:00 AM	7/2	4:00 PM	7/2	8	DN/BS		19	0		757	4,499	5.9
16 [b,c]	6:00 PM	7/2	12:00 AM	7/2	6	GN	5.5	74		23	16,204	97,934	6.0
17 [b,c]	6:00 PM	7/3	12:00 AM	7/3	6	GN	5.5	84		38	15,969	98,090	6.1
18 [b,c]	2:00 PM	7/4	8:00 PM	7/4	6	GN	5.5	80		5	12,541	74,652	6.0
19 [b,c]	6:00 PM	7/5	12:00 AM	7/5	6	GN	5.5	109		6	14,085	83,442	5.9
20 [b,c]	6:00 PM	7/6	12:00 AM	7/6	6	GN	5.5	89		9	7,565	44,477	5.9
21 [c]	6:00 PM	7/7	12:00 AM	7/7	6	GN	5.5	94		7	8,088	48,692	6.0
22	8:00 PM	7/8	2:00 AM	7/9	6	GN	6.0	131		21	13,077	82,119	6.3
23 [d]	6:00 PM	7/9	12:00 AM	7/9	6	GN	6.0	148		33	19,842	128,094	6.5
24	3:00 PM	7/11	12:00 AM	7/11	9	GN	6.0	149		28	13,011	82,927	6.4
25	3:00 PM	7/13	12:00 AM	7/13	9	GN	6.0	70		5	1,879	11,536	6.1
26	3:00 PM	7/15	12:00 AM	7/15	9	GN	6.0	137		20	15,643	102,182	6.5
										15 [e]			
District 1 subtotal:					248			220	300	210	207,871	1,277,031	6.1

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Table 3.–Page 2 of 4.

District 2

Period	Starting time	Start date	Ending time	End date	Hours fished	Gear type [a]	Mesh size	Number fishermen	Chinook salmon: Number caught and released	Chinook salmon: Number caught but not sold	Summer chum salmon: Number	Summer chum salmon: Pounds	Summer chum salmon: Avg wt
1	6:00 PM	6/20	3:00 AM	6/21	9	DN/BS		15	0		1,882	10,903	5.8
2	12:00 PM	6/22	12:00 AM	6/22	12	DN/BS		27	12		5,318	32,286	6.1
3	12:00 PM	6/23	12:00 AM	6/23	12	DN/BS		34	22		5,967	36,065	6.0
4	12:00 PM	6/24	12:00 AM	6/24	12	DN/BS		45	14		5,722	34,524	6.0
5	12:00 PM	6/25	12:00 AM	6/25	12	DN/BS		63	47		7,570	45,346	6.0
6	12:00 PM	6/26	12:00 AM	6/26	12	DN/BS		61	60		7,214	42,812	5.9
7	12:00 PM	6/27	12:00 AM	6/27	12	DN/BS		65	68		12,858	74,876	5.8
8	12:00 PM	6/28	12:00 AM	6/28	12	DN/BS		69	98		16,530	95,667	5.8
9	12:00 PM	6/29	12:00 AM	6/29	12	DN/BS		58	19		9,912	56,903	5.7
10	12:00 PM	6/30	12:00 AM	6/30	12	DN/BS		35	44		6,999	42,010	6.0
11	12:00 PM	7/1	12:00 AM	7/1	12	DN/BS		52	38		7,390	41,566	5.6
12	12:00 PM	7/2	12:00 AM	7/2	12	DN/BS		54	57		6,601	37,390	5.7
13	8:00 AM	7/3	12:00 AM	7/3	16	DN/BS		57	57		8,821	49,998	5.7
14	8:00 AM	7/4	8:00 PM	7/4	12	DN/BS		48	23		5,287	30,002	5.7
15	12:00 PM	7/5	12:00 AM	7/5	12	DN/BS		57	27		5,352	30,434	5.7
16	12:00 PM	7/6	12:00 AM	7/6	12	DN/BS		65	33		4,878	27,176	5.6
17	8:00 AM	7/7	8:00 PM	7/7	12	DN/BS		28	9		940	5,218	5.6
18	8:00 PM	7/8	12:00 AM	7/8	4	GN	6.0	112		76	12,162	75,312	6.2
19	4:00 PM	7/10	8:00 PM	7/10	4	GN	6.0	115		33	10,168	62,426	6.1
20	6:00 PM	7/11	10:00 PM	7/11	4	GN	6.0	107		43	10,124	62,829	6.2
21	11:00 AM	7/14	8:00 PM	7/14	9	GN	6.0	56		38	8,086	50,401	6.2
22 [d]	3:00 PM	7/17	12:00 AM	7/17	9	GN	6.0	128		54	11,491	74,190	6.5
										29 [e]			
District 2 subtotal:					235			174	628	273	171,272	1,018,334	5.9
Lower Yukon area, summer season, Districts 1, 2, and 3 subtotal [f]					483			384	928	483	379,143	2,295,365	6.1

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Table 3.–Page 3 of 4.

District 4

Period	Starting time	Start date	Ending time	End date	Hours fished 4-A	Gear type	Mesh size	Number fishermen	Chinook salmon: Number caught and released	Chinook salmon: Number caught but not sold	Summer chum salmon: Number	Summer chum salmon: Pounds	Summer chum salmon: Avg wt
1 [g]	12:01 AM	7/1	12:00 AM	7/1	24	FW		–	–		–	–	–
2 [g]	12:01 AM	7/2	12:00 AM	7/2	24	FW		–	–		–	–	–
3 [g]	12:01 AM	7/3	12:00 AM	7/3	24	FW		2	0		638	2,999	4.7
4 [g]	12:01 AM	7/4	12:00 AM	7/4	24	FW		6	3		4,174	20,453	4.9
5 [g]	12:01 AM	7/5	12:00 AM	7/5	24	FW		6	8		5,394	24,812	4.6
6 [g]	12:01 AM	7/6	12:00 AM	7/6	24	FW		5	2		3,394	16,970	5.0
7 [g]	12:01 AM	7/7	12:00 AM	7/7	24	FW		8	1		8,682	37,333	4.3
8 [g]	12:01 AM	7/8	12:00 AM	7/8	24	FW		7	5		6,404	28,818	4.5
9 [g]	12:01 AM	7/9	12:00 AM	7/9	24	FW		7	0		7,151	31,464	4.4
10 [g]	12:01 AM	7/10	12:00 AM	7/10	24	FW		8	4		3,543	15,944	4.5
11 [g]	12:01 AM	7/11	12:00 AM	7/11	24	FW		8	10		6,745	32,376	4.8
12 [g]	12:01 AM	7/12	12:00 AM	7/12	24	FW		8	16		6,814	31,344	4.6
13 [g]	12:01 AM	7/13	12:00 AM	7/13	24	FW		9	8		6,674	33,370	5.0
14 [g]	12:01 AM	7/14	12:00 AM	7/14	24	FW		9	14		5,979	27,503	4.6
15 [g]	12:01 AM	7/15	12:00 AM	7/15	24	FW		7	15		4,520	22,148	4.9
16 [g]	12:01 AM	7/16	12:00 AM	7/16	24	FW		7	9		3,247	15,274	4.7
17 [g]	12:01 AM	7/17	12:00 AM	7/17	24	FW		8	7		3,212	15,095	4.7
18 [g]	12:01 AM	7/18	12:00 AM	7/18	24	FW		7	4		2,761	12,980	4.7
19 [g]	12:01 AM	7/19	12:00 AM	7/19	24	FW		7	2		3,410	15,683	4.6
20 [g]	12:01 AM	7/20	12:00 AM	7/20	24	FW		8	0		1,858	8,361	4.5
21	12:01 AM	7/21	12:00 AM	7/21	24	FW/GN	6.0	8	0		2,980	13,708	4.6
22	12:01 AM	7/22	12:00 AM	7/22	24	FW/GN	6.0	7	0		2,948	13,856	4.7
23	12:01 AM	7/23	12:00 AM	7/23	24	FW/GN	6.0	9	0		3,512	17,560	5.0
24	12:01 AM	7/24	12:00 AM	7/24	24	FW/GN	6.0	9	0		2,602	13,010	5.0
25	12:01 AM	7/25	12:00 AM	7/25	24	FW/GN	6.0	7	0		1,808	9,040	5.0
26	12:01 AM	7/26	12:00 AM	7/26	24	FW/GN	6.0	7	0		1,218	6,090	5.0
27	12:01 AM	7/27	12:00 AM	7/27	24	FW/GN	6.0	7	0		839	4,195	5.0
District 4 subtotal:					648			9	108		100,507	470,386	4.7

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Table 3.–Page 4 of 4.

Subdistricts 6-A, 6-B, and 6-C

Period	Starting time	Start date	Ending time	End date	Hours fished 6-AB	Gear type	Mesh size	Number fishermen	Chinook salmon Number caught and released	Chinook salmon Number caught but not sold	Summer chum salmon Number	Summer chum salmon Pounds	Summer chum salmon Avg wt
1 [g]	6:00 PM	7/19	12:00 PM	7/21	42	FW		1	20		283	1,700	6.0
2 [g]	6:00 PM	7/22	12:00 PM	7/24	42	FW		1	39		881	5,247	6.0
3 [g]	6:00 PM	7/26	12:00 PM	7/28	42	FW		2	23		1,530	10,352	6.8
4 [g]	6:00 PM	7/29	12:00 PM	7/31	42	FW		1	12		1,198	7,516	6.3
5	6:00 PM	8/2	12:00 PM	8/4	42	FW/GN	6.0	2	3	1	1,345	7,845	5.8
6	6:00 PM	8/5	12:00 PM	8/7	42	FW/GN	6.0	1	5		700	3,990	5.7
7	6:00 PM	8/9	12:00 PM	8/11	42	FW/GN	6.0	–	–		–	–	–
District 6 subtotal:					294			2	102	1	5,937	36,650	6.2
Upper Yukon area, summer season, Districts 4, 5, and 6 subtotal:					942			11	197	1	106,444	507,036	4.8
Yukon area, summer season, Districts 1 through 6 total [f]:					1,425			395	1,125	484	485,587	2,802,401	5.8

Note: Chinook salmon caught in gillnets were not allowed to be sold throughout the summer and fall season. Chinook salmon caught in dip nets, beach seines and fish wheels were required to be immediately released alive. DN = dip net; BS = beach seine; GN = gillnet; FW = fish wheel. No commercial fishing occurred in Districts 3 and 5. En dash indicates no commercial fishing activity occurred.

[a] Under new commercial fishing regulations adopted by the Alaska Board of Fisheries in 2013, ADF&G may allow the use of dip nets and beach seines.

[b] The portion open to commercial fishing was the South Mouth area down river of the lower point of Head of Passes to Chris Point within District 1.

[c] Gillnets were restricted to a maximum mesh size of 5.5 inches not to exceed 30 meshes in depth.

[d] Additionally, 2 coho salmon were caught and sold during this commercial period.

[e] Includes Chinook salmon caught but not sold in the fall season.

[f] The number of fishermen is the unique number of permits fished. Some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

[g] Fish wheels were to be manned at all times. Chinook salmon caught in fish wheels were to be released immediately back to the water alive.

Table 4.–Fall chum and coho salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Yukon Area, 2013.

Period	Starting time	Start date	Ending time	End date	Hours fished Drift	Hours fished Set	Mesh size	Number fishermen	Fall chum salmon Number	Fall chum salmon Pounds	Fall chum salmon Avg wt	Coho salmon[a] Number	Coho salmon[a] Pounds	Coho salmon[a] Avg wt	Chinook salmon Number	Chinook salmon Pounds	Chinook salmon Avg wt
District 1																	
1	12:00 PM	7/18	9:00 PM	7/18	9	12	6	112	3,824	25,264	6.6	16	116	7.3	12 [b]		
2	3:00 PM	7/22	12:00 AM	7/22	6	9	6	183	15,935	114,847	7.2	102	718	7.0	1 [b]		
3	3:00 PM	7/25	12:00 AM	7/25	6	9	6	151	5,789	41,325	7.1	94	604	6.4	1 [b]		
4	6:00 PM	7/29	12:00 AM	7/29	6	6	6	179	16,992	124,522	7.3	902	5,695	6.3			
5	6:00 PM	8/1	3:00 AM	8/2	6	9	6	70	539	3,985	7.4	195	1,196	6.1			
6	3:00 PM	8/5	12:00 AM	8/5	6	9	6	179	10,526	77,799	7.4	2,242	14,474	6.5			
7	5:00 PM	8/17	11:00 PM	8/17	6	6	6	183	22,676	171,636	7.6	5,668	40,736	7.2			
8	9:00 AM	8/19	6:00 PM	8/19	6	9	6	201	19,675	142,225	7.2	6,799	48,540	7.1			
9	12:00 PM	8/22	9:00 PM	8/22	6	9	6	134	5,082	36,864	7.3	4,703	33,189	7.1			
10	4:00 PM	8/26	10:00 PM	8/26	6	6	6	148	2,557	17,615	6.9	4,470	32,529	7.3			
11	5:00 PM	8/29	11:00 PM	8/29	6	6	6	127	2,993	21,134	7.1	2,113	15,280	7.2			
												2	17				
District 1 subtotal:					69	90		251	106,588	777,216	7.3	27,306	193,094	7.1	14 [b]		
District 2																	
1	2:00 PM	7/21	8:00 PM	7/21	6		6	114	6,426	41,791	6.5	11	61	5.5	11 [b]		
2	2:00 PM	7/24	8:00 PM	7/24	6		6	134	11,981	82,946	6.9	51	309	6.1	11 [b]		
3	2:00 PM	7/28	8:00 PM	7/28	6		6	97	6,136	43,639	7.1	94	539	5.7			
4	2:00 PM	8/2	8:00 PM	8/2	6		6	100	9,580	70,509	7.4	682	4,126	6.0	2 [b]		
5	2:00 PM	8/4	8:00 PM	8/4	6		6	74	1,263	8,821	7.0	351	2,114	6.0			
6	2:00 PM	8/17	8:00 PM	8/17	6		6	146	13,249	96,685	7.3	7,361	49,453	6.7			
7	2:00 PM	8/20	8:00 PM	8/20	6		6	144	31,241	229,019	7.3	5,740	39,494	6.9	5 [b]		
8	12:00 PM	8/24	6:00 PM	8/24	6		6	118	9,179	65,102	7.1	4,969	34,917	7.0			
9	4:00 PM	8/25	8:00 PM	8/25	4		6	107	9,016	64,997	7.2	3,901	28,311	7.3			
10	2:00 PM	8/28	7:00 PM	8/28	5		6	133	5,780	40,465	7.0	6,401	47,155	7.4			
11	2:00 PM	8/31	7:00 PM	8/31	5		6	83	2,423	16,872	7.0	1,895	13,751	7.3			
												2	11				
District 2 subtotal:					62			197	106,274	760,846	7.2	31,458	220,241	7.0	29 [b]		

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Table 4.–Page 2 of 2.

						Hours fished		Number fishermen	Fall chum salmon			Coho salmon[a]			Chinook salmon		
						Drift	Set		Number	Pounds	Avg wt	Number	Pounds	Avg. wt	Number	Pounds	Avg wt
Lower Yukon Area, fall Season, Districts 1, 2, and 3 subtotal:						69	90	436	212,862	1,538,062	7.2	58,764	413,335	7.0	43 [b]		
Subdistricts 5-B and 5-C																	
	1	6:00 PM	8/13	6:00 PM	8/18		120	1	1,041	6,921	6.6	0	0	0			
	2	6:00 PM	8/20	6:00 PM	8/25		120	–	–	–	–	–	–	–			
	3	6:00 PM	8/27	6:00 PM	9/1		120	–	–	–	–	–	–	–			
	4	6:00 PM	9/3	6:00 PM	9/8		120	–	–	–	–	–	–	–			
	5	6:00 PM	9/10	6:00 PM	9/15		120	–	–	–	–	–	–	–			
	6	6:00 PM	9/17	6:00 PM	9/22		120	–	–	–	–	–	–	–			
	7	6:00 PM	9/24	6:00 PM	9/29		120	–	–	–	–	–	–	–			
	8	6:00 PM	10/1	6:00 PM	10/6		120	–	–	–	–	–	–	–			
District 5 subtotal:							360	1	1,041	6,921	6.6	0	0	0			
Subdistricts 6-A, 6-B, and 6-C																	
	1	6:00 PM	8/16	12:00 PM	8/18		42	–	–	–	–	–	–	–			
	2	6:00 PM	8/19	12:00 PM	8/21		42	–	–	–	–	–	–	–			
	3	6:00 PM	8/23	12:00 PM	8/25		42	1	331	1,887	5.7	0	0	0			
	4	6:00 PM	8/26	12:00 PM	8/28		42	–	–	–	–	–	–	–			
	5	6:00 PM	8/30	12:00 PM	9/1		42	1	198	1,263	6.4	8	46	5.8			
	6	6:00 PM	9/2	12:00 PM	9/4		42	1	385	2,575	6.7	0	0	0			
	7	6:00 PM	9/6	12:00 PM	9/8		42	1	835	5,410	6.5	40	220	5.5			
	8	6:00 PM	9/9	12:00 PM	9/11		42	–	–	–	–	–	–	–			
	9	6:00 PM	9/13	12:00 PM	9/15		42	–	–	–	–	–	–	–			
	10	6:00 PM	9/16	12:00 PM	9/18		42	2	4,368	27,081	6.2	1,543	8,490	5.5			
	11	6:00 PM	9/20	12:00 PM	9/22		42	3	3,952	24,502	6.2	1,483	8,305	5.6			
	12	6:00 PM	9/23	12:00 PM	9/25		42	4	3,756	23,287	6.2	1,384	7,750	5.6			
	13	8:00 AM	9/27	12:00 PM	9/30		76	6	10,323	64,003	6.2	2,981	16,694	5.6			
District 6 subtotal:							580	6	24,148	150,009	6.2	7,439	41,504	5.6			
Upper Yukon Area, fall season, Districts 4, 5, and 6 subtotals:							940	7	25,189	156,930	6.2	7,439	41,504	5.6			
Yukon Area, fall season, Districts 1–6 total:							1030	443	238,051	1,694,992	7.1	66,203	454,839	6.9			

Note: No commercial fishing occurred in Districts 3 and 4 and Subdistricts 5-A and 5-D. U= unrestricted mesh size ≤ 7.5 inches. En dash indicates no commercial fishing activity occurred.

[a] Caught but not sold.

[b] Chinook salmon sales during the fall season were added to the summer season harvest in Districts 1 and 2.

Table 5.–Total utilization in numbers of salmon by district and country, Yukon River drainage, 2013.

District	Fishery	Chinook [a]	Summer Chum [a]	Fall Chum [a]	Coho [a]
1	Subsistence [b]	1,634	28,516	3,673	1,224
	Commercial	0	207,871	106,588	27,306
	Test fish sales	0	2,304	121	1
	Total	1,634	238,691	110,382	28,531
2	Subsistence [b]	1,104	32,499	4,878	1,080
	Commercial	0	171,272	106,274	31,458
	Test fish sales	0	0	0	
	Total	1,104	203,771	111,152	32,538
3	Subsistence [b]	444	4,744	1,713	371
	Commercial	0	0	0	0
	Total	444	4,744	1,713	371
Total Lower Yukon Area	Subsistence [b]	3,182	65,759	10,264	2,675
	Commercial	0	379,143	212,862	58,764
	Test fish sales	0	2,304	121	1
	Total	3,182	447,206	223,247	61,440
4	Subsistence [b]	2,893	15,854	16,013	5,221
	Commercial	0	100,507	0	0
	Total	2,893	116,361	16,013	5,221
5	Subsistence [b]	4,463	11,253	75,329	1,298
	Commercial	0	0	1,041	0
	Total	4,463	11,253	76,370	1,298
6	Subsistence [b]	451	1,304	12,278	5,409
	Commercial	0	5,937	24,148	7,439
	Personal use	42	138	383	109
	Total	493	7,379	36,809	12,957
Total Upper Yukon Area	Subsistence [b]	7,807	28,411	103,620	11,928
	Commercial	0	106,444	25,189	7,439
	Personal use	42	138	383	109
	Total	7,849	134,993	129,192	19,476
Total Yukon River (Alaska)	Subsistence [b]	10,989	94,170	113,884	14,603
	Commercial	0	485,587	238,051	66,203
	Personal use	42	138	383	109
	Test Fish sales	0	2,304	121	1
	Sport Fish [c]	[d]	[d]	[d]	[d]
	Total	11,031	582,199	352,439	80,916
Total Canada	Domestic	0	0	18	0
	Aboriginal (mainstem)	1,902	0	500	0
	Sport fish	0	0	0	0
	Test Fish harvest	–	–	–	–
	Commercial	2	0	3,369	2
	Subtotal	1,904	0	3,887	2
	Porcupine aboriginal	242	0	2,283	151
	Total	2,146	0	6,170	153
	Grand total	13,177	582,199	358,609	81,069

Note: En dash indicates no test fishing occurred.

[a] Commercial harvest includes only fish sold in the round. Does not include subsistence harvest from coastal communities of Hooper Bay and Scammon Bay.

[b] Data are preliminary.

[c] Assume majority of chum salmon harvested during summer season.

[d] Sport fish harvest for the U.S. portion of the Yukon Area not available.

Table 6.–Commercial salmon sales by statistical area, Yukon, 2013.

Statistical area	Chinook [a]	Summer Chum [a]	Fall Chum [a]	Coho [a]	Total salmon
334-11	0	36	240	33	309
12	0	55,130	21,188	4,995	81,313
13	0	20,303	7,304	1,248	28,855
14	0	35,431	11,192	2,360	48,983
15	0	19,303	12,175	4,810	36,288
16	0	6,198	5,484	2,609	14,291
17	0	67,662	43,824	9,993	121,479
18	0	3,808	5,181	1,258	10,247
Subtotal District 1	0	207,871	106,588	27,306	341,765
334-21	0	10,458	18,476	3,951	32,885
22	0	96,662	27,663	11,041	135,366
23	0	29,860	16,379	7,225	53,464
24	0	34,292	40,955	8,911	84,158
25	0	0	2,801	330	3,131
Subtotal District 2	0	171,272	106,274	31,458	309,004
334-31	–	–	–	–	–
32	–	–	–	–	–
Subtotal District 3					
Total Lower Yukon	0	379,143	212,862	58,764	650,769

Statistical area	Chinook [a]	Summer Chum [a]	Fall Chum [a]	Coho [a]	Total salmon
334-42	–	–	–	–	–
43	–	–	–	–	–
44	–	–	–	–	–
45	–	–	–	–	–
46	0	100,507	–	–	–
47	–	–	–	–	–
Subtotal District 4	0	100,507	–	–	–
334-51	–	–	–	–	–
52	–	–	1,041	0	1,041
53	–	–	0	0	0
54	–	–	–	–	–
55	–	–	–	–	–
Subtotal District 5	–	–	1,041	0	1,041
334-61	0	0	0	0	0
62	0	5,937	24,148	7,439	37,524
63	0	0	0	0	0
Subtotal District 6	0	5,937	24,148	7,439	37,524
Total Upper Yukon	0	106,444	25,189	7,439	38,565
Grand total Yukon Area	0	485,587	238,051	66,203	689,334

Note: En dash indicates no commercial fishing activity occurred.

[a] Sales reported in numbers of fish sold in the round and pounds of unprocessed roe. Does not include ADF&G test fishery sales.

Table 7.–Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2013.

District/ Subdistrict	Number of fishermen [a]	Chinook	Summer Chum	Fall Chum	Coho
1	264	0	207,871	106,588	27,306
2	211	0	171,272	106,274	31,458
Subtotal	451	0	379,143	212,862	58,764
3	–	–	–	–	–
Total Lower Yukon	451	0	379,143	212,862	58,764
Anvik River	–	–	–	–	–
4-A	9	–	100,507	–	–
4-BC	–	–	–	–	–
Subtotal District 4	9	-	100,507	–	–
5-ABC	1	-	-	1,041	0
5-D	–	–	–	–	–
Subtotal District 5	1	–	–	1,041	0
6	6	–	5,937	24,148	7,439
Total Upper Yukon	16	–	106,444	25,189	7,439
Total Alaska	467	0	485,587	238,051	66,203
Total Canada		2	–	3,369	2
Grand total	467	2	485,587	241,420	66,205

Note: En dash indicates no commercial fishing activity occurred.

[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.

Table 8.–Subsistence salmon fishing closures and gear restrictions, Lower Yukon Area, 2013.

	Coastal District [a]				
	Southern [b]	Northern [c]	District 1	District 2	District 3
5/27	Open - no schedule		Open - no schedule	Open - no schedule	Open - no schedule
5/28	Open	Open	Open	Open	Open
5/29	Open	Open	Open	Open	Open
5/30	Open 8 PM 6"mesh		Open 8 PM 6" mesh	Open	Open
5/31	6" mesh	6" mesh	Open 6" mesh	Open	Open
6/1	6" mesh	6" mesh	Close 8 AM	Open	Open
6/2	6" mesh	6" mesh	Closed	Open 8 PM 6"mesh	Open
6/3	6" mesh	6" mesh	Open 8 PM 6" mesh	Open 6" mesh	Open
6/4	6" mesh	6" mesh	Open	Close 8 am	Open
6/5	6" mesh	6" mesh	Close 8 AM	Open 8 PM 6"mesh	Open 8 PM 6" mesh
6/6	6" mesh	6" mesh	Open 8 PM 6" mesh	Open 6" mesh	Open 6" mesh
6/7	6" mesh	6" mesh	Open 6" mesh	Open 6" mesh	Open 6" mesh
6/8	6" mesh	6" mesh	Open 6" mesh	Open 6" mesh	Open 6" mesh
6/9	6" mesh	6" mesh	Open 6" mesh	Open 6" mesh	Open 6" mesh
6/10	6" mesh	6" mesh	Open 6" mesh	Open 6" mesh	Open 6" mesh
6/11	6" mesh	6" mesh	Open 6" mesh	Close 8 am	Close 8 am
6/12	6" mesh	6" mesh	Close 8 AM	Open 8 PM 6"mesh	Open 8 PM 6"mesh
6/13	6" mesh	6" mesh	Open 8 PM 6" mesh	Open 6" mesh	Open 6" mesh
6/14	6" mesh	6" mesh	Open 6" mesh	Close 8 AM	Close 8 AM
6/15	6" mesh	6" mesh	Close 8 AM	Closed	Closed
6/16	6" mesh	6" mesh	Closed	Open 8 PM 6"mesh	Open 8 PM 6"mesh
6/17	6" mesh	6" mesh	Open 8 PM 6" mesh	Open 6" mesh	Open 6" mesh
6/18	6" mesh	6" mesh	Open. **Open 12 PM -12 AM** [d, e]	Close 8 AM	Close 8 AM
6/19	6" mesh	6" mesh	Close 8 AM, **Open 6pm** [e, f]	Open 8 PM 6"mesh	Open 8 PM 6"mesh
6/20	6" mesh	Close 8 PM	**Close 3AM Open 12 PM -12 AM** [e, f]	Open 6" mesh [d, e]	Open 6" mesh
6/21	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Close 8 am	Close 8 AM
6/22	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM-12 AM** [e,f]	Closed
6/23	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM-12 AM** [e,f]	Open 8 PM 6"mesh
6/24	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM-12 AM** [e,f]	Open 6"mesh
6/25	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM-12 AM** [e,f]	Close 8 AM
6/26	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Open 6pm, 6"mesh [g] **Open 12 PM-12 AM** [e,f]	Closed
6/27	6" mesh	Open 8 PM 6" mesh	Open 8 PM 6" mesh. **Open 8 AM** [e]	Close 12 pm. **Open 12 PM-12 AM** [e,f]	Closed
6/28	6" mesh	Close 2 PM	Close 2 PM **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM-12 AM** [e,f]	Closed

-continued-

Table 8.–Page 2 of 4.

	Coastal District [a]				
	Southern [a]	Northern [b]	District 1	District 2	District 3
6/29	6" mesh	Closed	Closed? **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM 12 AM** [e,f]	Closed
6/30	6" mesh	Closed	Closed. **Open 12 PM - 12 AM** [e,f]	Closed. **Open 12 PM 12 AM** [e,f]	Open 12 PM 12 AM 6"
7/1	6" mesh	Open 8 PM 6" mesh	Open 8 pm. **Open 8 AM - 8 PM** [h]	Closed. **Open 12 PM 12 AM** [e,f]	Closed
7/2	6" mesh	Close 8 AM	Close 8 am. **Open 8 AM – 4 PM** [h, i]	Closed. **Open 12 PM 12 AM** [e,f, j]	Closed
7/3	6" mesh	Closed	Closed. **Open 6 PM 12 AM** [i]	Closed. **Open 12 PM 12 AM** [e, f]	Closed
7/4	6" mesh	Open 8 PM 6" mesh	Open 8 PM 6"mesh **Open 2 PM 8 pm**[i]	Open 8 PM 6" mesh. **Open 8 AM 8 PM** [e, f]	Closed
7/5	6" mesh	6" mesh	Close 8 AM **Open 6 PM 12 AM** [i]	Close 8 AM **Open 12 PM 12 AM** [e,f]	Closed
7/6	6" mesh	6" mesh	Closed. **Open 6 PM 12 AM** [i]	Closed. **Open 12 PM 12 AM** [e,f]	Closed
7/7	6" mesh	6" mesh	Closed. **Open 6 PM 12 AM** [l]	Open 8 PM 6"mesh. **Open 8 AM 8 PM** [e]	Closed
7/8	6" mesh	6" mesh	Open 8 PM 6" mesh. **Open 8 PM** [l]	Close 8 am. **Open 8 PM 12 AM** [k]	Open 2 PM 6"mesh
7/9	6" mesh	6" mesh	Close 2 PM **Close 2 AM**[l]**. Open 6 PM 12 AM**[m]	Closed	Close 8 AM
7/10	6" mesh	6" mesh	Closed	Open 8 PM 6" mesh **Open 4PM 8 PM** [k]	Open 8 PM 6"mesh
7/11	6" mesh	6" mesh	Open 8 PM 6" mesh. **Open 3 PM 12 AM**[m]	Close 2 pm. **Open 6 PM 10 PM**[k]	Close 2 PM
7/12	12 PM 7.5"mesh [n]	12 PM 7.5"mesh [n]	Close 2 PM	Closed	Closed
7/13	7.5" mesh	7.5" mesh	Closed. **Open 3 PM 12 AM** [m]	Open 12 PM 12 AM 6" mesh	Closed
7/14	Open	Open	Closed.	Open 8 PM 7.5" mesh **Open 11AM 8 PM** [k]	Open 8 PM 7.5"mesh
7/15	Open	Open	Closed. **Open 3 PM 12 AM** [m]	Open 7.5" mesh	Open 7.5" mesh
7/16	Open	Open	Open 12:01AM 7.5" mesh	Open 7.5" mesh	Open
7/17	Open	Open	Close 9 PM	Close 3 AM **Open 3 PM 12 AM** [k]	Open
7/18	Open	Open	Closed. **Open 9AM 9 PM** [o]	Open 12 PM 7.5" mesh	Open
7/19	Open	Open	Open 9 AM	Open	Open
7/20	Open	Open	Open	Open	Open
7/21	Open	Open	Open	Close 2 AM **Open 2 PM 6 PM** [k]	Open
7/22	Open	Open	Close 3 AM **Open 3 PM to 12 AM** [o]	Open 8 am	Open
7/23	Open	Open	Open 12 pm	Open	Open
7/24	Open	Open	Open	Close 2 AM **Open 2 PM 8 PM** [k]	Open
7/25	Open	Open	Close 3 AM **Open 3 PM 12 AM** [o]	Open 8 AM	Open
7/26	Open	Open	Open 12 PM	Open	Open
7/27	Open	Open	Open	Open	Open
7/28	Open	Open	Close 3 PM **Open 6 PM 12 AM** [m]	Close 2 AM **Open 2 PM 8 PM** [k]	Open
7/29	Open	Open	Open 12 PM	Open 8 AM	Open

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Table 8.–Page 3 of 4.

	Coastal District [a]				
	Southern [a]	Northern [b]	District 1	District 2	District 3
7/30	Open	Open	Open	Open	Open
7/31	Open	Open	Open	Open	Open
8/1	Open	Open	Close 6 AM **Open 6 PM** [o]	Open	Open
8/2	Open	Open	Open 3 PM . (**Close 3 AM**)	Close 2 AM **Open 2 PM -8 PM** [k]	Open
8/3	Open	Open	Open	Open 8AM	Open
8/4	Open	Open	Open	Close 2 AM **Open 2 PM -8 PM** [k]	Open
8/5	Open	Open	Close 3 AM **Open 3 PM to 12 AM** [o]	Open 8AM	Open
8/6	Open	Open	Open 12 PM	Open	Open
8/7	Open	Open	Open	Open	Open
8/8	Open	Open	Open	Open	Open
8/9	Open	Open	Open	Open	Open
8/10	Open	Open	Open	Open	Open
8/11	Open	Open	Open	Open	Open
8/12	Open	Open	Open	Open	Open
8/13	Open	Open	Open	Open	Open
8/14	Open	Open	Open	Open	Open
8/15	Open	Open	Open	Open	Open
8/16	Open	Open	Open	Open	Open
8/17	Open	Open	Close 5 AM **Open 5 PM - 11PM** [m]	Close 2 AM **Open 2 PM -8 PM** [k]	Open
8/18	Open	Open	Open 11 AM Close 9PM	Open 8AM	Open
8/19	Open	Open	Closed **Open 9 AM 6 PM** [o]	Open	Open
8/20	Open	Open	Open 6 AM	Close 2 AM **Open 2 PM -8 PM** [k]	Open
8/21	Open	Open	Open	Open 8AM	Open
8/22	Open	Open	Close 12:01AM **Open 12 PM - 9PM** [o]	Open	Open
8/23	Open	Open	Open 8 AM	Open	Open
8/24	Open	Open	Open	Close 12:01 AM **Open 12 PM -6 PM** [k]	Open
8/25	Open	Open	Open	**Open 4 PM -8 PM** [k]	Open
8/26	Open	Open	Close 1 AM **Open 1 PM -10 PM** [o]	Open 11 PM	Open
8/27	Open	Open	Open 10 AM	Open	Open
8/28	Open	Open	Open	Close 2 AM **Open 2 PM -7 PM** [k]	Open
8/29	Open	Open	Close 1 AM **Open 1 PM -11 PM** [o]	Open 7 AM	Open
8/30	Open	Open	Open 11 AM	Open	Open
8/31	Open	Open	Open	Close 2 AM **Open 2 PM - 5 PM** [k]	Open
9/1	Open [p]	Open [p]	Open [p]	Open 7 AM [p]	Open [p]

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Note: Shaded areas indicate fishery closures. Outlined shaded days were closed to protect the first and second pulses of Chinook salmon. Bold font indicates openings for commercial fishing periods. Dates with double lines above and below contain subsistence openings limited to beach seines and dip nets with no retention of Chinook salmon allowed. Dates with dark shading were closed for subsistence fishing for 12 hours before, during and 12 hours after commercial fishing periods. Unless noted, mesh size was restricted to 7.5 in or less in all districts and subdistricts in 2013. The Innoko River remained open 24 hours a day 7 days a week, but was restricted to 6 in or smaller mesh from 8 pm June 5 to July 14. During subsistence salmon fishing closures, all gillnets with a mesh size greater than 4 in and a length greater than 60 ft must be removed from the water.

[a] The Coastal District was split for management purposes based on which mouths various salmon species were entering the delta.

[b] The portion of the Coastal District from the Naskonat Peninsula north to 62 degrees North latitude and 3 miles offshore, including communities of Chevak, Hooper Bay, and Scammon Bay.

[c] The portion of the Coastal District from 62 degrees North latitude to Point Romanoff and 3 miles offshore.

[d] Commercial period open during all or part of a subsistence fishing period

[e] Commercial salmon fishing with beach seine and dip net gear only. Beach seine mesh size is restricted to 4 in or smaller mesh size. Dip net mesh size is restricted 4.5 in or smaller mesh. Fishermen employing dip nets or beach seine gear were required to immediately release incidentally caught Chinook salmon back to the water alive. Chinook salmon killed by these gear types were required to be recorded on a fish ticket and forfeited to the state. Commercial permit holder may operate up to 4 dip nets, while subsistence fishermen may only operate 1 dip net per person.

[f] Subsistence fishing opened concurrently with a commercial dip net/beach seine period during all or part of a subsistence closure and restricted to beach seine and dip net gear only. Fishermen were required to release Chinook salmon alive.

[g] Subsistence fishing period restricted to 6 in or smaller mesh with retention of Chinook salmon allowed occurring during all or part of a commercial and subsistence period restricted to beach seines and dip nets where all Chinook salmon must be immediately released alive.

[h] Commercial fishing limited to beach seine and dip net. Subsistence fishing with these gear types not allowed during this opening.

[i] Commercial salmon fishing in the South Mouth area of District 1 open for a 6 hour commercial fishing period with gillnets restricted to 5.5 in or smaller mesh size and not exceeding 30 meshes in depth to target summer chum salmon. The area open to commercial fishing extends from the lower point of Head of Passes to Chris Point and includes Black River, Kwiguk Pass, and coastal waters from the Black River to 1 mile north of Kwiguk Pass. Middle and North Mouth and passes such as Aproka and Bugomowik, north of the mainstem South Mouth are closed to commercial fishing.

[j] Effective 12:00 noon commercial fishing not allowed on the south bank of the Yukon River from an ADF&G buoy upstream of the Pilot Station sonar to an ADF&G marker 500 yards downstream of the sonar.

[k] Commercial fishing open to 6 in or smaller mesh. Chinook salmon may be retained for subsistence.

[l] Commercial fishing open in the entire District 1 with gillnets restricted to 5.5 in or smaller mesh and not exceeding 30 meshes in depth. Chinook salmon may be retained for subsistence purposes.

[m] Commercial fishing open in the entire District 1 area for 6 in or smaller mesh. Commercial gillnet fishermen may retain Chinook salmon for subsistence purposes.

[n] Coastal District reopened to 7.5 in or smaller mesh by emergency order announced in news release July 14.

[o] Commercial fishing open between these hours in either or both the Coastal Set Net only area of District 1 and the remainder of District 1. Typically the remainder of District 1 was open 3 hours after the start of commercial fishing periods in the Coastal Set Net Only Area. Chinook salmon may be retained for subsistence purposes, but not sold. Gear restricted to gillnets of 6 in or smaller mesh.

[p] Remained open 24 hours a day 7 days a week.

Table 9.–Subsistence salmon fishing closures and gear restrictions, Upper Yukon Area, 2013.

	Subdistrict 4-A [a]		Sub 4-B / 4-C [b]	5-A/5-B / 5-C	Subdistrict 5-D [c]		
	Lower	Upper			Lower	Middle	Upper
5/30	Open - no schedule		Open - no schedule		Open - no schedule		
5/31	Open	Open	Open	Open	Open	Open	Open
6/1	Open	Open	Open	Open	Open	Open	Open
6/2	Open	Open	Open	Open	Open	Open	Open
6/3	Open	Open	Open	Open	Open	Open	Open
6/4	Open	Open	Open	Open	Open	Open	Open
6/5	Open	Open	Open	Open	Open	Open	Open
6/6	Open	Open	Open	Open	Open	Open	Open
6/7	Open	Open	Open	Open	Open	Open	Open
6/8	Open	Open	Open	Open	Open	Open	Open
6/9	Open	Open	Open	Open	Open	Open	Open
6/10	Open [d]	Open [d]	Open	Open	Open	Open	Open
6/11	Open	Open	Open	Open	Open	Open	Open
6/12	6 PM 6" mesh	6 PM 6" mesh	Open	Open	Open	Open	Open
6/13	Open 6"mesh	Open 6"mesh	Open	Open	Open	Open	Open
6/14	Close 6 PM	Close 6 PM	Open	Open	Open	Open	Open
6/15	Closed	Closed	Open	Open	Open	Open	Open
6/16	Open 6 PM 6" mesh	Open 6 PM 6" mesh	Open	Open	Open	Open	Open
6/17	Open	Open	Open	Open	Open	Open	Open
6/18	Close 6 PM	Close 6 PM	Open	Open	Open	Open	Open
6/19	6 PM 6" mesh	6 PM 6" mesh	6 PM 6"mesh	Open	Open	Open	Open
6/20	Open 6"mesh	Open 6"mesh	Open 6"mesh	Open	Open	Open	Open
6/21	Close 6 PM	Close 6 PM	Close 6 PM	Open	Open	Open	Open
6/22	Closed	Closed	Closed	Open	Open	Open	Open
6/23	Open 6 PM 6" mesh	Open 6 PM 6" mesh	Open 6 PM 6"mesh	Open	Open	Open	Open
6/24	Open 6" mesh	Open 6"mesh	Open 6"mesh	Open	Open	Open	Open
6/25	Close 6 PM	Close 6 PM	Close 6 PM	6 PM 6" mesh	Open	Open	Open
6/26	6 PM 6" mesh	6 PM 6" mesh	Open 6 PM 6"mesh	Open 6" mesh	Open	Open	Open
6/27	Open 6"mesh	Open 6"mesh	Open 6"mesh	Close 6 PM	Open	Open	Open
6/28	Close 6 PM	Close 6 PM	Close 6 PM	Open 6 PM 6"	Open	Open	Open
6/29	Closed	Closed	Closed	Open 6"mesh	Open	Open	Open
6/30	Closed	Closed	Open 6 PM 6"mesh	Close 6 PM	Open	Open	Open

-continued-

Table 9.–Page 2 of 5.

	Subdistrict 4-A [a]		Sub 4-B / 4-C [b]	5-A/5-B / 5-C	Subdistrict 5-D [c]		
	Lower	Upper			Lower	Middle	Upper
7/1	Closed. Commercial [e]	Closed. Commercial [e]	Open 6"mesh	Closed	8 PM 6" mesh	8 PM 6" mesh	8 PM 6" mesh
7/2	Closed. Commercial [e]	Commercial [e]	Close 6 PM	Open 6 PM 6"	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/3	Open 6 PM [f], Comm. [e]	Closed. Comm. [e]	Closed	Open 6"mesh	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/4	Close 6 PM . Comm. [e]	Open 6 PM [f], Comm. [e]	Closed	Close 6 PM	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/5	Closed. Commercial [e]	Close 6 PM . Comm. [e]	Closed	Closed	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/6	Closed. Commercial [e]	Closed. Commercial [e]	Closed	Closed	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/7	Closed. Commercial [e]	Closed. Commercial [e]	Open 6 PM 6"mesh [f]	Closed	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/8	Closed. Commercial [e]	Closed. Commercial [e]	Close 6 PM	Closed	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/9	Closed. Commercial [e]	Closed. Commercial [e]	Closed	Closed	Open 6" mesh	Open 6" mesh	Open 6" mesh
7/10	Open 6 PM [h]. Commercial [e]	Open 6 PM [f] Commercial [e]	Closed	Closed	Close 8 PM	Open 6" mesh	Open 6" mesh
7/11	Close 6 PM . Commercial [e]	Close 6 PM . Commercial [g]	Closed	Closed	Closed	Open 6" mesh	Open 6" mesh
7/12	Closed. Commercial [e]	Closed. Commercial [g]	Closed	Closed	Closed	Open 6" mesh	Open 6" mesh
7/13	Closed. Commercial [e]	Closed. Commercial [g]	Closed	Open 6 PM 6" [f]	Closed	Open 6" mesh	Open 6" mesh
7/14	Open 6 PM [d, f] Commercial [e]	Open 6 PM [d, f] Commercial [e]	Open 6 PM [f]	Close 6 PM	Closed	Close 6 PM	Open 6" mesh
7/15	Close 6 PM Commercial [e]	Close 6 PM Commercial [e]	Close 6 PM	Closed	Closed	Closed	Open 6" mesh
7/16	Closed. Commercial [e]	Commercial [e]	Closed	Open 6 PM 6" [f]	Closed	Closed	Close 6 PM
7/17	Open 6 PM [g]. Commercial [e]	Open 6 PM [g]. Commercial [e]	Open 6 PM [f]	Close 6 PM	Open 8 PM [f]	Closed	Closed
7/18	Open. Commercial [e]	Open. Commercial [e]	Close 6 PM	Closed	Close 8 PM	Closed	Closed
7/19	Close 6 PM . Commercial [e]	Close 6 PM . Commercial [e]	Closed	Closed	Closed	Closed	Closed
7/20	Closed. Commercial [e]	Closed. Commercial [e]	Closed	Open 6 PM 6" [f]	Closed	Closed	Closed
7/21	Open 6 PM . Commercial [e]	Open 6 PM . Commercial [e]	Open 6 PM 7.5"	Close 6 PM	Closed	Open 8 PM [f]	Closed
7/22	Open. Commercial [e]	Open. Commercial [e]	Open	Closed	Closed	Close 8 PM	Closed
7/23	Close 6 PM . Commercial [e]	Close 6 PM . Commercial [e]	Close 6 PM	Open 6 PM	Open 8 PM [f]	Closed	Open 8 PM [f]
7/24	Open 6 PM . Commercial [e]	Open 6 PM . Commercial [e]	Open 6 PM	Open	Close 8 PM	Closed	Close 8 PM
7/25	Open. Commercial [e]	Open. Commercial [e]	Open	Close 6 PM	Closed	Closed	Closed
7/26	Close 6 PM . Commercial [e]	Close 6 PM . Commercial [e]	Close 6 PM	Open 6 PM	Closed	Closed	Closed
7/27	Closed. Commercial [e]	Closed. Commercial [e]	Closed	Open	Closed	Closed	Closed
7/28	Open 6 PM	Open 6 PM	Open 6 PM	Close 6 PM	Closed	Closed	Closed
7/29	Open	Open	Open	Closed	Closed	Closed	Closed
7/30	Close 6 PM	Close 6 PM	Open	Open 6 PM	Closed	Closed	Closed
7/31	Open 6 PM	Open 6 PM	Open	Open	Closed	Closed	Closed
8/1	Open	Open	Open	Close 6 PM	Closed	Closed	Closed
8/2	Open	Open	Close 6 PM	Open 6 PM	Closed	Closed	Closed
8/3	Open	Open [h]	Closed	Open	Closed	Closed	Closed
8/4	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Closed	Closed	Closed

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	Subdistrict 4-A [a]		Sub 4-B / 4-C [b]	5-A/5-B / 5-C	Subdistrict 5-D [c]		
	Lower	Upper			Lower	Middle	Upper
8/5	Closed	Closed	Open	Closed	Closed	Closed	Closed
8/6	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM	Open 6 PM	Closed	Closed
8/7	Open	Open [h]	Open	Open	Open	Closed	Closed
8/8	Open	Open [h]	Open	Open	Open	Open 6 PM	Closed
8/9	Open	Open [h]	Close 6 PM	Open	Open	Open	Closed
8/10	Open	Open [h]	Closed	Open	Open	Open	Closed
8/11	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Open	Open	Closed
8/12	Closed	Closed	Open	Closed	Open	Open	Closed
8/13	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM [i]	Open	Open	Closed
8/14	Open	Open [h]	Open	Open [i]	Open	Open	Open 12PM
8/15	Open	Open [h]	Open	Open [i]	Open	Open	Open
8/16	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
8/17	Open	Open [h]	Closed	Open [i]	Open	Open	Open
8/18	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Open	Open	Open
8/19	Closed	Closed	Open	Closed	Open	Open	Open
8/20	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM [i]	Open	Open	Open
8/21	Open	Open [h]	Open	Open [i]	Open	Open	Open
8/22	Open	Open [h]	Open	Open [i]	Open	Open	Open
8/23	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
8/24	Open	Open [h]	Closed	Open [i]	Open	Open	Open
8/25	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Open	Open	Open
8/26	Closed	Closed	Open	Closed	Open	Open	Open
8/27	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM [i]	Open	Open	Open
8/28	Open	Open [h]	Open	Open [i]	Open	Open	Open
8/29	Open	Open [h]	Open	Open [i]	Open	Open	Open
8/30	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
8/31	Open	Open [h]	Closed	Open [i]	Open	Open	Open
9/1	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Open	Open	Open
9/2	Closed	Closed	Open	Closed	Open	Open	Open
9/3	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM [i]	Open	Open	Open
9/4	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/5	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/6	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
9/7	Open	Open [h]	Closed	Open [i]	Open	Open	Open
9/8	Close 6 PM	Close 6 PM	Open 6 PM	Close 6 PM	Open	Open	Open
9/9	Closed	Closed	Open	Closed	Open	Open	Open

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Table 9.–Page 4 of 5.

	Subdistrict 4-A [a]		Sub 4-B / 4-C [b]	5-A/5-B / 5-C	Subdistrict 5-D [c]		
	Lower	Upper			Lower	Middle	Upper
9/10	Open 6 PM	Open 6 PM [h]	Open	Open 6 PM [i]	Open	Open	Open
9/11	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/12	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/13	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
9/14	Open	Open [h]	Closed	Open [i]	Open	Open	Open
9/15	Open	Open [h]	Open 6 PM	Close 6 PM	Open	Open	Open
9/16	Open	Open [h]	Open	Closed	Open	Open	Open
9/17	Open	Open [h]	Open	Open 6 PM [i]	Open	Open	Open
9/18	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/19	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/20	Open	Open [h]	Close 6 PM	Open [i]	Open	Open	Open
9/21	Open	Open [h]	Closed	Open [i]	Open	Open	Open
9/22	Open	Open [h]	Open 6 PM	Close 6 PM	Open	Open	Open
9/23	Open	Open [h]	Open	Closed	Open	Open	Open
9/24	Open	Open [h]	Open	Open 6 PM [i]	Open	Open	Open
9/25	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/26	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/27	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/28	Open	Open [h]	Open	Open [i]	Open	Open	Open
9/29	Open	Open [h]	Open	Close 6 PM	Open	Open	Open
9/30	Open	Open [h]	Open	Closed	Open	Open	Open
10/1	Open	Open	Open	Open 6 PM [i]	Open	Open	Open

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Note: Shaded areas indicate windowed fishery closures. Outlined shaded days were closed to protect the first and second pulses of Chinook salmon. Unless noted, mesh size was restricted to 7.5 in or less in all districts and subdistricts.

[a] Subdistrict 4-A was divided into 2 separate areas above and below Stink Creek to protect the first pulse of Chinook salmon as it passed through this long section of river.

[b] State regulations do not allow the use of drift gillnets in State waters of Subdistrict 4-B and 4-C. Federal regulations allow the use of drift gillnets in Federal waters of Subdistricts 4-B and 4-C.

[c] Subdistrict 5-D was divided into 3 separate areas to protect the first pulse of Chinook salmon as it passed through this long section of river. Subdistrict 5-D Lower: from the ADF&G marker 2 miles downstream of Waldron Creek upstream to the Hadweenzic River, Subdistrict 5-D Middle: from the Hadweenzic River upstream to 22 Mile Slough, Subdistrict 5-D Upper: from 22 Mile Slough to the U.S./Canada border.

[d] By regulation, fishermen in Subdistrict 4A may use drift gillnets during scheduled subsistence salmon fishing periods on the mainstem of the Yukon River from June 10 to July 14. This period was extended until 6 pm Monday, July 15.

[e] Commercial fishing period in Subdistrict 4A with fish wheels only. Fish wheels were required to be manned at all times and any Chinook salmon caught were to be immediately released alive. From July 1 to July 20, commercial fishing was open for twenty 24-hour periods. As per construction specifications adopted by the Board of Fisheries, fish wheels must be constructed in a manner that reduces the potential for injury to Chinook salmon.

[f] Subsistence fishing open for gillnets restricted to 6-inch or smaller mesh. Fish wheels must be equipped with a chute or live box, closely attended while in operation, and all Chinook salmon released back to the water alive.

[g] Gear restrictions discontinued in this period and subsequent periods. Subsistence fishing allowed with gillnets 7.5 in or less and Chinook salmon may be kept when caught in fish wheels.

[h] Beginning 12:01 a.m. Saturday, August 3, the use of subsistence drift gillnet gear was allowed during subsistence salmon fishing periods in the portion of Subdistrict 4-A upstream from the mouth of Stink Creek. Fishermen could use gillnets with a mesh size of 7.5 in or less.

[i] Commercial fishing open in Subdistricts 5-B and 5-C concurrent with subsistence fishing periods. Chinook salmon may not be sold, but may be used for subsistence.

Table 10.–Subsistence and commercial salmon fishing schedule and gear restrictions, Old Minto Area, Tanana River and Koyukuk River, 2013.

Date	Koyukuk River	Tanana River [a] 6A	6B	6C	Old Minto Area [a]	Date	Koyukuk River	Tanana River 6A	6B	6C	Old Minto Area
5/30	No schedule	Closed	Closed	Closed	Closed	7/4	Open 6" mesh	Closed	Closed	Closed	Closed
5/31	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM	7/5	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM
6/1	Open	Open	Open	Open	Open	7/6	Open 6" mesh	Open	Open	Open	Open
6/2	Open	Close noon	Close noon	Close noon	Open	7/7	Open 6" mesh	Close noon	Close noon	Close noon	Open
6/3	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open	7/8	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open
6/4	Open	Open	Open	Open	Open	7/9	Open 6" mesh	Open	Open	Open	Open
6/5	Open	Close noon	Close noon	Close noon	Close 6 PM	7/10	Open 6" mesh	Close noon	Close noon	Close noon	Close 6 PM
6/6	Open	Closed	Closed	Closed	Closed	7/11	Open 6" mesh	Closed	Closed	Closed	Closed
6/7	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM	7/12	Open 6" mesh	Closed	Closed	Closed	Closed
6/8	Open	Open	Open	Open	Open	7/13	Open 6" mesh	Closed	Closed	Closed	Closed
6/9	Open	Close noon	Close noon	Close noon	Open	7/14	Open 6" mesh	Closed	Closed	Closed	Closed
6/10	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open	7/15	Open 6" mesh	Open 6 PM	Open 6 PM	Closed	Open 6 PM
6/11	Open	Open	Open	Open	Open	7/16	Open 6" mesh	Open	Open	Closed	Open
6/12	Open	Close noon	Close noon	Close noon	Close 6 PM	7/17	Open 6" mesh	Close 12 PM	Close 12 PM	Closed	Close 6 PM
6/13	Open	Closed	Closed	Closed	Closed	7/18	Open 6" mesh	Closed	Closed	Closed	Closed
6/14	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM	7/19	Open 6" mesh	Open 6 PM [b]	Open 6 PM [b]	Closed [c]	Open 6 PM
6/15	Open	Open	Open	Open	Open	7/20	Open 6" mesh	Open [b]	Open [b]	Closed [c]	Open
6/16	Open	Close noon	Close noon	Close noon	Open	7/21	Open 6" mesh	Close 12 PM	Close 12 PM	Closed	Open
6/17	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open	7/22	Open 6" mesh	Open 6 PM [b]	Open 6 PM [b]	Closed [c]	Open
6/18	Open	Open	Open	Open	Open	7/23	Open 6" mesh	Open [b]	Open [b]	Closed [c]	Open
6/19	6 PM : 6"mesh	Close noon	Close noon	Close noon	Close 6 PM	7/24	Open 6" mesh	Close 12 PM	Close 12 PM	Closed	Close 6 PM
6/20	Open 6" mesh	Closed	Closed	Closed	Closed	7/25	Open 6" mesh	Closed	Closed	Closed	Closed
6/21	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM	7/26	6 PM : 7.5" mesh	Closed [c]	Closed [c]	Closed [c]	Closed
6/22	Open 6" mesh	Open	Open	Open	Open	7/27	Open	Closed [c]	Closed [c]	Closed [c]	Closed
6/23	Open 6" mesh	Close noon	Close noon	Close noon	Open	7/28	Open	Closed	Closed	Closed	Closed
6/24	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open	7/29	Open	Open 6 PM [b]	Open 6 PM [b]	Closed [c]	Open 6 PM
6/25	Open 6" mesh	Open	Open	Open	Open	7/30	Open	Open [b]	Open [b]	Closed [c]	Open
6/26	Open 6" mesh	Close noon	Close noon	Close noon	Close 6 PM	7/31	Open	Close 12 PM	Close 12 PM	Closed	Close 6 PM
6/27	Open 6" mesh	Closed	Closed	Closed	Closed	8/1	Open	Closed	Closed	Closed	Closed
6/28	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open 6 PM	8/2	Open	Open 6 PM [d]	Open 6 PM [d]	Closed [e]	Open 6 PM
6/29	Open 6" mesh	Open	Open	Open	Open	8/3	Open	Open [d]	Open [d]	Closed [e]	Open
6/30	Open 6" mesh	Close noon	Close noon	Close noon	Open	8/4	Open	Close 12 PM	Close 12 PM	Closed	Open
7/1	Open 6" mesh	Open 6 PM	Open 6 PM	Open 6 PM	Open	8/5	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open
7/2	Open 6" mesh	Open	Open	Open	Open	8/6	Open	Open [f]	Open [f]	Open [f]	Open
7/3	Open 6" mesh	Close noon	Close noon	Close noon	Close 6 PM	8/7	Open	Close 12 PM	Close 12 PM	Close 12 PM	Close 6 PM

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Date	Koyukuk River	Tanana River 6A	Tanana River 6B	Tanana River 6C	Old Minto Area	Date	Koyukuk River	Tanana River 6A	Tanana River 6B	Tanana River 6C	Old Minto Area
8/8	Open	Closed	Closed	Closed	Closed	9/4	Open	Close 12 PM Closed	Close 12 PM Closed	Close 12 PM Closed	Close 6 PM Closed
8/9	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM	9/5	Open				
8/10	Open	Open [f]	Open [f]	Open [f]	Open	9/6	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM
8/11	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open	9/7	Open	Open [f]	Open [f]	Open [f]	Open
8/12	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open	9/8	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open
8/13	Open	Open	Open	Open	Open	9/9	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open
8/14	Open	Close 12 PM	Close 12 PM	Close 12 PM	Close 6 PM	9/10	Open	Open [f]	Open [f]	Open [f]	Open
8/15	Open	Closed	Closed	Closed	Closed	9/11	Open	Close 12 PM Closed	Close 12 PM Closed	Close 12 PM Closed	Close 6 PM Closed
8/16	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM	9/12	Open				
8/17	Open	Open [f]	Open [f]	Open [f]	Open	9/13	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM
8/18	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open	9/14	Open	Open [f]	Open [f]	Open [f]	Open
8/19	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open	9/15	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open
8/20	Open	Open [f]	Open [f]	Open [f]	Open	9/16	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open
8/21	Open	Close 12 PM	Close 12 PM	Close 12 PM	Close 6 PM	9/17	Open	Open [f]	Open [f]	Open [f]	Open
8/22	Open	Closed	Closed	Closed	Closed	9/18	Open	Close 12 PM Closed	Close 12 PM Closed	Close 12 PM Closed	Close 6 PM Closed
8/23	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM	9/19	Open				
8/24	Open	Open [f]	Open [f]	Open [f]	Open	9/20	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM
8/25	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open	9/21	Open	Open [f]	Open [f]	Open [f]	Open
8/26	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open	9/22	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open
8/27	Open	Open [f]	Open [f]	Open [f]	Open	9/23	Open	Open 6 PM [g]	Open 6 PM [g]	Open 6 PM [g]	Open
8/28	Open	Close 12 PM	Close 12 PM	Close 12 PM	Close 6 PM	9/24	Open	Open [g]	Open [g]	Open [g]	Open
8/29	Open	Closed	Closed	Closed	Closed	9/25	Open	Close 12 PM Closed [g]	Close 12 PM Closed [g]	Close 12 PM Closed [g]	Close 6 PM Closed
8/30	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM	9/26	Open				
8/31	Open	Open [f]	Open [f]	Open [f]	Open	9/27	Open	Open 6 PM [e]	Open 6 PM [e]	Open 6 PM [e]	Open 6 PM
9/1	Open	Close 12 PM	Close 12 PM	Close 12 PM	Open	9/28	Open	Open [g]	Open [g]	Open [g]	Open
9/2	Open	Open 6 PM [f]	Open 6 PM [f]	Open 6 PM [f]	Open	9/29	Open	Close 12 PM [g]	Close 12 PM [g]	Close 12 PM [g]	Open
9/3	Open	Open [f]	Open [f]	Open [f]	Open	9/30	Open	Open 6 PM	Open 6 PM	Open 6 PM	Open

Note: Shaded areas indicate windowed fishery closures. Outlined shaded days were closed to protect the first and second pulses of Chinook salmon. Unless noted, mesh size was restricted to 7.5 inch or less in all districts and subdistricts.

