

Regional Information Report No. 3A09-02

**2009 Yukon Area Subsistence, Personal Use, and
Commercial Salmon Fisheries Outlook and
Management Strategies**

by

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and

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May 2009

Alaska Department of Fish and Game

Division of Commercial Fisheries



Symbols and Abbreviations

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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted		mid-eye-to-tail-fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.		
meter	m	at	@	Mathematics, statistics	
milliliter	mL	compass directions:		<i>all standard mathematical</i>	
millimeter	mm	east	E	<i>signs, symbols and</i>	
		north	N	<i>abbreviations</i>	
		south	S	alternate hypothesis	H _A
		west	W	base of natural logarithm	<i>e</i>
Weights and measures (English)		copyright	©	catch per unit effort	CPUE
cubic feet per second	ft ³ /s	corporate suffixes:		coefficient of variation	CV
foot	ft	Company	Co.	common test statistics	(F, t, χ^2 , etc.)
gallon	gal	Corporation	Corp.	confidence interval	CI
inch	in	Incorporated	Inc.	correlation coefficient	
mile	mi	Limited	Ltd.	(multiple)	R
nautical mile	nmi	District of Columbia	D.C.	correlation coefficient	
ounce	oz	et alii (and others)	et al.	(simple)	r
pound	lb	et cetera (and so forth)	etc.	covariance	cov
quart	qt	exempli gratia		degree (angular)	°
yard	yd	(for example)	e.g.	degrees of freedom	df
		Federal Information		expected value	<i>E</i>
Time and temperature		Code	FIC	greater than	>
day	d	id est (that is)	i.e.	greater than or equal to	≥
degrees Celsius	°C	latitude or longitude	lat. or long.	harvest per unit effort	HPUE
degrees Fahrenheit	°F	monetary symbols		less than	<
degrees kelvin	K	(U.S.)	\$, ¢	less than or equal to	≤
hour	h	months (tables and		logarithm (natural)	ln
minute	min	figures): first three		logarithm (base 10)	log
second	s	letters	Jan, ..., Dec	logarithm (specify base)	log ₂ , etc.
		registered trademark	®	minute (angular)	'
Physics and chemistry		trademark	™	not significant	NS
all atomic symbols		United States		null hypothesis	H ₀
alternating current	AC	(adjective)	U.S.	percent	%
ampere	A	United States of		probability	P
calorie	cal	America (noun)	USA	probability of a type I error	
direct current	DC	U.S.C.	United States	(rejection of the null	
hertz	Hz		Code	hypothesis when true)	α
horsepower	hp		use two-letter	probability of a type II error	
hydrogen ion activity	pH		abbreviations	(acceptance of the null	
(negative log of)			(e.g., AK, WA)	hypothesis when false)	β
parts per million	ppm			second (angular)	"
parts per thousand	ppt, ‰			standard deviation	SD
volts	V			standard error	SE
watts	W			variance	
				population	Var
				sample	var

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COMMERCIAL SALMON FISHERIES OUTLOOK AND
MANAGEMENT STRATEGIES**

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The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: <http://www.sf.adfg.ak.us/statewide/divreprots/html/intersearch.cfm>.

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PREFACE

The following information is for fishers participating in subsistence, personal use and commercial fisheries in the Yukon Area during the 2009 season. Fishers may contact ADF&G, Division of Commercial Fisheries staff at the office locations listed below.

Emmonak Seasonal Field Office

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333 Raspberry Road

Anchorage, Alaska 99518

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For a recording of the current subsistence, personal use, and commercial fishing schedules call toll free 1-866-479-7387 or in the Fairbanks area call (907) 459-7387.

For Tanana River subsistence and personal use permit harvest reporting call (907) 459-7388.

NOTICE TO FISHERMEN

Waters subject to ANILCA Title VIII (including waters in which the United States has identified a reserved water right) or “federal subsistence jurisdiction”. Subject to federal restrictions and closures, waters subject to ANILCA Title VIII are open to fishing under state regulations. If you are subsistence fishing in waters under federal subsistence jurisdiction, you must comply with federal subsistence regulations and some state permit conditions or state regulations may be pre-empted.

To familiarize yourself with the federal regulations you may consult the *Subsistence Management Regulations for the Harvest of Fish and Shellfish on Federal Public Lands and Waters in Alaska* for details. Copies may be obtained at federal offices. Calling the federal agencies is also recommended as inseason closures or temporary regulatory changes can occur at anytime and may not be reflected in the annual regulatory publication.

For more information, or a copy of federal regulations, please contact USFWS, Office of Subsistence Management - 1-800-478-1456 - coordinating the federal subsistence program in Alaska for U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, and the U.S.D.A. Forest Service.

ABSTRACT

This management plan provides an overview of the expected salmon outlooks, management issues, and harvest strategies for Yukon River summer and fall salmon fisheries in 2009. Subsistence, personal use, and commercial fisheries occur throughout the Yukon Area. The Yukon Area includes all waters of the Yukon River drainage in Alaska and all coastal waters of Alaska from Point Romanof south to Naskonat Peninsula. Management strategies may change inseason based upon assessment of salmon runs.

Key words: Yukon, Chinook, summer chum, fall chum, coho, outlook, strategy, management plan, commercial fishing, subsistence fishing, ADF&G.

1.0 INTRODUCTION

This document provides the 2009 outlook for Yukon Area salmon runs, as well as management strategies for subsistence, personal use, and commercial salmon fisheries. Subsistence fishing in portions of the Yukon Area is under dual management authority of the Alaska Department of Fish & Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS). Fishermen are reminded that they should consult both the State of Alaska fishing regulations and the Federal Subsistence Management Regulations for Federal Public Lands before fishing in the Yukon Area.

The Yukon Area includes all waters of Alaska within the Yukon River drainage and coastal waters from Point Romanof, northeast of Kotlik, to the Naskonat Peninsula. For management purposes the Yukon Area is divided into 7 districts and 10 subdistricts (Figure 1). Commercial fishing may be allowed along the entire 1,224 miles of the Yukon River in Alaska and along the lower 225 miles of the Tanana River. The Coastal District includes the majority of coastal marine waters within the Yukon Area and is only open to subsistence fishing. The Lower Yukon Area (Districts 1, 2, and 3) includes coastal waters of the Yukon River delta and that portion of the Yukon River drainage downstream of Old Paradise Village (river mile 301). The Upper Yukon Area (Districts 4, 5, and 6) is the Alaskan portion of the Yukon River drainage upstream of Old Paradise Village.

Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, and coho *O. kisutch* salmon are harvested in Yukon River commercial, subsistence, personal use and sport fisheries. Yukon River chum salmon consists of an earlier and typically more abundant summer chum salmon run and a later fall chum salmon run. No directed commercial fishing has occurred for pink *O. gorbuscha* salmon, but sporadic sales of incidental harvests have been documented. Aboriginal, commercial, domestic, and sport salmon fisheries also occur in Canada, which are managed by the Canadian Department of Fisheries and Oceans (DFO).

2.0 OUTLOOK FOR 2009

2.1 CHINOOK SALMON

The Canadian spawning escapements in 2003 and 2004, the brood years producing age-6 and age-5 fish returning in 2009, were well above average and near the 1999-2008 average, respectively. However, the run of Canadian-origin Chinook salmon in 2009 is expected to be below average to poor, with a run outlook of 60,700-71,600 fish based on anticipated low production as observed in 2007 and 2008. For comparison, the average run size from 2000 to 2008 is 97,000 Chinook salmon.

The total Yukon River Chinook salmon run can be 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 2007 and 2008 proportions of Canadian origin fish in the total run were below average (approximately 50%) at 37% and 36%, respectively. Since recent run sizes are considered the best indicators of upcoming run size, the 2009 run outlook estimate is based on the 2007 and 2008 proportions. Using this method, the expected total Yukon River run size is 166,000 based on sibling and the Ricker models, but could be as low as 149,000. Note that there is a lot of uncertainty associated with this methodology.

Thus, the 2009 Yukon River Chinook salmon run will likely be below average to poor with the primary concern being for a poor run of Canadian-origin Chinook salmon. It is therefore prudent to enter the 2009 season with the expectation that subsistence conservation measures, beyond those used in 2008, will be required in an effort to share the available subsistence harvest amount and meet escapement goals. It is unlikely that there will be a directed Chinook salmon commercial fishery in 2009 on the mainstem river, but there may be opportunity to commercially harvest less than 1,000 Chinook salmon on the Tanana River, as the Tanana River is managed independently as a terminal fishery.

2.2 SUMMER CHUM SALMON

The strength of the summer chum salmon runs in 2009 will be dependent on production from the 2005 (age-4 fish) and 2004 (age-5 fish) escapements as these age classes dominate the run. The total run during 2004 and 2005 was approximately 1.5 and 2.5 million summer chum salmon respectively, though tributary escapements were highly variable. It appears that production has shifted from major spawning tributaries in the lower portion of the drainage, such as the Andreafsky and Anvik rivers over the last 8 years, to higher production in spawning tributaries upstream.

Since summer chum salmon exhibit a strong every other year pattern with alternating annual dominance of age-4 fish and age-5 fish, an above average percentage of age-4 fish is expected in 2009. The 2009 run is estimated using the Anvik River brood table, sibling relationships between age-4 and age-5 fish, and the 5-year average ratio between the Anvik River and Pilot Station Sonar. It is expected that the total run in the Yukon River could be approximately 1.5–2.0 million summer chum salmon in 2009 which constitutes an average run. However, the BASIS surveys in Norton Sound in fall 2006 indicated that juvenile chum salmon were less abundant and did not appear to be as healthy as previous years. This may indicate the 2009 return of age-4 fish may be less than anticipated.

The 2009 summer chum salmon run is anticipated to provide for escapements, support a normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs have exhibited steady improvements since 2001 with a harvestable surplus in each of the last 6 years (2003–2008). If inseason indicators of run strength develops as anticipated, the commercially harvestable surplus in Alaska could range from 500,000 to 900,000 summer chum salmon. However, the actual commercial harvest of summer chum salmon in 2009 will likely be affected by a potentially poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon-directed fisheries.

