

# **Annual Management Report Yukon Area, 2017**

**by**

**Jeffrey L. Estensen**

**Holly C. Carroll**

**Sean D. Larson**

**Christy M. Gleason**

**Bonnie M. Borba**

**Deena M. Jallen**

**Andrew J. Padilla**

**and**

**Kristie M. Hilton**

---

December 2018

---

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



## Symbols and Abbreviations

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

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

***FISHERY MANAGEMENT REPORT NO. 18-28***

**ANNUAL MANAGEMENT REPORT YUKON AREA, 2017**

by  
Jeffrey L. Estensen, Christy M. Gleason, Bonnie M. Borba, Andrew J. Padilla, and Kristie M. Hilton  
Alaska Department of Fish and Game, Division of Commercial Fisheries, Fairbanks  
and  
Sean D. Larson, Deena M. Jallen, and Holly C. Carroll,  
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game  
Division of Sport Fish, Research and Technical Services  
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2018

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

*Jeffrey L. Estensen, Christy M. Gleason, Bonnie M. Borba, Andrew J. Padilla, and Kristie M. Hilton,  
Alaska Department of Fish and Game, Division of Commercial Fisheries,  
1300 College Road, Fairbanks AK, 99701, USA  
and  
Holly C. Carroll, Sean D. Larson, and Deena M. Jallen,  
Alaska Department of Fish and Game, Division of Commercial Fisheries,  
333 Raspberry Road, Anchorage AK, 99518, USA*

*This document should be cited as follows:*

*Estensen, J. L., H. C. Carroll, S. D. Larson, C. M. Gleason, B. M. Borba, D. M. Jallen, A. J. Padilla, and K. M. Hilton. 2018. Annual management report Yukon Area, 2017. Alaska Department of Fish and Game, Fishery Management Report No. 18-28, Anchorage.*

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

**If you believe you have been discriminated against in any program, activity, or facility please write:**

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526

U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA 22203

Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW MS 5230, Washington DC 20240

**The department's ADA Coordinator can be reached via phone at the following numbers:**

(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648,

(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

**For information on alternative formats and questions on this publication, please contact:**

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

# TABLE OF CONTENTS

	Page
LIST OF TABLES.....	iii
LIST OF FIGURES.....	iii
LIST OF APPENDICES .....	iv
ABSTRACT .....	1
INTRODUCTION .....	1
SALMON FISHERIES.....	1
Description of Area and District Boundaries.....	1
Fishery Resources .....	2
Fisheries Overview .....	3
Management .....	5
Federal Subsistence Management.....	9
Federal Subsistence Management Actions .....	10
Canadian Yukon River Salmon Fishery .....	10
U.S./Canada Yukon River Salmon Panel and Treaty Negotiations .....	10
Canadian Chinook Salmon .....	11
Canadian Fall Chum Salmon .....	11
Fishing Branch River Fall Chum Salmon .....	12
2017 Salmon Management and harvests .....	12
Total Yukon Drainage Salmon Harvest .....	12
Alaska Commercial Fishery.....	13
Chinook and Summer Chum Salmon Assessment.....	13
Summer Season Subsistence Fishery.....	14
Summer Season Commercial Fishery .....	15
Lower Yukon Districts .....	15
Upper Yukon Districts.....	16
Summer Season Harvest, Effort, and Exvessel Value .....	16
Summer Season Commercial Harvest Characteristics .....	17
Fall Chum and Coho Salmon Assessment .....	17
Subsistence Fisheries .....	18
Fall Season Commercial Fisheries.....	18
Fall Season Harvest, Effort and Exvessel Value.....	19
Fall Season Commercial Harvest Characteristics .....	20
Yukon Area Subsistence and Personal Use Salmon Harvest.....	20
Subsistence Survey.....	21
Subsistence Permits.....	21
Amounts Necessary for Subsistence and Historic Trends .....	22
Personal Use Harvest.....	22
Sport Fishery.....	23
Enforcement .....	23
Alaska Wildlife Troopers summary .....	23
USFWS Law Enforcement summary .....	24
Canadian Fisheries.....	24
Canadian Commercial Fishery.....	24
Chinook Salmon Harvest .....	24
Fall Chum Salmon Harvest.....	25
Aboriginal Fishery .....	25

## TABLE OF CONTENTS (Continued)

	<b>Page</b>
Mainstem Yukon River Chinook Salmon .....	25
Mainstem Yukon River Fall Chum Salmon .....	25
Porcupine River Chinook Fall Chum and Coho Salmon .....	25
Domestic Fishery .....	26
Recreational Fishery .....	26
Spawning Escapement .....	26
Escapement Goals .....	26
Mixed Stock Analysis .....	27
Aerial Survey Escapement Assessment Methods .....	29
2017 Summer Season Escapement .....	29
Chinook Salmon Drainagewide Total Run .....	29
Method 1 .....	29
Method 2, .....	30
Chinook Salmon Escapement .....	30
Summer Chum Salmon Escapement .....	32
2017 Fall Season Escapement .....	33
Fall Chum Salmon Escapement .....	33
Coho Salmon Escapement .....	35
2018 Salmon Outlook .....	36
Chinook Salmon .....	36
Summer Chum Salmon .....	36
Fall Chum Salmon .....	36
Coho Salmon .....	37
OTHER MARINE AND FRESHWATER FINFISH FISHERIES .....	37
Subsistence and Personal Use Fishery .....	37
Commercial Fishery .....	38
Whitefish Fishery Summary .....	38
Harvest Sampling .....	39
Arctic Lamprey Fishery Summary .....	39
Fishing Effort and Run Timing .....	40
Commercial Fishery .....	40
CAPE ROMANZOF HERRING FISHERY .....	41
ACKNOWLEDGEMENTS .....	41
REFERENCES CITED .....	42
TABLES AND FIGURES .....	45
APPENDIX A .....	79
APPENDIX B .....	163
APPENDIX C .....	185
APPENDIX D .....	205
APPENDIX E .....	221
APPENDIX F .....	253
APPENDIX G .....	257

## LIST OF TABLES

Table	Page
1 Guideline harvest ranges and midpoints for commercial harvest of Chinook, summer chum, and fall chum salmon, Yukon Area, Alaska, 2017. ....	46
2 Yukon Area regulatory subsistence salmon fishing schedule. ....	47
3 Total utilization in numbers of salmon by district and country, Yukon River drainage, 2017. ....	48
4 Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2017. ....	49
5 Summer season subsistence fishing openings and allowed gear. ....	50
6 Chinook and summer chum salmon commercial harvest by district, period, and gear type, for Districts 1, 2, 4, and 6, Yukon Area, 2017. ....	51
7 Commercial sales in number of salmon by statistical area, Yukon Area, 2017. ....	55
8 Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2017. ....	56
9 Fall chum and coho salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3, and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2017. ....	57
10 Subsistence and personal use salmon harvest estimates, including commercially related and test fishery harvests provided for subsistence use, and related information, Yukon Area, 2017. ....	61
11 Summary of 2017 salmon escapement counts compared to existing goals. ....	64

## LIST OF FIGURES

Figure	Page
1 Map of the Yukon River drainage. ....	65
2 Map of the Alaska portion of the Yukon River drainage showing communities and fishing districts. ....	66
3 Map of the Yukon Area District 1 and the Coastal District including the northern and southern areas. ....	67
4 Set Gillnet Only Area of District 1, Yukon Area. ....	68
5 District 1 showing statistical areas, Yukon Area. ....	69
6 District 2 showing statistical areas, Yukon Area. ....	70
7 District 3 showing statistical areas, Yukon Area. ....	71
8 District 4 showing statistical areas, Yukon Area. ....	72
9 District 5 showing statistical areas, Yukon Area. ....	73
10 District 6 showing statistical areas, Yukon Area. ....	74
11 Subdistrict 5-D Boundary Divisions, Yukon Area. ....	75
12 The Fairbanks Nonsubsistence Area. ....	76
13 Anvik River Management Area, Yukon Area. ....	77

# LIST OF APPENDICES

Appendix	Page
A1 List of indigenous fishes found in the Yukon Area.....	80
A2 Yukon River drainage mileages. ....	81
A3 Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1997–2017. ....	84
A4 Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1997–2017. ....	87
A5 Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1997–2017. ....	90
A6 Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1997–2017. ....	93
A7 Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1997–2017. ....	96
A8 Number of commercial salmon fishing permit holders making at least one delivery by district and season, Yukon Area, 1997–2017. ....	97
A9 Type of commercial salmon processing, Yukon Area, 1997–2017. ....	100
A10 Estimated average price per pound paid to fishermen, Yukon Area, 1997–2017. ....	101
A11 Value of commercial salmon fishery to Yukon Area fishermen, 1997–2017. ....	102
A12 Average weight of salmon harvested in the commercial fishery, Yukon Area, 1997–2017. ....	104
A13 Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017. ....	105
A14 Summer chum salmon total utilization in numbers of fish by district and area, Yukon River drainage, 1997–2017. ....	111
A15 Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017. ....	116
A16 Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017. ....	122
A17 Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1997–2017. ....	128
A18 Yukon River Chinook salmon historical harvest percentage by stock group for the United States and Canada, 1997–2017. ....	133
A19 Salmon fishery projects conducted in the Alaska portion of the Yukon River drainage in 2017. ....	134
A20 Selected environmental and salmon catch information, Yukon River drainage, 1997–2017. ....	140
A21 List of harvest/escapement monitoring and incubation/rearing projects involving salmon in the Canadian portion of the Yukon River drainage in 2017. ....	141
A22 List of emergency orders and their descriptions for Districts 1–6 in the Chinook and summer chum salmon fishery, Yukon Area, 2017. ....	144
B1 Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1997–2017. ....	164
B2 Commercial Chinook salmon harvest for fall and summer seasons combined by statistical area, Lower Yukon Area, 1997–2017. ....	165
B3 Commercial summer chum salmon harvest by statistical area, Lower Yukon Area, 1997–2017. ....	167
B4 Commercial fall chum salmon harvest by statistical area, Lower Yukon Area, 1997–2017. ....	169
B5 Commercial coho salmon harvest (in numbers of fish) by statistical area, Yukon Area, 1997–2017. ....	171
B6 Commercial pink salmon harvest by statistical area, Lower Yukon Area, 1997–2017. ....	173
B7 Daily and cumulative CPUE for Chinook salmon in the 8.5-inch set gillnet test fishery, Big Eddy and Middle Mouth sites combined, lower Yukon River, 2017. ....	175
B8 Daily and cumulative CPUE for the 2017 Chinook salmon set gillnet test fishery compared to the average daily and cumulative CPUE from 1989–2017. ....	177
B9 Daily and cumulative CPUE for summer chum salmon in the cooperative 5.5-inch mesh drift gillnet test fishery, Big Eddy and Middle Mouth sites combined, lower Yukon River, 2017. ....	178
B10 Fall chum and coho salmon, daily and cumulative catch per unit of effort, cooperative drift gillnet test fishery, Big Eddy and Middle Mouth sites combined, Lower Yukon Area, 2001 to 2016 compared to 2017. ....	180

## LIST OF APPENDICES (Continued)

Appendix	Page
B11 Fall chum salmon daily and cumulative catch per unit of effort, Big Eddy and Middle Mouth sites combined, cooperative driftnet test fishery, Lower Yukon River, 2001–2016 compared to 2017.....	182
B12 Coho salmon daily and cumulative catch per unit of effort (CPUE), Big Eddy and Middle Mouth sites combined, cooperative driftnet test fishery, Lower Yukon River, 2001–2016 compared to 2017.....	183
C1 Commercial salmon harvest by statistical area and gear type, Upper Yukon Area, 2017.....	186
C2 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1997–2017. ....	187
C3 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1997–2017. ....	188
C4 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017. ....	189
C5 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1997–2017. ....	190
C6 Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017. ....	191
C7 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1997–2017. ....	192
C8 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1997–2017. ....	195
C9 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017. ....	196
C10 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1997–2017. ....	197
C11 Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017. ....	198
C12 Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1997–2017. ....	199
C13 Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017.....	200
C14 Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1997–2017. ....	201
C15 Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017. ....	202
C16 Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1997–2017.....	203
C17 Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017.....	204
D1 Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017. ....	206
D2 Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017...208	208
D3 Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits, and test fishery projects, Yukon Area, 2007–2017..210	210
D4 Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017.....212	212
D5 Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2007–2017.....214	214
D6 Reported harvest of salmon and other fish species from subsistence permits issued in the Yukon and Koyukuk rivers, 2007–2017. ....216	216
D7 Reported harvest of salmon and other fish species from subsistence permits issued in Subdistricts 6-A, 6-B and 6-D of the Tanana River, 2007–2017. ....217	217

## LIST OF APPENDICES (Continued)

Appendix	Page
D8 Reported harvest of salmon and other fish species from personal use permits issued in Subdistrict 6-C of the Tanana River, 2007–2017. ....	218
D9 Estimated and reported subsistence and personal use harvest of miscellaneous fish species, Yukon Area, 2007–2017. ....	219
E1 Origins of Yukon River drainage salmon spawning escapement goals by species. ....	222
E2 Detailed preliminary salmon spawning escapement estimates for the Yukon River drainage, 2017. ....	223
E3 Pilot Station sonar project estimates with standard error, Yukon River drainage, 1995 and 1997–2017....	226
E4 Chinook salmon aerial survey indices for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017. ....	227
E5 Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017. ....	228
E6 Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1997–2017. ....	230
E7 Summer chum salmon escapements for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017. ....	233
E8 Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaska portions of the Yukon River Drainage, 1997–2017.....	236
E9 Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Canadian portions of the Yukon River Drainage, 1997–2017.....	238
E10 Yukon River fall chum salmon estimated brood year production and return per spawner estimates 1974–2017.....	240
E11 Coho salmon passage estimates or escapement estimates for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017. ....	242
E12 The lower Yukon River drainage. ....	244
E13 The Koyukuk River drainage. ....	245
E14 The Tanana River drainage. ....	246
E15 The middle Yukon River and Porcupine River drainages. ....	247
E16 The upper Yukon River drainage in Canada. ....	248
E17 Select salmon monitoring projects, Yukon River drainage. ....	249
E18 Reconstructed drainagewide Yukon River Chinook salmon run size, 1982–2017.....	250
E19 Historical Estimated Yukon River Chinook salmon drainagewide run size, various methods, 1987–2017.....	251
F1 Commercial freshwater finfish harvest, Lower Yukon Area, 1997–2017.....	254
F2 Commercial freshwater finfish harvest, Upper Yukon Area, 1997–2017. ....	255
F3 Freshwater finfish sales during the commercial salmon fishing season by district, Yukon Area, 1997–2017.....	256
G1 Waters open to commercial herring fishing in the Cape Romanzof District. ....	258

# ABSTRACT

The 2017 Yukon Area management report summarizes management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries in the Yukon Area of Alaska. The report provides the Yukon Area status of salmon stocks in 2017 with reference to historical data, presents an outlook for the 2018 fishing season, and provides data on the use of salmon species by commercial, subsistence (Aboriginal), personal use (domestic), and sport (recreational) fisheries. Alaska and Canadian fisheries are summarized because the Yukon River is a transboundary river. The report compiles summaries of selected Yukon River projects. Fisheries data in this report supersedes information in previous annual management reports. Some of the data presented are preliminary and may be presented with minor differences in future reports. The Yukon Area report is organized into the following sections: 1) Salmon Fishery: this section presents a description of the area, fishery resources, and fisheries management practices, along with a comprehensive report of the 2017 salmon fisheries, by summer and fall season, and compares the 2017 runs with previous years, 2) Other Marine and Freshwater Finfish Fisheries: this section presents a description of the fishery resources and freshwater finfish fisheries other than salmon (e.g., whitefish and lamprey), and 3) the Cape Romanzof District Herring Fishery.

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

## INTRODUCTION

The Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G) is responsible for the management of subsistence, personal use, and commercial fisheries in the Yukon Area of Alaska. This annual management report details the activities of ADF&G in the Yukon Area during 2017.

The Yukon Area includes all waters of the Yukon River drainage in Alaska and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1).

## SALMON FISHERIES

### DESCRIPTION OF AREA AND DISTRICT BOUNDARIES

The Yukon River is the largest river in Alaska and the fifth largest drainage in North America. The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska, and flows over 3,190 km (1,980 mi) through Yukon Territory, Canada, and Alaska, United States (U.S.) before emptying into the Bering Sea at the Yukon–Kuskokwim Delta. It drains an area of approximately 832,700 km<sup>2</sup> (321,500 mi<sup>2</sup>), of which 195,200 mi<sup>2</sup> lies within Alaska. Except for a few fish taken in the adjacent coastal waters near the mouth, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 97,740 residents), there are approximately 22,380 rural residents in the Alaska portion of the drainage (Hunsinger 2018), the majority of whom reside in 43 small communities scattered along the coast and major river systems. Most of these people are dependent, to varying degrees, on fish and game resources for their livelihood.

