

**2011 Yukon Area Subsistence, Personal Use, and  
Commercial Salmon Fisheries Outlook and  
Management Strategies**

by

**Steve J. Hayes**

and

**Jeff L. Estensen**

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May 2011

Alaska Department of Fish and Game

Division of 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 and the Division of Commercial Fisheries Regional Reports. 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.

<b>Weights and measures (metric)</b>		<b>General</b>		<b>Measures (fisheries)</b>	
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	@	<b>Mathematics, statistics</b>	
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 <sub>A</sub>
<b>Weights and measures (English)</b>		west	W	base of natural logarithm	<i>e</i>
cubic feet per second	ft <sup>3</sup> /s	copyright	©	catch per unit effort	CPUE
foot	ft	corporate suffixes:		coefficient of variation	CV
gallon	gal	Company	Co.	common test statistics	(F, t, $\chi^2$ , etc.)
inch	in	Corporation	Corp.	confidence interval	CI
mile	mi	Incorporated	Inc.	correlation coefficient	
nautical mile	nmi	Limited	Ltd.	(multiple)	R
ounce	oz	District of Columbia	D.C.	correlation coefficient	
pound	lb	et alii (and others)	et al.	(simple)	r
quart	qt	et cetera (and so forth)	etc.	covariance	cov
yard	yd	exempli gratia		degree (angular)	°
		(for example)	e.g.	degrees of freedom	df
<b>Time and temperature</b>		Federal Information		expected value	<i>E</i>
day	d	Code	FIC	greater than	>
degrees Celsius	°C	id est (that is)	i.e.	greater than or equal to	≥
degrees Fahrenheit	°F	latitude or longitude	lat. or long.	harvest per unit effort	HPUE
degrees kelvin	K	monetary symbols		less than	<
hour	h	(U.S.)	\$, ¢	less than or equal to	≤
minute	min	months (tables and		logarithm (natural)	ln
second	s	figures): first three		logarithm (base 10)	log
		letters	Jan, ..., Dec	logarithm (specify base)	log <sub>2</sub> , etc.
<b>Physics and chemistry</b>		registered trademark	®	minute (angular)	'
all atomic symbols		trademark	™	not significant	NS
alternating current	AC	United States		null hypothesis	H <sub>0</sub>
ampere	A	(adjective)	U.S.	percent	%
calorie	cal	United States of		probability	P
direct current	DC	America (noun)	USA	probability of a type I error	
hertz	Hz	U.S.C.	United States	(rejection of the null	
horsepower	hp		Code	hypothesis when true)	$\alpha$
hydrogen ion activity	pH			probability of a type II error	
(negative log of)				(acceptance of the null	
parts per million	ppm	U.S. state	use two-letter	hypothesis when false)	$\beta$
parts per thousand	ppt, ‰		abbreviations	second (angular)	"
			(e.g., AK, WA)	standard deviation	SD
volts	V			standard error	SE
watts	W			variance	
				population	Var
				sample	var

***REGIONAL INFORMATION REPORT NO. 3A11-04***

**2011 YUKON AREA SUBSISTENCE, PERSONAL USE, AND  
COMMERCIAL SALMON FISHERIES OUTLOOK AND  
MANAGEMENT STRATEGIES**

by

Steve J. Hayes  
Division of Commercial Fisheries, Anchorage  
and  
Jeff L. Estensen  
Division of Commercial Fisheries, Fairbanks

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
333 Raspberry Road, Anchorage, Alaska, 99518

May 2011

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>.

*Steve J. Hayes*  
*Alaska Department of Fish and Game, Division of Commercial Fisheries,*  
*333 Raspberry Road, Anchorage, AK 99518, USA*  
*and*  
*Jeff L. Estensen*  
*Alaska Department of Fish and Game, Division of Commercial Fisheries,*  
*1300 College Road, Fairbanks, AK 99701, USA*

*This document should be cited as:*

*Hayes, S. J. and J. L. Estensen. 2011. 2011 Yukon Area subsistence, personal use, and commercial salmon fisheries outlook and management strategies. Alaska Department of Fish and Game, Regional Information Report No. 3A11-04, Anchorage.*

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ADF&G, Division of Sport Fish, Research and Technical Services, 333 Raspberry Road, Anchorage AK 99518 (907)267-2375.

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## **PREFACE**

The following information is for fishermen participating in subsistence, personal use and commercial fisheries in the Yukon Area during the 2011 season. Fishermen may contact ADF&G, Division of Commercial Fisheries staff at the office locations listed below.

### **Emmonak Seasonal Field Office**

**(June through August)**

Alaska Department of Fish and Game

Division of Commercial Fisheries

P.O. Box 127

Emmonak, Alaska 99581

Telephone: (907) 949-1320

Fax: (907) 949-1830

**Recorded Information: (907) 949-1731**

### **Fairbanks Office**

Alaska Department of Fish and Game

Division of Commercial Fisheries

1300 College Road

Fairbanks, Alaska 99701

Telephone: (907) 459-7274

Fax: (907) 452-7271

### **Anchorage Office**

Alaska Department of Fish and Game

Division of Commercial Fisheries

333 Raspberry Road

Anchorage, Alaska 99518

Telephone: (907) 267-2105

Fax: (907) 267-2442

**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 “claimed 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 a federally qualified subsistence user and choose to subsistence fish under federal subsistence regulations in waters under federal jurisdiction, you must comply with federal subsistence regulations. If you are a resident of Alaska (including a federally qualified subsistence user) and you choose to subsistence fish under State of Alaska subsistence fishery regulations in waters under claimed federal subsistence jurisdiction you must comply with State subsistence regulations and state permit conditions. State subsistence regulations may be pre-empted by federal subsistence regulations at times. It is the responsibility of the subsistence user to understand the boundaries of waters claimed under federal subsistence jurisdiction.

To familiarize yourself with the federal subsistence 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 and are available on line at <http://alaska.fws.gov/asm/law.cfml>. 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 or – 907-786-3888 - 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 2011. 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, salmon, outlook, strategy, management plan, commercial fishing, subsistence fishing, ADF&G.

## 1.0 INTRODUCTION

This document provides the 2011 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 commercial, subsistence, personal use, and sport fisheries within the Yukon River drainage. Chum salmon in the Yukon River consist 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 may also occur in Canada, which are managed by the Canadian Department of Fisheries and Oceans (DFO).

## 2.0 OUTLOOK FOR 2011

### 2.1 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 average proportion of Canadian origin fish in the total run is approximately 50%. Using this method, the expected total Yukon River run size is 216,200<sup>1</sup>,

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<sup>1</sup> Based on the averaged value for both sibling and Ricker models. Values for each model separately are 205,500 and 224,000 for Ricker and sibling models respectively.

using the unadjusted model estimate. However, there is a lot of uncertainty associated with this methodology and, due to reductions in productivity in recent years, environmental factors and other phenomena not incorporated into the models, this estimate is unlikely. The drainage-wide run outlook based on the adjusted Canadian-origin model estimate, which attempts to account for low productivity since 2007, is 130,000–178,000 Chinook salmon. Thus, the 2011 Yukon River Chinook salmon run will likely be poor to below average.

## **2.2 SUMMER CHUM SALMON**

The strength of the summer chum salmon run in 2011 will be dependent on production from the 2007 (age-4 fish) and 2006 (age-5-fish) escapements, as these age classes dominate the run. The total run during 2006 and 2007 were both above average at approximately 4.0 and 2.0 million summer chum salmon respectively, though tributary escapements were highly variable.

Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years, and it is expected that the total run in the Yukon River will be similar to the 2010 run of approximately 1.6 million fish. In 2010 there was a good showing of age-3 fish from the 2007 brood year which may indicate an upward trend in run size if the age-4 fish returning in 2011 is above average. The high seas Bering Arctic Subarctic Integrated Surveys (BASIS) study indicated a decline in chum salmon in 2004 and 2005, but 2006 and 2007 results showed an increase. No BASIS survey was conducted in 2008. Chum salmon collected in the BASIS study in 2007 would correspond to the age-5 returns in 2011. A collaborative effort between ADF&G and NOAA is in progress to test the applicability of BASIS juvenile salmon indices for run size forecasting.

