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2013 Yukon Area Subsistence, Personal Use, and Commercial Salmon Fisheries Outlook and Management Strategies

by

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and

Jeff L. Estensen

May 2013

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.

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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by

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The Regional Information Report Series was established in 1987 and was redefined in 2007 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as 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.adfg.alaska.gov/sf/publications/

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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 2013 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 season salmon fisheries in 2013. 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 *Oncorhynchus tshawytscha*, summer chum, fall chum *Oncorhynchus keta*, coho, salmon *Oncorhynchus kisutch*, outlook, strategy, management strategies, commercial fishing, subsistence fishing.

INTRODUCTION

This document provides the 2013 outlook for Yukon Area salmon runs, as well as management strategies for subsistence, personal use, and commercial salmon fisheries managed by Division of Commercial Fisheries. Subsistence fishing in portions of the Yukon Area is under dual management authority of the Alaska Department of Fish and Game (department) and the U.S. Fish and Wildlife Service (USFWS). Fishermen are reminded that they should consult both State of Alaska fishing regulations and 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 mainstem 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 Alaska portion of the Yukon River drainage upstream of Old Paradise Village to the U.S./Canada border.

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 recreational salmon fisheries in Canada are managed by the Canadian Department of Fisheries and Oceans (DFO).

OUTLOOK FOR 2013

CHINOOK SALMON

Canadian-origin Upper Yukon Chinook Salmon

The Canadian-origin upper Yukon River Chinook salmon spawning escapements in 2007 and 2008, the brood years producing the age-6 and age-5 fish returning in 2012, were 34,904 and 33,883 fish, respectively, which were below-average escapements. The 2013 run of Canadian-origin upper Yukon River Chinook salmon is expected to be poor to below average; the average run size for Canadian-origin Chinook for 2003–2012 was 92,969 fish.

Stock-recruitment (S/R) and sibling models predict the 2013 run size of Canadian-origin Chinook salmon to be as high as 109,983 and 79,390, respectively (Table 1). However, these models do not include uncertainty associated with lower productivity observed in recent years. Over the past 6 years, observed returns were approximately 35% lower than preseason outlooks developed with the stock-recruitment (S/R) model, 38% lower than preseason outlooks developed with the sibling model, and 35% lower than preseason outlooks developed by averaging the 2 models. It is important to note that neither model incorporates environmental variables such as oceanic or freshwater conditions.

To account for some of the uncertainty in the preseason outlook due to lower productivity in recent years, the projection from each of the 2 models (109,983 and 79,390 for S/R and sibling models, respectively) was adjusted by the recent 6 year model performance. Based on this adjustment, the resulting preseason outlook range, rounded to the nearest thousand, is 49,000 to 71,000. In the past 6 years odd-year returns (2007, 2009, and 2011) have been better than even-year returns, due to a stronger age-6 component. However, the 2012 Chinook salmon run had a weaker age-5 component than anticipated and the sibling model is predicting a weak return of age-6 fish for 2013. These outlooks suggest that the 2013 Canadian-origin upper Yukon River Chinook salmon run may be a poor to below average run.

Performance of Stock-Recruitment Models for the Years 2001–2012

A review of preseason outlook performance provides an opportunity to document the recent decline in the upper Yukon River Chinook salmon return per spawner values (Table 1). Revised historical Canadian run size estimates were used to reconstruct the 2000 and 2001 runs; border passage estimates for 2002–2004 were based on radiotelemetry estimates while border escapement estimates for 2005–2012 were based on Eagle sonar. The average of the preseason outlook is derived using stock-recruitment (S/R) and sibling model projections compared to postseason estimates of run size (Table 1). The averaged model projection for 2013 is 95,000 Chinook salmon. As stated previously, the preseason estimates derived from each model are multiplied by the 6 year average performance to create a range. Despite good brood year escapements, the observed run sizes were relatively low from 2000 to 2002 and from 2007 to 2012. The causes of low returns are unknown but likely involve a number of factors in the marine and freshwater environments. For example, the 2008 outlook of 117,000 Chinook salmon overestimated the run size by a factor of 1.77, or77% above the actual run. It will be important to determine if the low run sizes observed in the 2007 to 2012 period develop into a long-term trend.

Table 1.–Preseason upper Yukon River Chinook salmon outlooks for 2000 to 2013 and the observed run sizes for the 2000 to 2012 period.