Commercial salmon fishing is allowed along the entire 1,200 mile length of the mainstem Yukon River in Alaska, the lower 225 miles of the Tanana River, and the lower 12 miles of the Anvik River. The Yukon Area is divided into 7 districts and 10 subdistricts for management and regulatory purposes (Figure 2). The Coastal District, which is divided into Southern and Northern areas, is the area from Naskonat Peninsula to Point Romanof, and includes all waters extending 3 nautical miles from any grassland (Figure 3). The Coastal District is sometimes

managed as part of District 1. The Set Gillnet Only Area is a fall season commercial fishing area in District 1, in which only set gillnets are allowed (Figure 4). For reporting purposes, the Lower Yukon Area includes the Coastal District and Districts 1, 2, and 3 (Figures 5, 6, and 7) to a point near Old Paradise Village at river mile 301. The Upper Yukon Area includes Districts 4, 5, and 6, and is that portion of the Yukon River drainage upstream of a point near Old Paradise Village at river mile 301 to the Canadian Border (Figures 8, 9, and 10). Subdistrict 5-D is divided into 3 areas (lower, middle, upper) for management purposes (Figure 11). Additional fishing areas include the Fairbanks Nonsubsistence Area (Figure 12) and the Anvik River (Figure 13). The districts and subdistricts are further divided into 31 statistical areas for management and reporting purposes (Appendix A2).

In addition to the U.S. fisheries, Aboriginal, commercial, sport, and domestic salmon fisheries occur in the Canadian portion of the Yukon River drainage. The Canadian Department of Fisheries and Oceans Canada (DFO) conducts the corresponding fishery management activities. Details about fisheries management in the Canadian portion of the Yukon River drainage can be found in the annual Yukon River Panel Joint Technical Committee (JTC) reports (e.g., JTC 2018).

## **FISHERY RESOURCES**

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

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

Chum salmon returns are made up of 2 genetically distinct runs: an early summer chum salmon run and a later fall chum salmon run. Summer chum salmon are characterized by earlier run timing (entering Yukon River from early June to mid-July), rapid maturation in freshwater, and smaller body size (average weight is approximately 6 to 7 pounds). Summer chum salmon spawn primarily in run-off streams in the lower 700 miles of the drainage and in the Tanana River drainage. Fall chum salmon are distinguished by later run timing (entering Yukon River from mid-July to early September), robust body shape, and larger body size (average weight is approximately 7 to 8 pounds). Fall chum salmon primarily spawn in the upper portion of the drainage in streams that are spring fed. Major fall chum salmon spawning areas include the Tanana, Porcupine, and Chandalar river drainages, as well as various streams in Yukon Territory, Canada, including the mainstem Yukon River. Fall chum salmon run sizes are typically much smaller than that of summer chum salmon.

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

Pink salmon enter the lower river from late June to late July. Pink salmon weigh on average about 2 to 3 pounds. They primarily spawn in the lower portion of the drainage, downstream of the community of Grayling (river mile 336). However, pink salmon have been caught in the mainstem Yukon River upstream as far upriver as Fort Yukon which is located at river mile 1,002 (Busher et al. 2009). In the past decade, pink salmon have exhibited an abundance cycle alternating between high and low every 2 years and high abundance is typically observed during even numbered years. Sockeye salmon are uncommon in the Yukon River drainage and only a few fish are caught each year. Sockeye salmon have been reported in the mainstem Yukon River upstream of Rampart (river mile 763). Observations of sockeye salmon have occurred in the Innoko (ADF&G 1986), Kantishna, Tanana River upstream of confluence with Kantishna River, Anvik, and Gisasa (Carlson 2017) river drainages. Sockeye salmon are annually counted at the Andreafsky River weir (Conitz 2017).

## **FISHERIES OVERVIEW**

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

Chinook salmon is the most targeted subsistence species by number of fishermen. Subsistence fishermen target Chinook salmon throughout the Yukon River drainage and coastal waters. During years of high abundance, it was not necessary to intensively manage the subsistence fishery for Chinook salmon, and during the 10 year period from 1998 to 2007, approximately 50,000 Chinook were harvested annually for subsistence purposes (Appendix A13). Beginning in 1998, Chinook salmon productivity began to decline and run sizes were considerably weaker; the most dramatic drop in run sizes began in 2007. Since 2008, restrictions to subsistence fishing for Chinook salmon have been necessary most years to meet escapement goals. Beginning in 2012, intensive subsistence fishery management has included full fishing closures around pulses of fish, fishing time reductions, gear restrictions, and even full subsistence fishing closures for Chinook salmon through most of the summer season; the lowest harvests were in 2014 (3,286) and 2015 (7,577) (Appendix A13). Chinook run size began to rebound in 2016 and 2017 therefore restrictions have been relaxed later in the season and some Chinook-directed subsistence harvest opportunities were provided. Harvests of Chinook salmon in 2016 and 2017 increased to above the 5-year average (Appendix A13).

Summer chum salmon provide the largest subsistence harvest of salmon in the Yukon Area (including the Coastal District), averaging about 90,000 fish harvested annually since 1998 (Appendix A14). Subsistence fishermen mainly target summer chum salmon in the Lower Yukon River. Although summer chum salmon are found as far upstream as the lower portion of Districts 5 and 6, fishermen typically do not target them due to their poor quality. Like Chinook salmon, production of summer chum salmon began a sharp decline in 1998. Although their recovery has occurred much faster, harvest levels have been affected by subsistence fishing restrictions because run timing overlaps with Chinook salmon. During this time, beach seines, dip nets and fish-friendly fish wheels were required to allow the live release of Chinook salmon. Annual subsistence harvests of summer chum salmon (including those from the Coastal District) averaged about 100,000 fish from 2012 to 2016 (Appendix A14).

Fall chum salmon provide the second largest subsistence harvest, averaging about 75,000 (including the Coastal District) fish harvested annually since 1998 (Appendix A15). Subsistence fishermen target fall chum salmon throughout the Yukon River drainage, but most harvest occurs in the Upper Yukon River and Tanana River late in the season. Harvest generally coincides with freezing weather, which allows some dog mushers to “crib” for use as dog food (Andersen and Scott 2010). Production of fall chum salmon began a sharp decline in 1998 although recovery occurred much faster. Subsistence fishing harvest levels increased due to low runs of Chinook salmon.

Coho salmon harvests generally occur incidentally while targeting fall chum salmon. The subsistence harvest has averaged about 17,000 fish annually since 1998 (Appendix A16). Much of the coho salmon harvest occurs in Districts 5 and 6, late in the season. Some dog mushers also “crib” coho salmon once freezing weather allows (Andersen and Scott 2010).

Pink salmon are harvested for subsistence primarily in the lower river districts. Pink salmon exhibit a cycle alternating between high and low abundance every 2 years; high abundance is typically observed during even-numbered years. The 1997–2015 odd-numbered year subsistence harvests averaged about 1,700 pink salmon. The 1998–2016 even-numbered year subsistence harvests for the entire drainage averaged about 6,800 pink salmon (Appendix A17).

Commercial Chinook salmon harvests in the Alaska portion of the Yukon River drainage between 1997 and 2007 averaged about 46,800 fish (Appendix A3). However, because of poor Chinook salmon runs, no Chinook salmon-directed commercial fishing has occurred in the Yukon Area since 2007. In most years since 2010, the sale of incidentally-caught Chinook salmon in the chum salmon-directed commercial fisheries has not been allowed.

Commercial harvests of summer chum salmon fluctuated from 1997 through 2016. Limited market interest and low run sizes caused summer chum salmon harvests to be relatively low; the average harvest as low as 38,000 between the years of 1997 and 2007 (Appendix A4). As the summer chum run has rebounded, and the introduction of selective gear that allows commercial fishing for summer chum, while releasing Chinook salmon alive, summer chum harvests have been some of the largest since 1989. The average harvest was 339,000 summer chum from 2008 to 2016 (Appendix A4). Commercial exploitation of summer chum salmon roe was renewed in Subdistrict 4-A as commercial market interest strengthened beginning in 2007, however the redevelopment of this fishery has been hindered by management strategies taken to reduce incidental harvest of co-migrating Chinook salmon and inconsistent market interest. Since 2012, selective gear types such as manned-fish wheels allowing the live release of Chinook salmon were implemented and there have been above-average summer chum salmon run sizes; however there was no buyer in 2015 and 2016 in Subdistrict 4-A (Appendix A4).

Commercial harvests of fall chum salmon from 1997 through 2016 averaged about 139,000 fish (Appendix A5). Like summer chum, fall chum salmon experienced decreased market interest and low returns from 1998 to 2004. A considerable amount of uncertainty has been associated with run forecasts, particularly in the last decade, because of unexpected run failures (1998 to 2002) followed by strong runs from 2003 through 2008. Beginning in 2008, markets began to improve, but run sizes lacked consistency. Since 2012, both the market and run productivity has been steady, and commercial harvests have averaged about 260,000 fish (Appendix A5).

Although Chinook, summer chum, and fall chum salmon have been targeted in the commercial fisheries, coho salmon were typically harvested incidentally during fall chum-directed fisheries.

Commercial harvest of coho salmon since 1997 averaged about 48,000 fish (Appendix A6). Since 2009, ADF&G had the flexibility to conduct late season coho salmon-directed commercial fishing if certain stipulations are met (such fisheries occurred in 2009–2011 and 2014–2017). Record coho salmon harvests were taken in 2014 and 2015, and the largest commercial harvest ever recorded was taken in 2016. Since 2012, commercial harvest of coho salmon averaged about 115,000 fish (Appendix A6).

## MANAGEMENT

The policy of ADF&G is to manage salmon runs to the extent possible for maximum sustainable yield, unless otherwise directed by state regulation (*Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222.)). Over the last few decades, ADF&G has managed salmon fisheries in the Yukon Area with the dual goal of achieving desired escapements consistent with the SSFP while at the same time maintaining important fisheries. The Alaska State Legislature and the Alaska Board of Fisheries (BOF) have designated subsistence use as the highest priority among beneficial uses of the resource. To maintain the subsistence priority and provide for spawning escapements to ensure sustainable yields, Yukon River salmon fisheries must be managed conservatively.

For management purposes, the summer season refers to fishing associated with Chinook and summer chum salmon migrations and fall season refers to fishing associated with fall chum and coho salmon migrations. Salmon fisheries within the Yukon River drainage may harvest stocks that are several weeks and over a thousand miles from their spawning grounds. Because the Yukon River subsistence and commercial fisheries are mixed stock fisheries, some tributary populations may be under or over exploited in relation to their actual abundance. Based on current knowledge, it is not possible to manage for individual stocks in most areas where fishing occurs. Fisheries within the Tanana and Anvik river drainages are managed as terminal areas.

Management of the Yukon River salmon fishery is complex due to overlapping multispecies salmon runs, increasing efficiency of the fishing fleet, allocation issues, and the immense geographic expanse of the Yukon River drainage. ADF&G uses an adaptive management strategy that evaluates run strength inseason to determine a harvestable surplus above escapement requirements and subsistence uses. The primary tools used by ADF&G to manage the salmon fisheries are management plans, guideline harvest ranges established by BOF, and emergency order (EO) authority, which is used to implement time and area openings, closures, and gear restrictions. Guideline harvest ranges have been established for Chinook, summer chum, and fall chum salmon commercial fisheries throughout the Alaska portion of the drainage (Table 1). ADF&G attempts to manage the commercial salmon fisheries so the harvest in each district or subdistrict is proportional to the respective guideline harvest ranges. Typically, the majority of the coho salmon harvest is incidental to the fall chum salmon fishery and their management is conditional to the abundance of fall chum salmon. ADF&G does have the option to conduct late season coho salmon-directed commercial fishing if certain stipulations are met. Likewise, most of pink salmon commercially harvested is incidental to the summer and fall chum salmon-directed commercial fisheries. However, beginning in 2016, ADF&G was given the option to allow a pink salmon-directed commercial fishery in June and July.

During the fishing season, management is based on preseason projections and inseason run assessment. Inseason run assessment includes abundance indices from test fisheries, passage estimates from various sonar projects, and spawning escapement and harvest data. Since 1995,

the mainstem sonar project near the community of Pilot Station (hereafter called Pilot Station sonar) has provided inseason estimates of salmon passage for fisheries management (Schumann et. al 2017). The level of subsistence, commercial, sport, and personal use harvests can be adjusted through EOs to control time and area of openings and closures and/or to restrict fishing gear. News releases announcing EOs are broadcast on local radio stations, posted on the state web site (<http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>), VHF radio where available, transmitted by fax, and emailed to select communities, processors, buyers, and fishermen. Most processors and buyers are notified of EOs by telephone.

In 2017, various government and non-government agencies operated projects in the Alaska and Canadian portions of the Yukon Area to obtain the biological information necessary for management of salmon runs (Appendices A19 and A20). The types of monitoring projects operating in the Alaska portion of the drainage include:

1. *Catch and Effort Assessment*: The harvest and effort of commercial, subsistence, personal use, and sport salmon fisheries were assessed for the Alaska portion of the Yukon River drainage. Commercial salmon fishing was monitored from June through October using fish tickets of commercial sales of salmon. In the majority of the Yukon Area, there is no regulatory requirement for fishermen to report their subsistence salmon harvest. The subsistence salmon harvest from communities is estimated through a voluntary household survey program. In areas of the drainage with road access, fishermen must obtain subsistence or personal use household permits on which their daily harvest is recorded. Similarly, sport fishing harvest and effort was estimated by Division of Sport Fish using mail-out questionnaires to sport fishing permit holders. Weekly teleconferences were held from June through August by the Yukon River Drainage Fisheries Association (YRDFA) as a forum for fishermen along the Yukon River to interact with state and federal managers and for the dissemination of fisheries information.
2. *Test Fishery*: A test fishery project was operated in the lower Yukon River at the South and Middle (Middle and North combined) Mouths. The project utilized set gillnets from late May through July 15 to index the Chinook salmon run relative abundance, and drift gillnets from late May through July 15 to provide an index of Chinook and summer chum salmon run abundance; and from July 16 through mid-September for fall chum and coho salmon runs. The test fisheries also provided run timing and age composition information. A test fishery in Mountain Village was operated by the Asa'carsarmiut Traditional Council to index fall chum and coho salmon run timing and relative abundance using drift gillnets.
3. *Mainstem Sonar Projects*: Hydroacoustic equipment was operated in the mainstem Yukon River at 2 locations; near Pilot Station to obtain inseason salmon passage estimates by species and near Eagle to estimate passage of Chinook and fall chum salmon into Canada. These projects include associated test gillnet fisheries for species apportionment applied to the sonar counts.
4. *Tributary Sonar Projects*: Hydroacoustic equipment was operated in the Anvik River to estimate summer chum salmon escapement, and in the Chandalar River to estimate fall chum salmon spawning escapements. Sonar operations also occurred in the Tanana drainage on the Chena and Salcha rivers to estimate Chinook and summer chum salmon escapement.

5. *Age, Sex, and Size Composition:* Data were collected from salmon harvested in commercial and subsistence fisheries, as well as test fisheries and escapement projects located throughout the Yukon River drainage. Samples were collected using gillnets, fish wheels, beach seines, weir traps, and carcass surveys. Scales were collected from salmon to determine age composition of the runs. Chum salmon escapement sampling from carcasses uses vertebra for ageing instead of scales because of resorption problems. Sex was determined by examining internal reproductive organs or external characteristics. Length was measured from mid eye to fork of tail.
6. *Genetic Stock Identification:* Genetic samples were collected from Chinook and chum salmon caught in select test fisheries throughout the drainage. Analyses of Chinook and chum salmon were conducted to identify relative proportions of various stocks for inseason management purposes. Samples were also collected from subsistence-caught Chinook salmon in Districts 1–5. Genetic samples were collected during fall season from chum salmon in the subsistence fishery in a portion of District 5 located between Tanana and Rapids.
7. *Aerial and Ground Surveys of Salmon Spawning Streams:* Aerial surveys were flown to monitor spawning escapement in major spawning tributaries throughout the Yukon River drainage. Surveys for Chinook and summer chum salmon were flown in late July. Fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage in October through early December. Aerial surveys were conducted in the Nenana River drainage to estimate fall chum and coho salmon escapement in October. Aerial surveys in the Upper Tanana River drainage were not conducted in 2017 due to inclement weather.
8. *Tower Project:* Despite many high water events this season, Chinook and Chum salmon were at least partially counted on the Chena, Salcha, and Goodpaster River towers.
9. *Weir Projects:* Weirs were operated on the East Fork Andreafsky River, Gisasa River, and Henshaw Creek from June to August to estimate Chinook and summer chum salmon escapement.
10. *Juvenile Studies:* Yukon Delta Smolt Project (NOAA-AFSC, Spearfish Research, and Yukon Drainage Fisheries Development Association): This project has been ongoing since 2014, however new objectives were introduced in 2016. Net-sampling methods were utilized in Yukon River tributaries and pro-delta habitats to catch juvenile salmon and other finfish species. The goals of this project are: to determine the composition and spatio-temporal variation in prey species of juvenile Chinook salmon; determine the quality of dominant juvenile Chinook salmon prey; assess the relationship between prey quality and juvenile Chinook salmon size and condition during summer; evaluate juvenile Chinook salmon spatial distribution and habitat use in relation to prey communities in Yukon River tributaries and delta habitats; and evaluate spatio-temporal differences in juvenile Chinook salmon condition, size, and energy content.