2.3 FALL CHUM SALMON

A considerable amount of uncertainty has been associated with fall chum salmon run size projections because of unexpected run failures from 1998 to 2002 which was followed by a strong improvement in productivity from 2003 through 2007. Weakness in salmon runs prior to 2003 has generally been attributed to reduced productivity in the marine environment and not as a result of low levels of parental escapement. Similarly, the recent improvements in productivity may be attributed to the marine environment. Projections have been adjusted based on more recent trends in production.

Table 1.—Preseason drainage-wide fall chum salmon outlooks and observed run sizes for the Yukon River, 1998–2008.

Year	Expected Run Size (Preseason)	Estimated Run Size (Postseason)	Proportion of Expected Run
1998	880,000	334,000	0.38
1999	1,197,000	420,000	0.35
2000	1,137,000	239,000	0.21
2001	962,000	383,000	0.40
2002	646,000	425,000	0.66
2003	647,000	775,000	1.20
2004	672,000	614,000	0.92
2005	776,000	2,325,000	3.00
2006	1,211,000	1,144,000	0.94
2007	1,106,000	1,098,000	0.99
2008	1,057,000	760,000	0.72
Average (1998 to 2008)			0.89

Yukon River fall chum salmon return primarily as age-4 and age-5 fish, although age-3 and age-6 fish also contribute to the run. Escapements for the 2004 and 2005 parent years will be the major contributors to the age-4 and age-5 classes of fish returning in 2009. Both parent year escapements were above the upper end of the drainage-wide escapement goal of 300,000 to 600,000 fall chum salmon. The 2005 escapement was particularly strong, exceeding the upper end of the drainage-wide escapement goal range by more than 3 times and is anticipated to be the largest contributor to the 2009 fall chum salmon run. Estimates of returns per spawner (R/S) based on brood year return were used to estimate production for 2003 and 2004. An auto-regressive Ricker spawner-recruit model was used to predict returns from 2005 and 2006. The point projections for 2009 used the 1984 to 2002 brood year returns applied to the odd/even maturity schedule, because current production is reduced from the pre-1984 level.

The estimated 2003 brood year returns appears to be slightly above average for an odd-numbered year return while the 2004 brood year return is estimated to be below average for even-numbered year returns. There is greater uncertainty as to how well the 2005 fall chum salmon brood year will be represented in the coming generation. As examples, the returns from the record escapements achieved in 1975 and 1995 resulted in very different production levels. Good survival was realized for the 1975 brood year with an estimated return per spawner of 1.0 while lower survival was evident in 1995 brood year which resulted in a record low return per spawner

of 0.34 fish. Recent production levels at 2.0 return per spawner (average R/S 1998 to 2002 excluding 2001) are well above the poor returns observed in 1994–1997 (0.49 average R/S) however they appear to be in a declining mode.

Because returns from the 2005 brood year are extremely uncertain, a range of return was developed in the following manner. The lower bound of the range was based on expected return from the Spawner-Recruit model, which was 0.29 return per spawner, and the upper bound was based on the point of equilibrium of the Spawner-Recruit model which was estimated to be 0.56 return per spawner. These two return per spawner rates were applied to the 1984–2002 odd/even maturity schedule. This resulted in a range of projected run size between 600,000 and 980,000 fall chum salmon. The midpoint of these 2 estimates is 790,000 fall chum salmon with contributions from the 2005 brood year ranging from 66% to 79% age-4 fish. These estimates of age-4 returns represent 400,000 to 800,000 fall chum salmon contributing to the 2009 run.

During the season, strength of the run will be monitored using the strength of summer chum salmon run as a precursor of the fall chum salmon run. Additionally, inseason monitoring projects will be used to determine appropriate management actions and levels of harvest based on stipulations in the *Alaska Yukon River Drainage Fall Chum Salmon Management Plan* (Appendix A6). With a range in run size from 600,000 and 980,000 fall chum salmon, it is anticipated that escapement goals should be met while supporting normal subsistence fishing activities. However, commercial harvestable surpluses will have to be determined inseason.

2.4 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-4 fish and overlap in run timing with fall chum salmon. The major contributor to the 2009 coho salmon run will be the age-4 fish returning from the 2005 parent year. Based on Pilot Station sonar operations from 1995, and 1997 through 2008, the 2005 passage estimate of 184,000 coho salmon was above average (Figure 11). The Delta Clearwater River (DCR) is a major producer of coho salmon in the upper Tanana River drainage which has comparative escapement monitoring data since 1972. The parent year escapement of 34,000 fish in 2005 was the sixth highest on record and 2 times the upper end of the Sustainable Escapement Goal (SEG) range of 5,200 to 17,000 coho salmon. DCR escapement has been on the increase since 1972, in particular within the last decade. Evaluations of coho salmon escapements in the Nenana and Richardson Clearwater rivers also indicated the run was average to above average. Assuming average survival, the 2009 coho salmon run, is anticipated to be average to above average based on good escapements in 2005.

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

3.0 U.S./CANADA YUKON RIVER SALMON PANEL AGREEMENT

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty. In December 2002, the United States and Canada signed an agreement 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. The Alaskan and Canadian fisheries will be managed consistent with stock rebuilding and conservation objectives that have been jointly developed.

For the 2009 season, the U.S./Canada panel agreed to a one year Canadian Interim Management Escapement Goal (IMEG) of >45,000 Chinook salmon based on the Eagle sonar program. The IMEG for the Fishing Branch River of 22,000 to 49,000 fall chum salmon based on the Fishing Branch River weir count will continue through 2010. The US/Canada Yukon River Panel also agreed to a Canadian Yukon River fall chum salmon mainstem escapement objective of >80,000 fish based on the Eagle sonar program rather than the one previously based on the mark/recapture project near the mainstem border. In addition to the escapement obligations, the U.S. agreed in the Agreement to a sharing of the harvestable surplus of the Canadian run component. Canada is to receive 20% to 26% of the available TAC for Canadian bound Chinook salmon and 29% to 35% of the available TAC for Canadian bound fall chum salmon.

4.0 MANAGEMENT STRATEGY FOR 2009

ADF&G manages Yukon Area salmon according to policies and regulations established by the Alaska Board of Fisheries (BOF). Management of the Yukon Area commercial salmon fishery is complex due to the mixed stock nature of the fishery, increased efficiency of the commercial fleet, allocation issues, and the complication of State/Federal dual management regimes for the subsistence fishery in approximately half the drainage. The *Yukon River Drainage Subsistence Salmon Fishery Management Protocol* provides guidelines for coordinated management with federal agencies concerning subsistence fisheries in waters subject to Federal reserved water rights within the Yukon River drainage. However, some state and federal regulations differ and managers may not agree on specific management actions, which could result in differing regulations for waters subject to applicable federal management.

The *Policy for Statewide Salmon Escapement Goals* (Escapement Goal Policy: 5 AAC 39.223) and the *Policy for the Management of Sustainable Salmon Fisheries* (Sustainable Salmon Policy: 5 AAC 39.222) define various levels of escapement in a manner consistent with sustained yield. Escapement objectives that were previously estimated in the absence of a stock specific catch estimate and used as an index, or as an escapement estimate, are now defined as a Sustainable Escapement Goal (SEG). Tables 2, 3, and 4 list Biological Escapement Goals (BEGs), SEGs, and Optimal Escapement Goals (OEGs) that will be used for inseason management and postseason assessment. The Canadian Chinook and fall chum salmon escapement objectives are based on limited scientific information and are not classified as a SEG or a BEG. These objectives are negotiated by the U.S./Canada Panel annually as stipulated in the treaty agreement and include both an escapement objective and harvest share identified as a portion of the Total Allowable Catch (TAC).

Table 2.–Escapement goals for Chinook salmon, Yukon Area.

Stream	Goal	Type of Goal
East Fork Andreafsky River Aerial Survey	960–1,900	SEG
West Fork Andreafsky River Aerial Survey	640–1,600	SEG
Anvik River Aerial Survey	1,100–1,700	SEG
Nulato River Aerial Survey	940–1,900	SEG
Gisasa River Aerial Survey	420–1,100	SEG
Chena River Tower	2,800–5,700	BEG
Salcha River Tower	3,300–6,500	BEG
Canada Mainstem Eagle Sonar Goal	>45,000	IMEG ^a

^a The US-Canada Panel agreed to a one year interim management escapement goal (IMEG) of greater than 45,000 based on sonar assessment near Eagle, Alaska for 2009 plus the Agreement stipulation of 20% to 26% of the TAC on the Canadian run component.

Table 3.–Escapement goals for summer chum salmon, Yukon Area.

Stream	Goal	Type of Goal
East Fork Andreafsky River Weir	65,000–130,000	BEG
Anvik River Sonar	350,000–700,000	BEG
Drainage-wide Escapement	600,000	OEG

Table 4.–Escapement goals for fall chum salmon, Yukon Area.

Stream	Goal	Type of Goal
Drainage-wide Escapement	300,000–600,000	BEG
Tanana River drainage	61,000–136,000	BEG
Delta River	6,000–13,000	BEG
Toklat River	15,000–33,000	BEG
Upper Yukon Tributaries	152,000–312,000	BEG
Chandalar River	74,000–152,000	BEG
Sheenjek River	50,000–104,000	BEG
Fishing Branch	22,000–49,000	IMEG ^a
Canadian Mainstem	>80,000	Treaty Goal ^b

^a Canadian Interim Management Escapement Goal agreed to by the Yukon River Panel for 2009 through 2010.

^b The US-Canada Panel agreed to a rebuilt spawning escapement goal of greater than 80,000 based on sonar assessment near Eagle, Alaska plus the Agreement stipulation of 29% to 35% of the TAC on the Canadian run component.