[a] The regulatory schedule is always in place in the Tanana River District and does not have a start date.

[b] Commercial fishing open concurrent with subsistence and restricted to fish wheels only. Fish wheels were required to be constructed in a manner that reduces the potential for injury to Chinook salmon, manned at all times and any Chinook salmon caught were to be immediately released alive.

[c] Commercial fishing open during subsistence or personal use fishery closure and restricted to fish wheels. Fish wheels were required to be constructed in a manner that reduces the potential for injury to Chinook salmon, manned at all times and any Chinook salmon caught were to be immediately released alive.

[d] Commercial fishing open concurrent with subsistence fishing. Commercial fishermen restricted to fish wheels or 6-inch or smaller mesh

[e] Commercial fishing open during a personal use fishery closure and restricted to fish wheels or set gillnets with 6-inch or smaller mesh.

[f] Commercial fishing opening concurrent with subsistence and personal use fishery openings. No additional gear restrictions. Some commercial periods had no harvest or fishermen participating.

[g] Commercial fishing open continuously for 76 hours and during a subsistence fishing closure.

Table 11.–Subsistence and personal use salmon harvest estimates, including commercially related and test fish harvests provided for subsistence use, and related information, Yukon Area, 2013.

Community	Survey date or permit [b]	Number of fishing households[c]	Number of dogs in household[d]	Estimated harvest				Primary gear used [a]		
				Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels
Hooper Bay [e]	9/10–9/12	135	310	1,210	13,629	91	73	124	7	0
Scammon Bay	9/24	74	157	332	9,506	58	214	67	0	0
Coastal District total		209	467	1,542	23,135	149	287	191	7	0
Nunam Iqua [f]	9/12–9/13	18	46	12	2,651	93	83	17	1	0
Alakanuk [e]	9/9–9/12	63	160	275	7,520	328	167	18	40	0
Emmonak [e]	9/6–9/8	87	199	553	8,209	2,165	517	11	68	0
Kotlik [e]	9/9–9/13	83	162	794	10,136	1,087	457	37	46	0
District 1 subtotal		251	567	1,634	28,516	3,673	1,224	83	155	0
Mountain Village [e]	9/13–9/16	115	145	266	11,861	2,174	271	8	105	0
Pitkas Point	9/19–9/22	17	26	37	2,186	65	41	2	11	0
St. Mary's e	9/16–9/19	105	98	215	9,167	1,009	124	6	99	0
Pilot Station [e]	9/20–9/23	47	110	258	5,299	777	136	2	45	0
Marshall	9/25–9/27	52	151	328	3,986	853	508	4	48	0
District 2 subtotal		336	530	1,104	32,499	4,878	1,080	22	308	0
Russian Mission	9/26–9/27	69	120	236	3,967	804	152	13	56	0
Holy Cross	9/25–9/26	22	46	204	262	855	0	13	9	0
Shageluk	9/24	9	19	4	463	105	219	5	4	0
District 3 subtotal		100	185	444	4,692	1,764	371	31	69	0
Lower Yukon River total		687	1,282	3,182	65,707	10,315	2,675	136	532	0
Anvik	9/23–9/24	19	57	121	830	763	97	4	14	0
Grayling	Inseason	33	113	226	618	471	34	10	20	0
Kaltag	10/4–10/5	23	37	348	67	583	306	0	23	0
Nulato	10/3–10/4	67	111	602	401	2,995	125	2	65	0
Koyukuk	10/9–10/10	33	172	898	4,459	5,308	3,267	25	8	0
Galena [g]	10/7–10/8	27	167	275	179	602	170	12	11	4
Ruby	10/8–10/10	21	125	357	681	2,505	345	14	0	7
District 4 Yukon River subtotal		223	782	2,827	7,235	13,227	4,344	67	141	11
Huslia	10/10–10/13	17	149	62	3,241	722	342	17	0	0
Hughes	10/17–10/18	7	48	6	829	535	18	6	0	1
Allakaket	10/2–10/3	16	131	6	2,116	687	236	16	0	0
Alatna	10/3	5	2	0	340	20	0	5	0	0
Bettles	10/1	0	26	0	0	0	0	0	0	0
Koyukuk River subtotal		45	356	74	6,526	1,964	596	44	0	1
District 4 subtotal		268	1,138	2,901	13,761	15,191	4,940	111	141	12

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Table 11.–Page 2 of 3.

Community	Survey date or permit[b]	Number of fishing households[c]	Number of dogs in household[d]	Estimated harvest				Primary gear used [a]		
				Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels
Tanana	10/15–10/17	49	362	1,200	9,565	31,546	1,135	32	0	17
Rampart	permits	2	2	35	5	100	0	2	0	0
Fairbanks NSB [h]	permits	30	132	610	1,350	1,160	0	27	0	3
Stevens Village [i]	10/16–10/17 [i]	6	44	239	50	840	0	6	0	0
Birch Creek	Phone	0	0	0	0	0	0	0	0	0
Beaver	10/19–10/20	7	25	107	12	21	0	5	0	2
Fort Yukon	10/25–10/28	50	327	1,561	225	16,453	7	7	0	43
Circle	permits	7	75	150	66	1,197	150	4	0	3
Central	permits	2	3	21	0	0	0	1	0	1
Eagle [e]	permits	19	182	175	50	18,871	0	11	0	8
Other District 5 [j]	permits	8	16	125	94	121	0	6	0	2
District 5 Yukon River subtotal		180	1,168	4,223	11,417	70,309	1,292	101	0	79
Venetie	10/21–10/22	25	193	311	0	5,340	6	25	0	0
Chalkyitsik	10/22–10/23	7	33	0	0	249	0	7	0	0
Chandalar and Black R. subtotal		32	226	311	0	5,589	6	32	0	0
District 5 subtotal		212	1,394	4,534	11,417	75,898	1,298	133	0	79
Manley	permits	8	51	165	45	1,459	419	7	0	1
Minto [k]	permits	9	76	60	258	568	257	7	0	2
Nenana [l]	permits	21	161	87	646	3,112	1,762	13	0	8
Healy	permits	1	30	0	0	740	200	1	0	0
Fairbanks NSB [l]	permits	43	304	91	211	6,025	2,685	38	0	5
Other District 6 [m]	permits	18	106	6	72	0	0	17	0	0
District 6 Tanana River subtotal [k]		100	728	409	1,232	11,904	5,323	83	0	16
Upper Yukon River total		580	3,260	7,844	26,410	102,993	11,561	327	141	107
Survey village subtotal		1,308	3,871	10,145	106,595	77,167	8,593	520	680	74
Subsistence permit subtotal [n]		132	1,138	1,479	2,659	32,874	5,363	99	0	32
Subsistence test fish subtotal [o]		–	–	901	5,860	2,937	457	–	–	–
District 6 commercial related [p]		–	–	1	0	96	1	–	–	–
Subsistence harvests subtotal		1,440	5,009	12,526	115,114	113,074	14,414	619	680	106
Personal use permit subtotals		36	–	42	138	383	109	35	0	1
Alaska, Yukon River total [q]		1,267	4,542	11,026	92,117	113,308	14,236	463	673	107
Alaska, Yukon Area total [r]		1,476	5,009	12,568	115,252	113,457	14,523	654	680	107
AK, Yukon Area percentages of the total		–	–	5%	45%	44%	6%	45%	47%	7%

-continued-

[a] Primary fishing gear used is based on survey information or from subsistence permits issued. Totals for gear and household may not be equal due to a small number of fishermen using unknown or "Other" gear types. Primary gear information for surveyed communities was expanded for households that were not surveyed. Primary gear is determined by the larger number of salmon harvested by gear types in the household.

[b] Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries using surveys and fishing permits. Survey data are expanded for number of fishing households, number of dogs, primary gear type and harvest. Commercially retained salmon are included in subsistence harvests from surveyed communities. Permit data are unexpanded, and are from all permits received as of February 20, 2014.

[c] Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas. Does not include 45 households with Tolovana River pike permits. Includes 4 households that fished District 5 and District 6 permit areas.

[d] The number of dogs is based on survey information or from permits issued. Information about dogs is not collected on personal use permits.

[e] Harvest totals include salmon given to communities from test fisheries.

[f] Formerly known as Sheldon or Sheldon's Point.

[g] Does not include 750 summer chum salmon harvested commercially in District 1 and donated by Kwik'pak LLC, or other salmon donated by various agencies to Galena after flooding during breakup.

[h] Fairbanks North Star Borough (FNSB) households that obtained a permit and indicated they fished in the Yukon River permit required area.

[i] Permit harvest information from Stevens Village residents was used to complement the information obtained by the survey.

[j] "Other District 5" includes residents of Anchorage, Manley, Minto, Nenana, Tanana, Wasilla, Willow, and Wiseman, and the Upper Tanana River drainage community of Tok who obtained a household permit and fished in a Yukon River permit required area.

[k] Includes the harvest of 60 fall chum and 42 coho salmon from Tolovana River pike permits.

[l] Includes harvest from the personal use permit area and salmon retained from commercial fishing from households that fished in the Tanana River.

[m] "Other District 6" includes residents of the Upper Tanana River drainage communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok, and the community of Anderson who obtained a permit and fished in the Tanana River.

[n] Subsistence permit subtotal does not include Stevens Village permit information or commercially retained salmon from District 6. Also does not include Tolovana pike permits, 3 households with duplicate permits in the Eagle area, or one household with 2 personal use permit types.

[o] Test fish given away for subsistence use. Includes 3 Chinook salmon given to Eagle residents from the Eagle sonar project test fishery.

[p] District 6 "Commercial Retained" included fish caught but not sold during commercial fishing periods but retained for subsistence or personal use. These salmon are added to the Fairbanks NSB and Nenana community harvests reported on permits.

[q] Does not include Coastal District for use in U.S./Canada negotiations.

[r] Based on subsistence survey estimates, 433 Chinook, 1,699 summer chum, 496 fall chum, and 68 coho salmon were retained from commercial harvests in Districts 1, 2, 3, and 4. Commercially retained salmon are included in subsistence harvests from surveyed communities.

Table 12.–Summary of 2013 salmon escapement counts, in comparison with existing goals.

Location	Assessment method	Escapement goal (type)	2013 Escapement
Chinook Salmon			
E. Fork Andreafsky	Weir	2,100–4,900 (SEG)	1,998
W. Fork Andreafsky	Aerial survey	640–1,600 (SEG)	1,090
Anvik	Aerial survey	1,100–1,700 (SEG)	940
Gisasa	Weir	none	1,126
Henshaw	Weir	none	706
Chena	Tower/Sonar	2,800–5,700 (BEG)	1,653
Salcha	Tower	3,300–6,500 (BEG)	4,941
Goodpaster	Tower	none	738
Yukon River Mainstem	Sonar-Harvest	42,500–55,000	28,669
Summer Chum Salmon			
E. Fork Andreafsky	Weir	>40,000 (BEG)	61,234
Anvik	Sonar	350,000–700,000 (BEG)	571,690
Gisasa	Weir	none	80,055
Henshaw	Weir	none	263,746
Chena	Tower/Sonar	none	21,385
Salcha	Tower	none	59,188
Fall Chum Salmon			
Drainagewide	Run Reconstruction	300,000–600,000 (SEG)	866,556
Chandalar River	Sonar	74,000–152,000 (BEG)	253,041
Sheenjek River [a]	Regression	50,000–104,000 (BEG)	–
Upper Tributary [b]	Sonars	212,000–441,000 (BEG)	–
Tanana River [c]	M/R regressions	61,000–136,000 (BEG)	274,611
Delta River	Ground Surveys	6,000–13,000 (BEG)	31,955
Fishing Branch River [a]	X-Weir	22,000–49,000 (IMEG)	–
Yukon River Mainstem	Sonar-Harvest	70,000–104,000 (IMEG)	200,262
Coho Salmon			
Delta Clearwater River	Boat survey	5,200-17,000	6,222

Note: Biological escapement goal (BEG) and sustainable escapement goal (SEG). En dash indicates data are unavailable.

[a] Project did not operate in 2013.

[b] Not measurable because Fishing Branch River and Sheenjek River projects did not operate in 2013.

[c] The Tanana River escapement estimate was based on regression with Mainstem Yukon 1995–2012 (excluding 2005) minus Tanana River harvests.

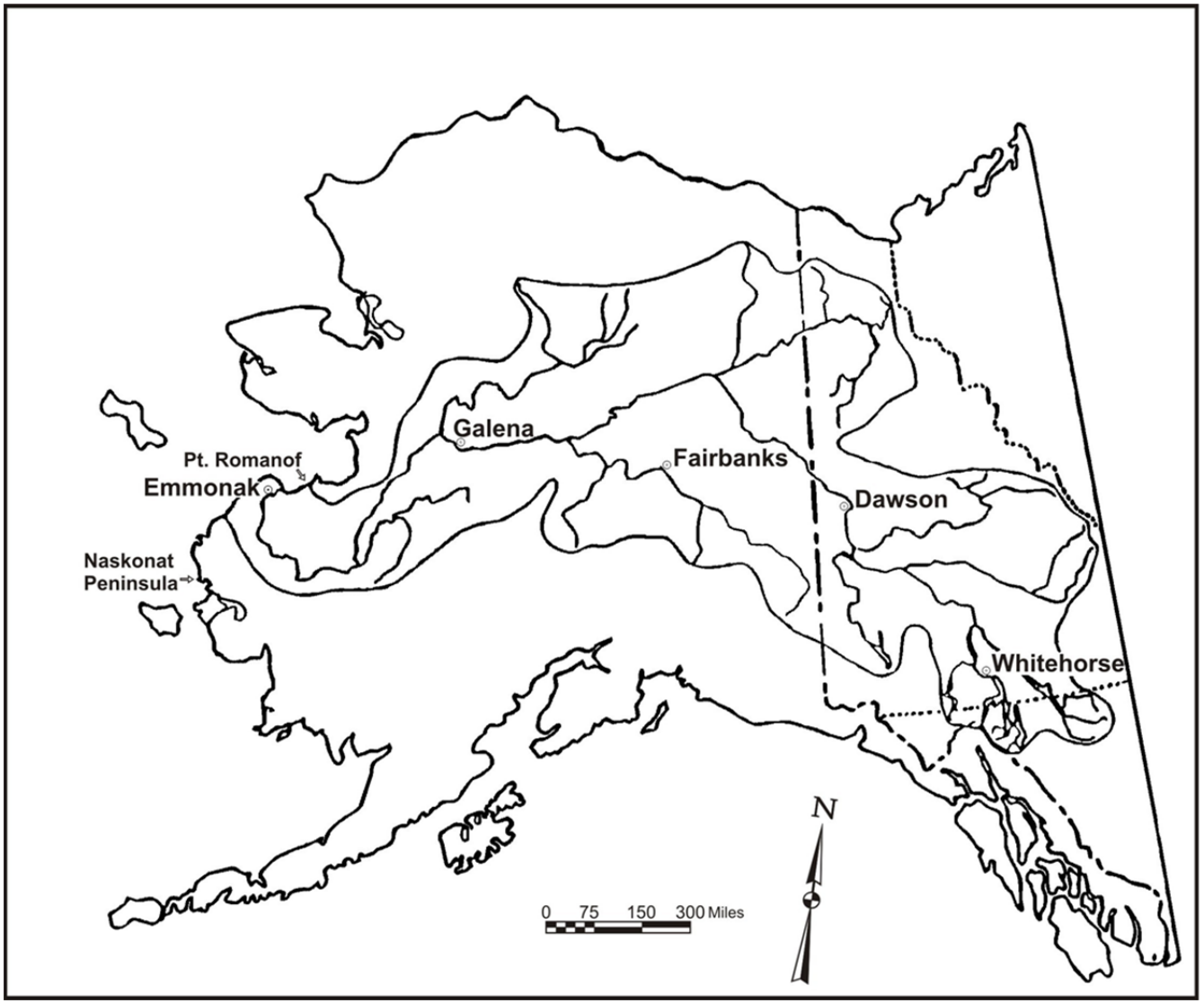

Figure 1.–Map of the Yukon River drainage.

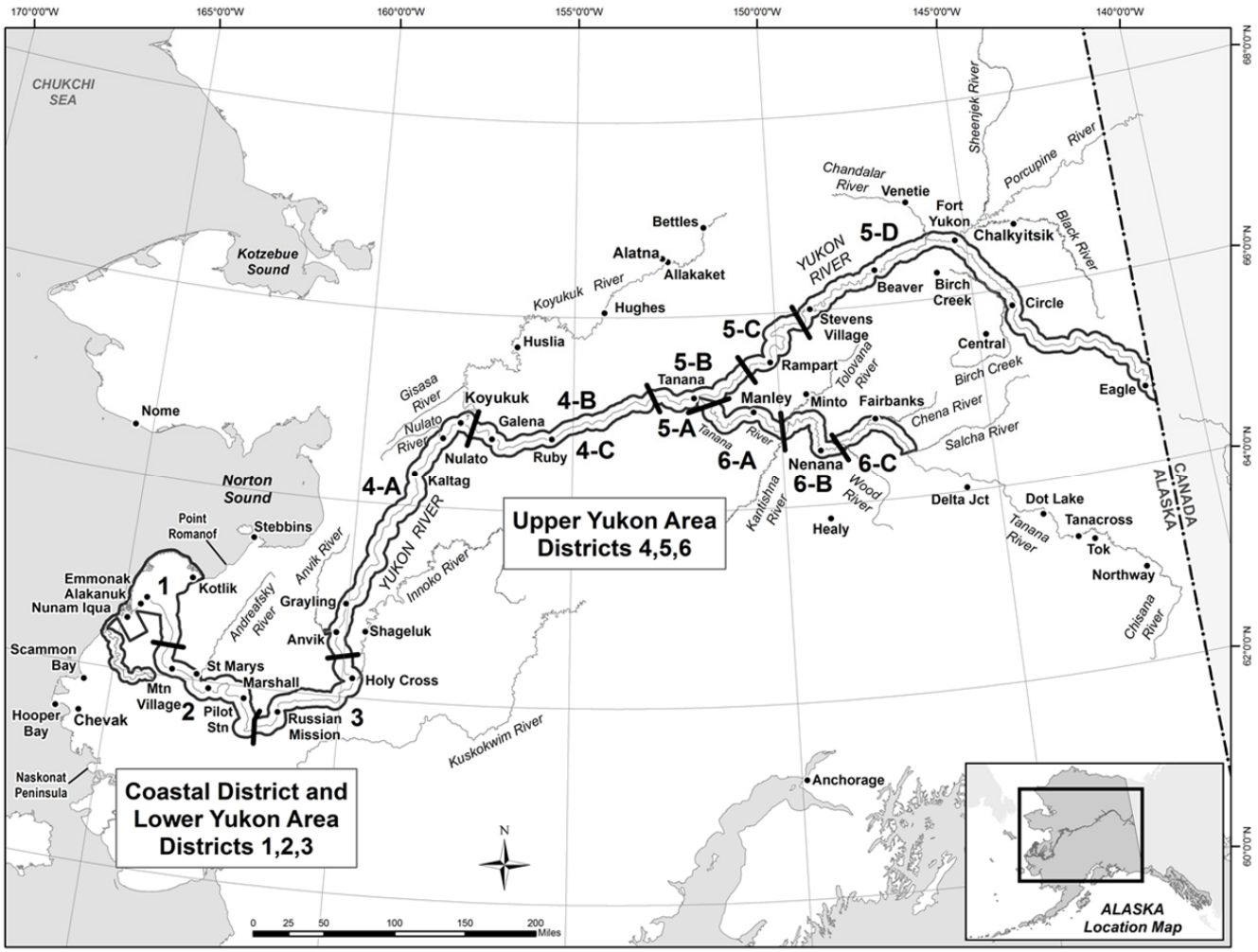

Figure 2.–Map of the Alaska portion of the Yukon River drainage showing communities and fishing districts.

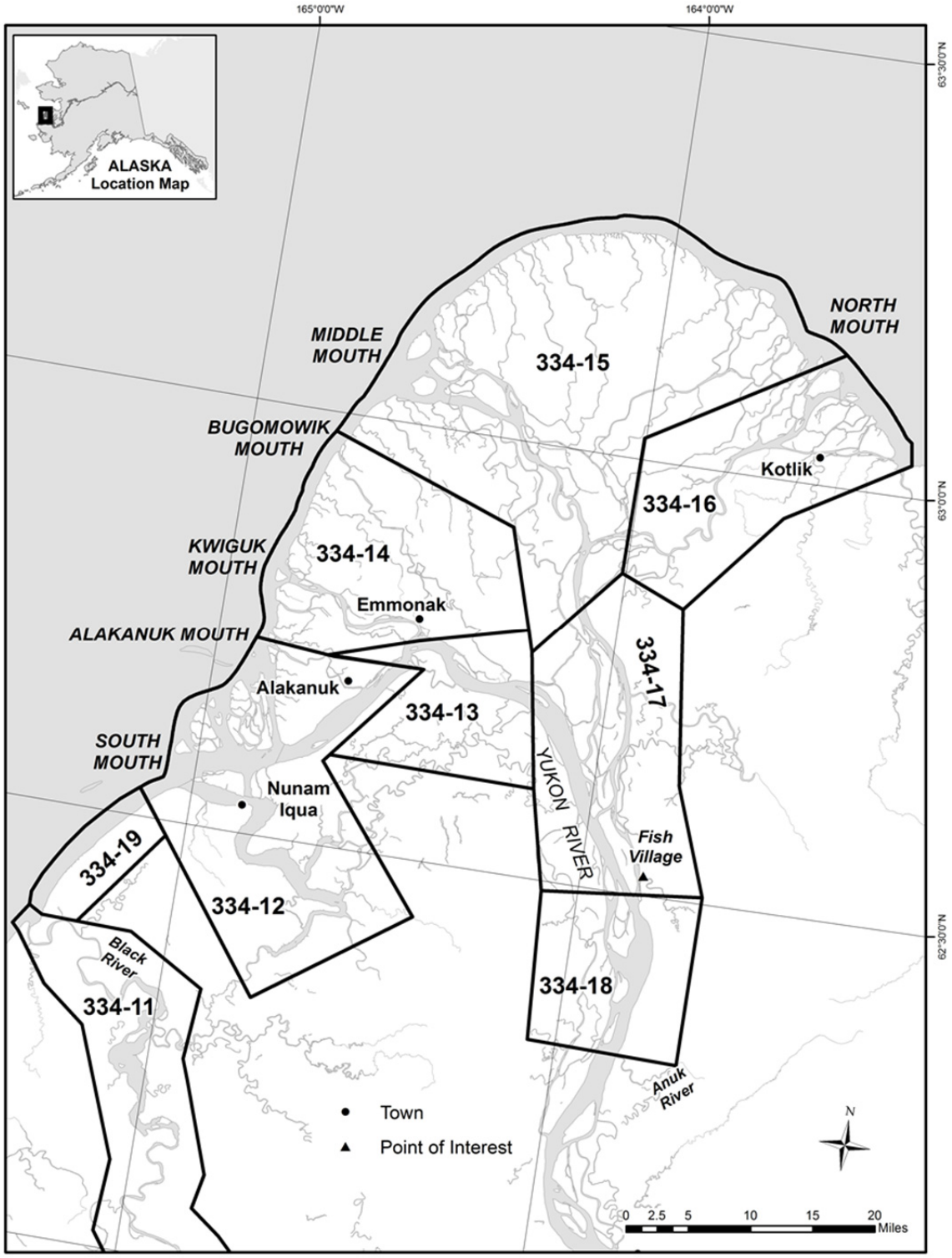

Figure 3.–District 1 showing statistical areas, Yukon Area.

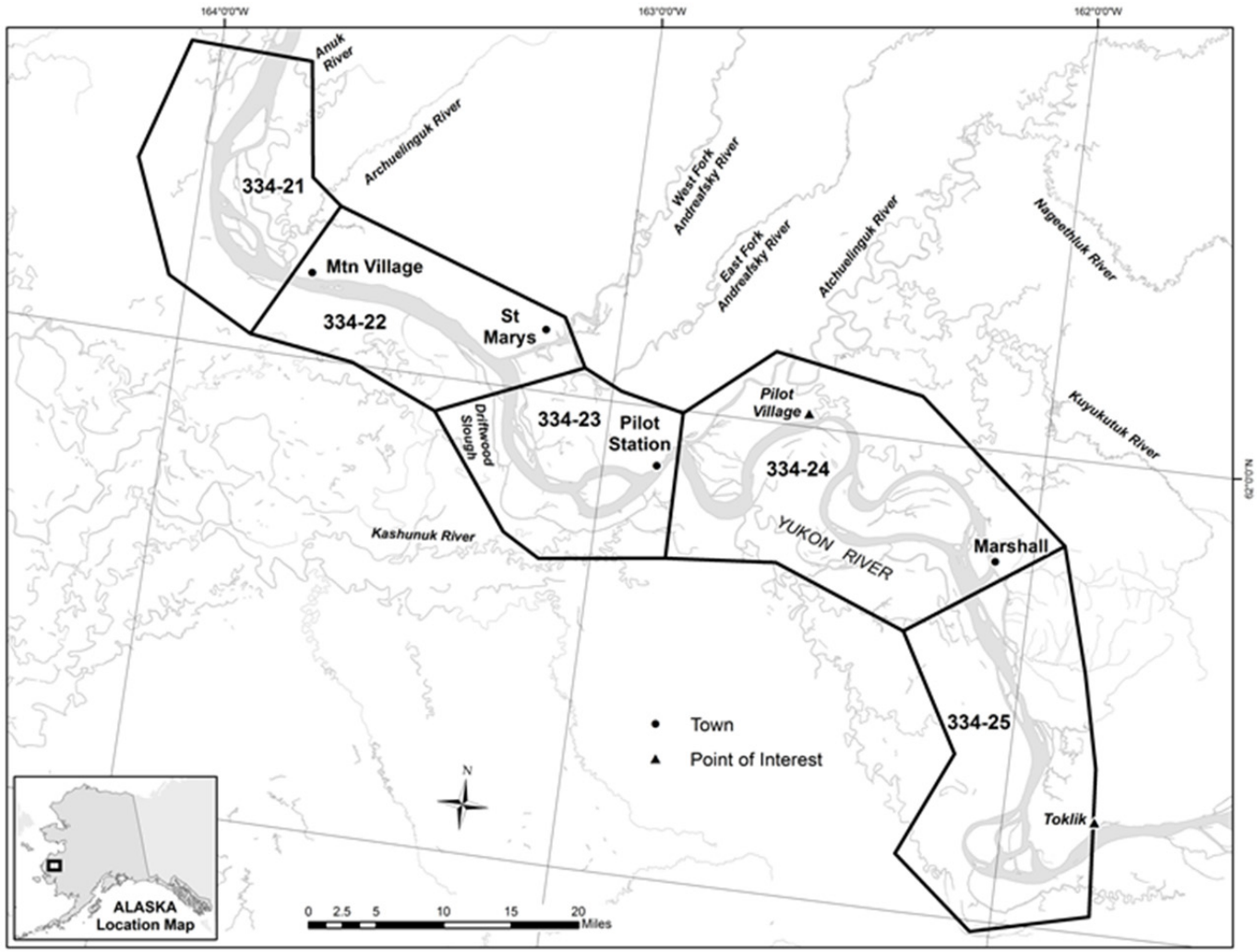

Figure 4.–District 2 showing statistical areas, Yukon Area.

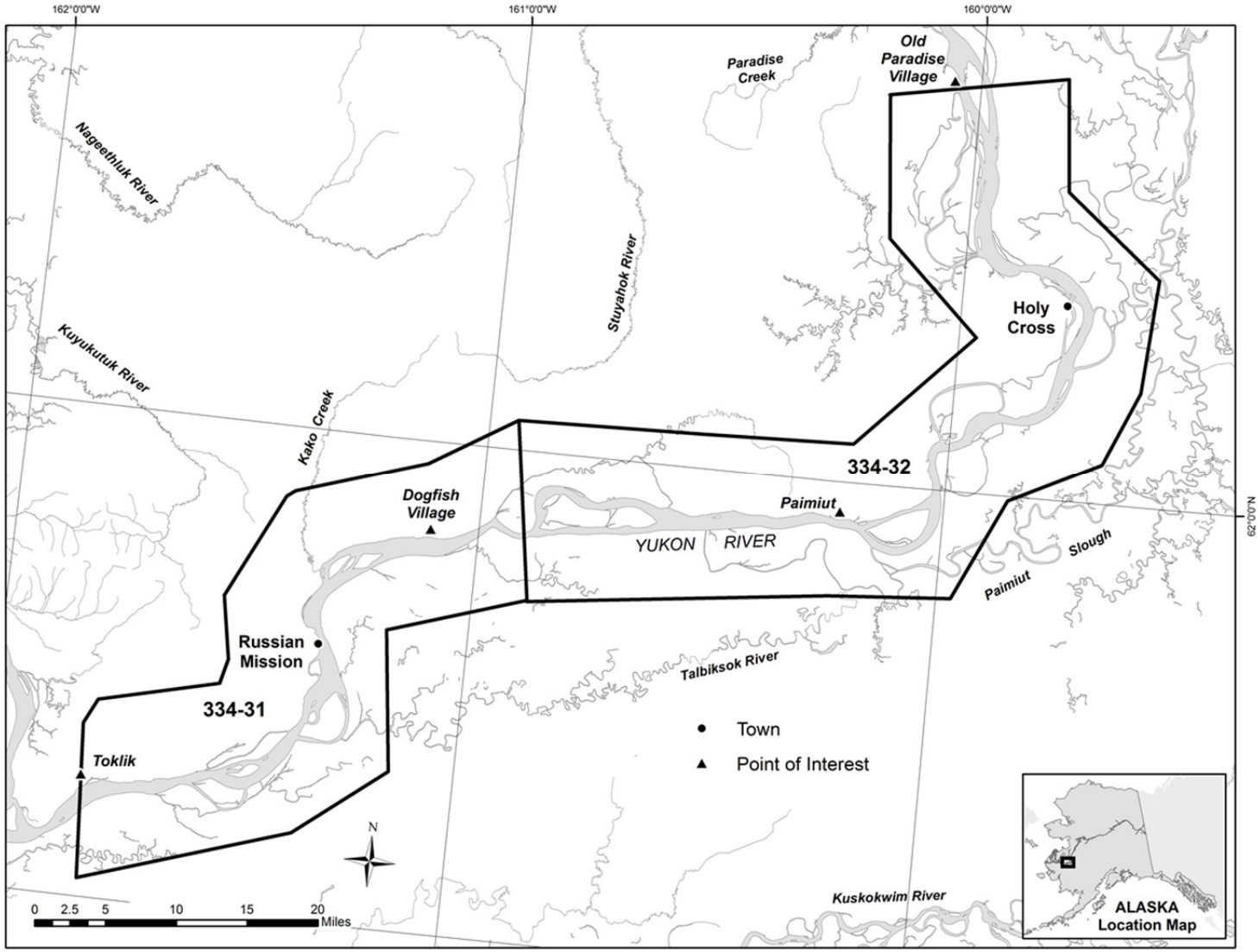

Figure 5.–District 3 showing statistical areas, Yukon Area.

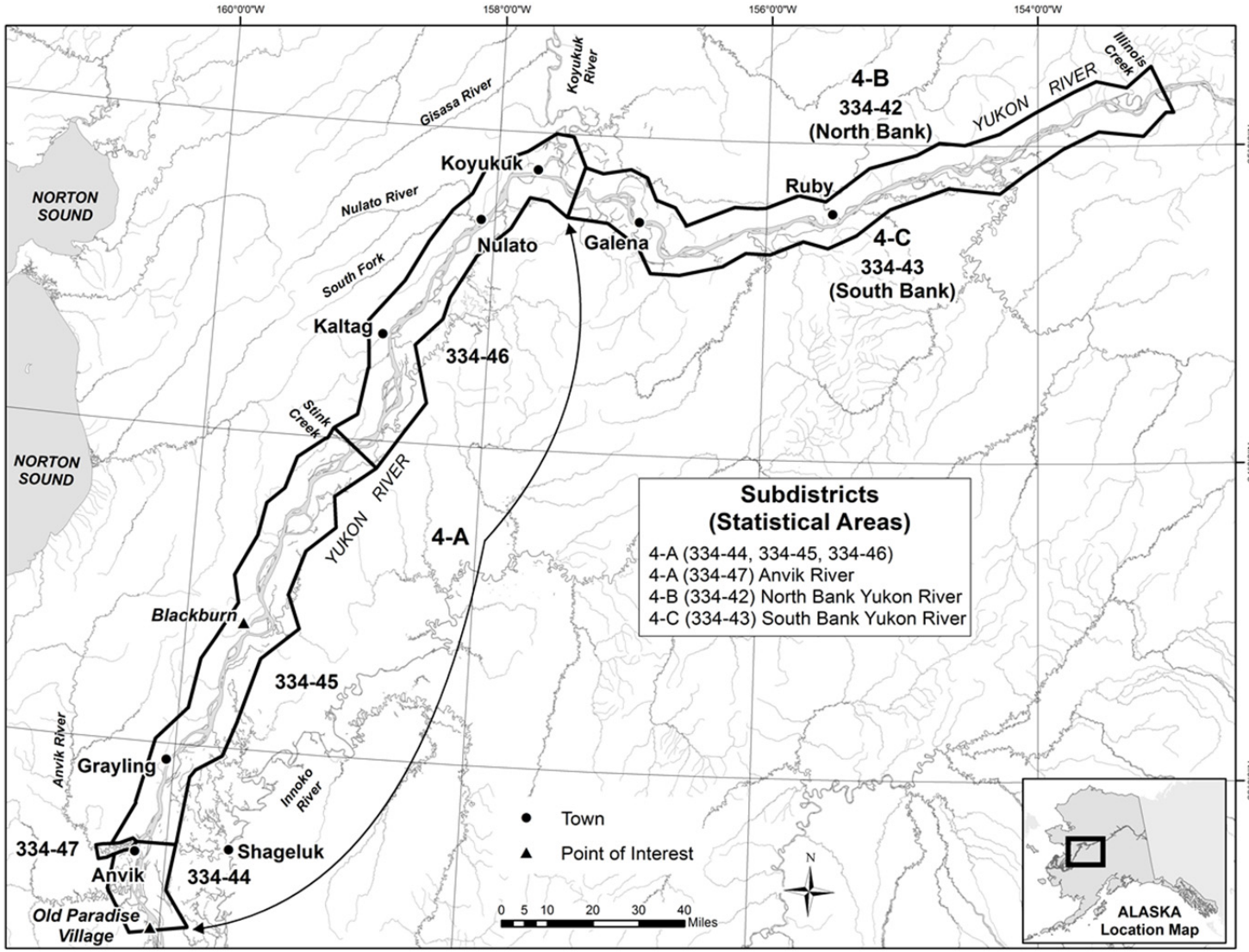

Figure 6.–District 4 showing statistical areas, Yukon Area.

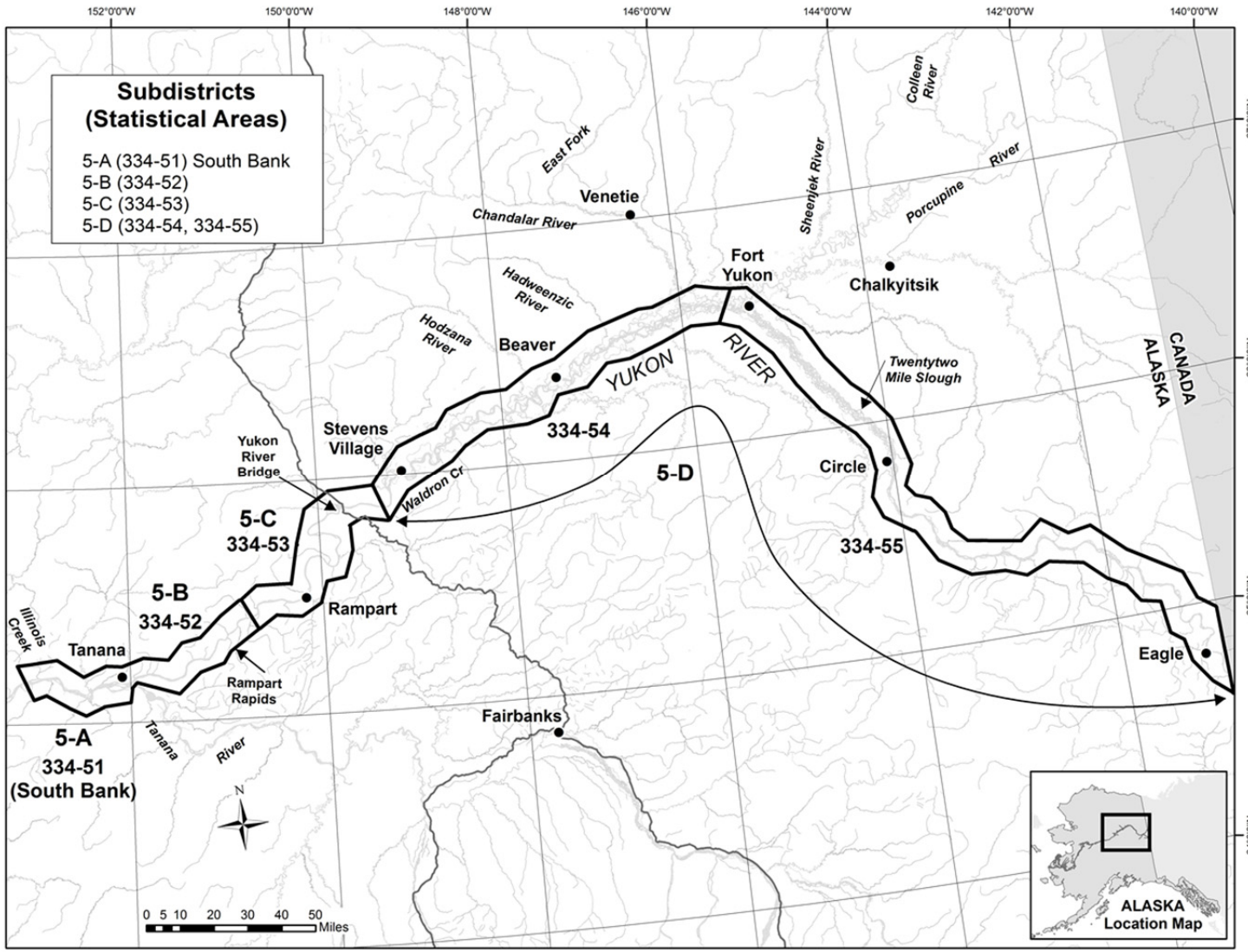

Figure 7.–District 5 showing statistical areas, Yukon Area.

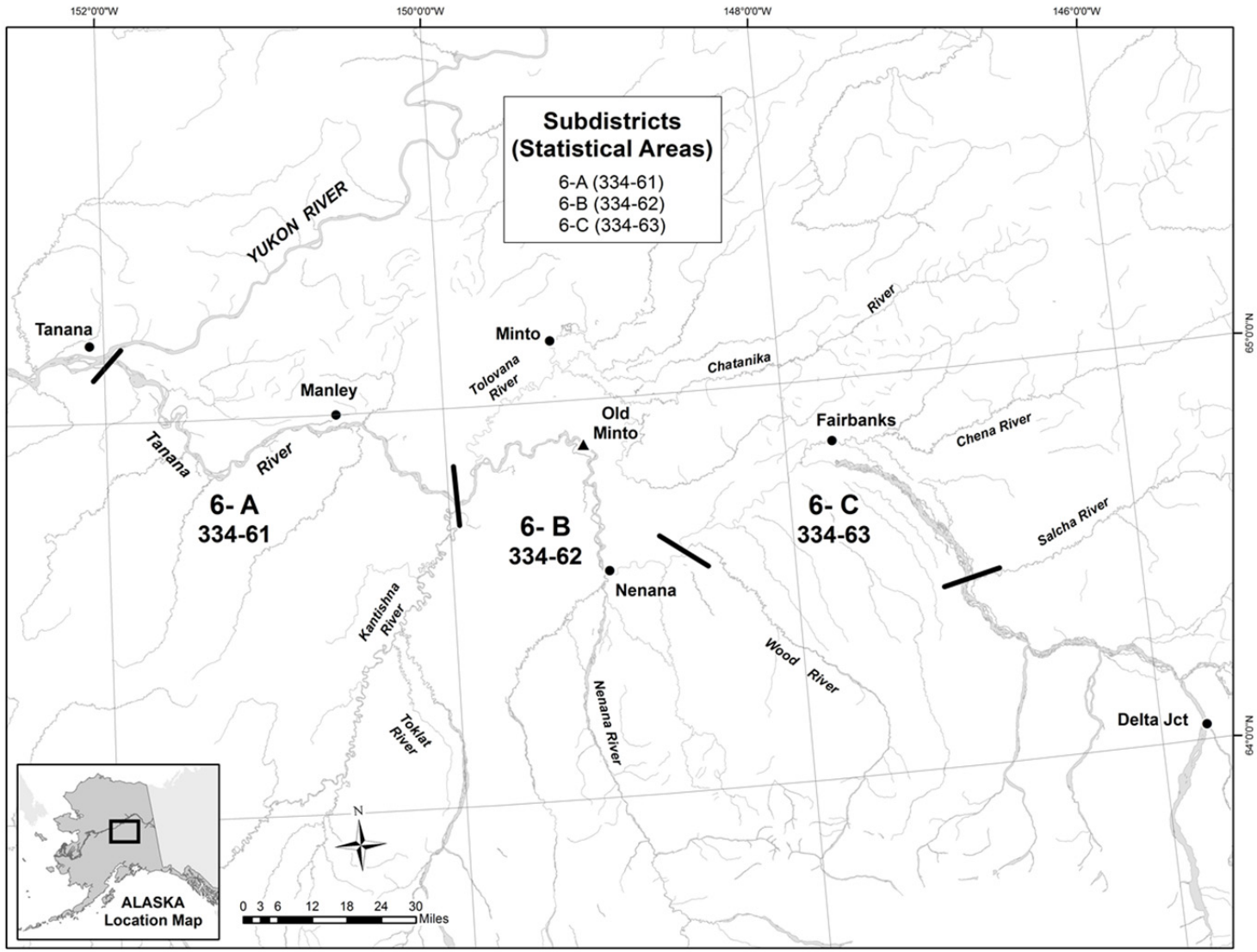

Figure 8.–District 6 showing statistical areas, Yukon Area.

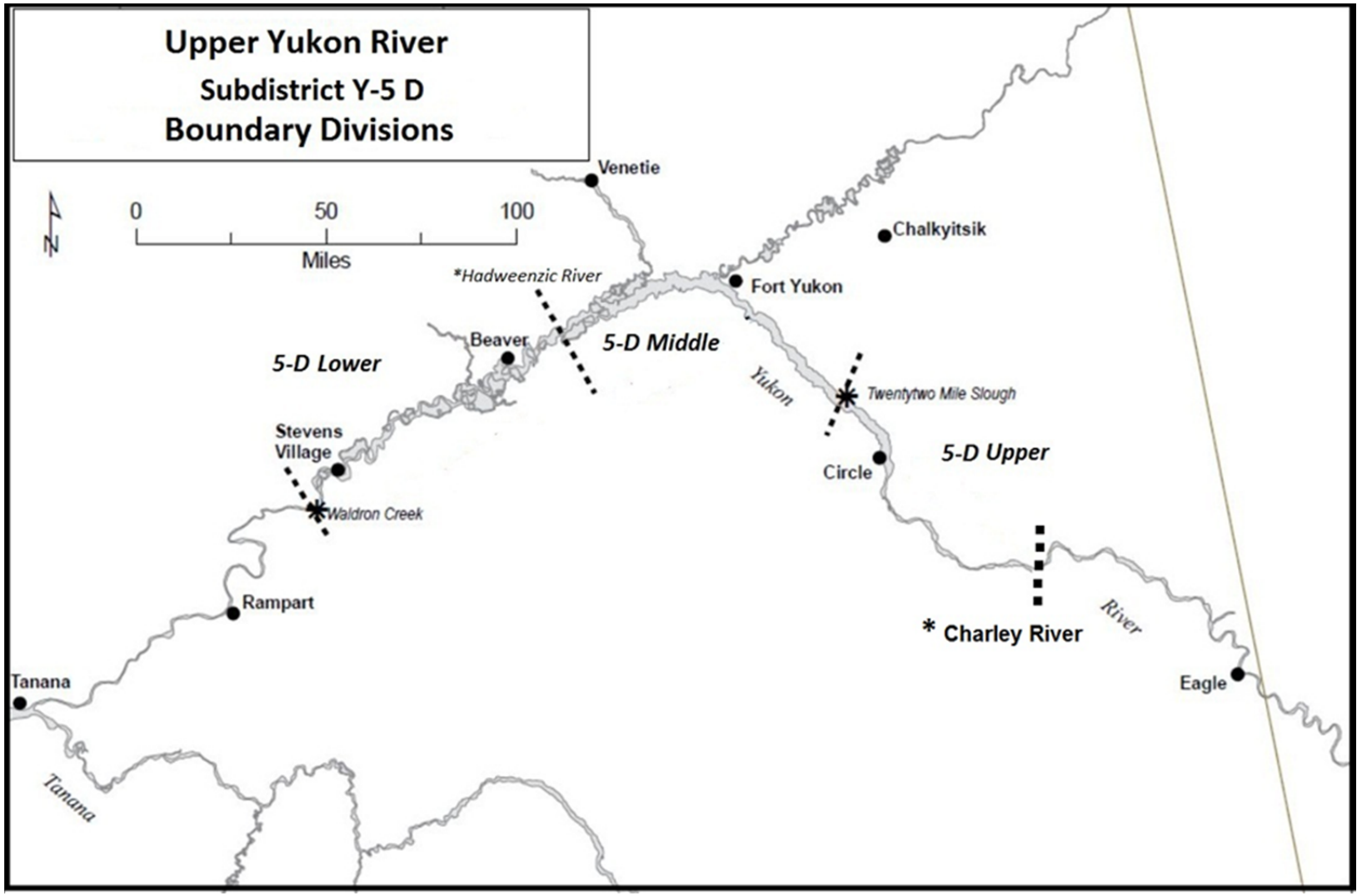

Figure 9.–Subdistrict 5-D boundary divisions, Yukon Area.

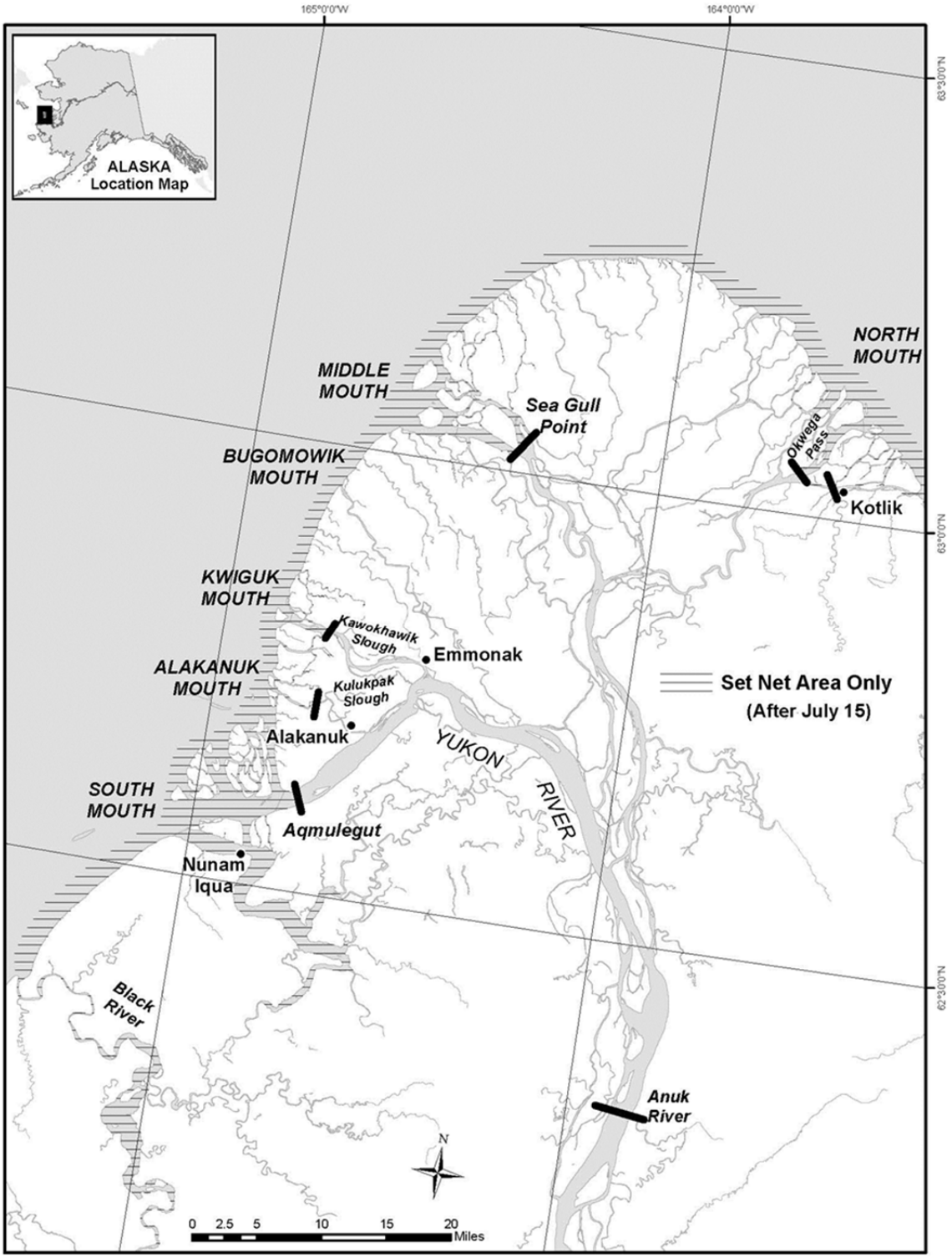

Figure 10.–Set gillnet only area of District 1, Yukon Area.

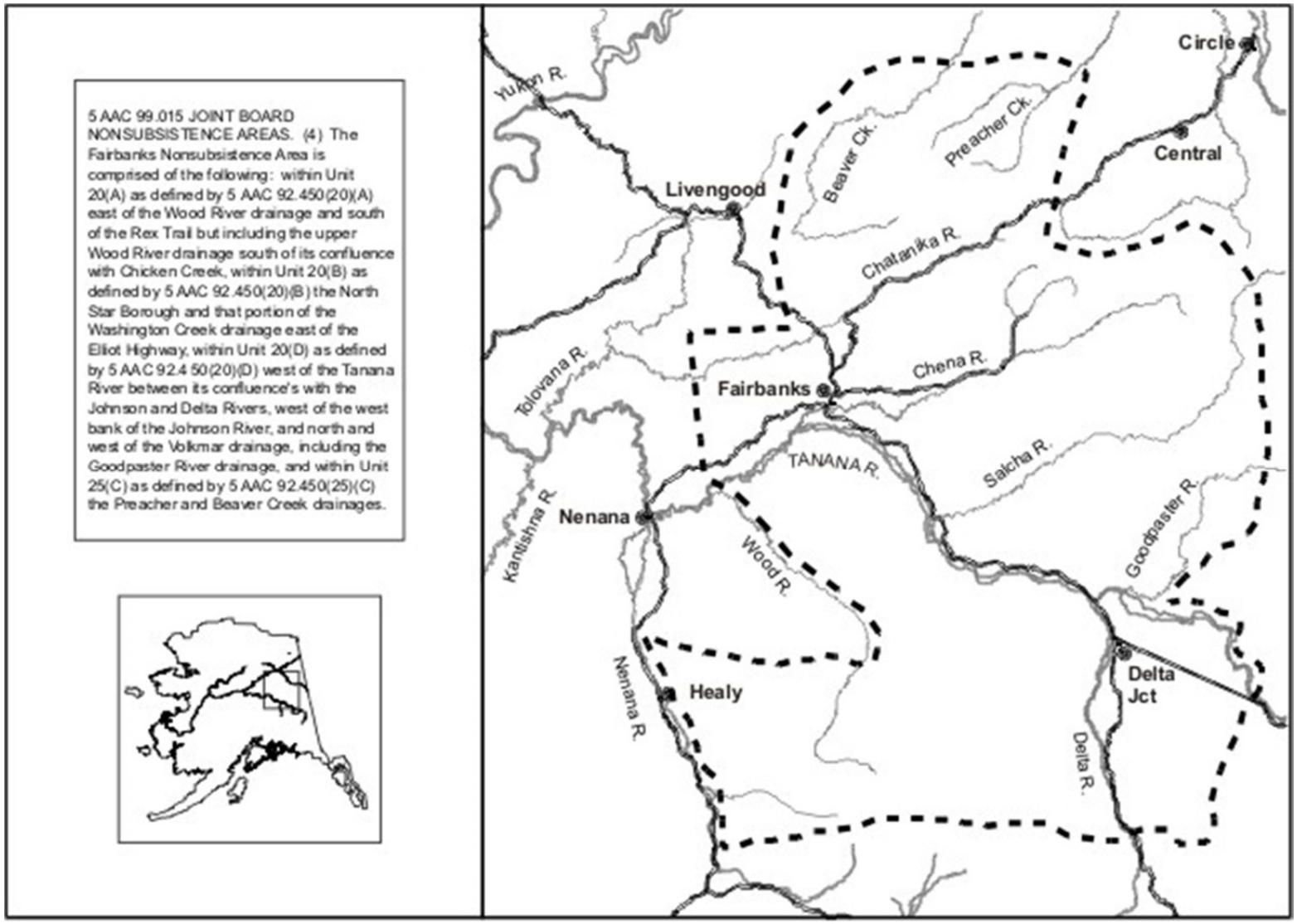

Figure 11.–The Fairbanks Nonsubsistence Area.