The Pilot Station sonar is the primary project used to determine abundance of fish passage as applied to the fishery management plans inseason. Updated selectivity parameters for all species were developed after the 2015 season and are used to produce passage estimates inseason at the project (Pfisterer et al. 2017). The daily passage estimates, by species, from 1995 to present have

been updated with these improved selectivity parameters and can be obtained from the ADF&G, Division of Commercial Fisheries, Arctic–Yukon–Kuskokwim database management system (AYKDBMS)<sup>1</sup>.

The Yukon River Chinook salmon run is managed according to the guidelines described in the *Yukon River King Salmon Management Plan* (5 AAC 05.360). The management plan provides for escapement needs and subsistence uses while aiming to reestablish the historic range of harvest levels by other users. In response to guidelines established in the SSFP (5 AAC 39.222(f)(42)), the BOF classified Yukon River Chinook salmon as a yield concern at its September 2000 work session. A stock of yield concern is defined as “a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock’s escapement needs; a yield concern is less severe than a management concern” (5 AAC 39.222(f)(42)). The SSFP defines chronic inability as “the continuing or anticipated inability to meet expected yields over a 4 to 5 year period”. This determination as a yield concern was originally based on low harvest levels for the previous 3 year period (1998–2000) and anticipated low harvest in 2001. The classification as a yield concern was continued at the January 2004, January 2007, January 2010, and January 2013 BOF meetings and at the 2015 work session (Schmidt et al. 2015).

The Yukon River summer chum salmon run is managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan* (5 AAC 05.362). The intent of this plan is to conservatively manage harvests to provide for escapement needs and subsistence use as a priority over other consumptive uses such as commercial, sport, and personal use fishing. Since 2001, this management plan has allowed for varying levels of harvest opportunity depending on the run size projection. The BOF modified the management plan in 2016. Directed summer chum salmon commercial opportunity has been provided since 2007. Unfortunately, despite large run sizes in these years, full exploitation of harvestable surplus has been hindered by limited buyer capacity and conservative management strategies taken in response to poor Chinook salmon runs which co-migrate with summer chum salmon.

The *Anvik River Chum Salmon Fishery Management Plan* (5 AAC 05.368.) allows the Anvik River to be opened to summer chum salmon commercial fishing if a surplus beyond the escapement goal of 500,000 fish is available. All Chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive. Summer chum salmon were harvested in this terminal area only during the years 1994–1997.

Fall chum salmon runs have been mostly average to above average since 2005 and sufficient to meet escapement and subsistence needs while providing a limited commercial harvest (with the exceptions of 2009 and 2010). Management of the Yukon Area fall season commercial salmon fisheries is in accordance with the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 ACC 01.249). The plan sets the threshold number of fall chum salmon needed to prosecute a commercial fishery at 550,000 fish and commercial fishing is allowed on the surplus above that level. The fall chum salmon plan incorporates the amount of fall chum salmon needed to meet U.S./Canada treaty objectives for border passage and provides guidelines necessary for escapement and prioritized uses. The intent of the plan is to align management objectives with the established escapement goals, provide flexibility in managing subsistence harvests when stocks are low, and bolster salmon escapement as run abundance increases. The sustainable

---

<sup>1</sup> AYKDBMS, <http://www.adfg.alaska.gov/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx>.

escapement goal (SEG) range for the Yukon River drainage is 300,000–600,000 fall chum salmon. There are provisions in the plan to allow incremental levels of subsistence salmon fishing balanced with requirements to attain escapement objectives during low runs.

Coho salmon runs have been above average since 2014 and escapement and subsistence needs have been met. Coho salmon are primarily harvested incidentally during the fall chum directed commercial fishery. The *Yukon River Coho Salmon Management Plan 5* ACC 05.369 allows a coho salmon-directed commercial fishery in the absence of achieving the threshold number of fall chum salmon if a harvestable surplus of coho salmon exists and if a commercial fishery will not have a significant impact on fall chum salmon escapement and allocation.

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

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

## **FEDERAL SUBSISTENCE MANAGEMENT**

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 mandates that rural subsistence users have a priority over other users to take wildlife on federal public lands where recognized customary and traditional use patterns exist and required the creation of Regional Advisory Councils (RAC) to enable rural residents to have a meaningful role in federal subsistence management. On October 1, 1999, the Secretary of Interior and Secretary of Agriculture published regulations to expand federal management of subsistence fisheries to Alaska rivers, lakes, and limited marine waters within, and adjacent to, federal public lands. The Secretaries delegated their authority in Alaska to the Federal Subsistence Board (FSB) to manage fish and wildlife resources for subsistence uses on federal public land, including waters running through or next to these lands. Federal subsistence fishing regulations are adopted by the FSB. The RACs provide recommendations and information to the FSB, review policies and management plans, provide a public forum, and deal with other matters relating to subsistence uses. The FSB or U.S. Fish and Wildlife Service (USFWS) may close fishing for other uses in these waters and implement a priority for federally-qualified rural subsistence users if it is determined that state-managed fishery management is causing subsistence or conservation concerns (Ward and Horn 2003). Federal subsistence fishing schedules, openings, closures, and fishing methods are established in regulations (Department of Interior 2011). In general, the regulations are the same as those issued for the subsistence taking of fish under AS 16.05.060; however, differences in regulations do exist. In some cases, state regulations can be superseded by a Federal Special Action.

## **Federal Subsistence Management Actions**

The Yukon Area federal management staff work closely with ADF&G Division of Commercial Fisheries Division Yukon Area managers, sharing information and coordinating management actions. Many public fisheries-related meetings are attended throughout the year by both agencies jointly and individually that are preceded with considerable effort to provide consistent stock information, management strategy expectations, and rationale for management actions. ADF&G area managers are the lead agency staff with authority throughout the entire Yukon Area whereas federal management authority is primarily limited to overlapping waters adjacent to Federal Conservation Units. During the 2017 fishing season, federal managers issued 25 Streamlining Actions (17 summer; 8 fall) which aligned federal subsistence fishing regulations with state regulations that were established through EO authority. Management of the Yukon Area commercial fishery by the state prompted issuance of 10 Federal Memorandums of Concurrence (6 during summer season; 4 during fall season). These memorandums documented federal consideration which resulted in concluding state actions taken in regulating the commercial fishery provided adequate assurances for escapement and federal subsistence needs. No Federal Special Actions were issued during the 2017 season which would be used to implement changes in federal rules that differ from state regulations.

The federal inseason subsistence fishery manager received a request for a cultural and educational Chinook salmon harvest permit, and 1 was issued allowing the harvest of up to 6 Chinook salmon by set gillnet using a mesh size of 6 inch or less between June 19 and June 21, 2017, in federal public waters adjacent to the Nowitna National Wildlife Refuge. Additionally, 1 funerary salmon harvest allowance was requested and granted for a family in Kaltag. This funerary allowance limited the harvest to a maximum of 10 Chinook salmon.

## **CANADIAN YUKON RIVER SALMON FISHERY**

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

Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917 and continuously from 1918 to 1947. No harvest records are available from 1948 to 1957. Harvest records document the annual salmon harvest by species since 1958 and by user group since 1961. DFO has provided annual harvest data from the Canadian portion of the Yukon River drainage since 1962.

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

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

focus of the Panel was the salmon stocks that spawn in the Canadian portion of the Yukon River drainage.

In December 2002, the U.S. and Canada signed a formal YRSA that set harvest share target ranges based on a postseason run assessment of Chinook and fall chum salmon into the Canadian mainstem of the Yukon River. Under the YRSA, Alaska and Canadian fisheries are managed consistent with conservation objectives that were jointly developed. The Panel meets semiannually and advises the U.S. and Canadian governments on the conservation and management of salmon originating in the Canadian portion of the Yukon River. In recognition of the changing dynamics of the fishery and the spirit of the agreement, interim management objectives are jointly reviewed and agreed upon each spring prior to salmon returns. In addition to escapement needs, Alaska is obligated to share harvestable surpluses of the Canadian run component; Canada receives 20% to 26% of the available total allowable catch (TAC) for Canadian-bound Chinook salmon and 29% to 35% of the available TAC for Canadian-bound fall chum salmon.

### **Canadian Chinook Salmon**

In 2010, the Panel adopted an interim management escapement goal (IMEG) range of 42,500–55,000 Chinook salmon. In the absence of a biological escapement goal (BEG; i.e., a goal based on a production or population model), the IMEG has been retained each year since then. At the April 2017 meeting, the Yukon River Panel implemented the current IMEG range of 42,500–55,000 for 2017–2019 (JTC 2018). The success of achieving this escapement goal is assessed using the mainstem sonar operated near Eagle, Alaska, passage estimate minus catches from fisheries upstream of the sonar, namely U.S. subsistence catch near the community of Eagle, Alaska and the harvest from Canadian fisheries. The JTC continues to examine other data and approaches that may be used to recommend a revised, biologically based escapement goal in the future.

### **Canadian Fall Chum Salmon**

The upper Yukon River escapement goal specified within the YRSA is greater than 80,000 fall chum salmon. This goal was achieved 15 times between 1982 and 2009 (28 years) and met 22 times through 2016. The DFO fall chum salmon mark–recapture program was conducted from 1982 to 2008 and the joint U.S./Canada sonar program operated near Eagle, Alaska was conducted for fall chum salmon from 2006 to present. The mark–recapture estimates generally agreed with mainstem Yukon River sonar estimates of fall chum salmon when the 2 programs were conducted concurrently (2006–2008). Therefore, the sonar project on the mainstem Yukon River became the primary assessment tool for the Canadian border passage and has been applied from 2006 to present.

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

In 2017, the JTC recommended that the upper Yukon IMEG remain as established in 2010 as a range of 70,000–104,000 fall chum salmon. This range was developed as 0.8 to 1.2 times the estimated spawners at maximum sustained yield (86,600 fish), which was derived prior to the

returns from the exceptional 2005 spawning escapement of over 437,498 fall chum salmon. Run size at the border has been assessed through the joint U.S./Canada sonar program near Eagle since 2006. The JTC recommended that the Canadian-origin mainstem Yukon IMEG remain as established in 2010 and remain in place for the 2018 and 2019 season (JTC 2018).

### **Fishing Branch River Fall Chum Salmon**

The escapement goal specified within the YRSA is a range of 50,000–120,000 fall chum salmon to the Fishing Branch River. This goal has been achieved 10 times from 1974 to 2012 and 5 times from 1985 to 2016 when the full season weir operation was the primary assessment project. The Fishing Branch River escapement goal was reviewed in 2001 and after a thorough analysis of the available data a recommendation was made for a BEG of 27,000–56,000 fall chum salmon (Eggers 2001). However, because of concerns over the quality of the data and analytical issues, the BEG recommendation was not accepted during a PSARC review (Tanasichuk 2002).

In April 2008, the Panel accepted the JTC recommendation to adopt an IMEG range of 22,000–49,000 fall chum salmon for the Fishing Branch River for the 2008 to 2010 period. The percentile method (Clark et al. 2014) was used to determine the IMEG. The analysis used escapement contrast (i.e., ratio of maximum to minimum escapement) and harvest rate information to determine what percentile range of observed escapements is appropriate for the escapement goal range determination. In the Fishing Branch River fall chum salmon analysis, escapements from 1985 to 2007 (excluding 1990) were incorporated along with the high contrast ratio of 24:1. The escapement goal range reflects the approximate 25 and 75 percentiles of 22 years of Fishing Branch River weir counts.

The use of this IMEG range has continued because no new data for analysis was available. The 2012 and 2016 Fishing Branch weir counts and run size estimates did not provide any indication that the 2008 IMEG required revision. Some attempts were made in 2013–2014 to assess the Fishing Branch River escapement based on a combination of projects operated near the community of Old Crow, including sonar estimates of fall chum salmon and the proportion of Porcupine River chum salmon radio tag recoveries upstream of the weir site. However, because there are concerns about the tagging portion of this study, comparing it to the weir goal is not substantiated. The Fishing Branch River weir was operated in both 2015 and 2016, concurrently with operations of the Porcupine River border sonar. In 2016 high water was an issue the entire season and the Fishing Branch River weir count was supplemented by the sonar estimates. The Porcupine River border passage was greater than 54,000 and the weir count was greater than 32,000 the fall chum salmon which met the Fishing Branch River IMEG (22,000–49,000 fish).

In 2017, the Panel adopted the JTC recommendation that the Fishing Branch IMEG remain as established in 2008 as a range of 22,000–49,000 fall chum salmon for the 2017, 2018 and 2019 seasons (JTC 2018). This range has been extended for 3 year periods since 2008.

## **2017 SALMON MANAGEMENT AND HARVESTS**

### **Total Yukon Drainage Salmon Harvest**

The total 2017 harvest in the Alaska portion of the Yukon River drainage, including the Coastal District, was 38,393 Chinook salmon, 646,210 summer chum, 576,667 fall chum, 146,480 coho salmon, and 2,457 pink salmon (Table 3; Appendices A13–A17).

## **Alaska Commercial Fishery**

A total of 9 salmon processors and/or catcher-sellers registered in the Alaska portion of the Yukon Area in 2017 (Table 4). The total 2017 commercial harvest for the Yukon Area in Alaska was 168 Chinook; 556,516 summer chum; 489,702 fall chum; 138,915 coho; and 0 pink salmon (Table 3). The commercial harvest of summer and fall chum, and coho salmon were all above the 5-year averages (Appendices A14–A16). A total of 476 permit holders participated in the 2017 commercial fishery, which was below the 5-year average of 485 permit holders (Appendix A8). Yukon River fishermen in Alaska received an estimated \$4.6 million for their salmon harvest in 2017, which was above the 5-year average of \$3.5 million (Appendix A11).

## **Chinook and Summer Chum Salmon Assessment**

ADF&G monitors a suite of assessment projects that provide critical salmon run timing, relative abundance, and stock composition information. Inseason run assessments included test fisheries, sonar passage estimates, commercial harvest data, subsistence and commercial fishing reports, and age, sex, and length (ASL) data. In addition, genetic samples were collected and analyzed inseason from multiple assessment projects to determine stock contribution of both Chinook and summer chum salmon.

Initial assessment in the lower river is critical to implementing an inseason management plan throughout the drainage. Three projects on the lower river provided timing information and inseason abundance: the Lower Yukon test fishery (LYTF), an 8.5-inch setnet project primarily designed to assess Chinook salmon run timing operated in the Middle and South Mouths of the Yukon River; a summer chum salmon-directed drift gillnet test fishery using 5.5-inch mesh operated in the Middle and South Mouths of the Yukon River; and Pilot Station sonar which provides abundance estimates of Chinook and summer chum salmon. Given the anticipated below average run size, efforts were made by ADF&G to reduce Chinook salmon mortality in test fisheries. Chinook salmon caught in drift and setnets that were deemed healthy were released alive immediately. Any Chinook salmon mortalities were delivered to Tribal Councils in various villages for distribution to elders or disabled individuals placed on a distribution list provided by the Councils.

Ice breakup at the mouth of the Yukon River occurred on May 14, which was about 1 week earlier than the average breakup date of May 21 (Appendix A21). The first summer chum salmon of the year was caught in the subsistence fishery on May 21. The first subsistence-caught Chinook salmon was harvested May 26, which was 4 days earlier than the average date of May 30 (Appendix A21). ADF&G relied on subsistence harvest reports to guide initial management actions during the early portion of the salmon runs.