4.1 ALASKA BOARD OF FISHERIES ACTIONS

In response to the guidelines established in the *Sustainable Salmon Policy*, the BOF discontinued the Yukon River summer and fall chum salmon as stocks concern in February 2007. The Yukon River Chinook salmon stock was continued as a stock of yield concern based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998.

4.2 SUBSISTENCE FISHERY

Subsistence fishing occurs throughout most of the Yukon River Area and has the highest priority among all uses of the resource in the State of Alaska. When salmon stocks are abundant and commercial fishing will occur, it is necessary to place some restrictions on the subsistence fishery in order to enforce commercial fishing regulations. For example, subsistence salmon fishing is closed in most areas 24 hours prior to the commercial salmon fishing season to discourage the illegal sale of subsistence caught salmon or salmon roe. Generally, more fishing time is allowed throughout the fishing season for subsistence than for commercial activities.

Since 2001, the subsistence salmon fishery has been based on a schedule implemented chronologically by ADF&G consistent with migratory timing as the run progresses upstream in most of the drainage. 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 schedules and provides reasonable opportunity for subsistence during years of normal 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, 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 users during years of low salmon runs. Table 5 shows the implementation of the BOF regulatory subsistence fishing schedule in 2008.

Table 5.–Yukon Area BOF adopted subsistence fishing schedule (5 AAC 01.210 and 5 AAC 05.360).

Area	Regulatory Subsistence Fishing Periods	Schedule to Begin	Days of the Week
Coastal District	7 days/week	By Regulation	M/T/W/TH/F/SA/SU – 24 hours
District 1	Two 36-hour periods/week	May 26, 2008	Mon. 8 pm to Wed. 8 am /Thu. 8 pm to Sat. 8 am
District 2	Two 36-hour periods/week	May 28, 2008	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
District 3	Two 36-hour periods/week	May 30, 2008	Fri. 8 am to Sat. 8 pm / Tue. 8 am to Wed. 8 pm
District 4	Two 48-hour periods/week	June 8, 2008	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Koyukuk River	7 days/week	By Regulation	M/T/W/TH/F/SA/SU – 24 hours
Subdistricts 5-A, B, C	Two 48-hour periods/week	June 17, 2008	Tue. 6 pm to Thu. 6 pm /Fri. 6 pm to Sun. 6 pm
Subdistrict 5-D	7 days/week	By Regulation	M/T/W/TH/F/SA/SU – 24 hours
District 6	Two 42-hour periods/week	By Regulation	Mon. 6 pm to Wed. Noon /Fri. 6 pm to Sun. Noon
Old Minto Area	5 days/week	By Regulation	Friday 6 pm to Wednesday 6 pm

The Yukon River Drainage Fisheries Association (YRDFA) facilitated a series of regional teleconferences and an in person meeting to provide managers, fishers, tribal council representatives, and other stakeholders the opportunity to share information, provide input, and discuss management options. The purpose of the calls and in person meeting was to work cooperatively to identify options and practical management strategies for 2009 that will assist in getting adequate numbers of fish to the spawning grounds, particularly to Canada, should the 2009 Chinook salmon run be similar to the unexpected low runs of 2007 and 2008. Based on

input from these preseason meetings, several management actions will be taken in the subsistence fishery.

Because of the below average to poor outlook for Chinook salmon in 2009, the subsistence salmon fishing schedule will be reduced by one-half beginning approximately 7 days after ice out at Alakanuk in District Y-1 and implemented chronologically with the upriver migration. If ice out is earlier than average, the schedule may be delayed longer than 7 days; if the ice out is later than average, it may be implemented earlier than 7 days. Table 6 shows the 2009 reduced subsistence fishing schedule based in regulation on 5 AAC 01.210 and 5 AAC 05.360. Depending on run strength and ice out as determined at Alakanuk, the schedule is subject to change.

Table 6.–Yukon Area subsistence salmon fishing schedule, 2009.

Note: this schedule is subject to change depending on run strength and ice out as determined at Alakanuk.

Area	Reduced Regulatory Subsistence Fishing Periods	Schedule to Begin	Days of the Week
Coastal District	7 days/week with 6" or smaller mesh size gillnets	7 days after ice out	M/T/W/TH/F/SA/SU – 24 hours
District Y-1	Two 18-hour periods/week	7 days after ice out	Mon. 8 pm to Tue. 2 pm / Thu. 8 pm to Fri. 2 pm
District Y-2	Two 18-hour periods/week	2 days after Y-1	Wed. 8 pm to Thu. 2 pm / Sun. 8 pm to Mon. 2 pm
District Y-3	Two 18-hour periods/week	3 days after Y-2	Wed. 8 pm to Thu. 2 pm / Sun. 8 pm to Mon. 2 pm
Subdistrict Y-4-A	Two 24-hour periods/week	3 days after Y-3	Sun. 6 pm to Mon. 6 pm / Wed. 6 pm to Thu. 6 pm
Subdistricts Y-4-B, C	Two 24-hour periods/week	6 days after Y-4-A	Sun. 6 pm to Mon. 6 pm / Wed. 6 pm to Thu. 6 pm
Koyukuk and Innoko River	7 days/week	By Regulation	M/T/W/TH/F/SA/SU – 24 hours
Subdistricts Y-5-A, B, C	Two 24-hour periods/week	5 days after Y-4-B,C	Tue. 6 pm to Wed. 6 pm / Fri. 6 pm to Sat. 6 pm
Subdistrict Y-5-D (Below 22 Mile Slough)	3.5 days/week	4 days after Y-5-A,B,C	Sun. 6pm to Thurs 6am
Subdistrict Y-5-D (Above 22 Mile Slough)	3.5 days/week	7 days after Y-5-A,B,C	Sun. 6pm to Thurs 6am
District Y-6	Two 42-hour periods/week	By Regulation	Mon. 6 pm to Wed. Noon / Fri. 6 pm to Sun. Noon
Old Minto Area	5 days/week	By Regulation	Friday 6 pm to Wednesday 6 pm

The Coastal District will be open 7 days a week. However, upon implementation of the reduced subsistence salmon fishing schedule in District Y-1, gillnet gear will be restricted to a maximum of 6-inch mesh size in the Coastal District. The Tanana River (District Y-6), Koyukuk and Innoko Rivers subsistence fishing schedules are not being reduced because these areas do not harvest Canadian bound Chinook salmon.

Additionally, to conserve the greatest number of Canada bound Chinook salmon, there will be no fishing on the first pulse of Chinook salmon. Beginning in District Y-1, one to two subsistence fishing periods will be pulled and similarly implemented to upriver fishing districts and subdistricts based on migratory timing. This will be announced by short notice news releases on VHF, radio, and Yukon River Drainage Fisheries Association (YRDFA) teleconferences. Because of the large size of Subdistrict 5-D and the travel time that is associated with fish

migrating through the area, the subdistrict will be divided into separate management portions: the area below 22 Mile Slough and the area above 22 Mile Slough. Further subdividing Subdistrict 5-D into two smaller portions will allow for more management precision and flexibility when the reduced subsistence fishing schedule is implemented. The reduced subsistence fishing schedule will be re-established after the first pulse is passed.

The Chinook salmon run will be reassessed near the midpoint to determine if the projected run strength is sufficient to warrant relaxing subsistence fishing regulations. If it is determined there is a harvestable surplus of salmon in excess of subsistence uses, the subsistence fishing schedule may revert to the schedule specified in 5AAC 01.210, (c-h) FISHING SEASONS AND PERIODS (Table 5).

From June 1 through July 15, the two lobes of the caudal fin (both tips of the tail) are required to be removed from subsistence caught Chinook salmon in Districts 1-3.

During closed subsistence salmon fishing periods, subsistence fishing for whitefish, suckers, and other non-salmon species will be allowed throughout the drainage. Gillnets with greater than 4 inch mesh must be removed from the water and fish wheels may not be operated during closed subsistence salmon fishing periods in an effort to avoid salmon. In addition, gillnets used to take species other than salmon during subsistence salmon closures are limited to 60 feet in length. This opportunity to target non-salmon species, while protecting salmon stocks of concern, may be discontinued if found ineffective at adequately reducing salmon harvest.

The summer and fall chum salmon management plans adopted by the BOF provide guidelines for managing subsistence salmon fisheries based on inseason run size projections. If subsistence harvest reductions are necessary, efforts will be made to spread the burden of conservation throughout the drainage. Potential harvest reduction measures include gear restrictions, reductions in fishing time, or extended periods of closed fishing. Conservation of salmon may require fish wheels to be equipped with a live box or live chute.

Subsistence fishing permits are required on the Yukon River from the western tip of Garnet Island to the Dall River including the community of Rampart and the Haul Road bridge area, for portions of the Yukon River near the communities of Circle and near Eagle from 22 Mile Slough to the U.S./Canada border. Subsistence fishing permits are also required in District 6, the Tanana River drainage, except for Subdistrict 6-C, which is managed under personal use regulations. Subsistence permit holders in that portion of Subdistrict 6-B, from a point 3 miles upstream of the mouth of Totchaket Slough to the upper boundary of Subdistrict 6-B, are required to report to ADF&G the number of salmon harvested each week. Permit holders can report their weekly catch on a message recording at (907) 459-7388. Subsistence fishermen must obtain a permit by contacting the ADF&G office in Fairbanks prior to subsistence fishing. Permits can be issued in person, by mail, and more recently by email. Subsistence fishers in permit areas are reminded that they must have their permit in possession while fishing. All permit holders are required to report harvest information on their permits and return their permits to ADF&G at the end of the fishing season.

In non-permit areas, ADF&G conducts a postseason harvest survey and encourages fishermen to use catch calendars to keep track of their harvest. Non-permitted fishermen who did not receive a subsistence salmon calendar by mail may obtain one by contacting ADF&G in Emmonak or Fairbanks. ADF&G has prepaid postage for the calendar in an effort to encourage fishermen to use and return catch calendars. Additionally, a lottery awarding six \$100 cash prizes will be

conducted following the season for which all households that have returned properly filled out calendars will be eligible.