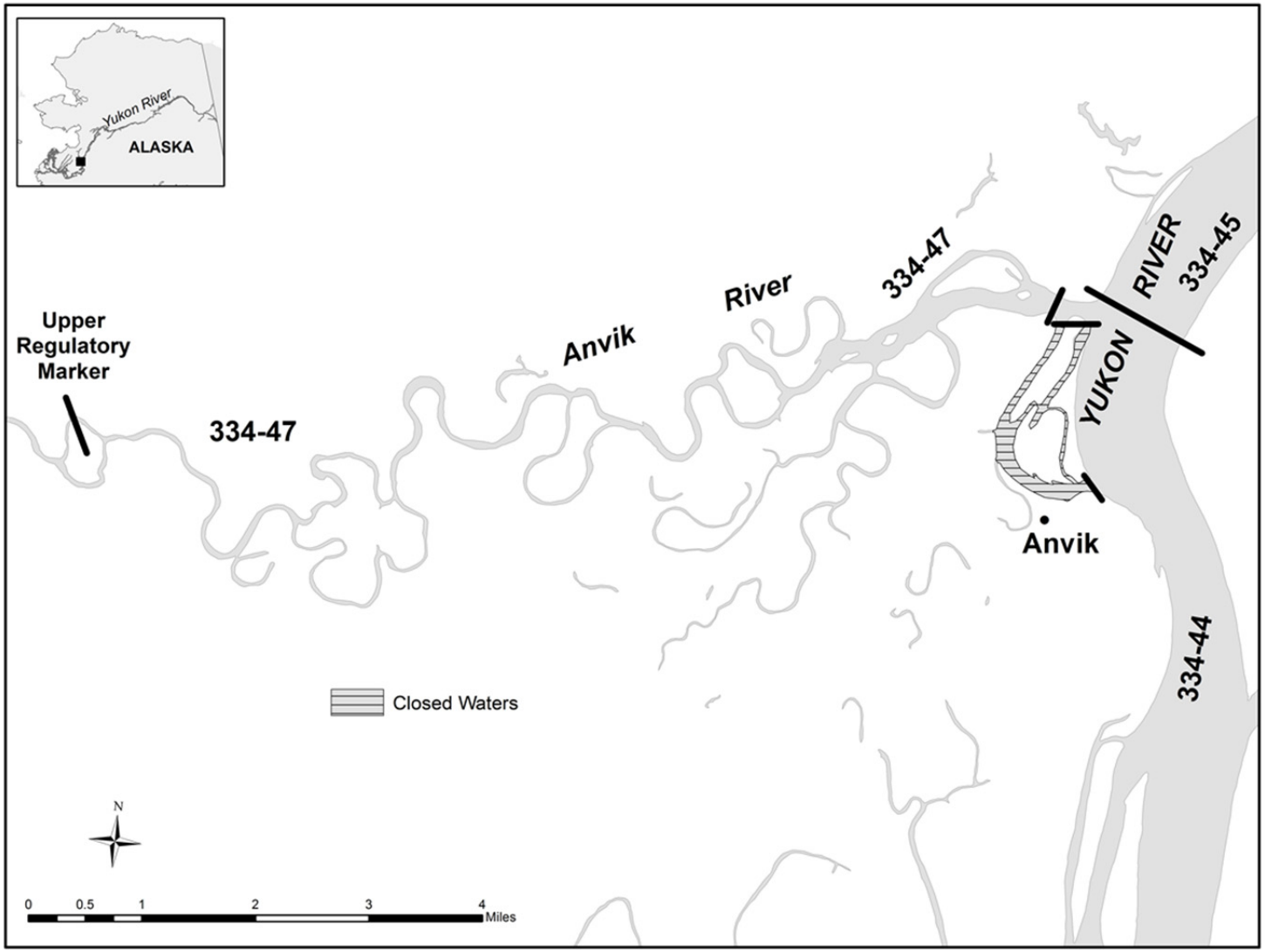

Figure 12.–Anvik River management area, Yukon Area.

APPENDIX A: YUKON RIVER DRAINAGE SALMON

Appendix A1.–List of indigenous fishes found in the Yukon Area.

Species Code [a]	Scientific Name	Common Name
601	*Lampetra camtschatic*	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 mileages.

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 Villaage	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

-continued-

Location	Mileage from Mouth
(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
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

Location	Mileage from Mouth
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

-continued-

Appendix A2.–Page 3 of 3.

Location	Mileage from Mouth
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	1,810
(Outlet L.Bennett)	
Bennett	1,835

Appendix A3.–Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1993–2013.

	Lower Yukon Area [a]			
Year	District 1	District 2	District 3	Subtotal
1993	49,286	37,293	1,501	88,080
1994	62,241	41,692	1,114	105,047
1995	76,106	41,458	–	117,564
1996	56,642	30,209	0	86,851
1997	66,384	39,363	–	105,747
1998	25,413	16,806	0	42,219
1999	37,161	27,133	538	64,832
2000	4,735	3,783	–	8,518
2001	–	–	–	–
2002	11,089	11,440	–	22,529
2003	22,709	14,220	–	36,929
2004	28,403	24,145	–	52,548
2005	16,694	13,413	–	30,107
2006	23,748	19,843	315	43,906
2007	18,616	13,306	190	32,112
2008	2,530	2,111	–	4,641
2009	90	226	–	316
2010	5,744	4,153	–	9,897
2011 [b]	36	46	–	82
2012 [b]	0	0	–	0
2013 [b]	0	0	–	0
2008–2012 Average	1,680	1,307		2,987
2003–2012 Average	11,857	9,146	253	21,054

-continued-

Appendix A3.–Page 2 of 3.

	District 4			District 5			District 6		
Year	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]	Number	Roe	Estimated Harvest [c]
1993	1,349	701	1,577	3,008	0	3,008	1,113	1,313	1,445
1994	2,216	564	2,443	3,739	10	3,744	2,135	1,820	2,606
1995	262	626	499	3,242	0	3,242	1,660	4,731	2,747
1996	45	202	137	2,497	518	2,757	278	750	447
1997	1,450	14	1,457	3,678	0	3,678	1,966	3,211	2,728
1998	–	–	–	517	0	517	882	260	963
1999	1,437	0	1,437	2,604	0	2,604	402	1,096	689
2000	0	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	771	0	771	836	896	1,066
2003	562	0	562	1,134	0	1,134	1,813	0	1,813
2004	–	–	–	1,546	0	1,546	2,057	0	2,057
2005	–	–	–	1,469	0	1,469	453	0	453
2006	–	–	–	1,839	0	1,839	84	0	84
2007	0	0	0	1,241	0	1,241	281	0	281
2008	0	0	0	–	–	–	0	0	0
2009	0	0	0	–	–	–	0	0	0
2010	0	0	0	–	–	–	0	0	0
2011	–	–	–	–	–	–	0	0	0
2012	0	0	0	–	–	–	0	0	0
2013	0	0	0	–	–	–	0	0	0
2008–2012 Average							0	0	0
2003–2012 Average	94	0	94	1,446	0	1,446	469	0	469

-continued-

	Upper Yukon Area [d]					
	Subtotal				Total	
Year	Number	Roe	Estimated Harvest [c]	Estimated Harvest [c]	Canada Total	Grand Total
1993	5,470	2,014	6,030	94,110	10,350	104,460
1994	8,090	2,394	8,793	113,840	12,028	125,868
1995	5,164	5,357	6,488	124,052	11,146	135,198
1996	2,820	1,470	3,341	90,192	10,164	100,356
1997	7,094	3,225	7,863	113,610	5,311	118,921
1998	1,399	260	1,480	43,699	390	44,089
1999	4,443	1,096	4,730	69,562	3,160	72,722
2000	–	–	–	8,518	–	8,518
2001	–	–	–	–	1,351	1,351
2002	1,607	896	1,837	24,366	708	25,074
2003	3,509	0	3,509	40,438	2,672	43,110
2004	3,603	0	3,603	56,151	3,785	59,936
2005	1,922	0	1,922	32,029	4,066	36,095
2006	1,923	0	1,923	45,829	2,332	48,161
2007	1,522	0	1,522	33,634	–	33,634
2008	–	–	–	4,641	1	4,642
2009	–	–	–	316	364	680
2010	–	–	–	9,897	0	9,897
2011	–	–	–	82	4	86
2012	0	0	0	0	0	0
2013	0	0	0	0	2	2
2008–2012 Average				2,987	74	3,061
2003–2012 Average	2,080	0	2,080	22,302	1,322	23,624

Note: En dash indicates no commercial fishing activity occurred.

[a] All fish sold in the round.

[b] In an effort to conserve Chinook salmon, commercial sales were prohibited during the summer season.

[c] The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

[d] Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe. Does not include ADF&G test fish sales.

Appendix A4.–Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1993–2013.

	Lower Yukon Area			
Year	District 1 [a]	District 2 [a]	District 3	Subtotal
1993	73,659	19,332	463	93,454
1994	42,332	12,869	35	55,236
1995	142,266	83,817	–	226,083
1996	92,506	30,727	1,534 [b]	124,767
1997	59,915	18,242	–	78,157
1998	21,270	6,848	0	28,118
1999	16,181	11,702	0	27,883
2000	3,315	3,309	–	6,624
2001	–	–	–	–
2002	6,327	4,027	–	10,354
2003	3,579	2,583	–	6,162
2004	13,993	5,782	–	19,775
2005	23,965	8,313	–	32,278
2006	21,816	25,543	116	47,475
2007	106,790	69,432	1	176,223
2008	67,459	58,139	–	125,598
2009	71,335	86,571	–	157,906
2010	102,267	80,948	–	183,215
2011	163,439	103,071	–	266,510
2012	150,800	57,049	–	207,849
2013	207,871	171,272	–	379,143
2008–2012 Average	111,060	77,156		188,216
2003–2012 Average	72,544	49,743	59	122,299

-continued-

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	Upper Yukon Area [c]								
	District 4			District 5			District 6		
Year	Number	Roe	Estimated Harvest [d]	Number	Roe	Estimated Harvest [d]	Number	Roe	Estimated Harvest [d]
1993	27	22,447	42,957	0	0	0	3,041	515	3,705
1994	3,611	89,717	171,607	229	212	464	21,208	7,828	31,434
1995	8,873	281,074	554,587	107	188	316	24,711	9,475	37,428
1996	0	295,190	510,240	0	302	336	22,360	18,332	46,890
1997	2,062	74,231	124,671	137	0	137	14,886	9,036	25,287
1998	–	–	–	96	13	110	397	140	570
1999	1,267	0	1,267	115	0	115	124	24	148
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	6	0	6	3,198	16	3,218
2003	62	0	62	0	0	0	4,461	0	4,461
2004	–	–	–	25	0	25	6,610	0	6,610
2005	–	–	–	0	0	0	8,986	0	8,986
2006	–	–	–	20	0	20	44,621	0	44,621
2007	7,304	0	7,304 [e]	0	0	0	14,674	0	14,674
2008	23,746	0	23,746 [e]	–	–	–	1,842	0	1,842
2009	4,589	0	4,589 [e]	–	–	–	7,777	0	7,777
2010	44,207	0	44,207 [f]	–	–	–	5,466	0	5,466
2011	–	–	–	–	–	–	8,651	0	8,651
2012	108,222	0	108,222	–	–	–	3,504	0	3,504
2013	100,507	0	100,507	–	–	–	5,937	0	5,937
2008–2012 Average	45,191	0	45,191				5,448	0	5,448
2003–2012 Average	31,355	0	31,355	9	0	9	10,659	0	10,659

-continued-

	Upper Yukon Area [c]					
	Subtotal			Total		
Year	Number	Roe	Estimated Harvest [d]	Number	Roe	Estimated Harvest [d]
1993	3,068	22,962	46,662	96,522	22,962	140,116
1994	25,048	97,757	203,505	80,284	97,757	258,741
1995	33,691	290,737	592,331	259,774	290,737	818,414
1996	22,360	313,824	557,466	147,127	313,824	682,233
1997	17,085	83,267	150,095	95,242	83,267	228,252
1998	493	153	680	28,611	153	28,798
1999	1,506	24	1,530	29,389	24	29,413
2000	–	–	–	6,624	–	6,624
2001	–	–	–	–	–	–
2002	3,204	16	3,224	13,558	16	13,578
2003	4,523	0	4,523	10,685	0	10,685
2004	6,635	0	6,635	26,410	0	26,410
2005	8,986	0	8,986	41,264	0	41,264
2006	44,641	0	44,641	92,116	0	92,116
2007	21,978	0	21,978	198,201	0	198,201
2008	25,588	0	25,588	151,186	0	151,186
2009	12,366	0	12,366	170,272	0	170,272
2010	49,673	0	49,673	232,888	0	232,888
2011	8,651	0	8,651	275,161	0	275,161
2012	111,726	0	111,726	319,575	0	319,575
2013	106,444	0	106,444	485,587	0	485,587
2008–2012 Average	41,601	0	41,601	229,816	0	229,816
2003–2012 Average	29,477	0	29,477	151,776	0	151,776

Note: En dash indicates no commercial fishing activity occurred.

[a] All sales are fish in the round in District 1 and 2.

[b] Number of males and females harvested to produce 935 pounds of roe.

[c] 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 ADF&G test fish sales.

[d] From 1990 to 2006, 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.

[e] The number of female fish from which roe were extracted is the number harvested. Males were not purchased and accounted for as caught but not sold are included in personal use totals. Roe information is included in Zephyr as both numbers of fish and pounds of roe were recorded on fish tickets.

[f] Both males and females were purchased and are included in the number harvested.

Appendix A5.–Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1993–2013.

	Lower Yukon Area			
Year	District 1 [a]	District 2 [a]	District 3 [a]	Subtotal
1993	–	–	–	–
1994	–	–	–	–
1995	79,378	90,831	–	170,209
1996	33,629	29,651	–	63,280
1997	27,483	24,326	–	51,809
1998	–	–	–	–
1999	9,987	9,703	–	19,690
2000	–	–	–	–
2001	–	–	–	–
2002	–	–	–	–
2003	5,586	–	–	5,586
2004	660	–	–	660
2005	130,525	–	–	130,525
2006	101,254	39,905	–	141,159
2007	38,852	35,826	–	74,678
2008	67,704	41,270	–	108,974
2009	11,911	12,072	–	23,983
2010	545	270	–	815
2011	127,735	100,731	–	228,466
2012	139,842	129,284	–	269,126
2013	106,588	106,274	–	212,862
2008–2012 Average	69,547	56,725		126,273
2003–2012 Average	62,461	35,936		98,397

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	Upper Yukon Area								
	District 4			District 5			District 6		
Year	Numbers [a]	[a] Roe [b]	Estimated Harvest [c]	Numbers [a]	Roe [b]	Estimated Harvest [c]	Numbers [a]	Roe [b]	Estimated Harvest [c]
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	3,630	0	3,630	1	4,368	4,369
1995	2,924	4,126	8,731	9,778	18,816	30,033	67,855	9,560	74,117
1996	2,918	0	2,918	11,878	8,498	20,376	10,266	6,173	17,574
1997	2,458	0	2,458	2,446	1,194	3,640	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	681	0	681	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	1,315	0	1,315	–	–	–	4,095	0	4,095
2004	–	–	–	0	0	0	3,450	0	3,450
2005	–	–	–	0	0	0	49,637	0	49,637
2006	–	–	–	10,030	0	10,030	23,353	0	23,353
2007	–	–	–	427	0	427	15,572	0	15,572
2008	0	0	0	4,556	0	4,556	5,735	0	5,735
2009	–	–	–	–	–	–	1,286	545	1,893
2010	–	–	–	–	–	–	1,735	0	1,735
2011	–	–	–	1,246	0	1,246	9,267	0	9,267
2012	811	0	811	2,419	0	2,419	17,336	0	17,336
2013	–	–	–	1,041	0	1,041	24,148	0	24,148
2008–2012 Average	406	0	406	2,740	0	2,740	7,072	109	7,193
2003–2012 Average	709	0	709	2,668	0	2,465	13,147	55	13,207

-continued-

	Upper Yukon Area					
	Subtotal			Total		
Year	Numbers [a]	Roe [b]	Estimated Harvest [c]	Estimated Harvest	Canada Total	Grand Total
1993	–	–	–	–	7,762	7,762
1994	3,631	4,368	7,999	7,999	30,035	38,034
1995	80,557	32,502	112,881	283,090	39,012	322,102
1996	25,062	14,671	40,868	104,148	20,069	124,217
1997	4,904	1,194	6,098	57,907	8,068	65,975
1998	–	–	–	–	–	–
1999	681	0	681	20,371	10,402	30,773
2000	–	–	–	–	1,319	1,319
2001	–	–	–	–	2,198	2,198
2002	–	–	–	–	3,065	3,065
2003	5,410	0	5,410	10,996	9,030	20,026
2004	3,450	0	3,450	4,110	7,365	11,475
2005	49,637	0	49,637	180,162	11,931	192,093
2006	33,383	0	33,383	174,542	4,096	178,638
2007	15,999	0	15,999	90,677	7,109	97,786
2008	10,291	0	10,291	119,265	4,062	123,327
2009	1,286	545	1,893	25,876	293	26,169
2010	1,735	0	1,735	2,550	2,186	4,736
2011	10,513	0	10,513	238,979	5,312	244,291
2012	20,566	0	20,566	289,692	3,205	292,897
2013	25,189	0	25,189	238,051	3,369	241,420
2008–2012 Average	8,878	109	9,000	135,272	3,012	138,284
2003–2012 Average	15,227	55	15,288	113,685	5,459	119,144

Note: En dash indicates no commercial fishing activity occurred. Numbers based on reports generated from the Alaska TIX, Zephyr, and OceanAK programs. Canadian harvest numbers are from JTC 2014. Includes test fish sales prior to 1988.

[a] Harvest reports in numbers of fish sold in the round.

[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 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 ratio of pounds of roe to females to produce roe was assumed to be 1.0 pounds of roe per female.

Appendix A6.–Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1993–2013.

	Lower Yukon Area			
Year	District 1 [a]	District 2 [a]	District 3 [a]	Subtotal
1993	–	–	–	–
1994	–	–	–	–
1995	21,678	18,488	–	40,166
1996	27,705	20,974	–	48,679
1997	21,450	13,056	–	34,506
1998	–	1	–	1
1999	855	746	–	1,601
2000	–	–	–	–
2001	–	–	–	–
2002	–	–	–	–
2003	9,757	–	–	9,757
2004	1,583	–	–	1,583
2005	36,533	–	–	36,533
2006	39,323	14,482	–	53,805
2007	21,720	21,487	–	43,207
2008	13,946	19,246	–	33,192
2009	5,994	1,582	–	7,576
2010	1,027	1,028	–	2,055
2011	45,336	24,195	–	69,531
2012	39,757	29,063	–	68,820
2013	27,306	31,458	–	58,764
2008–2012 Average	21,212	15,023		36,235
2003–2012 Average	21,498	15,869		32,606

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	Upper Yukon Area								
	District 4			District 5			District 6		
Year	Numbers [a]	Roe [b]	Estimated Harvest [c]	Numbers [a]	Roe [b]	Estimated Harvest [c]	Numbers [a]	Roe [b]	Estimated Harvest [c]
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	120	5,588	4,451
1995	–	–	–	–	–	–	5,824	2,229	6,900
1996	161	0	161	–	–	–	3,803	4,829	7,142
1997	814	0	814	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	367	0	367	–	–	–	15,119	0	15,119
2004	–	–	–	0	0	0	18,649	0	18,649
2005	–	–	–	0	0	0	21,778	0	21,778
2006	–	–	–	–	–	–	11,137	0	11,137
2007	–	–	–	–	–	–	1,368	0	1,368
2008	0	0	0	91	0	91	2,408	0	2,408
2009	–	–	–	–	–	–	457	258	742
2010	–	–	–	–	–	–	1,700	0	1,700
2011	–	–	–	0	0	0	6,784	0	6,784
2012	0	0	0	634	0	634	5,335	0	5,335
2013	–	–	–	0	0	0	7,439	0	7,439
2008–2012 Average	0	0	0	242	0	242	3,337	52	3,394
2003–2012 Average	122	0	122	145	0	145	8,474	26	8,502

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Year	Upper Yukon Area Subtotal Numbers [a]	Roe [b]	Estimated Harvest [c]	Alaska Total Harvest
1993	–	–	–	–
1994	120	5,588	4,451	4,451
1995	5,824	2,229	6,900	47,066
1996	3,964	4,829	7,303	55,982
1997	814	0	814	35,320
1998	–	–	–	1
1999	–	–	–	1,601
2000	–	–	–	0
2001	–	–	–	0
2002	–	–	–	0
2003	15,486	0	15,486	25,243
2004	18,649	0	18,649	20,232
2005	21,778	0	21,778	58,311
2006	11,137	0	11,137	64,942
2007	1,368	0	1,368	44,575
2008	2,499	0	2,499	35,691
2009	457	258	742	8,318
2010	1,700	0	1,700	3,755
2011	6,784	0	6,784	76,315
2012	5,969	0	5,969	74,789
2013	7,439	0	7,439	66,203
2008–2012 Average	3,482	52	3,539	39,774
2003–2012 Average	8,583	26	8,611	41,217

Note: En dash indicates no commercial fishing activity occurred. Numbers based on reports generated from the Alaska TIX and Zephyr programs. Canadian harvest numbers are from JTC 2014. Does not include test fish sales.

[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] 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.

Appendix A7.–Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type. Yukon Area, 1993–2013.

	Lower Yukon Area Set or Drift Gillnet		Upper Yukon Area Set Gillnet		Upper Yukon Area Fish Wheel		Total	
Year	Permits Issued [a]	Permits Fished [b]	Permits Issued [a]	Permits Fished [b]	Permits Issued [a]	Permits Fished [b]	Permits Issued [a]	Permits Fished
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	72	13	162	25	938	670
2000	704	560	72	0	161	0	937	560
2001	701	0	72	0	157	0	930	0
2002	702	539	72	12	156	12	930	563
2003	703	557	72	7	157	20	932	584
2004	693	551	67	9	137	14	897	574
2005	691	579	67	6	135	15	893	600
2006	686	574	66	10	128	26	880	610
2007	684	565	66	6	124	24	874	595
2008	681	473	64	2	124	20	869	495
2009	678	391	61	2	122	10	861	403
2010	670	444	58	0	115	11	843	455
2011	667	456	55	0	115	9	837	465
2012	669	477	52	1	107	20	828	498
2013	674	449	51	0	106	16	831	467
2008–2012 Average	673	448	58	1	117	14	848	463

[a] Information obtained from CFEC.

[b] Data obtained from ADF&G fish ticket database.

Appendix A8.–Number of commercial salmon fishing permit holders making at least one delivery by district and season, Yukon Area, 1993–2013.

	Chinook and Summer Chum Salmon Season								
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [a]	District 4	District 5	District 6	Subtotal	Total
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 [b]	–	–	–	–	–	–	–	–	–
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
2005	370	228	0	578	0	12	5	17	595
2006	379	214	6	569	0	15	10	25	594
2007	359	220	3	564	5	12	10	27	591
2008	266	181	0	444	8	0	5	13	457
2009	213	166	0	376	6	0	5	11	387
2010	264	181	0	440	5	0	5	10	450
2011	228	182	0	403	0	0	5	5	408
2012	242	178	0	413	11	0	3	14	427
2013	220	174	0	384	9	0	2	11	395
2008–2012 Average	243	178	0	415	6	0	5	11	426

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	Chinook and Summer Chum Salmon Season								
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [a]	District 4	District 5	District 6	Subtotal	Total
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 [b]	–	–	–	–	–	–	–	–	–
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
2005	177	0	0	177	0	0	7	7	184
2006	219	71	0	286	0	4	11	15	301
2007	181	122	0	300	0	2	8	10	310
2008	251	177	0	428	0	3	8	11	439
2009	165	130	0	292	0	0	2	2	294
2010	72	18	0	90	0	0	4	4	94
2011	234	169	0	395	0	2	5	8	403
2012	267	201	0	449	4	3	5	13	462
2013	251	197	0	436	0	1	6	7	443
2008–2012 Average	198	139	0	331	1	2	5	8	338

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	Combined Season [c]								
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal [a]	District 4	District 5	District 6	Subtotal	Total
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	349	214	0	561	0	0	0	0	561
2001 [b]	–	–	–	–	–	–	–	–	–
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
2005	392	228	0	581	0	12	9	21	602
2006	396	224	6	574	0	20	16	36	610
2007	366	236	3	566	5	13	12	30	596
2008	297	208	0	474	8	3	11	22	496
2009	226	172	0	391	6	0	6	12	403
2010	274	183	0	444	5	0	6	11	455
2011	260	201	0	437	0	2	7	9	446
2012	284	210	0	475	11	3	5	23	498
2013	264	211	0	451	9	1	6	16	467
2008–2012 Average	268	195	0	444	6	2	7	15	460

Note: En dash indicates no commercial fishing activity occurred.

[a] 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 fishermen in the Lower Yukon Area may have operated in more than one district during the year.

[b] No commercial fishing.

[c] Combined seasons numbers will differ as the data represent the total number of unique permits fished during the entire season.

Appendix A9.–Commercial salmon pack by species and type of processing, Yukon Area, 1993–2013.

	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)
1993	0	0	0	1,905,414	0	634,931	0	0	0	0	97,630
1994	0	0	0	2,260,301	744	528,666	0	0	0	0	183,873
1995	0	0	0	2,635,972	317,357	3,524,754	0	0	0	0	498,925
1996	0	0	0	1,836,242	400,960	1,733,129	0	0	0	0	443,939
1997	0	0	0	2,324,306	255,228	1,089,678	0	0	0	0	190,359
1998	0	0	0	779,936	9	191,692	0	0	0	0	28,919
1999	0	0	0	1,368,658	10,342	352,970	0	0	0	0	50,696
2000	0	0	0	158,776	0	50,782	0	0	0	0	6,286
2001	–	–	–	–	–	–	–	–	–	–	–
2002	0	0	0	472,678	–	93,416	0	0	0	0	931
2003	0	0	0	841,748	165,757	144,942	0	0	0	0	0
2004	0	0	0	1,142,053	117,295	165,587	0	0	0	0	0
2005	0	0	0	597,191	410,398	1,637,483	0	0	0	0	273
2006	0	0	0	857,552	390,502	1,844,981	0	0	0	0	0
2007	0	0	0	594,003	331,412	1,890,820	0	0	0	0	5,939
2008	0	0	0	65,558	243,030	1,877,347	0	0	0	0	29,094
2009	0	0	0	4,194	55,464	1,260,795	0	0	0	0	4,709
2010	0	0	0	127,846	23,986	1,457,912	0	0	0	0	0
2011	0	0	0	985	516,498	3,483,462	0	0	0	0	0
2012	0	0	0	0	457,466	3,810,797	0	0	0	0	0
2013	0	0	0	0	454,839	4,497,391	0	0	0	0	0

Note: En dash indicates no commercial fishing activity occurred. 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.

Appendix A10.–Estimated average prices per pound paid to fishermen, Yukon Area, 1993–2013.

	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
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	–	–	–	–	–	–	–	–	–	–	–	–
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	–
2005	3.43	0.05	0.32	0.32	0.87	–	0.25	–	0.14	–	0.12	–
2006	3.94	0.05	0.20	0.20	1.30	–	0.16	–	0.14	–	0.19	–
2007	3.73	0.19	0.27	0.39	1.33	–	0.25	2.36	0.20	–	0.20	–
2008	4.64	0.40	0.55	0.97	–	–	0.25	3.00	0.27	–	0.20	–
2009	5.00	0.50	0.70	1.00	–	–	0.26	3.00	0.19	–	0.15	–
2010	5.00	0.70	1.00	1.50	–	–	0.23	–	0.23	–	0.26	–
2011	5.00 [a]	0.75	1.00	1.00	–	–	0.26	–	0.22	–	0.15	–
2012	–	0.75	1.00	1.25	–	–	0.37	–	0.19	–	0.25	–
2013	–	0.75	0.75	1.10	–	–	0.30	–	0.16	–	0.17	–
2008–2012 Average	3.93	0.62	0.85	1.14			0.27	3.00	0.22		0.20	

Note: En dash indicates no commercial fishing activity occurred.

[a] Chinook salmon sold in fall season only.

Appendix A11.–Value of commercial salmon fishery to Yukon Area fishermen, 1993–2013.

	Summer Season						
	Chinook			Summer Chum			
	Lower Yukon	Upper Yukon		Lower Yukon	Upper Yukon		Total
Year	Value	Value	Subtotal	Value	Value	Subtotal	Season
1993	4,884,044	113,217	4,997,261	226,772	203,762	430,534	5,427,795
1994	4,169,270	124,270	4,293,540	79,206	396,685	475,891	4,769,431
1995	5,317,508	87,059	5,404,567	241,598	1,060,322	1,301,920	6,706,487
1996	3,491,582	47,282	3,538,864	89,020	966,277	1,055,297	4,594,161
1997	5,450,433	110,713	5,561,146	56,535	96,806	153,341	5,714,487
1998	1,911,370	17,285	1,928,655	26,415	821	27,236	1,955,891
1999	4,950,522	74,475	5,024,997	19,687	1,720	21,407	5,046,404
2000	725,606	–	725,606	8,633	–	8,633	734,239
2001	–	–	–	–	–	–	–
2002	1,781,996	20,744	1,802,740	4,342	6,176	10,518	1,813,258
2003	1,871,202	40,957	1,912,159	1,585	6,879	8,464	1,920,623
2004	3,063,667	38,290	3,101,957	8,884	9,645	18,529	3,120,486
2005	1,952,109	24,415	1,976,524	11,004	13,479	24,483	2,001,007
2006	3,290,367	32,631	3,322,998	23,862	42,988	66,850	3,389,848
2007	1,939,114	27,190	1,966,304	220,715	34,421	255,136	2,221,440
2008	325,470	–	325,470	326,930	65,840	392,770	718,240
2009	20,970	–	20,970	514,856	20,430	535,286	556,256
2010	639,230	–	639,230	823,967	61,534	885,501	1,524,731
2011	4,925	–	4,925	1,301,008	12,966	1,313,974	1,318,899
2012	–	–	–	980,424	137,817	1,118,241	1,118,241
2013	–	–	–	1,721,524	152,110	1,873,634	1,873,634
2008–2012 Average	247,649		247,649	789,437	59,717	849,154	1,047,273

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	Fall Season							
	Fall Chum			Coho				
	Lower Yukon	Upper Yukon		Lower Yukon	Upper Yukon		Total	Total
Year	Value	Value	Subtotal	Value	Value	Subtotal	Season	Value
1993	0	0	0	0	0	0	0	5,427,795
1994	0	8,517	8,517	0	8,739	8,739	17,256	4,786,687
1995	185,036	167,571	352,607	80,019	11,292	91,311	443,918	7,150,405
1996	48,579	45,438	94,017	96,795	13,020	109,815	203,832	4,797,993
1997	86,526	7,252	93,778	79,973	1,062	81,035	174,813	5,889,300
1998	–	–	–	–	–	–	–	1,955,891
1999	35,639	876	36,515	3,620	0	3,620	40,135	5,086,539
2000	–	–	–	–	–	–	–	734,239
2001	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	1,813,258
2003	5,993	3,398	9,391	18,168	5,095	23,263	32,654	1,953,277
2004	1,126	848	1,974	2,774	6,372	9,146	11,120	3,131,606
2005	316,698	48,159	364,857	83,793	19,182	102,975	467,832	2,468,839
2006	202,637	33,806	236,443	50,299	11,137	61,436	297,879	3,687,727
2007	144,256	16,907	161,163	127,869	1,368	129,237	290,400	2,511,840
2008	428,969	22,089	451,058	216,777	3,717	220,494	671,552	1,389,792
2009	108,778	1,286	110,064	52,176	457	52,633	162,697	718,953
2010	5,428	2,761	8,189	20,535	442	20,977	29,166	1,553,897
2011	1,628,329	16,115	1,644,444	472,199	6,792	478,991	2,123,435	3,442,334
2012	1,385,498	28,355	1,413,853	534,523	7,428	541,951	1,955,804	3,074,045
2013	1,154,172	25,744	1,179,916	453,998	7,115	461,113	1,641,029	3,514,663
2008–2012 Average	711,400	14,121	725,522	259,242	3,767	263,009	988,531	2,035,804

Note: En dash indicates no commercial fishing activity occurred.

Appendix A12.–Average weight of salmon harvests in the commercial fishery, Yukon Area, 1993–2013.

	Lower Yukon Area [a]				Upper Yukon Area [a]			
Year	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
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	–	–	–	–	–	–	–	–
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
2005	18.9	6.8	7.8	7.1	14.6	6.0	7.1	6.9
2006	19.0	6.8	7.2	6.2	13.1	6.1	7.0	5.1
2007	17.9	6.5	7.1	7.5	13.5	5.8	5.4	5.0
2008	14.1	6.6	7.2	6.8	–	7.3	7.8	7.6
2009	13.3	6.5	6.6	6.9	–	5.4	5.2	6.8
2010	12.9	6.4	6.7	6.7	–	5.3	6.9	6.0
2011	12.0	6.5	7.1	6.8	–	5.7	6.8	6.5
2012	–	6.3	6.9	6.2	–	4.6	7.0	5.0
2013	–	6.1	7.2	7.0	–	4.8	6.2	5.6
2003–2012 Average	15.0	6.7	7.0	6.9	13.9	5.8	6.4	6.1

Appendix A13.–Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1993–2013.

	District 1					District 2			
Year	Subsistence [a]	Commercial [b]	Personal Use [c]	Test Fish Sales	Total	Subsistence	Commercial [b]	Test Fish Sales	Total
1993	10,408	49,286		1,408	61,102	11,513	37,293	164	48,970
1994	6,540	62,241		1,561	70,342	8,956	41,692	70	50,718
1995	5,960	76,106		2,078	84,144	9,037	41,458	74	50,569
1996	3,646	56,642		1,698	61,986	7,780	30,209	0	37,989
1997	7,550	66,384		2,791	76,725	9,350	39,363	20	48,733
1998	7,242	25,413		878	33,533	9,455	16,806	48	26,309
1999	6,848	37,161		1,049	45,058	10,439	27,133	156	37,728
2000	5,891	4,735		275	10,901	9,935	3,783	322	14,040
2001	7,089	–		0	7,089	13,442	–	0	13,442
2002	5,603	11,089		494	17,186	8,954	11,440	34	20,428
2003	6,332	22,709		619	29,660	9,668	14,220	61	23,949
2004	5,880	28,403		722	35,005	9,724	24,145	70	33,939
2005	5,058	16,694		310	22,062	9,156	13,413	0	22,569
2006	5,122	23,748		817	29,687	8,039	19,843	0	27,882
2007	6,059	18,616		792	25,467	10,553	13,306	57	23,916
2008	6,163	2,530		0	8,693	8,826	2,111	0	10,937
2009	4,125	90		0	4,215	6,135	226	0	6,361
2010	5,856	5,744		0	11,600	8,676	4,153	0	12,829
2011	6,255	36		0	6,291	8,069	46	0	8,115
2012	4,313	0		0	4,313	6,881	0	0	6,881
2013	1,634 [d]	0		0	1,634	1,104 [d]	0	0	1,104
2008–2012 Average	5,342	1,680		0	7,022	7,717	1,307	0	9,025
2003–2012 Average	5,516	11,857		326	17,699	8,573	9,146	19	17,738

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	District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial	Total	Subsistence [a]	Commercial	Personal Use [c]	Test Fish Sales	Total
1993	6,592	1,501	8,093	28,513	88,080		1,572	118,165
1994	6,124	1,114	7,238	21,620	105,047		1,631	128,298
1995	5,419	–	5,419	20,416	117,564		2,152	140,132
1996	6,783	0	6,783	18,209	86,851		1,698	106,758
1997	6,311	–	6,311	23,211	105,747		2,811	131,769
1998	4,514	0	4,514	21,211	42,219		926	64,356
1999	7,715	538	8,253	25,002	64,832		1,205	91,039
2000	3,914	–	3,914	19,740	8,518		597	28,855
2001	6,361	–	6,361	26,892	–		0	26,892
2002	4,139	–	4,139	18,696	22,529		528	41,753
2003	5,002	–	5,002	21,002	36,929		680	58,611
2004	4,748	–	4,748	20,352	52,548		792	73,692
2005	5,131	–	5,131	19,345	30,107		310	49,762
2006	5,374	315	5,689	18,535	43,906		817	63,258
2007	4,651	190	4,841	21,263	32,112		849	54,224
2008	5,855	–	5,855	20,844	4,641		0	25,485
2009	2,924	–	2,924	13,184	316		0	13,500
2010	4,299	–	4,299	18,831	9,897		0	28,728
2011	4,134	–	4,134	18,458	82		0	18,540
2012	2,362	–	2,362	13,556	0		0	13,556
2013	444 [d]	–	444	3,182 [d]	0		0	3,182
2008–2012 Average	3,915		3,915	16,975	2,987		0	19,962
2003–2012 Average	4,448	253	4,499	18,537	21,054		345	39,936

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	District 4				District 5				
Year	Subsistence	Commercial	Commercial Related [e]	Total	Subsistence	Commercial	Commercial Related [e]	Personal Use [c]	Total
1993	10,936	1,349	228	12,513	21,365	3,008	0		24,373
1994	10,327	2,216	227	12,770	18,760	3,739	5		22,504
1995	9,474	262	237	9,973	16,866	3,242	0		20,108
1996	8,193	45	92	8,330	15,727	2,497	260		18,484
1997	12,006	1,450	7	13,463	18,049	3,678	0		21,727
1998	15,801	–	–	15,801	14,802	517	0		15,319
1999	11,238	1,437	0	12,675	14,330	2,604	0		16,934
2000	6,264	–	–	6,264	8,854	–	–		8,854
2001	10,152	–	–	10,152	13,566	–	–		13,566
2002	9,456	–	–	9,456	13,401	771	0		14,172
2003	12,771	562	0	13,333	19,191	1,134	0		20,325
2004	16,269	–	–	16,269	15,666	1,546	0		17,212
2005	13,964	–	–	13,964	17,424	1,469	0		18,893
2006	12,022	–	–	12,022	15,924	1,839	0		17,763
2007	11,831	0	0	11,831	19,165	1,241	0		20,406
2008	10,619	0	0	10,619	11,626	–	–		11,626
2009	9,514	0	0	9,514	8,917	–	–		8,917
2010	12,888	0	0	12,888	10,397	–	–		10,397
2011	9,893	–	–	9,893	10,493	–	–		10,493
2012	7,489	0	0	7,489	6,466	–	–		6,466
2013	2,893 [d]	0	0	2,893	4,463 [d]	–	–		4,463
2008–2012 Average	10,081	0	0	10,081	9,580				9,580
2003–2012 Average	11,726	94	0	11,782	13,527	1,446	0		14,250

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	District 6					
Year	Subsistence	Commercial	Commercial Related [e]	Personal Use [c]	Test Fish Sales	Total
1993	1,672	1,113	332	426	0	3,543
1994	2,370	2,135	471	0	0	4,976
1995	1,779	1,660	1,087	399	0	4,925
1996	1,177	278	169	215	0	1,839
1997	2,712	1,966	762	313	0	5,753
1998	1,919	882	81	357	0	3,239
1999	1,624	402	288	331	0	2,645
2000	983	–	–	75	0	1,058
2001	2,327	–	–	122	0	2,449
2002	1,067	836	230	126	0	2,259
2003	2,145	1,813	0	204	0	4,162
2004	1,388	2,057	0	201	0	3,646
2005	1,828	453	0	138	0	2,419
2006	1,229	84	0	89	0	1,402
2007	1,717	281	0	136	0	2,134
2008	605	0	0	126	0	731
2009	1,285	0	0	127	0	1,412
2010	1,143	0	0	162	0	1,305
2011	1,367	0	0	89	0	1,456
2012	698	0	0	71	0	769
2013	451 [d]	0	0	42	0	493
2008–2012 Average	1,020	0	0	115	0	1,135
2003–2012 Average	1,341	469	0	134	0	1,944

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	Upper Yukon Area Subtotals					
Year	Subsistence	Commercial	Commercial Related [c]	Personal Use [c]	Test Fish Sales	Total
1993	33,973	5,470	560	426	0	40,429
1994	31,457	8,090	703	0	0	40,250
1995	28,119	5,164	1,324	399	0	35,006
1996	25,097	2,820	521	215	0	28,653
1997	32,767	7,094	769	313	0	40,943
1998	32,522	1,399	81	357	0	34,359
1999	27,192	4,443	288	331	0	32,254
2000	16,101	0	0	75	0	16,176
2001	26,045	0	0	122	0	26,167
2002	23,924	1,607	230	126	0	25,887
2003	34,107	3,509	0	204	0	37,820
2004	33,323	3,603	0	201	0	37,127
2005	33,216	1,922	0	138	0	35,276
2006	29,175	1,923	0	89	0	31,187
2007	32,713	1,522	0	136	0	34,371
2008	22,850	0	0	126	0	22,976
2009	19,716	0	0	127	0	19,843
2010	24,428	0	0	162	0	24,590
2011	21,753	0	0	89	0	21,842
2012	14,653	0	0	71	0	14,724
2013	7,807 [d]	0	0	42	0	7,849
2008–2012 Average	20,680	0	0	115	0	20,795
2003–2012 Average	26,593	1,248	0	134	0	27,976

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	Alaska Yukon River Totals						
Year	Subsistence [a]	Commercial	Commercial Related [e]	Personal Use [c]	Test Fish Sales	Sport Fish [f]	Total
1993	62,486	93,550	560	426	1,572	1,695	160,289
1994	53,077	113,137	703	0	1,631	2,281	170,829
1995	48,535	122,728	1,324	399	2,152	2,525	177,663
1996	43,306	89,671	521	215	1,698	3,873	139,284
1997	55,978	112,841	769	313	2,811	2,174	174,886
1998	53,733	43,618	81	357	926	654	99,369
1999	52,194	69,275	288	331	1,205	1,023	124,316
2000	35,841	8,518	0	75	597	276	45,307
2001	52,937	0	0	122	0	679	53,738
2002	42,620	24,136	230	126	528	486	68,126
2003	55,109	40,438	0	204	680	2,719	99,150
2004	53,675	56,151	0	201	792	1,513	112,332
2005	52,561	32,029	0	138	310	483	85,521
2006	47,710	45,829	0	89	817	739	95,184
2007	53,976	33,634	0	136	849	960	89,555
2008	43,694	4,641	0	126	0	409	48,870
2009	32,900	316	0	127	0	863	34,206
2010	43,259	9,897	0	162	0	474	53,792
2011	40,211	82	0	89	0	474	40,856
2012	28,209	0	0	71	0	345	28,625
2013	10,989 [d]	0	0	42	0	[g]	11,031
2008–2012 Average	37,655	2,987	0	115	0	513	41,270
2003–2012 Average	45,130	22,302	0	134	345	898	68,809

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	Canada: Yukon Territories Totals							
	Mainstem Yukon							
	Non–Commercial						Porcupine	Total
Year	Domestic	Aboriginal	Sport	Test Fish [h]	Commercial	Subtotal	Aboriginal	Canadian
1993	243	5,576	300		10,350	16,469	142	16,611
1994	373	8,069	300		12,028	20,770	428	21,198
1995	300	7,942	700		11,146	20,088	796	20,884
1996	141	8,451	790		10,164	19,546	66	19,612
1997	288	8,888	1,230		5,311	15,717	811	16,528
1998	24	4,687	–	737	390	5,838	99	5,937
1999	213	8,804	177	–	3,160	12,354	114	12,468
2000	–	4,068	–	761	–	4,829	50	4,879
2001	89	7,421	146	767	1,351	9,774	370	10,144
2002	59	7,139	128	1,036	708	9,070	188	9,258
2003	115	6,121	275	263	2,672	9,446	173	9,619
2004	88	6,483	423	167	3,785	10,946	292	11,238
2005	99	6,376	436	–	4,066	10,977	394	11,371
2006	63	5,757	606	–	2,332	8,758	314	9,072
2007	–	4,175	2	617	–	4,794	300	5,094
2008	–	2,885	0	513	1	3,399	314	3,713
2009	17	3,791	125	–	364	4,297	461	4,758
2010	–	2,455	1	–	–	2,456	250	2,706
2011	–	4,550	40	–	4	4,594	290	4,884
2012	–	2,000	0	–	0	2,000	200	2,200
2013	0	1,902	0	–	2	1,904	242	2,146
2008–2012 Average		3,136	33		92	3,349	303	3,652
2003–2012 Average		4,459	191	390	1,653	6,167	299	6,466

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	Yukon River Drainage (Alaska/Canada) Totals							
Year	Subsistence [a,i]	Commercial	Commercial Related [e]	Personal Use [c]	Alaska Test Fish	Sport Fish	Total
1993	68,447	103,900	560	426	1,572	1,995	176,900
1994	61,947	125,165	703	0	1,631	2,581	192,027
1995	57,573	133,874	1,324	399	2,152	3,225	198,547
1996	51,964	99,835	521	215	1,698	4,663	158,896
1997	65,965	118,152	769	313	2,811	3,404	191,414
1998	59,280	44,008	81	357	926	654	105,306
1999	61,325	72,435	288	331	1,205	1,200	136,784
2000	40,720	8,518	0	75	597	276	50,186
2001	61,584	1,351	0	122	0	825	63,882
2002	51,042	24,844	230	126	528	614	77,384
2003	61,781	43,110	0	204	680	2,994	108,769
2004	60,705	59,936	0	201	792	1,936	123,570
2005	59,430	36,095	0	138	310	919	96,892
2006	53,844	48,161	0	89	817	1,345	104,256
2007	59,068	33,634	0	136	849	962	94,649
2008	47,406	4,642	0	126	0	409	52,583
2009	37,169	680	0	127	0	988	38,964
2010	45,964	9,897	0	162	0	475	56,498
2011	45,051	86	0	89	0	514	45,740
2012	30,409	0	0	71	0	345	30,825
2013	13,133 [d]	2	0	42	0	0	13,177
2008–2012 Average	41,200	3,061	0	115	0	546	44,922
2003–2012 Average	50,083	23,624	0	134	345	1,089	75,275

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	Total Alaska Yukon Area		
Year	Coastal District	Alaska Total	Yukon Area Total
1993	1,429	160,289	161,718
1994	825	170,829	171,654
1995	2,085	177,663	179,748
1996	2,365	139,284	141,649
1997	1,139	174,886	176,025
1998	391	99,369	99,760
1999	1,111	124,316	125,427
2000	563	45,307	45,870
2001	2,882	53,738	56,620
2002	1,122	68,126	69,248
2003	1,850	99,150	101,000
2004	2,038	112,332	114,370
2005	848	85,521	86,369
2006	883	95,184	96,067
2007	1,198	89,555	90,753
2008	1,492	48,870	50,362
2009	905	34,206	35,111
2010	1,300	53,792	55,092
2011	769	40,856	41,625
2012	2,104	28,625	30,729
2013	1,542 [d]	11,031	12,573
2008–2012 Average	1,314	41,270	42,584
2003–2012 Average	1,339	68,809	70,148

Note: En dash indicates no commercial fish activity occurred.

[a] Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Includes estimates of illegal sales.

[c] Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.

[d] Subsistence harvest information is considered preliminary.

[e] Commercial related refers to the estimated harvest of female Chinook salmon to produce roe sold.

[f] Estimated sport fish harvest for the Alaska portion of the Yukon River drainage. The majority of sport fish harvest occurs in the Tanana River drainage (District 6).

[g] Sport fish harvest for the U.S. portion of the Yukon Area are not currently available.

[h] 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.

[i] Includes Alaska subsistence harvest and Canadian domestic, test fish, and aboriginal harvests.

Appendix A14.–Summer chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1993–2013.

	District 1					District 2			
Year	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales	Total	Subsistence	Commercial	Test Fish Sales	Total
1993	33,986	73,659		1,379	109,024	25,297	19,332	490	45,119
1994	32,145	42,332		2,769	77,246	22,907	12,869	443	36,219
1995	34,990	142,266		5,672	182,928	27,190	83,817	401	111,408
1996	27,289	92,506		7,309	127,104	28,426	30,727	0	59,153
1997	27,248	59,915		2,557	89,720	26,971	18,242	33	45,246
1998	26,888	21,270		2,935	51,093	26,280	6,848	84	33,212
1999	20,169	16,181		799	37,149	24,137	11,702	37	35,876
2000	24,079	3,315		561	27,955	25,331	3,309	87	28,727
2001	22,771	–		0	22,771	26,303	–	0	26,303
2002	24,107	6,327		164	30,598	23,554	4,027	54	27,635
2003	19,701	3,579		37	23,317	16,773	2,583	82	19,438
2004	20,620	13,993		217	34,830	25,931	5,782	0	31,713
2005	27,695	23,965		134	51,794	24,277	8,313	0	32,590
2006	27,881	21,816		456	50,153	31,655	25,543	0	57,198
2007	24,209	106,790		10	131,009	23,507	69,432	0	92,939
2008	22,767	67,459		80	90,306	24,291	58,139	0	82,430
2009	23,998	71,335		0	95,333	21,089	86,571	0	107,660
2010	25,172	102,267		0	127,439	23,738	80,948	0	104,686
2011	28,590	163,439		0	192,029	24,692	103,071	0	127,763
2012	35,370	150,800		1,274	187,444	32,566	57,049	1,138	90,753
2013	28,516 [c]	207,871		2,304	238,691	32,499 [c]	171,272	0	203,771
2008–2012 Average	27,179	111,060		271	138,510	25,275	77,156	228	102,658
2003–2012 Average	25,600	72,544		221	98,365	24,852	49,743	122	74,717

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	District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial	Total	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales	Total
1993	7,538	463	8,001	66,821	93,454		1,869	162,144
1994	8,492	35	8,527	63,544	55,236		3,212	121,992
1995	12,143	–	12,143	74,323	226,083		6,073	306,479
1996	11,368	1,534	12,902	67,083	124,767		7,309	199,159
1997	10,316	–	10,316	64,535	78,157		2,590	145,282
1998	6,472	0	6,472	59,640	28,118		3,019	90,777
1999	5,748	0	5,748	50,054	27,883		836	78,773
2000	3,687	–	3,687	53,097	6,624		648	60,369
2001	1,309	–	1,309	50,383	–		0	50,383
2002	2,506	–	2,506	50,167	10,354		218	60,739
2003	5,858	–	5,858	42,332	6,162		119	48,613
2004	2,958	–	2,958	49,509	19,775		217	69,501
2005	5,766	–	5,766	57,738	32,278		134	90,150
2006	3,534	116	3,650	63,070	47,475		456	111,001
2007	2,056	1	2,057	49,772	176,223		10	226,005
2008	2,971	–	2,971	50,029	125,598		80	175,707
2009	1,146	–	1,146	46,233	157,906		0	204,139
2010	1,341	–	1,341	50,251	183,215		0	233,466
2011	2,733	–	2,733	56,015	266,510		0	322,525
2012	8,690	–	8,690	76,626	207,849		2,412	286,887
2013	4,744 [c]	–	4,744	65,759 [c]	379,143		2,304	447,206
2008–2012 Average	3,376		3,376	55,831	188,216		498	244,545
2003–2012 Average	3,705	59	3,717	54,158	122,299		343	176,799

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	District 4				
Year	Subsistence	Commercial	Commercial Related [d]	Anvik River [e]	Total
1993	20,076	27	42,930		63,033
1994	27,504	3,611	145,423	22,573	199,111
1995	25,084	8,873	490,970	54,744	579,671
1996	16,425	0	425,607	84,633	526,665
1997	24,230	2,062	109,061	13,548	148,901
1998	18,046	–	–	–	18,046
1999	15,339	1,267	0	–	16,606
2000	7,046	–	–	–	7,046
2001	4,588	–	–	–	4,588
2002	15,971	–	–	–	15,971
2003	17,513	62	0	–	17,575
2004	14,959	–	–	–	14,959
2005	12,350	–	–	–	12,350
2006	14,997	–	–	–	–
2007	16,256	7,304	0	–	23,560
2008	13,517	23,746	0	–	37,263
2009	14,958	4,589	0	–	19,547
2010	11,720	44,207	0	–	55,927
2011	13,166	–	–	–	13,166
2012	21,555	108,222	0	–	129,777
2013	15,854 [c]	100,507	0	–	116,361
2008–2012 Average	14,983	45,191	0		51,136
2003–2012 Average	15,099	31,355	0		36,014

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	District 5				
Year	Subsistence	Commercial	Commercial Related [c]	Personal Use [d]	Total
1993	11,086	0	0		11,086
1994	11,830	229	235		12,294
1995	7,655	107	209		7,971
1996	11,509	0	336		11,845
1997	4,520	137	0		4,657
1998	2,314	96	14		2,424
1999	2,276	115	0		2,391
2000	3,641	–	–		3,641
2001	2,856	–	–		2,856
2002	5,610	6	0		5,616
2003	5,545	0	0		5,545
2004	3,411	25	0		3,436
2005	6,800	0	0		6,800
2006	11,845	20	0		11,865
2007	8,846	0	0		8,846
2008	3,537	–	–		3,537
2009	5,298	–	–		5,298
2010	3,555	–	–		3,555
2011	7,709	–	–		7,709
2012	4,892	–	–		4,892
2013	11,253 [c]	–	–		11,253
2008–2012 Average	4,998				4,998
2003–2012 Average	6,144	9	0		6,148

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	District 6					
Year	Subsistence	Commercial	Commercial Related [d]	Personal Use [b]	Test Fish Sales	Total
1993	6,793	3,041	664	674	0	11,172
1994	7,026	21,208	10,226	–	0	38,460
1995	11,661	24,711	12,717	780	0	49,869
1996	7,486	22,360	24,530	905	0	55,281
1997	3,824	14,886	10,401	391	0	29,502
1998	6,004	397	173	84	0	6,658
1999	2,654	124	24	382	0	3,184
2000	1,111	–	–	30	0	1,141
2001	412	–	–	146	0	558
2002	512	3,198	19	175	0	3,904
2003	2,914	4,461	0	148	0	7,523
2004	1,793	6,610	0	231	0	8,634
2005	2,014	8,986	0	152	0	11,152
2006	1,010	44,621	0	262	0	45,893
2007	1,896	14,674	0	184	0	16,754
2008	1,311	1,842	0	138	0	3,291
2009	1,253	7,777	0	308	0	9,338
2010	422	5,466	0	319	0	6,207
2011	825	8,651	0	439	0	9,915
2012	999	3,504	0	321	0	4,824
2013	1,304 [c]	5,937	0	138	0	7,379
2008–2012 Average	962	5,448	0	305	0	6,715
2003–2012 Average	1,444	10,659	0	250	0	12,353

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	Upper Yukon Area Subtotals					
Year	Subsistence	Commercial	Commercial Related [d]	Personal Use [b]	Test Fish Sales	Total
1993	37,955	3,068	43,594	674	0	85,291
1994	46,360	25,048	178,457	0	0	249,865
1995	44,400	33,691	558,640	780	0	637,511
1996	35,420	22,360	535,106	905	0	593,791
1997	32,574	17,085	133,010	391	0	183,060
1998	26,364	493	187	84	0	27,128
1999	20,269	1,506	24	382	0	22,181
2000	11,798	0	0	30	0	11,828
2001	7,856	–	–	146	0	8,002
2002	22,093	3,204	19	175	0	25,491
2003	25,972	4,523	0	148	0	30,643
2004	20,163	6,635	0	231	0	27,029
2005	21,164	8,986	0	152	0	30,302
2006	27,852	44,641	0	262	0	57,758
2007	26,998	21,978	0	184	0	49,160
2008	18,365	25,588	0	138	0	44,091
2009	21,509	12,366	0	308	0	34,183
2010	15,697	49,673	0	319	0	65,689
2011	21,700	8,651	0	439	0	30,790
2012	27,446	111,726	0	321	0	139,493
2013	28,411 [c]	106,444	0	138	0	134,993
2008–2012 Average	20,943	41,601	0	305	0	62,849
2003–2012 Average	22,687	29,477	0	250	0	50,914

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	Alaska Yukon River Totals							Total Alaska Yukon Area	
Year	Subsistence [a]	Commercial	Commercial Related [d]	Personal Use [b]	Test Fish Sales	Sport Fish [f]	Total	Coastal District	Yukon Area Total
1993	104,776	96,522	43,594	674	1,869	564	247,999	20,798	268,797
1994	109,904	80,284	178,457	0	3,212	350	372,207	14,903	387,110
1995	118,723	259,774	558,640	780	6,073	1,174	945,164	17,360	962,524
1996	102,503	147,127	535,106	905	7,309	1,946	794,896	22,235	817,131
1997	97,109	95,242	133,010	391	2,590	662	329,004	15,711	344,715
1998	86,004	28,611	187	84	3,019	421	118,326	1,362	119,688
1999	70,323	29,389	24	382	836	555	101,509	13,461	114,970
2000	64,895	6,624	0	30	648	161	72,358	13,177	85,535
2001	58,239	–	0	146	0	82	58,467	13,916	72,383
2002	72,260	13,558	19	175	218	384	86,614	14,796	101,410
2003	68,304	10,685	0	148	119	1,638	80,894	13,968	94,862
2004	69,672	26,410	0	231	217	203	96,733	8,262	104,995
2005	78,902	41,264	0	152	134	435	120,887	14,357	135,244
2006	90,922	92,116	0	262	456	583	184,339	24,171	208,510
2007	76,770	198,201	0	184	10	245	275,410	16,121	291,531
2008	68,394	151,186	0	138	80	371	220,169	18,120	238,289
2009	67,742	170,272	0	308	0	174	238,496	12,797	251,293
2010	65,948	232,888	0	319	0	1,183	300,338	22,425	322,763
2011	77,715	275,161	0	439	0	294	353,609	18,305	371,914
2012	104,072	319,575	0	321	2,412	271	426,651	23,241	449,892
2013	94,170 [c]	485,587	0	138	2,304	[g]	582,199	23,135 [c]	605,334
2008–2012 Average	76,774	229,816	0	305	498	459	307,853	18,978	326,830
2003–2012 Average	76,844	151,776	0	250	343	540	229,753	17,177	246,929

Note: En dash indicates no commercial fishing activity occurred.