The LYTF was operational at the South Mouth (Big Eddy) drift gillnet site on May 25 and at the Middle Mouth site on June 6. The first Chinook and summer chum salmon were caught in the test fishery on May 31 and May 26, respectively. The Big Eddy setnet site was fished until June 28. The LYTF set gillnets concluded operations on July 13. The cumulative catch per unit effort (CPUE) was 27.89, which was below the historical average CPUE of 29.6 for years with early run timing. The first quarter point, midpoint, and third quarter point were June 13, June 20, and June 26, respectively. The 8.25-inch drift gillnet project for Chinook salmon operated in Big Eddy until July 15 and provided valuable supplemental run timing information for Chinook salmon entering the South Mouth of the Yukon River. In 2017, 797 Chinook salmon were released alive from the LYTF and 939 Chinook were distributed to locals in mostly lower Yukon

communities, with emphasis given to elders and people who are unable to fish (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

The cumulative passage estimate at the Pilot Station sonar was approximately 263,000 Chinook salmon (with 90% Confidence Interval of  $\pm 29,110$  Chinook; Appendix E3). This final passage estimate was above the 10-year average of 156,899 (Appendix E18). Chinook salmon entered the river in 4 pulses consisting of 20,800 fish, 79,900 fish, 69,400 fish, and 55,200 fish. Inseason run analysis was focused on making comparisons to years with similar early run timing. The first quarter point, midpoint, and third quarter point for the sonar project near Pilot Station was on June 17, June 21, and June 27, respectively. The 2017 Chinook salmon run was 3 days earlier than average based on the midpoint at the sonar project near Pilot Station (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

An estimated 3.1 million summer chum salmon passed the sonar project near Pilot Station (with 90% Confidence Interval of  $\pm 138,259$  summer chum; Appendix E3), which was above the 10-year average of 1.9 million fish for the project. The first quarter point, midpoint, and third quarter point were June 19, June 23, and June 29, respectively, which was consistent with historical early run timing. Three large pulses of summer chum salmon were detected at the sonar project and the largest group consisted of approximately 957,800 fish, which passed the sonar between June 21 and June 25 (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

### **Summer Season Subsistence Fishery**

Along with the regulatory schedule (Table 2), ADF&G implemented gear restrictions and additional closures as part of the subsistence fishery management actions during the summer season (Table 5). ADF&G relied on subsistence harvest reports to guide initial management actions during the early portion of the salmon runs right after breakup. In previous years, gillnets were restricted to 6-inch or smaller mesh immediately following ice-out. However, in 2016 and 2017, managers waited for increased Chinook salmon catches at the LYTF assessment project before restricting the subsistence gillnet fishery to provide opportunity to target sheefish and other species. Relatively small numbers of Chinook salmon were detected in the river on June 1. These fish were considered the early part of the run, and in District 1 fishing with gillnets was restricted to 6-inch or smaller mesh and fishermen were placed on the regulatory schedule of 2 36 hour periods per week. In 2017, the North Coastal area was managed as part of District 1, therefore all actions affecting District 1 applied to the North Coastal area as well. The South Coastal area (from the Naskonat Peninsula north to 62 degrees North latitude including the communities of Hooper Bay and Scammon Bay) was restricted to 6-inch or smaller mesh gillnets for a portion of the summer season (Table 5).

Subsistence salmon fishing with gillnets closed June 11 in District 1 and reverted to fishing with selective gear (dip nets and beach seines) in anticipation of the first pulse passing through Districts 1, 2, and 3 (Table 5). Both dip nets and beach seines require the live release of Chinook salmon. In Districts 1 and 2, commercial and subsistence fishing periods were not open concurrently; subsistence fishing was open daily for 10 hour periods with selective gear. In District 3, subsistence fishing with selective gear was open 24 hours a day, 7 days per week using dip nets and beach seines only.

Once run strength indicated harvest of Chinook salmon could be supported, short periods of gillnet fishing (surgical openings) using 7.5-inch gillnets or smaller mesh gillnets were offered in

Districts 1–3 (Table 5). The management strategy was to provide some Chinook-directed opportunity in the lower river at a time when high abundance of summer chum salmon makes it hard for fishermen in the lower river to catch Chinook salmon using 6-inch or smaller mesh nets.

The 2017 Chinook salmon run was conservatively managed in the early part of the season when run assessment had higher uncertainty. Restrictions were relaxed or removed once run projections at the sonar project near Pilot Station coincided with the upper end of the preseason forecast and fishery managers were confident that the border escapement and harvest sharing objectives would be achieved. Due to the strength of the run, management actions were not taken in Yukon River tributaries or Subdistrict 5-D, in order to provide normal subsistence opportunity (Table 5).

### **Summer Season Commercial Fishery**

For the tenth consecutive year, no commercial periods targeting Chinook salmon were allowed in the mainstem Yukon River or in the Tanana River during the summer season. Chinook salmon were allowed to be sold during 1 fall season chum salmon-directed commercial period. Because Chinook salmon are encountered incidentally in the commercial summer chum salmon fishery, a suite of strategies were used to conservatively manage these fisheries to minimize the impact to the below average Chinook salmon run.

With the forecasted large run of summer chum and the return of a buyer to District 4, liberal commercial fishing opportunity was provided for summer chum salmon in Districts 1, 2, 4, and 6. However, there was a considerable reduction in buyer capacity in District 2. Only 1 buyer operated in that district for most of the summer season and tendering capacity and ice production were limited to Mountain Village. This reduction of buying capacity meant that far fewer commercial periods were scheduled in District 2. A second, smaller-scale buyer began operating out of St. Mary's during the fall season. These reductions in opportunity probably created economic hardship on District 2 fishermen. There was a marked increase in number of fishing permits harvesting salmon in District 1 over previous years which may be partially due to fishermen shifting their effort from District 2 to District 1.

#### ***Lower Yukon Districts***

Commercial fishing for summer chum salmon using selective gear (dip nets and beach seines) began June 10 in District 1 and June 21 in District 2. The impact to Chinook salmon was expected to be minimal because fishermen were required to immediately release all incidentally-caught Chinook salmon back to the water alive. The combined harvest in Districts 1 and 2 using selective gear types was 135,043 summer chum salmon. A total of 4,618 Chinook salmon were reported released alive. Commercial fishing was open for 10 periods in District 1 and 7 periods in District 2 using selective gear (Table 6). Approximately 316 permit holders fished selective gear commercial openings; most fishermen (96%) used dip net gear and 4% of fishermen used beach seines. Beach seines accounted for less than 6% of the summer chum salmon harvest taken using selective gear types.

The use of gillnets in the summer chum commercial fishery was delayed until after the midpoint of the Chinook salmon run and the passage estimate at Pilot Station sonar was around 166,000 fish. In District 1, commercial opportunity using 5.5-inch or smaller mesh size gillnets not exceeding 30 meshes in depth began June 23 to reduce the incidental harvest of Chinook salmon. Gillnet opportunity with 6-inch or smaller mesh began July 1 in District 1 (Table 6). The 5.5-

inch gillnet gear restriction was not applied in District 2 because most fishermen do not have that gear type. Commercial fishing using 6-inch or smaller mesh gillnets began July 11 in District 2.

Sale of incidentally-caught Chinook salmon was prohibited for the seventh consecutive year in the summer season. Fishermen were required to report any Chinook salmon caught but not sold on fish tickets. An estimated 5,589 Chinook salmon were kept for personal use in Districts 1 and 2 during the summer season commercial gillnet fishery. By July 17, 99% of the Chinook salmon run had passed District 1, therefore, during the first fall season chum salmon commercial opening, ADF&G allowed the sale of 168 incidentally-caught Chinook salmon. After much concern was expressed from the public, ADF&G discontinued the sale of incidentally caught Chinook salmon and sought guidance from the BOF through an out-of-cycle proposal submitted for the 2018 cycle.

The cumulative summer chum salmon commercial harvest in Districts 1 and 2 for all gear types combined was 393,165 fish (Table 6; Appendix A4). No pink salmon or coho salmon were sold during the summer season. The summer chum salmon harvest was 4% above the 5-year average harvest of 378,054 fish (Appendix A4).

### ***Upper Yukon Districts***

Fishing opened in District 4 on June 25, with 34 periods through July 31 using live-release fish wheels. Fishermen were required to continuously monitor fish wheels and immediately release any Chinook salmon alive. The District 4 summer chum salmon harvest of 157,831 fish was the largest harvest since 1997 (Appendix A4). Less than 50 Chinook salmon were encountered and released alive in District 4 (Table 6). Due to different bank orientations, Chinook salmon are not typically found on the same bank as summer chum salmon in this area of the river and are not frequently caught in the commercial fish wheels.

ADF&G scheduled the first summer chum salmon-directed commercial fishing period in District 6 on July 14. By this time, nearly 260,000 Chinook salmon and over 3 million summer chum salmon had been counted at the Pilot Station sonar, which indicated strong runs for both species. Therefore, gear restrictions were not implemented during the commercial fishery; fishermen could use 7.5-inch or smaller mesh gillnets and fish wheels. Chinook salmon could not be sold but could be retained for personal use. ADF&G scheduled 8 commercial fishing periods. The preliminary cumulative harvest was 4,300 summer chum salmon and 185 Chinook kept for personal use (Table 6). The 2017 District 6 commercial harvest was 15% below the 5-year average of 5,029 summer chum salmon (Appendix A4).

### **Summer Season Harvest, Effort, and Exvessel Value**

In 2017, there were 73 commercial periods (Table 6) and the majority of commercial harvest occurred in the lower river districts (Tables 6, 7, and 8). The total commercial harvest in Districts 1, 2, 4, and 6 combined was 556,516 summer chum salmon, which was 25% above the 5-year average harvest of 444,094 fish and the largest harvest since 1997 (Appendix A4).

A total of 401 permit holders participated in the summer chum salmon fishery, which was below the 5-year average of 422 permit holders (Appendix A8). The Lower Yukon Area (Districts 1–3) and Upper Yukon Area (Districts 4–6) are separate Commercial Fisheries Entry Commission (CFEC) permit areas. A total of 388 permit holders fished in the Lower Yukon Area in 2016, which was below the 5-year average of 414 permits fished. In the Upper Yukon Area, 13 permit holders fished, which was above the 5-year average of 8 permits fished. (Appendix A8). The

increase in permit holders that fished in the Upper Yukon Area was primarily due to the commercial market in District 4.

Lower Yukon Area fishermen in Alaska received \$1.47 million for their summer chum salmon harvest in 2017, which was 2% below the 5-year average commercial harvest value of \$1.50 million. Lower Yukon Area fishermen also received an additional \$9,922 from the sale of Chinook salmon, which occurred during 1 commercial period during the fall season (Appendix A11). In 2017 fishermen received \$0.60 per pound for summer chum salmon and \$5.50 per pound for Chinook salmon (Appendix A10). The estimated average income for Lower Yukon Area fishermen during the summer season in 2017 was \$3,815. This includes the value of Chinook salmon sold in the fall season.

In 2017, Upper Yukon Area fishermen received an average of \$0.34 per pound for summer chum salmon sold in the round, which was above the 5-year average of \$0.29 per pound (Appendix A10). The Upper Yukon Area exvessel value for summer chum salmon was estimated to be \$274,608, which was 3 times larger than the 5-year average of \$91,616, and the largest since 1997 (Appendix A11).

### **Summer Season Commercial Harvest Characteristics**

Approximately 1,113 summer chum salmon were sampled for ASL from commercial harvests in District 1. The summer chum salmon age composition from the District 1 dip net commercial fishery ( $n = 445$ ) was <1% age-3, 52% age-4, 48% age-5, and <1% age-6 fish. Females comprised 42% of the sample. The summer chum salmon age composition from the District 1 gillnet commercial fishery ( $n = 601$ ) was 72% age-4, 27% age-5, and 1% age-6 fish. Females made up 49% of the sample. Sex determination of commercially caught fish was done with visual exterior inspection only. The mean length of all summer chum salmon sampled in the District 1 commercial fishery was 555 mm (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

### **Fall Chum and Coho Salmon Assessment**

ADF&G monitored a suite of assessment projects in the lower river that provided salmon run timing, relative abundance, and stock composition information. Projects operated included 2 drift gillnet test fisheries that provided timing information and relative abundance, a mainstem Yukon River sonar located near Pilot Station that provided abundance estimates, and harvest information from both subsistence and commercial fisheries. Genetic samples collected from chum salmon at the Pilot Station sonar provided stock composition information. Escapement projects were operated in the upper Yukon River tributaries and the upper mainstem of the Yukon River. Assessment projects operated in the upper river included a sonar in the mainstem Yukon River near U.S./Canada border as well as in 2 tributaries (Chandalar and Upper Porcupine rivers), and a weir on the Fishing Branch River (Porcupine River headwater). Data from these projects were analyzed collectively inseason, were used to verify and corroborate assessment between projects, and further used to project whether escapement goals would be achieved. ASL information were also collected at the lower river test fisheries, District 1 commercial fishery, mainstem Yukon River sonar (Eagle), as well as Fishing Branch and Delta rivers.

By regulation the fall season began in the lower Yukon River on July 16. Chum salmon caught in the Lower Yukon River drift gillnet test fishery (LYTF) after July 16 were considered fall chum salmon. Mountain Village drift gillnet test fishery (MVTf) began operating on July 18, and the

mainstem Yukon River sonar operated near Pilot Station began counting fall chum salmon on July 19. The subsequent transition of upriver districts and subdistricts to the fall season was based on the migration timing of fall chum salmon. The LYTF completed operations on September 10 (ADF&G ceased operations on August 28 and Yukon Delta Fisheries Development Association took over until September 10). The preliminary total cumulative CPUE of fall chum salmon was 3,827, which was well above the historical median of 1,923. The MVTF ceased operations after September 12 with a fall chum salmon cumulative CPUE of 6,390, which was well above the historical median of 2,035. The mainstem Yukon River sonar near Pilot Station ceased operations after September 7. The preliminary fall chum salmon passage estimate at the Pilot Station sonar project was 1.8 million fish, which was well above the historical median of 688,000 fish (Appendix E3).

The 2017 fall chum salmon run entered the Yukon River in 7 distinct pulses. The fourth pulse was the largest with approximately 1.1 million fish. The pulse was 7 days in duration and the peak daily passage at the Pilot Station sonar project was August 16. Cumulative fall chum salmon passage past the sonar remained well above the historical median the entire season. Inseason run projections remained well above the 550,000 fall chum salmon threshold necessary to allow fall chum salmon-directed commercial fishing. Run timing for fall chum salmon was an average of 2 days late over all the assessment projects (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

The cumulative coho salmon passage past the Pilot Station sonar was tracking with the historical median throughout the season. The coho salmon sonar passage estimate was 166,300 fish, which was above the historical median of 160,300 fish. The preliminary total cumulative CPUE for coho salmon at the LYTF and MVTF were above historical medians (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

## **Subsistence Fisheries**

In anticipation that the fall chum salmon run size in 2017 would meet both escapement needs and provide a commercial surplus, all districts and subdistricts were placed on their regulatory subsistence fishing schedules upon transitioning to fall season management. The transition date was based on the fall chum salmon migration timing upriver. Because of the strong run size and inseason run projections, ADF&G liberalized subsistence fishing schedules in all districts. Upon transitioning to fall season management, subsistence fishermen could use gillnets up to 7.5-inch mesh size.

Subsistence salmon fishing in the mainstem Porcupine River was placed on a reduced schedule of one 96-hour period per week beginning September 4. Subsistence salmon fishing in Porcupine River tributaries, such as the Sheenjek and Black rivers, remained open 7 days a week, 24 hours per day. The reduced schedule was an attempt to increase the number of fall chum salmon reaching the Canadian portion of the Porcupine River drainage. By September 22, based on favorable escapement projections for the Fishing Branch River weir, subsistence salmon fishing was relaxed to 24 hours a day, 7 days a week.

## **Fall Season Commercial Fisheries**

Districts 1 and 2 began the fall season on a 2 period per week commercial fishing schedule. An additional buyer began purchasing fish in District 2 on July 21. The first commercial period on July 17 in District 1 led to the second largest harvest of fall chum salmon in a single period in the

Yukon River. By the first week of August, fall chum salmon passage exceeded 476,000 fish at the Pilot Stations sonar and commercial opportunity was increased. Both buyers requested a departure from the 2 period per week schedule to focus commercial opening on the pulses. This worked well but there were some issues. On several occasions it resulted in openings when the buyer's capacity was exceeded, which resulted in reduced fishing time. In addition, it caused inconsistent subsistence closures in conjunction with commercial periods, which made it difficult to inform subsistence fishermen of when subsistence fishing was open or closed. By the third week in August, as fall chum passage at the Pilot Station sonar exceeded 1.6 million fish, both Districts 1 and 2 were fishing either every day or every other day. Often, 1 or more of the buyers were limited by processing capacity and asked for reduced fishing time.