The 2011 summer chum salmon run will likely be average and 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 8 years (2003–2010). The commercially harvestable surplus could range from 300,000 to 600,000 summer chum salmon. The actual commercial harvest of summer chum salmon in 2011 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**

The fall chum salmon forecast for 2011 is a point estimate of 737,000 fish with a range of 605,000 fish to 870,000 fish. The forecast range is based on the upper and lower values of the 80% confidence bounds for the point estimate. Confidence bounds were calculated using deviation of point estimates and observed returns from 1987 through 2010. This forecasted run size is below average for odd-numbered year returns.

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. The 2011 run will be comprised of parent years 2005 to 2008 (Table 1). Estimates of return per spawner (R/S) based on brood year return were used to estimate production for 2005 and 2006. An auto-regressive Ricker spawner-recruit model was used to predict returns from 2007 and 2008. The 2011 forecast uses the 1984 to the current complete brood year returns applied to the odd/even maturity schedule, because current production is reduced from the pre-1984 level. Contributing parent year escapements from 2005 through 2007 all exceeded the upper end of the drainagewide escapement goal range while 2008 was within the drainagewide escapement goal range of 300,000 to 600,000 fall chum salmon.

The 2005 through 2007 parent year's all contributed less than one return per spawner. The estimated return per spawner of 0.23 for the 2005 brood year was the lowest on record. The 2006 return per spawner was nearly three times that of 2005 but still considered poor. Also, the major contributor to the 2011 fall chum salmon run is anticipated to be age-4 fish returning from 2007 parent year. In 2010 there was a good showing of age-3 fish from the 2007 brood year which may indicate an improved return per spawner and an upward trend in run sizes if the age-4 fish returning in 2011 are also above average.

Table 1.—Projected 2011 total run size of fall chum salmon based on parent year escapement for each brood year and predicted return per spawner (R/S) rates, Yukon River, 2005–2008.

Brood Year	Escapement	Estimated production (R/S)	Estimated Production	Contribution based on age	Current Return
2005	1,996,513	0.23	459,198	0.7%	4,814
2006	873,987	0.63	550,612	25.2%	185,871
2007	928,430	0.83	770,612	72.5%	534,093
2008	564,482	1.42	799,421	1.6%	11,857
Total expected run (unadjusted)					736,635
Total 2011 run size expressed as a range based on the forecasted vs. observed returns from 1987 to 2010 (80% CI):					605,000 to 870,000

Another approach to estimate the 2011 fall chum salmon run size examined a time lagged correlation from observed runs (2000–2010, excluding 2005), which resulted in a projection of only 536,000 fall chum salmon with a 95% confidence interval of 300,000 to 700,000 fish. This method effectively reduces the projections by 30%, as the last 3 year's forecasts have overestimated the run size by approximately that amount. However, a concern with this approach is that it assumes that fall chum stocks are still in decline. With the amount of age-3 fish observed in 2010, the age-4 component would be expected to increase in 2011, and the run size would then be closer to the forecast of 700,000 fall chum salmon. Based on the preseason forecast, it is anticipated that the 2011 fall chum salmon run size will be sufficient for escapement and subsistence uses, and may support a commercial harvest ranging from 50,000 to 300,000 fish.

## 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. The major contributor to the 2011 coho salmon run will be the age-4 fish returning from the 2007 parent year. Based on run reconstruction using Pilot Station sonar estimates, the 2007 passage estimate of 173,000 coho salmon was above the historical average of 148,000 fish.

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. The parent year escapement of 15,000 fish in 2007 was near the upper end of the Sustainable Escapement Goal (SEG) range of 5,200 to 17,000 coho salmon, and coho salmon escapements in the Nenana River complex were nearly average. Assuming average survival, the 2011 coho salmon run is anticipated to be average based on escapements observed in 2007. Depending on whether coho salmon are

harvested incidental to fall chum salmon or harvested as a directed fishery late in the season the commercial harvest is anticipated to be 10,000 to 70,000 fish.

### **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 portion of the Yukon River drainage. The Alaskan and Canadian fisheries will be managed consistent with stock rebuilding and conservation objectives that have been jointly developed.

For the 2011 season, the U.S./Canada Yukon River Panel agreed to a 1 year Canadian mainstem Interim Management Escapement Goal (IMEG) ranges of 42,500–55,000 Chinook salmon and 70,000–104,000 fall chum salmon based on the Eagle sonar program. In addition to escapement needs, Alaska is obligated 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. Based on the current projected run size, it is anticipated that approximately 5,000 Chinook and 10,000 fall chum salmon or more, depending on run strength, would fulfill harvest sharing commitments specified in the Agreement. The IMEG range for the Fishing Branch River is 22,000 to 49,000 fall chum salmon based on the Fishing Branch River weir count.

### **4.0 MANAGEMENT STRATEGY FOR 2011**

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 subsistence fishery regulations differ and managers may not agree on specific management actions, which could result in differing regulations for waters subject to applicable federal subsistence 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, 4, and 5 list Biological or Sustainable Escapement Goals (BEGs or SEGs), as well as any 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 Yukon River Panel annually as stipulated in the agreement and include both an escapement objective and harvest share identified as a portion of the TAC.

Several funding increments were passed by the Alaska State Legislature in 2009 and 2010 to assist in managing Yukon salmon fisheries. Since 2009, a test fishing project offshore of Hooper Bay/Dall Point has been funded to assess the feasibility of determining relative abundance and run timing of Chinook and summer chum salmon prior to river entry. This is 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 salmon directed openings when there is a good abundance of chum salmon available.

ADF&G will continue to make adjustments to the Pilot Station sonar project in 2011. In addition to the standard sonar and test fishing operations, new options will be tested to improve the inseason estimates and overcome problems experienced in previous years. During periods of high water, increased silt can limit the ability of sonar to detect fish further offshore. In 2010, new side-scan sonar was deployed from a boat anchored offshore that could extend the effective range of the sonar under poor visibility conditions. This project will again operate in 2011. Assessment work for a new acoustic tagging project began in 2010 and will be implemented in 2011. The use of these tags will test assumptions about the distribution of salmon in the river, and provide insight into additional options for improving the sonar program.

Table 1.—Escapement goals for Chinook salmon, Yukon Area.

<b>Stream</b>	<b>Goal</b>	<b>Type of Goal</b>
East Fork Andreafsky River Weir	2,100–4,900	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
Chena River Tower	2,800–5,700	BEG
Salcha River Tower	3,300–6,500	BEG
Canada Mainstem Eagle Sonar Goal	42,500–55,000	IMEG <sup>a</sup>

<sup>a</sup> The US-Canada Panel agreed to a 1 year interim management escapement goal (IMEG) of 42,500 to 55,000 based on sonar assessment near Eagle, Alaska for 2011 plus the Agreement stipulation of 20% to 26% of the TAC on the Canadian run component.

Table 2.—Escapement goals for summer chum salmon, Yukon Area.

<b>Stream</b>	<b>Goal</b>	<b>Type of Goal</b>
East Fork Andreafsky River Weir	>40,000	SEG
Anvik River Sonar	350,000–700,000	BEG
Drainage-wide Escapement	>600,000	OEG

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

Stream	Goal	Type of Goal
Drainage-wide Escapement	300,000–600,000	SEG
Tanana River drainage	61,000–136,000	BEG
Delta River	6,000–13,000	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 <sup>a</sup>
Canadian Mainstem	70,000–104,000	IMEG <sup>b</sup>

<sup>a</sup> Canadian Interim Management Escapement Goal agreed to by the Yukon River Panel for 2011.

<sup>b</sup> The Yukon River Panel agreed to a 1 year interim management escapement goal (IMEG) of 70,000 to 104,000 to be determined by the sonar assessment near Eagle, Alaska for 2011 plus the Agreement stipulation of 29% to 35% of the TAC on the Canadian run component.

Table 4.–Escapement goals for coho salmon, Yukon Area.