[a] Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.

[c] Subsistence harvest information is considered preliminary.

[d] Commercial related refers to the estimated number of females and incidental males harvested to produce roe sold, excluding the Anvik River. Beginning in 2006, the numbers of females harvested are included in the total commercial harvest. Beginning in 2006, the numbers of females harvested are included in the total commercial harvest.

[e] 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.

[f] Estimated sport fish harvest for all chum salmon (assumes majority of chum salmon caught during summer season) in the Alaska portion of the drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

[g] Sport fish harvest for the U.S. portion of the Yukon Area was not available at the time of writing.

Appendix A15.–Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1993–2013.

	District 1					District 2			
Year	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales [c]	Total	Subsistence	Commercial	Test Fish Sales [c]	Total
1993	7,770	–		–	7,770	3,094	–	–	3,094
1994	4,887	–		–	4,887	4,151	–	–	4,151
1995	4,698	79,378		1,121	85,197	3,317	90,831	0	94,148
1996	4,147	33,629		1,717	39,493	5,287	29,651	0	34,938
1997	3,132	27,483		867	31,482	4,680	24,326	0	29,006
1998	3,163	–		–	3,163	4,482	–	–	4,482
1999	6,502	9,987		1,149	17,638	4,594	9,703	22	14,319
2000	5,294	–		–	5,294	1,425	–	–	1,425
2001	3,437	–		–	3,437	3,256	–	–	3,256
2002	1,881	–		–	1,881	1,618	–	–	1,618
2003	2,139	5,586		0	7,725	2,901	–	–	2,901
2004	2,067	660		0	2,727	2,421	–	–	2,421
2005	2,889	130,525		87	133,501	3,257	–	–	3,257
2006	3,902	101,254		0	105,156	4,015	39,905	0	43,920
2007	4,390	38,852		0	43,242	3,472	35,826	0	39,298
2008	2,823	67,704		0	70,527	3,522	41,270	0	44,792
2009	1,917	11,911		0	13,828	1,563	12,072	0	13,635
2010	3,202	545		0	3,747	1,419	270	0	1,689
2011	3,434	127,735		0	131,169	2,578	100,731	0	103,309
2012	7,622	139,842		74	147,538	3,332	129,284	0	132,616
2013	3,673 [d]	106,588		121	110,382	4,878 [d]	106,274	0	111,152
2008–2012 Average	3,800	69,547		15	73,362	2,483	56,725	0	59,208
2003–2012 Average	3,439	62,461		16	65,916	2,848	51,337	0	38,784

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	District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial	Total	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales [c]	Total
1993	1,449	–	1,449	12,313	–		–	12,313
1994	862	–	862	9,900	–		–	9,900
1995	1,672	–	1,672	9,687	170,209		1,121	181,017
1996	2,706	–	2,706	12,140	63,280		1,717	77,137
1997	787	–	787	8,599	51,809		867	61,275
1998	1,561	–	1,561	9,206	–		–	9,206
1999	415	–	415	11,511	19,690		1,171	32,372
2000	598	–	598	7,317	–		–	7,317
2001	700	–	700	7,393	–		–	7,393
2002	164	–	164	3,663	–		–	3,663
2003	738	–	738	5,778	5,586		0	11,364
2004	298	–	298	4,786	660		0	5,446
2005	1,304	–	1,304	7,450	130,525		87	138,062
2006	480	–	480	8,397	141,159		0	149,556
2007	925	–	925	8,787	74,678		0	83,465
2008	1,821	–	1,821	8,166	108,974		0	117,140
2009	937	–	937	4,417	23,983		0	28,400
2010	1,325	–	1,325	5,946	815		0	6,761
2011	354	–	354	6,366	228,466		0	234,832
2012	637	–	637	11,591	269,126		74	280,791
2013	1,713 [d]	–	1,713	10,264	212,862		121	223,247
2008–2012 Average	1,015		1,015	7,297	126,273		15	133,585
2003–2012 Average	882		882	7,168	98,397		16	105,582

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	District 4				District 5				
Year	Subsistence	Commercial	Commercial Related [e]	Total	Subsistence	Commercial	Commercial Related [e]	Personal Use [b]	Total
1993	10,832	–	–	10,832	43,764	–	–		43,764
1994	13,325	–	–	13,325	66,396	3,630	0		70,026
1995	14,057	2,924	5,807	22,788	57,594	9,778	20,255		87,627
1996	16,786	2,918	0	19,704	63,473	11,878	9,980		85,331
1997	11,734	2,458	0	14,192	55,258	2,446	1,474		59,178
1998	7,898	–	–	7,898	31,393	–	–		31,393
1999	9,174	681	0	9,855	53,580	–	–		53,580
2000	1,759	–	–	1,759	9,920	–	–		9,920
2001	3,352	–	–	3,352	20,873	–	–		20,873
2002	1,549	–	–	1,549	10,976	–	–		10,976
2003	9,750	1,315	0	11,065	28,270	–	–		28,270
2004	7,797	–	–	7,797	40,670	0	0		40,670
2005	9,405	–	–	9,405	51,663	0	0		51,663
2006	6,335	–	–	6,335	52,158	10,030	0		62,188
2007	8,576	–	–	8,576	53,731	427	0		54,158
2008	7,412	0	0	7,412	57,258	4,556	0		61,814
2009	7,382	–	–	7,382	38,083	–	–		38,083
2010	6,788	–	–	6,788	44,334	–	–		44,334
2011	7,260	–	–	7,260	51,885	1,246	0		53,131
2012	18,055	811	0	18,866	54,340	2,419	0		56,759
2013	16,013 [d]	–	–	16,013	75,329 [f]	1,041	0		76,370
2008–2012 Average	9,379	406	0	9,542	49,180	2,740	0		50,824
2003–2012 Average	8,876	709	0	9,089	47,239	2,668	0		49,107

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Year	District 6 Subsistence [e]	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Total
1993	9,853	–	–	163		10,016
1994	33,597	1	4,368	0		37,966
1995	49,168	67,855	6,262	863		124,148
1996	36,467	10,266	7,308	356		54,397
1997	19,550	–	–	284		19,834
1998	14,370	–	–	2		14,372
1999	15,471	–	–	261		15,732
2000	310	–	–	1		311
2001	3,526	–	–	10		3,536
2002	3,202	–	–	3		3,205
2003	12,986	4,095	0	394		17,475
2004	8,953	3,450	0	230		12,633
2005	22,946	49,637	0	133		72,716
2006	16,925	23,353	0	333		40,611
2007	29,893	15,572	0	173		45,638
2008	16,135	5,735	0	181		22,051
2009	15,099	1,286	607	78		17,070
2010	11,391	1,735	0	3,209		16,335
2011	14,376	9,267	0	347		23,990
2012	15,302	17,336	0	410		33,048
2013	12,278 [d]	24,148	0	383		36,809
2008–2012 Average	14,461	7,072	121	845		22,499
2003–2012 Average	16,401	13,147	61	549		30,157

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	Upper Yukon Area Subtotals					
Year	Subsistence [e]	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Total
1993	64,449	–	–	163		64,612
1994	113,318	3,631	4,368	0		121,317
1995	120,819	80,557	32,324	863		234,563
1996	116,726	25,062	17,288	356		159,432
1997	86,542	4,904	1,474	284		93,204
1998	53,661	–	–	2		53,663
1999	78,225	681	0	261		79,167
2000	11,989	–	–	1		11,990
2001	27,751	–	–	10		27,761
2002	15,727	–	–	3		15,730
2003	51,006	5,410	0	394		56,810
2004	57,420	3,450	0	230		61,100
2005	84,014	49,637	0	133		133,784
2006	75,418	33,383	0	333		109,134
2007	92,200	15,999	0	173		108,372
2008	80,805	10,291	0	181		91,277
2009	60,564	1,286	607	78		62,535
2010	62,513	1,735	0	3,209		67,457
2011	73,521	10,513	0	347		84,381
2012	87,697	20,566	0	410		108,673
2013	103,620 [d]	25,189	0	383		129,192
2008–2012 Average	73,020	8,878	121	845		82,865
2003–2012 Average	72,516	15,227	61	549		88,352

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Year	Alaska Yukon River Totals					
	Subsistence [a,b]	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Total
1993	76,762	–	–	163	–	76,925
1994	123,218	3,631	4,368	0	0	131,217
1995	130,506	250,766	32,324	863	1,121	415,580
1996	128,866	88,342	17,288	356	1,717	236,569
1997	95,141	56,713	1,474	284	867	154,479
1998	62,867	–	–	2	–	62,869
1999	89,736	20,371	0	261	1,171	111,539
2000	19,306	–	–	1	–	19,307
2001	35,144	–	–	10	–	35,154
2002	19,390	–	–	3	–	19,393
2003	56,784	10,996	0	394	0	68,174
2004	62,206	4,110	0	230	0	66,546
2005	91,464	180,162	0	133	87	271,846
2006	83,815	174,542	0	333	0	258,690
2007	100,987	90,677	0	173	0	191,837
2008	88,971	119,265	0	181	0	208,417
2009	64,981	25,269	607	78	0	90,935
2010	68,459	2,550	0	3,209	0	74,218
2011	79,887	238,979	0	347	0	319,213
2012	99,288	289,692	0	410	74	389,464
2013	113,884 [d]	238,051	0	383	121	352,439
2008–2012 Average	80,317	135,151	121	845	15	216,449
2003–2012 Average	79,684	113,624	61	549	16	193,934

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	Canada: Yukon Area Totals					
	Mainstem Yukon River				Porcupine	
Year	Domestic	Aboriginal	Commercial	Subtotal	Aboriginal	Total
1993	0	4,660	7,762	12,422	1,668	14,090
1994	0	5,319	30,035	35,354	2,654	38,008
1995	0	1,099	39,012	40,111	5,489	45,600
1996	0	1,260	20,069	21,329	3,025	24,354
1997	0	1,218	8,068	9,286	6,294	15,580
1998	0	1,745	0	1,745	6,159	7,904
1999	0	3,234	10,402	13,636	6,000	19,636
2000	0	2,927	1,319	4,246	5,000	9,246
2001	3	3,077	2,198	5,278	4,594	9,872
2002	0	3,109	3,065	6,174	1,860	8,034
2003	0	1,943	9,030	10,973	382	11,355
2004	0	2,180	7,365	9,545	205	9,750
2005	13	2,035	11,931	13,979	4,593	18,572
2006	0	2,521	4,096	6,617	5,179	11,796
2007	0	2,221	7,109	9,330	4,500	13,830
2008	0	2,068	4,062	6,130	3,436	9,566
2009	0	820	293	1,113	898	2,011
2010	0	1,523	2,186	3,709	2,078	5,787
2011	0	1,000	5,312	6,312	1,851	8,163
2012	0	700	3,205	3,905	3,118	7,023
2013	18	500	3,369	3,887	2,283	6,170
2008–2012 Average	0	1,222	3,012	4,234	2,276	6,510
2003–2012 Average	1	1,701	5,459	7,161	2,624	9,785

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Year	Yukon River Drainage (Alaska/Canada) Totals					
	Subsistence [a,f]	Commercial	Commercial Related [e]	Personal Use [b]	Alaska Test Fish [c]	Total
1993	83,090	7,762	0	163	–	91,015
1994	131,191	33,666	4,368	0	0	169,225
1995	137,094	289,778	32,324	863	1,121	461,180
1996	133,151	108,411	17,288	356	1,717	260,923
1997	102,653	64,781	1,474	284	867	170,059
1998	70,771	0	0	2	–	70,773
1999	98,970	30,773	0	261	1,171	131,175
2000	27,233	1,319	0	1	–	28,553
2001	42,818	2,198	0	10	–	45,026
2002	24,359	3,065	0	3	–	27,427
2003	59,109	20,026	0	394	0	79,529
2004	64,591	11,475	0	230	0	76,296
2005	98,105	192,093	0	133	87	290,418
2006	91,515	178,638	0	333	0	270,486
2007	107,708	97,786	0	173	0	205,667
2008	94,475	123,327	0	181	0	217,983
2009	66,699	25,562	607	78	0	92,946
2010	72,060	4,736	0	3,209	0	80,005
2011	80,887	244,291	0	347	0	325,525
2012	99,988	292,897	0	410	74	393,369
2013	116,685 [d]	241,420	0	383	121	358,609
2008–2012 Average	82,822	138,163	121	845	15	221,966
2003–2012 Average	83,514	119,083	61	549	16	203,222

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Year	Total Alaska Yukon Area		
	Coastal District	Alaska Total	Yukon Area Total
1993	120	76,925	77,045
1994	347	131,217	131,564
1995	354	415,580	415,934
1996	392	236,569	236,961
1997	0	154,479	154,479
1998	34	62,869	62,903
1999	204	111,539	111,743
2000	89	19,307	19,396
2001	559	35,154	35,713
2002	284	19,393	19,677
2003	146	68,174	68,320
2004	320	66,546	66,866
2005	70	271,846	271,916
2006	187	258,690	258,877
2007	234	191,837	192,071
2008	386	208,417	208,803
2009	158	90,935	91,093
2010	186	74,218	74,404
2011	315	319,213	319,528
2012	11	389,464	389,475
2013	149 [d]	352,439	352,588
2008–2012 Average	211	216,449	216,661
2003–2012 Average	201	193,934	194,135

Note: En dash indicates no commercial fishing activity occurred.

[a] Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.

[c] The number of salmon sold by ADF&G test fisheries.

[d] Subsistence harvest information is considered preliminary.

[e] Estimated number of females harvested to produce roe sold.

[f] Includes Alaska Yukon River subsistence and Canadian domestic and aboriginal harvests.

Appendix A16.–Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1993–2013.

	District 1					District 2			
Year	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales [c]	Total	Subsistence	Commercial	Test Fish Sales [c]	Total
1993	2,343	–		–	2,343	1,695	–	–	1,695
1994	3,272	–		–	3,272	3,881	–	–	3,881
1995	2,251	21,625		193	24,069	2,142	18,488	0	20,630
1996	2,445	27,705		1,728	31,878	3,475	20,974	0	24,449
1997	1,823	21,450		498	23,771	2,424	13,056	0	15,480
1998	2,171	–		–	2,171	2,297	1	0	2,298
1999	1,730	855		236	2,821	2,793	746	0	3,539
2000	1,067	–		–	1,067	2,351	–	–	2,351
2001	1,274	–		–	1,274	1,440	–	–	1,440
2002	1,295	–		–	1,295	1,233	–	–	1,233
2003	1,260	9,757		0	11,017	1,586	–	–	1,586
2004	1,175	1,583		0	2,758	1,500	–	–	1,500
2005	976	36,533		0	37,509	1,110	–	–	1,110
2006	1,177	39,323		0	40,500	2,459	14,482	0	16,941
2007	2,265	21,720		0	23,985	2,347	21,487	0	23,834
2008	1,211	13,946		0	15,157	1,997	19,246	0	21,243
2009	847	5,994		0	6,841	1,057	1,582	0	2,639
2010	1,122	1,027		0	2,149	557	1,023	0	1,580
2011	1,127	45,335		0	46,462	823	24,184	0	25,007
2012	3,350	39,757		39	43,146	1,346	29,063	0	30,409
2013	1,224 [d]	27,306		1	28,531	1,080 [d]	31,458	0	32,538
2008–2012 Average	1,531	21,212		8	22,751	1,156	15,020	0	16,176
2003–2012 Average	1,451	21,498		4	22,952	1,478	15,867	0	12,585

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	District 3			Lower Yukon Area Subtotals				
Year	Subsistence	Commercial	Total	Subsistence [a]	Commercial	Personal Use [b]	Test Fish Sales [c]	Total
1993	279	–	279	4,317	–		–	4,317
1994	363	–	363	7,516	–		–	7,516
1995	891	–	891	5,284	40,113		193	45,590
1996	444	–	444	6,364	48,679		1,728	56,771
1997	766	–	766	5,013	34,506		498	40,017
1998	400	–	400	4,868	1		0	4,869
1999	610	–	610	5,133	1,601		236	6,970
2000	94	–	94	3,512	–		–	3,512
2001	0	–	0	2,714	–		–	2,714
2002	115	–	115	2,643	–		–	2,643
2003	711	–	711	3,557	9,757		0	13,314
2004	284	–	284	2,959	1,583		0	4,542
2005	217	–	217	2,303	36,533		0	38,836
2006	83	–	83	3,719	53,805		0	57,524
2007	739	–	739	5,351	43,207		0	48,558
2008	410	–	410	3,618	33,192		0	36,810
2009	321	–	321	2,225	7,576		0	9,801
2010	353	–	353	2,032	2,050		0	4,082
2011	36	–	36	1,986	69,519		0	71,505
2012	556	–	556	5,252	68,820		39	74,111
2013	371 [d]	–	371	2,675 [d]	58,764		1	61,440
2008–2012 Average	335		335	3,023	36,231		8	39,262
2003–2012 Average	371		371	3,300	32,604		4	35,908

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	District 4				District 5				
			Commercial				Commercial	Personal	
Year	Subsistence	Commercial	Related [e]	Total	Subsistence	Commercial	Related [e]	Use [b]	Total
1993	1,167	–	–	1,167	5,984	–	–		5,984
1994	3,515	–	–	3,515	4,174	–	–		4,174
1995	1,934	–	–	1,934	2,205	–	–		2,205
1996	2,467	161	0	2,628	6,588	–	–		6,588
1997	3,754	814	0	4,568	3,583	–	–		3,583
1998	2,593	–	–	2,593	2,839	–	–		2,839
1999	2,049	–	–	2,049	4,241	–	–		4,241
2000	1,068	–	–	1,068	4,987	–	–		4,987
2001	2,266	–	–	2,266	7,674	–	–		7,674
2002	1,023	–	–	1,023	2,076	–	–		2,076
2003	5,773	367	0	6,140	3,887	–	–		3,887
2004	4,766	–	–	4,766	1,423	–	–		1,423
2005	2,971	–	–	2,971	2,159	–	–		2,159
2006	1,302	–	–	1,302	3,779	–	–		3,779
2007	2,952	–	–	2,952	3,366	–	–		3,366
2008	1,490	0	0	1,490	3,203	91	–		3,294
2009	3,986	–	–	3,986	2,498	–	–		2,498
2010	1,730	–	–	1,730	3,604	–	–		3,604
2011	2,072	–	–	2,072	1,389	–	–		1,389
2012	3,353	0	0	3,353	3,092	634	0		3,726
2013	5,221 [d]	–	–	5,221	1,298 [d]	0	0		1,298
2008–2012 Average	2,526	0	0	2,526	2,757	363			2,902
2003–2012 Average	3,040	122	0	3,076	2,840	363			2,913

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	District 6					
Year	Subsistence	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Total
1993	4,304	–	–	0		4,304
1994	26,489	120	4,331	–		30,940
1995	18,802	5,826	1,074	417		26,119
1996	14,893	3,803	3,339	198		22,233
1997	11,595	–	–	350		11,945
1998	7,472	–	–	9		7,481
1999	9,394	–	–	147		9,541
2000	5,150	–	–	0		5,150
2001	8,966	–	–	34		9,000
2002	9,499	–	–	20		9,519
2003	10,363	15,119	0	549		26,031
2004	11,584	18,649	0	233		30,466
2005	19,538	21,778	0	107		41,423
2006	10,571	11,137	0	279		21,987
2007	7,845	1,368	0	135		9,348
2008	8,428	2,408	0	50		10,886
2009	7,051	457	285	70		7,863
2010	5,555	1,700	0	1,062		8,317
2011	6,842	6,784	0	232		13,858
2012	9,540	5,335	0	100		14,975
2013	5,409 [d]	7,439	0	109		12,957
2008–2012 Average	7,483	3,337	57	303		11,180
2003–2012 Average	9,732	8,474	29	282		18,515

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	Upper Yukon Area Subtotals					
Year	Subsistence	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Total
1993	11,455	–	–	0		11,455
1994	34,178	120	4,331	–		38,629
1995	22,941	5,826	1,074	417		30,258
1996	23,948	3,964	3,339	198		31,449
1997	18,932	814	0	350		20,096
1998	12,904	–	–	9		12,913
1999	15,684	–	–	147		15,831
2000	11,205	–	–	0		11,205
2001	18,906	–	–	34		18,940
2002	12,598	–	–	20		12,618
2003	20,023	15,486	0	549		36,058
2004	17,773	18,649	0	233		36,655
2005	24,668	21,778	0	107		46,553
2006	15,652	11,137	0	279		27,068
2007	14,163	1,368	0	135		15,666
2008	13,121	2,499	0	50		15,670
2009	13,535	457	285	70		14,347
2010	10,889	1,700	0	1,062		13,651
2011	10,303	6,784	0	232		17,319
2012	15,985	5,969	0	100		22,054
2013	11,928 [d]	7,439	0	109		19,476
2008–2012 Average	12,767	3,482	57	303		16,608
2003–2012 Average	15,611	8,583	29	282		24,504

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	Alaska Yukon River Totals						
Year	Subsistence [a]	Commercial	Commercial Related [e]	Personal Use [b]	Test Fish Sales [c]	Sport Fish [f]	Total
1993	15,772	–	–	0	–	897	16,669
1994	41,694	120	4,331	0	0	2,174	48,319
1995	28,225	45,939	1,074	417	193	1,278	77,126
1996	30,312	52,643	3,339	198	1,728	1,588	89,808
1997	23,945	35,320	0	350	498	1,470	61,583
1998	17,772	1	0	9	0	758	18,540
1999	20,817	1,601	0	147	236	609	23,410
2000	14,717	–	–	0	–	554	15,271
2001	21,620	–	–	34	–	1,202	22,856
2002	15,241	–	–	20	–	1,092	16,353
2003	23,580	25,243	0	549	0	1,477	50,849
2004	20,732	20,232	0	233	0	1,623	42,820
2005	26,971	58,311	0	107	0	627	86,016
2006	19,371	64,942	0	279	0	1,000	85,592
2007	19,514	44,575	0	135	0	597	64,821
2008	16,739	35,691	0	50	0	341	52,821
2009	15,760	8,033	285	70	0	964	25,112
2010	12,921	3,750	0	1,062	0	944	18,677
2011	12,289	76,303	0	232	0	463	89,287
2012	21,237	74,789	0	100	39	662	96,827
2013	14,603 [d]	66,203	0	109	1	[g]	80,916
2008–2012 Average	15,789	39,713	57	303	8	675	56,545
2003–2012 Average	18,911	41,187	29	282	4	870	61,282

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	Canada: Yukon Territories Totals			Total Alaska Yukon Area		
Year	Mainstem Yukon River [h]	Porcupine Aborginal	Total	Coastal District	Alaska Total	Yukon Area Total
1993	0	60	60	40	16,669	16,709
1994	2	332	334	81	48,319	48,400
1995	0	509	509	152	77,126	77,278
1996	0	41	41	92	89,808	89,900
1997	2	298	300	0	61,583	61,583
1998	0	214	214	349	18,540	18,889
1999	0	100	100	74	23,410	23,484
2000	0	37	37	222	15,271	15,493
2001	0	0	0	548	22,856	23,404
2002	26	449	475	248	16,353	16,601
2003	7	523	530	292	50,849	51,141
2004	5	175	180	63	42,820	42,883
2005	0	11	11	279	86,016	86,295
2006	1	111	112	335	85,592	85,927
2007	2	500	502	110	64,821	64,931
2008	0	200	200	116	52,821	52,937
2009	0	0	0	246	25,112	25,358
2010	0	12	12	124	18,677	18,801
2011	0	63	63	55	89,287	89,342
2012	0	10	10	93	96,827	96,920
2013	2	151	153	287 [d]	80,916	81,203
2008–2012 Average	0	57	57	127	56,545	56,672
2003–2012 Average	2	161	162	171	61,282	61,454

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	Yukon River Drainage (Alaska/Canada) Totals						
Year	Subsistence [a,h]	Commercial	Commercial Related [e]	Personal Use [b]	Alaska Test Fish [c]	Sport Fish	Total
1993	15,832	0	0	0	0	897	16,729
1994	42,026	122	4,331	0	0	2,174	48,653
1995	28,734	45,939	1,074	417	193	1,278	77,635
1996	30,353	52,643	3,339	198	1,728	1,588	89,849
1997	24,243	35,322	0	350	498	1,470	61,883
1998	17,986	1	0	9	0	758	18,754
1999	20,917	1,601	0	147	236	609	23,510
2000	14,754	0	0	0	0	554	15,308
2001	21,620	0	0	34	0	1,202	22,856
2002	15,690	17	0	20	0	1,101	16,828
2003	24,103	25,243	0	549	0	1,484	51,379
2004	20,907	20,236	0	233	0	1,624	43,000
2005	26,982	58,311	0	107	0	627	86,027
2006	19,482	64,942	0	279	0	1,001	85,704
2007	20,014	44,575	0	135	0	599	65,323
2008	16,939	35,691	0	50	0	341	53,021
2009	15,760	8,033	285	70	0	964	25,112
2010	12,933	3,750	0	1,062	0	944	18,689
2011	12,352	76,303	0	232	0	463	89,350
2012	21,247	74,789	0	100	39	662	96,837
2013	14,756 [d]	66,203	0	109	1	0	81,069
2008–2012 Average	15,846	39,713	57	303	8	675	56,602
2003–2012 Average	19,072	41,187	29	282	4	871	61,444

Note: En dash indicates no commercial fishing activity occurred.

[a] Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

[b] Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.

[c] The number of fish sold by ADF&G test fisheries.

[d] Subsistence harvest information is considered preliminary.

[e] Estimated number of females harvested to produce roe sold.

[f] Estimated sport fish harvest for the Alaska portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage, District 6.

[gi] Sport fish harvest for the U.S. portion of the Yukon Area was not available at the time of writing.

[h] Includes domestic, commercial, test, sport, and aboriginal harvest from the Mainstem Yukon River.

[i] Includes Alaska Yukon River subsistence harvest and Canadian aboriginal harvest.

Appendix A17.–Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1993–2013.

	Coastal District			District 1			District 2		
Year	Subsistence [a]	Commercial	Total	Subsistence [a]	Commercial	Total	Subsistence [a]	Commercial	Total
1993					0	0		0	0
1994	2,053	0	2,053	4,233	0	4,233	2,731	0	2,731
1995	385	0	385	132	0	132	15	0	15
1996	3,517	0	3,517	443	0	443	933	0	933
1997	265	0	265	69	0	69	115	0	115
1998	3,732	0	3,732	1,590	0	1,590	1,550	0	1,550
1999	626	0	626	32	0	32	21	0	21
2000	998	0	998	301	0	301	235	0	235
2001	394	–	394	9	–	9	0	–	0
2002	5,892	0	5,892	1,028	0	1,028	1,282	0	1,282
2003	1,470	0	1,470	207	0	207	117	0	117
2004	7,926	0	7,926	615	0	615	1,138	0	1,138
2005	2,505	0	2,505	390	0	390	230	0	230
2006	2,814	0	2,814	1,114	0	1,114	900	0	900
2007	1,548	0	1,548	382	0	382	185	0	185
2008	3,779	0	3,779	3,053	13,391	16,444	942	709	1,651
2009	2,143	0	2,143	132	0	132	14	0	14
2010	2,464	0	2,464	787	0	787	946	0	946
2011	2,098	0	2,098	53	0	53	91	0	91
2012	2,444	0	2,444	1,619	0	1,619	880	0	880
2013	809	0	809	115	0	115	140	0	140
2008–2012 Average	2,586	0	2,586	1,129	2,678	3,807	575	142	716
2003–2012 Average	2,919	0	2,919	835	1,339	2,174	544	71	615

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	District 3				Lower Yukon Area Subtotals			
Year	Subsistence [a]	Commercial	Commercial Related [b]	Total	Subsistence	Commercial	Commercial Related [b]	Total
1993		0	0	0		0	0	
1994	289	0	0	289	7,253	0	0	7,253
1995	0	–	0	0	147	0	0	147
1996	180	0	100	280	1,556	0	100	1,656
1997	0	–	0	0	184	0	0	184
1998	1,617	0	0	1,617	4,757	0	0	4,757
1999	0	0	0	0	53	0	0	53
2000	28	–	0	28	564	0	0	564
2001	0	–	–	0	9	–	–	9
2002	0	–	0	0	8,202	0	0	8,202
2003	130	–	0	130	1,924	0	0	1,924
2004	6	–	0	6	9,685	0	0	9,685
2005	0	–	0	0	3,125	0	0	3,125
2006	25	0	0	25	4,853	0	0	4,853
2007	3	0	0	3	2,118	0	0	2,118
2008	456	–	0	456	8,230	14,100	0	22,330
2009	9	–	0	9	2,298	0	0	2,298
2010	2	–	0	2	4,199	0	0	4,199
2011	9	–	0	9	2,251	0	0	2,251
2012	100	–	0	100	5,043	0	0	5,043
2013	12	–	0	12	1,076	0	0	1,076
2008–2012 Average	115		0	115	4,404	2,820	0	7,224
2003–2012 Average	74	0	0	74	4,373	1,410	0	5,783

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	District 4				District 5			
Year	Subsistence [a]	Commercial	Commercial Related [b]	Total	Subsistence [a]	Commercial	Commercial Related [b]	Total
1993		0	0	0		0	0	0
1994	995	0	66	1,061	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	59	0	0	59	0	0	0	0
1997	34	0	0	34	0	0	0	0
1998	700	–	0	700	0	0	0	0
1999	2	0	0	2	0	0	0	0
2000	31	–	–	31	0	–	–	0
2001	0	–	–	0	0	–	–	0
2002	221	–	–	221	0	0	0	0
2003	243	0	0	243	0	0	0	0
2004	12	–	–	12	0	0	0	0
2005	7	–	–	7	0	0	0	0
2006	1	–	–	1	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	1,023	0	0	1,023	276	0	0	0
2009	2	0	0	2	0	–	–	0
2010	0	0	0	0	0	–	–	0
2011	40	–	–	40	0	0	0	0
2012	104	0	0	104	3	0	0	0
2013	0	0	0	0	0	0	0	0
2008–2012 Average	234	234	0	234	56	0	0	0
2003–2012 Average	143	0	0	143	28	0	0	0

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	District 6				Upper Yukon Area Subtotals			
Year	Subsistence [a]	Commercial	Commercial Related [b]	Total	Subsistence [a]	Commercial	Commercial Related [b]	Total
1993		0	0	0	0	0	0	0
1994	0	0	0	0	995	0	66	1,061
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	59	0	0	59
1997	0	0	0	0	34	0	0	34
1998	0	0	0	0	700	0	0	700
1999	0	0	0	0	2	0	0	2
2000	0	–	–	0	31	0	0	31
2001	0	–	–	0	0	–	0	0
2002	0	0	0	0	221	0	0	221
2003	0	0	0	0	243	0	0	243
2004	0	0	0	0	12	0	0	12
2005	0	0	0	0	7	0	0	7
2006	0	0	0	0	1	0	0	1
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	1,299	0	0	1,299
2009	0	0	0	0	2	0	0	2
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	40	0	0	40
2012	0	0	0	0	107	0	0	107
2013	0	0	0	0	0	0	0	0
2008–2012 Average	0	0	0	0	290	0	0	290
2003–2012 Average	0	0	0	0	171	0	0	171

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	Alaska Yukon Area Totals				
Year	Subsistence [a]	Commercial	Commercial Related [b]	Sport Fish [c]	Total
1993		0	0	0	0
1994	8,248	0	66	0	8,314
1995	147	0	0	0	147
1996	1,615	0	100	30	1,745
1997	218	0	0	0	218
1998	5,457	0	0	85	5,542
1999	55	0	0	0	55
2000	595	0	0	0	595
2001	9	–	0	0	9
2002	8,423	0	0	0	8,423
2003	2,167	0	0	24	2,191
2004	9,697	0	0	33	9,730
2005	3,132	0	0	0	3,132
2006	4,854	0	0	54	4,908
2007	2,118	0	0	0	2,118
2008	9,529	14,100	0	0	23,629
2009	2,300	0	0	0	2,300
2010	4,199	0	0	0	4,199
2011	2,291	0	0	0	2,291
2012	5,150	0	0	51	5,201
2013	1,076	0	0		1,076
2008–2012 Average	4,694	2,820	0	10	7,524
2003–2012 Average	4,544	1,410	0	16	5,970

Note: En dash indicates no commercial fishing activity occurred.

[a] Subsistence harvest estimates for pink salmon not available until 1994. Subsistence harvests of chum salmon below Kaltag prior to 1995 may include some pink salmon.

[b] Commercial related refers to the estimated number of females and males harvested to produce roe sold.

[c] Estimated sport fish harvest for Alaska portion of the Yukon River drainage.

Appendix A18.–Percent of age composition of combined commercial and subsistence salmon harvest by species, Alaska portion of Yukon River drainage, 1993–2013.

Species / Run	Year	Sample Size	Age In Years (Percent) 3	4	5	6	7	8
Chinook	1993	4,034	0.2	15.8	25.4	50.5	8.0	0.0
Salmon	1994	3,692	0.3	4.1	47.2	44.5	3.8	0.0
	1995	5,559	0.0	7.8	13.7	74.7	3.6	0.2
	1996	5,861	0.0	2.4	44.0	35.6	17.9	0.2
	1997	5,134	0.0	7.5	17.8	70.5	4.2	0.1
	1998	3,122	0.7	5.2	55.1	31.4	7.6	0.0
	1999	4,285	0.1	3.8	17.7	76.7	1.7	0.0
	2000	1,201	0.0	1.0	29.9	60.5	8.6	0.0
	2001 [a]	1,182	0.1	9.0	27.2	57.6	6.1	0.0
	2002	3,580	0.0	8.2	27.0	53.9	10.9	0.0
	2003	3,850	0.1	3.4	32.3	56.5	7.7	0.0
	2004	6,556	0.0	9.9	23.3	63.1	3.6	0.0
	2005	4,515	0.0	5.8	43.0	48.5	2.6	0.0
	2006	4,470	0.0	4.2	53.6	40.7	1.5	0.0
	2007	7,095	0.0	11.0	26.8	60.0	2.1	0.0
	2008	4,431	0.1	5.6	60.9	30.9	2.5	0.0
	2009	5,232	0.1	14.8	20.2	63.8	1.1	0.0
	2010	4,244	0.2	15.4	52.3	29.2	3.0	0.0
	2011	5,679	0.0	10.3	51.0	35.7	2.9	0.0
	2012	3,885	0.2	7.0	54.7	36.8	1.3	0.0
	2013 [b]							
	2007–2011 Average	5,336	0.1	11.4	42.2	43.9	2.3	0.0

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Species / Run	Year		Sample Size	Age In Years (Percent) 3	4	5	6	7
Chum	1993		2,011	0.4	47.5	47.7	4.5	0.0
Salmon/	1994		3,820	0.1	51.3	46.6	2.0	0.0
Summer	1995		4,740	0.6	51.9	45.3	2.1	0.0
	1996		3,863	0.4	46.2	48.8	4.5	0.1
	1997		3,195	0.2	29.0	67.2	3.6	0.0
	1998		1,147	0.3	62.8	34.2	2.7	0.0
	1999		1,627	0.2	40.7	58.2	0.9	0.0
	2000		442	0.0	44.2	53.4	2.4	0.0
	2001	[a]	586	0.0	15.4	81.9	2.7	0.0
	2002		1,103	0.1	52.9	44.4	2.6	0.0
	2003		1,144	0.3	55.4	39.2	5.1	0.0
	2004		2,742	1.3	37.2	60.4	1.0	0.1
	2005		2,381	0.2	83.2	15.2	1.5	0.0
	2006		2,799	0.1	18.6	81.1	0.2	0.0
	2007		4,356	0.0	34.5	50.5	14.9	0.1
	2008		2,292	0.1	35.0	58.6	6.1	0.2
	2009		4,087	1.3	49.0	47.5	2.1	0.2
	2010		4,303	5.8	69.1	24.1	1.0	0.0
	2011		3,744	0.1	51.3	47.9	0.7	0.0
	2012		2,950	0.2	74.2	21.1	4.5	0.0
	2013	[b]						
	2007–2011 Average		3,567	1.5	41.2	52.3	4.9	0.1

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Species / Run	Year		Sample Size	Age in Years (Percent) 3	4	5	6
Chum	1993		1,616	0.1	62.8	35.2	1.8
Salmon/	1994		1,295	2.4	66.4	31.1	0.1
Fall	1995		1,731	0.8	59.2	37.4	2.6
	1996		1,391	0.3	52.3	43.9	3.5
	1997		1,245	0.3	57.2	41.6	0.9
	1998	[c]	0	–	–	–	–
	1999		371	0.0	79.2	20.5	0.3
	2000	[c]	0	–	–	–	–
	2001	[a]	295	0.0	54.2	45.4	0.3
	2002	[c]	0	–	–	–	–
	2003		1,596	0.1	79.6	19.4	0.9
	2004		1,449	19.6	54.7	25.7	0.0
	2005		4,754	0.0	97.6	2.1	0.3
	2006		2,340	1.4	43.1	55.4	0.1
	2007		3,064	0.7	75.4	22.2	1.8
	2008		1,557	0.6	45.5	51.9	2.1
	2009		1,901	2.5	71.6	23.5	2.3
	2010		1,394	14.8	68.3	16.5	0.3
	2011		3,492	1.1	72.6	26.1	0.3
	2012		2,470	0.6	79.6	17.6	2.3
	2013	[b]					
	2007–2011 Average		2,282	3.9	66.7	28.0	1.3

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Species / Run	Year		Sample Size	Age in Years (Percent) 3	4	5
Coho	1993		522	15.5	83.5	1.0
Salmon	1994		752	22.9	76.2	0.9
	1995		664	41.7	58.0	0.3
	1996		944	10.4	87.2	2.4
	1997		516	6.1	92.0	2.0
	1998	[c]	0	–	–	–
	1999		40	7.5	85.0	7.5
	2000	[c]	0	–	–	–
	2001	[a]	18	22.2	77.8	0.0
	2002	[c]	0	–	–	–
	2003		753	25.1	69.8	5.1
	2004		590	22.3	75.0	2.7
	2005		1,921	8.3	84.8	6.8
	2006		1,231	14.7	80.7	4.6
	2007		1,234	11.6	85.6	2.8
	2008		978	14.4	75.3	10.3
	2009		430	9.3	81.9	8.8
	2010		608	8.7	87.5	3.9
	2011		995	19.7	76.0	4.3
	2012		458	25.1	68.5	6.4
	2013	[b]				
	2007–2011 Average		849	11.7	82.2	6.1

Note: Ages were estimated from samples collected from each gear type, by district and fishery, or from adjacent fisheries with similar gear. Fisheries for which no appropriate samples were available were not included.

[a] No commercial fishing, samples were from subsistence harvests.

[b] 2013 data are not available.

[c] No commercial fishing occurred and subsistence harvests for fall chum and coho salmon were not sampled.

Appendix A19.–Yukon River Chinook salmon historical harvest percentage by stock group for the United States and Canada, 1990–2012.

	Lower	Middle	Upper		
Year			U.S.	Canada	Total
1990	20.2	25.2	43.3	11.4	54.7
1991	28.0	25.3	34.9	11.8	46.7
1992	16.3	21.8	52.3	9.6	61.9
1993	21.5	25.4	43.9	9.2	53.1
1994	18.2	21.4	49.4	11.0	60.4
1995	17.9	22.4	49.2	10.5	59.7
1996	21.0	10.4	56.2	12.4	68.6
1997	26.4	16.8	48.2	8.6	56.9
1998	32.7	17.4	44.2	5.6	49.8
1999	40.1	6.3	44.5	9.1	53.6
2000	33.9	12.3	44.1	9.7	53.8
2001	31.6	16.0	36.5	15.9	52.4
2002	19.4	29.2	39.3	12.1	51.4
2003	6.8	28.9	55.4	8.9	64.3
2004	15.3	28.8	46.8	9.1	55.9
2005	20.7	21.4	46.4	11.5	57.9
2006	17.6	27.6	46.1	8.7	54.9
2007	13.0	30.6	51.1	5.4	56.4
2008	17.0	28.0	48.4	6.6	55.0
2009	11.1	31.4	45.3	12.2	57.5
2010	17.8	32.7	44.8	4.7	49.5
2011	13.9	29.8	45.6	10.7	56.3
2012	13.4	34.9	44.8	6.9	51.8
1990-2011 Average	20.9	23.1	46.2	9.8	55.9
2002-2011 Average	15.3	28.8	46.9	9.0	55.9
2007-2011 Average	14.6	30.5	47.0	7.9	54.9

Appendix A20.–Salmon fishery projects conducted in the Alaska portion of the Yukon River drainage in 2013.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Commercial Catch and Effort Assessment	Alaska portion of the Yukon River drainage	1) Document and estimate the catch and associated effort of the Alaska Yukon River and; 2) Commercial salmon fishery via receipts (fish tickets) of commercial sales of salmon.	June-Oct.	ADF&G	All aspects
Commercial Catch Sampling and Monitoring	Alaska portion of the Yukon River drainage	1) Determine age, sex and size of Chinook, chum and coho salmon harvested in Alaska Yukon River commercial fisheries and; 2) Monitor Alaska commercial fishery openings and closures.	June-Oct.	ADF&G, ADPS	All aspects Enforcement
Subsistence and personal use Catch and Effort Assessment	Alaska portion of the Yukon River drainage	Document and estimate the catch and associated effort of the Alaska Yukon River subsistence salmon fishery via interviews, catch calendars, mail-out questionnaires, telephone interviews, and subsistence fishing permits, and of the personal use fishery based on fishery permits.	Ongoing	ADF&G, YRDFA	All aspects Assistants in Communities
Sport Catch, Harvest and Effort Assessment	Alaska portion of the Yukon River drainage	Document and estimate the catch, harvest, and associated effort of the Alaska Yukon River sport fishery via post-season mail-out questionnaires.	Postseason	ADF&G	All aspects
Biological Sampling of Yukon River Salmon	Yukon, RM 17-1,002	Collect genetics samples and age, sex, and length information from subsistence caught Chinook salmon.	June - Aug	AVCP, TCC	All aspects
Yukon River Chinook Microsatellite Baseline	Yukon River drainage	Survey standardized microsatellites and Yukon River Chinook salmon both U.S. and Canada populations.	Ongoing	ADF&G, USFWS, DFO	R&M Funding R&E Funding
Yukon River Salmon Stock Identification	Yukon River drainage	Estimate Chinook salmon stock composition of the various Yukon River drainage harvests through genetic stock identification, age compositions, and geographical distribution of catches and escapements.	Ongoing	ADF&G	All aspects R&M Funding
Yukon Delta Smolt	Yukon Delta (mouths and delta platform)	1) Describe catch rates and distribution of juvenile Chinook; update juvenile life-history information on size and timing of marine entry. 2) Describe fish communities in Yukon Delta tributary, tidal channel, and delta front/prodelta habitats and investigate prey consumption by potential juvenile salmon competitors and predators. 3) Describe temporal and spatial patterns in juvenile Chinook nutritional status.	May-August	All aspects	All aspects
Yukon River Chum Salmon Mixed-Stock Analysis	Pilot Station, RM 123	Estimate the stock compositions of chum salmon using samples collected from Pilot Station sonar test fisheries.	May – Aug.	USFWS	All aspects R&M Funding summer, OSM Funding -fall
YRDFA Weekly Teleconferences	Yukon River drainage	Acts as a forum for fishermen along the Yukon River to interact with state and federal managers for the collection and dissemination of fisheries information.	May – Sept.	YRDFA	All aspects R&M Funding

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Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Lower Yukon River Set Gillnet Test Fishing	South, Middle, and North mouths of the Yukon River Delta, RM 20	1) Index Chinook salmon run timing and abundance using set gillnets and; 2) Sample captured salmon for age, sex, size composition information.	June – Aug.	ADF&G, YDFDA	All aspects
Lower Yukon River Drift Test Fishing	South, Middle, and North mouths of the Yukon River Delta, RM 20	1)Index Chinook, summer and fall chum, and coho salmon run timing and abundance using drift gillnets and; 2) Sample captured salmon for age, sex, size composition information.	June – Aug.	ADF&G, YDFDA	All aspects
East Fork Weir, Andreafsky River	RM 20 East Fork, Yukon RM 124	Estimate daily escapement, with age, sex and size composition, of Chinook and summer chum salmon into the East Fork of the Andreafsky River.	June – Aug.	USFWS	All aspects OSM Funding
Anvik River Sonar	RM 40 Anvik River, Yukon RM 358	1) Estimate daily escapement of summer chum salmon to the Anvik River and; 2) Estimate age, sex, and size composition of the summer chum salmon escapement.	June – July	ADF&G	All aspects OSM Funding
Pilot Inseason Monitoring of Subsistence Salmon Harvests	Grayling, Yukon RM 336	Test methods for inseason data collection by conducting door-to-door salmon harvest surveys during the fishing season with reference to: 1) local research assistant capacity with staff oversight; 2) financial costs; 3) community response; provide regular updates to managers; and 4) produce report outlining results.	May – Jan.	ADF&G	All aspects
Yukon River Sonar	Pilot Station, RM 123	Estimate Chinook and summer and fall chum salmon passage in the mainstem Yukon River. Apportionment of species including coho salmon and other finfish.	May – Sept.	ADF&G	All aspects R&M funded
Gisasa River Weir	RM 3 Gisasa River, Koyukuk River drainage, RM 567	1) Estimate daily escapement of Chinook and summer chum salmon into the Gisasa River and; 2) Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements.	June – Aug.	USFWS	All aspects OSM Funding
Henshaw Creek Weir	RM 1 Henshaw Creek, Koyukuk River drainage, RM 976	1) Estimate daily escapement of Chinook and summer chum salmon into Henshaw Creek and; 2) Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements.	June – Aug.	TCC, USFWS-OSM	All aspects oversight & funding report write-up
Chandalar River Sonar	RM 14 Chandalar River, Yukon RM 996	1) Estimate fall chum salmon passage using DIDSON sonar in the Chandalar River.	Aug. – Sept.	USFWS	All aspects TI Funding, R&M Funding-ASL
Yukon River Sonar	Eagle, RM 1,213	1) Estimate daily passage of Chinook and chum salmon in the mainstem Yukon River using both split-beam and DIDSON and; 2) Estimate age, sex, and size composition of salmon captured in the test nets.	July – Oct.	ADF&G, DFO	All aspects, technical support, TI Funding, R&E Funding

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Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Middle Yukon River Chinook Sampling Project	Mainstem Yukon River Kaltag, RM 451	Estimate age, sex, and size composition of Chinook salmon harvested in middle Yukon River subsistence fisheries.	June – July	City of Kaltag	All aspects OSM Funding
Rapids Test Fish Wheel	Mainstem Yukon River, RM 730	1) Index run timing of Chinook and fall chum salmon runs as well as non-salmon species using video monitoring techniques and; 2) Characterize the sex, weight, and girth composition of Chinook salmon.	June – Sept.	Zuray USFWS	All aspects R&E funding
Tanana River Sonar	Mainstem Tanana River, RM 765	1) Estimate daily passage of Chinook, chum and coho salmon in the mainstem Tanana River using both split-beam and DIDSON and; 2) Estimate age, sex, and size composition of salmon captured in the test nets and fish wheel.	Jul. – Sept.	ADF&G	All aspects
Nenana River Escapement Surveys	Nenana River drainage, RM 860	Aerial surveys for numbers and distribution of coho and chum salmon in 10 tributaries of the Nenana River below Healy Creek.	Sept. – Oct.	ADF&G	All aspects
Delta River Ground Surveys	Tanana River drainage RM 1,031	1) Estimate fall chum salmon spawning escapement in Delta River and; 2) Sample fall chum salmon carcasses for age, sex, and size composition information.	Oct. – Dec.	ADF&G	All aspects
Chena River Tower	RM 45 Chena River, Tanana River drainage, RM 921	Estimate daily escapement of Chinook and summer chum salmon into the Chena River.	July – Aug.	ADF&G	All aspects AYKSSF Funding
Salcha River Tower	RM 4 Salcha River, Tanana River drainage, RM 967	Estimate daily escapement of Chinook and summer chum salmon into the Salcha River.	July – Aug.	BSFA	All aspects R&M Funding
Upper Tanana Escapement Surveys	Tanana River drainage, RM 991-1,053	Aerial surveys for numbers and distribution of coho and chum salmon in the side sloughs and tributaries of the Tanana River drainage.	Nov.	ADF&G	All aspects
Goodpaster River Tower	RM 45 Goodpaster River, Tanana River drainage, RM 1,049	Estimate daily escapement of Chinook and summer chum salmon into the Goodpaster River.	July – Aug.	BSFA	All aspects Pogo Mine funding
Upper Yukon River Chum Salmon Genetic Stock Identification	Yukon River drainage	Establish the feasibility of using DNA markers for genetic stock identification of chum salmon in the Yukon River.	June – Oct.	USFWS	All aspects
Yukon River Inseason Salmon Harvest Interviews	Alakanuk, Marshall, Russian Mission, Holy Cross, Kaltag, Huslia, Galena, Nenana, Ft. Yukon and Eagle	Collect qualitative inseason subsistence salmon harvest information through weekly interviews.	June – Sept.	YRDFA, USFWS	All aspects OSM funding
Migratory Timing and Harvest Information of Chinook Salmon Stocks	Yukon River drainage	Enlarge existing allozyme and develop a DNA database to characterize the genetic diversity of Chinook salmon in the Yukon River within the U.S. and Canada. U.S. collections include microsatellites and allozyme. Canadian collections include microsatellites.	June – Aug.	USFWS-OSM, ADF&G, DFO	All aspects

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Acronyms:

ADF&G	= Alaska Department of Fish and Game
ADPS	= Alaska Department of Public Safety
AVCP	= Association of Village Council Presidents, Inc.
AYKSSF	= Arctic-Yukon-Kuskokwim Sustainable Salmon Fund
BSFA	= Bering Sea Fishermen's Association
DFO	= Department of Fisheries and Oceans (Canada)
DNA	= Deoxyribonucleic acid
NPS	= National Park Service
OSM	= Office of Subsistence Management
R&E	=Yukon River Panel Restoration and Enhancement Program
R&M	=Research and Management Fund
TCC	= Tanana Chiefs Conference, Inc.
UAF	= University of Alaska Fairbanks
USFWS	= United States Fish and Wildlife Service
USFWS-OSM	= United States Fish and Wildlife Service, Office of Subsistence Management
YDFDA	=Yukon Delta Fisheries Development Association
YRDFA	= Yukon River Drainage Fisheries Association

Appendix A21.–List of harvest/escapement monitoring and incubation/rearing projects involving salmon in the Canadian portion of the Yukon River drainage in 2013.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Aboriginal Catch Monitoring	Yukon communities	1) To determine weekly catches and effort in the aboriginal fishery, and; 2) To implement components of the UFA and AFS.	July – Oct.	YFN's DFO	Joint Project
Recreational Catch Monitoring	Yukon River mainstem and tributaries	1) To determine the recreational harvest by species including the date, sex, whether released or retained, and fishing location, and; 2) Salmon caught are reported through the Yukon Salmon Conservation Catch Card (YSCCC) program.	July – Oct.	DFO	All aspects
Commercial Catch Monitoring	Yukon River mainstem	1) To determine weekly catches and effort in the Canadian commercial fishery (Chinook and chum) and; 2) to collect other information as required	July – Oct.	DFO	All aspects
Escapement Surveys and Biological Sampling	Throughout upper Yukon River drainage	1) To conduct surveys of spawning fish by foot, boat, air etc.; 2) To collect ASL and genetic tissue samples from spawning population, and; 3) To enumerate and recover tags in terminal areas.	July – Oct.	R&E Projects DFO YFNs AFS	All aspects
Porcupine River Chum Salmon Radio Tagging and Telemetry	Porcupine River and tributaries (Including Fishing Branch) upstream of Old Crow.	1) To estimate the % of Porcupine River chum salmon spawning upstream of the Fishing Branch weir site, to allow comparison of Old Crow hydroacoustic estimates to historic weir counts; and 2) To identify chum spawning locations in the Porcupine River upstream of Old Crow.	Aug. – Oct.	VGG & EDI & DFO	Joint Project
Porcupine River Sonar	Old Crow	1) Installation and operation of two ARIS sonar program for chum salmon, 2) Conduct biological sampling for species apportionment, age, sex and length, and; 3) To provide inseason projections of run strength.	Aug. – Oct.	DFO & VGG	Joint Project
Whitehorse Rapids Fishway	Whitehorse	1) To enumerate wild and hatchery reared Chinook salmon returns to the Whitehorse fishway area and; 2) obtain age, size, sex and tag data.	July – Aug.	YF&GA	All aspects
Blind Creek Weir	Pelly River	1) To enumerate Chinook salmon escapement, recover tags and; 2) collect ASL data and DNA samples.	July – Aug.	JW&A	All aspects
Big Salmon Sonar	Big Salmon River	1) Installation and operation of a DIDSON sonar program for Chinook salmon, and; 2) obtain carcass survey, ASL, and genetic samples.	July – Aug.	JW&A	All aspects

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Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Teslin River Sonar	Teslin River	Installation and operation of a DIDSON sonar program for Chinook salmon enumeration.	July – Oct.	BM&A	All aspects
Whitehorse Rapids Fish Hatchery and Coded-Wire Tagging Project	Whitehorse	1) To rear and release ~150K Chinook salmon fry produced from Whitehorse Rapids Fishway broodstock, and; 2) To mark fry with a CWT, adipose clip, and release upstream of the Whitehorse hydroelectric facility.	Ongoing	GY and YEC, YF&GA	All aspects Coded-wire tagging
McIntyre Incubation Facility and Coded-Wired Tagging Project	Whitehorse	1) To incubate up to 120K CK salmon eggs from brood stock collected at Tatchun R, and/or the Whitehorse Rapids fishway, and; 2) To rear, mark with CWT, adipose clip, and release fry to natal sites.	Ongoing	DFO, YC, YRC	Technical support, field work, project monitoring
Fox Creek Restoration Program	Whitehorse Area	Rear, tag and release Whitehorse Rapids CK to Fox Creek.	Ongoing	TKC	All aspects

Acronyms:

ASL = Age Sex Length- term that refers to the collection of biological information
AFS = Aboriginal Fisheries Strategy
BM&A = B. Mercer and Associates
CWT = Coded Wire Tag
DFO = Department of Fisheries and Oceans Canada
DNA = Deoxyribonucleic acid
EDI = Environmental Dynamics Incorporated
GY = Government of Yukon-Environment Yukon
JW&A = Jane Wilson & Associates
NRI = Northern Research Institute
R&E = Yukon Panel Restoration and Enhancement Program
TKC = Ta'an Kwa'chin Council
VGG = Vuntut Gwitchin Government
YC = Yukon College
YEC = Yukon Energy Corporation
YFN's = Yukon First Nation's
YF&GA = Yukon Fish and Game Association

Appendix A22.–Selected environmental and salmon catch information, Yukon River drainage, 1993–2013.

Year	Average Nome April Air Temp (°F)	Tanana River Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Yukon Delta Area [a]	First Summer Chum Caught Yukon Delta Area [a]	First District 1 Commercial Period
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	5/5	5/19	5/24	5/24	6/10
1997	27 [b]	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 [c]	5/29	6/6	6/13	6/22
2000	21	5/1	5/29	6/3	6/5	6/24
2001	22	5/8	6/5	6/7	6/9	N/A
2002	20	5/7	5/24	5/31	5/30	6/20
2003	26	4/29	5/17	5/22	5/30	6/16
2004	29	4/24	5/8	5/18	5/27	6/17
2005	15	4/28	5/17	5/25	6/1	6/24
2006	12 [d]	5/2	5/29	6/6	6/7	6/19
2007	27 [d]	4/27	5/18	6/3	6/12	6/18
2008	15 [d]	5/5	5/24	6/3	6/16	7/2
2009	17 [d]	5/1	5/26	6/5	6/10	6/20
2010	20 [d]	4/29	5/22 [e]	6/9	6/10	6/28
2011	18 [f]	5/4	5/22	5/31	6/4	6/24
2012	20 [f]	4/23	5/25	6/8	6/9	6/29
2013	21 [f]	5/20	6/3	6/10	6/10	6/18
1993-2012 Average	21	4/30	5/22	5/30	6/3	6/19

[a] Subsistence or test fishery.