Commercial fishing periods were established in Districts 5, 6, and Subdistrict 4-A, but limited markets resulted in low fishing effort and relatively small harvests. Commercial fishing was open in Subdistrict 4-A from August 1 through August 14. Fall chum salmon catches were relatively small with 1 buyer and less than 5 fishermen, thus commercial activity ceased. In Subdistricts 5-B and 5-C, commercial fishing for fall chum salmon was open from August 4 through September 30, but the harvest of fall chum salmon was small. District 6 opened for commercial fishing for fall chum salmon on August 11 and remained on schedule through September 24. The last commercial period in District 6, from September 25–30, was extended from 42 hours to 126 hours due to the strong fall chum salmon run and market interests. Because of poor market conditions for roe, 1 buyer operated briefly in the district, but most of harvest was by catcher-sellers operating in the district.

Coho salmon daily and cumulative passages at the Pilot Station sonar were mostly below the historical median until mid-August when the second and largest pulse passed the sonar. Coho salmon continued to be above the historical median at the lower river test fishery projects and Pilot Station sonar for the remainder of the season. The commercial harvest of coho salmon in Districts 1 and 2 combined was the third largest on record. The coho salmon run in 2017 was assessed as above average. ADF&G determined that a commercial surplus, in addition to what was harvested during the fall chum salmon-directed fisheries, remained. As a result, 2 coho salmon-directed commercial openings on September 3 and September 6 were allowed in District 1, and a coho-directed commercial fishery was allowed in District 6 from October 3 to October 4.

### **Fall Season Harvest, Effort and Exvessel Value**

A total of 71 commercial periods were announced in 2017; most of the commercial fishing periods and harvest occurred in Districts 1 and 2 (Table 9). A regular schedule of commercial fishing periods was established in Subdistricts 5-B, 5-C, and 4-A, and District 6. Fishing effort was low and harvests were relatively small because of limited markets.

The 2017 total commercial harvest for the Yukon River fall season in the Alaska portion of the drainage was 489,702 fall chum salmon (Tables 3 and 9; Appendix A5) and 138,915 coho salmon (Tables 3 and 9; Appendix A6). The fall chum salmon commercial harvest set a record for the Alaska portion of the Yukon River drainage. The 5-year average commercial harvest was 260,065 fall chum salmon. The coho salmon harvest was the third largest on record and above the 5-year average of 115,373 fish. Most salmon was sold in the round and some roe was sold separately. The average weight of fall chum salmon caught commercially in Districts 1 and 2 was 7.3 pounds, which was above the average weight of 7.0 pounds in 2016 and the 10-year

average weight of 7.1 pounds (Appendix A12). The average price paid per pound in Districts 1 and 2 (Lower Yukon Area) was \$0.60 for fall chum and \$1.00 for coho salmon (Appendix A10). The fall chum salmon price was below the 5-year average of \$0.76 but the coho salmon price was near the 5-year average of \$1.01. In Subdistricts 5-B, 5-C, and 4-A, and District 6 (Upper Yukon Area), the average price paid per pound was \$0.15 for fall chum salmon and \$0.15 for coho salmon (Appendix A10). Both prices were below 5-year averages. The total exvessel value of the fall season harvest was the second highest on record at \$2,067,408 for fall chum and \$823,358 for coho salmon (Appendix A11). A total of 451 individual permit holders participated in the 2017 fall chum and coho salmon fishery; 438 in Districts 1 and 2 combined, and 13 in Districts 4, 5, and 6 combined (Appendix A8).

### **Fall Season Commercial Harvest Characteristics**

Preliminary fall chum salmon age composition from the District 1 commercial harvest was 2.9% age-3 and 0.2% age-6, and the dominant age classes contained 81.3% age-4 and 15.7% age-5, estimated from a sample of 872 fish. Females composed 46.5% of the commercial harvest sample of fall chum salmon, which was below the 10-year average of 50.4%. The mean length of fall chum salmon in the commercial harvest sample was 570 mm, which was near the 10-year average of 572 mm (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

Preliminary coho salmon sex composition from the commercial harvest in District 1 ( $n = 200$ ) contained 50.5% females, which was below the 10-year average of 49.1%. The mean length of coho salmon in the commercial harvest sample was 541 mm, which was well below the 10-year average of 562 mm (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

### **Yukon Area Subsistence and Personal Use Salmon Harvest**

Subsistence salmon household harvest survey (survey) and permit programs collected quantitative information about salmon harvest by species, gear types used to harvest salmon, harvest distribution, miscellaneous species harvest, number of dogs, and whether salmon was harvested for dogs. Qualitative information was also collected from households about salmon health and quality, subsistence fishing success, and fishery concerns. Subsistence permits are required in portions of the Yukon Area that are road accessible, including the Tanana River drainage, segments of the Koyukuk River and upper Yukon River in District 5. Subsistence salmon harvest estimates were derived by adding survey estimates, subsistence permit data, test fishery donations, and commercially-retained salmon for personal use. The preliminary 2017 Yukon Area subsistence salmon harvest estimate (not including the personal use harvests from District 6-C) was 38,100 Chinook, 87,437 summer chum, 85,093 fall chum, and 7,313 coho salmon (Table 3). An estimated 1,617 households participated in the Yukon Area subsistence and personal use fisheries in 2017 with 43%, 47% and 6% of households using drift gillnets, set gillnets, and fish wheels respectively as primary gear types (Table 10). The remaining 4% of households used other gear types such as beach seines and dip nets. To conserve Chinook salmon, fishing closures and gear restrictions were enacted throughout the drainage, except in Subdistrict 5-D, during the early part of the Chinook and summer chum salmon migrations. Subsistence and personal use fishing during the fall chum and coho salmon runs were largely unrestricted and open according to regulatory schedules.

### *Subsistence Survey*

The survey employed a stratified random sampling technique to select Yukon Area households to be interviewed during 2017 (Cochran 1977). Harvest estimates were determined by sampled household and by level of harvest (e.g. no harvest, medium, or heavy harvesters). Estimates were expanded to include households not interviewed for a more complete estimate of a community's harvest; accordingly, surveys estimates have associated error (Jallen et al. 2017). A total of 1,412 households were surveyed from 33 communities. In 2017, the survey estimated  $30,278 \pm 2,696$  Chinook,  $81,159 \pm 7,244$  summer chum,  $56,279 \pm 2,696$  fall chum, and  $3,648 \pm 1,000$  coho salmon were harvested (Table 10). In addition to the survey estimates, 1,000 Chinook, 3,626 summer chum, 4,095 fall chum, and 1,019 coho salmon, distributed by test fishery projects, were added to the relevant communities (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks). Test fishery donations do not have an associated error because they are considered exact reports.

During the survey, households had the opportunity to comment on any topic related to fishing they felt was important. The largest groups of comments were related to positive run dynamics (110 responses). The second most numerous comments said that they met their needs for salmon (102 responses). The third largest group (47) of comments was personal in nature and regarded circumstances that affected an individual household's fishing effort such as health problems, work schedules, and time conflicts with other activities. Lack of equipment, e.g. boats, motors and nets, was reported as preventing fishing for 31 households. Comments discussing management actions in a positive way (33) were almost equal to comments discussing management actions in a negative way (32). Twelve comments mentioned river conditions, mainly high-water conditions (9). Six or less comments mentioned animals, weather, conservation, dogs, expenses, or disease. Dip nets were mentioned by 16 households, with the majority having a negative opinion (11) of dip nets due to their inefficiency, difficulty of use, etc. The remaining households reported being glad for the fishing opportunity dip nets provided or mentioned using them (5) (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

### *Subsistence Permits*

Subsistence permits are used to assess harvest in the road accessible communities. A total of 355 subsistence permits were issued in 2017 for the harvest of salmon and nonsalmon species. As of March 27, 2018, 99% of the permits issued were returned and 261 permits reported fishing information (Appendices D6 and D7). There was no error associated with estimates of permit harvest because they are considered exact reports. Stevens Village residents have both permit and non-permit (subsistence survey) fishing areas nearby and may choose to participate in either or both fisheries. To avoid double counting, salmon harvest from this community was primarily estimated using the survey (Jallen et al. 2017). Households that returned subsistence permits reported harvesting 6,679 Chinook, 2,494 summer chum, 28,814 fall chum, and 2,628 coho salmon (Appendices D6 and D7). Commercially harvested salmon (from the Tanana River fishery) which are retained for personal use and reported as such on fish tickets, and this harvest was added to the relevant community permit totals. In 2017, 185 Chinook, 177 summer chum, and 21 coho salmon were added to the community harvest totals of Nenana and Fairbanks (Table 10) The number of subsistence permits issued in 2017 was 7% below the 5-year average and 15% below the 10-year average.

### ***Amounts Necessary for Subsistence and Historic Trends***

One method for assessing the relative success of Yukon Area fishermen is to compare the annual estimated Yukon Area subsistence harvest (permits and surveys) to historic averages and to the “amounts (reasonably) necessary for subsistence” (ANS) harvest ranges established by BOF (ADF&G 2001; Estensen et al. 2015). The ANS levels outlined in 5 AAC 01.236 are 45,500–66,704 Chinook; 83,500–142,192 summer chum; 89,500–167,900 fall chum; 20,500–51,980 coho; and 2,100–9,700 pink salmon. Except for the harvests of summer chum and pink salmon, which were within their ANS ranges, subsistence harvests of each of the other salmon species in 2017 were below the lower level of their ANS ranges. When comparing to ANS, subsistence salmon harvest estimates do not include salmon harvested from personal use permits or salmon retained from commercial fisheries for personal use. The years of data included to derive ANS do not include years in which fishery restrictions for a species were enacted and current year management actions should be considered when comparing to ANS levels.

Subsistence salmon harvest estimates indicated the 2017 Chinook salmon subsistence harvest was 152% above 5-year average and 13% below the 2007–2011 average (Appendix D1). The summer chum salmon subsistence harvest was approximately 13% below the 5-year average and 2% below the 2007–2011 average (Appendix D2). The harvest of fall chum salmon was 11% below the 5-year average and 4% above the 2007–2011 average (Appendix D3). Coho salmon harvest was 54% below the 5-year average and 53% below the 2007–2011 average (Appendix D4). Overall, the 2017 Yukon Area subsistence salmon harvest of 217,943 Chinook, summer chum, fall chum and coho salmon combined (Appendices D1–D4) was approximately 4% below the 5-year average of 226,333 fish and 5% below the 2007–2011 average of 229,499 fish. This 10 year period includes years with very low harvests and fishing restrictions, such as closures during the summer season to protect Chinook salmon from 2009 through 2016. The 2017 harvest of Chinook salmon was the highest harvest since 2011. The reductions in fall chum and coho salmon harvests reported on permits in 2017 may have occurred due to a shift from subsistence harvests to the commercial market through an increase of catcher-sellers operating in the Tanana River.

### ***Personal Use Harvest***

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area, Subdistrict 6-C (Figure 11). Fishermen are required to document their daily personal use harvest of salmon and nonsalmon on household permits and return them to ADF&G at the end of the season. Like the subsistence fishing permits, demographics including numbers of fishermen, household members, primary gear type, number of dogs owned and whether salmon was harvested for dogs was documented (Jallen et al. 2017).

In 2017, 82 personal use salmon permits were issued. As of March 27, 2018, all personal use salmon permits were returned and 40 reported fishing. The reported personal use harvest was 125 Chinook, 438 summer chum, 626 fall chum, and 200 coho salmon (Appendix D8). The number of personal use permits issued in 2017 was 36% above the 5-year average and 38% above the 10-year average. Most personal use nonsalmon harvests are from the directed whitefish and sucker fishery using various approved gear types in an attempt to minimize salmon harvests (Appendix D8).

## **Sport Fishery**

In 2017, sport fishermen in the Yukon River drainage could take 1 Chinook salmon over 20 inches in length after June 26. Prior to this date, sport fishing in the Yukon River drainage was closed. The Tanana River Area remained open for sport fishing in 2017. Alaskan sport fishing effort and harvests are monitored annually through a statewide sport fishery postal survey. Harvest estimates are typically not available until approximately 1 calendar year after the fishing season. The 5-year average Yukon River drainage (including Tanana Drainage) sport salmon harvest was estimated as 105 Chinook, 505 chum, 575 coho, and 51 pink salmon (Appendices A13 to A16).

## **ENFORCEMENT**

The primary enforcement authority for ADF&G subsistence, personal use, and commercial fishing regulations within the Yukon Area is the Division of Alaska Wildlife Troopers (AWT) with the Department of Public Safety. However, in 2017 the USFWS Division of Refuge Law Enforcement, Bureau of Land Management, and AWT were all involved in enforcement operations covering the entire length of the river for both the Chinook and summer chum salmon runs. The following is the postseason summary for 2017 Enforcement staff by agency.

### ***Alaska Wildlife Troopers summary***

Patrols of the lower Yukon River were conducted from mid-June to mid-July during the Chinook and summer chum salmon season. The presence of AWT in the lower river communities was noticed by the public and built positive rapport with fishermen. Subsistence and commercial fishermen in Districts 1 and 2 were in relatively good compliance. Marking of subsistence and commercial fishing gear has continued to be a frequent problem over the years. Unless other violations were present, warnings were given for unmarked gear, or if the operator was not present, AWT left instruction for compliance. Approximately 30 citations were issued for employing unlicensed crew or having no crew license present; failing to have required personal floatation devices for each occupant; no vessel identification; no permit holder present; numerous vessel safety requirements; period violations; obstructing more than half of a waterway; and commercial fishing in closed waters. In some circumstances, fish proceeds were confiscated. No gear was seized in the lower river from active fishermen or unattended gear, although it was discovered that nearly every beach seine inspected was in violation of regulation due to the monofilament prohibition.

In the middle and upper Yukon River, patrol plans were developed to primarily focus on the early part of the run of Chinook salmon when full closures were expected. Focused patrols based on run timing in coordination with ADF&G staff and input from the public. Concerns were like past years and included fishing with oversized mesh and closed period violations. AWT received 1 complaint about subsistence fishermen using drift gillnets near Galena in an area not open to drift gillnet fishing. Overall, the response from communities was positive and supportive of AWT having a presence during the fishery. Due primarily to increased staffing, AWT was able to increase patrols in the Upper river and conducted five 2-day boat patrols that originated from the Yukon River bridge, down to Tanana and upstream to Stevens Village area. An aircraft was used once on a 2 day patrol in conjunction with a boat patrol above and below the bridge. Overall contacts were relatively low, and compliance was good. AWT issued 5 citations for violations including gear size, closed period, and interference with lawful fishing. Gear marking violations were documented and fishermen were warned. In July, other patrols were conducted

between Grayling and Tanana, Rampart to Stevens Village, Beaver to Circle, and Circle to Eagle. The primary violations in all areas from Rampart to Eagle were subsistence fishing with unmarked gear and set gillnets with a mesh size over 7.5 inches. In some cases, when citations were issued for oversized mesh or fishing during closed periods, the nets were seized and fish were donated to the local village councils.

Looking forward to 2018 season, AWT plans to continue these levels of proactive patrols. In the upriver portion, attempts will be made to conduct more frequent aircraft patrols during peak and especially non-peak times to confirm compliance between pulses of fish or at the beginning/end of pulses. This will also include efforts at increased patrols in the middle Yukon River between Grayling and Tanana.

### ***USFWS Law Enforcement summary***

Depending on the egregiousness of the violation, actions taken by federal officers ranged from warnings to citations, including net seizures. Patrols indicated that a few people were still using gillnets with a mesh size greater than 7.5 inches. Officers traveled to communities between Galena and St. Mary's in mid-May to conduct outreach prior to the season. In early June, patrols were made in the lower river around the first pulse of Chinook salmon entering the river. During this time, the most frequent violation encountered was unmarked gillnets. Other violations included oversized mesh or the overall length of net being too long, therefore a couple nets were seized. Officers continued to visit villages and fish camps during the season to talk with local fishermen and learn about local customs. As the season progressed, patrols were conducted in the middle river between Koyukuk to Tanana. In this area, violations included 1 fisherman near Ruby fishing during a closure, 2 fishermen drifting in state waters illegally, numerous unmarked gear, a couple nets had oversized mesh, and a commercial fisherman had an unmarked and unmanned fish wheel while in operation. Patrols were made in the upper Yukon River between the Yukon River bridge and Fort Yukon. Most violations observed were fishing with unmarked gear. In response, an officer spoke on the KZPA radio to announce the need to mark all fishing gear.

## **CANADIAN FISHERIES**

A total of 3,631 Chinook salmon, 5,716 fall chum salmon, and 71 coho salmon were harvested in the 2017 Canadian commercial, Aboriginal, recreational, and domestic fisheries combined (Table 3; Appendices A13, A15, and A16).