Stream	Goal	Type of Goal
Delta Clearwater River	5,200–17,000	SEG

#### 4.1 ALASKA BOARD OF FISHERIES ACTIONS

To keep Yukon Area salmon fishermen, processors, and other interested individuals informed of current fishing regulations, the department is providing this partial summary of regulatory changes enacted by the BOF at the January 2010 meeting. *The following summary is for informational purposes only and is not intended to detail, reflect, or fully interpret reasons for the BOF actions.*

1. Chinook salmon on the Yukon River were continued as a “Stock of Yield Concern” due to variable run sizes, reduced and eliminated commercial harvest since 2001, and subsistence harvests that were steady until 2007 but were restricted in 2008 and 2009.
2. During times of Chinook salmon conservation, the department now has emergency order authority to prohibit the sale of king salmon during summer chum salmon directed commercial fishing periods.
3. The Yukon River Summer Chum Salmon Management Plan was modified to allow, by emergency order, a commercial harvest up to 50,000 fish if the total run size is between 900,000 and 1,000,000 fish, distributed by district or subdistrict in proportion to the guideline harvest levels.
4. The Yukon River Fall Chum Salmon Management Plan was modified by lowering the threshold required to allow a directed fall chum salmon commercial fishery from a run size of 600,000 fall chum salmon to 500,000 fall chum salmon. This modification also changed the threshold in the Yukon River Coho Salmon Management Plan from a run size of 550,000 fall chum salmon to 500,000 fall chum salmon in order to conduct a coho directed commercial fishery.

5. The Yukon River Coho Salmon Management Plan was modified to allow for late season harvest of coho salmon if the department determines there is a harvestable surplus of coho salmon above escapement needs and those necessary for subsistence uses and that a directed coho salmon commercial fishery will not have a significant impact on escapement or allocation of fall chum salmon.
6. The subsistence fishing schedule in Subdistrict 4-A was changed to two 48-hour periods per week, regardless of commercial fishing periods.
7. The Innoko River subsistence fishing schedule was changed to open 7 days per week.
8. The King Salmon Management Plan was amended by adding a new subsection that ADF&G may use emergency order authority to close all salmon fishing in a district or portion of a district if run assessment information indicates an insufficient abundance of Chinook salmon in order to meet escapement objectives.
9. The subsistence fishing schedule in Subdistricts 4-B and 4-C was modified to open from 6:00 p.m. Sundays until 6:00 p.m. Fridays when commercial fishing closures last longer than 5 days.
10. **Effective in 2011**, the maximum mesh size for subsistence, commercial gillnets, and personal use in the Yukon Area will be 7.5 inches.

## 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 occurs, it is necessary to place some restrictions on the subsistence fishery in order to enforce commercial fishing regulations. In Districts 1, 2, and 3, from June 1 to July 15 a person may not possess Chinook salmon taken for subsistence uses unless both tips (lobes) of the tail fin have been removed. Additionally, 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, and consistent with migratory timing as the runs progress 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.

The Yukon River Drainage Fisheries Association (YRDFA) facilitated an in person meeting in Anchorage on April 13 to provide managers, fishermen, tribal council representatives, and other stakeholders the opportunity to share information, provide input, and discuss management options. The purpose of the in person meeting was to work cooperatively to identify options and

practical management strategies for 2011 that will assist in getting adequate numbers of fish to the spawning grounds in Alaska and Canada, should the 2011 Chinook salmon run be similar to the unexpected low runs of 2007 through 2010. Based on input from this preseason meeting, several management actions will be taken in the subsistence fishery.

The subsistence salmon fishing schedule will begin June 6 in District 1 and implemented chronologically with the upriver migration until the salmon run size is projected to be of sufficient strength to warrant relaxing or additional conservation measures appear necessary. Until the regulatory subsistence salmon fishing schedule is implemented, Districts 1-4 and Subdistricts 5-ABC are open to subsistence salmon fishing 7 days per week. The Coastal District, Koyukuk and Innoko Rivers, and Subdistrict 5-D is open 7 days per week all season. District 6 is on two 42-hour subsistence salmon fishing periods per week all season. Table 5 shows the 2011 subsistence fishing schedule based in regulations 5 AAC 01.210 and 5 AAC 05.360.

Table 5.–Yukon Area subsistence salmon fishing schedule, 2011.

**Note: this schedule is subject to change depending on run strength.**

Area	Reduced Regulatory Subsistence Fishing Periods	Approximate Schedule to Begin	Days of the Week
Coastal District	7 days/week	All Season	M/T/W/TH/F/SA/SU – 24 hours
District Y-1	Two 36-hour periods/week	June 6	Mon. 8 pm to Wed. 8 am /Thu. 8 pm to Sat. 8 am
District Y-2	Two 36-hour periods/week	June 8	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
District Y-3	Two 36-hour periods/week	June 12	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
Subdistrict Y-4-A	Two 48-hour periods/week	June 15	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Subdistricts Y-4-B, C	Two 48-hour periods/week	June 22	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Koyukuk and Innoko Rivers	7 days/week	All Season	M/T/W/TH/F/SA/SU – 24 hours
Subdistricts Y-5-A, B, C	Two 48-hour periods/week	June 28	Tue. 6 pm to Thu. 6 pm /Fri. 6 pm to Sun. 6 pm
Subdistrict Y-5-D	7 days/week	All Season	M/T/W/TH/F/SA/SU – 24 hours
District Y-6	Two 42-hour periods/week	All Season	Mon. 6 pm to Wed. Noon /Fri. 6 pm to Sun. Noon
Old Minto Area	5 days/week	All Season	Friday 6 pm to Wednesday 6 pm

The Coastal District typically has a subsistence fishing schedule of 7 days a week. However, to conserve the greatest number of Chinook salmon and to share the available surplus, there will be reduced fishing on the first pulse of Chinook salmon in portions of the Coastal District. In the southern portion of the Coastal District, from the Naskonak Peninsula north to 62 degrees latitude, mesh size will be restricted to 6 inch or smaller from June 6 through June 12. This action is intended to conserve Chinook salmon while allowing subsistence fishermen the opportunity to target summer chum salmon. The timeframe corresponds with expectations of when the first pulse of Chinook salmon would likely be migrating through the area which includes the communities of Chevak, Hooper Bay, and Scammon Bay. The remaining northern

portion of the Coastal District, from 62 degrees North latitude to Point Romanoff, will have a one period closure with dates and times that will coincide with the first period closure in District 1. Similar period closures will be followed in the mainstem Yukon River districts based on migratory timing to provide pulse protection.

Subsistence fishing in the Koyukuk and Innoko Rivers will not initially be reduced from their standard 7 days a week subsistence fishing schedule because they do not harvest substantial amounts of Chinook salmon. The Tanana River District 6 will be managed inseason based on tributary assessment data.

If inseason assessment anywhere in the drainage indicates Chinook salmon run strength continues to be poor after closing the first period, additional conservation measures may be necessary. This will likely be announced by short notice news releases on VHF, radio stations, 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, that subdistrict will be divided into three separate management portions. Further subdividing Subdistrict 5-D into three smaller portions will allow for more management precision and flexibility when the reduced subsistence fishing schedule is implemented. These management areas will be defined at a meeting in late May in Fort Yukon and maps will be sent to villages in Subdistrict 5-D prior to the fishing season.

All subsistence salmon fishing with gillnets and fish wheels must be stopped during subsistence salmon fishing closures. During closed subsistence salmon fishing periods, subsistence fishing for whitefish, suckers, and other non-salmon species will be allowed throughout the drainage 7 days per week. However, gillnets with mesh size 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 Dall River including the community of Rampart and the Haul Road bridge area, for portions of the Yukon River from 22 Mile Slough to the U.S./Canada border including the communities of Circle and Eagle. Subsistence fishing permits are also required in the entire Tanana River drainage (District 6), except for Subdistrict 6-C surrounding the community of Fairbanks, 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 and by mail. Subsistence

fishermen 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 order to get the salmon harvest numbers before the new year and after the permit return reminder letters have been exhausted enforcement will be notified which fishermen are not complying with the reporting requirements.