[b] Average April air temperature was 9 degrees fahrenheit above normal.

[c] The Nenana Ice Classic tripod moved on 4/29, but the ice did not move out for several more days.

[d] Source: http://climate.gi.alaska.edu/AKCityClimo/AK_Climate_Sum.html

[e] Though breakup on the Lower River occurred May 22, shore-fast sea ice persisted until later than usual in the season.

[f] Source: http://akclimate.org/AKCityClimo/2011/Apr/Apr_2011.html

Appendix A23.–List of emergency orders (EO) pertaining to the Summer Yukon in Districts 1–6 Chinook and summer chum salmon fishery, Yukon Area, 2013.

EO Number: 3-S-SY-01-13 Effective Date: May 30, 2013

The subsistence salmon fishing schedules begin at 8:00 p.m. Thursday, May 30, in District 1, 8:00 p.m. Sunday, June 2, in District 2, and 8:00 p.m. Wednesday, June 5, in District 3. The subsistence salmon fishing schedule consists of two 36-hour periods each week in districts 1 through 3. Gillnet mesh size is restricted to 6-inch or smaller as the schedule is initiated in each district. In the Innoko River, which has a subsistence salmon fishing schedule of 24 hours a day, 7 days per week, the 6-inch gillnet mesh size restriction is being implemented to coincide with the adjacent fishing district, District 3.

EO Number: 3-S-SY-02-13 Effective Date: May 30, 2013

At 8:00 p.m. Thursday, May, 30, gillnets are restricted to 4-inch or smaller mesh size and not longer than 60 feet in length during subsistence salmon fishing closures in districts 1 through 6.

EO Number: 3-S-SY-03-13 Effective Date: May 30, 2013

From 8:00 p.m. Thursday, May 30, until 12:00 noon Friday, July 12, gillnets are restricted to 6-inch or smaller mesh size in the Coastal District.

EO Number: 3-S-SY-04-13 Effective Date: June 7, 2013

The 36-hour subsistence salmon fishing period scheduled from 8:00 p.m. Thursday, June 6, until 8:00 a.m. Saturday, June 8, is extended 60 hours from 8:00 a.m. Saturday, June 8, until 8:00 p.m. Monday, June 10, in District 1. The 36-hour subsistence salmon fishing period scheduled from 8:00 p.m. Wednesday, June 5, until 8:00 a.m. Friday, June 7, is extended 60 hours from 8:00 a.m. Friday, June 7, until 8:00 pm Sunday, June 9, in Districts 2 and 3. Gillnets are restricted to 6-inch or smaller mesh size in districts 1 through 3.

EO Number: 3-S-SY-05-13 Effective Date: June 12, 2013

The subsistence salmon fishing schedules begin at 6:00 p.m. Wednesday, June 12, in Subdistrict 4-A and 6:00 p.m. Wednesday, June 19, in Subdistricts 4-B and 4-C. The subsistence salmon fishing schedule consists of two 48-hour periods each week from 6:00 p.m. Wednesdays until 6:00 p.m. Fridays and from 6:00 p.m. Sundays until 6:00 p.m. Tuesdays in Subdistricts 4-A, 4-B, and 4-C.

Gillnets are restricted to 6-inch or smaller mesh size in Subdistricts 4-A, 4-B, 4-C, and the Koyukuk River as the schedule is initiated in each district. In the Koyukuk River, which has a subsistence salmon fishing schedule of 24 hours a day, 7 days a week, the 6-inch gillnet mesh size restriction is being implemented to coincide with the adjacent fishing subdistricts, Subdistricts 4-B and 4-C.

EO Number: 3-S-SY-06-13 Effective Date: June 25, 2013

The subsistence salmon fishing schedule begins at 6:00 p.m. Tuesday, June 25, in Subdistricts 5-A, 5-B, and 5-C. The subsistence salmon fishing schedule consists of two 48-hour periods each 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. Gillnets are restricted to 6-inch or smaller mesh size when the schedule is initiated.

EO Number: 3-S-SY-07-13 Effective Date: June 17, 2013

At 8:00 p.m. Monday, June 17, the commercial salmon fishing season opens in District 1.

EO Number: 3-S-SY-08-13 Effective Date: June 18, 2013

One 12-hour commercial salmon fishing period is scheduled from 12:00 noon until 12:00 midnight on Tuesday, June 18, in District 1. Gear is restricted to beach seine or dip nets only.

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EO Number: 3-S-SY-09-13 Effective Date: June 19, 2013

One 9-hour concurrent commercial and subsistence salmon fishing period is scheduled from 6:00 p.m. Wednesday, June 19, until 3:00 a.m. Thursday, June 20, in District 1. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-10-13 Effective Date: June 20, 2013

Subsistence salmon fishing closes at 8:00 p.m. Thursday, June 20, in the Coastal District from 62 degrees North latitude to Point Romanof and 3 miles offshore. The subsistence salmon fishing periods scheduled from 8:00 p.m. Thursday, June 20, until 8:00 a.m. Saturday, June 22, in District 1 and from 8:00 p.m. Sunday, June 23, until 8:00 a.m. Tuesday, June 25, in District 2 are canceled.

EO Number: 3-S-SY-11-13 Effective Date: June 19, 2013

At 6:00 p.m. Wednesday, June 19, the commercial salmon fishing season opens in District 2.

EO Number: 3-S-SY-12-13 Effective Date: June 20, 2013

One 9-hour commercial salmon fishing period is scheduled from 6:00 p.m. Thursday, June 20, until 3:00 a.m. Friday, June 21, in District 2. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-13-13 Effective Date: June 20, 2013

One 12-hour concurrent commercial and subsistence salmon fishing period is scheduled from 12:00 noon until 12:00 midnight on Friday, June 20, in District 1. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-14-13 Effective Date: June 21, 2013

Three 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Friday, June 21, Saturday, June 22, and Sunday, June 23, in District 1. District 1 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-15-13 Effective Date: June 22, 2013

Three 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Saturday, June 22, Sunday, June 23, and Monday, June 24, in District 2. District 2 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-16-13 Effective Date: June 24, 2013

Three 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Monday, June 24, Tuesday, June 25, and Wednesday, June 26, in District 1. District 1 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-17-13 Effective Date: June 24, 2013

The subsistence salmon fishing closure is extended from 8:00 a.m. Tuesday, June 25, until 8:00 p.m. Thursday, June 27, in the Coastal District from 62 degrees North latitude to Point Romanof and 3 miles offshore. The subsistence salmon fishing periods scheduled from 8:00 p.m. Monday, June 24, until 8:00 a.m. Wednesday, June 26, in District 1 and from 8:00 p.m. Wednesday, June 26, until 8:00 a.m. Friday, June 28, in District 3 are canceled.

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EO Number: 3-S-SY-18-13 Effective Date: June 25, 2013

Three 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Tuesday, June 25, Wednesday, June 26, and Thursday, June 27, in District 2. District 2 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-19-13 Effective Date: June 26, 2013

At 6:00 p.m. Wednesday, June 26, subsistence salmon fishing is reduced from a 36-hour subsistence period to an 18-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Wednesday, June 26, until 2:00 p.m. Thursday, June 27, in District 2.

EO Number: 3-S-SY-20-13 Effective Date: June 27, 2013

One 18-hour subsistence salmon fishing period is scheduled from 8:00 p.m. Thursday, June 27, until 2:00 p.m. Friday, June 28, in the Coastal District from 62 degrees North latitude to Point Romanoff and 3 miles offshore. Salmon may not be taken from 2:00 p.m. Friday, June 28, until 8:00 p.m. Monday, July 1.

At 8:00 p.m. Thursday, June 27, subsistence salmon fishing is reduced from a 36-hour subsistence period to an 18-hour subsistence period. Subsistence salmon fishing is scheduled from 8:00 p.m. Thursday, June 27, until 2:00 p.m. Friday, June 28, in District 1.

EO Number: 3-S-SY-21-13 Effective Date: June 27, 2013

One 12-hour commercial salmon fishing period is scheduled from 8:00 a.m. until 8:00 p.m. on Thursday, June 27, in District 1. Gear is restricted to beach seine and dip nets only.

EO Number: 3-S-SY-22-13 Effective Date: July 1, 2013

Gillnets are restricted to 6-inch or smaller mesh size for subsistence salmon fishing periods in Subdistrict 5-D.

EO Number: 3-S-SY-23-13 Effective Date: June 28, 2013

Two 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Friday, June 28, and Saturday, June 29, in District 2. District 2 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-24-13 Effective Date: June 28, 2013

One 12-hour concurrent subsistence and commercial salmon fishing period is scheduled from 12:00 noon until 12:00 midnight on Friday, June 28, in District 1. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-25-13 Effective Date: June 30, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Sunday, June 30, until 6:00 p.m. Tuesday, July 2, in Subdistrict 4-A is canceled.

EO Number: 3-S-SY-26-13 Effective Date: June 29, 2013

Two 12-hour subsistence and commercial salmon fishing periods are scheduled for Saturday, June 29, and Sunday, June 30, in District 1. District 1 is open from 12:00 noon until 12:00 midnight during each period. Gear is restricted to beach seine or dip nets only.

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EO Number: 3-S-SY-27-13 Effective Date: June 30, 2013

The subsistence salmon fishing period scheduled from 8:00 p.m. Sunday, June 30, until 8:00 a.m. Tuesday, July 2, in District 2 is canceled. At 12:00 noon Sunday, June 30, subsistence salmon fishing is reduced from a 36-hour subsistence period to a 12-hour subsistence period. Subsistence salmon fishing is scheduled from 12:00 noon Sunday, June 30, until 12:00 midnight Sunday, June 30, in District 3.

EO Number: 3-S-SY-28-13 Effective Date: June 30, 2013

Three 12-hour concurrent commercial and subsistence salmon fishing periods are scheduled for Sunday, June 30, Monday, July 1, and Tuesday, July 2, in District 2. District 2 is open from 12:00 noon until midnight 12:00 during each period. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-29-13 Effective Date: July 1, 2013

At 12:01 a.m. Monday, July 1, the commercial salmon fishing season opens in District 4.

EO Number: 3-S-SY-30-13 Effective Date: July 1, 2013

Six 24-hour commercial salmon fishing periods are scheduled from 12:01 a.m. Monday, July 1, until 12:00 midnight Saturday, July 6, in Subdistrict 4-A. Gear is restricted to fish wheels only.

EO Number: 3-S-SY-31-13 Effective Date: July 1, 2013

One 12-hour subsistence salmon fishing period is scheduled from 8:00 p.m. Monday, July 1, until 8:00 a.m. Tuesday, July 2, in the Coastal District from 62 degrees North latitude to Point Romanof and 3 miles offshore. Salmon may not be taken from 8:00 a.m. Tuesday, July 2, until 8:00 p.m. Thursday, July 4.

At 8:00 p.m. Monday July 1, subsistence salmon fishing is reduced from a 36-hour subsistence period to a 12-hour subsistence period. Subsistence salmon fishing is scheduled from 8:00 p.m. Monday, July 1, until 8:00 a.m. Tuesday, July 2, in District 1.

EO Number: 3-S-SY-32-13 Effective Date: July 1, 2013

One 12-hour concurrent commercial and subsistence salmon fishing period is scheduled from 8:00 a.m. until 8:00 p.m. on Monday, July 1, in District 1. Gear is restricted to beach seine or dip nets only.

EO Number: 3-S-SY-33-13 Effective Date: July 3, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Wednesday, July 3, until 6:00 p.m. Friday, July 5, in Subdistricts 4-B and 4-C is canceled.

At 6:00 p.m. Wednesday, July 3, subsistence salmon fishing is reduced from a 48-hour period to 24-hour period. Subsistence salmon fishing is scheduled from 6:00 p.m. Wednesday, July 3, until 6:00 p.m. Thursday, July 4, in the lower portion of Subdistrict 4-A and from 6:00 p.m. Thursday, July 4, until 6:00 p.m. Friday, July 5, in the upper portion of Subdistrict 4-A.

EO Number: 3-S-SY-34-13 Effective Date: July 3, 2013

The subsistence salmon fishing period scheduled from 8:00 p.m. Wednesday, July 3, until 8:00 a.m. Friday, July 5, in District 3 is canceled.

Subsistence salmon fishing is reduced from a 36-hour subsistence period to a 12-hour subsistence period. Subsistence salmon fishing is scheduled from 8:00 p.m. Thursday, July 4, until 8:00 a.m. Friday, July 5, in District 2.

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EO Number: 3-S-SY-35-13 Effective Date: July 2, 2013

One 8-hour commercial salmon fishing period is scheduled from 8:00 a.m. until 4:00 p.m. on Tuesday, July 2, in District 1. Gear is restricted to beach seine or dip net gear only.

One 6-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 12:00 midnight, on Tuesday, July 2, in the South Mouth of District 1. Gillnets are restricted to 5.5-inch or smaller mesh size and not more than 30 meshes in depth.

EO Number: 3-S-SY-36-13 Effective Date: July 2, 2013

At 12:00 noon July 2, commercial salmon fishing is closed until further notice from an ADF&G buoy placed 100 yards upstream of the ADF&G Pilot Station sonar to an ADF&G marker placed approximately 500 yards downstream on the south bank of the Yukon River in District 2.

EO Number: 3-S-SY-37-13 Effective Date: July 3, 2013

Two concurrent subsistence and commercial salmon fishing periods are scheduled from 8:00 a.m. until 12:00 midnight on Wednesday, July 3, and from 8:00 a.m. until 8:00 p.m. on Thursday, July 4, in District 2. Gear is restricted to beach seine and dip nets only.

EO Number: 3-S-SY-38-13 Effective Date: July 3, 2013

One 6-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 12:00 midnight, on Wednesday, July 3, in the South Mouth of District 1. Gillnets are restricted to 5.5-inch or smaller mesh size and not more than 30 meshes in depth.

EO Number: 3-S-SY-39-13 Effective Date: July 5, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Friday, July 5, until 6:00 p.m. Sunday, July 7, in Subdistricts 5-A, 5-B and 5-C is canceled.

EO Number: 3-S-SY-40-13 Effective Date: July 4, 2013

At 8:00 p.m. Thursday, July 4, subsistence salmon fishing is reduced from a 36-hour subsistence period to a 12-hour subsistence period. Subsistence salmon fishing is scheduled from 8:00 p.m. Thursday, July 4, until 8:00 a.m. Friday, July 5, in District 1.

EO Number: 3-S-SY-41-13 Effective Date: July 4, 2013

One 6-hour commercial salmon fishing period is scheduled from 2:00 p.m. until 8:00 p.m. on Thursday, July 4, in the South Mouth of District 1. Gillnets are restricted to 5.5-inch or smaller mesh size and not more than 30 meshes in depth.

EO Number: 3-S-SY-42-13 Effective Date: July 5, 2013

Two 6-hour commercial salmon fishing periods are scheduled from 6:00 p.m. until 12:00 midnight on Friday, July 5, and from 6:00 p.m. until 12:00 midnight on Saturday, July 6, in the South Mouth of District 1. Gillnets are restricted to 5.5-inch or smaller mesh size and not more than 30 meshes in depth.

EO Number: 3-S-SY-43-13 Effective Date: July 5, 2013

Two 12-hour concurrent commercial and subsistence fishing periods are scheduled from 12:00 noon until 12:00 midnight on Friday, July 5, and from 12:00 noon until 12:00 midnight on Saturday, July 6, in District 2. Gear is restricted to beach seine and dip nets only.

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EO Number: 3-S-SY-44-13 Effective Date: July 7, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Sunday, July 7, until 6:00 p.m. Tuesday, July 9, in Subdistrict 4-A is canceled.

At 6:00 p.m. Sunday, July 7, subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Sunday, July 7, until 6:00 p.m. Monday, July 8, in Subdistricts 4-B and 4-C.

EO Number: 3-S-SY-45-13 Effective Date: July 7, 2013

Seven 24-hour fishing periods are scheduled from 12:01 a.m. Sunday, July 7, until 12:00 midnight Saturday, July 13, in Subdistrict 4-A. Gear is restricted to fish wheels only.

EO Number: 3-S-SY-46-13 Effective Date: July 7, 2013

At 8:00 p.m. Sunday, July 7, subsistence salmon fishing is reduced from a 36-hour subsistence period to a 12-hour subsistence period. Subsistence salmon fishing is scheduled from 8:00 p.m. Sunday, July 7, until 8:00 a.m. Monday, July 8, in District 2.

At 8:00 p.m. Sunday, July 7, subsistence salmon fishing is reduced from a 36-hour subsistence period to an 18-hour subsistence period. Subsistence salmon fishing is scheduled from 2:00 p.m. Monday, July 8, until 8:00 a.m. Tuesday, July 9, in District 3.

EO Number: 3-S-SY-47-13 Effective Date: July 7, 2013

One 12-hour commercial salmon fishing period is scheduled from 8:00 a.m. until 8:00 p.m. on Sunday, July 7, in District 2. Gear is restricted to beach seine and dip nets only.

One 4-hour commercial salmon fishing period is scheduled from 8:00 p.m. until 12:00 midnight on Monday, July 8, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-48-13 Effective Date: July 7, 2013

One 6-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 12:00 midnight on Sunday, July 7, in District 1. Gillnets are restricted to 5.5-inch or smaller mesh size and not more than 30 meshes in depth.

EO Number: 3-S-SY-49-13 Effective Date: July 9, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Tuesday, July 9, until 6:00 p.m. Thursday, July 11, in Subdistricts 5-A, 5-B, and 5-C is canceled.

EO Number: 3-S-SY-50-13 Effective Date: July 10, 2013

Subsistence salmon fishing closes at 8:00 p.m. Wednesday, July 10, in the lower portion of Subdistrict 5-D.

EO Number: 3-S-SY-51-13 Effective Date: July 8, 2013

At 8:00 p.m. Monday, July 8, subsistence salmon fishing is reduced from two 36-hour subsistence periods per week to two 18-hour subsistence periods per week. Subsistence salmon fishing is scheduled from 8:00 p.m. Monday, July 8, until 2:00 p.m. Tuesday, July 9, and from 8:00 p.m. Thursday, July 11, until 2:00 p.m. Friday, July 12, in District 1.

EO Number: 3-S-SY-52-13 Effective Date: July 8, 2013

One 6-hour commercial salmon fishing period is scheduled from 8:00 p.m. Monday, July 8, until 2:00 a.m. Tuesday, July 9, in District 1. Gillnets are restricted to 6-inch or smaller mesh size.

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EO Number: 3-S-SY-53-13 Effective Date: July 12, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Friday, July 12, until 12:00 noon Sunday, July 14, in Subdistricts 6-A and 6-B is canceled. The subsistence salmon fishing period scheduled from 6:00 p.m. Friday, July 12, until 6:00 p.m. Monday, July 15, in the Old Minto Area is canceled.

EO Number: 3-S-SY-54-13 Effective Date: July 10, 2013

At 12:00 noon Wednesday, July 10, personal use salmon fishing closes in Subdistrict 6-C.

EO Number: 3-S-SY-55-13 Effective Date: July 10, 2013

At 6:00 p.m. Wednesday, July 10, subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Wednesday, July 10, until 6:00 p.m. Thursday, July 11, in Subdistrict 4-A.

The subsistence salmon fishing period scheduled from 6:00 p.m. Wednesday, July 10, until 6:00 p.m. Friday, July 12, in Subdistricts 4-B and 4-C is canceled.

EO Number: 3-S-SY-56-13 Effective Date: July 10, 2013

One 6-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 12:00 midnight on Tuesday, July 9, in District 1. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-57-13 Effective Date: July 10, 2013

At 8:00 p.m. Wednesday, July 10, subsistence salmon fishing is reduced from two 36-hour periods per week to two 18-hour subsistence periods per week. Subsistence salmon fishing is scheduled from 8:00 p.m. Wednesday, July 10, until 2:00 p.m. Thursday, July 11, and from 8:00 p.m. Sunday, July 14, until 2:00 p.m. Monday, July 15, in Districts 2 and 3.

EO Number: 3-S-SY-58-13 Effective Date: July 10, 2013

One 4-hour commercial salmon fishing period is scheduled from 4:00 p.m. until 8:00 p.m. on Wednesday, July 10, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-59-13 Effective Date: July 11, 2013

One 9-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 12:00 midnight on Thursday, July 11, in District 1. Gillnets are restricted to 6-inch or smaller mesh size.

One 4-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 10:00 p.m. on Thursday, July 11, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-60-13 Effective Date: July 12, 2013

At 6:00 p.m. Friday, July 12, subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Saturday, July 13, until 6:00 p.m. Sunday, July 14, in Subdistricts 5-A, 5-B, and 5-C.

EO Number: 3-S-SY-61-13 Effective Date: July 14, 2013

Subsistence salmon fishing closes at 6:00 p.m. Sunday, July 14, in the middle portion of Subdistrict 5-D and at 6:00 p.m. Tuesday, July 16, in the upper portion of Subdistrict 5-D.

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EO Number: 3-S-SY-62-13 Effective Date: July 14, 2013

At 6:00 p.m. Sunday, July 14, subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Sunday July, 14, until 6:00 p.m. Monday, July 15, in Subdistricts 4-A, 4-B, and 4-C.

Subsistence salmon fishing is extended from 12:01 a.m. Monday, July 15, until 6:00 p.m. Monday, July 15, in Subdistrict 4-A. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-63-13 Effective Date: July 13, 2013

One 9-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 12:00 midnight on Saturday, July 13, in District 1. Gillnets are restricted 6-inch or smaller mesh size.

EO Number: 3-S-SY-64-13 Effective Date: July 13, 2013

An additional 12-hour subsistence salmon fishing period is scheduled from 12:00 noon until 12:00 midnight on Saturday, July 13, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-65-13 Effective Date: July 14, 2013

Seven 24-hour fishing periods are scheduled from 12:01 a.m. Sunday, July 14, until 12:00 midnight Saturday, July 20, in Subdistrict 4-A. Gear is restricted to fish wheels only.

EO Number: 3-S-SY-66-13 Effective Date: July 14, 2013

At 8:00 p.m. Sunday July 14, commercial salmon fishing opens in District 3.

Emergency order 3-S-SY-57-13, which established a reduced subsistence salmon fishing schedule for Districts 2 and 3, is rescinded.

At 8:00 p.m. Sunday, July 14, subsistence salmon fishing is open 7 days per week, 24 hours a day, except for 12 hours before, during and 12 hours after a commercial salmon fishing period in District 3. Gillnets are relaxed to 7.5-inch or smaller mesh size in District 3 and the Innoko River.

Subsistence salmon fishing is scheduled from 8:00 p.m. Sunday, July 14, until 8:00 a.m. Monday July, 15. Gillnets are relaxed to 7.5-inch or smaller mesh size. At 8:00 a.m. Monday, July 15, subsistence salmon fishing is open 7 days per week, 24 hours a day except for 12 hours before, during and 12 hours after a commercial period in District 2.

EO Number: 3-S-SY-67-13 Effective Date: July 14, 2013

One 9-hour commercial salmon fishing period is scheduled from 11:00 a.m. until 8:00 p.m. on Sunday, July 14, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-68-13 Effective Date: July 15, 2013

Emergency order 3-S-SY-01-13, which established a weekly subsistence salmon fishing schedule and restricted gillnets in districts 1 through 3 and the Innoko River, is rescinded.

Subsistence salmon fishing is scheduled from 12:00 midnight Monday, July 15, until 12:00 noon Tuesday, July 16, in District 1. Gillnets are relaxed to 7.5-inch or smaller mesh size.

At 12:00 noon Tuesday, July 16, subsistence salmon fishing is open 7 days per week, 24 hours a day except for 12 hours before, during and 12 hours after a commercial period in District 1.

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EO Number: 3-S-SY-69-13 Effective Date: July 15, 2013

One 9-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 12:00 midnight on Monday, July 15, in District 1. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-70-13 Effective Date: July 17, 2013

One 9-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 12:00 midnight on Wednesday, July 17, in District 2. Gillnets are restricted to 6-inch or smaller mesh size.

EO Number: 3-S-SY-71-13 Effective Date: July 17, 2013

One 24-hour subsistence salmon fishing period is scheduled from 8:00 p.m. Wednesday, July 17, until 8:00 p.m. Thursday, July 18, in the lower portion of Subdistrict 5-D.

EO Number: 3-S-SY-72-13 Effective Date: July 16, 2013

Subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Tuesday, July 16, until 6:00 p.m. Wednesday, July 17, in Subdistricts 5-A, 5-B, and 5-C.

EO Number: 3-S-SY-73-13 Effective Date: July 17, 2013

At 6:00 p.m. on Wednesday, July 17, gillnets are relaxed to 7.5-inch or smaller mesh size in Subdistrict 4-A.

Subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Wednesday, July 17, until 6:00 p.m. Thursday, July 18 in Subdistricts 4-B and 4-C. At 6:00 p.m. Sunday, July 21, gillnets are relaxed to 7.5-inch or smaller mesh size.

EO Number: 3-S-SY-74-13 Effective Date: July 19, 2013

At 6:00 p.m. Friday, July 19, subsistence salmon fishing is reduced from a 48-hour subsistence period to a 24-hour subsistence period. Subsistence salmon fishing is scheduled from 6:00 p.m. Saturday, July 20, until 6:00 p.m. Sunday, July 21, in Subdistricts 5-A, 5-B, and 5-C. Gear is restricted is fish wheels only. At 6:00 p.m. Tuesday, July, 23, gillnets are relaxed to 7.5-inch or smaller mesh size.

EO Number: 3-S-SY-75-13 Effective Date: July 19, 2013

At 6:00 p.m. Friday, July 19, the commercial salmon fishing season opens in District 6.

EO Number: 3-S-SY-76-13 Effective Date: July 19, 2013

One 42-hour commercial salmon fishing period is scheduled from 6:00 p.m. Friday, July 19, until 12:00 noon Sunday, July 21, in Subdistrict 6-A and 6-B. Gear is restricted to fish wheels only.

EO Number: 3-S-SY-77-13 Effective Date: July 21, 2013

One 24-hour subsistence salmon fishing period is scheduled from 8:00 p.m. Sunday, July 21, until 8:00 p.m. Monday, July 22, in the middle portion of Subdistrict 5-D.

One 24-hour subsistence salmon fishing period is scheduled from 8:00 p.m. Tuesday, July 23, until 8:00 p.m. Wednesday, July 24, in the lower and upper portions of Subdistrict 5-D.

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EO Number: 3-S-SY-78-13 Effective Date: July 21, 2013

Seven 24-hour commercial salmon fishing periods are scheduled from 12:01 a.m. Sunday, July 21, until 12:00 midnight Saturday, July 27, in Subdistrict 4-A. Gear is restricted to fish wheels or gillnets of 6-inch or smaller mesh size.

EO Number: 3-S-SY-79-13 Effective Date: July 26, 2013

At 6:00 p.m. Friday, July 26, gillnets are relaxed to 7.5-inch or smaller mesh size in the Koyukuk River.

EO Number: 3-S-SY-80-13 Effective Date: July 22, 2013

Two 42-hour commercial salmon fishing periods are scheduled from 6:00 p.m. Monday, July 22, until 12:00 noon Wednesday, July 24, and from 6:00 p.m. Friday, July 26, until 12:00 noon Sunday, July 28, in Subdistricts 6-A and 6-B. Gear is restricted to fish wheels only.

EO Number: 3-S-SY-81-13 Effective Date: July 26, 2013

The subsistence salmon fishing period scheduled from 6:00 p.m. Friday, July 26, until 12:00 noon Sunday, July 28, in Subdistricts 6-A and 6-B is canceled.

The subsistence salmon fishing period scheduled from 6:00 p.m. Friday, July 26, to 6:00 p.m. Monday, July 29, in the Old Minto Area is canceled.

EO Number: 3-S-SY-82-13 Effective Date: July 29, 2013

One 42-hour commercial salmon fishing period is scheduled from 6:00 p.m. Monday, July 29, until 12:00 noon Wednesday, July 31, in Subdistricts 6-A and 6-B.

EO Number: 3-S-SY-83-13 Effective Date: August 2, 2013

At 6:00 p.m. Friday, August 2, a weekly schedule of two 42-hour commercial salmon fishing periods is scheduled from 6:00 p.m. Fridays until 12:00 noon Sundays and from 6:00 p.m. Mondays until 12:00 noon Wednesdays in Subdistricts 6-A and 6-B.

EO Number: 3-S-SY-84-13 Effective Date: August 6, 2013

At 6:00 p.m. Tuesday, August 6, salmon may be taken 7 days a week with gillnets relaxed to 7.5-inch or smaller mesh size in the lower portion of Subdistrict 5-D.

Emergency order 3-S-SY-50-13, which closed subsistence salmon fishing in the lower portion of Subdistrict 5-D, is rescinded.

EO Number: 3-S-SY-85-13 Effective Date: August 8, 2013

At 6:00 p.m. Thursday, August 8, salmon may be taken 7 days a week with gillnets relaxed to 7.5-inch or smaller mesh size in the middle portion of Subdistrict 5-D.

EO Number: 3-S-SY-86-13 Effective Date: August 14, 2013

At 12:00 noon Wednesday, August 14, salmon may be taken 7 days a week with gillnets relaxed to 7.5-inch or smaller mesh size in the upper portion of Subdistrict 5-D.

Emergency orders 3-S-SY-22-13, which restricted gillnets in Subdistrict 5-D, and 3-S-SY-61-13, which closed subsistence salmon fishing in the middle and upper portions of Subdistrict 5-D, are rescinded.

Appendix A24.–Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 2013.

District	Residence	Gillnet Permits (S04Y)
1, 2, and 3	Alakanuk	78
	Anchorage	33
	Auke Bay	1
	Bethel	13
	Chevak	2
	Eagle River	1
	Elim	1
	Emmonak	109
	Ester	1
	Fairbanks	8
	Fortuna Ledge	2
	Holy Cross	6
	Homer	3
	Hooper Bay	3
	Kalskag	1
	Kotlik	76
	Kwethluk	2
	Marshall	38
	Mcgrath	1
	Mountain Village	73
	Newhalen	1
	Nome	1
	North Pole	1
	Nunam Iqua	12
	Palmer	1
	Pilot Station	58
	Russian Mission	15
	Saint Marys	76
	Saint Michael	3
	Sand Point	2
	Scammon Bay	27
	Shaktoolik	1
	Sitka	1
	Stebbins	5
	Tuluksak	1
	Wasilla	13
	De Pere, WI	1
	Ft. Campbell, KY	1
	Painted Post, NY	1
	Snohomish, WA	1
Total Lower Yukon Area		674

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District	Residence	Gillnet Permits (S04P)	Fish Wheel Permits (S08P)	Total
4, 5, and 6	Anchorage	3	2	5
	Aniak	1		1
	Anvik	1	5	6
	Circle City		1	1
	Dot Lake		1	1
	Eagle River		1	1
	Fairbanks	23	19	42
	Fort Yukon		1	1
	Galena	2	8	10
	Grayling	4	4	8
	Hughes		1	1
	Kaltag	1	9	10
	Koyukuk		1	1
	Manley Hot Springs	2	5	7
	Mcgrath	1	1	2
	Minto		1	1
	Nenana	6	16	22
	North Pole	2	2	4
	Nulato		8	8
	Palmer		1	1
	Rampart	1		1
	Ruby	1	4	5
	Salcha	1		1
	Stevens Village		2	2
	Tanana	1	9	10
	Valdez		1	1
	Wasilla		2	2
	Lusk, WY	1	1	2
Total Upper Yukon Area		51	106	157
Grand Total Yukon Area		725	106	831[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.

APPENDIX B: LOWER YUKON AREA SALMON

Appendix B1.–Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1993–2013.

	Unrestricted Mesh Size [a,b]				7.5 inch Maximum Mesh Size [a,c]				6 inch Maximum Mesh Size [a,d]	
	Chinook			Summer Chum	Chinook			Summer Chum	Chinook	Summer Chum
Year [e]	District 1	District 2	Total	Districts 1 and 2	District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1993	47,084	37,293	84,377	47,488					2,202	45,503
1994 [f]	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	–	–	–	–					–	–
2002	11,089	11,440	22,529	10,354					0	0
2003	22,708	14,220	36,928	6,162					0	0
2004	28,401	24,145	52,546	19,775					0	0
2005	16,619	13,413	30,032	32,278					0	0
2006	23,728	19,356	43,084	35,574					478	11,785
2007	13,558	9,238	22,796	11,311					9,121	164,911
2008	–	–	–	–					4,348	125,598
2009 [g]	–	–	–	–					131	157,906
2010	–	–	–	–					9,897	183,215
2011 [g]	–	–	–	–	–	–	–	–	0	266,510
2012 [g]	–	–	–	–	–	–	–	–	0	207,849
2013 [g,h]	–	–	–	–	–	–	–	–	0	379,143
2008–2012 Average									2,875	188,216
2003–2012 Average	21,003	16,074	37,077	21,020					2,398	111,777

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Note: En dash indicates no commercial fishing activity occurred.

[a] Does not include Chinook caught during the fall season fishery.

[b] Primarily 8 to 8.5-inch mesh size used during early June to early July.

[c] In 2010, the Alaska Board of Fisheries (BOF) adopted new regulation stating the maximum mesh size of gillnets to be used within the Yukon River drainage was 7.5 inches. This went into effect for the 2011 fishing season.

[d] Catch through July 15 to 20, relatively few Chinook and summer chum salmon taken after these dates.

[e] ADF&G test fish sales not included in total.

[f] 8 inch or greater mesh size restriction was in effect until June 27 and fishermen were requested to take chum salmon home for subsistence use until June 22 in order to reduce the harvest of chums.

[g] In summer chum directed commercial fisheries with gillnets restricted to a 6 inch maximum mesh size, the sale of incidentally caught Chinook salmon was prohibited throughout portions or all of the summer season.

[h] In 2013, The BOF adopted new gear types for use in the summer chum directed commercial fishery: dip net, beach seine and 5.5-inch mesh, not exceeding 30 meshes in depth. The total number harvested in these gear types was 269,208 fish.

Appendix B2.–Commercial Chinook salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1993–2013.

	District 1								
Year	334–11	334–12	334–13	334–14	334–15	334–16	334–17	334–18	Total
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	–	–	–	–	–	–	–	–	–
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
2005	2,137	1,531	944	592	2,580	1,650	3,926	3,334	16,694
2006	2,252	2,106	1,558	928	3,507	2,476	6,201	4,720	23,748
2007	1,116	1,419	1,555	855	4,890	1,168	5,828	1,785	18,616
2008	50	440	209	263	372	226	628	342	2,530
2009	1	16	4	3	36	17	10	3	90
2010	252	824	213	358	1,266	985	1,570	276	5,744
2011	1	8	1	0	4	17	4	1	36
2012	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0
2008–2012									
Average	61	258	85	125	336	249	442	124	1,680
2003–2012									
Average	839	1,356	754	602	2,170	876	3,096	2,166	11,857

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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
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	–	–	–
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	–	–	–
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	1,433	964	415	457	511	3,780	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	2,140	3,044	1,992	2,712	1,546	11,434	–	–	–
2003	2,965	5,454	993	2,104	2,704	14,220	–	–	–
2004	5,879	8,326	3,459	3,819	2,662	24,145	–	–	–
2005	3,292	5,905	1,397	347	2,472	13,413	–	–	–
2006	3,750	8,457	2,700	3,425	1,511	19,843	315	0	0
2007	2,818	5,509	2,458	1,375	1,146	13,306	190	0	0
2008	420	654	670	252	115	2,111	–	–	–
2009	39	106	56	2	23	226	–	–	–
2010	389	1,690	890	1,184	0	4,153	–	–	–
2011	2	16	6	22	0	46	–	–	–
2012	0	0	0	0	0	0	–	–	–
2013	0	0	0	0	0	0	–	–	–
2008–2012 Average	170	493	324	292	28	1,307			
2003–2012 Average	1,955	3,612	1,263	1,253	1,063	9,146	253	0	0

Note: En dash indicates no commercial fishing activity occurred.

Appendix B3.–Commercial summer chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon area 1993–2013.

	District 1								
Year	334–11	334–12	334–13	334–14	334–15	334–16	334–17	334–18	Total
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	–	–	–	–	–	–	–	–	–
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
2005	4,260	2,791	1,658	2,697	3,631	1,985	3,970	2,973	23,965
2006	4,310	3,181	1,915	899	2,315	1,441	4,382	3,373	21,816
2007	3,724	15,690	14,297	10,746	15,816	8,801	25,753	11,963	106,790
2008	1,200	9,216	5,521	9,224	6,219	5,937	17,423	12,719	67,459
2009	730	7,457	9,120	9,569	12,979	4,930	23,532	3,018	71,335
2010	3,881	19,138	5,707	12,405	12,116	9,484	32,994	6,542	102,267
2011	150	28,715	20,807	39,517	19,948	10,720	35,634	7,948	163,439
2012	4,240	43,096	21,516	25,364	1,126	432	53,037	1,989	150,800
2013	36	55,130	20,303	35,431	19,303	6,198	67,662	3,808	207,871
2008–2012 Average	2,040	21,524	12,534	19,216	10,478	6,301	32,524	6,443	111,060
2003–2012 Average	2,325	13,076	8,210	11,162	7,753	4,479	20,146	5,393	72,544

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	District 2						District 3		
							334–31		
Year	334–21	334–22	334–23	334–24	334–25	Total	Number	Roe	Estimated Harvest [a]
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	–	–	–
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	–	–	–
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	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	1,105	997	862	794	269	4,027	–	–	–
2003	1,153	855	218	181	176	2,583	–	–	–
2004	1,724	1,439	1,350	1,061	208	5,782	–	–	–
2005	2,852	3,978	850	105	528	8,313	–	–	–
2006	6,325	10,523	2,080	5,805	810	25,543	116	0	116
2007	21,356	32,583	9,310	1,740	4,443	69,432	1	0	1
2008	15,326	14,017	16,781	10,145	1,870	58,139	–	–	–
2009	13,583	48,571	19,717	3,053	1,647	86,571	–	–	–
2010	9,575	23,029	14,474	33,870	0	80,948	–	–	–
2011	15,959	27,109	20,506	37,868	1,629	103,071	–	–	–
2012	12,129	20,952	12,317	11,651	0	57,049	–	–	–
2013	10,458	96,662	29,860	34,292	0	171,272	–	–	–
2008–2012 Average	13,314	26,736	16,759	19,317	1,029	77,156			
2003–2012 Average	9,998	18,306	9,760	10,548	1,131	49,743	59	0	59

Note: En dash indicates no commercial fishing activity occurred.

[a] Estimated harvest includes reported harvest of both males and females harvested to produce roe sold.

Appendix B4.–Commercial fall chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1993–2013.

	District 1									
Year	334–11	334–12	334–13	334–14	334–15	334–16	334–17	334–18	334–19	Total
1993	–	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–
1999	4	1,931	474	1,182	1,934	1,439	1,103	1,920	–	9,987
2000	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–
2003	0	2,784	177	310	958	0	381	976	–	5,586
2004	0	509	25	67	0	0	19	40	–	660
2005	117	16,840	8,735	25,330	8,253	31,864	29,546	9,840	–	130,525
2006	163	16,212	9,929	9,973	7,538	9,568	32,200	15,671	–	101,254
2007	0	6,395	8,550	4,951	1,423	2,130	12,562	2,841	–	38,852
2008	22	16,471	6,018	9,138	5,152	7,090	16,072	7,741	–	67,704
2009	66	1,355	457	301	4,576	2,118	2,415	623	–	11,911
2010	0	211	0	13	83	10	167	61	–	545
2011	11	10,019	3,673	10,142	34,153	35,432	27,230	7,075	–	127,735
2012	2,068	34,698	4,039	12,305	23,870	11,351	37,810	13,701	–	139,842
2013	240	21,188	7,304	11,192	12,175	5,484	43,824	5,181	–	106,588
2008–2012 Average	433	12,551	2,837	6,380	13,567	11,200	16,739	5,840		69,547
2003–2012 Average	245	10,549	4,160	7,253	8,601	9,956	15,840	5,857		62,461

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Year [a]	District 2						District 3		
	334–21	334–22	334–23	334–24	334–25	Total	334–31	334–32	Total
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–
1995	147	54,231	20,018	16,435	0	90,831	–	–	–
1996	1,960	14,349	4,184	7,634	1,524	29,651	–	–	–
1997	5,040	9,827	2,316	5,972	1,171	24,326	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	1,536	2,836	3,254	1,910	167	9,703	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	3,362	21,069	11,060	4,414	0	39,905	–	–	–
2007	8,619	17,068	8,245	1,894	0	35,826	–	–	–
2008	10,027	11,630	11,507	7,424	682	41,270	–	–	–
2009	1,107	7,988	1,593	235	1,149	12,072	–	–	–
2010	3	27	165	0	75	270	–	–	–
2011	14,239	33,639	18,123	32,063	2,667	100,731	–	–	–
2012	14,454	34,658	26,646	53,526	–	129,284	–	–	–
2013	18,476	27,663	16,379	40,955	2,801	106,274	–	–	–
2008–2012 Average	7,966	17,588	11,607	18,650	1,143	56,725			
2003–2012 Average	7,402	18,011	11,048	14,222	762	51,337			

Note: En dash indicates no commercial fishing activity occurred.

Appendix B5.–Commercial coho salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1993–2013.

	District 1								
Year	334–11	334–12	334–13	334–14	334–15	334–16	334–17	334–18	Total
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–
1999	3	261	36	45	184	176	88	62	855
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
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
2005	98	4,249	1,069	4,020	1,560	17,728	6,615	1,194	36,533
2006	7	3,034	2,467	2,315	3,508	15,280	10,196	2,516	39,323
2007	0	1,320	2,361	1,983	993	6,331	7,091	1,641	21,720
2008	35	3,122	1,024	1,274	838	2,456	3,712	1,485	13,946
2009	0	227	124	11	1,566	2,486	1,493	87	5,994
2010	0	204	5	6	142	102	445	123	1,027
2011	21	5,257	1,851	4,696	9,424	9,101	12,724	2,261	45,335
2012	33	3,739	331	1,229	8,683	7,241	14,523	3,978	39,757
2013	33	4,995	1,248	2,360	4,810	2,609	9,993	1,258	27,306
2008–2012 Average	18	2,510	667	1,443	4,131	4,277	6,579	1,587	21,212
2003–2012 Average	32	2,681	974	1,648	2,865	6,073	5,743	1,482	21,498

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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
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–
1995	115	12,154	2,951	3,268	0	18,488	–	–	–
1996	761	12,155	2,755	4,409	894	20,974	–	–	–
1997	2,197	6,449	1,238	3,025	147	13,056	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	147	238	248	65	48	746	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	2,138	7,250	3,745	1,349	0	14,482	–	–	–
2007	4,195	12,354	3,253	1,685	0	21,487	–	–	–
2008	3,275	6,076	4,594	4,680	621	19,246	–	–	–
2009	370	1,085	100	8	19	1,582	–	–	–
2010	7	105	606	0	305	1,023	–	–	–
2011	6,184	8,091	3,705	5,987	217	24,184	–	–	–
2012	4,748	10,750	5,584	7,981	–	29,063	–	–	–
2013	3,951	11,041	7,225	8,911	330	31,458	–	–	–
2008–2012 Average	2,917	5,221	2,918	3,731	291	15,020			
2003–2012 Average	2,988	6,530	3,084	3,099	194	15,867			

Note: En dash indicates no commercial fishing activity occurred.

Appendix B6.–Daily and cumulative catch per unit effort (CPUE) for Chinook salmon in the set gillnet test fishery, Lower Yukon River, 2013.

Chinook Salmon in 8.5" Set Gillnets						
	2013				Average 1989-2012 [a]	
Date	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished [b]	Percent	Cumulative CPUE
26 May						
27 May					0.00	0.03
28 May					0.00	0.04
29 May					0.00	0.06
30 May					0.00	0.11
31 May					0.01	0.16
1 Jun					0.01	0.22
2 Jun					0.01	0.30
3 Jun					0.02	0.44
4 Jun					0.03	0.61
5 Jun					0.04	0.78
6 Jun					0.05	1.02
7 Jun					0.06	1.30
8 Jun					0.07	1.63
9 Jun					0.10	2.17
10 Jun					0.12	2.64
11 Jun	0	0.00	0.00		0.14	3.13
12 Jun	0	0.00	0.00		0.17	3.74
13 Jun	1	0.01	0.01		0.20	4.45
14 Jun	1	0.01	0.02		0.24	5.16
15 Jun	4	0.05	0.07		0.27	5.87
16 Jun	12	0.17	0.24		0.31	6.76
17 Jun	5	0.08	0.32		0.35	7.60
18 Jun	9	0.13	0.45	12	0.39	8.45
19 Jun	13	0.18	0.63	9	0.42	9.26
20 Jun	12	0.18	0.80	12	0.46	10.01
21 Jun	24	0.33	1.14	12	0.50	10.93
22 Jun	27	0.38	1.51	12	0.54	11.86
23 Jun	25	0.35	1.86	12	0.58	12.73
24 Jun	20	0.28	2.14	12	0.63	13.73
25 Jun	34	0.47	2.61	12	0.67	14.59
26 Jun	25	0.35	2.96	12	0.71	15.44
27 Jun	40	0.56	3.51	12	0.74	16.18
28 Jun	36	0.50	4.01	12	0.77	16.89
29 Jun	53	0.88	4.89	12	0.80	17.53
30 Jun	23	0.27	5.17	12	0.83	18.04

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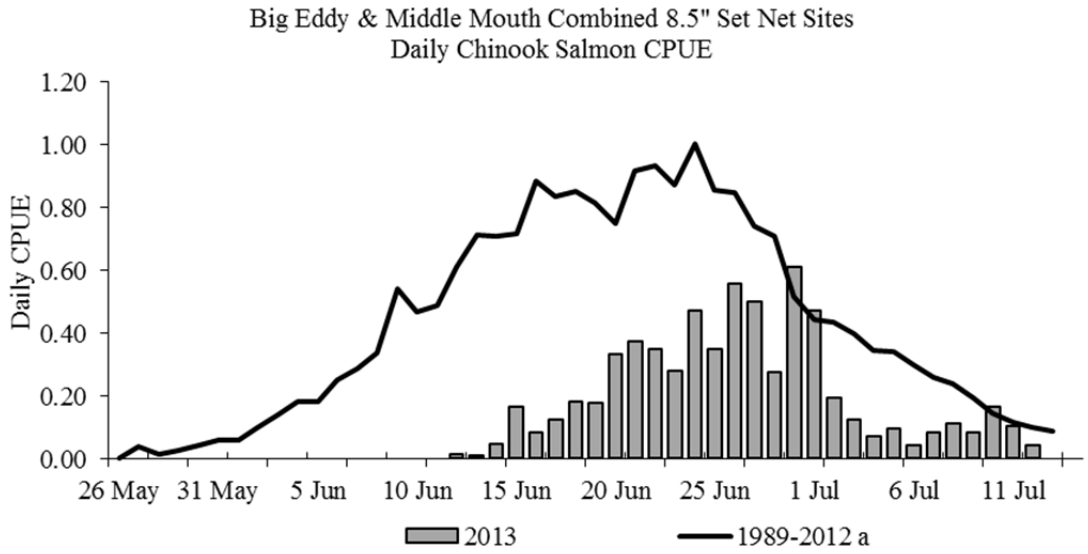
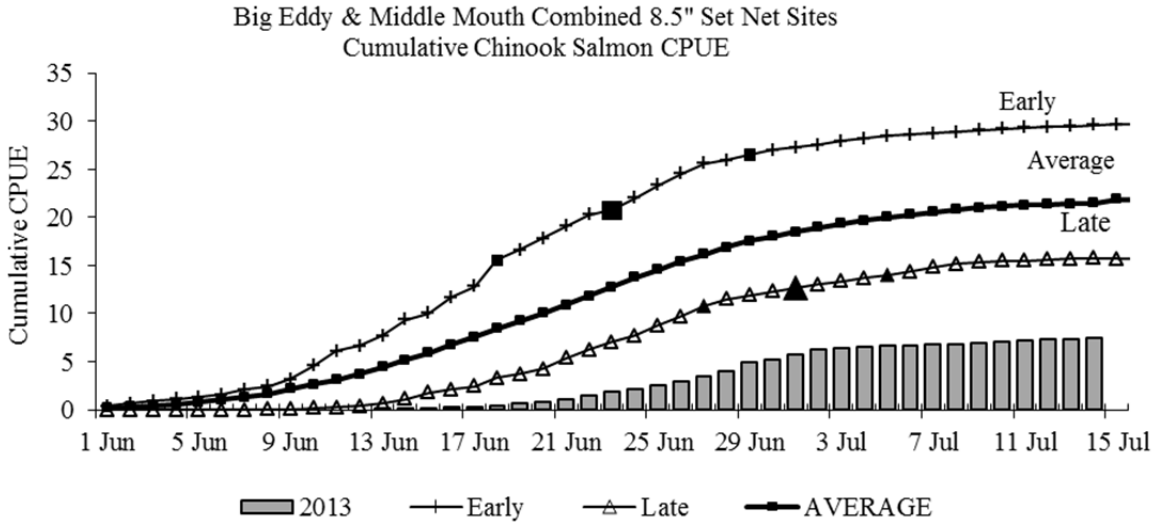
Chinook Salmon in 8.5" Set Gillnets						
	2013				Average 1989-2012 [a]	
Date	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished [b]	Percent	Cumulative CPUE
1 Jul	44	0.61	5.78	12	0.85	18.49
2 Jul	34	0.47	6.25	14	0.87	18.92
3 Jul	14	0.19	6.45	6	0.88	19.32
4 Jul	9	0.13	6.57	6	0.90	19.66
5 Jul	5	0.07	6.64	6	0.91	20.00
6 Jul	7	0.10	6.74	6	0.93	20.30
7 Jul	3	0.04	6.78	6	0.94	20.56
8 Jul	6	0.08	6.86	6	0.95	20.80
9 Jul	8	0.11	6.97	6	0.96	20.99
10 Jul	6	0.08	7.06		0.97	21.13
11 Jul	8	0.17	7.22	6	0.97	21.25
12 Jul	5	0.10	7.33		0.98	21.35
13 Jul	2	0.04	7.37	6	0.98	21.44
14 Jul	2	0.04	7.41		0.98	21.50
15 Jul					1.00	21.86
Total	517		7.41	233		21.86

[a] 2009 not included because high water and debris caused considerable difficulty for the project.

[b] No Chinook salmon directed commercial fishing periods were executed in 2013.





Appendix B7.–Daily and cumulative CPUE for Chinook salmon set gillnet test fishery sites in 2013, compared to historic and late year average run timing.

Appendix B8.–Big Eddy and Middle Mouth summer chum salmon daily and cumulative index, cooperative 5.5 in mesh drift gillnet test fishery, Lower Yukon River, 2013.

	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	Percent	Cumulative Index	Daily Catch	Daily Index	Percent	Cumulative Index	Daily Catch	Daily Index	Percent	Cumulative Index
26 May												
27 May												
28 May												
29 May												
30 May												
31 May												
1 Jun												
2 Jun												
3 Jun												
4 Jun												
5 Jun												
6 Jun												
7 Jun												
8 Jun												
9 Jun												
10 Jun	5	17.65	0.01	17.65 [a]					5	17.65	0.00	17.65
11 Jun	3	4.62	0.01	22.26					3	4.62	0.00	22.26
12 Jun	0	0.00	0.01	22.26					0	0.00	0.00	22.26
13 Jun	2	2.87	0.01	25.13	0	0.00	0.00	0.00	2	2.87	0.01	25.13
14 Jun	0	0.00	0.01	25.13	0	0.00	0.00	0.00	0	0.00	0.01	25.13
15 Jun	16	24.90	0.01	50.03	0	0.00	0.00	0.00	16	24.90	0.01	50.03
16 Jun	41	118.72	0.05	168.75	12	13.54	0.01	13.54	53	132.26	0.04	182.29
17 Jun	19	29.35	0.06	198.10	3	4.26	0.02	17.80	22	33.61	0.05	215.90
18 Jun	12	18.39	0.06	216.49	2	2.80	0.02	20.60	14	21.19	0.05	237.09
19 Jun	31	45.39	0.08	261.89	4	5.85	0.02	26.45	35	51.24	0.06	288.34

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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	Percent	Cumulative Index	Daily Catch	Daily Index	Percent	Cumulative Index	Daily Catch	Daily Index	Percent	Cumulative Index
20 Jun	50	79.55	0.10	341.44	34	35.81	0.06	62.26	84	115.36	0.09	403.70
21 Jun	76	126.04	0.14	467.48	24	29.71	0.08	91.97	100	155.75	0.12	559.45
22 Jun	41	62.37	0.16	529.85	22	27.16	0.11	119.13	63	89.53	0.14	648.98
23 Jun	63	102.92	0.19	632.77	20	25.90	0.13	145.03	83	128.82	0.17	777.80
24 Jun	54	82.24	0.21	715.01	64	75.29	0.20	220.32	118	157.53	0.21	935.33
25 Jun	133	242.49	0.28	957.50	77	104.29	0.29	324.61	210	346.78	0.28	1,282.11
26 Jun	82	205.86	0.34	1,163.36	48	89.26	0.37	413.87	130	295.12	0.35	1,577.23
27 Jun	62	92.69	0.37	1,256.05	39	61.04	0.42	474.91	101	153.73	0.38	1,730.96
28 Jun	67	98.02	0.40	1,354.07	95	133.83	0.54	608.74	162	231.85	0.44	1,962.81
29 Jun	26	71.30	0.42	1,425.37 [a]	27	39.18	0.57	647.92	53	110.48	0.46	2,073.29
30 Jun	75	236.61	0.49	1,661.98 [a]	12	16.58	0.59	664.50	87	253.19	0.52	2,326.48
1 Jul	88	728.28	0.71	2,390.26 [b]	56	81.78	0.66	746.28	144	810.06	0.70	3,136.54
2 Jul	37	111.95	0.74	2,502.21 [a]	48	68.15	0.72	814.43	85	180.10	0.74	3,316.64
3 Jul	24	69.17	0.76	2,571.38 [a]	16	22.33	0.74	836.76	40	91.50	0.76	3,408.14
4 Jul	36	113.12	0.79	2,684.50 [a]	35	49.27	0.79	886.03	71	162.39	0.79	3,570.53
5 Jul	34	183.08	0.85	2,867.58 [a]	8	12.10	0.80	898.13	42	195.18	0.84	3,765.71
6 Jul	53	209.82	0.91	3,077.40 [a]	5	7.70	0.80	905.83	58	217.52	0.88	3,983.23
7 Jul	2	6.00	0.91	3,083.40 [a]	5	15.00	0.82	920.83 [a]	7	21.00	0.89	4,004.23
8 Jul	59	109.32	0.95	3,192.72	12	17.39	0.83	938.22	71	126.71	0.92	4,130.94
9 Jul	34	57.00	0.96	3,249.72	14	22.67	0.85	960.89	48	79.67	0.93	4,210.61
10 Jul	39	73.75	0.98	3,323.47	67	108.34	0.95	1,069.23	106	182.09	0.97	4,392.70
11 Jul	8	24.62	0.99	3,348.09	17	45.65	0.99	1,114.88	25	70.27	0.99	4,462.97
12 Jul	2	3.16	0.99	3,351.25	3	4.40	0.99	1,119.28	5	7.56	0.99	4,470.53
13 Jul	0	0.00	0.99	3,351.25	1	3.00	0.99	1,122.28	1	3.00	0.99	4,473.53
14 Jul	1	2.79	0.99	3,354.04	2	2.96	1.00	1,125.24	3	5.75	0.99	4,479.28
15 Jul	8	24.00	1.00	3,378.04 [c]	1	2.86	1.00	1,128.10 c	9	26.86	1.00	4,506.14
Total	1,283			3,378.04	773			1,128.10	2,056			4,506.14

Note: 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.

[a] Drift schedule was altered, only 2 drifts were conducted.

[b] Drift schedule was altered, only 1 drift was conducted.

[c] Last day of operation.

Appendix B9.–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, 2001 to 2012 compared to 2013.