### **Canadian Commercial Fishery**

A total of 2,404 fall chum salmon were harvested in the Canadian Yukon River commercial fishery in 2017 (Appendix 15). No other salmon species were harvested for commercial purposes (Table 3).

### **Chinook Salmon Harvest**

The lower Canadian commercial fishery area is located downstream of the Stewart River. The most intensive fishing activity and catch monitoring is conducted in this area.

The inseason Chinook salmon run status indicated that there would not be a sufficient run to support a commercial fishery. The commercial Chinook salmon fishery remained closed throughout the 2017 season and there was no harvest (JTC 2018). Since 1997, there has been a

marked decrease in commercial catch of Chinook salmon in the upper Yukon River as a result of very limited fishing opportunities and/or closures to protect weak runs.

### **Fall Chum Salmon Harvest**

A strong return of fall chum salmon resulted in opportunities for commercial fishery openings throughout the fall season. A total of 2,404 fall chum salmon were harvested during commercial fishery openings (JTC 2018). Since 1997, there has been a marked decrease in commercial catches of upper Yukon River fall chum salmon because of a limited market as well as reduced fishing opportunities in some years due to below average run sizes. The 2017 commercial fall chum salmon harvest was 26% below the 10-year average of 3,263 fish and 12% below the 5-year average of 2,733 fish (Appendix A15). Between 2006 and 2016, the commercial fall chum salmon catch ranged from a low of 293 fish in 2009, when the run was late, and the fishery was closed most of season due to conservation concerns, to a high of 7,109 fish in 2007.

Commercial harvest of coho salmon in the mainstem Yukon River in Canada is usually very small. This is thought to be related to a combination of low abundance and limited availability of this species to fisheries due to late migration timing. There were no coho salmon harvested in the commercial fishery in 2017.

### **Aboriginal Fishery**

#### ***Mainstem Yukon River Chinook Salmon***

Catch estimates of salmon in the Aboriginal fishery on the Yukon and Porcupine rivers are determined from locally-conducted inseason and postseason interviews using a catch calendar and a voluntary recording system.

Based on a preseason outlook for a below average run of 70,000–97,000 Canadian-origin Yukon Chinook salmon, the Yukon Salmon Subcommittee recommended a conservative approach early in the 2017 fishing season. Although inseason border escapement projections indicated that the run strength was toward the upper end of the preseason forecast, Yukon First Nations Governments continued to follow very conservative management plans, which resulted in significantly reduced harvests for 2017 compared to historical averages (JTC 2018). The upper Yukon River Aboriginal Chinook salmon catch was estimated to be 3,500 fish (Appendix 13). This was above the 5-year average of 1,554 fish and the 10-year average of 2,563 fish.

#### ***Mainstem Yukon River Fall Chum Salmon***

The preseason outlook for Canadian-origin fall chum salmon in 2017 indicated an above average run of 350,000–425,000 fish. The border passage estimate at this run projection would place Canadian management in the green zone and therefore no restrictions were expected in the First Nations fisheries. As inseason information became available, the First Nations fisheries proceeded without restrictions. The preliminary 2017 fall chum salmon harvest in the Aboriginal fishery from the upper Yukon River was estimated to be 1,000 fish based on recent harvest information (JTC 2018).

#### ***Porcupine River Chinook Fall Chum and Coho Salmon***

Vuntut Gwitchin First Nation (VGFN) reported a season total harvest of 131 Chinook salmon for 2017. The 10-year average was 244 Chinook salmon (Appendix 13).

A total of 2,312 fall chum salmon was harvested in the Old Crow-based VGFN fishery, which was 2% below the 10-year average harvest of 2,371 chum salmon.

There were 71 coho salmon harvested on the Porcupine River in 2017, which was below the 10-year average of 93 fish (Appendix A16).

### **Domestic Fishery**

The domestic fishery was closed during the Chinook salmon season. For fall chum salmon, there were openings (concurrent with the commercial fishery openings) during the season. There was no reported domestic catch of fall chum salmon in 2017. This compares to a recent average of 14 fish from 2012–2016 (Appendix A15), and a long-term average of 443 fish, from 1974–2016; domestic fishery catches were not recorded prior to 1974 (JTC 2018).

### **Recreational Fishery**

In 1999, the Salmon Sub-Committee introduced a mandatory Yukon Salmon Conservation Catch Card to improve harvest estimates and to serve as a statistical base to ascertain the importance of salmon to the Yukon River recreational fishery. Anglers are required to report their catch and harvest by late fall. The information reported includes the number, species, fate (kept or released), sex, size, date, and location of all salmon caught.

From catch card information received as of this publication, no Chinook salmon were caught nor harvested in the Yukon River or its tributaries in the 2017 recreational fishery. Over the last 10 years retention (harvest) of Chinook salmon in the recreational fishery has only been permitted in 2009 and 2011. For the 2017 season, the daily catch and possession limits of fall chum salmon in the recreational fishery remained at 2 and 4, respectively. There were no reports of fall chum salmon caught (JTC 2018).

## **SPAWNING ESCAPEMENT**

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

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

### **Escapement Goals**

Escapement goals (EG) have been established for several Chinook, summer and fall chum, and coho salmon stocks or stock aggregates which spawn in Yukon River drainage streams or areas (Appendix E1). The EGs developed or modified through this process are primarily presented as ranges. The underlying principle in establishing an EG is that it should allow for escapements necessary to conserve and sustain potential salmon production and be consistent with sustained yield (SSFP and *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223.)). The use of EG ranges should allow for uncertainty associated with observed variability in measurement, changes in climate and oceanographic conditions, and varying abundance within related populations of the salmon stock being measured. ADF&G undertakes a triennial review of

salmon escapement goals in conjunction with BOF meeting cycle. Chinook, summer chum, fall chum, and coho salmon stocks will be reviewed during the 2019 BOF cycle. Based on previous years' reviews and goals established during the previous BOF cycle, a BEG or SEG was recommended for each stock (ADF&G 2004; Brannian et al 2006; Volk et al. 2009; Conitz et al. 2012, and Conitz et al. 2015). BEG is defined as an escapement range that provides the highest potential to produce maximum sustained yield. SEG is defined as a level of escapement, determined through an index or range of escapement estimates that has provided for sustained yield over a 5- to 10-year period.

Most Arctic–Yukon–Kuskokwim (AYK) Region escapement goals were originally set in the late 1970s or early 1980s, many of which have been revised subsequently in accordance with updated policies and newer information and analytical methods. Yukon area escapement goals were first documented by Buklis (1993) as required under ADF&G's original escapement goal policy signed in 1992. These early goals were generally established using a simple escapement averaging methodology based on aerial survey counts. Following adoption of the new policies (SSFP and *Policy for Statewide Salmon Escapement Goals*), several new or revised BEGs were established. These included BEGs for Chena and Salcha rivers Chinook salmon (Evenson 2002), Anvik River summer chum salmon (Clark and Sandone 2001), and Andreafsky River summer chum salmon (Clark 2001), and Yukon River fall chum salmon (Eggers 2001). The Chena and Salcha Chinook salmon BEGs have been reanalyzed in subsequent review cycles but not changed (Volk et al. 2009). The goal range for Anvik River summer chum salmon has been revised (ADF&G 2004). The goal for East Fork Andreafsky River summer chum salmon was changed to a lower-bound SEG, based on a run reconstruction and spawner-recruitment analysis using a newer Bayesian statistical analysis (Fleischman and Evenson 2010). The drainagewide BEG for fall chum salmon was reanalyzed based upon similar Bayesian methods with a new run reconstruction and was revised to an SEG with the same range (Fleischman and Borba 2009). These 2 revisions from BEG to SEG were not due to lack of information; in fact, the newer analyses were more rigorous and better statistically defined. However, practical management considerations in both cases limit options for maintaining escapements below an upper bound. A few goals have been discontinued since 2001 (Volk et al. 2009; ADF&G 2004). The remaining systems with Chinook salmon goals include the West Fork Andreafsky, Nulato, and Anvik rivers based on aerial surveys and a coho salmon goal for the Delta Clearwater River based upon a boat survey (Conitz et al. 2012). Transboundary escapement goals for passage at the Alaska-Canada border have been established by agreement, according to provisions of the Yukon River Salmon Agreement, for mainstem Chinook salmon and mainstem and Porcupine River (Fishing Branch) fall chum salmon (JTC 2010). These goals are referred to as IMEG because they were provisionally established until the 2 parties can agree upon formal BEG analyses.

Escapement goal recommendations were presented at the January 2016 Alaska Board of Fisheries meeting. A drainagewide summer chum salmon goal of 500,000–1,200,000 was recommended along with the discontinuation of 2 existing fall chum goals: the Sheenjek River and the Upper Yukon Tributary aggregate goal (Conitz et al. 2015). ADF&G has no means to monitor the escapement into the Sheenjek River since 2012, and Sheenjek River goal is a subset of the Upper Yukon Tributary goal rendering both goals unnecessary.

### **Mixed Stock Analysis**

Scale pattern analysis, age composition estimates, and geographic distribution have been used by ADF&G on an annual basis from 1981 through 2003 to estimate stock composition of Chinook

and chum salmon in Yukon River harvests and to estimate total run abundance. In 2004, the feasibility of using genetic analysis in replacement of scale pattern analysis to assess Chinook salmon stock composition was first tested (JTC 2012). Since that time, the development of genetic methods and techniques for Chinook and chum salmon stock identification in the Yukon River drainage has been ongoing (Flannery et. al 2015). Identification of salmon stock composition using genetic techniques has been a useful tool for inseason fisheries management on the Yukon River.

Three region-of-origin groupings (also referred to as stock groups) have been identified for Chinook salmon within the Yukon River drainage. The lower and middle Yukon River stock groups spawn in Alaska and the upper Yukon River stock group spawns in Canada. In 2017, salmon tissues were taken inseason for mixed stock analysis (MSA) from 613 Chinook salmon collected from the test fishery associated with the Pilot Station sonar project. Genetic MSA on all samples weighted for postseason passage indicated 44% of the samples were Canadian-origin Chinook. Inseason analysis by stratum indicated the first stratum sampled (May 31–June 13) was 43% Canadian-origin, the second stratum sampled (June 14–20) was 49% Canadian-origin; the third stratum sampled (June 21–25) was 43% Canadian-origin; and the final stratum (June 26–July 19) was 41% Canadian-origin (JTC 2018). These analyses were used to help project if the Chinook salmon border passage objectives would be achieved, which influenced inseason management actions. The samples collected at Eagle sonar were analyzed by DFO for their management of Canadian conservation units (JTC 2018). Tissue samples ( $n = 2,030$ ) were also collected from fish in the mixed stock subsistence harvest from 11 communities and genetic MSA indicated that the subsistence Chinook salmon harvest in District 1 was 46% Canadian-origin, the harvest in District 2 was 41% Canadian-origin, the harvest in District 3 was 43% Canadian-origin, the harvest in District 4A Upper was 45% Canadian-origin and the harvest in District 5 (community of Tanana only) was 72% Canadian-origin. Within individual communities, the proportion of the Chinook salmon harvest that was of Canadian-origin ranged between 31% and 72%. Genetic MSA information is vital to produce brood tables and to forecast future returns of Chinook salmon to the Yukon River which are based on the spawning escapement and returns of the Canadian-origin stock.

Genetic sampling of chum salmon harvest for MSA is in its infancy within most of the Yukon River drainage fisheries. The summer chum salmon stock groups are similar to the western Alaska stocks (Eggers et al. 2011). However, the fall chum salmon can be separated into distinct stock groups, including a partition of Canadian-origin stocks which are of importance in regard to meeting treaty obligations. Genetic MSA from test fishery samples are used in fall season fishery management with consideration for all chum salmon stocks entering the river after July 19, and stock groups include: summer, Tanana, Border U.S. (Chandalar, Sheenjek, and Black rivers) and total Canadian-origin stocks but does not separate Canadian mainstem from Porcupine stocks (JTC 2018).

Chum salmon genetic tissue samples were collected May 31 to September 7 ( $n = 4,377$  in summer season and  $n = 2,855$  in fall season) from the test fishery at Pilot Station sonar. Results from the MSA were reported for each pulse or time stratum and distributed by email to fishery managers to be considered during resource assessment (JTC 2018). For summer chum salmon, the lower river stock group made up 77% of the run and the middle river stock group accounted for 23% of the run. The Tanana component of the middle river stock group composed 6% of the total summer chum salmon run, with the largest proportion (relative to other stocks) occurring

during the sampling period of July 19 to July 22. The run transition from summer to fall chum salmon occurred slightly after July 19, because the mixture was composed of 38% fall chum salmon during the first fall season commercial period (July 19-22). For fall chum salmon, 74% of the run was of U.S. origin and 26% of Canadian origin. The composition of the U.S. contribution was 36% Tanana stock and 38% border U.S. stock (Chandalar, Sheenjek, and Black rivers). The composition of the Canadian contribution was 7% mainstem Yukon, 5% Porcupine, and 14% White River stocks.

## **Aerial Survey Escapement Assessment Methods**

The Yukon River drainage is too extensive for complete assessment of all salmon spawning streams. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft form an integral component of the escapement assessment program. The greatest advantage of aerial surveys is the cost-effectiveness of obtaining escapement information throughout an extremely vast and remote area. Another advantage to aerial surveillance is that current or potential habitat-related problems arising from natural or man-induced causes can be identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used. Recently helicopters have been used more often to increase accuracy of counts because of the aircrafts maneuverability, but they are also limited on range and are more costly.

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

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

## **2017 Summer Season Escapement**

### ***Chinook Salmon Drainagewide Total Run***

Calculating a drainagewide estimate of Chinook salmon abundance, or total run, is an important part of estimating postseason success regarding the forecast's ability to predict actual run sizes. It is also an important postseason measure of the Chinook salmon that were available for escapement and harvest in the U.S. portion of the drainage, when a large portion of the run is made up of U.S.-bound stocks that do not travel to Canada to spawn. There are currently 2 rudimentary methods for calculating the drainagewide run for Chinook salmon.

**Method 1**, Using Canadian-origin run size and extrapolation based on proportion of run: The Canadian-origin run size is a simple estimate derived postseason from the Eagle sonar passage estimate plus the estimated number of Canadian-origin fish harvested (JTC 2018). Historically,

the drainagewide total run was calculated by assuming the Canadian-origin stock made up 50% of the run. To calculate the drainagewide run, the estimated total Canadian-origin run was simply multiplied by 2, to create the drainagewide estimate. Furthermore, genetic MSA methods have been used to analyze Chinook salmon tissues collected from the test fishery at Pilot Station sonar (2005–2017) and indicate the weighted season total Canadian proportion has ranged between 34% and 52%, with the average run composition 41% Canadian-origin. Because these genetic methods began in 2005, it is not possible to know whether there was a shift in the population that caused the Canadian-origin stock to decline from 50% to closer to 40%, or if the difference was a result of more accurate methods (DeCovich and Howard 2011).

**Method 2**, Using the season total Chinook salmon passage estimate derived at Pilot Station sonar project plus the harvest and escapement that occurs below the sonar. Harvest removed from fisheries below the sonar include Chinook retained for personal use while commercial fishing (reported on fish tickets); and subsistence harvest which was estimated by the subsistence harvest survey project postseason from the coast, up to and including, the community of Pilot station (Appendix E18). For escapement below Pilot Station sonar, the East Fork Andreafsky weir count is doubled (Total Andreafsky River) to account for passage into the West Fork Andreafsky (Appendix E18)

Beginning in 2017, for years when Pilot Station sonar was in operation (1995, 1997–2017) the drainagewide total run was estimated postseason using Method 2 (Appendices E18 and E19). For years prior to Pilot sonar operations (1982–1994, 1996) there are no mainstem run abundance estimates, so drainagewide total run will continue to be based on Method 1 (Canadian-origin run size doubled). The 2017 drainagewide total run size was 278,166 Chinook salmon, which was the sum of 5,940 escapement below Pilot Station, 9,212 Chinook harvested, and the Pilot Station sonar count of 263,014 Chinook salmon (Appendix E18 and E19).

### ***Chinook Salmon Escapement***

Although below the 1987–1996 average, the 2017 Chinook salmon run of approximately 278,000 came in above the upper end of the preseason outlook range, and the total Chinook salmon passage estimate at Pilot station sonar was the largest since 2003 (Appendix E3). Most systems with long-term projects were assessed this season, however inclement weather precluded survey flights in 2017 for east Fork Andreafsky and Gisasa rivers (Appendices E2 and E4).