In non-permit areas, ADF&G conducts a postseason harvest survey and encourages fishermen to use catch calendars to keep track of their daily 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 allow concurrent subsistence and commercial fishing periods. 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 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, subsistence fishing in the Koyukuk River drainage is allowed in the Middle Fork of the Koyukuk River upstream of its confluence with the North Fork, and 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. These stipulations are in place to protect salmon species in known spawning areas that have 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 on a message recording at (907) 459-7388. Only one personal use salmon permit per household is allowed annually. The annual possession limit per permit holder is 10 Chinook salmon, 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 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 the ADF&G office in Emmonak. Processors, buyers, and catcher/sellers in Districts 4, 5, and 6 must register with the ADF&G 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 (Districts 4, 5, and 6) 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 (Districts 1, 2, and 3). 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 (maps of statistical areas are available upon request and are noted in regulation).

Furthermore, regulations also require commercial fishermen to report, on each fish ticket, the number of salmon harvested but not sold during commercial fishing periods. 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. Buyers are required to ensure this information is reported on fish tickets even though a portion of the commercial harvest may have been used for subsistence.

#### **4.5 CHINOOK AND SUMMER CHUM SALMON COMMERCIAL SEASON**

Chinook and summer chum salmon management plans guide ADF&G management actions. The 2011 Yukon River Chinook salmon run will likely be poor to below average 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 2011 on the mainstem Yukon River.

Inseason Chinook salmon run assessment will be based on lower river test fisheries, subsistence catch reports, age and sex composition, sonar passage estimates, 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 salmon stocks. As in years past, ADF&G will participate in YRDFA teleconferences inseason to gather information from the public, disseminate project information, and to discuss run status and management actions. The YRDFA teleconferences provide a venue for not only distributing information, but also to provide feedback from the public on potential management actions. In recent years, management decisions have been made with recommendations from these teleconferences.

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 inseason management. If the abundance of summer chum salmon in 2011 is projected to be greater than 900,000 based on Pilot Station sonar, a directed summer chum salmon fishery may be allowed.

Table 6.–Summary of the summer chum salmon management plan.

<i>Summer Chum Salmon Management Plan Overview</i>					
Projected Run Size <sup>a</sup>	RECOMMENDED MANAGEMENT ACTION				Targeted Drainage-wide Escapement
	Commercial	Personal Use	Sport	Subsistence	
600,000 or less	Closure	Closure	Closure	Closure <sup>b</sup>	>600,000
600,001 to 700,000	Closure	Closure	Closure	Possible Restrictions <sup>b</sup>	
700,001 to 900,000	Restrictions <sup>b</sup>	Restrictions <sup>b</sup>	Restrictions <sup>b</sup>	Normal Fishing Schedules	
900,000-1,000,000	0-50,000 <sup>c</sup>	Open	Open	Normal Fishing Schedules	
>1,000,000	Open <sup>c</sup>	Open	Open	Normal Fishing Schedules	≥1,000,000 <sup>d</sup>

<sup>a</sup> Projected Run Size: Mainstem river sonar passage estimate plus the estimated harvests below the sonar site and the Andrafsky River escapement.

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

<sup>c</sup> Drainagewide 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.

<sup>d</sup> 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

In managing the 2011 summer chum salmon run, ADF&G will follow the guidelines provided by the BOF in 5 AAC 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 900,000 summer chum salmon for the entire Yukon River drainage. The 2011 summer chum salmon run is expected to be 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 6-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 the 2011 Chinook run may be poor to below average, limitations on the summer chum commercial fishery may be necessary. ADF&G has emergency order authority to prohibit the sale of Chinook salmon during chum directed commercial fishing periods during times of Chinook salmon conservation. No sale of incidental Chinook salmon harvested during summer chum commercial fishing periods is anticipated this summer season.

It is expected that if fishermen use their incidental Chinook salmon harvest for subsistence rather than commercial use, then there would be a reduction in the overall harvest of Chinook salmon. As a result, summer chum directed fishing could be less restrictive. 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.

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. Commercial and subsistence fishing time may be concurrent to allow for commercial fishing directed at summer chum salmon while allowing Chinook salmon to be taken home for subsistence use.

If the requirements to allow directed summer chum salmon commercial fishing are met, fishing periods would likely be 4 to 12 hours in duration. Shorter directed fishing periods might be scheduled based on run assessment and market considerations.

It is unlikely that the Chinook salmon 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. 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 of the boat.

Gillnet depth regulations for commercial fishing in Districts 1, 2, and 3 require that gillnets 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 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 and abundance of Chinook salmon. During concurrent subsistence and commercial openings, Chinook salmon may be kept for subsistence use. ADF&G staff will be present on the grounds to observe the fishery.

#### **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. At this time it is unlikely there will be a buyer in the Anvik River management area.

#### 4.5.4 District 5

It is unlikely that there will be a directed Chinook salmon commercial fishery in 2011 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.

#### 4.5.5 District 6

District 6 is managed inseason using salmon run strength and timing indicators in the Tanana River drainage. Assessment includes a test fish wheel providing catch per unit effort (CPUE) data 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 commercial 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

Yukon River fall chum salmon runs are managed following the guidelines in 5 AAC 01.249 *Yukon River Drainage Fall Chum Salmon Management Plan*; Table 8. The plan stipulates that directed fall chum salmon commercial fisheries may only be allowed on the projected surplus of the run above 500,000 fall chum salmon for the entire Yukon River drainage. Tanana River drainage stocks will be managed following the guidelines in 5 AAC 05. 367 *Tanana River Salmon Management Plan* to meet Tanana and Delta river escapement goals, and for subsistence needs.

Table 7.–The Yukon River drainage fall chum salmon management plan, 5AAC 01.249.

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

<sup>a</sup> Considerations for the Canadian mainstem rebuilding plan may require more restrictive management actions.

<sup>b</sup> ADF&G will 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.

<sup>c</sup> The fisheries may be opened or less restrictive in areas where indicator(s) suggest the escapement goal(s) in that area will be achieved.

<sup>d</sup> Subsistence fishing will be managed to achieve a minimum drainagewide escapement goal of 300,000 fall chum salmon.

<sup>e</sup> Fall chum salmon will be commercially harvested following the guidelines harvest levels established in 5 AAC 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 2011 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 there is a harvestable surplus of coho salmon above escapement needs and those necessary for subsistence uses and the fall chum salmon run is above the 500,000 fish threshold necessary to allow a directed fall chum salmon fishery. In addition, the plan allows for late season harvest of coho salmon if the department determines there is a harvestable surplus of coho salmon and that a directed coho salmon commercial fishery will not have a significant impact on escapement or allocation of fall chum salmon.

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 2011 it is possible that commercial fishing for both fall chum and coho salmon may occur simultaneously if abundance and run timing permit, or late in the season for coho salmon.

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 pulses occur each season. These pulses are often associated with onshore wind events and/or high tides. This entry pattern makes it difficult to project run strength inseason at the mouth of the river. ADF&G will monitor the fall salmon runs using information from passage at Pilot Station sonar, 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. Also, information from genetic stock proportion estimates from Pilot Station sonar test fishing samples will be considered. This information, in concert with the preseason forecasts and the performance of the summer chum salmon run, will be the basis for initial management decisions.

#### **4.6.1 Districts 1, 2, and 3**

Initial commercial fishing period length and frequency will primarily be based on the fall chum salmon run size projection established by the relationship between summer chum salmon run size and fall chum run size. Maintaining good salmon flesh quality will be the principal 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 District 1 village post offices and at the ADF&G 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**

In years with average run timing and a commercially harvestable surplus, the first District 4 fall chum salmon directed commercial fishing period typically occurs in early to mid-August.