In Subdistrict 4-A, regulations separate subsistence fishing periods from commercial fishing periods. By regulation, during the commercial salmon fishing season, subsistence salmon fishing with set nets and fish wheels will be closed 12 hours before, during, and 12 hours following each Subdistrict 4-A commercial salmon fishing period. However, subsistence fishing time may be changed by emergency order to maintain the subsistence fishing schedule and still allow for commercial fishing directed at summer chum salmon.

If the commercial salmon fishing season is opened in Subdistricts 4-B and 4-C or District 5, managers will attempt to coincide allowable commercial salmon fishing periods with the subsistence salmon fishing schedule. When ADF&G announces a commercial fishing closure that will last longer than 5 days in duration during the commercial salmon season in District 4 and Subdistricts 5-A, 5-B, and 5-C, subsistence salmon fishing will be allowed 5 days per week, unless modified by emergency order.

From November 1 through June 31, waters open for subsistence fishing in the Koyukuk River drainage are expanded to include the Middle Fork of the Koyukuk River upstream of its confluence with the North Fork, and the South Fork of the Koyukuk River upstream from the mouth of the Jim River. A household subsistence fishing permit is required as a condition of this increased fishing opportunity to harvest non-salmon species. Only gillnet gear is allowed and the mesh size may not exceed 3½ inches. This is done in an effort to protect salmon species in known spawning area with road access.

4.3 PERSONAL USE FISHERY

Subdistrict 6-C falls entirely within the Fairbanks Nonsubsistence Area and is managed under personal use regulations. Personal use salmon fishing permits are required in Subdistrict 6-C and can be obtained from ADF&G's office in Fairbanks. Personal use fishermen must possess a valid State of Alaska resident sport fishing license and report their harvests to ADF&G each week. Only one personal use salmon permit per household is allowed annually. The annual possession limit per permit holder is 10 Chinook salmon and 75 chum salmon for periods through August 15, and 75 chum and coho salmon in combination for the time period after August 15. Subdistrict 6-C fishery harvest limits are 750 Chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined. If a harvest limit is reached inseason, the Subdistrict 6-C personal use fishery may be closed.

The personal use fishing schedule is two, 42-hour periods per week by regulation and fishing is open from 6:00 p.m. Monday until 12:00 noon Wednesday and from 6:00 p.m. Friday until 12:00 noon Sunday. Whitefish and suckers may also be taken with dip nets under personal use fishing regulations and a separate personal use whitefish/sucker permit is required.

4.4 COMMERCIAL FISHERY AND REPORTING REQUIREMENTS

All processors, buyers, and catcher/sellers of salmon are required to register with ADF&G before operating in the Yukon Area. Processors, buyers and catcher/sellers in Districts 1, 2, and 3 must register with ADF&G's office in Emmonak. Processors, buyers, and catcher/sellers in Districts 4, 5, and 6 must register with ADF&G's office in Fairbanks. Registered salmon buyers are required to provide a verbal report of their salmon purchases within 18 hours following the closure of a

commercial fishing period. Buyers may verbally report harvest information in the Upper Yukon Area after office hours by calling a 24-hour message recording at (907) 459-7388. Buyers are also required to mail fish tickets to ADF&G within 24 hours or deliver fish tickets within 48 hours following the closure of each commercial fishing period in the Lower Yukon Area. In the Upper Yukon Area, buyers are required to mail fish tickets to ADF&G within 36 hours or deliver fish tickets within 36 hours following the closure of each commercial fishing period. If there is incomplete reporting, ADF&G may delay additional commercial fishing periods until the needed harvest reports are received. In addition, it is very important for buyers to accurately report on each fish ticket the statistical area where salmon were harvested.

All salmon caught by CFEC permit holders during commercial periods, must be reported on fish tickets. In fisheries directed at the harvest of roe, the number of salmon from which the roe was extracted must be reported on the fish ticket and the pounds of roe produced and the number of male chum and Chinook salmon released alive. Furthermore, regulations also require commercial fishermen to report, on each fish ticket, the number of salmon harvested but not sold during commercial fishing periods. Buyers are required to ensure this information is reported on fish tickets even though a portion may have been used for subsistence.

4.5 CHINOOK AND SUMMER CHUM SALMON COMMERCIAL SEASON

Inseason Chinook salmon run assessment will be based on lower river test fisheries, subsistence catch reports, age and sex composition, and sonar passage and escapement monitoring information. In addition, genetic samples collected in the lower river test fishery and at Pilot Station sonar will be analyzed inseason to determine stock contribution and to project abundance of the Canadian Chinook stock. As in years past, ADF&G will participate in Yukon River Drainage Fisheries Association (YRDFA) teleconferences inseason to gather information from the public, disseminate project information, and to discuss run status and management actions. The YRDFA teleconferences have provided an excellent venue for not only distributing information, but also to provide potential management actions for YRDFA and public participants to comment on. In recent years, management decisions have been made with recommendations from these teleconferences.

There are Chinook and Summer Chum Salmon Management Plans which guide ADF&G management actions. The 2009 Yukon River Chinook salmon run will likely be below average to poor and subsistence fishing restrictions to conserve Chinook salmon will be implemented. Therefore, it is unlikely that there will be a directed Chinook salmon commercial fishery in 2009 on the mainstem Yukon River.

Table 7 summarizes the summer chum salmon management plan. Although the Pilot Station sonar project is the primary run assessment tool for management, all available run assessment projects are utilized for in season management. If the abundance of summer chum salmon in 2009 is projected greater than 800,000 based on Pilot Station sonar, a directed summer chum salmon fishery may be allowed.

Table 7.–Summary of the summer chum salmon management plan.

<i>Summer Chum Salmon Management Plan Overview</i>					
Projected Run Size ^a	RECOMMENDED MANAGEMENT ACTION				Targeted Drainage-wide Escapement
	Commercial	Personal Use	Sport	Subsistence	
600,000 or less	Closure	Closure	Closure	Closure ^b	≤600,000
600,001 to 700,000	Closure	Closure	Closure	Possible Restrictions ^b	
700,001 to 1,000,000	Restrictions ^b	Restrictions ^b	Restrictions ^b	Normal Fishing Schedules	
Greater than 1,000,000	Open ^c	Open	Open	Normal Fishing Schedules	≥1,000,000 ^d

^a PROJECTED RUN SIZE: Mainstem river sonar passage estimate plus the estimated harvests below the sonar site and the Andreafsky River escapement.

^b The fishery may be opened or less restrictive in areas that indicator(s) suggest the escapement goal(s) in that area will be achieved.

^c DRAINAGE-WIDE COMMERCIAL FISHERIES: The harvestable surplus will be distributed by district or subdistrict in proportion to the guidelines harvest levels established in 5AAC 05.362 (f) and (g) and 5 AAC 05.365 if buying capacity allows.

^d Inriver run goal: This is a specific management objective for salmon stocks that are subject to harvest upstream of the point where escapement is estimated.

4.5.1 Districts 1, 2, and 3

Several funding increments were passed by the Alaska State legislature in 2009 to assist in managing Yukon salmon fisheries. A test fishing project offshore of Hooper Bay/Dall Point was funded to assess the feasibility of determining relative abundance and run timing of Chinook, summer chum, fall chum and coho salmon prior to river entry. This will be a cooperative project with Yukon Delta Fisheries Development Association (YDFDA) that may, in the future, be able to provide salmon abundance and timing information several days before salmon enter the river. Funding was also secured to operate a cooperative summer chum drift test fishing project in the lower river with YDFDA. The objective of this project is to identify increasing passage of summer chum salmon near the mouth of the river to allow the possibility of short notice commercial summer chum directed openings when there is a good abundance of chum salmon available.

In managing the 2009 summer chum salmon run, the department will follow the guidelines provided by the BOF in 5AAC 05.362 *Yukon River Summer Chum Salmon Management Plan*. In accordance with the management plan, directed summer chum salmon commercial fishing may be allowed when the run size projection is greater than 1,000,000 summer chum salmon for the entire Yukon River Drainage. The 2009 summer chum salmon run is expected to be near average.

If a surplus of summer chum salmon is identified above escapement and subsistence needs, there may be directed chum commercial fishing with gillnets restricted to six-inch maximum mesh size in Districts 1 and 2. It is unlikely there will be a buyer in District 3. However, because Chinook salmon are incidentally caught in summer chum salmon directed fisheries, and because 2009 Chinook runs may be poor, limitations on the summer chum commercial fishery may be necessary. If Chinook salmon run strength is not adequate and the Canadian stock is weak at the

midpoint of the Chinook run, the department will likely wait until the third quarter point of the Chinook run before opening commercial chum fishing. It is anticipated that incidental harvest of Canadian origin Chinook salmon should be minimized after the third quarter point of the run. Normally, after July 4, fewer Canadian bound Chinook salmon are present.

If the requirements to allow directed summer chum salmon commercial fishing are met, directed summer chum salmon fishing periods will likely be 4 to 12 hours in duration. Shorter summer chum salmon directed fishing periods might be scheduled based on run assessment and market considerations. If buyers and catcher/sellers agree not to buy incidentally caught Chinook salmon, it may be possible to increase fishing time or frequency of summer chum directed fishing periods. It is expected that if fishers use their incidental Chinook harvest for subsistence rather than commercial use, then there will be a reduction in the overall harvest of Chinook salmon. As a result, summer chum fishing restrictions may be relaxed.

While fishing periods restricted to 6 inch or smaller mesh size gillnets provides for a directed harvest of summer chum salmon, there is an incidental harvest of primarily smaller, predominantly male Chinook salmon. The quality of escapements is a concern; hence management is not only focused on escapement abundance, but on the proportion of female salmon in the escapements as well.