Three resistance board weirs enumerated Chinook salmon passage in the Yukon River area during 2017. The East Fork Andreafsky River weir was operated by USFWS and had an estimated Chinook salmon passage of 2,970 fish. This passage fell within the SEG range of 2,100–4,900 fish. This goal has been met in 4 of the last 5 years (Appendix E5). ASL data were collected from 167 Chinook salmon caught in the weir trap. The estimated age composition at the East Fork Andreafsky River was 63.0% age-4, 22.8% age-5, and 14.2% age-6, fish. The sex composition of fish sampled was 25.7% female and 74.3% male (JTC 2018). The Gisasa River weir was operated by USFWS and had an estimated Chinook salmon passage of 1,083 fish (Appendix E5). This passage estimate was below the 10-year average of 1,608 Chinook salmon. ASL data were collected from 138 Chinook salmon caught in the weir trap. The estimated age composition from scale samples was 26.3% age-4, 63.9% age-5, and 9.8% age-6. The sex composition of fish sampled was 27.5% female and 72.5% male. The Henshaw Creek weir was operated by the Tanana Chiefs Conference and USFWS Office of Subsistence Management. The estimated Chinook salmon passage at the weir in 2017 was 677 fish (Appendix E5). This passage

was well below the 10-year average of 1,248 fish. ASL data were collected from 491 Chinook salmon caught in the weir trap. The estimated age composition from scale samples was 33.0% age-4, 32.2% age-5, 34.6% age-6, and <1% age-7 fish. The sex composition of fish sampled was 43.0% female and 57.0% male.

Escapement on the Chena and Salcha rivers was monitored using tower counts with counts supplemented using dual-frequency identification sonar (DIDSON) during high water events, and escapement on the Goodpaster River was monitored using a counting tower. Chinook salmon escapement at the Chena and Salcha rivers were affected by high water conditions throughout the season but counts were expanded for missed days using sonar estimates to create preliminary escapement counts. Final estimates will be calculated using a binominal mixed-effects model to create passage estimates for the periods of missed counts. An estimated 4,201 Chinook salmon were counted in the Chena River, which met the escapement goal range of 2,800–5,700 (Appendix E5). This goal has been met 4 of the last 5 years that could be assessed (Appendix E5). An estimated 4,195 Chinook salmon were counted in the Salcha River, which met the escapement goal range of 3,300–6,500 Chinook salmon. The BEG for the Salcha River has been met in 4 of the last 5 years that could be monitored (Appendix E5). The Goodpaster River tower counted an estimated 2,769 Chinook salmon. ASL information for Chinook salmon was collected from the Chena and Salcha rivers using carcass surveys conducted by ADF&G. The estimated age composition of 386 Chinook salmon sampled in the Chena River was 2.8% age-4, 74.1% age-5, and 23.1% age-6 fish. The sex composition was 45.3% female and 54.7% male. The estimated age composition of 471 Chinook salmon sampled in the Salcha River was 5.5% age-4, 72.2% age-5, and 22.3% age-6 fish. The sex composition of fish sampled was 41.2% female and 58.8% male.

The Canadian border passage estimate for 2017 was 71,815 Chinook salmon. This was calculated using the Eagle sonar project estimate of 73,313 minus an estimated 1,498 fish harvested by Alaskan subsistence fishermen upstream of the sonar project site (Appendix E6). After subtracting the Canadian Yukon River mainstem harvest of 3,500 fish, a total of 68,315 Chinook salmon are estimated to have reached Canadian spawning areas (Appendix E6). The spawning escapement surpassed the upper end of the IMEG range of 42,500–55,000 which was the fifth time that the goal has been achieved since it was adopted by the Yukon River Panel in 2010 (Appendix E1). A drift gillnet test fishery is operated as a component of the Eagle sonar project to monitor species composition and to collect biological information, including ASL and genetic samples, from fish passing the sonar project site. Four different mesh size gillnets (5.25, 6.5, 7.5, and 8.5 inches) are fished daily to collect samples. The estimated age composition of 804 Chinook salmon caught in the test fishery was 0.1% age-3, 4.2% age-4, 46.5% age-5, 48.1% age-6, and 1.1% age-7 fish. The sex composition of fish sampled was 51.2% female and 48.8% male (JTC 2018).

In Canada, the Big Salmon River was enumerated using a long-range DIDSON located approximately 1.5 km upstream of the confluence with the Yukon River. The 2017 count of 5,672 Chinook salmon was above the 10-year average passage of 5,298 Chinook salmon for the Big Salmon River (Appendices E2 and E6). The escapement of Chinook salmon to the Big Salmon River, based on sonar and genetic stock identification, represented 8.5% of the mainstem Yukon River sonar passage estimate near Eagle, Alaska. Carcass sampling yielded 87 Chinook salmon samples. Of the total, 45 (52%) fish were female and 42 (48%) fish were male. The mean lengths from mid eye to tail fork (METF) of females and males sampled was 816 mm and 736

mm respectively. Of the 60 samples which were successfully aged, 1.7% (3.7% of the males and none of the females) were age-4, 38.3% (70.4% of the males and 12.1% of the females) were age-5, and 60.0% (25.9% of the males and 87.9% of the females) were age-6 (JTC 2018).

Sonars were used to estimate Chinook salmon escapement to the Pelly River system between July 3 and August 15, 2017. Selkirk First Nation worked with Environmental Dynamics Incorporated (EDI) to conduct this pilot year of assessment. Two SIMRAD EK60 split-beam sonar systems (1 on each bank) were operated at a site approximately 20 km upstream of the confluence of the Pelly and Yukon rivers, at a site identified in the Selkirk First Nation's 2015 reconnaissance survey. Accounting for periods of data expansion produces a total passage estimate of 9,081 Chinook salmon. The peak daily count of 651 fish on July 28 occurred when 55% (un-interpolated counts) of the run had passed (JTC 2018).

The Blind Creek weir project enumerated Chinook salmon escapement and obtained biological information from the stock in 2017. The weir was set up approximately 1 km upstream of the confluence with the Pelly River. Weir installation was initiated on July 14, but high flows delayed completion until July 24. From July 24 to July 27, 17 Chinook salmon were sampled for ASL data. Heavy rainfall led to extreme flood conditions beginning July 28. With rising water levels and increased turbidity, weir operations were suspended, and unimpeded fish passage was provided by the removal of the pen gates and weir panels next to each bank. Water levels continued to rise with the eventual collapse of the weir structure on July 29. The 2017 project year was the first time the weir failed due to high water (JTC 2018).

The Whitehorse Rapids Fishway is a fish ladder that bypasses the Whitehorse dam. It has a viewing window and fish trap that allows salmon counts without handling fish. Staff at Whitehorse Rapids Fishway counted 1,226 Chinook salmon in 2017 (Appendices E2 and E6). Of the adult Chinook salmon counted, 39% were of hatchery origin. The hatchery component included 94 females and 382 males, comprising 29% of the female and 42% of the male escapement. The wild component included 227 females and 523 males. Female Chinook salmon made up 26% of the total returns to the hatchery.

### ***Summer Chum Salmon Escapement***

Summer chum salmon escapement in the Alaska portion of the Yukon River drainage is monitored through a combination of weirs, towers, and sonar (Appendix E7). The East Fork Andreafsky River weir escapement estimate for chum salmon was 55,532, which was above the SEG of >40,000 fish but below the 10-year average of 56,392 fish (Appendix E7). ASL data were collected from 1,723 fish caught in the weir trap. The estimated age composition was 0.2% age-3, 56.8% age-4, 41.3% age-5, 1.6% age-6, and 0.1% age-7 fish. The sex composition of the fish sampled was 42.0% female and 58.0% male. The Anvik River sonar escapement count of 415,139 summer chum salmon was within the BEG range of 350,000–700,000 fish (Appendix E7) and was below the 10-year average of 424,032 fish. ASL samples were collected for 717 summer chum salmon. The estimated age composition was 0.3% age-3, 53.4% age-4, and 45.5% age-5, and 0.7% age-6 fish. The sex composition of the fish sampled was 48.1% female and 51.9% male. The escapement estimate of summer chum salmon through the Gisasa River weir was 73,584 fish, which was above the 10-year average of 55,798 fish (Appendix E7). ASL data were collected from 1,093 fish caught in the weir trap. The age composition of samples was 0.5% age-3, 50.6% age-4, 47.8% age-5, and 1.1% age-6 fish. The sex composition of the fish sampled was 58.9% female and 41.1% male. The escapement estimate of summer chum salmon at the

Henshaw Creek weir was 360,687, which was higher than the 10-year average of 194,904 fish (Appendix E7). ASL data were collected from 760 fish caught in the weir trap. The estimated age composition from scale samples was 59.4% age-4, 39.0% age-5, and 1.6% age-6 fish. The sex composition of fish sampled was 63.7% females and 36.3% males. The escapement estimate of summer chum salmon through the Chena River tower was higher than the 5-year average of 11,334 fish (Appendix E7); at least 16,000 summer chum salmon were counted by the Chena River tower, and the total estimated sonar passage was 21,156 fish. The escapement estimate of summer chum salmon through the Salcha River tower was lower than the 5-year average of 30,736 fish; at least 23,940 summer chum salmon were counted by the Salcha River tower, and the total estimated sonar passage was 29,093 fish (Appendix E7). Summer chum salmon passage into the Chena and Salcha rivers is considered incomplete due to incomplete assessment data during 2017.

## **2017 Fall Season Escapement**

### ***Fall Chum Salmon Escapement***

Fall chum salmon are discrete spawners choosing areas of upwelling and relatively warmer water to incubate their eggs in a shorter time when compared to other species. Major fall chum salmon spawning areas are in the Tanana, Chandalar, and Porcupine River drainages and within the Canadian portion of the mainstem Yukon River drainage, monitoring projects concentrate on these areas. Drainagewide run size was determined based on coverage of spawner distribution (escapement estimates), age composition, and estimates of harvest (Appendices E2, E8, E9, and E11).

Current escapement goals for the Yukon River drainagewide and individual tributaries or stock groups were developed based on the analysis done by Eggers (2001) with a recent modification of the drainagewide goal from a BEG to a SEG based on Fleischman and Borba (2009). From 2000 through 2013, the postseason run reconstruction and resulting drainagewide escapement estimate were derived from Eggers' (2001) method. Since 2014, a Bayesian state-space model was used to determine the drainagewide escapement like that reported in Fleischman and Borba 2009. The drainagewide escapement estimate produced for 2017 was 1,648,000 fall chum salmon, which exceeded the SEG goal range of 300,000–600,000 fall chum salmon. The model utilized historical escapement data from the Toklat, Delta, Chandalar, Sheenjek, Fishing Branch and Canadian mainstem Yukon rivers, as well as mark–recapture estimates of abundance from the Kantishna and upper Tanana rivers (Appendices E8 and E9). The model considers estimates from sub-drainages in the dataset. Individually the fall chum salmon escapements to Chandalar and Delta rivers both exceeded the upper end of the individual escapement goals (Appendix E8). Further, adding the U.S. and Canada harvests (584,000 fish) to the estimated escapement, results in a total run size estimate of slightly greater than 2,231,000 fall chum salmon.

The drainagewide escapement goal was not achieved from 1998–2000 even with restrictions to fisheries reducing exploitation to as low as 11%. Four even-numbered years between 1976 and 1984 also had extremely low escapements (based on current measures) but were mostly caused by high harvests of fall chum salmon, with exploitation as high as 60%. The current drainagewide goal for fall chum salmon has been achieved in 91% of the last 44 years and all 14 years since the range was established in 2004.

The 1974–2016 average drainagewide run size is 988,000 fall chum salmon and ranges between 252,000 fish in 2000 to 2,700,000 fish in 1975. From 1974 to 1991, fall chum salmon run sizes

alternated consistently between lower even-numbered years and higher odd-numbered years (averaging 852,000 and 1,400,000 respectively). Since 1992, there appears to be a decadal cycle occurring when the fall chum salmon run peaked in 1995, 2005, and 2016 and was at lows in the cycles in 1992, 2000, and 2010. The record low (2000) and the second highest (2005) abundances occurred in the last decade. The 2017 fall chum salmon run could be characterized overall as above average for both the all year average and the odd-numbered year average from 1974–2016, and it is currently ranked as the second largest run.

The Tanana River produces the largest component of the drainagewide fall chum salmon run. Based on abundance estimates from mark–recaptures studies conducted from 1995–2007 (Cleary and Hamazaki 2008), the Tanana River drainage contributes 21% to 41% of the overall run, averaging 32%. Estimated escapement in those years averaged 184,000 fall chum salmon with a range of 56,000 in 2000 fish to 373,000 fish in 2005. In 2017, there were no inseason assessment projects for fall chum salmon in the Tanana River drainage except for catch per unit effort in the subsistence and commercial fisheries. Mixed Stock Analysis (MSA), based on genetics, suggested the estimate for the Tanana River was greater than 600,000 chum salmon and considering upriver harvests, the BEG range of 61,000–136,000 fall chum salmon was probably exceeded in the Tanana River.

Evaluation of the fall chum salmon run to the Delta River, an index tributary of the Tanana River, was based on 8 replicate foot surveys conducted between October 3 and December 1, 2017. The Delta River escapement was estimated to be 48,800 fall chum salmon (Table 11) based on the peak surveys from each of the 3 portions of the floodplain (West, East, and Middle on November 1, 7 and 14 respectively). This level of escapement is the highest on record and exceeded the upper end of the BEG range of 6,000–13,000 fall chum salmon.

Chandalar River is the second largest component of overall Yukon River drainage fall chum salmon run. Since 1995, the Chandalar River contribution of fall chum salmon has ranged from 23% to 41%, averaging 30%. The project has used various sonar types (splitbeam 1995–2006 and DIDSON 2007 to present) to enumerate fall chum salmon passage (Melegari 2014). After applying the end of the season expansions to the historical data back to 1995, passage estimates of fall chum salmon have ranged from a low of 71,000 fish in 2000 to 527,000 fish in 2005. In 2017, the project operated from August 8 through September 26 and ended with a cumulative count of 482,007 fish. However, because the project was still passing more than 7,000 fish a day when the project ceased operation, an expansion of passage through October 9 was made. The resulting escapement estimate was 509,115 fall chum salmon (Table 11; Appendices E2 and E8) and was more than double the 5-year average of 228,000 fish. The 2017 estimate exceeded the upper end of the BEG of 74,000–152,000 fish. Since 1995, fall chum salmon passage has met or exceeded the BEG in all years except 2000.

In 2017, estimates of the Canadian component included the operation of the Fishing Branch River weir in combination with sonar at the weir site. Expansions were applied to 6 days near the beginning of the season and expanded by 4 days at the end of the season to October 25 resulting in an estimate of 48,422 fall chum salmon, indicating the IMEG of 22,000–49,000 was achieved in 2017. The sonar project located on the Porcupine River near the U.S./Canada border (downstream of Old Crow) was operated resulting in a passage estimate of 67,818 targets attributed to fall chum salmon; subtracting the Old Crow harvest would indicate that the IMEG was achieved with some consideration for stocks bound to other locations in the drainage. The mainstem Yukon River border passage was assessed using sonars located downstream of Eagle

Alaska in 2017. After removal of U.S. and Canada harvests the 2017 escapement was estimated to be approximately 401,000 fall chum salmon, which exceeded the upper end of the IMEG of 70,000–104,000. The low end of the goal has been achieved for the past 15 years (since 2002) and exceeded the upper end in all but 2 of those years (Appendices E2 and E9). The 2017 Yukon River mainstem escapement was the second highest recorded since 1980 (behind 2005).

The upper Yukon River tributary escapement goal of 152,000–312,000 fall chum salmon, representing a combination of Chandalar, Sheenjek, and Fishing Branch river escapements (Eggers 2001) was discontinued in 2016. Since 2012, Sheenjek River escapements have not been monitored and the Fishing Branch River weir was not operated in 2013 and 2014. As a result, assessing whether the component goal was achieved was difficult. The Porcupine River systems, including the Sheenjek and Fishing Branch rivers, have consistently been the weakest contributors to the overall drainagewide run. In years of high abundance these individual goals are generally met.

### ***Coho Salmon Escapement***

Assessment of coho salmon spawning escapement is constrained in the Yukon River drainage because of funding limitations and marginal survey conditions during periods of peak spawning. The Pilot Station sonar does not provide complete estimate of coho salmon passage because the project ceases operations before the end of the run. The passage estimate of coho salmon at Pilot Station sonar was 166,320 fish through September 7, 2017 (Appendices E3 and E11). Tributary escapement estimate information was limited to portions of the Tanana River drainage. In 2017, escapements were above average in most areas of the Tanana River and supported the above average run that was indicated by the run reconstruction that included the Pilot Station sonar plus the large harvests that occurred downstream.