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

In years with average fall chum 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. Few coho salmon are typically harvested in these areas as they primarily migrate into the Tanana River drainage. 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 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, and differences in stock timing through the Subdistrict 5-A test fish wheel it is believed that the majority of fall chum and coho salmon harvested in Subdistrict 5-A are bound for the Tanana River (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. Genetic apportionment will provide information of when Tanana River stocks begin entering the Yukon River. As the run progresses into the Tanana River, test fishery projects will be used to assess the run timing and relative run size of 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 BOF 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 chum, and fall chum salmon. Figures 2-6, include historical harvests of commercial and subsistence fisheries by species for the Alaska portion of the Yukon River drainage.

Table 8.—Guideline harvest ranges and midpoints for commercial harvest of Yukon River Chinook, summer, and fall chum salmon.

<b>Chinook Salmon</b>						
District or Subdistrict	Guideline Harvest Range <sup>a</sup>					
	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

<b>Summer Chum Salmon</b>						
District or Subdistrict	Guideline Harvest Range <sup>b</sup>					
	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 <sup>c</sup>	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. <sup>d</sup>

<b>Fall Chum Salmon</b>						
District or Subdistrict	Guideline Harvest Range <sup>e</sup>					
	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. <sup>f</sup>

<sup>a</sup> The Chinook salmon guideline harvest ranges have been in effect since 1981.

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

<sup>c</sup> Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.

<sup>d</sup> The current Anvik River Management Area roe cap was established in March 1996.

<sup>e</sup> The current fall chum salmon guideline harvest ranges were established in 1990.

<sup>f</sup> 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.



## **FIGURES**

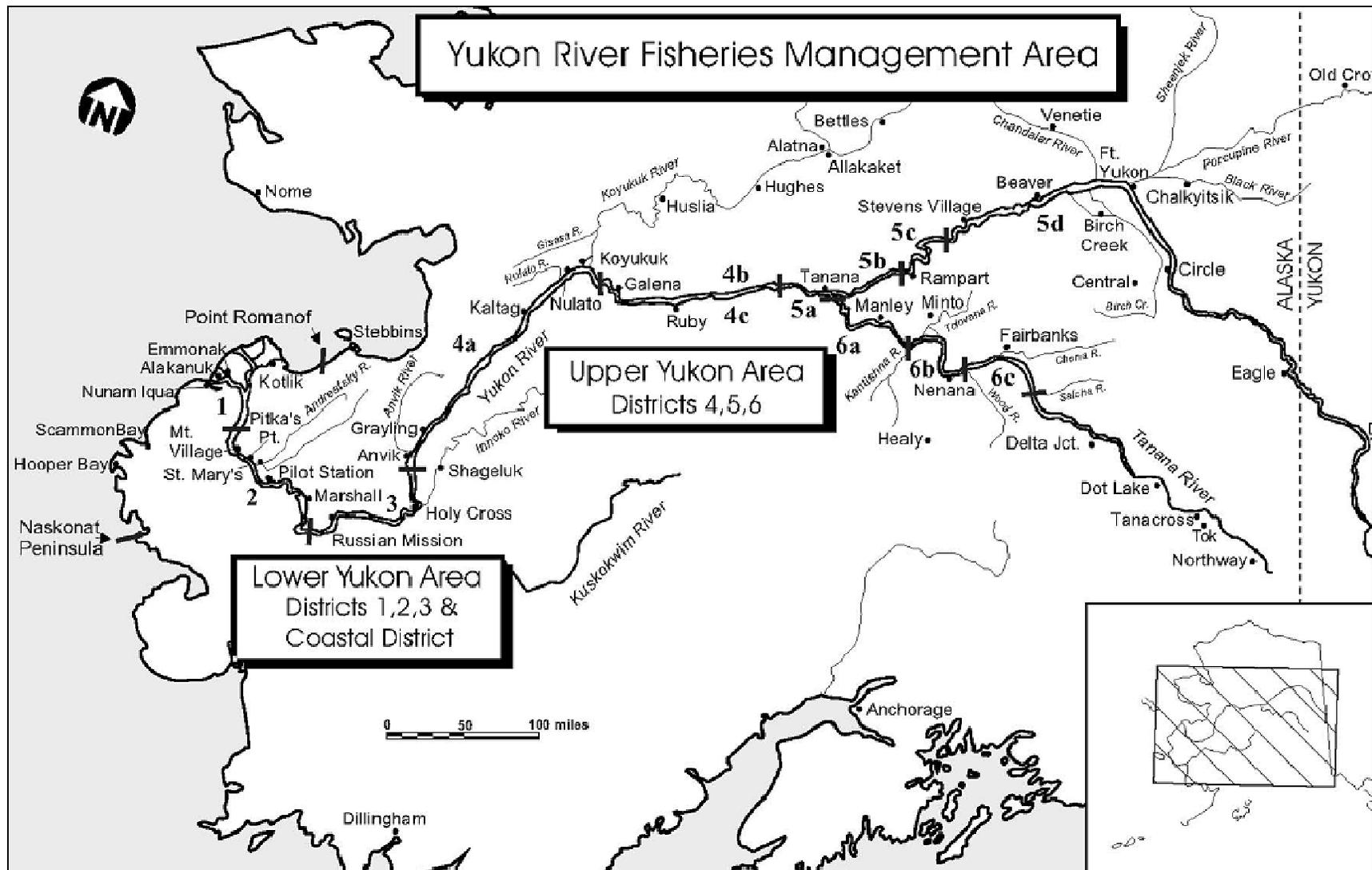
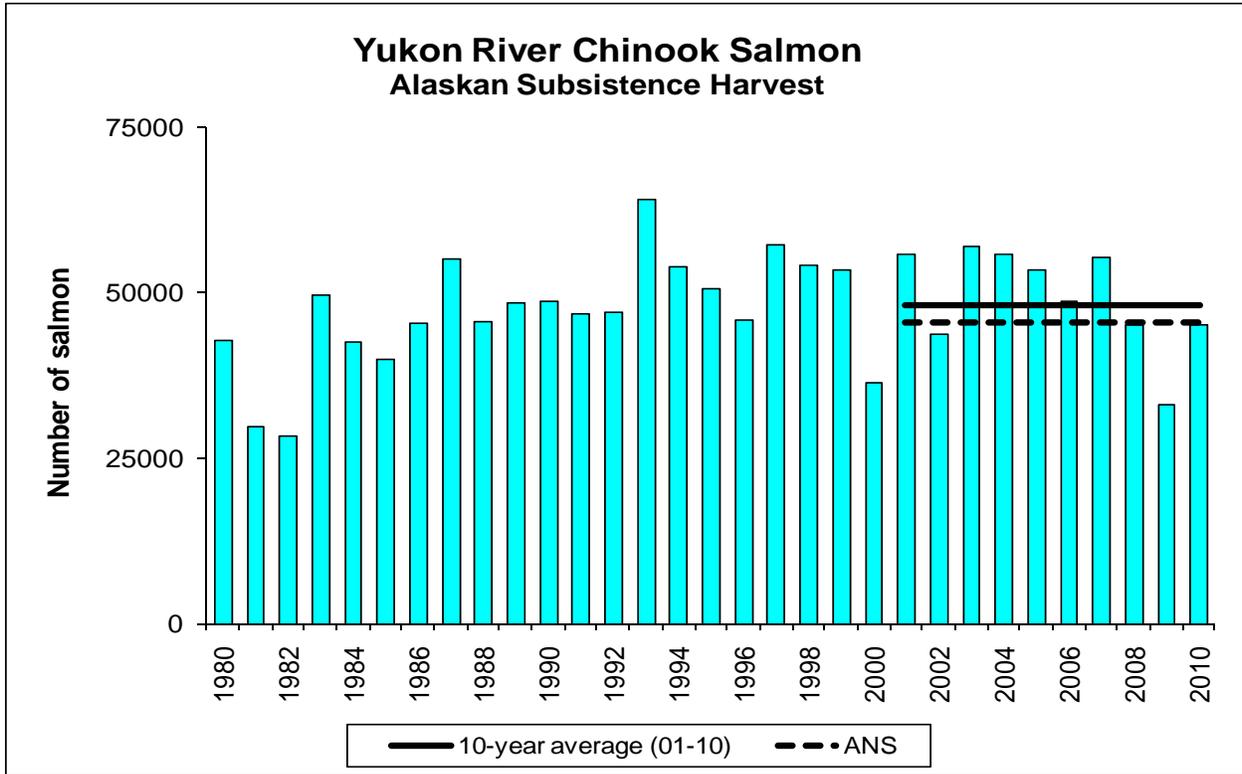


Figure 1.—Yukon Area communities and fishing districts.