It is unlikely that the Chinook run will be large enough to support even a small directed commercial fishery. However, if a harvestable surplus of Chinook beyond escapement and subsistence needs is identified, it is anticipated the Chinook salmon directed commercial fishery would open after the midpoint of the run. This management strategy provides for passage of a portion of the early run segment through the lower river districts before commercial fishing starts.

In Districts 1-3 during the summer commercial salmon fishing season, subsistence salmon fishing closes by regulation 18 hours before, during, and 12 hours following a commercial salmon fishing period. However, subsistence fishing time may be changed by emergency order to maintain the subsistence fishing schedule and still allow for commercial fishing directed at summer chum salmon.

Regulations require identification of any vessel used by commercial salmon fishermen in Districts 1, 2, and 3. A vessel must display either the ADF&G vessel license number or the fisherman's 5-digit Commercial Fisheries Entry Commission (CFEC) permit serial number and the letter that follows. Symbols must be at least 12 inches high and 1 inch wide and displayed on both sides of the hull or cabin.

Gillnet depth regulations for commercial fishing in Districts 1, 2, and 3 require that gillnets with greater than 6-inch mesh size may not be more than 45 meshes in depth and gillnets with mesh size of 6 inches or less may not be more than 50 meshes in depth.

4.5.2 District 4

A market for summer chum salmon roe is expected in Subdistrict 4-A. By regulation, sale of Chinook salmon roe is prohibited in Subdistrict 4-A. At this time it is unlikely there will be a buyer in Subdistricts 4-B and 4-C.

Management of summer chum salmon will be dependent on available surplus, fishing effort, buyer input; in consideration of market quality and capacity, and monitoring of the fishery inseason.

Based upon preseason contacts with potential buyers in Subdistrict 4-A, directed commercial fishing for summer chum salmon is anticipated to begin with concurrent subsistence and commercial fishing between June 25 and June 29 dependent on inseason assessment of timing of the first pulse of Chinook salmon. It is anticipated that fish wheels will be operated during the commercial fishery with fish wheel operators intending to man their wheels for releasing live Chinook and male chum salmon. During concurrent subsistence and commercial openings, Chinook salmon may be kept for subsistence use. Department staff will be present on the grounds to observe the fishery. Given confirmation that fish wheels are being manned for live release of Chinook salmon and Chinook salmon encounters remain low, fishing period duration may be increased or more frequent periods may be added such as more frequent 12-hour commercial fishing periods.

Given continued adequate summer chum salmon run indicators, commercial fishing time may be increased once the majority of Chinook salmon has passed through the subdistrict.

4.5.3 Anvik River Management Area

The Anvik River may be opened to summer chum salmon commercial fishing if the escapement is anticipated to exceed 500,000 fish. Fishing periods in the Anvik River will be based upon size of the surplus available for commercial harvest and the availability of a commercial market. The intent is to allow a harvest of Anvik River summer chum salmon stock that is in excess of the spawning escapement goal and to decrease harvest pressure on non-Anvik River summer chum salmon stocks. Permit holders are reminded that all Chinook salmon caught during Anvik River commercial fishing periods must be released alive.

4.5.4 District 5

It is unlikely that there will be a directed Chinook salmon commercial fishery in 2009 on the mainstem Yukon River. However, assessment of run abundance and timing from downstream districts, along with subsistence catch reports, will be used to determine if commercial fishing is warranted. By regulation, no commercial fishing will be allowed in Subdistrict 5-A during the Chinook and summer chum salmon fishing season. If commercial fishing is allowed in Subdistricts 5-B and 5-C, it is anticipated that fishing periods would be 12-hours in duration. For Subdistrict 5-D, 24-hour commercial fishing periods are typical. These duration of openings allow ADF&G to monitor and maintain the harvest within guideline harvest ranges. In years with average returns and run timing, the first commercial fishing period usually occurs between July 1 and July 7 in Subdistricts 5-B and 5-C, and between July 1 and July 10 in Subdistrict 5-D.

4.5.5 District 6

District 6 is managed inseason using salmon run strength and timing indicators in the Tanana River drainage. Assessment includes test fish wheel catches near the community of Nenana and escapement information on Chinook and summer chum salmon collected by tower counting projects on the Chena and Salcha Rivers. ADF&G can exceed the upper end of the guideline harvest ranges in years when it has been determined that escapement goals and subsistence needs will be met.

Directed summer chum salmon commercial fishing periods would likely occur later in July and into August and will depend on inseason run assessment. The length and duration of commercial fishing periods will depend on run strength and buyer capacity.

4.6 FALL CHUM AND COHO SALMON COMMERCIAL SEASON

The 2008 fall chum salmon outlook is uncertain with an expected run size ranging widely from slightly below average to above average. The coho salmon run size is expected to be near average. A commercial fishery for both chum and coho salmon is anticipated with the surplus available for commercial harvest to be determined inseason.

In managing the 2009 Yukon River fall chum salmon fishery, ADF&G will follow guidelines provided by the BOF in 5 AAC 01.249 *Yukon River Drainage Fall Chum Salmon Management Plan*. The plan stipulates that directed fall chum salmon commercial fisheries may only be allowed on the projected surplus of the run above 600,000 fall chum salmon for the entire Yukon River drainage. There is an exception to this plan where commercial fishing may be allowed in portions of the drainage where escapement and subsistence needs are projected to be exceeded and when the drainage-wide run size is projected to be greater than 500,000 fall chum. Since the 2009 preseason projection is for a run size ranging from 600,000 to 980,000 fall chum salmon, it is anticipated that the run will provide sufficient abundance for escapement and subsistence uses and may support commercial harvest levels ranging from below to above average depending upon run size. Table 8 summarizes the fall chum salmon management plan.

Table 8.–Summary of the fall chum salmon management plan.

<i>Fall Chum Salmon Management Plan Overview</i>					
Projected Run Size ^a	RECOMMENDED MANAGEMENT ACTION				Targeted Drainage-wide Escapement
	Commercial	Personal Use	Sport	Subsistence	
300,000 or less	Closure	Closure	Closure	Closure ^b	
300,000 to 500,000	Closure	Closure ^b	Closure ^b	Possible Restrictions ^{b,c}	
500,000 to 600,000	Restrictions ^b	Open	Open	Pre-2001 Fishing Schedules	300,000 to 600,000
Greater than 600,000	Open ^d	Open	Open	Pre-2001 Fishing Schedules	

^a PROJECTED RUN SIZES use the best available data (including preseason projections, mainstem river sonar passage estimates, test fisheries indices, subsistence and commercial fishing reports, and passage estimates from escapement monitoring projects)

^b The fishery may be opened or less restrictive in areas that indicator(s) suggest the escapement goal(s) in that area will be achieved.

^c Subsistence fishing will be managed to achieve a minimum drainage-wide escapement goal of 300,000.

^d DRAINAGE-WIDE COMMERCIAL FISHERIES may be open and the harvestable surplus above 600,000 will be distributed by district or subdistrict (in proportion to the guidelines harvest levels established in 5AAC 05.365 and 5 AAC 05.367.

Management of directed coho salmon fishing during the fall season is complicated by an overlapping run of more abundant fall chum salmon stocks. The 2009 coho salmon fishery will be managed consistent with regulation 5 AAC 05.369 *Yukon River Coho Salmon Management Plan*. The plan allows a directed coho salmon commercial fishery when the coho salmon run is judged to be average to above average and the fall chum salmon run is below the 600,000 fish threshold necessary to allow a directed fall chum salmon fishery, yet still above the minimum of 550,000 fall chum salmon.

Therefore, the commercial harvest of coho salmon will likely be dependent upon the abundance of fall chum salmon and accompanying management strategies used to harvest fall chum salmon. In 2009 it is anticipated that commercial fishing for both fall chum and coho salmon will occur simultaneously.

ADF&G will monitor the fall salmon runs inseason by using the Pilot Station sonar passage and genetic proportion estimates, lower Yukon River drift gillnet test fishery near Emmonak, the Mountain Village drift gillnet test fishery, subsistence catch reports, and, if available, commercial catch statistics. This information, in combination with the preseason expectation and the performance of the summer chum salmon run, will be the basis for initial management. The fall season outlook anticipates a commercial harvest of fall chum salmon of 50,000 to 300,000 and a potential coho salmon harvest of 50,000 to 70,000. Fishery managers will work with commercial buyers to maximize market capacity and distribute harvest.

Several funding increments were passed by the Alaska legislature in 2009 to assist in managing Yukon salmon fisheries. A test fishing project offshore of Hooper Bay/Dall Point was funded to assess the feasibility of determining relative abundance and run timing of Chinook, summer chum, fall chum and coho salmon prior to river entry. This will be a cooperative project with YDFDA that may, in the future, be able to provide salmon abundance and timing information several days before salmon enter the river. Funding was secured to operate a cooperative fall chum drift test fishing project in the lower river with YDFDA. This project was funded by USFWS in the past. The Nenana test fish wheel project was funded during the fall season. This project is used in managing Tanana River fall chum and coho salmon fisheries and was previously funded through federal grants. Additionally, funding was provided for more comprehensive sonar sampling at Pilot Station during fall chum salmon pulses to ensure accuracy of salmon passage estimates.

4.6.1 Districts 1, 2, and 3

The majority of fall chum salmon enter the Yukon River from mid-July through early September in erratic pulses usually lasting 2 to 3 days. Typically, 4 to 5 large pulses occur each season. These pulses are often associated with onshore wind events and/or high tides. This entry pattern makes it difficult to accurately project run strength inseason at the mouth of the river. Initial commercial fishing period length and frequency will be based on the performance of the summer chum salmon return as an indicator of fall chum salmon production, the distribution of fishing interest, and on the assumption that there will likely be a surplus of fall chum salmon available drainage-wide for commercial harvest. Maintaining good salmon flesh-quality will be a primary objective. Managers will work with buyers to harvest good quality fish, to maximize available processing capacities and transportation opportunities, and to spread harvest throughout the fall salmon run.