	Historical	Fall Chum Salmon								Historical	Coho Salmon								
	Median	2001 to 2012 Median				2013				Median	2001 to 2012 Median					2013			
	Cumulative	Daily	Daily		Cumulative	Daily	Daily		Cumulative	Cumulative	Daily	Daily		Cumulative	Daily	Daily		Cumulative	
Date	Percent [a]	Catch	Index	%	Index [a]	Catch	Index	%	Index [a]	Date	Percent [a]	Catch	Index	%	Index [a]	Catch	Index	%	Index [a]
16 Jul	0.01	17	13.52	0.01	13.52	46	32.46	0.01	32.46	16 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
17 Jul	0.04	19	12.57	0.03	34.78	41	28.44	0.02	60.90	17 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
18 Jul	0.06	5	3.42	0.06	65.52	4	5.51	0.03	66.41	18 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
19 Jul	0.09	15	11.53	0.07	66.86	1	0.79	0.03	67.20	19 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
20 Jul	0.11	4	2.45	0.08	74.34	60	43.54	0.04	110.74	20 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
21 Jul	0.13	5	3.34	0.09	90.17	43	30.58	0.06	141.32	21 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
22 Jul	0.15	3	1.88	0.09	107.53	51	41.22	0.07	182.54	22 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
23 Jul	0.17	3	2.29	0.10	115.45	87	64.70	0.10	247.25	23 Jul	0.00	0	0.00	0.00	0.00	1	0.79	0.00	0.79
24 Jul	0.19	6	3.69	0.10	121.49	130	92.05	0.14	339.30	24 Jul	0.00	0	0.00	0.00	0.00	1	0.70	0.00	1.49
25 Jul	0.23	5	4.77	0.10	126.26	20	15.35	0.14	354.64	25 Jul	0.00	0	0.00	0.00	0.00	0	0.00	0.00	1.49
26 Jul	0.25	6	4.02	0.11	129.56	1	0.79	0.14	355.43	26 Jul	0.00	0	0.00	0.00	0.69	1	0.75	0.01	2.24
27 Jul	0.30	14	10.31	0.15	210.64	1	0.79	0.14	356.22	27 Jul	0.00	0	0.00	0.00	0.69	0	0.00	0.01	2.24
28 Jul	0.32	32	24.33	0.17	268.10	51	32.02	0.15	388.24	28 Jul	0.00	1	0.38	0.00	1.97	2	1.25	0.01	3.49
29 Jul	0.34	18	13.31	0.20	295.09	174	131.02	0.21	519.26	29 Jul	0.00	1	0.36	0.01	3.39	4	3.71	0.02	7.20
30 Jul	0.35	9	6.56	0.23	298.68	39	29.09	0.22	548.36	30 Jul	0.01	2	1.97	0.02	4.08	2	1.46	0.03	8.66
31 Jul	0.37	40	25.60	0.28	301.52	3	2.37	0.22	550.73	31 Jul	0.01	2	1.49	0.02	6.56	2	1.60	0.03	10.26
1 Aug	0.38	34	31.36	0.34	305.11	0	0.00	0.22	550.73	1 Aug	0.01	2	1.95	0.03	8.20	1	0.77	0.03	11.03
2 Aug	0.39	13	13.13	0.39	326.64	1	0.70	0.22	551.43	2 Aug	0.01	2	1.45	0.04	13.42	0	0.00	0.03	11.03
3 Aug	0.41	12	12.85	0.41	418.52	1	0.75	0.22	552.18	3 Aug	0.02	3	2.25	0.06	18.03	0	0.00	0.03	11.03
4 Aug	0.45	5	2.74	0.44	453.50	2	1.52	0.22	553.70	4 Aug	0.02	1	1.10	0.06	18.84	0	0.00	0.03	11.03
5 Aug	0.49	10	6.50	0.45	460.60	123	104.78	0.26	658.48	5 Aug	0.04	4	3.77	0.07	20.53	16	14.37	0.07	25.41
6 Aug	0.53	33	18.61	0.47	532.82	5	3.74	0.26	662.22	6 Aug	0.04	5	3.15	0.12	28.18	1	0.70	0.08	26.10
7 Aug	0.55	24	16.69	0.49	548.56	38	27.25	0.27	689.47	7 Aug	0.06	5	5.17	0.16	32.88	2	1.43	0.08	27.53
8 Aug	0.58	30	20.58	0.51	553.10	94	64.24	0.30	753.71	8 Aug	0.08	7	4.93	0.17	34.56	24	16.30	0.13	43.84
9 Aug	0.62	25	19.46	0.52	586.40	9	6.79	0.30	760.50	9 Aug	0.11	8	6.01	0.17	52.46	2	1.52	0.13	45.35
10 Aug	0.66	19	14.34	0.55	654.54	2	1.48	0.30	761.98	10 Aug	0.13	11	6.99	0.19	63.73	0	0.00	0.13	45.35
11 Aug	0.69	4	2.55	0.55	662.50	0	0.00	0.30	761.98	11 Aug	0.15	12	8.32	0.21	78.24	1	0.73	0.13	46.09

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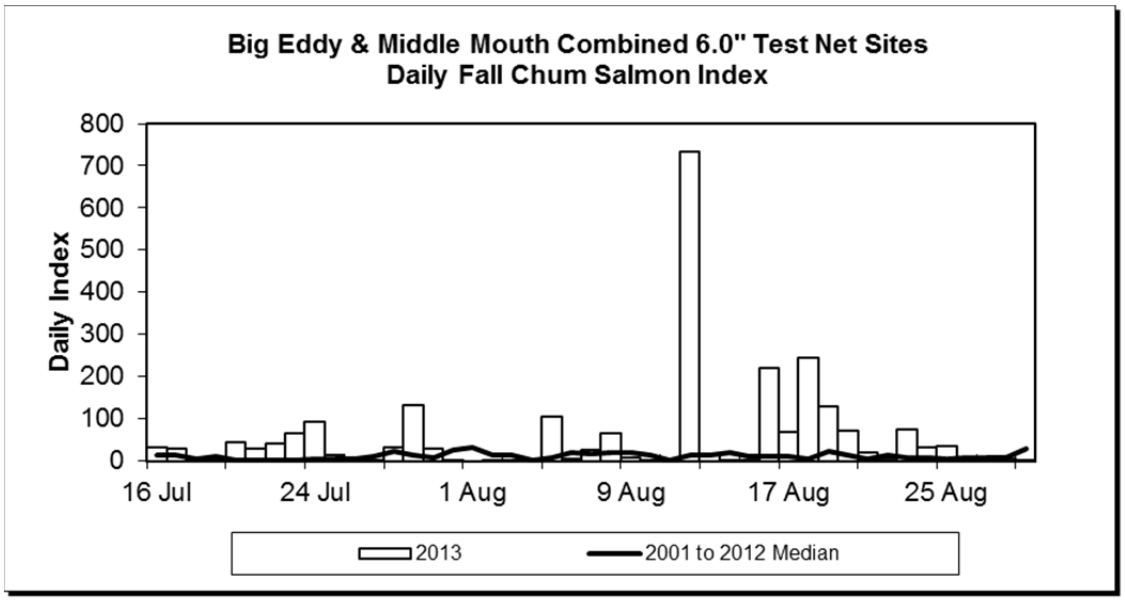
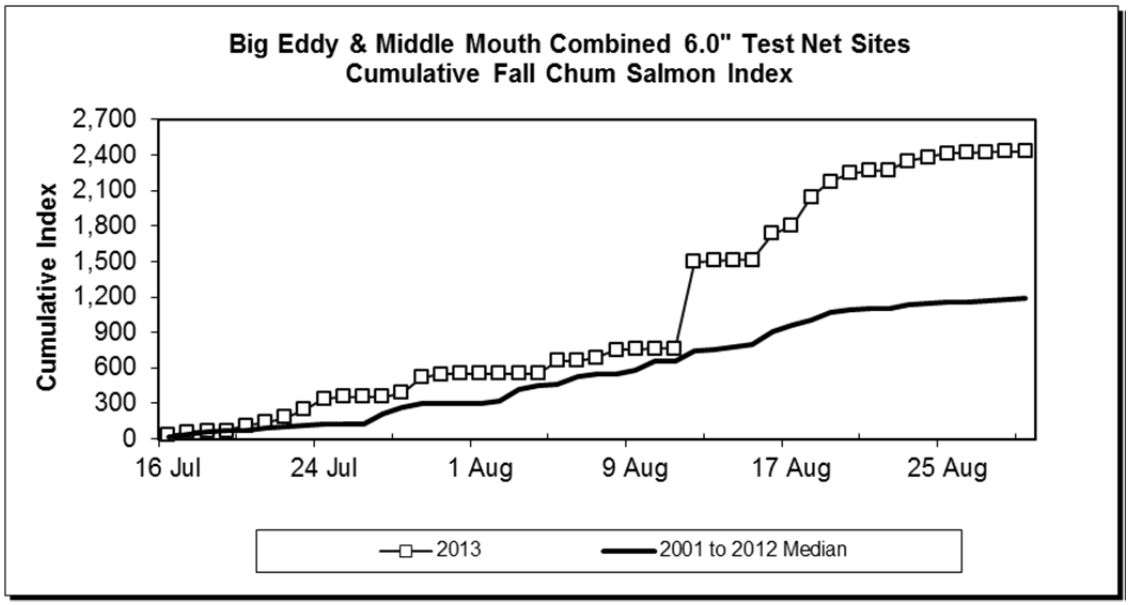
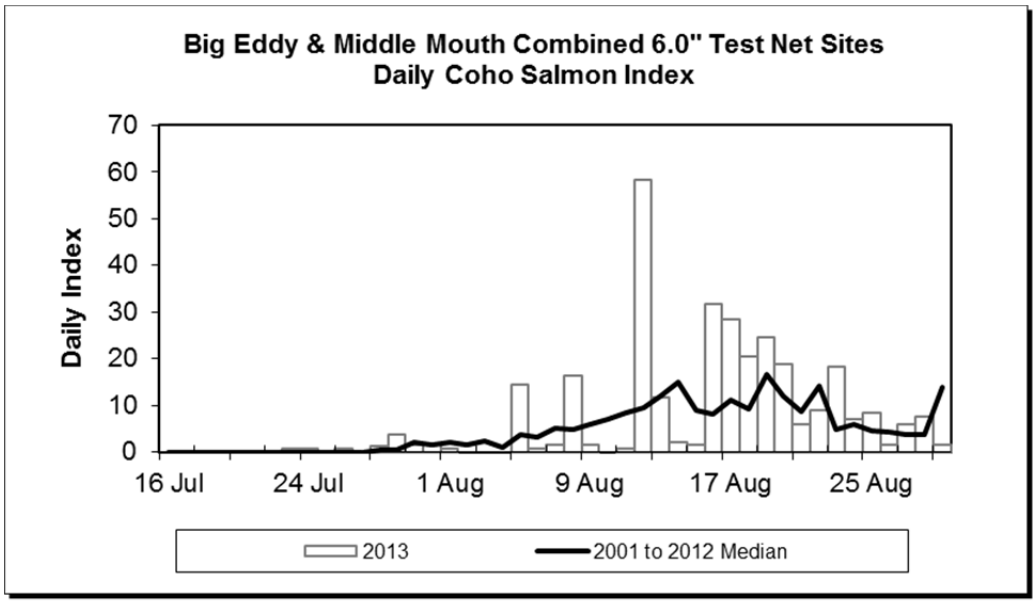
	Historical	Fall Chum Salmon								Historical	Coho Salmon								
	Median	2001 to 2012 Median				2013				Median	2001 to 2012 Median					2013			
	Cumulative	Daily	Daily		Cumulative	Daily	Daily		Cumulative	Cumulative	Daily	Daily		Cumulative	Daily	Daily		Cumulative	
Date	Percent [a]	Catch	Index	%	Index [a]	Catch	Index	%	Index [a]	Date	Percent [a]	Catch	Index	%	Index [a]	Catch	Index	%	Index [a]
12 Aug	0.70	20	14.37	0.59	748.92	266	733.64	0.60	1,495.63	12 Aug	0.20	13	9.58	0.24	93.61	37	58.21	0.30	104.30
13 Aug	0.72	12	14.87	0.63	751.47	20	14.46	0.60	1,510.09	13 Aug	0.23	15	11.94	0.28	108.31	16	11.60	0.34	115.90
14 Aug	0.74	23	20.94	0.67	779.40	2	1.43	0.60	1,511.52	14 Aug	0.34	13	15.04	0.35	116.38	3	2.20	0.34	118.09
15 Aug	0.77	15	11.23	0.69	798.29	2	1.50	0.60	1,513.02	15 Aug	0.39	9	9.08	0.39	129.63	2	1.54	0.35	119.63
16 Aug	0.82	12	9.76	0.76	904.29	299	221.53	0.69	1,734.55	16 Aug	0.45	13	8.15	0.44	155.54	37	31.77	0.44	151.40
17 Aug	0.83	13	10.10	0.78	967.69	96	67.20	0.72	1,801.75	17 Aug	0.51	13	11.02	0.49	172.14	41	28.36	0.52	179.76
18 Aug	0.85	9	5.30	0.80	1,002.56	245	245.56	0.82	2,047.31	18 Aug	0.58	9	9.12	0.52	179.46	25	20.52	0.58	200.28
19 Aug	0.87	28	21.72	0.83	1,071.88	71	129.99	0.87	2,177.31	19 Aug	0.62	20	16.67	0.64	201.07	13	24.69	0.66	224.96
20 Aug	0.89	15	12.60	0.86	1,093.03	104	71.58	0.90	2,248.89	20 Aug	0.68	15	12.02	0.71	264.45	28	18.75	0.71	243.71
21 Aug	0.91	7	5.14	0.88	1,098.80	28	20.50	0.90	2,269.39	21 Aug	0.70	12	8.70	0.80	272.17	8	5.88	0.73	249.59
22 Aug	0.93	18	13.17	0.90	1,105.03	4	5.93	0.91	2,275.32	22 Aug	0.75	21	14.18	0.82	289.98	6	8.86	0.75	258.45
23 Aug	0.94	10	8.59	0.91	1,133.82	120	75.18	0.94	2,350.50	23 Aug	0.80	5	4.86	0.83	298.70	29	18.28	0.81	276.74
24 Aug	0.96	11	8.36	0.92	1,151.49	45	31.13	0.95	2,381.63	24 Aug	0.87	8	6.05	0.85	302.40	10	6.98	0.83	283.71
25 Aug	0.97	5	3.89	0.93	1,154.27	44	34.74	0.96	2,416.38	25 Aug	0.89	5	4.49	0.88	314.95	10	8.46	0.85	292.17
26 Aug	0.98	9	7.70	0.96	1,157.56	4	5.86	0.96	2,422.24	26 Aug	0.91	5	4.39	0.93	323.55	1	1.50	0.86	293.67
27 Aug	0.99	8	6.96	0.99	1,173.17	4	2.97	0.97	2,425.20	27 Aug	0.97	4	3.65	0.96	335.60	8	5.88	0.87	299.55
28 Aug	1.00	5	7.00	1.00	1,180.97	7	5.22	0.97	2,430.42	28 Aug	1.00	4	3.75	1.00	337.11	10	7.54	0.90	307.09
29 Aug	1.00	34	28.85	1.00	1,195.20	1	1.54	0.97	2,431.96	29 Aug	1.00	14	13.81	1.00	341.45	1	1.54	0.90	308.63
Total		653				2,389				Total		257				345			

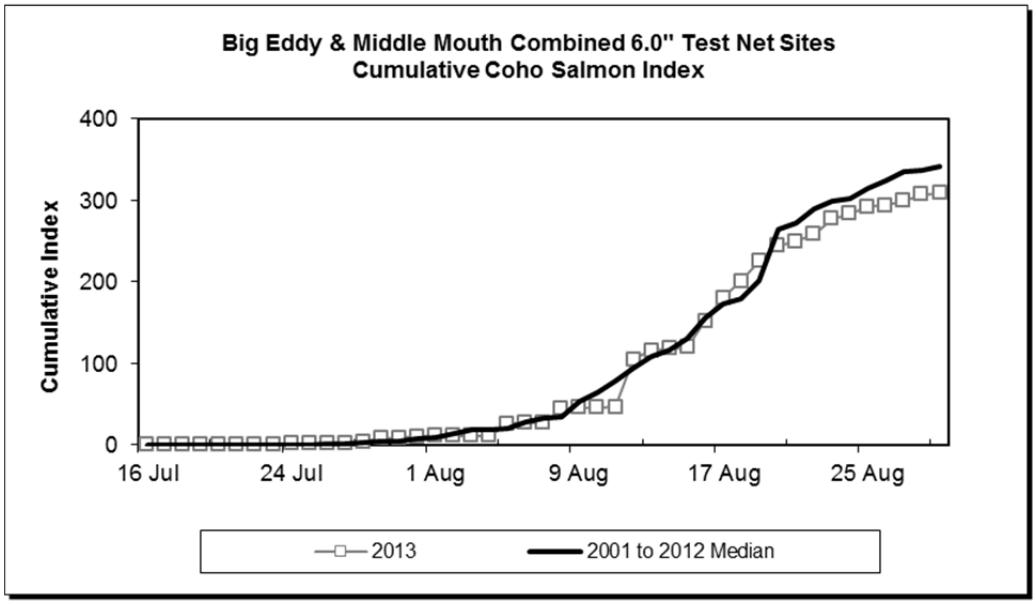
[a] Historical percent passage is based on the median from the set net test fishery 1980 to 1993 and 1995 to 2000. The box indicates the first to the third quartile of the cumulative catch per unit effort (CPUE). The median date of the cumulative CPUE is also highlighted.





Appendix B10.–Fall chum 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 2012 compared to 2013.





Appendix B11.–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, from 2001 to 2012 compared to 2013.

APPENDIX C: UPPER YUKON AREA SALMON

Appendix C1.–Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 2013.

Beach seine, purse seine, set gillnet and fish wheel combined[a]													
		Chinook			Summer chum			Fall chum			Coho		
Statistical Area	Number of fishermen[b]	Number	Roe	Estimated harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated harvest	Number	Roe	Estimated harvest
334–42	–	–	–	–	–	–	–	–	–	–	–	–	–
334–43	–	–	–	–	–	–	–	–	–	–	–	–	–
334–44	0	0	0	0	0	0	0	–	–	–	–	–	–
334–45	0	0	0	0	0	0	0	–	–	–	–	–	–
334–46	9	0	0	0	100,507	0	100,507	–	–	–	–	–	–
334–47	0	0	0	0	0	0	0	–	–	–	–	–	–
District 4	9	0	0	0	100,507	0	100,507	–	–	–	–	–	–
334–51	–	–	–	–	–	–	–	–	–	–	–	–	–
334–52	1	–	–	–	–	–	–	1,041	0	1,041	0	0	0
334–53	0	–	–	–	–	–	–	0	0	0	0	0	0
334–54	–	–	–	–	–	–	–	–	–	–	–	–	–
334–55	–	–	–	–	–	–	–	–	–	–	–	–	–
District 5	1	–	–	–	–	–	–	1,041	0	1,041	0	0	0
334–61	0	0	0	0	0	0	0	0	0	0	0	0	0
334–62	6	0	0	0	5,937	0	5,937	24,148	0	24,148	7,439	0	7,439
334–63	0	0	0	0	0	0	0	0	0	0	0	0	0
District 6	6	0	0	0	5,937	0	5,937	24,148	0	24,148	7,439	0	7,439
Total Upper Yukon Area	16	0	0	0	106,444	0	106,444	25,189	0	25,189	7,439	0	7,439

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C2.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits, and test fishery projects, Yukon Area, 2003–2013.

Set Gillnet [a]

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	0	0	0	0	0	0	0	–	–	–	–	–	–
334–45	0	0	0	0	0	0	0	–	–	–	–	–	–
334–46	0	0	0	0	0	0	0	–	–	–	–	–	–
334–47	0	0	0	0	0	0	0	–	–	–	–	–	–
Subtotal District 4	–	–	–	–	–	–	–	–	–	–	–	–	–
334–51	–	–	–	–	–	–	–	–	–	–	–	–	–
334–52	–	–	–	–	–	–	–	0	0	0	0	0	0
334–53	–	–	–	–	–	–	–	0	0	0	0	0	0
334–54	–	–	–	–	–	–	–	–	–	–	–	–	–
334–55	–	–	–	–	–	–	–	–	–	–	–	–	–
Subtotal District 5	–	–	–	–	–	–	–	0	0	0	0	0	0
334–61	–	–	–	–	–	–	–	0	0	0	0	0	0
334–62								0	0	0	0	0	0
334–63	–	–	–	–	–	–	–	0	0	0	0	0	0
Subtotal District 6	–	–	–	–	–	–	–	0	0	0	0	0	0
Total Upper Yukon Area	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: En dash indicates no commercial fishing activity occurred.

[a] Set net gear was allowed but not been used by permit holders in 2013.

[b] The number of fishermen is the unique number of permits fished.

Appendix C3.–Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2013.

Fish Wheel [a]													
		Chinook			Summer Chum			Fall Chum			Coho		
Statistical Area	Number of Fishermen [b]	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334–42	–	–	–	–	–	–	–	–	–	–	–	–	–
334–43	–	–	–	–	–	–	–	–	–	–	–	–	–
334–44	0	0	0	0	0	0	0	–	–	–	–	–	–
334–45	0	0	0	0	0	0	0	–	–	–	–	–	–
334–46	9	0	0	0	100,507	0	100,507	–	–	–	–	–	–
334–47	0	0	0	0	0	0	0	–	–	–	–	–	–
Subtotal District 4	9	0	0	0	100,507	0	100,507	–	–	–	–	–	–
334–51	–	–	–	–	–	–	–	–	–	–	–	–	–
334–52	1	–	–	–	–	–	–	1,041	0	1,041	0	0	0
334–53	0	–	–	–	–	–	–	0	0	0	0	0	0
334–54	–	–	–	–	–	–	–	–	–	–	–	–	–
334–55	–	–	–	–	–	–	–	–	–	–	–	–	–
Subtotal District 5	1	–	–	–	–	–	–	1,041	0	1,041	0	0	0
334–61	0	0	0	0	0	0	0	0	0	0	0	0	0
334–62	6	0	0	0	5,937	0	5,937	24,148	0	24,148	7,439	0	7,439
334–63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 6	6	0	0	0	5,937	0	5,937	24,148	0	24,148	7,439	0	7,439
Total Upper Yukon Area	16	0	0	0	106,444	0	106,444	25,189	0	25,189	7,439	0	7,439

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C4.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1993–2013.

	334–44			334–45			334–46			Total		
Year [a]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]
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	–	–	–	–	–	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	0	0	0	0	0	0
2003	–	–	–	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–	–	–	–
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	0	0	0	0	0	0	0	0	0	0	0	0

Note: En dash indicates no commercial fishing activity occurred.

[a] Prior to 1990, Subdistrict 4–A consisted of a single Statistical Area, 334–41. Beginning in 1990, Subdistrict 4-A was subdivided into Statistical Areas 334–44, 334–45 and 334–46.

[b] Harvest reported in numbers of fish sold in the round.

[c] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[d] 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.

Appendix C5.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4–B and 4–C, Upper Yukon Area, 1993–2013.

	334–42			334–43			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
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	–	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	562	0	562	562	0	562
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–
2008	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C6.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1993–2013.

	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]
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	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
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
2005	0	0	0	1,297	0	1,297	172	0	172	1,469	0	1,469
2006	0	0	0	1,358	0	1,358	481	0	481	1,839	0	1,839
2007	0	0	0	1,064	0	1,064	177	0	177	1,241	0	1,241
2008	–	–	–	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C7.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1993–2013.

	334–54			334–55			Total		
Year [a]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]
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	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	0	0	0	207	0	207	207	0	207
2003	0	0	0	226	0	226	226	0	226
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–
2008	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[a] Prior to 1990, Subdistrict 5-D consisted of a single Statistical Area, 334–54. Beginning in 1990, Subdistrict 5-D was subdivided into 2 Statistical Areas, 334–54 and 334–55.

[b] Harvest reported in numbers of fish sold in the round.

[c] Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

[d] 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.

Appendix C8.–Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1993–2013.

	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]
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	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
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
2005	0	0	0	391	0	391	62	0	62	453	0	453
2006	0	0	0	0	0	0	84	0	84	84	0	84
2007	0	0	0	106	0	106	175	0	175	281	0	281
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2008–2012 Average	0	0	0	0	0	0	0	0	0	0	0	0
2003–2012 Average	0	0	0	348	0	348	120	0	120	469	0	469

Note: En dash indicates no commercial fishing activity occurred.

[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 6 sampling program that estimated average roe weight per female by period.

Appendix C9.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4–A, Upper Yukon Area, 1993–2013.

	334–44					334–45				
	Roe Expansion					Roe Expansion				
Year [a]	Number [b]	Roe [c]	Males [d]	Females [e]	Estimated Harvest [f]	Number [b]	Roe [c]	Males [d]	Females [e]	Estimated Harvest [f]
1993	0	6,234	4,308	7,334	11,642	0	6,081	4,246	7,230	11,476
1994 [g]	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	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–	–
2007 [h]	5,359	–	–	–	5,359	–	–	–	–	–
2008 [h]	–	–	–	–	–	–	–	–	–	–
2009 [h]	3,890	–	–	–	3,890	699	–	0	699	699
2010 [i]	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–
2012 [i]	–	–	–	–	–	–	–	–	–	–
2013 [i]	–	–	–	–	–	–	–	–	–	–
2008–2012 Average										
2003–2012 Average										

-continued-

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Year [a]	334–46 Roe Expansion Number [b]	Roe [c]	Males [d]	Females [e]	Estimated Harvest [f]	Subtotal 334–44, 45 and 46 Roe Expansion Number [b]	Roe [c]	Males [d]	Females [e]	Estimated Harvest [f]
1993	0	8,170	5,579	9,499	15,078	0	20,485	14,133	24,063	38,196
1994 [g]	0	29,615	28,825	37,119	65,944	0	62,801	52,794	79,000	131,794
1995	0	102,080	105,663	124,550	230,213	0	189,252	192,387	227,301	419,688
1996	0	109,172	98,926	120,942	219,868	0	181,050	155,921	201,017	356,938
1997	0	41,587	29,207	44,247	73,454	0	56,301	40,454	59,935	100,389
1998	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–	–
2007 [h]	1,945	–	–	–	1,945	7,304	–	–	–	7,304
2008 [h]	23,746	–	–	–	23,746	23,746	–	–	–	23,746
2009 [h]	–	–	–	–	–	4,589	–	–	–	4,589
2010 [i]	44,207	–	–	–	44,207	44,207	–	–	–	44,207
2011	–	–	–	–	–	–	–	–	–	–
2012 [i]	108,222	–	–	–	108,222	108,222	–	–	–	108,222
2013 [i]	100,507	–	–	–	100,507	100,507	–	–	–	100,507
2008–2012 Average	58,725				58,725	45,191				45,191
2003–2012 Average	44,530				44,530	37,614				37,614

-continued-

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Year [a]	334–47 (Anvik River) Roe Expansion Number [b]	Roe [c]	Females [e]	Estimated Harvest [f]	Total (Subdistrict 4-A and Anvik) Roe Expansion Number [b]	Roe [c]	Males [d]	Females [e]	Estimated Harvest [f]
1993	–	–	–	–	0	20,485	14,133	24,063	38,196
1994 [g]	0	19,532	22,574	22,574	0	82,333	52,794	101,574	154,368
1995	0	48,477	54,744	54,744	0	237,729	192,387	282,045	474,432
1996	0	76,318	84,663	84,663	0	257,368	155,921	285,680	441,601
1997	0	13,067	13,548	13,548	0	69,368	40,454	73,483	113,937
1998	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007 [h]	–	–	–	–	7,304	–	–	–	7,304
2008 [h]	–	–	–	–	23,746	–	–	–	23,746
2009 [h]	–	–	–	–	4,589	–	–	–	4,589
2010 [i]	–	–	–	–	44,207	–	–	–	44,207
2011	–	–	–	–	–	–	–	–	–
2012 [i]	–	–	–	–	108,222	–	–	–	108,222
2013 [i]	–	–	–	–	100,507	–	–	–	100,507
2008–2012 Average					45,191				45,191
2003–2012 Average					37,614				37,614

-continued-

Note: En dash indicates no commercial fishing activity occurred.

[a] Prior to 1990, Subdistrict 4–A consisted of a single Statistical Area, 334-41. Beginning in 1990, Subdistrict 4–A was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

[b] Harvest reported in numbers of fish sold in the round.

[c] 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.

[d] 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, this 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.

[e] 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] From 1990–2006 the 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. Beginning in 2007 the actual numbers of female fish from which roe were extracted are included in the total harvest. Males were recorded as caught but not sold, thus are accounted for in personal use totals.

[g] In 1994, Statistical Area 334–47 was included in Subdistrict 4–A and it represents the Anvik River Management Area.

[h] The number of female fish from which roe were extracted is the number harvested. Males were not purchased and accounted for as caught but not sold are included in personal use totals. Roe information is included in Zephyr as both numbers of fish and pounds of roe were recorded on fish tickets.

[i] Both males and females were purchased and are included in the number harvested.

Appendix C10.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4–B and 4–C, Upper Yukon Area, 1993–2013.

	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 [e]	Harvest [d]
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		14,803	767	929		2,436	3,611	7,384			17,239
1995	8,873	39,699		73,570	0	3,646		6,585	8,873	43,345			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	–	–	–	–	–	–	–	–	–	–	–	–	–
1999	153	0	0	153	1,114	0	0	1,114	1,267	0	0	0	1,267
2000	–	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–	–	–	–	–
2008	–	–	–	–	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[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.

[e] 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).

Appendix C11.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1993–2013.

	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]
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	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	6	0	6	6	0	6
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	3	0	3	22	0	22	25	0	25
2005	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	20	0	0	0	0	0	20	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	–	–	–	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[a] Harvest reported in numbers of fish sold in the round.

[b] Pounds of 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.

Appendix C12.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5–D, Upper Yukon Area, 1993–2013.

	334–54			334–55			Total		
Year [a]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]
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	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–
2008	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[a] Prior to 1990, Subdistrict 5-D consisted of a single Statistical Area, 334–54. Beginning in 1990, Subdistrict 5-D was subdivided into 2 Statistical Areas, 334–54 and 334–55.

[b] Harvest reported in numbers of fish sold in the round.

[c] 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.

[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 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.

Appendix C13.–Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1993–2013.

	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]
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	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
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
2005	0	0	0	5,404	0	5,404	3,582	0	3,582	8,986	0	8,986
2006	0	0	0	37,758	0	37,758	6,863	0	6,863	44,621	0	44,621
2007	0	0	0	10,627	0	10,627	4,047	0	4,047	14,674	0	14,674
2008	0	0	0	1,194	0	1,194	648	4	652	1,842	4	1,846
2009	590	0	590	4,979	0	4,979	2,208	0	2,208	7,777	0	7,777
2010	0	0	0	5,466	0	5,466	0	0	0	5,466	0	5,466
2011	0	0	0	4,964	0	4,964	3,687	0	3,687	8,651	0	8,651
2012	0	0	0	3,151	0	3,151	353	0	353	3,504	0	3,504
2013	0	0	0	5,937	0	5,937	0	0	0	5,937	0	5,937
2008–2012 Average	118	0	118	3,951	0	3,951	1,379	1	1,380	5,448	1	5,449
2003–2012 Average	59	0	59	7,994	0	7,994	2,606	0	2,606	10,659	0	10,660

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C14.–Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1993–2013.

	334–41 [a]			334–42			334–43			Total		
Year	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]	Number [b]	Roe [c]	Harvest [d]
1993	–	–	–	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	104	0	104	577	0	577	681	0	681
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001[e]	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	1,315	0	1,315	1,315	0	1,315
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–
2006	0	0	0	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–	–	–	–
2008	0	0	0	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	811[f]	0	811[f]	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–

Note: En Dash indicates no commercial fishing activity occurred.

[a] In Subdistrict 4–A (Statistical Area 334–41), from 1977 to 2001, commercial fishing, by regulation, was not allowed during fall season. Additionally, in 1990, Subdistrict 4–A (Statistical Area 334–41) was subdivided into Statistical Areas 334–44, 334–45 and 334–46. Because this is the same area and because no harvest has occurred in Subdistrict 4–A, all data is recorded under 334–41.

[b] Harvest reported in numbers of fish sold in the round.

[c] 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.

[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 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.

[e] Guideline harvest range (GHR) included 4–A.

[f] Harvest occurred in 334–46.

Appendix C15.–Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1993–2013.

	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]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1990	0	0	0	5,169	945	6,243	0	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	0	24,141	3,625	28,900
1992	–	–	–	–	–	–	–	–	–	–	0	0	0	–
1993	–	–	–	–	–	–	–	–	–	–	0	0	0	–
1994	–	–	–	–	–	–	–	–	–	–	1	0	0	–
1995	0	2,513	3,159	1,785	13,091	18,397	4,014	389	4,498	0	0	5,799	15,993	26,054
1996	0	181	208	5,898	8,317	15,670	1,583	0	1,583	0	0	7,481	8,498	17,461
1997	0	0	0	1,595	1,194	3,069	0	0	0	0	0	1,595	1,194	3,069
1998	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2004	0	0	0	–	–	–	–	–	–	–	–	0	0	0
2005	–	–	–	0	0	0	0	0	0	–	–	0	0	0
2006	–	–	–	–	–	–	10,030	–	10,030	–	–	10,030	0	10,030
2007	–	–	–	385	–	385	42	–	42	–	–	427	0	427
2008	–	–	–	4,556	–	4,556	–	–	–	–	–	4,556	0	4,556
2009	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	1,246	–	1,246	–	–	–	–	–	1,246	0	1,246
2012	–	–	–	2,419	–	2,419	–	–	–	–	–	2,419	0	2,419
2013	–	–	–	1,041	–	1,041	–	–	–	–	–	1,041	0	1,041
2008–2012 Average				2,740		2,740						2,316	0	2,316
2003–2012 Average				1,721		1,721	3,357	0	3,357			2,668	0	2,668

Note: En Dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

[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.

Appendix C16.–Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5–D, Upper Yukon Area, 1990–2013.

	334–54			334–55			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]	Number [a]	Roe [b]	Harvest [c]
1990 [d]	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	–	–	–	–	–	–	–	–	–
1993	–	–	–	–	–	–	–	–	–
1994	–	–	–	3,630	0	3,630	3,630	0	3,630
1995 [e]	0	0	0	3,979	2,823	3,979	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	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–
2008	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–
2012	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[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, in 1990, Subdistrict 5–D (Statistical Area 334–54) was subdivided into 2 statistical areas, (Statistical Areas 334–54 and 334–55).

[e] 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.

Appendix C17.–Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1990–2013.

	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]
1990	9,254	0	9,254	28,932	6,617	35,776	4,996	918	5,945	43,182	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	–	–	–	13,713	1,816	15,852	2,008	990	3,170	15,721	2,806	19,022
1993	–	–	–	–	–	–	–	–	–	–	–	–
1994	–	–	–	0	4,319	4,319	1	49	50	1	4,368	4,369
1995	6,170	–	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	–	–	–	–	–	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	3,778	0	3,778	317	0	317	4,095	0	4,095
2004	–	–	–	3,450	0	3,450	–	–	–	3,450	0	3,450
2005	–	–	–	49,637	0	49,637	–	–	–	49,637	0	49,637
2006	–	–	–	23,353	0	23,353	–	–	–	23,353	0	23,353
2007	–	–	–	15,572	0	15,572	–	–	–	15,572	0	15,572
2008	4,029	–	4,029	1,706	0	1,706	–	–	–	5,735	0	5,735
2009	1286	545	1,893	–	–	–	–	–	–	1,286	545	1,893
2010	–	–	–	1,735	0	1,735	–	–	–	1,735	0	1,735
2011	–	–	–	9,267	0	9,267	–	–	–	9,267	0	9,267
2012	–	–	–	17,336	0	17,336	–	–	–	17,336	0	17,336
2013	–	–	–	24,148	0	24,148	–	–	–	24,148	0	24,148
2008–2012 Average	2,658		2,961	7,511	0	7,511				7,072	109	7,193
2003–2012 Average	2,658		2,961	13,982	0	13,982				13,147	55	13,207

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

[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.

Appendix C18.–Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1993–2013.

	334–41			334–42			334–43			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
1993	–	–	–	–	–	–	–	–	–	–	–	–
1994	–	–	–	–	–	–	–	–	–	–	–	–
1995	–	–	–	–	–	–	–	–	–	–	–	–
1996	–	–	–	161	0	161	0	0	0	161	0	161
1997	–	–	–	19	0	19	795	0	795	814	0	814
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	367	0	367	367	0	367
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–
2006	0	0	0	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–	–	–	–
2008	0	0	0	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	0	0	0	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C19.–Commercial Coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1990–2013.

	334–61			334–62			334–63			Total		
Year	Number [a]	Roe [b]	Harvest [c]	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
1990	3,173	0	3,173	7,096	3,559	9,951	1,280	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	–	–	–	5,731	1,267	6,800	825	413	1,179	6,556	1,680	7,979
1993	–	–	–	–	–	–	–	–	–	–	–	–
1994	–	–	–	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	–	–	–	–	–	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	14,984	0	14,984	135	0	135	15,119	0	15,119
2004	–	–	–	18,649	0	18,649	–	–	–	18,649	0	18,649
2005	–	–	–	21,778	0	21,778	–	–	–	21,778	0	21,778
2006	–	–	–	11,137	0	11,137	–	–	–	11,137	0	11,137
2007	–	–	–	1,368	0	1,368	–	–	–	1,368	0	1,368
2008	2,160	0	2,160	248	0	248	–	–	–	2,408	0	2,408
2009	457	258	742	–	–	–	–	–	–	457	258	742
2010	–	–	–	1,700	0	1,700	–	–	–	1,700	0	1,700
2011	–	–	–	6,784	0	6,784	–	–	–	6,784	0	6,784
2012	–	–	–	5,335	0	5,335	–	–	–	5,335	0	5,335
2013	–	–	–	7,439	0	7,439	–	–	–	7,439	0	7,439
2008–2012 Average	1,309	129	1,451	3,517	0	3,517				3,337	52	3,394
2003–2012 Average	1,309	129	1,451	9,109	0	9,109				8,474	26	8,502

Note: En dash indicates no commercial fishing activity occurred.

[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.

Appendix C20.–Summary of test fish wheel projects conducted in the Upper Yukon Area, 2013.

Test Fish Wheel Projects	Contractor/ Operator	River Mile [b]	Operational Dates			Total Days of Operation	Estimated Total Salmon Captured [a] Chinook	Summer Chum	Fall Chum	Coho	Historical Data / Comments
Yukon River											
Tanana Village											
Left Bank	Pat Moore	690	8/11	to	9/30	50	5	–	17,390	5,945	Wheel uses 24 hour video counts.
Yukon River (Rapids)											
Left Bank [c]	Stan Zuray	731	6/14	to	9/22	100	2,872	2,808	21,801	–	Wheel uses 24 hour video counts.
Tanana River											
Nenana	ADF&G										
Right Bank	Jack Duyck	859	7/3	to	8/5	33	465	2,093	–	–	Project started in 1988 for CPUE.
			8/16	to	9/28	43	–	–	4,793	2,993	Video counts since 2003.

[a] Unless otherwise noted, fish wheel catch are adjusted to estimate total catch per day (i.e., less than or greater than 24 hour catches adjusted to reflect a 24 hour catch).

[b] Estimated river miles from the mouth of the Yukon River.

[c] Estimated summer chum salmon totals include all chum salmon caught through July 30.

APPENDIX D: YUKON RIVER SALMON SUBSISTENCE AND PERSONAL USE

Appendix D1.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Hooper Bay	722	1,042	157	376	430	388	183	584	252	1,090	1,210	545	499
Scammon Bay	1,128	996	691	507	768	1,104	722	716	517	1,014	332	818	815
Coastal District Total	1,850	2,038	848	883	1,198	1,492	905	1,300	769	2,104	1,542	1,363	1,314
Nunam Iqua	925	647	338	371	907	163	200	404	250	195	12	638	242
Alakanuk	1,707	1,317	860	690	1,257	1,238	634	944	1,464	1,081	275	1,166	1,072
Emmonak	2,763	2,768	1,730	2,311	2,326	2,696	1,634	2,194	2,172	1,864	553	2,380	2,112
Kotlik	937	1,148	2,130	1,750	1,569	2,066	1,657	2,314	2,369	1,173	794	1,507	1,916
District 1 Subtotal	6,332	5,880	5,058	5,122	6,059	6,163	4,125	5,856	6,255	4,313	1,634	5,690	5,342
Mountain Village	2,174	2,362	2,383	1,659	2,077	1,645	1,482	1,601	2,063	1,789	266	2,131	1,716
Pitkas Point	633	609	618	274	320	544	265	580	246	261	37	491	379
St. Mary's	1,916	2,357	2,693	2,233	3,573	1,756	1,929	2,800	1,734	2,344	215	2,554	2,113
Pilot Station	2,886	2,406	1,658	1,976	2,028	1,597	1,258	1,585	1,340	1,078	258	2,191	1,372
Marshall	2,059	1,990	1,804	1,897	2,555	3,284	1,201	2,110	2,686	1,409	328	2,061	2,138
District 2 Subtotal	9,668	9,724	9,156	8,039	10,553	8,826	6,135	8,676	8,069	6,881	1,104	9,428	7,717
Russian Mission	2,057	2,337	1,894	1,851	1,301	2,949	978	924	1,550	1,711	236	1,888	1,622
Holy Cross	2,395	1,993	2,817	3,165	2,902	2,509	1,745	3,098	2,231	576	204	2,654	2,032
Shageluk	550	418	420	358	448	397	201	277	353	75	4	439	261
District 3 Subtotal	5,002	4,748	5,131	5,374	4,651	5,855	2,924	4,299	4,134	2,362	444	4,981	3,915
Lower Yukon River Total	21,002	20,352	19,345	18,535	21,263	20,844	13,184	18,831	18,458	13,556	3,182	20,099	16,975
Anvik	1,286	1,588	1,206	958	1,321	1,433	796	1,069	1,052	435	121	1,272	957
Grayling	1,613	1,869	1,878	1,702	1,500	1,761	1,133	2,122	1,374	1,081	226	1,712	1,494
Kaltag	1,838	1,656	3,367	2,833	1,456	2,403	1,970	3,191	2,488	1,346	348	2,230	2,280
Nulato	2,531	5,199	2,749	2,707	2,431	1,250	1,551	2,989	1,538	1,955	602	3,123	1,857
Koyukuk	860	400	396	835	811	513	982	867	1,349	614	898	660	865
Galena	3,112	3,296	2,864	2,380	2,511	2,232	1,370	1,357	1,434	742	275	2,833	1,427
Ruby/Kokrines	631	1,620	1,193	304	1,594	637	542	1,102	482	1,316	357	1,068	816
District 4 Subtotal	11,871	15,628	13,653	11,719	11,624	10,229	8,344	12,697	9,717	7,489	2,827	12,899	9,695
Huslia	469	285	207	258	146	255	969	65	121	165	62	273	315
Hughes	113	291	33	8	8	61	101	63	10	0	6	91	47
Allakaket	306	65	68	23	53	58	90	63	42	5	6	103	52
Alatna	12	0	0	14	0	16	10	0	3	0	0	5	6
Bettles	0	0	3	0	0	0	0	0	0	3	0	1	1
Koyukuk River Subtotal	900	641	311	303	207	390	1,170	191	176	173	74	472	420
District 4 Total (Incl. Koyukuk R.)	12,771	16,269	13,964	12,022	11,831	10,619	9,514	12,888	9,893	7,662	2,901	13,371	10,115

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Tanana	5,332	2,689	3,729	3,794	5,498	3,981	2,950	3,215	2,936	2,100	1,200	4,208	3,036
Rampart [a]	1,411	287	411	429	250	136	528	262	201	190	35	558	263
Fairbanks [b]	1,932	1,997	2,584	2,184	2,510	1,898	1,509	1,670	2,186	558	610	2,241	1,564
Stevens Village	1,121	2,394	1,570	1,245	610	753	405	469	415	330	239	1,388	474
Birch Creek	78	82	131	174	113	32	15	73	49	0	0	116	34
Beaver	1,156	858	957	830	1,244	546	516	198	356	71	107	1,009	337
Fort Yukon	4,004	4,430	3,591	3,144	4,076	1,991	846	1,683	2,472	2,141	1,561	3,849	1,827
Circle	895	565	1,283	694	1,057	519	372	324	297	280	150	899	358
Central	144	83	175	130	334	48	167	90	66	66	21	173	87
Eagle	2,081	1,512	2,566	2,303	1,999	1,068	446	867	728	167	175	2,092	655
Other [c]	862	357	315	330	472	362	541	779	777	477	125	467	587
District 5 Subtotal (Excluding Chandalar and Black Rivers)	19,016	15,254	17,312	15,257	18,163	11,334	8,295	9,630	10,483	6,380	4,223	17,000	9,224
Venetie	125	352	59	667	1,002	292	622	767	10	86	311	441	355
Chalkyitsik	50	60	53	0	0	0	0	0	0	0	0	33	0
Chandalar/Black River Subtotal	175	412	112	667	1,002	292	622	767	10	86	311	474	355
District 5 Total	19,191	15,666	17,424	15,924	19,165	11,626	8,917	10,397	10,493	6,466	4,534	17,474	9,580
Manley	213	239	289	361	333	106	345	337	287	174	165	287	250
Minto	317	35	35	31	82	12	0	43	61	99	60	100	43
Nenana	1,193	633	533	712	893	322	458	658	681	296	87	793	483
Fairbanks [d]	392	449	971	125	409	108	396	91	330	58	49	469	197
Other [e]	30	32	0	0	0	57	86	14	8	0	6	12	33
District 6 Tanana R. Total	2,145	1,388	1,828	1,229	1,717	605	1,285	1,143	1,367	627	367	1,661	1,005
Upper Yukon River Total	34,107	33,323	33,216	29,175	32,713	22,850	19,716	24,428	21,753	14,755	7,802	32,507	20,700
Alaska, Yukon River Total [f]	55,109	53,675	52,561	47,710	53,976	43,694	32,900	43,259	40,211	28,311	10,984	52,606	37,675
Alaska, Yukon Area Total	56,959	55,713	53,409	48,593	55,174	45,186	33,805	44,559	40,980	30,415	12,526	53,970	38,989

Note: Does not include harvest from personal use permits.

[a] Rampart area harvest as reported from subsistence fishing permits. Subsistence surveys were conducted 2001–2003 and permits were used 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 but did not reside in the communities listed.

[d] Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

[e] Other permit holders who fished in District 6 but did not reside in the communities listed.

[f] Does not include the Coastal District for use in U.S./Canada negotiations.

Appendix D2.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Hooper Bay	10,658	3,242	9,771	19,468	12,234	12,007	9,195	17,020	13,460	15,799	13,629	11,075	13,496
Scammon Bay	3,310	5,020	4,586	4,703	3,887	6,113	3,602	5,405	4,845	7,442	9,506	4,301	5,481
Coastal District Total	13,968	8,262	14,357	24,171	16,121	18,120	12,797	22,425	18,305	23,241	23,135	15,376	18,978
Nunam Iqua	2,561	2,698	2,794	2,903	2,325	1,949	2,280	2,267	2,077	1,977	2,651	2,656	2,110
Alakanuk	5,287	6,555	5,687	7,790	7,611	6,881	5,152	7,722	7,447	9,012	7,520	6,586	7,243
Emmonak	7,644	8,618	12,594	11,899	9,256	9,646	9,038	10,918	12,468	15,829	8,209	10,002	11,580
Kotlik	4,209	2,749	6,620	5,289	5,017	4,291	7,528	4,265	6,598	8,552	10,136	4,777	6,247
District 1 Subtotal	19,701	20,620	27,695	27,881	24,209	22,767	23,998	25,172	28,590	35,370	28,516	24,021	27,179
Mountain Village	6,497	10,676	8,861	13,119	8,104	7,559	7,204	7,071	9,355	9,031	11,861	9,451	8,044
Pitkas Point	800	717	1,023	680	515	1,246	994	633	585	1,153	2,186	747	922
St. Mary's	4,521	6,994	6,877	7,394	8,107	6,451	5,831	7,443	6,760	10,763	9,167	6,779	7,450
Pilot Station	4,163	5,779	4,333	6,070	3,711	6,012	4,888	6,196	4,182	5,716	5,299	4,811	5,399
Marshall	792	1,765	3,183	4,392	3,070	3,023	2,172	2,395	3,810	5,903	3,986	2,640	3,461
District 2 Subtotal	16,773	25,931	24,277	31,655	23,507	24,291	21,089	23,738	24,692	32,566	32,499	24,429	25,275
Russian Mission	171	884	925	1,328	759	2,400	849	528	1,225	2,508	3,967	813	1,502
Holy Cross	214	276	760	825	320	441	194	463	363	1,147	262	479	522
Shageluk	5,473	1,798	4,081	1,381	977	130	103	350	1,145	5,035	463	2,742	1,353
District 3 Subtotal	5,858	2,958	5,766	3,534	2,056	2,971	1,146	1,341	2,733	8,690	4,692	4,034	3,376
Lower Yukon River Total	42,332	49,509	57,738	63,070	49,772	50,029	46,233	50,251	56,015	76,626	65,707	52,484	55,831
Anvik	844	248	529	387	5,250	340	277	451	220	1,371	830	1,452	532
Grayling	1,072	1,129	783	644	641	660	1,429	1,612	838	2,616	618	854	1,431
Kaltag	1,028	213	680	159	109	916	50	102	163	186	67	438	283
Nulato	180	198	634	838	356	468	133	416	246	254	401	441	303
Koyukuk	1,339	329	537	394	995	1,104	1,378	352	890	828	4,459	719	910
Galena	289	782	1,013	1,205	571	758	1,718	1,702	3,414	718	179	772	1,662
Ruby/Kokrines	876	2,010	967	1,714	416	655	603	1,971	775	3,891	681	1,197	1,579
District 4 Subtotal	5,628	4,909	5,143	5,341	8,338	4,901	5,588	6,606	6,546	9,864	7,235	5,872	6,701
Huslia	6,187	3,844	2,433	1,122	3,243	4,377	2,554	1,349	3,166	7,306	3,241	3,366	3,750
Hughes	1,265	3,823	2,230	3,254	1,213	944	1,723	878	954	428	829	2,357	985
Allakaket	4,383	2,367	2,535	5,170	3,451	3,229	4,924	2,864	2,368	3,850	2,116	3,581	3,447
Alatna	50	16	5	110	11	66	163	23	132	100	340	38	97
Bettles	0	0	4	0	0	0	6	0	0	7	0	1	3
Koyukuk River Subtotal	11,885	10,050	7,207	9,656	7,918	8,616	9,370	5,114	6,620	11,691	6,526	9,343	8,282
District 4 Total(Incl. Koyukuk R)	17,513	14,959	12,350	14,997	16,256	13,517	14,958	11,720	13,166	21,555	13,761	15,215	14,983

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Tanana	3,075	1,490	4,832	5,474	5,229	2,877	4,665	1,856	4,381	4,333	9,565	4,020	3,622
Rampart [a]	9	103	315	135	25	27	112	161	67	71	5	117	88
Fairbanks [b]	89	280	780	1,341	564	119	44	427	688	172	1,350	611	290
Stevens Village	0	108	442	972	254	163	6	28	43	188	50	355	86
Beaver	7	2	68	117	41	27	22	22	393	27	12	47	98
Fort Yukon	2,176	1,187	67	2,165	2,365	230	275	722	1,297	0	225	1,592	505
Circle	85	52	3	58	200	5	0	37	48	0	66	80	18
Central	0	0	5	2	0	0	2	0	0	0	0	1	0
Eagle	104	171	235	974	15	14	0	25	2	0	50	300	8
Other [c]	0	3	53	117	81	25	29	144	790	101	94	51	218
District 5 Subtotal (Excluding Chandalar and Black Rivers)	5,545	3,396	6,800	11,355	8,774	3,487	5,155	3,422	7,709	4,892	11,417	7,174	4,933
Venetie	0	15	0	475	107	50	143	0	0	0	0	119	39
Chalkyitsik	0	0	0	0	0	0	0	133	0	0	0	0	27
Chandalar/Black River Subtotal	0	15	0	475	107	50	143	133	0	0	0	119	65
District 5 Total	5,545	3,411	6,800	11,830	8,881	3,537	5,298	3,555	7,709	4,892	11,417	7,293	4,998
Manley	65	296	163	89	140	144	367	102	142	58	45	151	163
Minto	625	7	21	460	82	9	1	8	27	64	258	239	22
Nenana	2,193	1,171	1,771	388	1,419	753	506	83	471	370	642	1,388	437
Fairbanks [d]	31	308	45	73	255	94	372	183	185	114	143	142	190
Other [e]	0	11	14	0	0	311	7	46	0	72	6	5	87
District 6 Tanana R. Total	2,914	1,793	2,014	1,010	1,896	1,311	1,253	422	825	678	1,094	1,925	898
Upper Yukon River Total	25,972	20,163	21,164	27,837	27,033	18,365	21,509	15,697	21,700	27,125	26,272	24,434	20,879
Alaska, Yukon River Total [f]	68,304	69,672	78,902	90,907	76,805	68,394	67,742	65,948	77,715	103,751	91,979	76,918	76,710
Alaska, Yukon Area Total	82,272	77,934	93,259	115,078	92,926	86,514	80,539	88,373	96,020	126,992	115,114	92,294	95,688

Note: Does not include harvest from personal use permits.

[a] Rampart area harvest as reported from subsistence fishing permits established by the Alaska Board of Fisheries (BOF) in 2004. Subsistence surveys were conducted 2001–2003 and permits were used 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 but did not reside in the communities listed.

[d] Fairbanks North Star Borough residents who subsistence fished in the Tanana River.

[e] Other permit holders who fished in District 6 but did not reside in the communities listed.

[f] Does not include the Coastal District for use in U.S./Canada negotiations.

Appendix D3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits, and test fishery projects, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Hooper Bay	40	264	1	146	64	329	41	116	267	1	91	103	151
Scammon Bay	106	56	69	41	170	57	117	70	48	10	58	88	60
Coastal District Total	146	320	70	187	234	386	158	186	315	11	149	191	211
Nunam Iqua	127	49	310	735	152	59	41	143	51	210	93	275	101
Alakanuk	348	953	627	624	1,348	423	116	860	881	449	328	780	546
Emmonak	1,257	785	1,436	2,056	2,360	1,670	1,589	1,718	1,540	5,890	2,165	1,579	2,481
Kotlik	407	280	516	487	530	671	171	481	962	1,073	1,087	444	672
District 1 Subtotal	2,139	2,067	2,889	3,902	4,390	2,823	1,917	3,202	3,434	7,622	3,673	3,077	3,800
Mountain Village	873	918	1,290	2,398	1,073	926	926	133	800	685	2,174	1,310	694
Pitkas Point	49	0	6	5	44	101	76	10	30	9	65	21	45
St. Mary's	762	104	490	417	825	830	106	387	611	1,423	1,009	520	671
Pilot Station	823	1,108	838	785	741	917	265	833	575	1,031	777	859	724
Marshall	394	291	633	410	789	748	190	56	562	184	853	503	348
District 2 Subtotal	2,901	2,421	3,257	4,015	3,472	3,522	1,563	1,419	2,578	3,332	4,878	3,213	2,483
Russian Mission	615	172	667	251	530	578	205	104	11	282	804	447	236
Holy Cross	9	76	582	224	248	920	627	21	94	339	855	228	400
Shageluk	114	50	55	5	147	323	105	1,200	249	16	105	74	379
District 3 Subtotal	738	298	1,304	480	925	1,821	937	1,325	354	637	1,764	749	1,015
Lower Yukon River Total	5,778	4,786	7,450	8,397	8,787	8,166	4,417	5,946	6,366	11,591	10,315	7,040	7,297
Anvik	179	398	497	118	429	317	176	169	202	569	763	324	287
Grayling	441	267	1,009	691	317	1,012	490	202	1,152	804	471	545	732
Kaltag	725	687	1,089	823	910	620	200	658	196	2,830	583	847	901
Nulato	1,341	1,246	421	751	1,345	729	552	1,049	652	2,729	2,995	1,021	1,142
Koyukuk	835	344	803	1,147	927	1,177	578	792	1,388	1,331	5,308	811	1,053
Galena	1,510	1,587	2,695	1,632	1,471	1,364	4,306	1,968	2,739	2,947	602	1,779	2,665
Ruby/Kokrines	2,331	1,064	559	227	1,959	657	134	1,026	592	4,408	2,505	1,228	1,363
District 4 Subtotal	7,362	5,593	7,073	5,389	7,358	5,876	6,436	5,864	6,921	15,618	13,227	6,555	8,143
Huslia	1,786	1,139	1,614	313	272	64	86	403	183	1,909	722	1,025	529
Hughes	497	97	111	240	0	127	288	0	64	2	535	189	96
Allakaket	105	968	557	393	939	1,345	572	521	92	508	687	592	608
Alatna	0	0	0	0	7	0	0	0	0	18	20	1	4
Bettles	0	0	50	0	0	0	0	0	0	0	0	10	0
Koyukuk River Subtotal	2,388	2,204	2,332	946	1,218	1,536	946	924	339	2,437	1,964	1,818	1,236
District 4 Total (Incl. Koyukuk R.)	9,750	7,797	9,405	6,335	8,576	7,412	7,382	6,788	7,260	18,055	15,191	8,373	9,379

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Tanana	14,308	23,118	20,545	23,167	21,596	17,478	19,595	14,984	21,728	20,465	31,546	20,547	18,850
Rampart [a]	365	0	358	250	250	1,000	1,000	735	340	190	100	245	653
Fairbanks [b]	105	43	1,682	5,269	2,126	659	229	822	1,696	793	1,160	1,845	840
Stevens Village	857	1,080	246	50	199	643	770	2,706	911	277	840	486	1,061
Beaver	192	48	179	0	354	13	120	37	122	174	21	155	93
Ft. Yukon	7,963	7,302	8,088	5,178	8,264	14,252	2,829	6,006	7,188	12,659	16,453	7,359	8,587
Circle	499	1,022	918	664	1,286	3,198	110	927	299	161	1,197	878	939
Central	0	0	36	0	0	0	0	0	0	0	0	7	0
Eagle	2,871	5,482	17,356	16,801	18,676	15,269	10,941	15,008	17,455	18,731	18,871	12,237	15,481
Other [c]	0	13	117	44	46	3,183	71	120	208	443	121	44	805
District 5 Subtotal (Excluding Chandalar and Black Rivers)	27,160	38,108	49,525	51,423	52,797	55,695	35,665	41,345	49,947	53,893	70,309	43,803	47,309
Venetie	770	2,083	1,801	520	721	1,563	2,373	2,989	1,938	295	5,340	1,179	1,832
Chalkyitsik	340	479	337	215	213	0	45	0	0	162	249	317	41
Chandalar/Black River Subtotal	1,110	2,562	2,138	735	934	1,563	2,418	2,989	1,938	457	5,589	1,496	1,873
District 5 Total	28,270	40,670	51,663	52,158	53,731	57,258	38,083	44,334	51,885	54,350	75,898	45,298	49,182
Manley	1,303	1,504	2,985	3,374	3,419	2,490	4,126	2,696	2,333	2,164	1,459	2,517	2,762
Minto	675	0	600	242	155	28	0	70	1,500	2	568	334	320
Nenana	7,802	5,367	10,594	10,530	21,863	6,585	7,623	6,802	5,268	8,665	3,112	11,231	6,989
Fairbanks [d]	1,949	1,024	6,691	1,311	3,325	340	3,460	678	4,317	3,876	5,651	2,860	2,534
Other [e]	1,257	1,058	2,076	1,468	1,131	6,692	870	1,145	958	595	731	1,398	2,052
District 6 Tanana R. Total	12,986	8,953	22,946	16,925	29,893	16,135	16,079	11,391	14,376	15,302	11,521	18,341	14,657
Upper Yukon River Total	51,006	57,420	84,014	75,418	92,200	80,805	61,544	62,513	73,521	87,707	102,610	72,012	73,218
Alaska, Yukon River Total [f]	56,784	62,206	91,464	83,815	100,987	88,971	65,961	68,459	79,887	99,298	112,925	79,051	80,515
Alaska, Yukon Area Total	56,930	62,526	91,534	84,002	101,221	89,357	66,119	68,645	80,202	99,309	113,074	79,243	80,726

Note: Does not include harvest from personal use permits.