	Expected Run Size (Preseason)					Estimated	Performance
Year	S/R	Sibling	Avg. (S/R & Sib.)	Avg. S/R Performance	Avg. Sib. Performance	Run Size (Postseason)	of Preseason Outlooks
2000	127,784	85,889	107,000			53,000	2.02
2001	126,641	51,082	89,000			86,000	1.04
2002	113,759	107,496	111,000			82,000	1.36
2003	116,948	109,577	113,000			150,000	0.76
2004	123,469	124,326	124,000			117,000	1.06
2005	121,764	117,860	120,000			124,000	0.97
2006	115,995	123,132	120,000			119,000	1.00
2007	118,557	139,934	129,000			88,000	1.47
2008	111,551	122,435	117,000			63,000	1.87
2009	98,172	103,541	101,000			87,000	1.16
2010	109,797	116,346	113,000			60,000	1.89
2011	102,831	113,323	108,000			72,000	1.51
2012	106,090	87,167	97,000	54,000	73,000	49,000	1.93
2013	109,983	79,390	95,000	49,000	72,000		
Average 2000-2012	111,364	88,368	111,538			88,000	1.38

Note: Run size estimates incorporate: radiotelemetry data (2002–2004); Eagle sonar estimates (2005–2012); and the relationship between telemetry/sonar to aerial surveys for 2000 and 2001. The average of the preseason spawner/recruit (S/R) and sibling run sizes, and the postseason run sizes are rounded to nearest thousand.

Drainagewide Chinook Salmon

The outlook for 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%. The drainagewide run outlook based on the adjusted Canadian-origin model estimate, which attempts to account for low productivity since 2007, is 98,000–144,000 Chinook salmon. Thus, the 2013 Yukon River Chinook salmon run will likely be poor to below average.

SUMMER CHUM SALMON

The strength of the summer chum salmon run in 2013 will be dependent on production from the 2009 (age-4 fish) and 2008 (age-5 fish) escapements, as these age classes generally dominate the run. The total runs during 2008 and 2009 were approximately 1.8 and 1.4 million summer chum salmon, respectively, though tributary escapements were highly variable. However, it is worth noting that poor runs have resulted from large escapements. Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years, although it is expected that the 2013 total run in the Yukon River will be below the 2012 run. The 2013 summer chum preseason outlook is estimated to be 1.5 to 1.8 million fish.

The 2013 run is anticipated to provide for escapements, a normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs have provided for a harvestable surplus in each of the last 10 years (2003–2012). If inseason indicators of run strength suggest sufficient abundance exists to allow for a commercial fishery, the commercially harvestable surplus in Alaska could range from 500,000 to 800,000 summer chum salmon. Similar to the last couple years, the actual commercial harvest of summer chum salmon in 2013 will likely be affected by a potentially poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon-directed fisheries.

FALL CHUM SALMON

The 2013 forecasted fall chum salmon run size is a point estimate of 1,029,000 fish with a range of 906,000 to 1,152,000 fish (Table 2). This forecasted run size is above average for odd-numbered year run.

Table 2.–Forecasted 2013 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, 2007–2010.

Brood Year	Escapement	Estimated Production (R/S)	Estimated Production	Age	Contribution based on age	Current Return
2007	910,883	1.23	1,120,386	6	0.9%	9,127
2008	687,153	1.64	1,126,932	5	33.7%	346,172
2009	482,411	1.85	894,756	4	62.8%	646,221
2010	526,355	1.62	853,198	3	2.6%	27,116
Total expected run (unadjusted)						1,029,000
Total 2013 run size expressed as a range based on the forecasted versus observed returns from 1987 to 2012 (80% CI):						906,000 to 1,152,000

The contributing parent year escapements from 2007 and 2008 both exceeded the upper end of the drainagewide escapement goal range while 2009 and 2010 were within the drainagewide escapement goal range of 300,000 to 600,000 fall chum salmon. All parent years are estimated to be exceeding 1.0 return per spawner. The major contributor to the 2013 fall chum salmon run is anticipated to be age-4 fish returning from 2009 parent year. The combination of good sized escapements and improved production has held up the run during the even year of 2012 and appears to be maintaining average levels in 2013.

Based on the forecast, it is anticipated that escapement goals will be met while providing normal subsistence fishing activities. Commercial harvest, depending on run size, could range from approximately 355,000 to 600,000 fall chum salmon. Commercial harvestable surpluses will be determined inseason and opportunity provided where commercial ventures exist.