Note: ANS = Amount necessary for subsistence. 2010 subsistence harvest is preliminary.

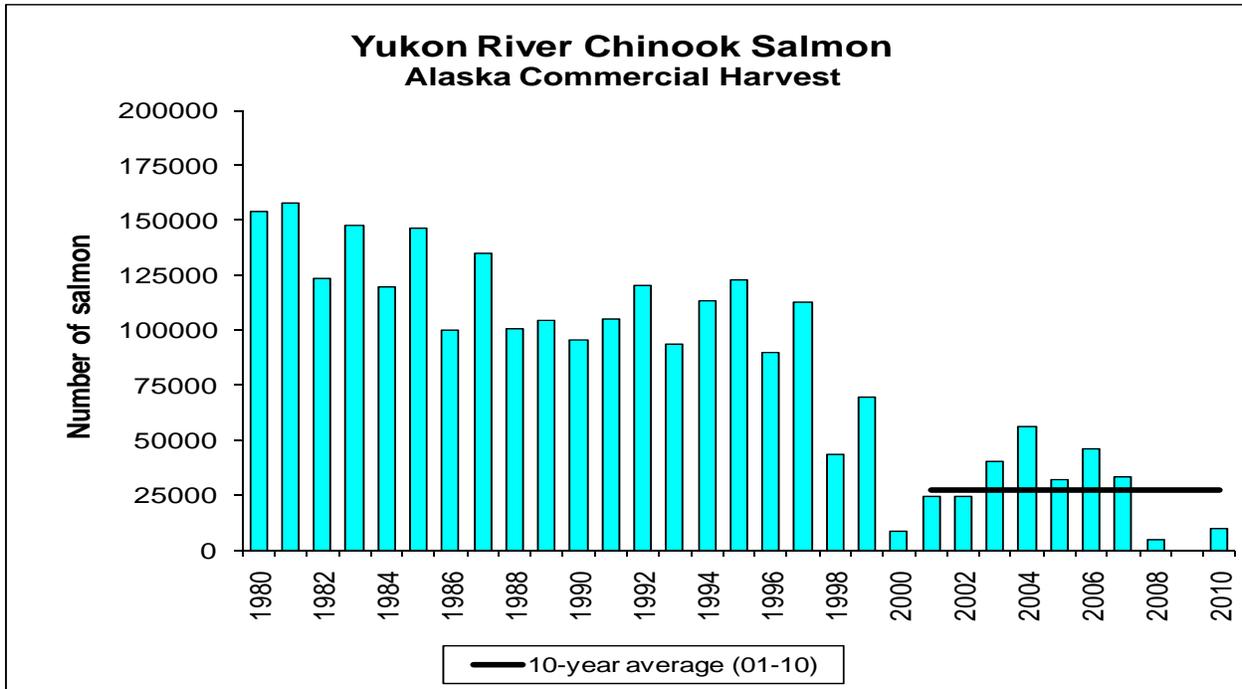
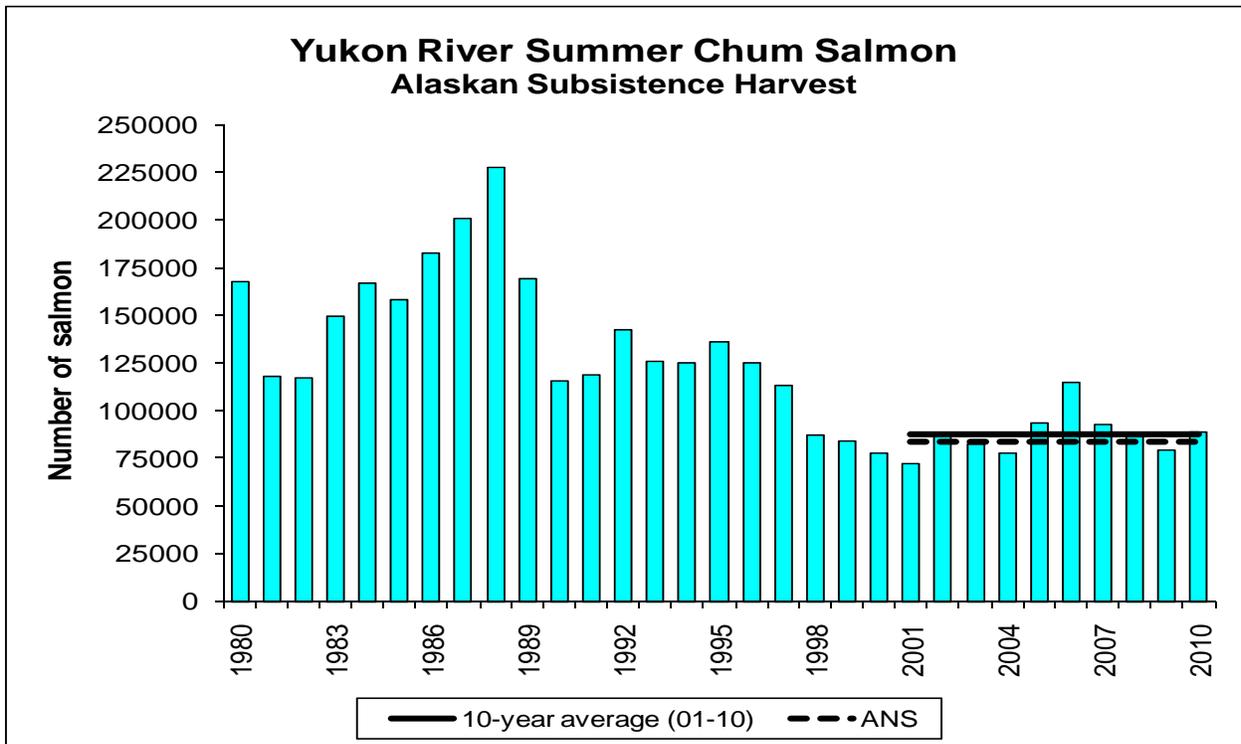


Figure 2.—Yukon River Chinook salmon subsistence and commercial harvests compared to the recent 10-year average, and the lower ANS range.



Note: ANS = Amount necessary for subsistence. 2010 subsistence harvest is preliminary.