[a] Rampart area harvest as reported from subsistence fishing permits established by the Alaska Board of Fisheries (BOF) in 2004. Subsistence surveys were conducted 2001–2003 and permits were used 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 but did not reside in the communities listed.

[d] Fairbanks North Star Borough residents who subsistence fished in the Tanana River.

[e] Other permit holders who fished in District 6 but did not reside in the communities listed.

[f] Does not include the Coastal District for use in U.S./Canada negotiations.

Appendix D4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Hooper Bay	244	9	0	175	26	66	24	45	0	7	73	91	28
Scammon Bay	48	54	279	160	84	50	222	79	55	86	214	125	98
Coastal District Total	292	63	279	335	110	116	246	124	55	93	287	216	127
Nunam Iqua	117	79	241	392	92	24	71	73	23	18	83	184	42
Alakanuk	193	207	322	101	857	157	194	449	431	252	167	336	297
Emmonak	547	296	191	450	1,032	717	401	362	472	2,660	517	503	922
Kotlik	403	593	222	234	284	313	181	238	201	420	457	347	271
District 1 Subtotal	1,260	1,175	976	1,177	2,265	1,211	847	1,122	1,127	3,350	1,224	1,371	1,531
Mountain Village	745	521	246	1,856	1,027	518	413	127	261	256	271	879	315
Pitkas Point	130	0	30	16	38	130	45	116	37	53	41	43	76
St. Mary's	276	258	252	171	97	591	151	92	230	141	124	211	241
Pilot Station	371	296	241	225	263	268	203	189	145	329	136	279	227
Marshall	64	425	341	191	922	490	245	33	150	567	508	389	297
District 2 Subtotal	1,586	1,500	1,110	2,459	2,347	1,997	1,057	557	823	1,346	1,080	1,800	1,156
Russian Mission	178	151	133	19	259	372	96	300	0	319	152	148	217
Holy Cross	498	27	84	16	213	38	120	0	0	237	0	168	79
Shageluk	35	106	0	48	267	0	105	53	36	0	219	91	39
District 3 Subtotal	711	284	217	83	739	410	321	353	36	556	371	407	335
Lower Yukon River Total	3,557	2,959	2,303	3,719	5,351	3,618	2,225	2,032	1,986	5,252	2,675	3,578	3,023
Anvik	12	288	406	0	807	40	137	28	19	214	97	303	88
Grayling	559	233	234	224	271	25	318	132	119	26	34	304	124
Kaltag	463	138	307	106	204	45	40	0	258	928	306	244	254
Nulato	928	203	60	214	130	195	171	242	118	41	125	307	153
Koyukuk	1,155	166	37	330	189	84	198	254	137	62	3,267	375	147
Galena	1,507	1,307	607	137	425	558	2,353	549	1,013	276	170	797	950
Ruby/Kokrines	648	1,540	361	11	168	291	314	148	312	1,806	345	546	574
District 4 Subtotal	5,272	3,875	2,012	1,022	2,194	1,238	3,531	1,353	1,976	3,353	4,344	2,875	2,290
Huslia	375	764	734	105	592	100	323	289	70	165	342	514	189
Hughes	20	110	20	150	100	0	89	0	13	0	18	80	20
Allakaket	99	17	205	25	66	152	43	88	13	38	236	82	67
Alatna	7	0	0	0	0	0	0	0	0	0	0	1	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River Subtotal	501	891	959	280	758	252	455	377	96	203	596	678	277
District 4 Total (Incl. Koyukuk R.)	5,773	4,766	2,971	1,302	2,952	1,490	3,986	1,730	2,072	3,556	4,940	3,553	2,567

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003-2007 Average	2008-2012 Average
Tanana	3,480	1,049	1,616	3,619	2,369	1,511	2,373	2,314	312	3,060	1,135	2,427	1,914
Rampart [a]	0	0	10	0	50	0	0	24	0	0	0	12	5
Fairbanks [b]	120	91	10	79	26	7	13	2	2	0	0	65	5
Stevens Village	0	100	0	0	0	0	90	428	0	0	0	20	104
Beaver	0	0	0	0	354	6	0	1	0	2	0	71	2
Fort Yukon [c]	0	19	394	35	567	1,618	2	244	1,040	4	7	203	582
Circle	244	100	100	22	0	0	13	164	0	5	150	93	36
Central	0	0	1	0	0	0	0	0	0	0	0	0	0
Eagle	0	14	15	0	0	0	0	1	1	0	0	6	0
Other [c]	25	0	13	0	0	61	7	0	0	21	0	8	18
District 5 Subtotal (Excluding Chandalar and Black Rivers)	3,869	1,373	2,159	3,755	3,366	3,203	2,498	3,178	1,355	3,092	1,292	2,904	2,665
Venetie	11	5	0	24	0	0	0	159	34	0	6	8	39
Chalkyitsik	7	45	0	0	0	0	0	267	0	0	0	10	53
Chandalar/Black River Subtotal	18	50	0	24	0	0	0	426	34	0	6	18	92
District 5 Total	3,887	1,423	2,159	3,779	3,366	3,203	2,498	3,604	1,389	3,092	1,298	2,923	2,757
Manley	886	1,384	2,510	1,671	1,126	1,901	2,308	1,832	1,482	1,374	419	1,515	1,779
Minto	423	5	0	14	155	0	0	0	0	0	257	119	0
Nenana	5,431	6,494	12,395	7,032	4,487	2,775	3,475	2,313	3,304	5,904	1,762	7,168	3,554
Fairbanks [d]	1,049	1,435	3,032	745	609	230	577	212	1,109	1,502	2,576	1,374	726
Other [e]	2,574	2,266	1,601	1,109	1,468	3,522	691	1,198	947	760	200	1,804	1,424
District 6 Tanana River Total	10,363	11,584	19,538	10,571	7,845	8,428	7,051	5,555	6,842	9,540	5,214	11,980	7,483
Upper Yukon Area Total	20,023	17,773	24,668	15,652	14,163	13,121	13,535	10,889	10,303	16,188	11,452	18,456	12,807
Alaska, Yukon River Total [f]	23,580	20,732	26,971	19,371	19,514	16,739	15,760	12,921	12,289	21,440	14,127	22,034	15,830
Alaska, Yukon Area Total	23,872	20,795	27,250	19,706	19,624	16,855	16,006	13,045	12,344	21,533	14,414	22,249	15,957

Note: Does not include harvest from personal use permits.

[a] Rampart area harvest as reported from subsistence fishing permits established by the Alaska Board of Fisheries (BOF) in 2004. Subsistence surveys were conducted 2001–2003 and permits were used 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 but did not reside in the communities listed.

[d] Fairbanks North Star Borough residents who subsistence fished in the Tanana River.

[e] Other permit holders who fished in District 6 but did not reside in the communities listed.

[f] Does not include the Coastal District for use in U.S./Canada negotiations.

Appendix D5.–Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Estimated Total Even Years Average	Estimated Total Odd Years Average	Estimated Total Ten years Average
Hooper Bay	473	5,418	860	1,433	113	1,013	957	219	210	1,101 [a]	302	1,837	1,659	1,180
Scammon Bay	997	2,508	1,645	1,381	1,435	2,766	1,186	2,245	1,888	1,343	507	2,049	2,158	1,739
Coastal District	1,470	7,926	2,505	2,814	1,548	3,779	2,143	2,464	2,098	2,444	809	3,885	3,816	2,919
Nunam Iqua	5	32	132	555	170	757	61	306	8	1,051	0	540	332	308
Alakanuk	0	233	49	115	32	494	24	151	13	174 [a]	92	233	201	129
Emmonak	4	32	54	225	51	641	5	206	0	199 [a]	0	261	221	142
Kotlik	198	318	155	219	129	1,161	42	124	32	195 [a]	23	403	371	257
District 1	207	615	390	1,114	382	3,053	132	787	53	1,619	115	1,438	1,124	835
Mountain Village	117	891	78	616	87	500	6	217	24	207	0	486	450	274
Pitkas Point	0	0	2	44	66	15	0	143	0	2	2	41	40	27
St. Mary's	0	137	144	236	32	367	5	543	1	643	0	385	257	211
Pilot Station	0	5	0	1	0	34	3	22	0	23 [a]	131	17	12	9
Marshall	0	105	6	3	0	26	0	21	66	5	7	32	44	23
District 2	117	1,138	230	900	185	942	14	946	91	880	140	961	803	544
Russian Mission	0	6	0	8	3	436	0	2	0	76	12	106	90	53
Holy Cross	0	0	0	17	0	20	0	0	0	0	0	7	7	4
Shageluk	130	0	0	0	0	0	9	0	9	24	0	5	2	17
District 3	130	6	0	25	3	456	9	2	9	100	12	118	100	74
Anvik	240	0	0	0	0	23	2	0	0	0	0	5	48	27
Grayling	3	0	3	0	0	200	0	0	40	0	0	40	9	25
Kaltag	0	10	4	0	0	383	0	0	0	0	0	79	1	40
Nulato	0	0	0	1	0	35	0	0	0	0	0	7	0	4
Koyukuk	0	0	0	0	0	67	0	0	0	0	0	13	0	7
Galena	0	0	0	0	0	31	0	0	0	3	0	7	0	3
Ruby	0	2	0	0	0	184	0	0	0	0	0	37	0	19
Huslia	0	0	0	0	0	100	0	0	0	101	0	40	0	20
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	243	12	7	1	0	1,023	2	0	40	104	0	228	58	143

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Estimated Total Even Years Average	Estimated Total Odd Years Average	Estimated Total Ten years Average
Tanana	0	0	0	0	0	80	0	0	0	3	0	17	0	8
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	196	0	0	0	0	0	39	0	20
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	276	0	0	0	3	0	56	0	28
Survey Totals	2,167	9,697	3,132	4,854	2,118	9,529	2,300	4,199	2,291	5,150	1,076	6,686	2,402	4,544
CI (95%)	964	2,829	1,521	990	739	1,818	1,184	1,209	918	1,155	387			

Note: Averages do not include the current year. CI (95%) is the annual 95% confidence interval.

[a] Includes pink salmon given to communities from test fishery projects. A total of 216 pink salmon were distributed from test fishery projects in these communities.

Appendix D6.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 2013.

Permit Fishing Area	Permit [a] Type	Issued [b]	Returned	Percent Returned	Number of Permits Returned that Fished [c]	Reported Harvest: Chinook [d]	Summer Chum [d]	Fall Chum [d]	Coho [d]	Whitefish	Sheefish	Burbot	Northern Pike	Longnose Sucker	Arctic Grayling
Subsistence Permit															
Koyukuk Middle & South Fork Rivers	SF	1	1	100%	1	0	0	0	0	8	0	6	0	25	25
Yukon River Rampart Area	SR	23	22	96%	18	474	579	300	0	27	2	0	0	0	5
Yukon River near Haul Road Bridge [e]	SY	49	46	94%	22	379	1,020	1,055	0	62	5	4	16	0	0
Yukon River near Circle and Eagle [f]	SE	30	25	83%	16	191	66	7,452	150	130	22	3	7	1	70
	SEU	21	20	95%	15	152	50	12,642	0	64	8	2	0	13	7
Tanana River Subdistrict 6A	SA	19	19	100%	12	218	88	1,478	421	18	2	1	6	0	0
Tanana River Subdistrict 6B	SB	93	87	94%	38	148	1,006	9,573	4,583	1,026	7	28	10	11	2
Tanana River Upstream of Subdistrict 6C	SU	52	41	79%	15	0	0	0	0	1,314	0	20	130	170	98
Kantishna River Subdistrict 6A	SK	3	3	100%	2	0	0	314	144	13	0	0	0	0	0
Tolovana River Pike Subdistrict 6B	ST	78	65	83%	45	0	0	60	42	15	1	3	231	9	0
Subsistence Permit Subtotals		369	329	89%	184	1,562	2,809	32,874	5,340	2,677	47	67	400	229	207

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Permit Fishing Area	Permit [a] Type	Issued [b]	Returned	Percent Returned	Number of Permits Returned that Fished [c]	Reported Harvest: Chinook [d]	Summer Chum [d]	Fall Chum [d]	Coho [d]	Whitefish	Sheefish	Burbot	Northern Pike	Longnose Sucker	Arctic Grayling
Personal Use Permit															
Tanana River Salmon Subdistrict 6C	PC	53	52	98%	29	42	138	363	124	24	1	0	0	0	0
Tanana River Whitefish Upstream of Subdistrict 6C	PW	14	13	93%	7	0	0	20	8	65	0	1	3	118	0
Personal Use Permit Subtotals		67	65	97%	36	42	138	383	132	89	1	1	3	118	0
Permit Totals		436	394	90%	220	1,604	2,947	33,257	5,472	2,766	48	68	403	347	207

[a] Permits returned as of February 20, 2014.

[b] Includes 33 households that were issued permits for more than one area.

[c] Includes 8 households that "fished" in 2 different permit areas.

[d] Does not include District 6 commercial related harvest of 1 Chinook, 69 fall chum, and 1 coho salmon caught but not sold during commercial fishing and retained for subsistence use in 2013.

[e] Includes harvest from Stevens Village.

[f] Does not include 3 Chinook salmon that could not be released live from the ADF&G Eagle sonar test fishery project and were given to residents of Eagle. Harvest taking place between the Eagle Sonar and the U.S./Canada border is reported on SEU permits.

Appendix D7.–Reported harvest of salmon and other fish species from subsistence permits issued in the Yukon and Koyukuk rivers, 2003–2013.

	Permits		Percent	Number of Permits Returned	Reported Harvest									
Year	Issued	Returned	Returned	that Fished	Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Northern Pike	Longnose Sucker	Arctic Grayling
2003 [a]	181	165	91%	120	6,112	281	3,478	145	1141	91	34	60	114	1197
2004	173	162	94%	111	5,168	636	6,560	205	441	22	33	48	249	942
2005	189	173	92%	130	7,572	1,547	20,467	149	325	87	50	79	129	767
2006	173	168	97%	129	6,243	2,744	23,133	101	437	60	35	72	93	419
2007	187	171	91%	118	6,999	890	22,681	76	723	58	47	84	193	488
2008 [b]	188	175	93%	111	4,313	192	20,581	7	420	105	71	73	93	395
2009	167	162	97%	94	3,794	189	13,117	123	519	46	46	74	76	265
2010	207	198	96%	122	4,059	814	17,612	191	491	68	22	73	40	157
2011	191	188	98%	117	4,276	1,619	20,447	3	723	70	17	119	160	395
2012	164	159	97%	87	1,749	344	20,316	26	663	100	11	30	21	59
2013	124	114	92%	72	1,196	1,715	21,449	150	291	37	15	23	39	107
2008-2012 Average	183	176	96%	106	3,638	632	18,415	70	563	78	33	74	78	254
2003-2012 Average	182	172	95%	114	5,029	926	16,839	103	588	71	37	71	117	508

Note: Reported information from permits issued in the Yukon River (portions of Subdistricts 5-C and 5-D) and the South Fork of the Koyukuk River. Permit types include SF (South Fork of the Koyukuk River), SR (Rampart Area), SY (Yukon River bridge area), SE (Circle/Eagle Area) and SEU (Eagle Area to U.S./Canada border).

[a] Does not include information from SR (Rampart Area) or SF (South Fork Koyukuk) permit areas. Permits were not required in these areas until 2004.

[b] Permits have been issued above and below the Eagle sonar project to document harvest of salmon between the sonar site and U.S./Canada border from 2008 to present.

Appendix D8.–Reported harvest of salmon and other fish species from subsistence permits issued in Subdistricts 6-A, 6-B and 6-D of the Tanana River, 2003–2013.

	Permits		Percent	Number of Permits Returned	Reported Harvest									
Year	Issued	Returned	Returned	that Fished	Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Northern Pike	Longnose Sucker	Arctic Grayling
2003	257	230	89%	127	2,145	2,920	12,986	10,363	2,731	111	83	1,196	217	16
2004	217	200	92%	98	1,388	1,793	8,953	11,584	3,406	74	94	558	91	89
2005	202	182	90%	88	1,828	2,014	19,699	12,318	3,262	65	21	560	162	30
2006	226	219	97%	133	926	1,010	16,766	10,182	2,675	15	88	934	493	87
2007	253	239	94%	125	1,472	1,896	16,298	6,647	2,603	24	52	2,009	50	37
2008	315	292	93%	152	601	1,000	10,510	6,017	2,942	4	18	1,603	48	93
2009	252	243	96%	125	1,273	1,253	13,845	6,744	3,472	29	73	662	127	98
2010	256	235	92%	107	954	422	10,813	5,415	2,343	52	20	177	64	39
2011	227	219	96%	112	1,015	825	12,726	6,124	4,072	32	122	200	118	80
2012	242	221	91%	110	603	494	12,881	8,099	3,281	47	47	795	142	45
2013	245	215	88%	112	366	1,094	11,425	5,190	2,386	10	52	377	190	100
2008-2012 Average	258	242	94%	121	889	799	12,155	6,480	3,222	33	56	687	100	71
2003-2012 Average	245	228	93%	118	1,221	1,363	13,548	8,349	3,079	45	62	869	151	61

Note: Permit types include SA (Subdistrict 6-A), SB (Subdistrict 6-B), SK (Kantishna River), ST (Tolovana River pike fishery), and SU (Upper Tanana River).

Appendix D9.–Reported harvest of salmon and other fish species from personal use permits issued in Subdistrict 6-C of the Tanana River, 2003–2013.

	Permits		Percent	Number of Permits Returned	Reported Harvest									
Year	Issued	Returned	Returned	that Fished	Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Northern Pike	Longnose Sucker	Arctic Grayling
2003	74	72	97%	35	204	148	394	549	22	1	5	0	135	7
2004	71	68	96%	36	201	231	230	233	51	1	0	0	1	0
2005	73	69	95%	32	138	152	133	107	84	3	7	2	403	3
2006	67	67	100%	39	89	262	333	279	287	5	4	2	184	1
2007	68	66	97%	32	136	184	173	135	4	1	0	1	0	0
2008	57	56	98%	29	126	138	181	50	41	2	0	2	157	0
2009	68	68	100%	28	127	308	78	70	48	1	0	0	315	0
2010	75	73	97%	41	162	319	3,209	1,062	206	1	3	7	66	5
2011	74	71	96%	38	89	439	347	232	62	1	1	0	142	0
2012	72	70	97%	32	71	321	410	100	22	0	0	0	233	0
2013	67	65	97%	36	42	138	383	132	89	1	1	3	118	0
2008-2012 Average	69	68	98%	34	115	305	845	303	76	1	1	2	183	1
2003-2012 Average	70	68	97%	34	134	250	549	282	83	2	2	1	164	2

Note: Permit types include PC for personal use salmon and PW for personal use whitefish.

Appendix D10.–Estimated and reported subsistence and personal use harvest of miscellaneous fish species, Yukon Area, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007	2008–2012
Survey Estimates [a]													
Whitefish [b]	68,416	64,039	48,862	60,923	64,338	54,729	51,778	50,232	44,890	70,486	64,781	61,316	54,423
Northern Pike	22,341	18,738	29,799	28,133	25,947	16,053	8,061	14,086	14,270	18,450	11,264	24,992	14,184
Sheefish	14,280	16,896	13,764	12,745	13,203	10,154	7,861	9,231	10,139	17,094	15,553	14,178	10,896
Survey Reported											[c]		
Burbot	3,000	2,628	3,138	5,069	3,500	3,273	2,027	2,743	2,477	2,422	2,115	3,467	2,588
Arctic Lamprey	29,886	33,919	38,115	2,092	12,584	803	1,699	10,863	6,037	1,243	2,608	23,319	4,129
Tomcod	4,608	5,649	4,988	13,652	7,121	6,391	2,709	3,978	6,797	4,023	5,221	7,204	4,780
Arctic Grayling	2,421	1,645	1,258	1,145	2,296	857	667	1,571	1,273	2,674	1,435	1,753	1,408
Longnose Suckers	234	178	1,452	105	225	25	59	273	286	95	180	439	148
Arctic Char	376	116	217	345	181	184	43	148	205	216	167	247	159
Alaska Blackfish	161,703	229,833	259,874	218,695	131,712	110,356	47,320	68,873	87,064	62,731	63,235	200,363	75,269
Sockeye Salmon	–	787	648	333	493	213	216	263	279	405	258	–	275
Herring [c]	–	–	–	–	–	–	–	–	–	10,449	9,082	–	–
Halibut [c]	–	–	–	–	–	–	–	–	–	21	551	–	–
Permit Reported													
Whitefish [b]	5,508	4,402	3,671	3,399	3,328	3,402	4,039	3,040	4,851	3,966	2,766	4,062	3,860
Northern Pike	1,266	606	641	1,008	2,094	1,678	733	257	319	825	403	1,123	762
Sheefish	203	97	155	80	83	111	76	121	103	147	48	124	112
Burbot	129	127	78	127	99	89	119	45	140	58	68	112	90
Arctic Grayling	1,228	1,032	800	507	525	488	363	201	475	104	207	818	326
Longnose Suckers	978	341	694	770	243	298	518	170	414	396	347	605	359
Yukon Area Totals													
Whitefish [b]	73,924	68,441	52,533	64,322	67,666	58,131	55,817	53,272	49,741	74,452	67,547	65,377	58,283
Northern Pike	23,607	19,344	30,440	29,141	28,041	17,731	8,794	14,343	14,589	19,275	11,667	26,115	14,946
Sheefish	14,483	16,993	13,919	12,825	13,286	10,265	7,937	9,352	10,242	17,241	15,601	14,301	11,007
Burbot	3,129	2,755	3,216	5,196	3,599	3,362	2,146	2,788	2,617	2,480	2,183	3,579	2,679
Arctic Lamprey	29,886	33,919	38,115	2,092	12,584	803	1,699	10,863	6,037	1,243	2,608	23,319	4,129
Tomcod	4,608	5,649	4,988	13,652	7,121	6,391	2,709	3,978	6,797	4,023	5,221	7,204	4,780
Arctic Grayling	3,649	2,677	2,058	1,652	2,821	1,345	1,030	1,772	1,748	2,778	1,642	2,571	1,735
Longnose Suckers	1,212	519	2,146	875	468	323	577	443	700	491	527	1,044	507
Arctic Char	376	116	217	345	181	184	43	148	205	216	167	247	159
Alaska Blackfish	161,703	229,833	259,874	218,695	131,712	110,356	47,320	68,873	87,064	62,731	63,235	200,363	75,269
Sockeye Salmon	–	787	648	333	493	213	216	263	279	405	258	–	275

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Note: Dashes indicate information was not collected.

[a] Subsistence whitefish, pike, and a sheefish estimates in surveyed communities is based on a stratified random sample of households as designated for the estimation of subsistence salmon harvests, and may not reflect harvest of those households targeting non-salmon species.

[b] Whitefish includes various *Coregonus* species and round whitefish (*Prosopium cylindraceum*).

[c] Starting in 2012, households in the Lower Yukon including the Coastal District were asked about harvest of herring and halibut. Household responses for herring include smelt and unspecified species, responses for halibut include unspecified flounder species.

APPENDIX E: YUKON RIVER SALMON ESCAPEMENT

Appendix E1.–Yukon River drainage salmon spawning escapement goals for selected species and streams 2013.

Chinook Salmon Stock	Goals	Goal Type	Year Established	Primary Source
E. Fork Andreafsky River	2,100 – 4,900	SEG	2010	Volk et al. (2009)
W. Fork Andreafsky River	640 – 1,600	SEG	2005	ADF&G (2004)
Anvik River	1,100 – 1,700	SEG	2005	ADF&G (2004)
Nulato R. -N. and S. combined	940 – 1,900	SEG	2005	ADF&G (2004)
Chena River	2,800 – 5,700	BEG	2001	Evenson (2002)
Salcha River	3,300 – 6,500	BEG	2001	Evenson (2002)
Canadian Upper Yukon River	42,500 – 55,000	Interim Management Escapement Goal	2010	JTC (2010)
Summer Chum Salmon Stock				
E. Fork Andreafsky River	>40,000	SEG	2010	Fleischman and Evenson (2010)
Anvik River	350,00–700,000	BEG	2005	ADF&G (2004)
Fall Chum Salmon Stock				
Yukon River Drainage	300,000–600,000	SEG	2010	Fleischman and Borba (2009)
Tanana River	61,000–136,000	BEG	2001	Eggers (2001)
Delta River	6,000–13,000	BEG	2001	Eggers (2001)
Upper Yukon R. Tributaries	152,000–312,000	BEG	2001	Eggers (2001)
Chandalar River	74,000–152,000	BEG	2001	Eggers (2001)
Sheenjek River	50,000–104,000	BEG	2001	Eggers (2001)
Canadian Upper Yukon River	70,000–104,000	Interim Management Escapement Goal	2010	JTC (2008)
Fishing Branch River	22,000–49,000	Interim Management Escapement Goal	2008	JTC (2010)
Coho Salmon Stock				
Delta Clearwater River	5,200–17,000	SEG	2004	ADF&G (2004)

Appendix E2.–Detailed preliminary salmon spawning escapement estimates for the Yukon River drainage, 2013.

Stream (method)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Andreafsky River							
East Fork (weir count)	7/2 - 7/30		1,998	61,234			USFWS
East Fork (fixed wing)	8/1	Good	(1,441)	(10,965)			ADF&G
West Fork (fixed wing)	8/1	Good	1,090	9,685			ADF&G
Andreafsky Subtotal			3,088	70,919			
Yukon River Near Pilot Station (sonar)	6/13 - 9/7		(117,159)	(2,747,218)	(716,727)	(84,795)	ADF&G
Anvik River (sonar)	6/16 - 7/26			571,690			ADF&G
Anvik River (fixed wing)							
Goblet Creek to Yellow R. [a]	8/1	Good	197	(11,950)			ADF&G
Yellow R. to McDonald Cr. [b]	8/1	Good	656	(19,220)			ADF&G
Swift River	8/1	Good	18	(1,820)			ADF&G
Beaver Creek	8/1	Good	36	(800)			ADF&G
Otter Creek	8/1	Good	33	(1,025)			ADF&G
Upstream of McDonald Cr.	8/1	Good	0	(4,100)			ADF&G
Anvik Subtotal			940	571,690			
Nulato River (fixed wing)							
North Fork [c]	7/31	Good	586	13,230			ADF&G
South Fork	7/31	Good	532	13,695			ADF&G
Nulato Subtotal			1,118	26,925			
Total Lower Yukon River (downstream of Koyukuk River)			5,146	669,534			
Koyukuk River Drainage							
Gisasa River (weir project)	6/20 - 7/31		1,126	80,055			USFWS
Gisasa River (fixed wing)	7/31	Late	(201)	(9,300)			ADF&G
Total Yukon River (downstream of Tanana River)			6,272	749,589			

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Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Tanana River Drainage							
Chatanika River (fixed wing)	8/6	Good	26	44			ADF&G
Kantishna River Drainage (helicopter)							
Toklar Springs Main Channel and Sloughs	11/6	Fair			8,333	0	ADF&G
Geiger Creek	11/6	Fair			828	360	ADF&G
Kantishna Subtotal			26	44	9,161	360	
Nenana River Drainage (helicopter)							
Seventeen Mile Slough	10/30	Fair			16	425	ADF&G
Julius Creek	10/30	Fair			31	0	ADF&G
Wood Creek	10/30	Fair			0	55	ADF&G
Clear Creek	10/30	Fair			140	2	ADF&G
Glacier Creek	10/30	Incomplete			80	30	ADF&G
Lost Slough (western floodplain)	10/30	Incomplete			0	721	ADF&G
Lignite Springs (foot survey)	11/1	Late			0	1	ADF&G
Nenana Subtotal					267	1,234	
Chena River (counting tower)	7/9 - 8/5		1,653	21,385			ADF&G
Salcha River (counting tower)	7/9 - 8/7		4,941	59,188			BSFA
Kiana Creek (helicopter)	11/7	Fair			0	171	ADF&G
Richardson Clearwater River (helicopter)	11/7	Good			130	647	ADF&G
Mainstem Tanana Sloughs (helicopter)							
Benchmark 735 Slough	11/7	Fair			344	0	ADF&G
Little Delta River mouth to Whitestone mouth	11/7	Fair			293	0	ADF&G
Whitestone Slough	11/7	Poor			9	0	ADF&G
Rika's Roadhouse vicinity	11/7	Fair			2,956	10	ADF&G
Clearwater Lake Outlet Slough	11/7	Fair			5,401	15	ADF&G
Pearse Slough and vicinity	11/7	Fair			1,896	6	ADF&G
Mainstem Tanana Subtotal			6,594	80,573	10,899	31	

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Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Delta River							
Foot Survey (peak count)	11/1, 12/4	Good			(25,172)	163	ADF&G
Population Estimate [d]					31,955		ADF&G
Blue Creek (helicopter)	11/7	Fair			498	178	ADF&G
Bluff Cabin Slough (helicopter)	11/7	Fair			5,554	255	ADF&G
Bluff Cabin Creek (helicopter)	11/7	Good			5	612	ADF&G
Delta Clearwater River Index Area (boat survey)	10/24	Good			0	6,222	ADF&G
Delta Clearwater Lake (helicopter)							
Clearwater Lake Outlet	11/7	Fair			395	1,870	ADF&G
Clearwater Lake Outlet Slough	11/7	Fair			5	351	ADF&G
Goodpaster River (counting tower)	7/15 - 8/3		738				TCC/BSFA
Total Tanana River			7,358	80,617	58,869	12,094	
Chandalar River (sonar) [e]	8/8-9/26, 10/9				253,041		USFWS
Yukon River near Eagle (sonar) [e]	7/6 - 10/6, 10/18		(30,725)		(216,791)		ADF&G/DFO
Total Alaska Portion of Drainage Observed Escapements			14,368	830,206	311,910	12,094	
Porcupine River Drainage							
Porcupine River (sonar)	8/24-10/12				36,994		DFO [f]
Yukon Territory Streams [g]							
Blind Creek (weir)	7/24-8/19		312				DFO [f]
Big Salmon River (sonar)	7/17-8/25		3,231				DFO [f]
Teslin River Drainage							
Teslin River (sonar)	7/19-9/2		9,916				DFO
Whitehorse Fishway (fish ladder with window)	7/25 - 9/1		1,132				DFO [f]
Subtotal Mainstem Sites			14,591		36,994		

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Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Canadian Mainstem Yukon River							
Border Passage Estimate (Eagle sonar minus U.S. harvest)			(30,573)		(204,149)		ADF&G/DFO
Canadian Escapement Estimate (Border Passage minus Canada Harvest)			28,669		200,262		ADF&G/DFO
Total Yukon Territory [h]			28,669		237,256		DFO
Yukon River Drainage Total Observed Escapements			43,037	830,206	512,172	12,094	

Note: Data in parentheses are not included in subtotals or totals. Surveys rated anything other than "Good or Fair" should not be used without reviewing the entire history of the system to determine relevance (http://sf.adfg.state.ak.us/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx).

[a] Anvik River chum salmon index area includes mainstem counts between Goblet Creek and McDonald Creek.

[b] Anvik River Chinook salmon index area includes Yellow River to McDonald Creek.

[c] Nulato River mainstem aerial survey counts below the forks are included with the North Fork.

[d] Population estimate based upon replicate foot surveys and salmon stream life data.

[e] Includes expansion for end of run for fall chum salmon.

[f] Yukon Territory counts provided by DFO but are operated by various contractors mostly funded by Restoration and Enhancement Funds.

[g] Canadian "border passage" estimate for Yukon Territory streams (excluding the Porcupine River). Canadian harvest has not been removed.

[h] Yukon Territory counts include Canadian mainstem Yukon River escapement estimate plus Porcupine River.

Appendix E3.–Chinook salmon aerial survey indices for selected spawning areas in the Alaska portion of the Yukon River drainage, 1990–2013.

	Andreafsky River		Anvik River			Nulato River		Gisasa River
Year	East Fork	West Fork	Drainagewide Total	Index Area [a]	North Fork [b]	South Fork	Both Forks	
1990	2,503	1,545	2,347	1,595	568 [c]	430 [c]	998 [c]	884 [c]
1991	1,938	2,544	875 [c]	625 [c]	767	1,253	2,020	1,690
1992	1,030 [c]	2,002 [c]	1,536	931	348	231	579	910
1993	5,855	2,765	1,720	1,526	1,844	1,181	3,025	1,573
1994	300 [c]	213 [c]		913 [c]	843	952	1,795	2,775
1995	1,635	1,108	1,996	1,147	968	681	1,649	410
1996		624	839	709		100	100	
1997	1,140	1,510	3,979	2,690				144 [c]
1998	1,027	1,249 [c]	709 [c]	648 [c]	507	546	1,053	889 [c]
1999	[c]	870 [c]	[c]	950 [c]	[c]	[c]	[c]	[c]
2000	1,018	427	1,721	1,394	[c]	[c]	[c]	[c]
2001	1,059	565	1,420	1,177	1,116	768	1,884 [d]	1,298 [c]
2002	1,447	917	1,713	1,329	687	897	1,584	506
2003	1,116 [c]	1,578 [c]	1,100 [c]	973 [c]	[c]	[c]	[c]	
2004	2,879	1,317	3,679	3,304	856	465	1,321	731
2005	1,715	1,492	2,421	1,922	323	230	553	958
2006	591 [c]	824	1,876	1,776 [e]	1,292	-	1,292	843
2007	1,758	976	1,529	1,497	2,583	-	2,583	593
2008	278 [c]	262 [c]	992 [c]	827 [c]	922	-	922	487
2009	84 [c]	1,678	832	590	2,260	-	2,260	515
2010	537	858	974	721	356	355	711	264
2011	620	1,173	642	501	788	613	1,401	906
2012	[c]	[c]	722	451	682	691	1,373	[c]
2013	1,441	1,090	940	656	586	832	1,118	201 [c]
SEG [f]	960-1,900	640-1,600		1,100-1,700			940-1,900	420-1,100
Average								
1990-2012	1,427	1,204	1,601	1,226	984	626	1,426	910
2003-2012	1,064	1,129	1,477	1,256	1,118	471	1,380	662
2008-2012	380	993	832	618	1002	553	1333	543

Note: Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.

[a] Anvik River Index Area includes mainstem counts between Yellow River and McDonald Creek.

[b] Nulato River mainstem aerial survey counts below the forks are included with the North Fork.

[c] Incomplete, poor timing and/or poor survey conditions resulting in minimal or inaccurate counts.

[d] In 2001, the Nulato River escapement goal was established for both forks combined.

[e] Index area includes counts from Beaver Creek to McDonald Creek.

[f] Sustainable escapement goal.

Appendix E4.–Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1990–2013.

	Andreafsky River		Anvik River				Nulato River			Gisasa River
Year	East Fork	West Fork	Drainagewide Total	Index Area [a]	North Fork [b]	South Fork	Both Forks	
1990	2,503	1,545	2,347	1,595	568 [c]	430 [c]	998 [c]	884 [c]
1991	1,938	2,544	875 [c]	625 [c]	767	1,253	2,020	1,690
1992	1,030 [c]	2,002 [c]	1,536	931	348	231	579	910
1993	5,855	2,765	1,720	1,526	1,844	1,181	3,025	1,573
1994	300 [c]	213 [c]		913 [c]	843	952	1,795	2,775
1995	1,635	1,108	1,996	1,147	968	681	1,649	410
1996		624	839	709		100	100	
1997	1,140	1,510	3,979	2,690				144 [c]
1998	1,027	1,249 [c]	709 [c]	648 [c]	507	546	1,053	889 [c]
1999	[c]	870 [c]	[c]	950 [c]	[c]	[c]	[c]	[c]
2000	1,018	427	1,721	1,394	[c]	[c]	[c]	[c]
2001	1,059	565	1,420	1,177	1,116	768	1,884 [d]	1,298 [c]
2002	1,447	917	1,713	1,329	687	897	1,584	506
2003	1,116 [c]	1,578 [c]	1,100 [c]	973 [c]	[c]	[c]	[c]	
2004	2,879	1,317	3,679	3,304	856	465	1,321	731
2005	1,715	1,492	2,421	1,922	323	230	553	958
2006	591 [c]	824	1,876	1,776 [e]	1,292	-	1,292	843
2007	1,758	976	1,529	1,497	2,583	-	2,583	593
2008	278 [c]	262 [c]	992 [c]	827 [c]	922	-	922	487
2009	84 [c]	1,678	832	590	2,260	-	2,260	515
2010	537	858	974	721	356	355	711	264
2011	620	1,173	642	501	788	613	1,401	906
2012	[c]	[c]	722	451	682	691	1,373	[c]
2013	1,441	1,090	940	656	586	832	1,118	201 [c]
SEG [f]	960-1,900	640-1,600		1,100-1,700			940-1,900	420-1,100
Average								
1990-2012	1,427	1,204	1,601	1,226	984	626	1,426	910
2003-2012	1,064	1,129	1,477	1,256	1,118	471	1,380	662
2008-2012	380	993	832	618	1002	553	1333	543

-continued-

Note: Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.

[a] Anvik River Index Area includes mainstem counts between Yellow River and McDonald Creek.

[b] Nulato River mainstem aerial survey counts below the forks are included with the North Fork.

[c] Incomplete, poor timing and/or poor survey conditions resulting in minimal or inaccurate counts.

[d] In 2001, the Nulato River escapement goal was established for both forks combined.

[e] Index area includes counts from Beaver Creek to McDonald Creek.

[f] Sustainable escapement goal.

Appendix E5.–Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1990–2013.

Year	East Fork Andreafsky River		Nulato River Tower	Henshaw Creek Weir		Gisasa River Weir		Chena River		Salcha River		Goodpaster
	No. Fish	% Fem.	No. Fish	No. Fish	% Fem.	No. Fish	% Fem.	No. Fish	% Fem. [a]	No. Fish	% Fem. [a]	No. Fish
1990		41.6 [b]						5,603 [c]	36.3	10,728 [c]	36.2	
1991		33.9 [b]						3,025 [c]	31.5	5,608 [c]	40.7	
1992		21.2 [b]						5,230 [c]	21.6	7,862 [c]	36.0	
1993		29.9 [b]						12,241 [d]	11.7	10,007 [d]	22.9	
1994	7,801	35.5 [e,f]	1,795 [f]			2,888	[f]	11,877 [d]	32.4	18,399 [d]	40.4	
1995	5,841	43.7 [e]	1,412			4,023	46.0	9,680 [c]	51.7	13,643 [d]	48.4	
1996	2,955	41.9 [e]	756			1,991	19.5	7,153 [c]	26.8	7,570 [d]	26.2	
1997	3,186	36.8 [e]	4,766			3,764	26.0	13,390 [c]	25.6	18,514 [d]	41.8	
1998	4,034	29.0 [e]	1,536			2,414	16.2	4,745 [d]	28.4	5,027 [d]	26.1	
1999	3,444	28.6 [e]	1,932			2,644	26.4	6,485 [d]	45.6	9,198 [d]	44.6	
2000	1,609	54.3 [e]	908	244	29.7	2,089	34.4	4,694 [c]	21.7	4,595 [d]	34.3	
2001		[f]	[f]	1,103	36.3	3,052	49.2 [f]	9,696 [d]	30.1	13,328 [d]	32.1	
2002	4,123	21.1 [e]	2,696	649	30.8	2,025	20.7	6,967 [c]	27.3	9,000 [d,g]	29.8	
2003	4,336	45.3 [e]	1,716 [e]	763	38.4	1,901	38.1	11,100 [d,h]	31.8	15,500 [d,g]	36.6	
2004	8,045	37.3	[i]	1,248	21.3	1,774	30.1	9,645 [d]	43.9	15,761 [d]	54.2	3,673
2005	2,239	50.2	[i]	1,059	41.4	3,111	34.0	[d,e]	30.6	5,988 [d]	47.5	1,184
2006	6,463	42.6	[i]		[e]	3,030	28.2	2,936 [d]	32.1	10,679 [d]	38.1	2,479
2007	4,504	44.7	[i]	740	24.9	1,425	39.0	3,806 [d]	27.3	6,425 [d]	31.0	1,581
2008	4,242	34.8	[i]	766	27.7	1,735	16.2	3,208 [d]	29.0	5,415 [d,g]	33.7	1,880
2009	3,004	46.0	[i]	1,637	49.0	1,955	29.3	5,253 [d]	40.0	12,774 [d]	33.9	4,280
2010	2,413	48.6	[i]	857	49.6	1,516	29.0	2,382 [d]	20.6	6,135 [d]	26.6	1,167
2011	5,213	20.2	[i]	1,796	33.9	2,692	19.5	[f]	22.7 [j]	[k]	42.1	1,325
2012	2,517	28.0	[i]	922	43.0	1,323	17.0	2,220 [d,l]	39.1	7,165	50.9	752
2013	1,998	40.4	[i]	706	44.8	1,126	34.1	1,653 [d,f]	40.3	4,941	50.5	723
BEG [m]								2,800-5,700		3,300-6,500		
Average												
1990-2012	4,221	37.2	1,946	982	35.5	2,387	29.1	6,730	30.8	9,969	37.7	1,904
2003-2012	4,298	39.8	1,716	1,088	36.6	2,046	28.0	5,069	31.7	9,538	39.5	1,904
2008-2012	3,478	35.5	-	1,196	40.6	1,844	22.2	3,266	30.3	7,872	37.4	1,881

-continued-

[a] In years when only carcass surveys were conducted, proportions of males and females were adjusted based on the average of ratios of unbiased estimates from mark–recapture experiments to estimates from carcass samples over those years when mark–recapture studies were conducted. In years when mark–recapture experiments were conducted, proportions of males and females were estimated as the ratio of the abundance estimate of each gender to the abundance estimate of all fish.

[b] Counting project terminated due to budget constraints.

[c] Mark–recapture population estimate.

[d] Tower counts.

[e] Weir counts.

[f] Project operations were hindered by high water conditions for much of the season.

[g] Estimate includes an expansion for missed counting days based on average run timing. Minimum documented abundances from successful counting days were 4,644 in 2002, 11,758 in 2003, and 5,415 in 2008.

[h] Estimate includes an expansion for missed counting days based on average run timing. Minimum documented abundance during successful counting days was 8,739 (SE = 653) fish.

[i] Project did not operate.

[j] Adjusted percent female based upon 8 years of paired electrofishing and carcass survey data, which indicated percent female from carcass surveys were biased high.

[k] No estimate due to high water; however, an aerial survey flown July 25 counted a total of 3,537 Chinook salmon.

[l] Estimate includes an expansion for missed counting days based on using 2 DIDSON sonars to assess Chinook salmon passage.

[m] Biological escapement goals (BEG) established by the Alaska Board of Fisheries, January 2001.

Appendix E6.–Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1992–2013.

Year	Tincup Creek [a]	Tatchun Creek [b]	Little Salmon River [a]	Big Salmon River [a,c]	Nisutlin River [a,d]	Ross River [a,e]	Wolf River [a,f]	Blind Creek	Chandindu River	Big Salmon Sonar	Klondike River Sonar	Teslin River Sonar
1992	73	106	494	617	241	423	110 [j]					
1993		183	184	572	339	400	168 [h]					
1994	101 [g]	477	726	1,764	389	506	393 [h]					
1995	121	397	781	1,314	274	253 [g]	229 [h]					
1996	150	423	1,150	2,565	719	102 [g]	705 [h]					
1997	193	1,198	1,025	1,345	277		322 [j]	957				
1998	53	405	361	523	145		66	373	132			
1999		252	495	353	330		131	892	239			
2000	19 [i]	276 [i]	46	113	20		32		4 [j]			
2001	39 [i]		1,035	1,020	481		154		129 [k]			
2002			526	1,149	280		84		[j]			
2003			1,658	3,075	687		292	1,115	185 [l]			
2004			1,140	762	330		226	792				
2005			1,519	952	807	363	260	525		5,584		
2006			1,381	1,140	601		114	677		7,308		
2007			451	601	137		54	304		4,450		
2008			93	303			22	276		1,329		
2009			821	1,827	497		134	716		9,261	5,147	
2010			63 [m]	656	288		94	270		3,817	803	
2011 [n]			38 [m]	405			81	360		5,156	1,181	
2012								157		2,553		3,396
2013								312		3,239		9,916
IMEG												
Averages												
1992-2012	94	413	699	1,053	380	341	184	570	138	4,932		
2003-2012			796	1,080	478	363	142	519	185	4,932		
2008-2012			254	798	393		83	356		4,423	2,377	

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	Whitehorse Fishway		Canadian Mainstem		
Year	Count	Percent Hatchery Contribution	Border Passage Estimate [o]	Harvest	Spawning Escapement Estimate [p]
1992	758 [q]	84 [q]	56,958	17,803	39,155
1993	668 [q]	73 [q]	52,713	16,469	36,244
1994	1,577 [q]	54 [q]	77,219	20,770	56,449
1995	2,103	57	70,761	20,088	50,673
1996	2,958	35	93,606	19,546	74,060
1997	2,084	24	69,538	15,717	53,821
1998	777	95	41,335	5,838	35,497
1999	1,118	74	49,538	12,354	37,184
2000	677	69	30,699	4,829	25,870
2001	988	36	62,333	9,774	52,559
2002	605	39	51,428	9,070	42,358
2003	1,443	70	90,037	9,446	80,591
2004	1,989	76	59,415	10,946	48,469
2005	2,632	57	78,962	10,977	67,985
2006	1,720	47	71,388	8,758	62,630
2007	427	56	39,698	4,794	34,904
2008	399	54	37,282	3,399	33,883
2009	828	47	69,575	4,297	65,278
2010	672	49	34,470	2,456	32,014
2011	1,534	48	50,901	4,594	46,307
2012	1,030	59	34,656	2,000	32,656
2013	1,139	67	30,573	1,904	28,669
IMEG Averages					42,500-55,000 [r]
1992-2012	1,285	57	58,215	10,187	48,028
2003-2012	1,267	56	56,638	6,167	50,472
2008-2012	893	51	45,377	3,349	42,028

-continued-

[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 prior to 1997 except 1978 (boat survey) and 1986 (aerial survey). The 1997-2000 data were from weir counts.

[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.

[e] Big Timber Creek to Lewis Lake.

[f] Wolf Lake to Fish Lake outlet except where otherwise indicated.

[g] Counts for Big Timber Creek to Sheldon Lake.

[h] Resistance board weir tested for 3 weeks.

[i] Foot survey.

[j] High water delayed project installation, therefore, counts are incomplete.

[k] Conventional weir July 01-September 08, but was breached from July 31 to August 7.

[l] Combination resistance board weir and conduit weir tested and operational from July 10 to 30.

[m] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.

[n] Data are preliminary.

[o] Estimated total border passage excluding Porcupine River based on Eagle sonar for 2005 to 2010, on radio tagging proportion study for 2002 to 2004, on 3 area index (Little Salmon, Big Salmon and Nisutlin aerial survey) plus Canadian harvest for 1982 to 2001.

[p] Estimated total spawning escapement excluding Porcupine River based on 3 area index for 1982 to 2001, and on border passage estimate minus Canadian harvest for 2002-2010.

[q] Counts and estimated percentages may be slightly exaggerated. In some or all of these years a number of adipose-clipped fish ascended the fish way, and were counted more than once. These fish would have been released into the fishway as fry between 1989 and 1994, inclusive.

[r] Interim management escapement goal (IMEG) range of 42,500-55,000 was established in 2010 and continued in 2011. This replaced the IMEG of 45,000 used in 2008 and 2009. These goals are based on Eagle sonar project estimates.

Appendix E7.–Summer chum salmon escapements for selected spawning areas in the Alaska portion of the Yukon River drainage, 1990–2013.

	Andreafsky River					Anvik River			Rodo River		Kaltag Creek		Nulato River					
	East Fork				West Fork								South Fork		North Fork [a]		Mainstem	
Year	Aerial		Sonar, Tower, or Weir Counts		Aerial		Tower & Aerial		Sonar	Aerial		Tower	Aerial		Aerial		Tower	
1990	11,519	c	–		20,426	c	–		403,627	1,941	c		3,196	c,e	1,419	c		
1991	31,886		–		46,657		–		847,772	3,977			13,150		12,491			
1992	11,308	c	–		37,808	c	–		775,626	4,465			5,322		12,358			
1993	10,935	c	–		9,111	c	–		517,409	7,867			5,486		7,698			
1994	–		200,981	f,g	–		–		1,124,689	–		47,295	–		–		148,762	g
1995	–		172,148	f	–		–		1,339,418	12,849		77,193	10,875		29,949		236,890	
1996	–		108,450	f	–		–		933,240	4,380		51,269	8,490	c,f	–		129,694	
1997	–		51,139	f	–		–		605,752	2,775	c	48,018	–		–		157,975	
1998	–		67,720	f	–		–		487,301	–		8,113	–		–		49,140	
1999	–		32,587	f	–		–		437,356	–		5,339	–		–		30,076	
2000	2,094	c	24,785	f	18,989	c	–		196,349	–		6,727	–		–		24,308	
2001	–		2,134	f,g	–		–		224,058	–		–	h	–		–		–	i
2002	–		44,194	f	–		–		459,058	–		13,583	–		–		72,232	
2003	–		22,461	f	–		–		256,920	–		3,056	–		–		19,590	g
2004	–		64,883	f	–		–		365,353	–		5,247	–		–		–	h
2005	–		20,127		–		–		525,391	–		22,093	–		–		–	h
2006	3,100	c	102,260		617		–		605,485	–		–	h	7,772		11,658		–	h
2007	–		69,642		–		–		460,121	–		–	h	21,825		15,277		–	h
2008	9,300		57,259		25,850		–		374,928	–		–	h	12,070		10,715		–	h
2009	736		8,770		3,877		–		193,099	621		–	h	2,120		567		–	h
2010	1,982		72,893		24,380		–		396,173	–		–	h	1,891		1,038		–	h
2011	12,889		100,473		10,020		–		642,528	6,011		–	h	9,454		8,493		–	h
2012		d	56,680			d	–		483,972	15,606		–	h	20,600		14,948		–	
2013	10,965		61,234		9,685		–		571,690	–		–	h	13,695		13,230		–	
Escapement Objective			>40	j					350–700	j								

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	Henshaw Creek	Gisasa River			Hogatza River				Tozitna River		Chena River			Salcha River		
					Clear & Caribou Cr.		Clear Creek									
Year	Weir	Aerial	b	Weir	Aerial	b	Tower		Weir and Aerial	b	Aerial	b	Tower	Aerial	b	Tower
1990		450	c		2,177	c			36		245	c		450	d	
1991		7,003			9,947				93		115	c		154	d	
1992		9,300			2,986				794		848	d		3,222		
1993		1,581			–				970		168		5,400	212		5,809
1994		6,827		51,116	g 8,247	m			–		1,137		9,984	4,916		39,450
1995		6,458		136,886	–		116,735		4,985		185	d	3,519	h 934	d	30,784
1996		–		158,752	27,090	m	100,912		2,310		2,061		12,810	h 9,722		74,827
1997		686	d	31,800	1,821	d	76,454		428	d	594	d	9,439	h 3,968	d	35,741
1998		–		21,142	120	d,n	212	l	7	d	24	d	5,901	370	d	17,289
1999		–		10,155	–		11,283		–		520		9,165	150		23,221
2000	27,271	–		11,410	–		19,376		480		105		3,515	228		20,516
2001	35,031	–		17,946	–		3,674		12,527		2		4,773	–		14,900 j
2002	25,249	–		33,481	–		13,150		18,789		–		1,021	g 78		20,837 j
2003	22,556	–		25,999	–		6,159		8,487		–		573	g –		–
2004	86,474	–		37,851	–		15,661		25,003		–		15,162	g –		47,861
2005	237,481	–		172,259	–		26,420		39,700		219		2,928	g 4320		193,085
2006	–	1,000		261,305	–		29,166		22,629		469		35,109	g 152		111,869
2007	44,425	–		46,257	–		6,029	l	8,470		–		4,999	4	d	13,069
2008	97,281	20,470		36,938	–	k	–	h	9,133		37		1,300	g 0	d	2,212 g
2009	156,201	1,060		25,904	3,981	k	–	h	8,434		–		16,516	–		31,035
2010	105,398	1,096		47,669	840	k	–	h	–		–		7,560	–		22,185
2011	248,247	13,228		95,796	3,665	k	–	h	11,351		4,600			m 819		m
2012	292,082		d	83,423	23,022	k	–	h					6,882			46,251
2013	263,746	9,300	d	80,055	–	d,k	–	h					21,385			59,188
Escapement Objective																

-continued-

Note: Unless otherwise noted blank cells indicate years prior to the project being operational. En dash indicates years in which no information was collected.

[a] Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.

[b] Aerial survey counts are peak counts only, survey rating is fair or good unless otherwise noted.

[c] From 1972 to 1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).

[d] Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.

[e] Mainstem counts below the confluence of the North and South Forks of the Nulato River included in the South Fork counts.

[f] Weir count.

[g] Incomplete count due to late installation and/or early removal of project or high water events.

[h] Project did not operate.

[i] No counts due to incomplete operations.

[j] Biological escapement goals (in thousands of fish) established by the Alaska Board of Fisheries, January 2010.

[k] Consists of Clear Creek only.

[l] Project operated as a video monitoring system.

[m] No estimates due to high water conditions that prevented counting for much of the season.

Appendix E8.–Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaska portions of the Yukon River Drainage, 1992–2013.