Management decisions made early in the fall season are based primarily on the preseason projection. The preseason projection, made in early July, refines the preseason forecast. The projection will be based on the 2013 summer chum salmon run size and a historical relationship between summer and fall chum salmon runs. As the fall chum salmon run approaches the first quarter point (late July to early August), management decisions will start incorporating abundance and run timing information from the Pilot Station sonar project and the drift gillnet test fisheries located at Emmonak, as well as fishing reports from local fishermen.

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 2013 coho salmon run will be 4-year-old fish returning from the 2009 parent year. Pilot Station sonar passage estimates cannot be used for evaluating coho salmon in 2009. A coho salmon index developed for the Yukon River from 1995 to 2012 (excluding 1996 and 2009) suggests that the average escapement is 164,000 fish. In 2009 both commercial and subsistence harvests were below average when compared to the recent 5 years. Assuming average survival, the 2013 coho salmon run is anticipated to be below average to average. Commercial harvest, depending on run size and fall chum salmon management, could range from 40,000 to 70,000 fish.

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 (Agreement). 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 Alaska and Canadian fisheries will be managed consistent with stock rebuilding and conservation objectives that have been jointly developed.

For the 2013 season, the U.S./Canada Yukon River Panel agreed to continue the 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 project. In addition to escapement needs, the objective is 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 a minimum of 10,000 fall chum salmon, depending on run strength, would fulfill harvest sharing objectives 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.

MANAGEMENT STRATEGY FOR 2013

The department manages Yukon Area salmon according to policies and regulations established by the Alaska Board of Fisheries (board). 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 3, 4, 5, and 6 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.

Table 3.–Escapement goals for Chinook salmon, Yukon Area.

Stream	Goal	Type of Goal
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 [a]

[a] The Yukon River 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 2013 plus the Agreement stipulation of 20% to 26% of the TAC on the Canadian run component.

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

Stream	Goal	Type of Goal
East Fork Andreafsky River weir	>40,000	SEG
Anvik River sonar	350,000–700,000	BEG
Drainagewide escapement	>600,000	OEG

Table 5.–Escapement goals for fall chum salmon, Yukon Area.

Stream	Goal	Type of Goal
Drainagewide 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 [a]
Canadian Mainstem	70,000–104,000	IMEG [b]

[a] Canadian interim management escapement goal (IMEG) agreed to by the Yukon River Panel for 2013.

[b] The Yukon River Panel agreed to an IMEG of 70,000 to 104,000 to be determined by the sonar project near Eagle, Alaska for 2013 plus the Agreement stipulation of 29% to 35% of the TAC on the Canadian run component.

Table 6.–Escapement goals for coho salmon, Yukon Area.

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

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 board at the January 2013 meeting. ***The following summary is for informational purposes only and is not intended to detail, reflect, or fully interpret reasons for the board actions.***

1. The amounts reasonably necessary (ANS) for subsistence salmon in Yukon Area was reviewed. An ANS range was established for pink salmon (2,100–9,700), no other changes were adopted to the other species-specific ranges.
2. Subsistence regulations in Districts 1–3 were amended to allow concurrent subsistence and commercial fishing, and adjustments to be made to closures around commercial fishing periods by emergency order (EO).
3. The *Yukon River King Salmon Management Plan* was amended, requiring protection of the first pulse of king salmon entering the Yukon River. After initiating the pulse closure in Districts 1 and 2, the department may discontinue subsistence fishing closures in Districts 3–6 based upon inseason run assessment.
4. The *Yukon River King Salmon Management Plan* was amended, prohibiting sale of king salmon from the Yukon River drainage unless there is a directed king salmon commercial fishery**.** Sale of king salmon will be prohibited at the start of the commercial fishing season. The department may allow sale of king salmon by emergency order based upon inseason run assessment.
5. The *Summer Chum Salmon Management Plan* was amended to allow for a directed chum salmon commercial fishery in Districts 1–3 in the Yukon Area during times of king salmon conservation using 5.5 inch or smaller mesh size not exceeding 30 meshes in depth. This provides an additional mesh size option to allow opportunity to harvest summer chum salmon.
6. The coastal waters referred to as the Acharon Channel, were opened to commercial salmon fishing. District 1 boundaries were redefined to include the coastal waters adjacent to the south mouth of the Yukon River from Chris Point south to Black River.
7. The *Summer Chum Salmon Management Plan* was amended to allow times when a commercial salmon gillnet permit holder in Districts 1–3 may use dip net and beach seine gear to commercially harvest chum salmon during the summer season. All king salmon caught in dip net and beach seine gear must be returned to the water immediately alive, except that dead king salmon must be recorded on a fish ticket and forfeited to the state. The maximum mesh size was specified to be 4.0 inches for beach seines and 4.5 inches for dip nets. A maximum of 4 dip nets may be used by a commercial salmon gillnet permit holder.