Regulations require District 1 commercial fishermen to register for the coastal *Set Net Only Area* prior to opening of the fall commercial season. Registration “sign-in” sheets will be available at Lower Yukon Area village post offices and at ADF&G’s field office in Emmonak. There are provisions that allow fishermen to transfer into and out of the *Set Net Only Area*. After initial registration for the *Set Net Only Area*, a permit holder may not commercially fish for salmon in the remainder of District 1, or in another district, until 72 hours after re-registration with ADF&G. After the first fall season commercial fishing period, a permit holder not registered for the *Set Net Only Area* may transfer to the *Set Net Only Area* after re-registration with ADF&G. The re-registration and 72-hour waiting period begins at the time the notification is received and noted by ADF&G.

4.6.2 District 4

Since 2001, Subdistrict 4-A has been combined with Subdistricts 4-B and 4-C in sharing the guideline harvest range of 5,000 to 40,000 fall chum salmon. In years with average run timing and a commercially harvestable surplus, the first District 4 fall season commercial fishing period normally occurs in early to mid-August. In the event a directed coho salmon commercial fishery is allowed, a commercial fishing period in Subdistrict 4-A may only occur on or after August 20 and would close by September 15. It is anticipated that there will be a surplus of fall chum and coho salmon available for commercial harvest; however weak market conditions may limit commercial harvests in the district for 2009.

4.6.3 Subdistricts 5-B, 5-C, and 5-D

In years with average run timing and a commercially harvestable surplus, the first fall season commercial fishing period in Subdistricts 5-B and 5-C typically occurs in mid-August with Subdistrict 5-D starting later in August or early September. Market interest has been weak in recent years and will likely dictate commercial fishing opportunity. Commercial fishing periods are usually scheduled concurrent with subsistence periods, but may be shifted to accommodate market limitations.

4.6.4 Subdistrict 5-A and District 6

Management of Subdistrict 5-A and District 6 is outlined in regulation 5 AAC 05.367 *Tanana River Salmon Management Plan*. This management plan directs ADF&G to manage Subdistrict 5-A and District 6 based on the stock status and timing of salmon bound for, and into, the Tanana River. Based on tagging studies conducted in 1979 and 1980, it is believed that the majority of fall chum and coho salmon harvested in Subdistrict 5-A are bound for the Tanana River, located in District 6.

ADF&G will initially manage the fall season in Subdistrict 5-A and District 6 based on the run strength and timing of the overall Yukon River fall chum salmon run as assessed by the Pilot Station sonar project. As the run progresses into the Tanana River, test fishery projects will be used to assess the run timing and size in the Tanana River portion of the drainage along with subsistence and commercial harvest information.

The Tanana River management plan allows Subdistrict 5-A commercial activities only during the fall season. In most years, the Subdistrict 5-A commercial fishery would be managed for a guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe. No waste of carcasses will be permitted. In adopting this regulation, the Board recognized that carcasses produced by this commercial roe fishery should be incorporated into the subsistence utilization in local communities namely the village of Tanana.

Depending on the inseason assessment of fall chum salmon run strength and timing indicators of Tanana River stocks, ADF&G does have the authority to manage Subdistrict 5-A and District 6 for a different harvest level within the guideline harvest range or to exceed the guideline harvest range. The first fall season commercial salmon fishing period normally occurs in early to mid-September. Managers will work with commercial buyers and fishermen in coordinating fishing periods to utilize available markets efficiently. Commercial and subsistence fishing periods are typically opened concurrently.

4.7 GUIDELINE HARVEST RANGES

Table 9 shows a summary of the guideline harvest ranges for all districts in the Yukon Area for the commercial harvest of Chinook, summer, and fall chum salmon.

Table 9.—Guideline harvest ranges and midpoints for commercial harvest of Yukon River Chinook, summer, and fall chum salmon.

Chinook Salmon						
District or Subdistrict	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 to 1,800	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
5-B & 5-C	0 to 2,400	3.6	2,600	2.6	2,800	2.2
5-D	0 to 300	0.4	400	0.4	500	0.4
6	0 to 600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0

Summer Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^b					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 251,000	62.8	503,000	62.9	755,000	62.9
3	0 to 6,000	1.5	12,500	1.6	19,000	1.6
4-A ^c	0 to 113,000	28.3	225,500	28.2	338,000	28.2
4-B & 4-C	0 to 16,000	4.0	31,500	3.9	47,000	3.9
5-B, -C, -D	0 to 1,000	0.3	2,000	0.3	3,000	0.3
6	0 to 13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0

Anvik River Management Area roe cap of 100,000 pounds. ^d

Fall Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^e					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	0 to 60,000	82.5	140,000	71.2	220,000	68.6
4	0 to 5,000	6.9	22,500	11.4	40,000	12.5
5-B and 5-C	0 to 4,000	5.5	20,000	10.2	36,000	11.2
5-D	0 to 1,000	1.4	2,500	1.3	4,000	1.2
6	0 to 2,750	3.8	11,625	5.9	20,500	6.4
Total	0 to 72,750	100.0	196,625	100.0	320,500	100.0

Subdistrict 5A range of 0 to 4,000 pounds of roe. ^f

^a The Chinook salmon guideline harvest ranges have been in effect since 1981.

^b Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975–1989.

^c Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.

^d The current Anvik River Management Area roe cap was established in March 1996.

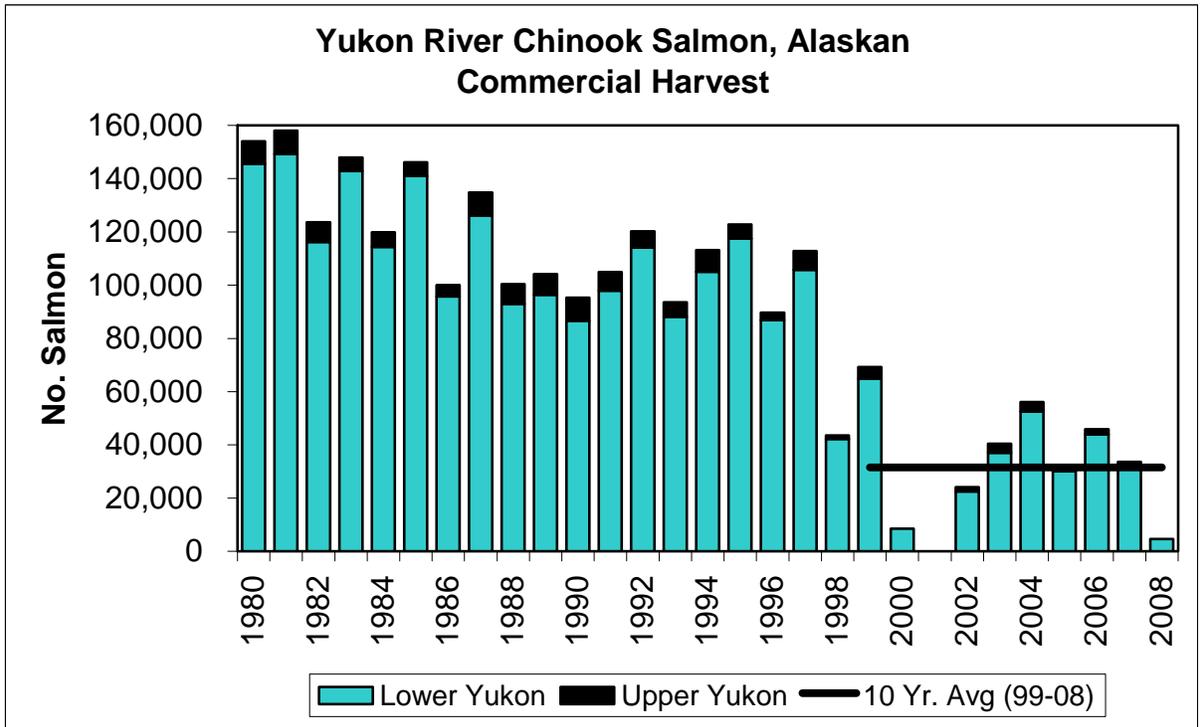
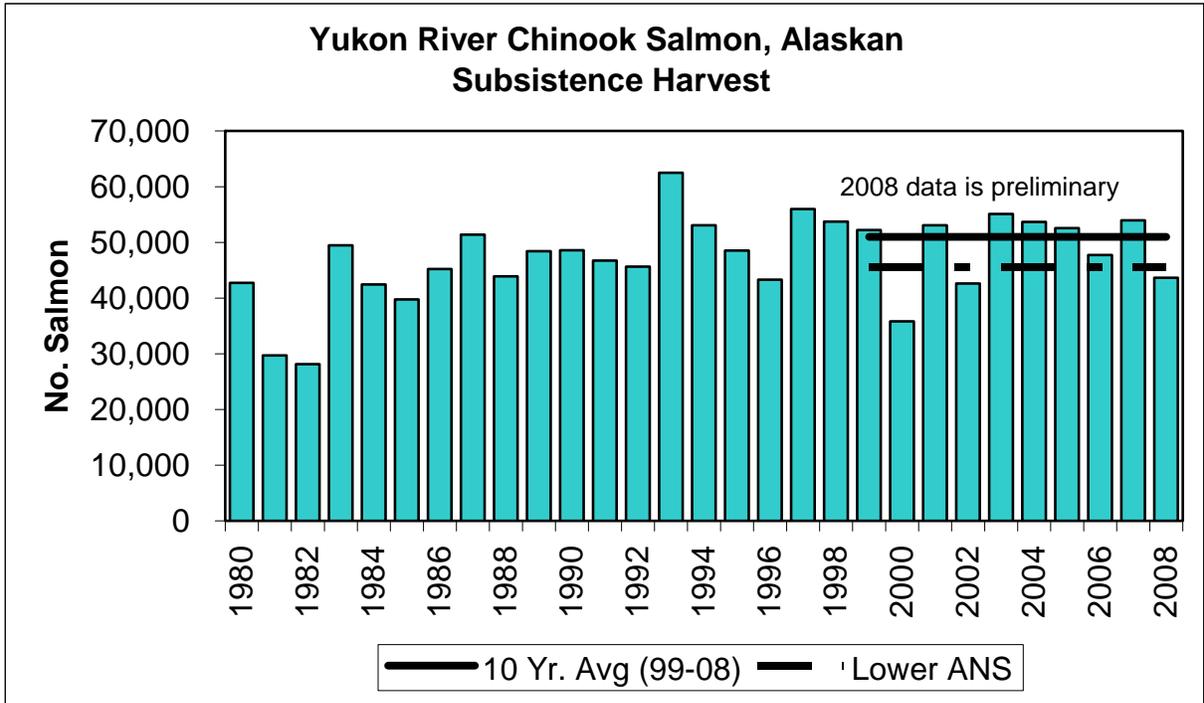
^e The current fall chum salmon guideline harvest ranges were established in 1990.