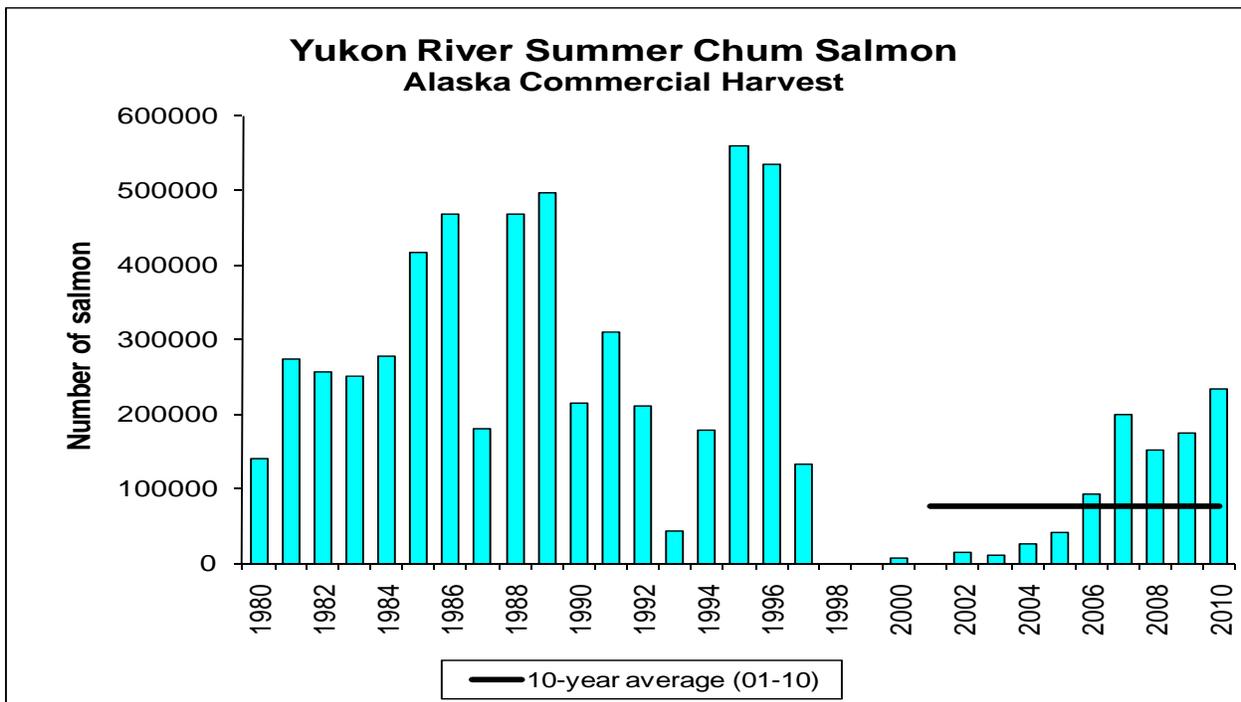


Figure 3.—Yukon River summer chum salmon subsistence and commercial harvests compared to the recent 10-year average, and the lower ANS range.

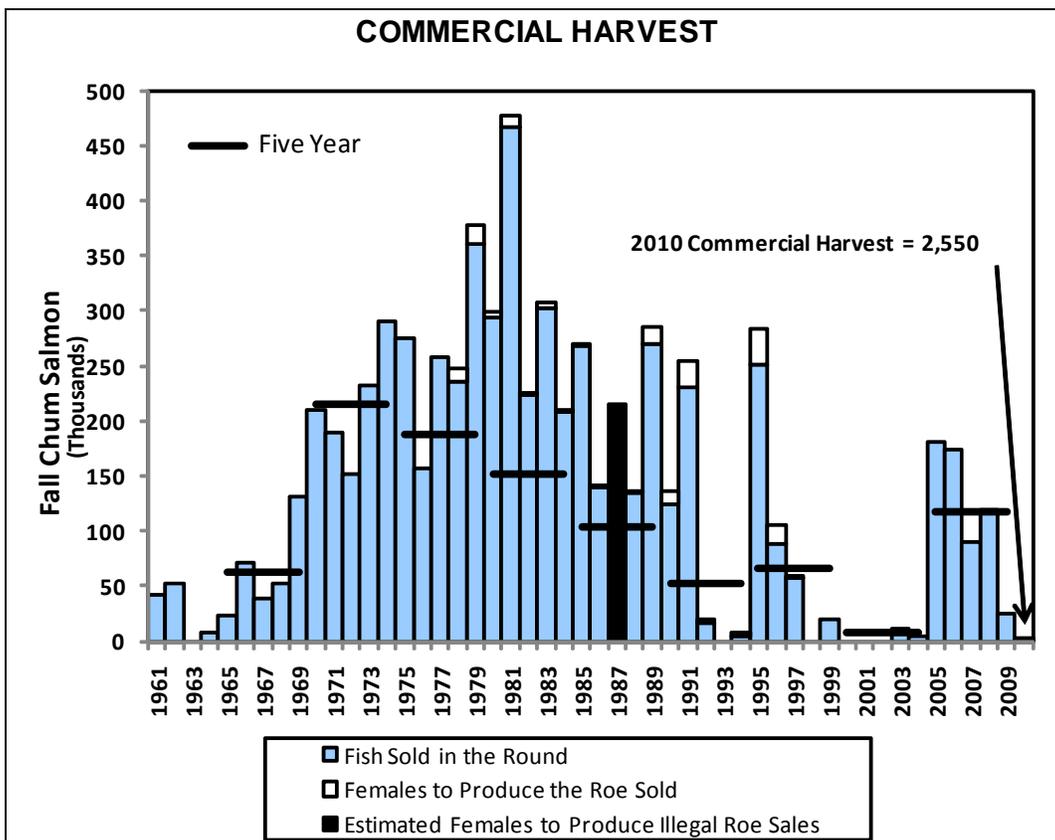
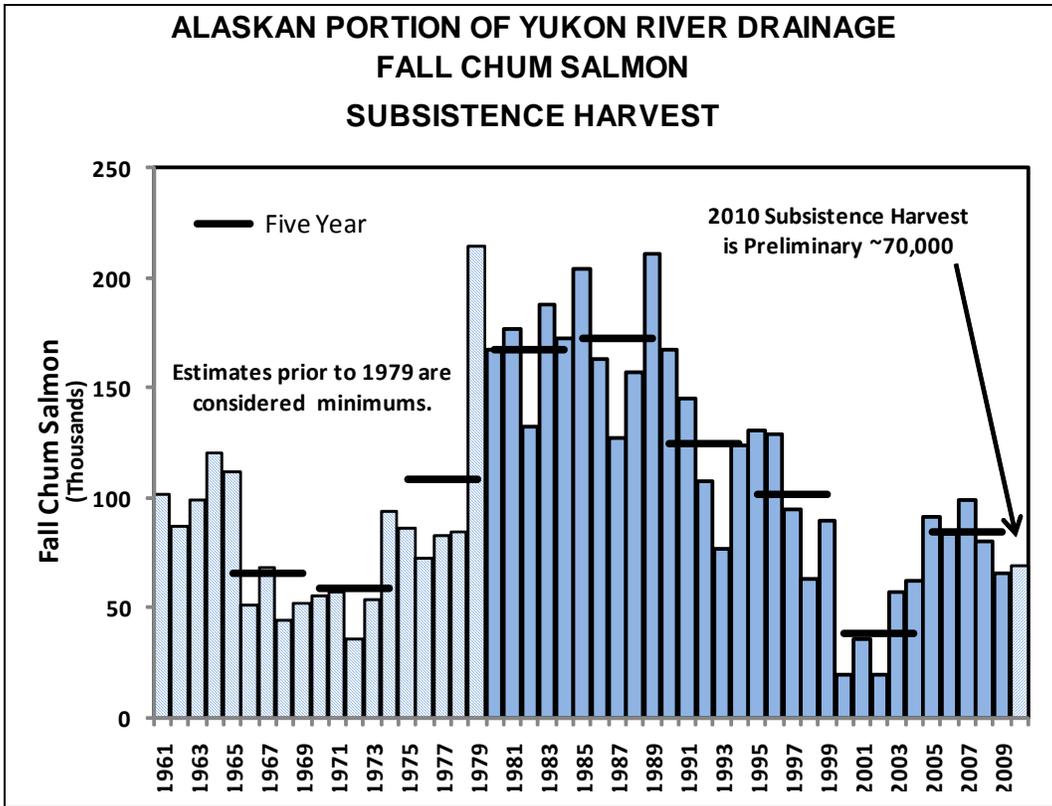


Figure 4.—Subsistence and commercial harvest of fall chum salmon, 1961 to 2010.