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

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

   a) basket sides and bottoms consisting of soft mesh material similar to or made of seine web; and
   b) an adjustable or fixed slide or chute that consists of a smooth bottom and closed cell foam lined sides: and
   c) returns Chinook salmon immediately to the water.

9. **As a reminder, effective since 2011**, the maximum mesh size for gillnets used for subsistence, commercial, and personal use in the Yukon Area is 7.5 inches.

SALMON RUN ASSESSMENT

Management plans adopted by the board provide guidelines for managing salmon fisheries for sustained yield. The department uses the best available data including preseason run projection, test fishing indices, age and sex composition, subsistence and commercial harvest reports, sonar passage estimates, escapement monitoring projects passage estimates, and inseason run projections to assess the run size for the purpose of implementing the management plans. In addition, genetic samples collected in the lower river test fishery and at the Pilot Station sonar project will be analyzed inseason to determine stock contribution and to project abundance of Canadian origin Chinook salmon, and summer and fall chum salmon. The department 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 provide a venue for distributing information and opportunity for the public to provide input regarding potential management actions. In recent years, management decisions have been made with recommendations from these teleconferences. In addition, department and USFWS managers will consult with the Yukon Advisory Group (YAG) to discuss management and fisheries issues. The YAG is made up of U.S. Section Yukon River Panel members, their alternates, and advisors. Under the Yukon Treaty Act, these members have the authority to provide input on issues relevant to the Yukon Area fisheries. Inseason meetings with this group, via teleconference organized by YRDFA, provide a more focused discussion with managers regarding key management issues.

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 the department 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.

Each winter from 2009 to 2012, YRDFA facilitated preseason planning meetings to provide managers, fishermen, tribal council representatives, and other stakeholders the opportunity to share information, provide input, and discuss management options. The purpose of these meetings was to work cooperatively to identify options and practical management strategies that would assist in getting adequate numbers of fish to the spawning grounds in Alaska and Canada. However, funds to facilitate a meeting for the purpose of planning management strategies were not available for the 2013. Department and USFWS staff attended many other fishery meetings throughout the 2013 winter and spring to discuss management options with the user groups on the Yukon River.

From 2009 to 2011, the implementation of the regulatory subsistence schedule was delayed at the request of fishermen to allow some additional subsistence fishing opportunity to harvest Chinook salmon before pulse closures went into effect. Unfortunately, in response to the continued trend of below average to poor runs, it is necessary to conserve this early portion of the Chinook salmon run to meet escapement, spread the harvest, and help rebuild these stocks for the future. The schedule will be implemented similar to the timeline used in 2012 and those years prior to 2009. The subsistence salmon fishing schedule will begin May 30, 2013, in District 1 and will be implemented chronologically with the upriver migration (Table 7). 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 normal schedule for the Coastal District, Koyukuk and Innoko rivers, and Subdistrict 5-D is open 7 days per week all season. District 6 is open for two 42-hour subsistence salmon fishing periods per week all season. Table 7 shows the 2012 subsistence fishing schedule based in regulations 5 AAC 01.210 and 5 AAC 05.360.

Table 7.–Yukon Area subsistence salmon fishing schedule, 2013.

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

Area	Regulatory Subsistence Fishing Periods	Date Schedule To Begin	Open Fishing Times
Coastal District	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
District 1	Two 36-hour periods/wk	May 30	Mon. 8 pm to Wed. 8 am / Thu. 8 pm to Sat. 8 am
District 2	Two 36-hour periods/wk	June 2	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
District 3	Two 36-hour periods/wk	June 5	Wed. 8 pm to Fri. 8 am / Sun. 8 pm to Tue. 8 am
Subdistrict 4A	Two 48-hour periods/wk	June 9	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Subdistricts 4B, C	Two 48-hour periods/wk	June 16	Sun. 6 pm to Tue. 6 pm / Wed. 6 pm to Fri. 6 pm
Koyukuk and Innoko Rivers	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
Subdistricts 5A, B, C	Two 48-hour periods/wk	June 21	Tue. 6 pm to Thu. 6 pm / Fri. 6 pm to Sun. 6 pm
Subdistrict 5D	7 days/wk	All Season	M/T/W/TH/F/SA/SU - 24 hours/day
District 6	Two 42-hour periods/wk	All Season	Mon. 6 pm to Wed. Noon / Fri. 6 pm to Sun. Noon
Old Minto Area	5 days/wk	All Season	Friday 6 pm to Wednesday 6 pm