		Alaska							
		Tanana River Drainage						Upper Yukon River Drainage	
Year	Yukon River Mainstem Sonar Estimate	Toklat River [a]	Kantishna River Abundance Estimate [b]	Delta River [c]	Bluff Cabin Slough [d]	Upper Tanana River Abundance Estimate [e]	Tanana River Estimate [f]	Chandalar River [g]	Sheenjek River [h]
1992		14,070		8,893	3,615				78,808
1993		27,838		19,857 [i]	5,550				42,922
1994		76,057		23,777	2,277				150,565
1995	1,053,245	54,513 [j]		20,587 [i]	19,460 [k]	268,173	230,643	280,999	241,855
1996		18,264		19,758	7,074 [c]	134,563	132,922	208,170	246,889
1997	506,621	14,511		7,705	5,707 [c]	71,661	88,641	199,874	80,423 [l]
1998	372,927	15,605		7,804	3,549 [c]	62,384	82,475	75,811	33,058
1999	379,493	4,551	27,199	16,534	7,037 [c]	97,843	109,309	88,662	14,229
2000	247,935	8,911	21,450	3,001	1,595 [k]	34,844	55,983	65,894	30,084 [m]
2001	376,182	6,007 [n]	22,992	8,103	1,808	96,556 [o]	116,012	110,971	53,932
2002	326,858	28,519	56,719	11,992	3,116 [k]	109,970	163,421	89,850	31,642
2003	889,778	21,492	87,359	22,582	10,600	193,418	263,302	214,416	44,047 [p]
2004	594,060	35,480	76,163	25,073	10,270	123,879	187,409	136,706	37,878
2005	1,813,589	17,779 [j]	107,719	28,132	11,964	337,755	372,758	496,484	561,863 [q,r,s]
2006	790,563		71,135	14,055		202,669	233,193	245,090	160,178 [q,r]
2007	684,011		81,843	18,610		320,811	357,016	243,805 [t]	65,435 [q,r]
2008	615,127			23,055	1,198		264,200	178,278 [t]	50,348 [q,r,t]
2009	233,307 [u]			13,492	2,900		159,828		54,126 [q,r,t]
2010	393,326			17,933	1,610		212,660	167,532 [t]	22,048
2011	764,194			23,639	2,655		270,846	298,223 [t]	97,976 [q,r,t,]
2012	682,510			9,377 [k]			102,096	205,791 [t]	104,701 [q,r,t,]
2013 [v]	716,727			31,955			274,611	253,041 [t]	109,000 [w]
Escapement [x]	300,000	15,000 [y]		6,000		46,000 [z]	61,000	74,000	50,000
Objective	600,000	33,000		13,000		103,000	136,000	152,000	104,000
Average									
1992–2012	655,651 [aa]	24,543	61,398	16,379	5,666	158,040	189,040	194,503	104,905
2003–2012	763,501 [aa]	24,917	84,844	19,595	5,885	235,706	242,331	242,925	119,860
2008–2012	613,789 [aa]	–	–	17,499	2,091	–	201,926	212,456	65,840

-continued-

[a] 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.

[b] Fall chum salmon abundance estimate for the Kantishna and Toklat River drainages is based on a mark–recapture program. Tag deployment occurred at a fish wheel located near the mouth of the Kantishna River and recaptures are collected at 4 fish wheels; 2 located 8 miles upstream of the mouth of the Toklat River (1999–2005) and 1 fish wheel on the upper Kantishna River (2000–2002, 2006–2007) and 2 fish wheels in 2003–2005.

[c] Population estimate generated from replicate foot surveys and stream life data (area under the curve method), unless otherwise noted.

[d] Aerial survey count, unless otherwise indicated.

[e] Fall chum salmon abundance estimate for the upper Tanana River drainage is based on a mark–recapture program. Tag deployment occurs from a fish wheel (2 fish wheels in 1995) located just upstream of the Kantishna River and recaptures are collected from one fish wheel (2 fish wheels in 1995) located downstream from the village of Nenana.

[f] Tanana River abundance estimates prior to 1995 can be found in Eggers (2001) but are based on Upper Tanana plus Toklat River escapement. Estimates from 1995 to 1998 are based on the relationship of the Upper Tanana to the Kantishna river abundance estimates, and 2008 to 2012 are based on the relationship of the Tanana estimate (1995-2007) with the Delta River escapements. The estimate in 2013 is based on regression with Mainstem Yukon 1995 to 2012 (excluding 2005) minus Tanana River harvests.

[g] Single-beam sonar estimate from 1986 to 1990, split-beam sonar estimate 1995 to 2006, DIDSON in since 2007, project was aborted in 2009.

[h] Single-beam sonar estimate beginning in 1981, split-beam sonar estimate 2002 to 2004, DIDSON from 2005 to 2012.

[i] Estimates are a total spawner abundance, using migratory time density curves and stream life data.

[j] Minimal estimate because of late timing of ground surveys with respect to peak of spawning.

[k] Peak foot survey count.

[l] Data interpolated due to high water from 29 August until 3 September 1997, during buildup to peak passage.

[m] Project ended early (September 12) because of low water.

[n] Minimal estimate because Sushana River was breached by the main channel and uncountable.

[o] Low numbers of tags deployed and recovered resulted in an estimate with an extremely large confidence interval (95% CI +/- 41,072).

[p] Project ended on peak daily passages due to late run timing, estimate was expanded based on run timing (87%) at Rampart.

[q] Sonar counts include both banks in 1985–1987, 2005–2009, and 2011–2012.

[r] In addition to the historical right bank count, the left bank was enumerated with DIDSON (right bank count for 2005–2009 and 2011–2012 was 266,963, 106,397, 39,548, 35,912, 28,480, 49,080 and 57,823 respectively, not including end of season expansions).

[s] Project ended while still counting >10,000 fish per day, estimate was expanded based on run timing (73%) at Rampart.

[t] Counts were expanded to represent the remainder of the run after the project was terminated for the season.

[u] Pilot Station sonar project encountered record low water levels during the fall season causing difficulties with species apportionment and catchability. Fall chum salmon estimate is suspected of being conservative and should not be used in averages or run reconstructions.

[v] Data are preliminary

[w] Sheenjek had 2 bank operations in 1985-1987, 2005 to 2009, and 2011-2012. The rest of the years were expanded using average 36% for second bank operations and regressed to Fishing Branch River weir excluding 2005 to estimate 2013.

[x] Escapement goal (EG) includes individual tributary BEGs and drainagewide SEG.

[y] EG discontinued in 2010.

[z] The BEG for the Tanana River as a whole is 61,000 to 136,000. However it includes the Toklat plus and the Upper Tanana which was broke out for comparison to the upper Tanana River abundance estimates.

[aa] Does not include 2009.

Appendix E9.–Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Canadian portions of the Yukon River drainage, 1992–2013.

	Porcupine Drainage					Canadian Mainstem		
Year	Fishing Branch River [a]	Porcupine River Sonar	Mainstem Yukon River Index [b]	Kluane River [b, c]	Teslin River [b, d]	Border Passage Estimate [e]	Harvest	Spawning Escapement Estimate [f]
1992	22,539		4,438	3,339	450	67,962	18,880	49,082
1993	28,707		2,620	4,610	555	42,165	12,422	29,743
1994	65,247		1,429 [g]	10,734	209 [g]	133,712	35,354	98,358
1995	51,971 [h]		4,701	16,456	633	198,203	40,111	158,092
1996	77,302		4,977	14,431	315	143,758	21,329	122,429
1997	27,031		2,189	3,350	207	94,725	9,306	85,419
1998	13,687		7,292	7,337	235	48,047	1,795	46,252
1999	12,958			5,136	19 [g]	72,188 [i]	13,636	58,552
2000	5,057		933 [g]	1,442	204	57,978 [i]	4,246	53,732
2001	21,737		2,453	4,884	5	38,769 [i]	5,278	33,491
2002	13,325		973	7,147	64	104,853 [i]	6,174	98,679
2003	29,713		7,982	39,347	390	153,656 [i]	10,523	143,133
2004	20,417		3,440	18,982	167	163,625 [i]	9,545	154,080
2005	119,058		16,425	34,600	585	451,477	13,979	437,733
2006	30,954		6,553	18,208	620	227,515 [j]	6,617	220,898
2007	32,150					246,317 [j]	9,330	254,649
2008	19,086 [h]					174,028 [j]	6,130	175,886
2009	25,828					94,739	1,113	93,626
2010	15,773					121,981	3,709	117,789
2011	13,085	12,438 [k]				211,878	6,312	205,566
2012	22,399	29,824 [k]				141,567	3,905	137,743
2013 [l]	25,376 [m]	35,656 [n]				204,149	3,887	200,262
EO [o]	50,000-120,000							>80,000
IMEG	22,000-49,000 [p]							70,000-104,000 [q]
Average								
1992-2012	31,811		4,743	12,667	311	142,340	11,414	132,140
2003-2012	32,846		8,600	27,784	441	198,678	7,116	194,110
2008-2012	24,758		-			148,839	4,234	146,122

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[a] Weir counts with expansions through October 25, unless otherwise indicated.

[b] Aerial survey count, unless otherwise indicated.

[c] Index area includes Duke River to end of spawning sloughs below Swede Johnston Creek.

[d] Index area includes Boswell Creek area (5 km below to 5 km above confluence).

[e] Border passage estimate is based on mark–recapture from 1980 to 2005, 2006 to present is based on sonar minus harvest from Eagle residents upstream of deployment.

[f] Excludes Fishing Branch River escapement (estimated border passage minus Canadian mainstem harvest).

[g] Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.

[h] Incomplete count caused by late installation and/or early removal of project or high water events.

[i] 1999 to 2004 border passage estimates were revised using a stratified "SPAS" analysis.

[j] Mark–recapture border passage estimates include 217,810, 235,956, and 132,048 from 2006 to 2008 respectively, during transition to sonar.

[k] Expanded at beginning and end of run to represent time frame August 21 to October 7.

[l] Preliminary data.

[m] This escapement estimate is based on the Porcupine Sonar count of 35,626 minus upstream harvest of 1,380 and multiplied by the proportion of tagged fish returning to the Fishing Branch River upstream of the historic weir site (74.1%).

[n] Operated from August 24 to October 12, 2013.

[o] Escapement objective based on U.S./Canada Treaty Obligations, some years stabilization or rebuilding goals are applied.

[p] Interim management escapement goal (IMEG) established for 2008–2010 based on percentile method.

[q] Interim management escapement goal (IMEG) established for 2010 based on brood table of Canadian origin mainstem stocks (1982 to 2003).

Appendix E10.–Yukon River fall chum salmon estimated brood year production and return per spawner estimates 1974–2013.

				Estimated Brood Year Return								(R)	(R/P)
	(P)	Estimated Annual Totals		Number of Salmon [a]				Percent				Total Brood	Return/
Year	Escapement [b]	Catch	Run	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Year Return [a]	Spawner
1974	436,485	478,875	915,360	91,751	497,755	68,693	0	0.14	0.76	0.10	0.00	658,199	1.51
1975	1,465,213	473,062	1,938,275	150,451	1,225,440	61,401	123	0.10	0.85	0.04	0.00	1,437,415	0.98
1976	268,841	339,043	607,884	102,062	587,479	137,039	4,316	0.12	0.71	0.16	0.01	830,896	3.09
1977	514,843	447,918	962,761	102,660	1,075,198	175,688	4,189	0.08	0.79	0.13	0.00	1,357,735	2.64
1978	320,487	434,030	754,517	22,222	332,230	90,580	0	0.05	0.75	0.20	0.00	445,032	1.39
1979	780,818	615,377	1,396,195	41,114	769,496	274,311	3,894	0.04	0.71	0.25	0.00	1,088,815	1.39
1980	263,167	488,373	751,540	8,377	362,199	208,962	3,125	0.01	0.62	0.36	0.01	582,663	2.21
1981	551,192	683,391	1,234,583	45,855	955,725	278,386	8,888	0.04	0.74	0.22	0.01	1,288,854	2.34
1982	179,828	373,519	553,347	11,327	400,323	166,754	679	0.02	0.69	0.29	0.00	579,083	3.22
1983	347,157	525,485	872,642	12,569	875,355	223,468	2,313	0.01	0.79	0.20	0.00	1,113,705	3.21
1984	270,042	412,323	682,365	7,089	408,040	174,207	8,516	0.01	0.68	0.29	0.01	597,852	2.21
1985	664,426	515,481	1,179,907	46,635	874,819	270,984	3,194	0.04	0.73	0.23	0.00	1,195,632	1.80
1986	376,374	318,028	694,402	0	429,749	368,513	4,353	0.00	0.54	0.46	0.01	802,615	2.13
1987	651,943	406,143	1,058,086	12,413	617,519	290,767	7,720	0.01	0.67	0.31	0.01	928,419	1.42
1988	325,137	353,685	678,822	41,003	175,236	152,368	10,894 [c]	0.11	0.46	0.40	0.03	379,501	1.17
1989	506,173	545,166	1,051,339	2,744	282,905	345,136 [c]	19,661	0.00	0.43	0.53	0.03	650,446	1.29
1990	369,654	352,007	721,661	710	579,452 [c]	405,472	30,095	0.00	0.57	0.40	0.03	1,015,729	2.75
1991	591,132	439,096	1,030,228	3,663 [c]	993,021	364,812	11,921	0.00	0.72	0.27	0.01	1,373,417	2.32
1992	324,253	148,846	473,099	6,554	646,049	193,073	3,768	0.01	0.76	0.23	0.00	849,444	2.62
1993	352,688	91,015	443,703	7,655	442,167	98,767	3,195	0.01	0.80	0.18	0.01	551,784	1.56
1994	769,920	169,225	939,145	4,234	217,211	147,685	1,603 [c]	0.01	0.59	0.40	0.00	370,733	0.48
1995	963,560	461,147	1,424,707	2,286	263,666	68,918 [c]	381	0.01	0.79	0.21	0.00	335,251	0.35
1996	787,688	260,923	1,048,611	415	165,691 [c]	136,431	8,274	0.00	0.53	0.44	0.03	310,811	0.39

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Appendix E10.–Page 2 of 2.

				Estimated Brood Year Return								(R)	(R/P)
	(P)	Estimated Annual Totals		Number of Salmon [a]				Percent				Total Brood	Return/
Year	Escapement [b]	Catch	Run	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Year Return [a]	Spawner
1997	481,336	170,059	651,395	3,087 [c]	243,950	118,044	3,326	0.01	0.66	0.32	0.01	368,407	0.77
1998	251,213	70,820	322,033	648	268,971	57,858	6,678	0.00	0.81	0.17	0.02	334,155	1.33
1999	283,786	131,175	414,961	29,023	703,881	173,990	13,683	0.03	0.77	0.19	0.02	920,577	3.24
2000	210,756	28,543	239,299	8,431	296,273	115,162	0	0.02	0.71	0.27	0.00	419,866	1.99
2001	336,435	44,976	381,411	135,700	2,151,589	685,274	33,807	0.05	0.72	0.23	0.01	3,006,370	8.94
2002	396,901	27,411	424,312	0	450,814	238,116	15,009	0.00	0.64	0.34	0.02	703,939	1.77
2003	693,967	79,529	773,496	24,607	854,987	499,245	16,610	0.02	0.61	0.36	0.01	1,395,449	2.01
2004	536,344	76,296	612,640	0	381,871	150,641	2,184	0.00	0.71	0.28	0.00	534,696	1.00
2005	1,990,251	290,183	2,280,434	2,606	384,216	99,388	5,317	0.01	0.78	0.20	0.01	491,527	0.25
2006	890,208	270,486	1,160,694	25,261	417,270	342,361	27,188	0.03	0.51	0.42	0.03	812,080	0.91
2007	921,244	205,667	1,126,911	87,920	850,766	170,523	6,650	0.08	0.76	0.15	0.01	1,115,859	1.21
2008	680,784	217,947	898,731	10,030	760,697	410,710	14,286	0.01	0.64	0.34		1,195,723 [d]	>1.76
2009	483,408	93,319	576,727	10,831	791,478	258,973						1,061,282 [e]	>2.20
2010	526,756	80,005	606,761	1,940									
2011	882,808	325,666	1,208,474										
2012	572,649	396,589	969,238										
2013	866,556	344,221	1,210,777										
Average-12	569,740		873,351										
Min-07	179,828	27,411	239,299	0	165,691	57,858	0	0.00	0.43	0.04	0.00	310,811	0.25
Max-07	1,990,251	683,391	2,280,434	150,451	2,151,589	685,274	33,807	0.14	0.85	0.53	0.03	3,006,370	8.94
	560,984	All Brood Years (1974-2007)		30,620	593,568	216,265	7,987	0.03	0.69	0.27	0.01	848,440	1.94
	410,429	Even Brood Years (1974-2007)		19,417	389,213	185,524	7,452	0.03	0.65	0.31	0.01	601,606	1.78
	711,539	Odd Brood Years (1974-2007)		41,823	797,924	247,006	8,522	0.03	0.72	0.24	0.01	1,095,274	2.10

Note: Current brood year data is preliminary.

[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] Contrast in escapement data is 11.07.

[c] Based upon expanded test fish age composition estimates for years in which the test fishery terminated early both in 1994 and 2000.

[d] Brood year return for 3, 4, and 5 year fish, indicate that production (R/P) from brood year 2008 was at least 1.76. Recruits estimated for incomplete brood year.

[e] Brood year return for 3 and 4 year fish, indicate that production (R/P) from brood year 2009 was at least 2.20. Recruits estimated for incomplete brood year.

Appendix E11.–Coho salmon passage estimates or escapement estimates for selected spawning areas in the Alaska portion of the Yukon River drainage, 1992–2013.

		Nenana River Drainage								Upper Tanana River Drainage					
Year	Yukon River Mainstem Sonar Estimate [a]	Lost Slough		Nenana Mainstem [b]		Wood Creek		Seventeen Mile Slough		Delta Clearwater River [c]		Clearwater Lake and Outlet		Richardson Clearwater River	
1992		372	(f)					490	(f)	3,963	(b)	229	(b)	500	(f)
1993		350	(f)	419	(f)	666	(w) [d]	581	(h)	10,875	(b)	3,525	(b)		
1994		944	(h)	1,648	(h)	1,317	(w) [e]	2,909	(h)	62,675	(b)	3,425	(b)	5,800	(f)
1995	101,806	4,169	(f)	2,218	(h)	500	(w)	1,512	(h)	20,100	(b)	3,625	(b)		
1996		2,040	(h)	2,171	(h)	201	(u) [f]	3,668	(g/b)	14,075	(b)	1,125	(b) [f]		
1997	104,343	1,524	(h)	1,446	(h)		[g]	1,996	(h)	11,525	(b)	2,775	(b)		
1998	136,906	1,360	(h) [f]	2,771	(h) [f]		[g]	1,413	(g/b)	11,100	(b)	2,775	(b)		
1999	62,521	1,002	(h) [f]	745	(h) [f]	370	(h)	662	(h) [f]	10,975	(b)				
2000	175,421	55	(h) [f]	68	(h) [f]		[g]	879	(h) [f]	9,225	(b)	1,025	(b)	2,175	(h)
2001	137,769	242	(h)	859	(h)	699	(h)	3,753	(h)	46,985	(b)	4,425	(b)	1,531	(f)
2002	122,566	0	(h)	328	(h)	935	(h)	1,910	(h)	38,625	(b)	5,900	(b)	874	(f)
2003	269,081	85	(h)	658	(h)	3,055	(h)	4,535	(h)	102,800	(b)	8,800	(b)	6,232	(h)
2004	188,350	220	(h)	450	(h)	840	(h)	3,370	(h)	37,550	(b)	2,925	(b)	8,626	(h)
2005	184,718	430	(h)	325	(h)	1,030	(h)	3,890	(h)	34,293	(b)	2,100	(b)	2,024	(h)
2006	131,919	194	(h)	160	(h)	634	(h)	1,916	(h)	16,748	(b)	4,375	(b)	271	(h)
2007	173,289	63	(h)	520	(h)	605	(h)	1,733	(h)	14,650	(b)	2,075	(b)	553	(h)
2008	135,570	1,342	(h)	1,539	(h)	578	(h)	1,652	(h)	7,500	(b)	1,275	(b)	265	(h)
2009	206,620 [h]	410	(h)			470	(h)	680	(h)	16,850	(b)	5,450	(b)	155	(h)
2010	155,784	1,110	(h)	280	(h)	340	(h)	720	(h)	5,867	(b)	813	(b)	1,002	(h)
2011	124,931	369	(h)					912	(h)	6,180	(b)	2,092	(b)	575	(h)
2012	106,782 [i]			106	(h)			405	(h)	5,230	(b)	396	(h)	515	(h)
2013	84,795	721	(h)			55	(h)	425	(h)	6,222	(b)	2,221	(h)	647	(h)
SEG [j]										5,200-17,000 [j]					
Averages															
1992-2012	148,140	814		928		816		1,885		23,228		2,957		2,073	
2003-2012	167,704	469		505		944		1,981		24,767		3,030		2,022	
2008-2012	145,937	808		642		463		874		8,325		2,005		502	

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Note: Only peak counts presented. Survey rating is fair to good, unless otherwise noted. Denotations of survey methods include: (b)=boat, (f)=fixed wing, (g)=ground/foot, (h)=helicopter, and (u)=undocumented.

[a] Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run.

[b] Index area includes mainstem Nenana River between confluence's of Lost Slough and Teklanika River.

[c] Index area is lower 17.5 miles of system.

[d] Weir project terminated on October 4, 1993. Weir normally operated until mid to late October.

[e] Weir project terminated September 27, 1994. Weir normally operated until mid-October.

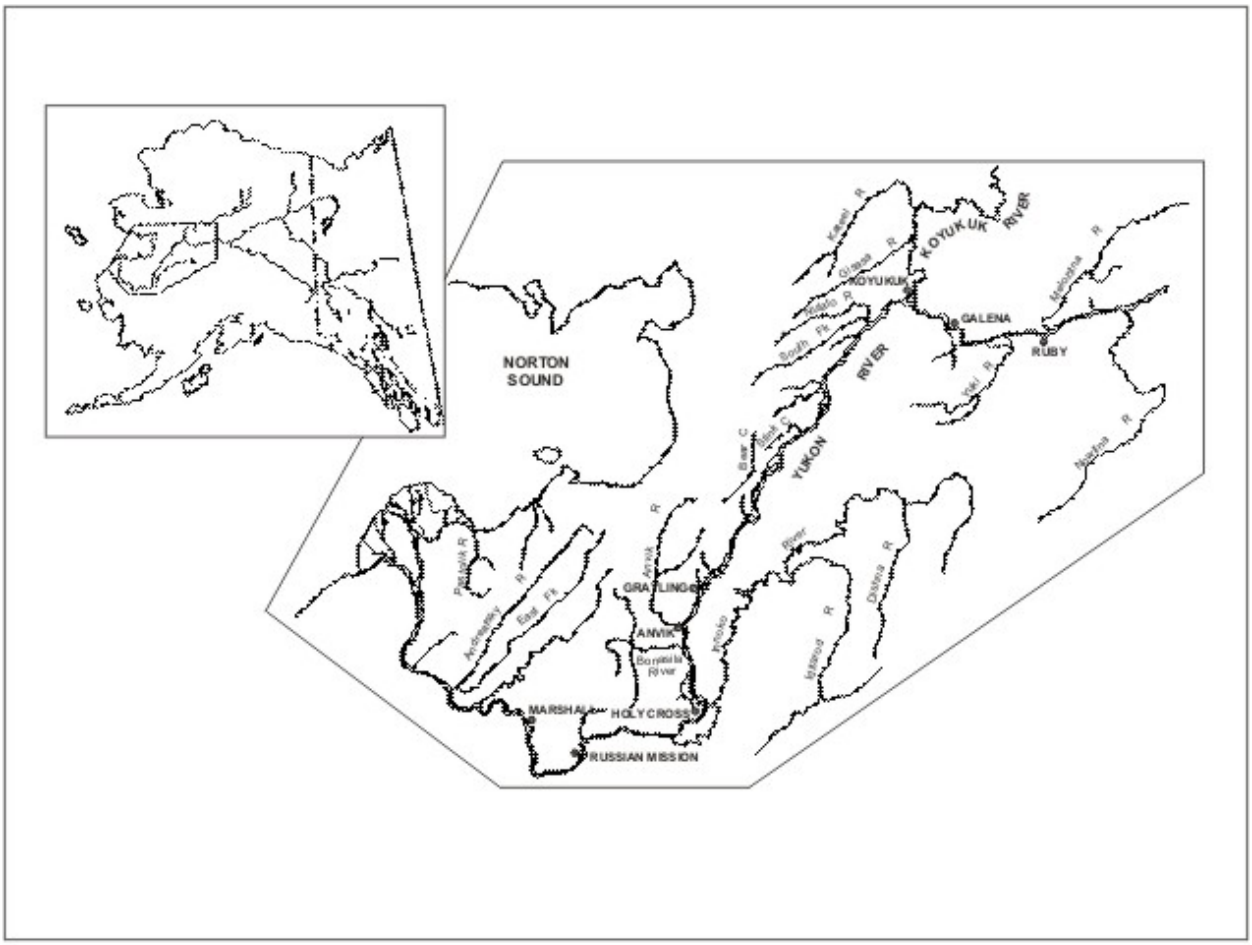
[f] Poor survey.

[g] No survey of Wood Creek due to obstructions in creek.

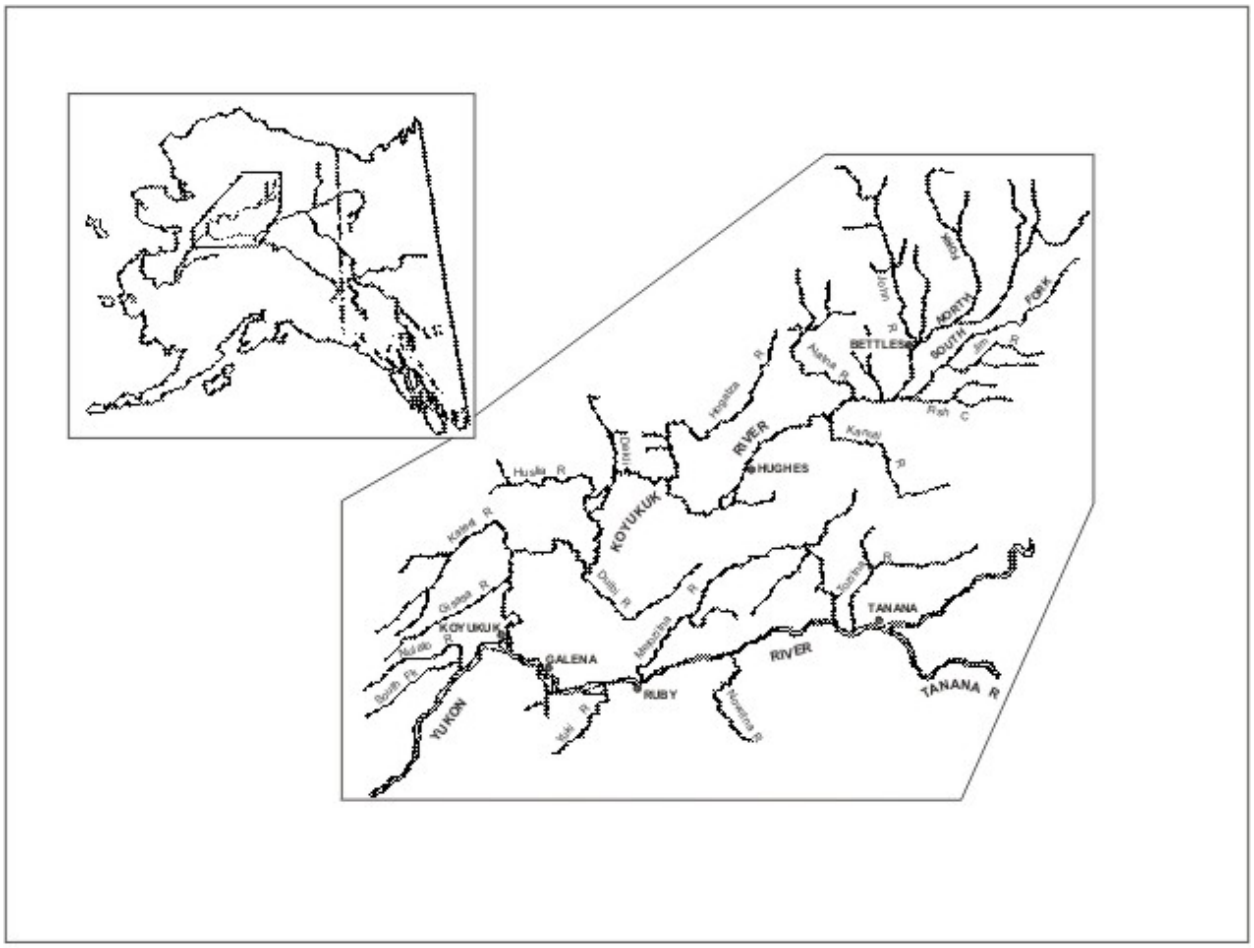
[h] Pilot Station sonar project encountered record low water levels during the fall season causing difficulties with species apportionment and catchability. Coho salmon are suspected of being over estimated therefore this value should not be used in averages or run reconstructions.

[i] Data preliminary.

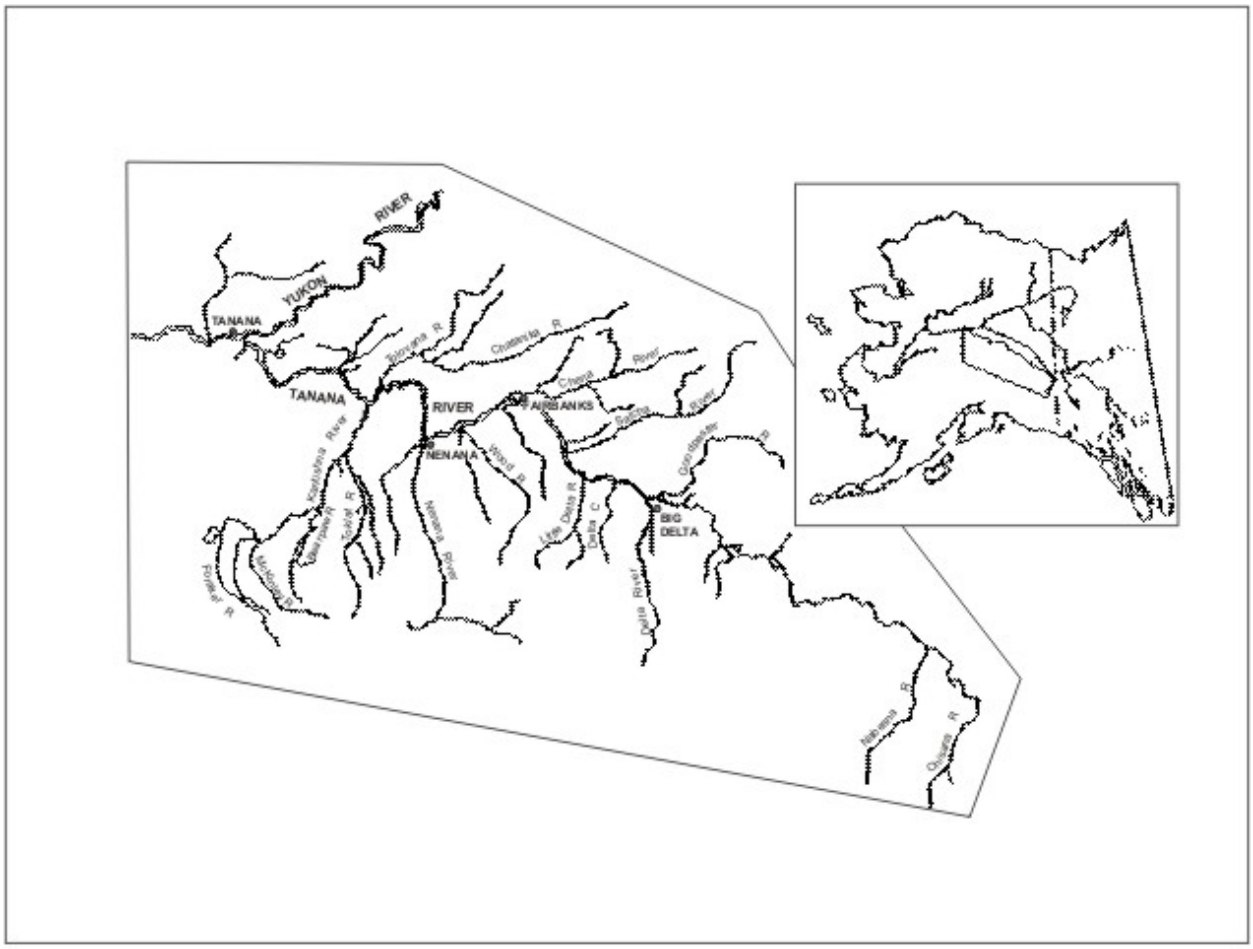
[j] Sustainable escapement goal (SEG) established January 2004, (replaces BEG of greater than 9,000 fish established March, 1993) based on boat survey counts of coho salmon in the lower 17.5 river miles during the period October 21 through 27.



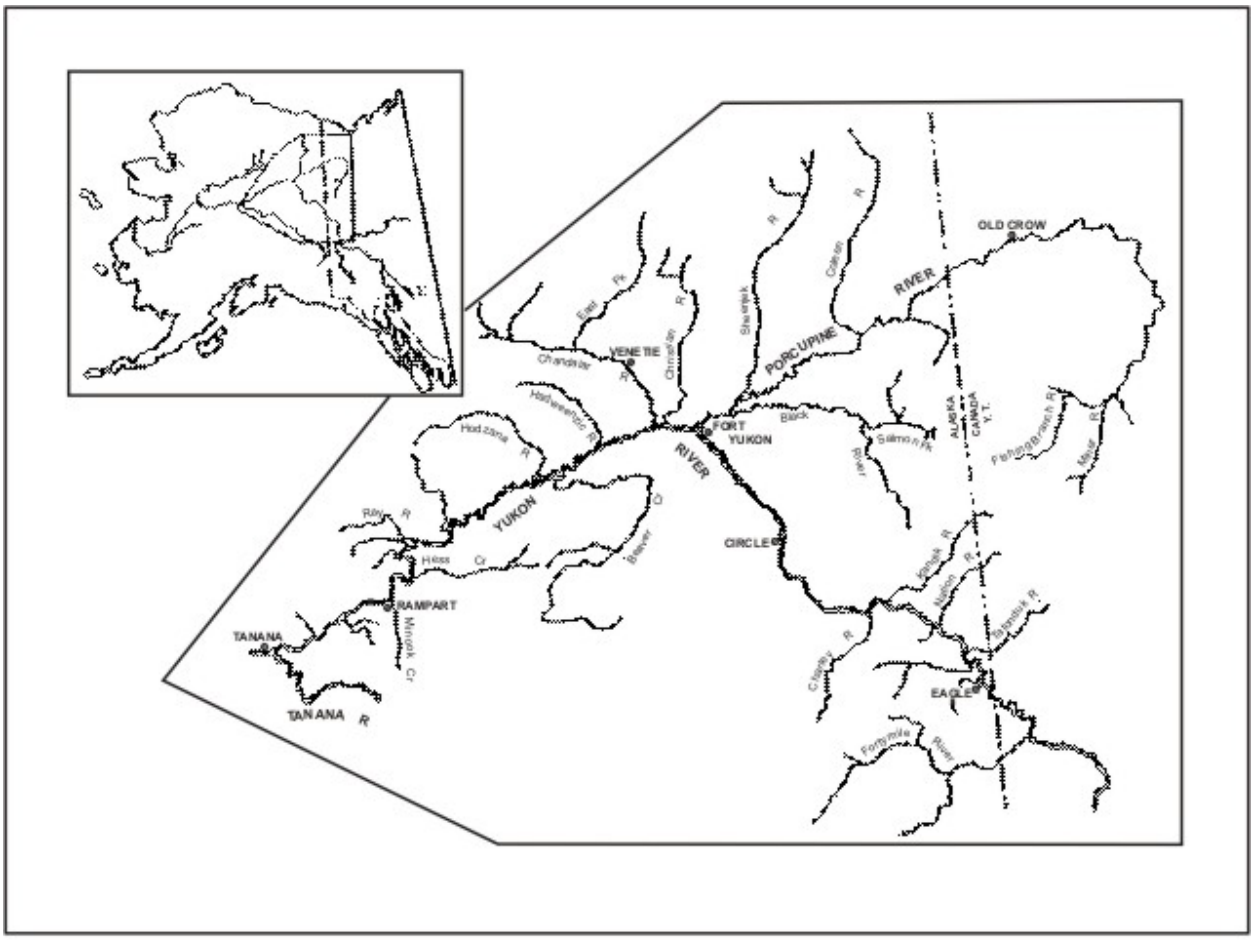
Appendix E12.–The Lower Yukon River drainage.



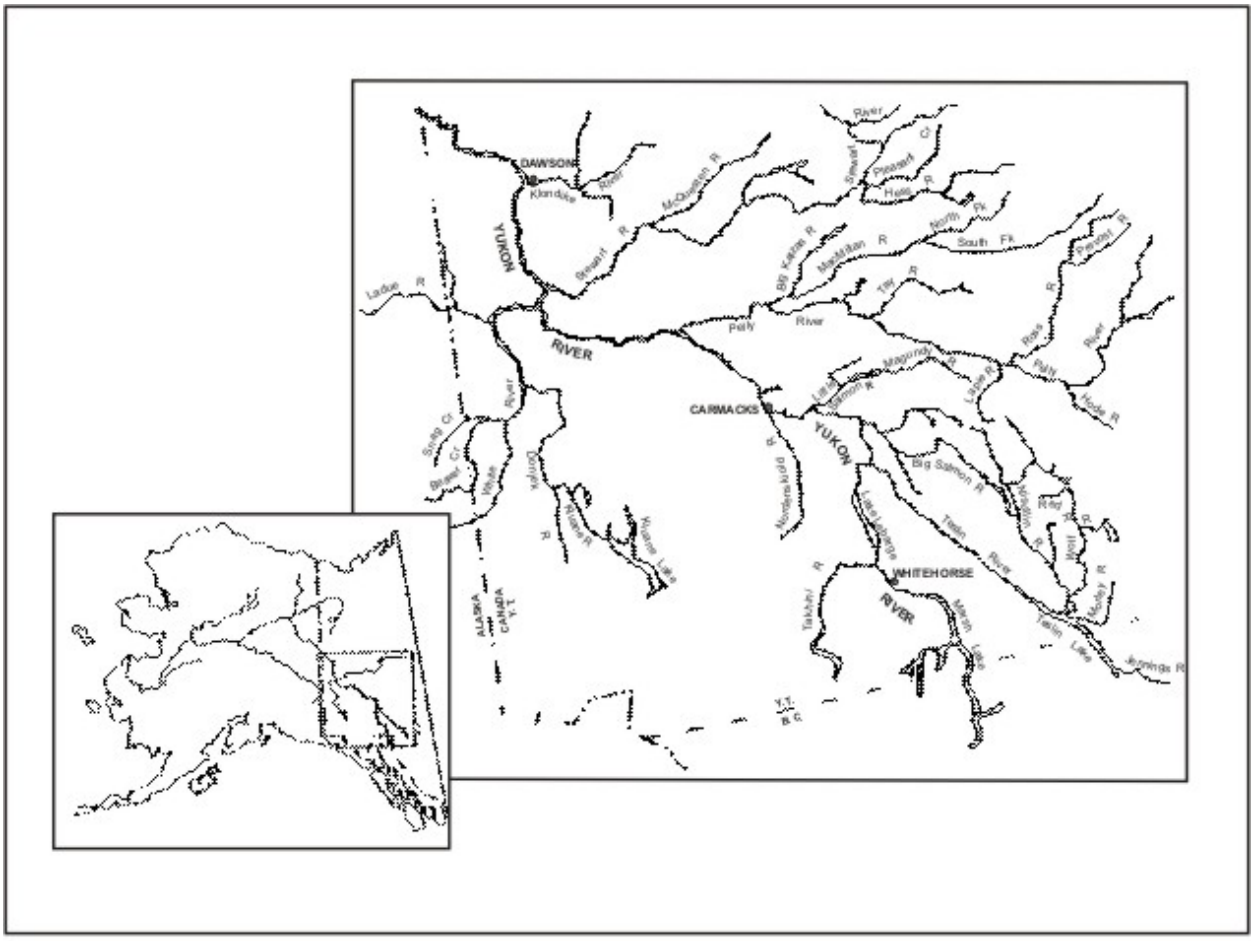
Appendix E13.–The Koyukuk River drainage.



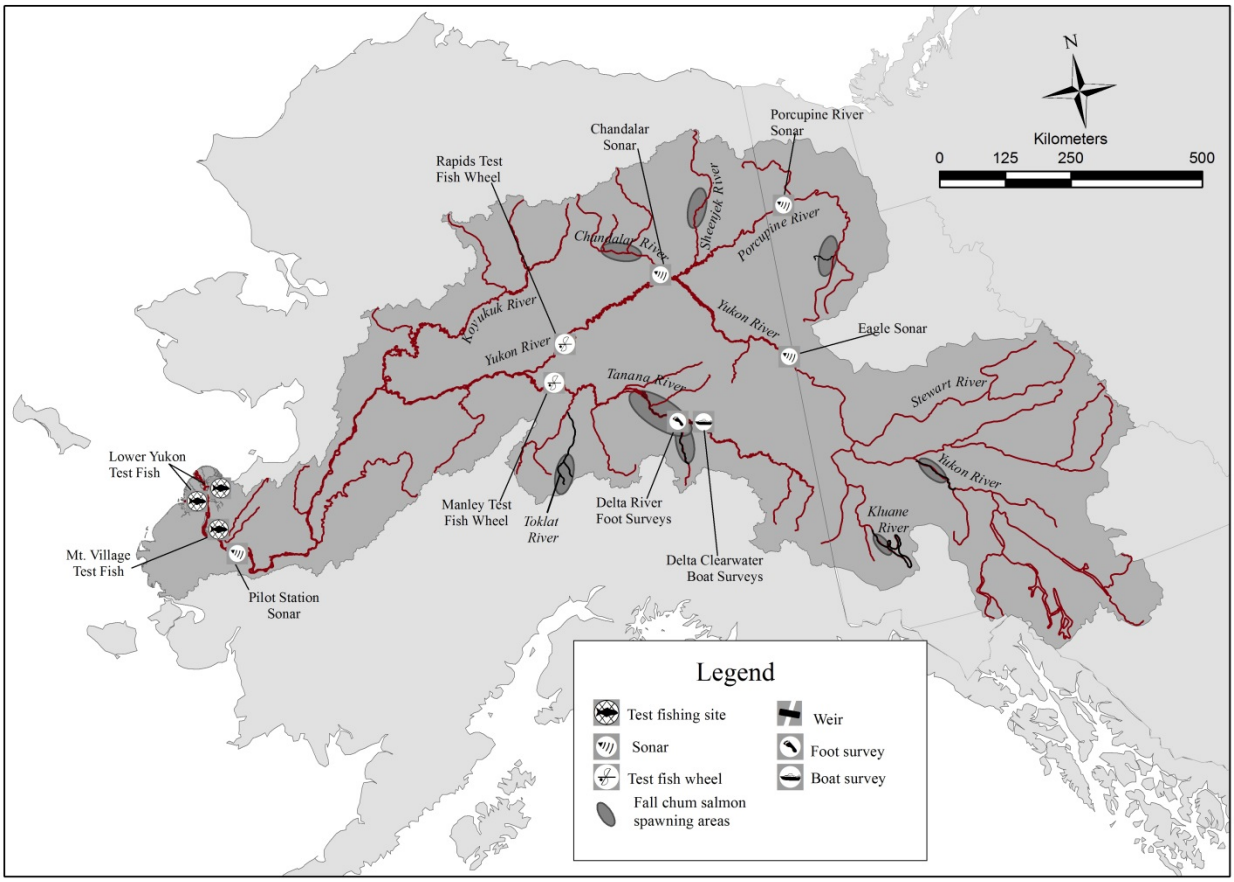
Appendix E14.–The Tanana River drainage.



Appendix E15.–The middle Yukon River and Porcupine River drainage.



Appendix E16.–The Upper Yukon River drainage.



Appendix E17.–Select fall chum salmon monitoring projects, Yukon River drainage.

APPENDIX F: YUKON AREA FRESHWATER FISHERIES

Appendix F1.–Commercial freshwater finfish harvest, Lower Yukon Area, 1993–2013.

	Sheefish		Bering Cisco		Other Whitefish[a]		Burbot		Pike	Lamprey		Blackfish
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Pounds	Number	Pounds	Pounds
1993	–	–	–	–	–	–	–	–	–	–	–	–
1994	0	0			157	471	0	0	0	0	0	0
1995	–	–	–	–	–	–	–	–	–	–	–	–
1996	–	–	–	–	–	–	–	–	–	–	–	–
1997	–	–	–	–	–	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	0	0			0	0	0	0	0	84,665 [b]	23,960	0
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	266	1,688	241	362 [c]	2,669	4,265	0	0	0	0	0	0
2006	472	2,912	4,497	5,519	1,932	2,832	0	0	0	3,149 [d]	715	0
2007	445	3,363 [e]	2,451	2,951	1,748	3,145	0	0	0	0	0	0
2008	0	0	8,642	9,380	695	692	0	0	0	0	0	0
2009	0	0	9,066	9,743	750	763	0	0	0	1,520 [f]	465	0
2010	0	0	13,922	14,784 [g]	418	437	0	0	0	0	0	0
2011	0	0	11,386	12,523	253	258	0	0	0	0	0	0
2012	0	0	11,099	12,705	233	237	0	0	0	0	0	0
2013	0	0	16,901	19,442	120	123	0	0	0	0	0	0
2008–2012 Average	0	0	10,823	11,827	470	477	0	0	0	304	93	0
2003–2012 Average	131	885	7,663	8,496	966	1,403	0	0	0	9,926	2,793	0

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

[a] Based on ADF&G fish ticket system categorizations other whitefish species include: general whitefish, least cisco, broad whitefish, and humpback whitefish.

[b] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.283). Harvest took place in St. Mary's area.

[c] In response to market conditions commercial whitefish fishing began to target Bering Cisco, therefore harvest of this species are separated from other whitefish species.

[d] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.227). A few deliveries were made in Mountain Village and St. Mary's.

[e] Includes 416 sheefish (2,906 pounds) sold in the whitefish directed commercial fishery and 29 sheefish (457 pounds) sold in the salmon directed commercial fishery.

[f] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.306). A few deliveries were made in Marshall.

[g] Includes 160 lb Bering Cisco fish harvested in January 2010 under permit authorized in fall 2009.

Appendix F2.–Commercial freshwater finfish harvest, Upper Yukon Area, 1993–2013.

	Healy Lake		Lake Minchumina		Tanana River				Yukon River							
	Whitefish [a]		Whitefish [a]		Burbot [a]		Whitefish [a]		Burbot [a]		Bering Cisco [a]		Other Whitefish [b]		Lamprey	
Year	Number	lb	Number	lb	Number	lb	Number	lb	Number	lb	Number	lb	Number	lb	Number	lb
1993	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1994	0	0	0	0	0	0	921	1,400	0	0	0	0	0	0	0	0
1995	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1996	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1997	0	0	0	0	0	0	908	1,160	0	0	0	0	0	0	0	0
1998	–	–	–	–	–	–	–	– [c]	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–	–	–	–	–	–	99,988 [d]	25,697
2004	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	0
2005	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0	0
2006	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32,943 [e]	7,481
2007	–	–	–	–	–	–	–	–	–	–	–	–	–	–	163 [f]	42
2008	–	–	–	–	–	–	–	–	–	–	–	–	–	–	41,750 [g]	11,137
2009	–	–	–	–	–	–	–	–	–	–	–	–	–	–	48,117 [h]	14,745
2010	–	–	–	–	–	–	–	–	–	–	–	–	–	–	108,838 [i]	30,713
2011	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2,888 [j]	783
2012	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1,539 [k]	336
2013	–	–	–	–	–	–	–	–	–	–	–	–	–	–	45,803 [l]	11,613
2008–2012 Average	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40,626	12,824
2003–2012 Average	–	–	–	–	–	–	–	–	–	–	–	–	–	–	33,623	9,093

[a] Numbers reflect fish harvested with the intent of commercial sale.

[b] Based on Zephyr categorizations other whitefish species include: general whitefish, least cisco, broad whitefish, and humpback whitefish.

[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.

[e] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.227). The majority of the harvest took place in the Grayling area.

[f] Number of lamprey equals pounds of lamprey divided by an average lamprey weight (0.258). All of the harvest took place near Grayling and no samples were collected. An average weight was calculated from samples taken in Grayling in 2003, 2004, and 2006.

[g] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.267). Harvest took place in Grayling area.

[h] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.306). Harvest took place in Grayling area.

[i] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.282). Harvest took place in Grayling area.

[j] Number of lamprey equals pounds of lamprey divided by the historical average sample weight collected from harvests in Grayling. No lamprey were sampled in 2011.

[k] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.218). Harvest took place in Grayling area.

[l] Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.253). Harvest took place in Grayling area.

Appendix F3.–Freshwater finfish sales during the commercial salmon fishing season by district, Upper Yukon Area, 1993–2013.

	District 4		District 5				District 6	
	Whitefish		Whitefish		Sheefish		Whitefish	
Year	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
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	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	60	120
2003	40	113	0	0	0	0	129	297
2004	–	–	4	15	0	0	53	112
2005	0	0	0	0	0	0	66	175
2006	–	–	0	0	0	0	99	397
2007	0	0	0	0	0	0	55	152
2008	0	0	276	289	38	338	165 [a]	507
2009	0	0	–	–	–	–	–	–
2010	0	0	–	–	–	–	18	72
2011	–	–	0	0	0	0	37	148
2012	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	22	56
2008–2012 Average	0	0	138	144	19	169	73	242
2003–2012 Average	7	19	40	43	5	48	78	232

Note: En dash indicates no commercial fishing activity occurred.

[a] The sale of fish sold did not include number of fish; therefore, number of fish were estimated using average weight (3.07 lbs) from 2007 and 2010 in District 6.

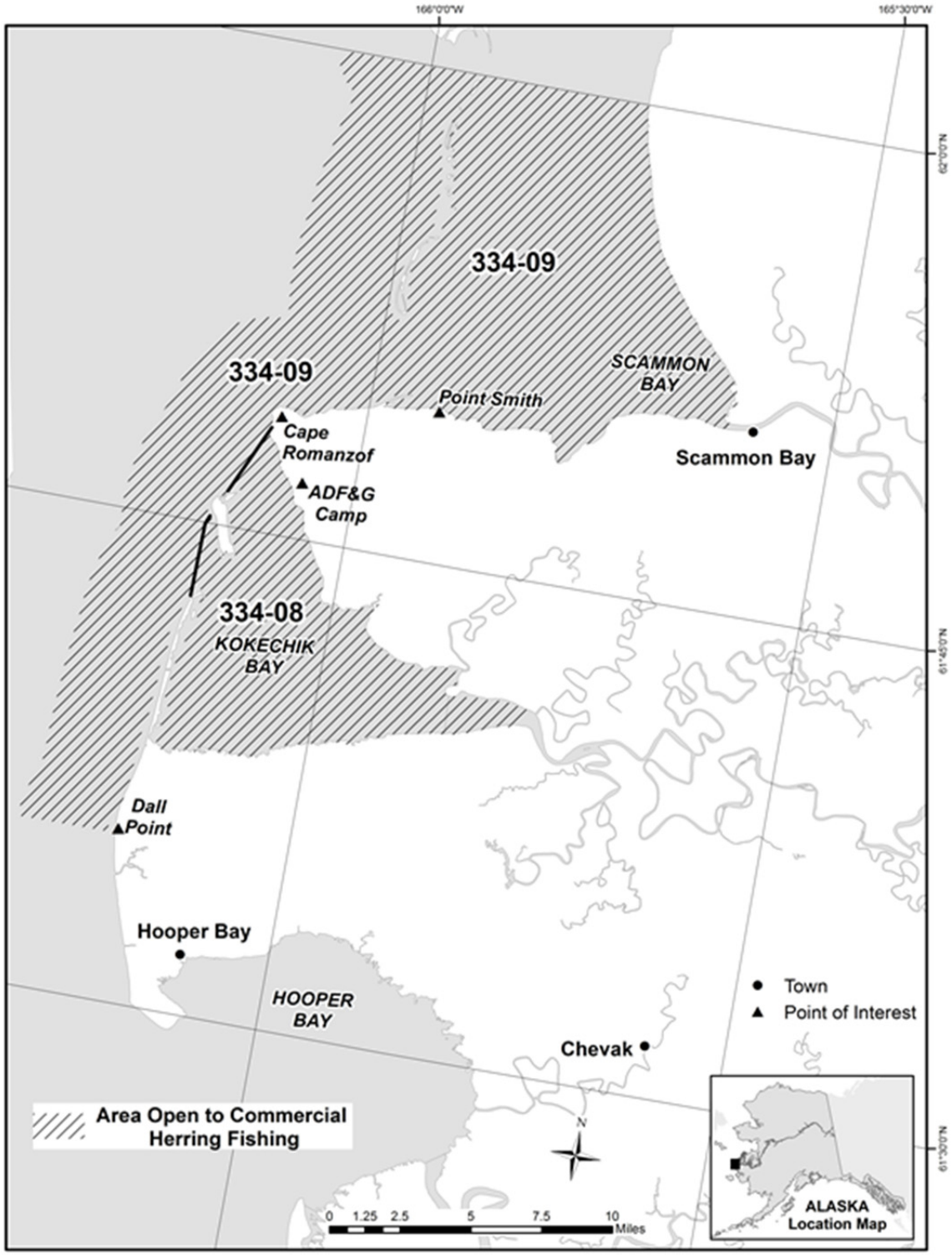
Appendix F4.–Lower Yukon Artic lamprey test fish harvest, 2013.

Date	Hoop Net		Fyke Net		Daily Total	
	Number of Sites	Artic Lamprey	Number of Sites	Arctic Lamprey	Number of Sites	Arctic Lamprey
16 Oct	2	0	3	25	5	25
17 Oct	2	0	3	9	5	9
18 Oct	3	4	3	14	6	18
19 Oct	5	11	4	23	9	34
20 Oct [a]	–	–	–	–	–	–
21 Oct [a]	–	–	–	–	–	–
22 Oct	5	8	5	115	10	123
23 Oct	3	0	5	5	8	5
24 Oct [a]	–	–	–	–	–	–
25 Oct	3	0	2	2	5	2
26 Oct	1	0	2	21	3	21
27 Oct [a]	–	–	–	–	–	–
28 Oct	1	0	2	2	3	2
29 Oct	0	0	5	24	5	24
30 Oct	0	0	4	0	4	0
Total	25	23	38	240	63	263

[a] Nets were not checked due to inclement weather.

APPENDIX G: CAPE ROMANZOF HERRING DISTRICT HERRING FISHERY

Appendix G1.–Waters open to commercial herring fishing in the Cape Romanzof District.



Appendix G2.–Commercial Pacific herring fishery data, Cape Romanzof District, 1993–2013.

	Year										
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Catch (short tons)	371	456	541	752	879	727	533	500	137	102	81
Hours Fished	12.5	7.0	15.0	34.0	29.5	35.0	13.5	13.0	13.5	41.5	64.0
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
Average Weight of Fish (Grams)[a]	373	372	367	356	360	369	364	376	378	412	428
Estimated Value (Thousands)	$110	$120	$330	$640	$190	$130	$130	$80	$10	$10	$10
Number of Buyers	2	2	2	3	3	1	1	2	1	1	1
Number of Fishermen	41	55	49	63	65	41	57	46	23	21	11
Biomass Estimate	4,000	5,000	5,000	6,000	5,000	4,500	3,800	3,500	2,700	3,600	3,685
Exploitation Rate (%)	9.3	9.1	10.8	12.5	17.6	16.2	14.0	14.3	5.1	2.8	2.2

	Year									
	2004	2005	2006	2007[b]	2008[b]	2009[b]	2010[b]	2011[b]	2012[b]	2013
Catch (short tons)	25	125	92	–	–	–	–	–	–	54.3
Hours Fished	148.0	158.0	89.0	–	–	–	–	–	–	72
Percent Roe Recovery	12.4	10.4	10.3	–	–	–	–	–	–	–
Average Weight of Fish (Grams) [a]	359	401	407	–	–	–	–	–	–	300
Estimated Value (in thousands)	$10	$40	$20	–	–	–	–	–	–	$8
Number of Buyers	1	1	1	–	–	–	–	–	–	1
Number of Fishermen	10	10	8	–	–	–	–	–	–	11
Biomass Estimate	3,500[c]	3,388	4,813	4,500	5,000	4,800	5,500	5,500	4,794	4,012
Exploitation Rate (%)	0.7	3.7	1.9	–	–	–	–	–	–	1.1

Note: En dash indicates information not available.

[a] Estimated from ADF&G commercial samples.

[b] No commercial fishing occurred.

[c] Preseason biomass estimated to be a range between 3,000 and 4,000 st.

Appendix G3.–Commercial Pacific herring fishery data, Cape Romanzof District, 1993–2013.

	Scammon Bay		Chevak		Hooper Bay		Total	
Year	Harvest (st)	Number of Fishermen	Harvest (st)	Number of Fishermen	Harvest (st)	Number of Fishermen	Harvest (st)	Number of Fishermen
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
2005	6.2	9	0.1	2	0.6	2	6.9	13
2006	1.7	9	0.3	3	0.5	2	2.5	14
2007	1.5	8	1.2	6	0.4	4	3.1	18
2008	1.0	7	1.0	2	0.3	3	2.3	12
2009	0.7	6	0.3	3	0.2	3	1.2	12
2010	0.6	6	0.7	3	0.8	5	2.1	14
2011[a]	–	–	–	–	–	–	–	–
2012[a]	–	–	–	–	–	–	–	–
2013	[b]	[b]	[c]	[c]	[b]	[b]	[b]	[b]
2006–2010 Average	1.1	7.2	0.7	3.4	0.4	3.4	2.2	14.0

Note: En dash indicates information not available. Harvest in short tons (st).

[a] Harvest survey questionnaires were not mailed out thus no harvest information available.

[b] Results from postseason survey not available for this report.

[c] Harvest survey questionnaires were not mailed out nor were postseason subsistence harvest surveys conducted. No information is available.