^f Subdistrict 5-A was removed from the guideline harvest ranges for Chinook and summer chum and a separate guideline harvest range of 0–4,000 pounds of fall chum salmon roe was established in November 1998.

REFERENCES CITED

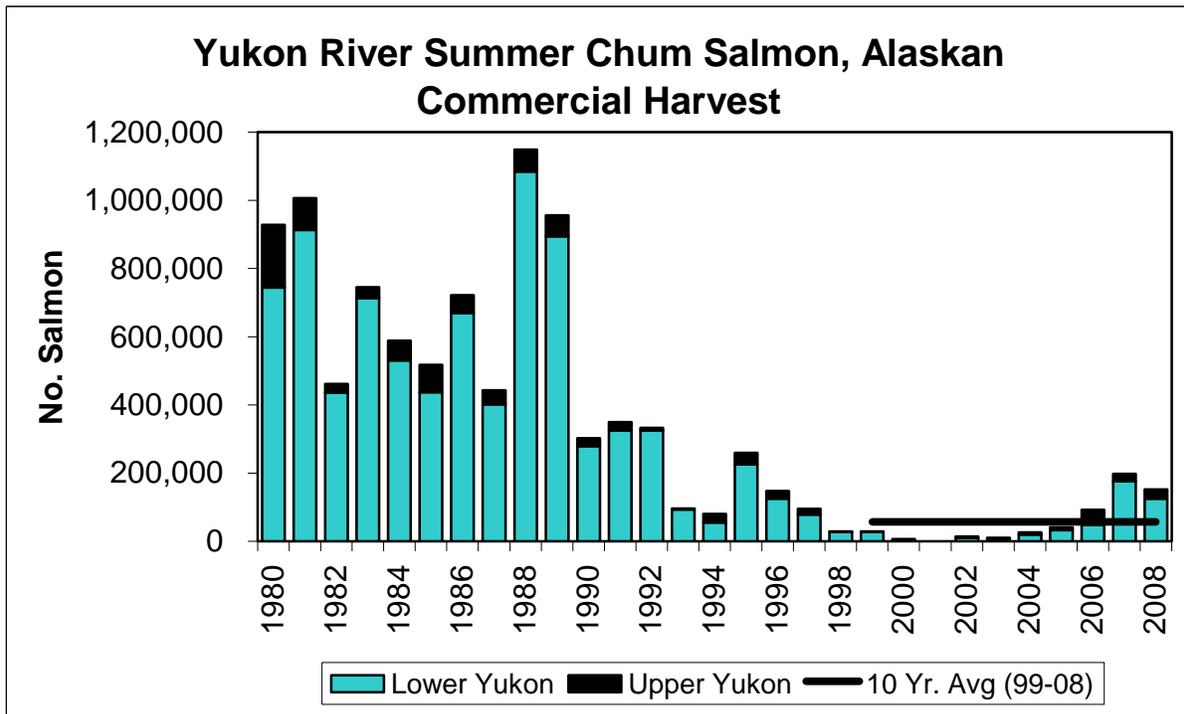
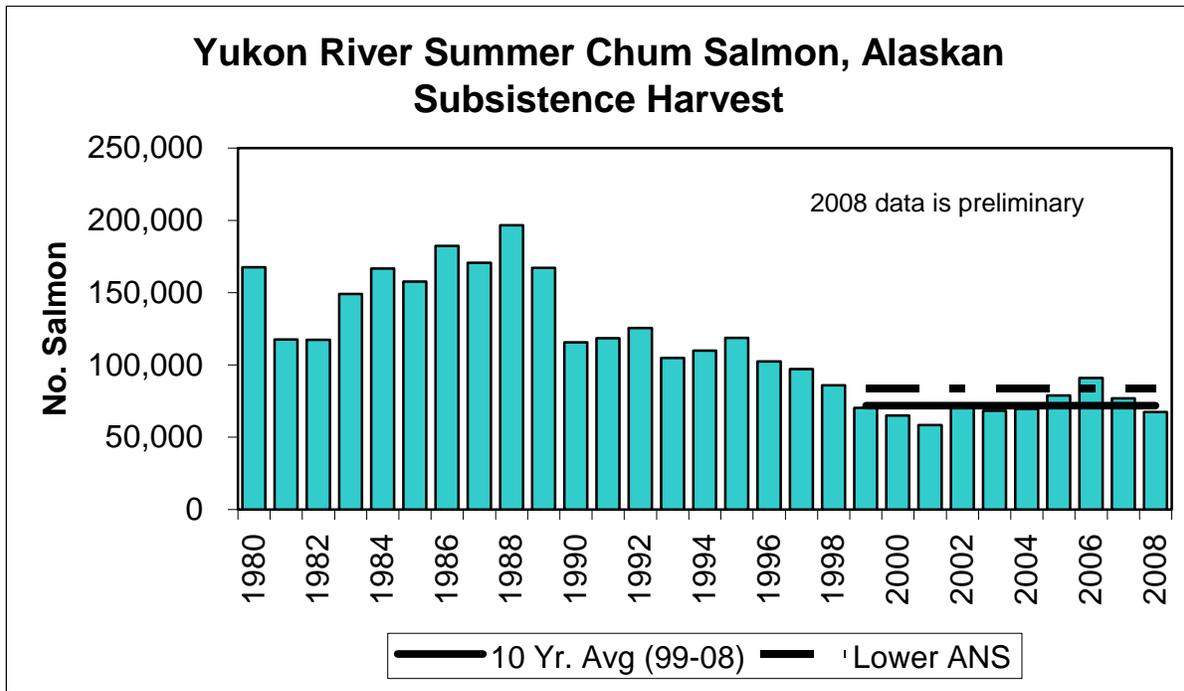
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FIGURES



Note: ANS = Amount necessary for subsistence.

Figure 2.—Yukon River Chinook salmon subsistence and commercial harvests compared to the recent 10-year average, and the lower ANS range.

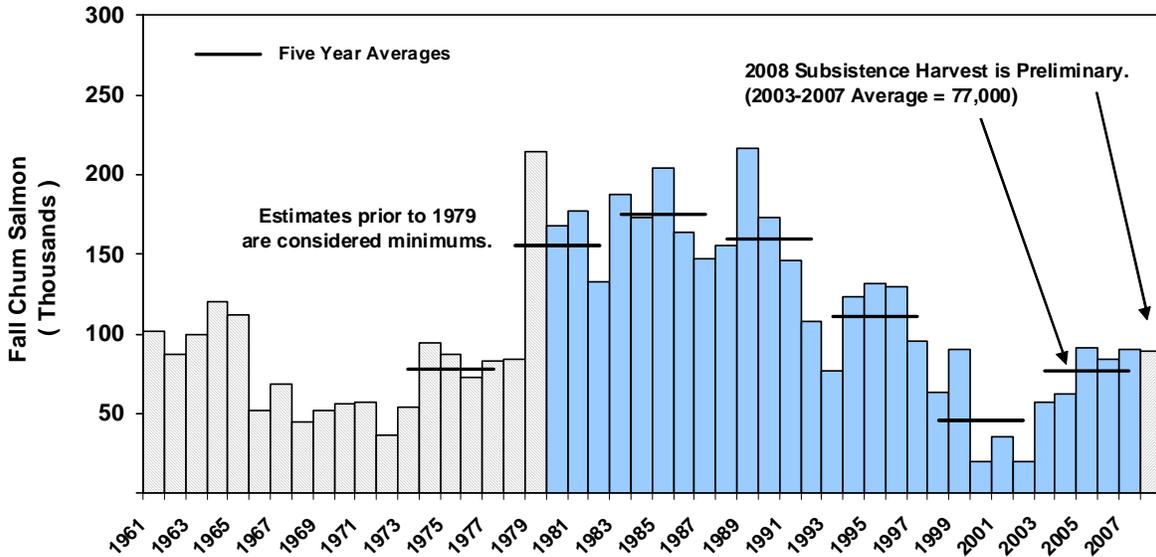


Note: ANS = Amount necessary for subsistence.

Figure 3.—Yukon River summer chum salmon subsistence and commercial harvests compared to the recent 10-year average, and the lower ANS range.