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 species other than salmon will be allowed throughout the drainage 7 days per week. However, gillnets with mesh size greater than 4.0 inches 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 maximum mesh size for gillnets used for subsistence and personal use in the Yukon Area is 7.5 inches. However, an additional measure will be taken to conserve Chinook salmon in 2013 and gillnets will be restricted to 6.0 inch maximum mesh size when the regulatory subsistence schedule is implemented in each district. The intent of this action is to minimize the overall harvest of the Chinook salmon especially the larger, older females while allowing for some harvest opportunity of smaller Chinook and summer chum salmon. Gillnets will also be restricted to 6.0 inch maximum mesh size in the Coastal District, Innoko River and Koyukuk Rivers. In these areas the restriction will be implemented to coincide with actions taken in the adjacent districts, District 1, District 3, and Subdistrict 4-A, respectively.

Because of the large size of Coastal District, Subdistrict 4-A and Subdistrict 5-D and the travel time that is associated with fish migrating through these districts; these management areas will be further subdivided. This strategy is intended to allow for more management precision and flexibility when the reduced subsistence fishing schedule is implemented. Subdistrict 5-D, will be divided into 3 areas and maps will be sent to villages prior to the fishing season.

Subsistence fishing on the first pulse of Chinook salmon will be closed. Based on the poor preseason projection, it is likely the closure will be extended to protect the second pulse (meaning an approximately 10 day closure). The closure will be initiated in District 1 (and the northern portion of

the Coastal District) and similarly implemented in upriver fishing districts and subdistricts based on migratory timing. After the closure, fishing time may be reduced to further conserve Chinook salmon.

Subsistence fishing in the Koyukuk and Innoko Rivers will not initially be reduced from their standard 7 days a week subsistence fishing schedule because the they do not harvest substantial amounts of Chinook salmon, but may see schedule reductions if necessary.

The Tanana River will be managed to meet Chinook salmon escapement goals for the Chena and Salcha rivers. To improve escapement into the Chena River, a subsistence fishing period will be closed (approximately 5 days) and implemented based on inseason assessment and run timing information. Gillnets will likely be restricted to 6.0 inch maximum mesh size at the midpoint of the run to conserve female Chinook salmon. Personal use fishery will be restricted to 6.0 inch maximum mesh size on July 1.

Any changes to the subsistence schedule will be announced by news releases, on VHF radio, radio stations, and YRDFA teleconferences. When implementing subsistence fishing restrictions to conserve Chinook salmon, effort will be made to spread the responsibility of conservation throughout the drainage.

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, and 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 are required to report to the department the number of salmon harvested each week. Permit holders can report their weekly catch by voicemail at (907) 459-7388. In addition, the subsistence harvest limits for each household in Subdistricts 6-A and 6-B is 60 Chinook and 500 chum salmon through August 15 and 2,000 chum and coho salmon combined after August 15. The department may approve the harvest of additional salmon in excess of the household limit upon request. Subsistence fishermen must obtain a permit by contacting the department 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 the department at the end of the fishing season. Subsistence fishermen should be advised that enforcement will be notified if permits have not been returned after reminder letters have been sent. In order to get the salmon harvest numbers before the new fishing season 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, department staff 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 the department in Emmonak or Fairbanks. To boost calendar return rates, additional money has been donated to the calendar lottery fund. This year, winners will be selected for the following prizes:$500 to 1 household and $100 to 31 households. To qualify for the lottery, you must return your original calendar to the department by December 31, 2013 with the questions on the inside cover filled out. You <u>do not</u> need to fish or harvest salmon in 2012 to be eligible.

Households can return their calendar by mail (postage is free) or return calendars to one of the subsistence salmon harvest surveyors during the postseason survey (September and October).

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 the department 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 3.5 inches. These stipulations are in place to protect salmon species in known spawning areas that have road access.

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. If fishing, fishermen are required to report their harvests to the department 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. Mondays until 12:00 noon Wednesdays and from 6:00 p.m. Fridays until 12:00 noon Sundays. Whitefish and suckers may also be taken under personal use fishing regulations and a separate personal use whitefish/sucker permit is required.