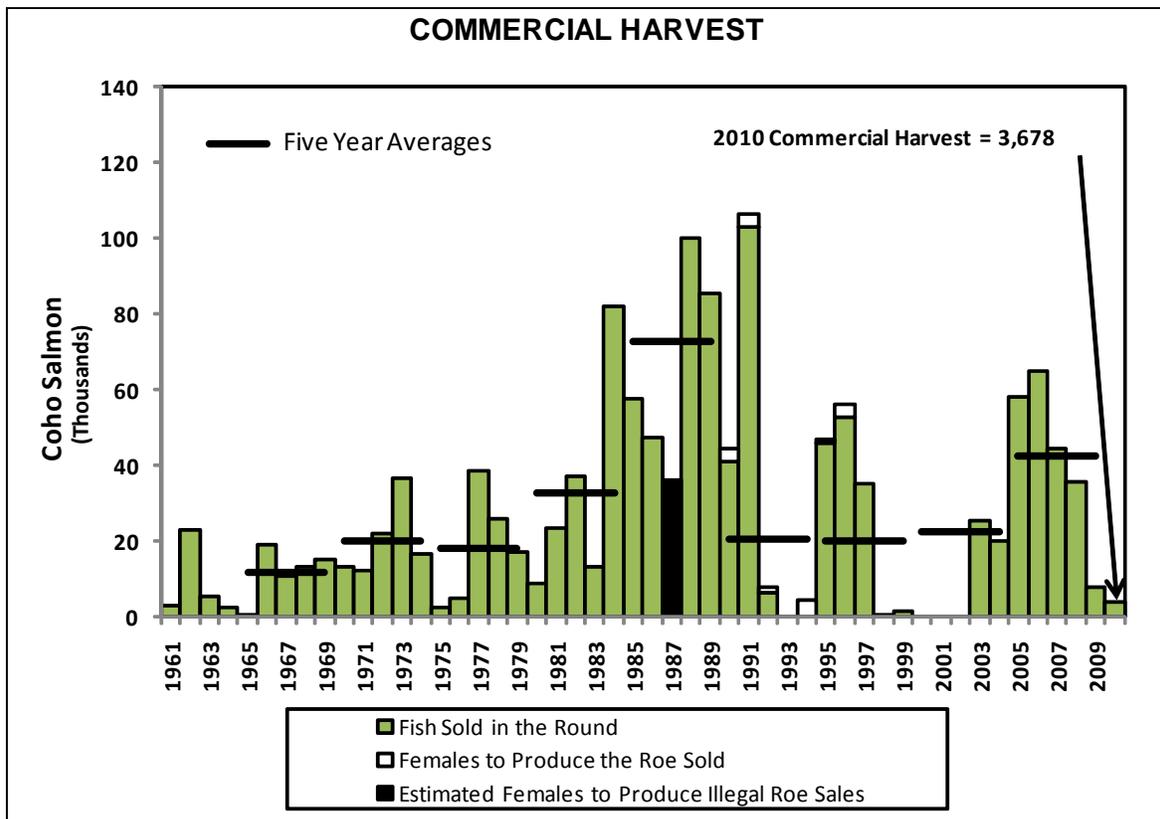
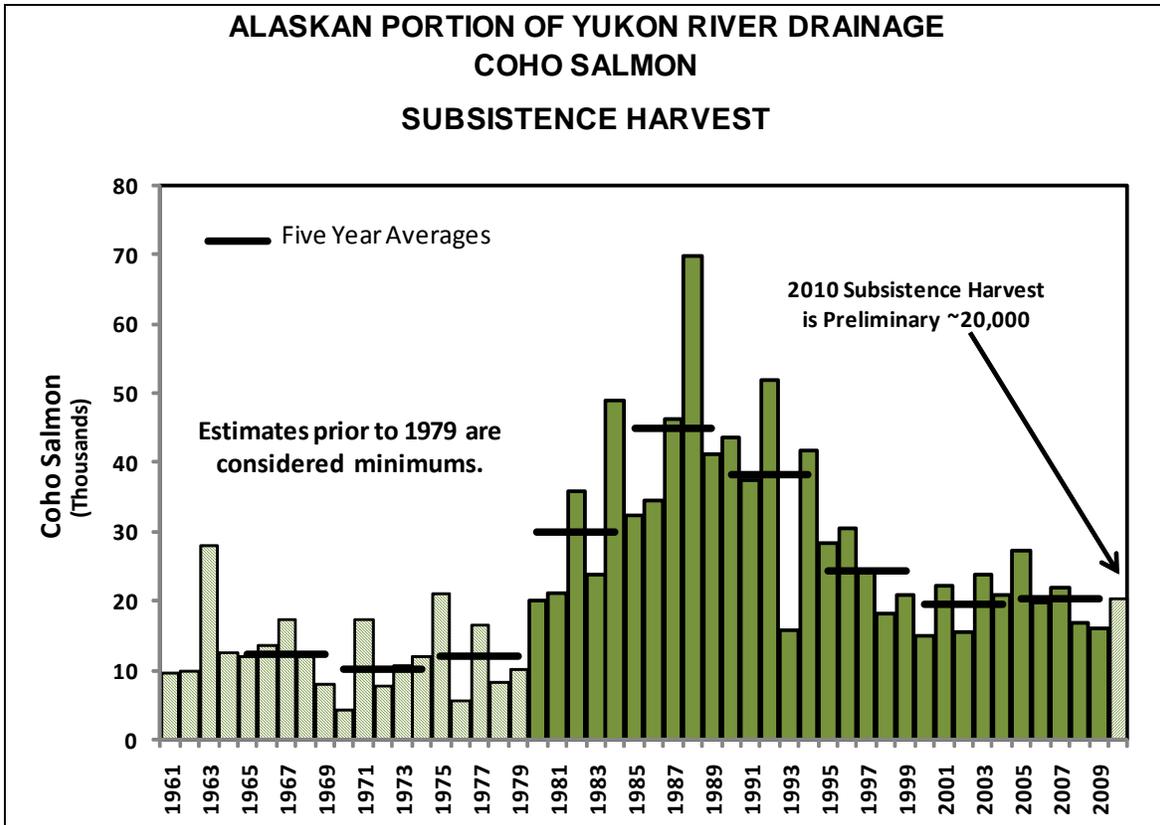


Figure 5.—Subsistence and commercial harvest of coho salmon, 1961 to 2010.

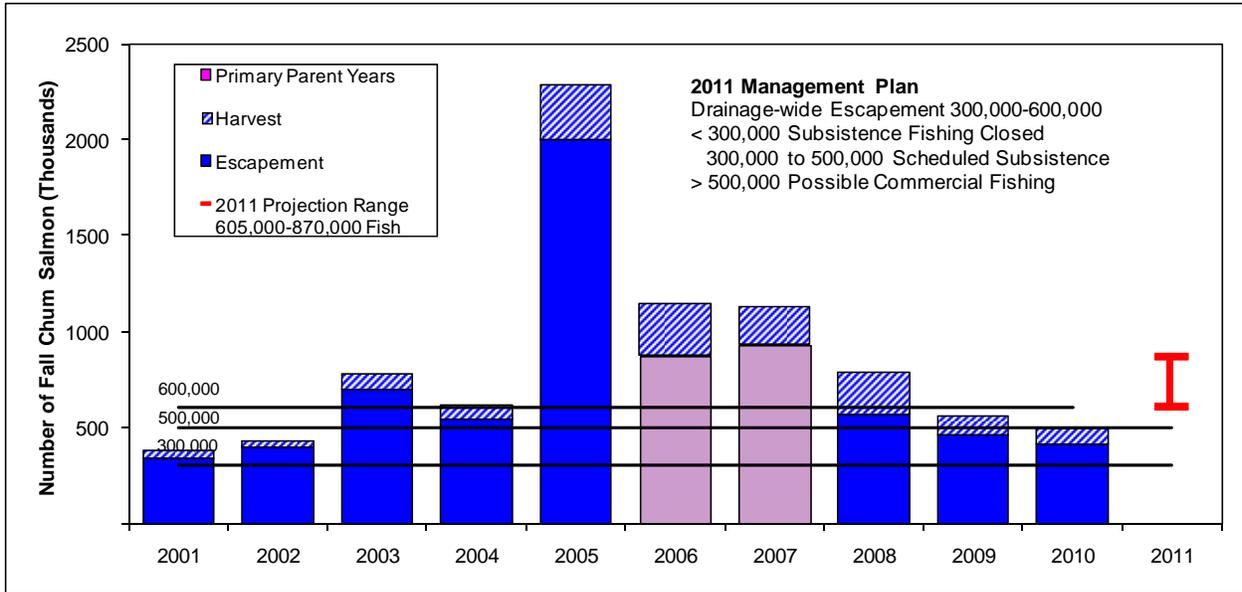


Figure 6.—Yukon River fall chum salmon management plan overview and comparison with historical run sizes.