ALASKAN PORTION OF YUKON RIVER DRAINAGE FALL CHUM SALMON

SUBSISTENCE HARVEST



COMMERCIAL HARVEST

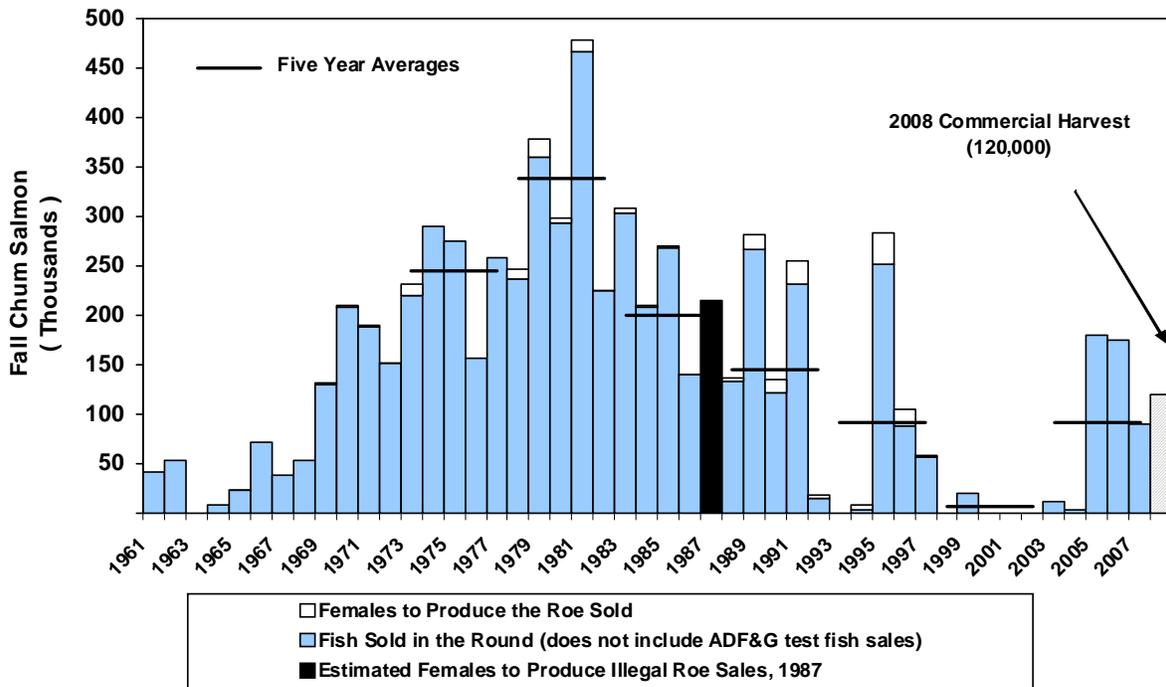
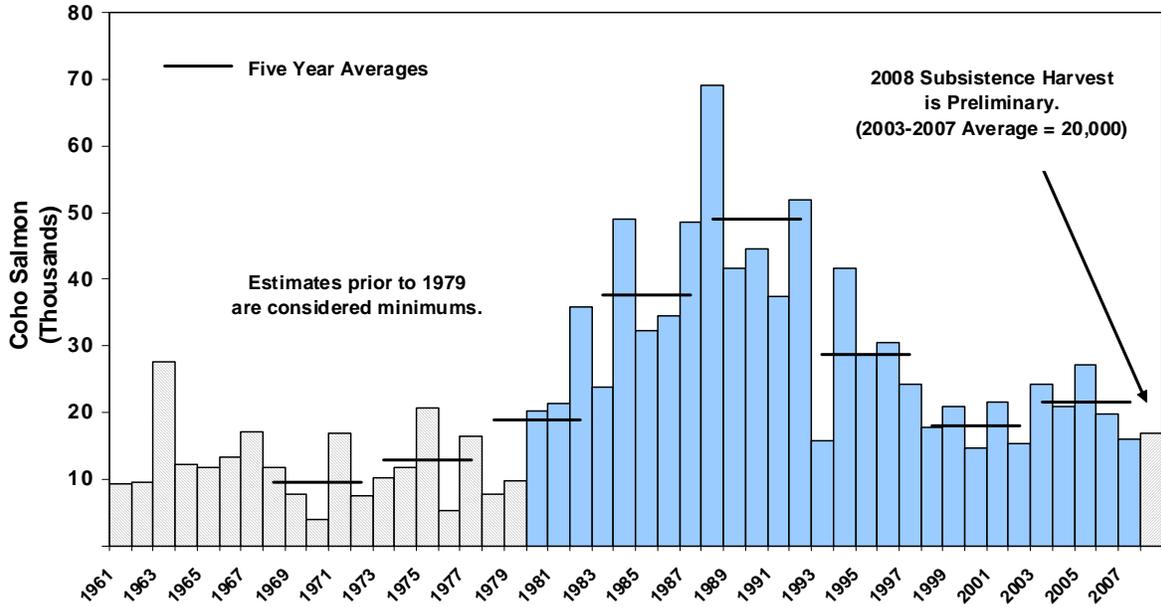


Figure 4.—Subsistence and commercial harvest of fall chum salmon, 1961 to 2008.

ALASKAN PORTION OF YUKON RIVER DRAINAGE COHO SALMON

SUBSISTENCE HARVEST



COMMERCIAL HARVEST

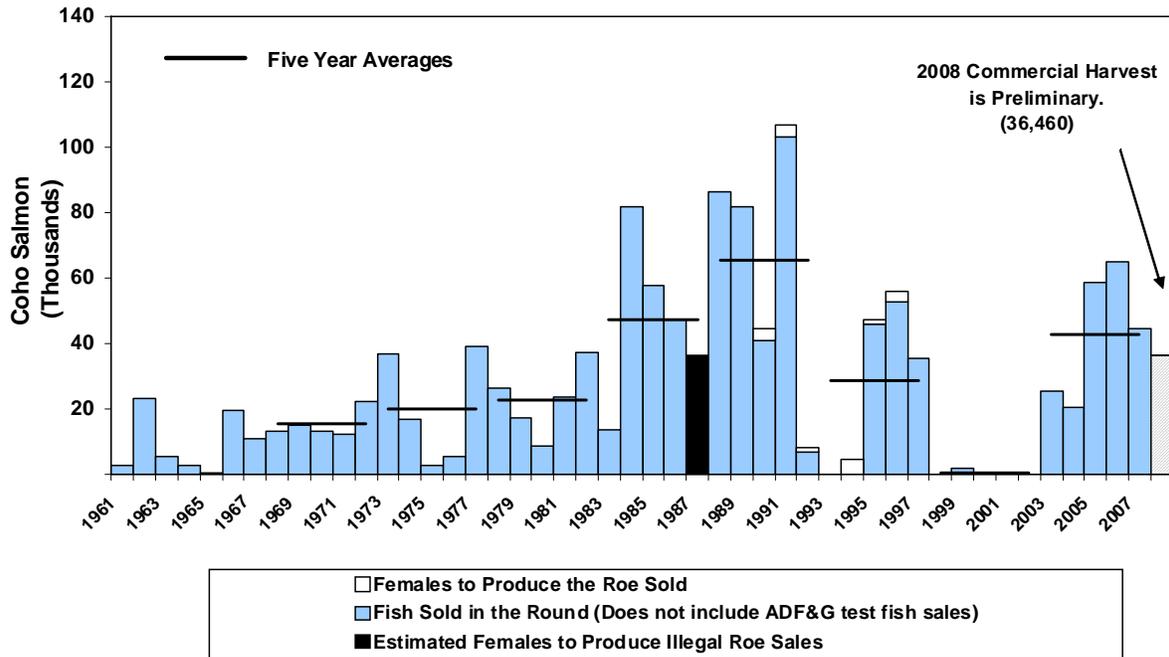


Figure 5.—Subsistence and commercial harvest of coho salmon, 1961 to 2008.

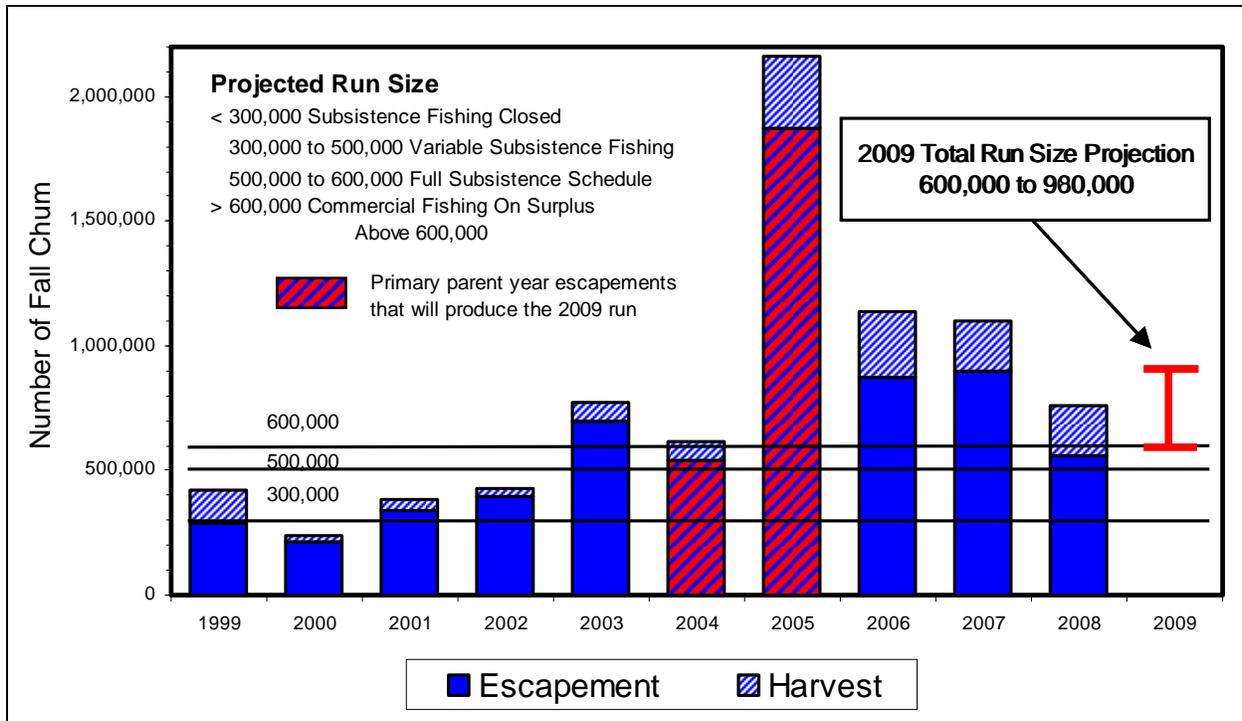


Figure 6.—Yukon River fall chum salmon management plan overview and comparison with historical run sizes.