COMMERCIAL FISHERY AND REPORTING REQUIREMENTS

All processors, buyers, and catcher/sellers of salmon are required to register with the department before operating in the Yukon Area. Registrations in Districts 1, 2, and 3 must be submitted to the department office in Emmonak. In Districts 4, 5, and 6, registrations can be submitted to the department 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 the department 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 the department within 36 hours or deliver fish tickets within 36 hours following the closure of each commercial fishing period. If there is incomplete reporting, the department 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 and example fish tickets will be provided to registered buyers.

All salmon caught by CFEC permit holders during commercial fishing periods must be reported on fish tickets. This includes salmon that are not sold but are taken home for personal use. In fisheries directed at the harvest of roe, the number of salmon from which the roe was extracted, the pounds of roe produced, and the number of male chum and Chinook salmon harvested or released alive must be reported on the fish ticket. 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.

CHINOOK AND SUMMER CHUM SALMON COMMERCIAL SEASON

Chinook and summer chum salmon management plans guide management actions taken by the department. The 2013 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 highly unlikely that there will be a directed Chinook salmon commercial fishery in 2013 on the mainstem Yukon River during the summer fishing season.

In managing the 2013 summer chum salmon run, the department will follow the guidelines provided by the board in 5 AAC 05.362 *Yukon River Summer Chum Salmon Management Plan* (Table 8). 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 2013 summer chum salmon run is expected to be average. Although the Pilot Station sonar project is the primary run assessment tool for management, all available run assessment projects are utilized for inseason management.

Table 8.–Summary of the summer chum salmon management plan, 5 AAC 05.362.

Summer Chum Salmon Management Plan Overview					
	RECOMMENDED MANAGEMENT ACTION				
Projected Run Size [a]	Commercial	Personal Use	Sport	Subsistence	Targeted Drainagewide Escapement
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 900,000	Restrictions [b]	Restrictions [b]	Restrictions [b]	Normal Fishing Schedules	
900,001-1,000,000	0-50,000 [c]	Open	Open	Normal Fishing Schedules	
>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] Drainagewide commercial fisheries: The harvestable surplus will be distributed by district or subdistrict in proportion to the guidelines harvest levels established in 5 AAC 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.

Districts 1, 2, and 3

If a surplus of summer chum salmon is identified above escapement and subsistence needs, there may be directed summer chum salmon commercial fishing in Districts 1 and 2. It is unlikely there will be a buyer in District 3. The summer chum salmon directed commercial fishery is expected to be negatively impacted by the need to conserve Chinook salmon.

Under new regulations adopted by the board in 2013, the department may by emergency order authority allow the use of dip nets, beach seines, and gillnets of 5.5 inch or smaller mesh size not exceeding 30 meshes in depth as commercial gear. The intent is to provide for summer chum directed fishing opportunity while reducing the incidental harvest of Chinook salmon. These gear types could be employed near the first quarter point of the summer chum salmon run. Fishermen employing dip nets or beach seine gear are required to immediately release incidentally caught Chinook salmon back to the water alive. The department plans to meet with commercial fishermen prior to the season to discuss these new gear types and will work closely with them to monitor their use throughout the season.

Commercial opportunity using gillnets will likely be delayed until after the midpoint or later of the Chinook salmon run in order to minimize the incidental harvest of Chinook salmon. The potential for incidental harvest of Chinook salmon will be investigated on a daily basis using test fishing indices, sonar passage estimates, and travel time information. Initially, gillnets will be restricted to 5.5 inch or smaller mesh size not exceeding 30 meshes in depth. It is anticipated that incidental harvest of Canadian-origin Chinook salmon should be minimized after the third quarter point of the run, as fewer Canadian bound Chinook salmon are present in the lower Yukon River. During this timeframe, a transition to the more traditional, 6.0 inch or smaller mesh size restriction would likely occur to target summer chum salmon. Participation is expected to increase during these periods. As a reminder, in Districts 1–3 regulations stipulate that gillnets with mesh size of 6.0 inches or less may not be more than 50 meshes in depth.

The sale of incidentally caught Chinook salmon in chum salmon directed commercial fishing is prohibited. Incidental Chinook salmon caught in gillnets may be taken home for subsistence use. Fishing periods would likely be 4 to 12 hours in duration.

Typically, 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, the department may by emergency order authority allow commercial and subsistence fishing to occur concurrently to provide commercial fishing opportunity directed at summer chum salmon. The two harvest events, normally separated by a closure, can effectively be compressed into a single event and reduce the overall amount of time the Chinook salmon run is exposed to harvest pressure. Additionally, the strategy of limiting the area open to commercial fishing to only portions of districts in which the incidental harvest rate could be anticipated to be low will likely be employed.

Regulations require identification of any vessel used by commercial salmon fishermen in Districts 1, 2, and 3. A vessel must display either the department 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.

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 no buyer has registered for Subdistricts 4-B and 4-C.

Management of summer chum salmon will be dependent on available surplus, fishing effort, buyer input regarding market quality and processing capacity, and monitoring of the fishery inseason. In Subdistrict 4-A, the department is planning to use emergency order authority to close the commercial set gillnet fishing season and immediately reopen the season during which only a fish wheel may be used. The fish wheel shall be attended at all times while it is in operations, and all Chinook salmon caught must be returned to the water alive immediately. This regulatory authority could allow commercial fishing for summer chum salmon to occur as early as June 22-24.

After a majority of the Chinook salmon run has passed, gillnet gear may be allowed and Chinook salmon will not have to be released alive during concurrent subsistence and commercial fishing periods. 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.

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 (5 AAC 05.368). 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.

District 5

At this time no buyer has registered for District 5 to purchase summer chum salmon. By regulation, no commercial fishing will be allowed in Subdistrict 5-A during the Chinook and summer chum salmon fishing season.

District 6

District 6 is managed under the *Tanana River Salmon Management Plan* (5 AAC 05.367) and inseason salmon run strength and timing indicators in the Tanana River drainage. Assessment includes escapement information regarding Chinook and summer chum salmon collected at counting tower projects operated on the Chena and Salcha rivers. The department 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.

The department now has the option to use emergency order authority to close the commercial set gillnet fishing season and immediately reopen the season during which only fish wheels may be used in District 6. The fish wheel shall be attended at all times while it is in operations, and all Chinook salmon caught must be returned to the water alive immediately. This new regulatory authority could allow commercial fishing for summer chum during times of Chinook salmon conservation. Directed summer chum salmon commercial fishing opportunity in District 6 will be dependent on available surplus, fishing effort, buyer input regarding market quality and processing

capacity, and monitoring of the fishery inseason. If a harvestable surplus is identified commercial fishing would likely occur later in July and could extend into August.

FALL CHUM AND COHO SALMON COMMERCIAL SEASON

Yukon River fall chum salmon run is managed following the guidelines in 5 AAC 01.249 *Yukon River Drainage Fall Chum Salmon Management Plan* (Table 9). 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.

The majority of fall chum salmon enter 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. The department will monitor the fall chum salmon run using information from passage at Pilot Station sonar project, lower Yukon River drift gillnet test fishery near Emmonak, subsistence catch reports, and, if available, commercial harvest and effort statistics. Also, information from genetic stock proportion estimates from Pilot Station sonar project 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.

Table 9.–The Yukon River drainage fall chum salmon management plan, 5 AAC 01.249.

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

[a] Considerations for the Canadian mainstem border objective may require more restrictive management actions.

[b] The department 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 to project run size inseason.

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

[d] Subsistence fishing will be managed to achieve a minimum drainagewide escapement goal of 300,000 fall chum salmon.

[e] Fall chum salmon will be commercially harvested following the guidelines harvest levels established in 5 AAC 05.365 and 5 AAC 05.367).

The 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 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.

Coho salmon are harvested incidentally in the fall chum salmon directed commercial fishery. 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.

Districts 1, 2, and 3

Initial commercial fishing opportunity will primarily be based on the preseason fall chum salmon run size projection determined by the relationship between summer chum salmon run size and fall chum salmon 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 sheets will be available at District 1 village post offices and at the department 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 the department. 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 the department. The re-registration and 72-hour waiting period begins at the time the notification is received and documented by the department.

District 4

A market for fall chum salmon is expected in Subdistrict 4-A. At this time it is unlikely there will be a buyer in Subdistricts 4-B and 4-C.

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.

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

In years with average fall chum salmon 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.

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 the department to manage Subdistrict 5-A and

District 6 based on the stock status and timing of salmon bound for, and into, the Tanana River drainage. 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).

The department 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, subsistence and commercial harvest information will be used to assess the run timing and relative run size of the Tanana River portion of the drainage.

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 or equivalent number of females or combination of female and male fish. No waste of carcasses will be permitted and they are typically absorbed in the local subsistence harvest.

Depending on the inseason assessment of fall chum salmon run strength and timing indicators of Tanana River stocks, the department 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.

GUIDELINE HARVEST RANGES

Table 10 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.

Table 10.–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 Numbers	Lower Percent	Midpoint Numbers	Midpoint Percent	Upper Numbers	Upper 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 Numbers	Lower Percent	Midpoint Numbers	Midpoint Percent	Upper Numbers	Upper 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 Numbers	Lower Percent	Midpoint Numbers	Midpoint Percent	Upper Numbers	Upper 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 to 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. A separate guideline harvest range of 0–4,000 pounds of fall chum salmon roe or equivalent number of females or combination of female and male fish was established in November 1998.

FIGURES

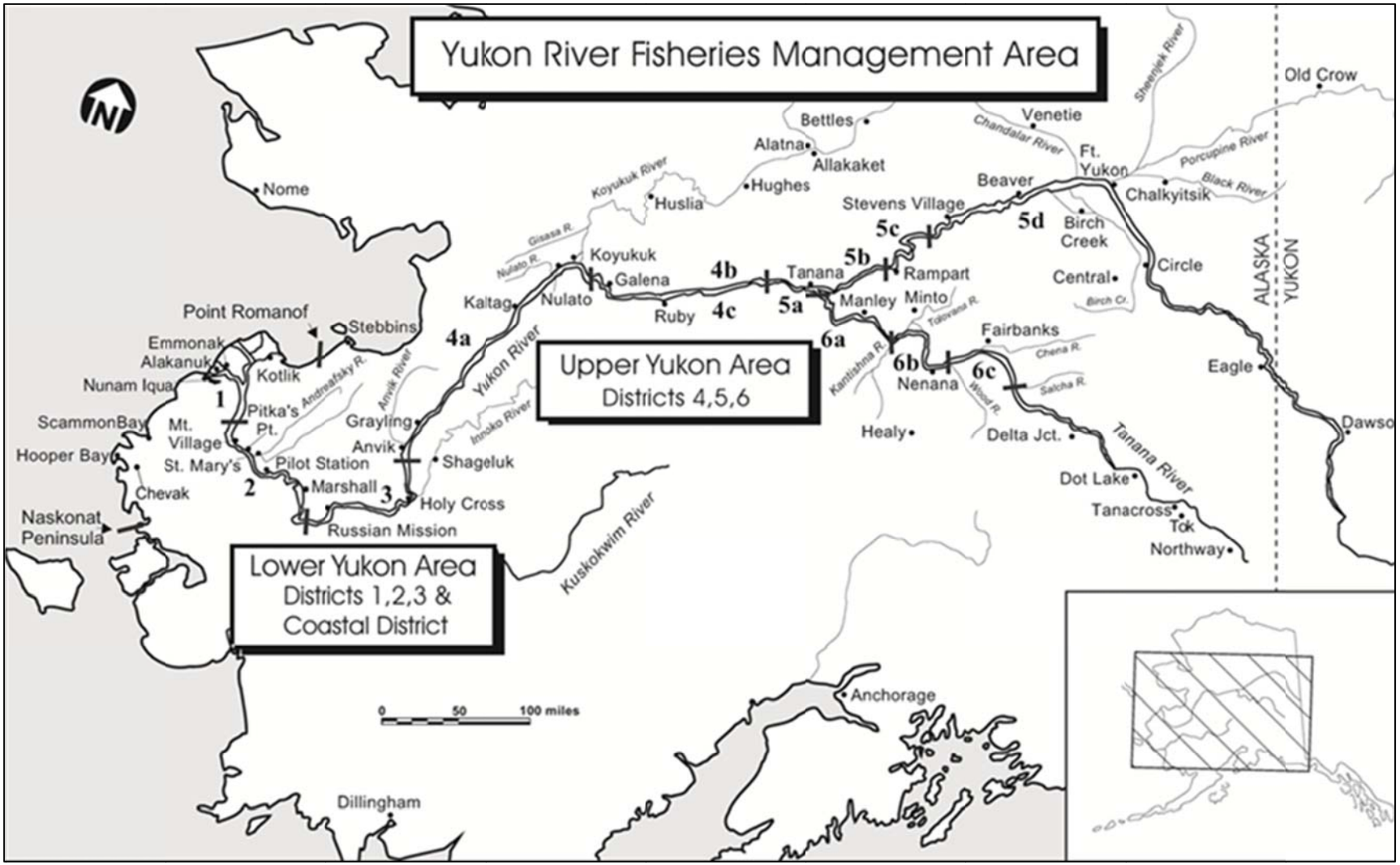

Figure 1.–Yukon Area communities and fishing districts.