Presently, only 1 escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River, in the Tanana River drainage, has an SEG range of 5,200–17,000 fish (ADF&G 2004). The Delta Clearwater River spawning count was 9,617 coho salmon (Table 11) and was conducted by boat survey on November 1, 2017. This escapement estimate was within the escapement goal range. Coho salmon escapements in the Nenana River and the upper Tanana River evaluated by aerial surveys were all near or above average when compared to the 1972–2016 and the 5-year average.

In recent years, a coho salmon run-reconstruction index has been developed that expands the Pilot Station sonar passage estimates by comparing timing of the next closest monitoring project in the Lower Yukon (LYTF or Mountain Village) using the appropriate lag for travel time. Further, commercial and subsistence harvests below the sonar site are included to provide an index of coho salmon abundance for the Yukon River. Subsistence harvest in this area is fairly stable averaging 3,000 coho salmon annually. However, the commercial harvest can vary drastically (<1,000–177,000) depending on management of the fall chum salmon fishery. Currently the data used for run-reconstruction of coho salmon is based on the years 1995 and 1997 to present (excluding 2009) when Pilot Station sonar was operational. This model results in an average run size of 206,000 coho salmon in the Yukon River. An index of Yukon River drainagewide escapement is derived from the run reconstruction minus the total harvest of coho salmon providing an average escapement of 165,000 fish. In 2017 the index of run size ranked third (approximately 315,000 coho salmon) with an estimated escapement of 167,000 fish (near average) after removal of an estimated harvest of approximately 148,000 fish.

## **2018 SALMON OUTLOOK**

### **Chinook Salmon**

The outlook for the 2018 total Yukon River Chinook salmon run can be estimated by applying historical average proportions of Canadian-origin fish in the total run to the JTC-approved Canadian-origin run outlook which is based on a combination of sibling and spawner-recruit forecast models, and also incorporates information from marine juvenile abundance forecast methods (JTC 2018). The 2005–2017 weighted average proportion of Canadian-origin fish (measured at Pilot Station sonar) is 41%. Therefore, for 2018, the Canadian-origin outlook of (71,000–103,000) is divided by 41% (JTC 2018). This creates a drainagewide outlook of 173,000–251,000. A run of this size should provide for escapements and allow for subsistence harvest. The 2018 drainagewide outlook is well below the 1987–1996 average drainagewide Chinook salmon run size of 314,000, but above the 10-year average drainagewide Chinook salmon run size of 178,000 (Appendix E18).

### **Summer Chum Salmon**

The strength of the summer chum salmon run in 2017 will be dependent on production from the 2014 (age-4 fish) and 2013 (age-5 fish) escapements, because these age classes generally dominate the run. The total runs during 2013 and 2014 were approximately 2.5 million and 3.3 million summer chum salmon, respectively. The escapement goal on the Anvik River (350,000–750,000 fish) was met in both 2013 and 2014. The East Fork Andreafsky River goal (>40,000 fish) was met 2013, but fell just short of the goal in 2014. Summer chum salmon generally exhibit strong run size correlations among adjacent years, and it is expected that the 2018 total run in the Yukon River will be approximately 2.5 million fish.

The 2018 summer chum 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 15 years (2003–2017). 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 1,200,000 to 1,900,000 summer chum salmon. Like the last 5 years, however, commercial harvest of summer chum salmon in 2018 could be affected due to measures taken to protect the Chinook salmon from incidental harvest in chum salmon-directed fisheries.

### **Fall Chum Salmon**

The 2018 run will be composed of fish returning from the parent years 2012–2015. Estimates of returns per spawner (R/S), based on brood year return, and were used to estimate production for 2012 and 2013. An auto-regressive Ricker spawner-recruit model was used to predict returns from 2014 and 2015. The point projection in 2018 used the 1974 to 2011 complete brood year returns applied odd/even maturity schedule for the same time. The result is a point estimate of 1,682,000 fall chum salmon. The 2018 run size forecast is expressed as a range of 1,600,000–1,800,000 fall chum salmon. This forecasted run size is above average for even-numbered year run.

The contributing parent year escapements from 2012 through 2014 all exceeded the upper end of the drainagewide escapement goal range 300,000–600,000 fall chum salmon (Appendix E10). The major contributor to the 2018 fall chum salmon run is anticipated to be age-0.3 fish

returning from 2014 parent year (Appendix E10). The run is expected to be bolstered by a large return of the age-0.4 component from the 2013 parent year that produced excellent returns as age-0.3. Models suggest that 2014 will be the peak year of production, which should fall below replacement by 2017 return.

Based on the 2017 projected run size for fall chum salmon, escapement goals would be anticipated to be met while supporting normal subsistence fishing activities. Commercial harvest could range from 1,050,000 to 1,250,000 fall chum salmon depending on where the actual run comes in within the forecasted range.

## **Coho Salmon**

Although there is little comprehensive escapement information for Yukon River drainage coho salmon, it is known that coho salmon primarily return as age-2.1 fish (4-year-old, age in European notation) and overlap in run timing with fall chum salmon. The major contributor to the 2018 coho salmon run will be age-4 fish returning from the 2014 parent year. Based on the run-reconstruction index (1995–2016, excluding 1996 and 2009), the 2014 escapement was estimated to be 264,000 coho salmon, which was the highest in the series and well above the median of 164,000 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 with comparative escapement monitoring data since 1972. The parent year escapement of 19,533 fish in 2014 was above the upper end of the SEG range of 5,200–17,000 coho salmon. Five additional locations in the Tanana River drainage were surveyed for coho salmon specifically; 4 of which were above average when compared to the 5-year average. The coho salmon run outlook is based on parent year escapements assuming average survival. Based on the last 3 years of high coho salmon returns there is a possibility for the run to be average. Commercial harvest could be between 60,000 and 200,000 coho salmon caught incidentally in the fall chum salmon-directed fishery.

# **OTHER MARINE AND FRESHWATER FINFISH FISHERIES**

## **SUBSISTENCE AND PERSONAL USE FISHERY**

The estimated subsistence and personal use harvest of nonsalmon species in 2017 was 67,464 whitefish (*Coregonus spp. and Prosopium cylindraceum*), 22,877 northern pike (*Esox lucius*), and 13,038 sheefish (*Stenodus leucichthys*; Appendix D9). Other species are only reported by total harvest because they are harvested in small amounts or do not occur during salmon season and include a total of 2,843 burbot (*Lota lota*), 6,661 tomcod (*Eleginus gracilis*), 1,501 Arctic grayling (*Thymallus arcticus*), 179 longnose suckers (*Catostomus catostomus*), 109,888 Alaska blackfish (*Dallia pectoralis*), 19,357 Arctic lamprey (*Lethenteron camtschaticum*), and 16,492 Pacific herring (*Clupea pallasii*) (Appendices D6, D8, and D9).

Nonsalmon species (e.g., pike, sheefish, whitefish, blackfish) are an important subsistence resource for people in most areas throughout the Yukon River drainage, largely because they are available for harvest all season (Brown et al. 2005; Andersen et al. 2004). Many subsistence users harvest marine and freshwater finfish other than salmon either as incidental bycatch while fishing for salmon or by directly targeting those species. Subsistence users particularly rely on Estimates of nonsalmon harvest is poorly understood at a species level throughout the Yukon

River drainage, thus a comprehensive assessment of nonsalmon harvest and use by species has been identified as a research priority for the Yukon Area (Brown et al. 2011). Information about nonsalmon species is collected during the annual ADF&G postseason subsistence salmon harvest surveys but is ancillary to salmon-specific surveys and usually does not include species distinctions. Survey projects have begun to identify whitefish harvest by species in the Koyukuk River drainage and lower-middle communities of Grayling, Anvik, Shageluk, and Holy Cross (Brown et al. 2005; Andersen et al. 2004). Beginning in 2012, households in the Lower Yukon including the Coastal District were asked about their herring harvests (Jallen et al. 2015).

A variety of fishing methods are used in the main rivers and coastal marine waters to harvest nonsalmon finfish. Beach seines are occasionally used near spawning grounds to capture salmon and other species of schooling fish. In the fall and winter months, various designs of fyke nets and fish weirs are used to capture whitefish, blackfish, and burbot. In the winter and spring months, hand lines are used through the ice to take sheefish, northern pike, and “tomcod” (saffron cod). The majority of the sheefish are harvested as they co-migrate up the Yukon River with the Chinook salmon. In the spring and early summer, smelt are harvested in the Yukon River Delta area using dip nets. During the fall months, dip nets and “eel sticks” are used to harvest Arctic lamprey in the mainstem Yukon River downstream of Grayling. Whitefish and sheefish are also harvested in fish wheels located in the Upper Yukon and Tanana rivers during salmon fishing.

## **COMMERCIAL FISHERY**

Regulations allow ADF&G to issue Commissioner’s permits for the commercial harvest of nonsalmon freshwater fish (e.g., whitefish, burbot, northern pike, blackfish, and Arctic lamprey) throughout the Yukon and Tanana River drainages. Commissioner’s permits allow for the commercial harvest of species not managed under existing commercial fishing regulations during discrete time periods throughout the year. Following the decline in salmon runs, an interest in nonsalmon commercial fisheries emerged on the Yukon River. Despite the strengthening chum salmon returns in recent years, the interest in freshwater fisheries has remained, particularly for Bering cisco *Coregonus laurettae* and Arctic lamprey.

### **Whitefish Fishery Summary**

From 2005 to 2017, ADF&G issued Commissioner’s permits for an experimental whitefish commercial fishery in the lower Yukon River. Commissioner’s permits allowed for the harvest of coregonid (‘whitefish’) species in Districts 1 and 2 starting with 10,000 pounds in 2005 and incrementally increasing to 25,000 cisco (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks). In 2013, the quota allocation switched from pounds of fish to numbers of fish. The reasons for the change in quota units are twofold: it is easier to track numbers of fish instead of pounds of fish, and the assumption that a whitefish weighs 1 pound was not accurate. Gear restrictions were implemented in 2007 to reduce the stretched-mesh size from a maximum of 6 inches (allowed in 2005 and 2006) to a maximum of 4 inches. The smaller mesh size would target cisco species while reducing the incidental harvest of sheefish and broad whitefish *Coregonus nasus*. In response to market preference, commercial permits were issued for the specific harvest of Bering cisco, and to a lesser extent least cisco *Coregonus sardinella*, beginning in 2009. The exact dates of the fishery have varied each year in response to the seasonal movements of whitefish and river conditions; however, the commercial harvest generally occurs in September and October.

In 2017, 1 Commissioner's permit was issued to Kwik'pak Fisheries, LLC for the commercial harvest of Bering and least cisco. The permit authorized a maximum harvest of 25,000 cisco in District 1 of the Lower Yukon Area between September 10 and October 1. The allowable harvest in 2017 did not change from the 25,000 fish authorized in 2014. The decision not to increase the allowable harvest was based principally on the lack of population abundance information on Yukon River Bering cisco. Given the lack of information on Bering cisco, a continued cautionary management approach is warranted (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

The fishery permit stipulated that fishing gear was restricted to 1 set or drift gillnet up to 150 feet in length with a maximum stretched-mesh size of 4 inches, or 1 hand line/hook and line. Commercial fishing was prohibited in designated areas around the village of Kotlik to prevent commercial fishing from potentially impacting subsistence fishing. Closures were implemented in the waters of Apoon Pass from its confluence with Chaniliut Slough to the northern shoreline of Apoon Mouth, including the Pastolik and Pastoliak rivers.

The 2017 commercial fishery occurred from September 11 to September 20. The whitefish commercial fishery opened on September 10 and the processor began purchasing cisco on September 11. Twenty-seven fishermen made 167 deliveries totaling 16,779 Bering cisco and 70 least cisco (Appendix F1). The 2017 harvest was approximately 8,150 cisco below the allowable quota.

The Bering cisco harvest was below the 5-year average of 20,721 fish and the least cisco harvest was below the 5-year average of 84 fish. The price paid to fishermen was \$1.50 per pound, resulting in an estimated total harvest value of \$29,308. The average price paid to each fisherman was approximately \$1,085. Most of the Bering cisco commercial harvest occurred in the stat area near Kotlik (75%) followed by Emmonak (19%) and Alakanuk (6%) (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks).

In the Upper Yukon area, commercial freshwater fisheries targeting whitefish occurred primarily through the 1970s. Since 1980 there have been sporadic small commercial harvests of whitefish in the upriver districts and no commercial permits were issued in 2017. Permit authorization is not required for the sale of whitefish species taken incidentally during commercial salmon fishing in any district. In upriver districts, whitefish have been taken incidentally to the salmon harvest and sold since the late 1980s. In 2017, 128 whitefish were incidentally harvested and sold in District 6 during commercial salmon fishing (Appendix F3).

### ***Harvest Sampling***

Whitefish were identified by species at the processing facility in Emmonak prior to shipment to Anchorage. A total of 179 Bering cisco were sampled for ASL. A small incision was made on the ventral side of each specimen to identify reproductive organs. Fork length (tip of snout to fork of tail) was measured to the nearest millimeter. The proportions of male and female Bering cisco were relatively equal (54% female and 46% male). Like previous years, females were generally larger than males, 402 mm and 331 mm, respectively. Otoliths were collected from all fish sampled and will be processed in the future for age classification.

### **Arctic Lamprey Fishery Summary**

Since 2003, a Commissioner's permit has been issued annually allowing for total harvests between 5,000 and 49,080 pounds of Arctic lamprey (data on file with Yukon Area Management

Group, ADF&G, Division of Commercial Fisheries, Fairbanks). The exact dates of the fishery have varied each year in response to run timing and ice conditions; however, the commercial harvest generally occurs in November and December.

### ***Fishing Effort and Run Timing***

The 2017 lamprey fishery was monitored by ADF&G staff via phone and email communications with fishermen. Community contacts were established with local subsistence fishermen in the villages of Alakanuk, Emmonak, Pitkas Point, St. Mary's, Mountain Village, Pilot Station, Russian Mission, Anvik, and Grayling. Information regarding subsistence fishing effort, harvest rates, local weather, river ice conditions, and run timing was gathered during these communication events. ADF&G representative also communicated with the processor for updates on harvest.

Similar to previous years, local contracted fishermen with the Yukon Delta Fisheries Development Association set up test fishing sites in the lower river to assess lamprey presence and run timing. Test fishing in 2017 began earlier than previous years to catch lamprey from the start of the run. Fyke nets operated from September 11 through October 21. Six fyke net sites fished in 2013–2015 in areas around Flat Island, Munson Island, were again fished in 2016 and 2017 in order to collect CPUE and run timing data for the same site across multiple years. A total of 336 lamprey were caught during test fishing operations in the 6 fyke nets located in District 1, with most of the lamprey caught across from the Alakanuk slough entrance. From October 6 through October 24, 3 additional fyke nets were set upriver in well-known lamprey fishing sites near Liberty Island located near Mountain Village to check for lamprey migrating upriver. No lamprey were caught in these nets.

Persistent warm weather and poor ice conditions prevented fishing, and when fishermen were able to fish, no lamprey harvest was reported. Hard, driving rain was reported in Mountain Village on October 26 which washed away snow and the forming beach ice. Above freezing temperatures were reported in Mountain Village on November 2, when slush ice was present in the river. By November 6, south winds packed unstable slush ice onto the north bank of the Yukon River, which prevented fishermen in Mountain Village, St. Mary's and Pitkas Point from accessing shallow offshore areas for dip netting or fishing with eel sticks.

Fishermen in Mountain Village were able to fish from boats or along the shore starting around November 9, but no lamprey were harvested. In mid-November, fishing took place in Emmonak, Mountain Village, Pilot Station, and Russian Mission. Through late November, stable river ice began to form allowing fishermen to venture farther out from shore to fish.

Subsistence lamprey harvest from 2017 will be assessed through postseason surveys that will occur in September 2018. Results from these surveys will be made available in an annual subsistence harvest report by ADF&G.

### ***Commercial Fishery***

In 2017, 1 freshwater commercial fishery permit was issued to Kwik'pak Fisheries, LLC allowing a harvest of up to 44,092 pounds (20 metric tons) of Arctic lamprey. The permit was valid September 15–December 15. No commercial harvest occurred in 2017, like 2005. Since 2003, low numbers or 0 lamprey were harvested commercially in 2005, 2007, 2011, and 2012 (data on file with Yukon Area Management Group, ADF&G, Division of Commercial Fisheries, Fairbanks). The lack of a commercial harvest was probably due to the late freeze-up of the

Yukon River and the inability of ADF&G and fishermen to locate the run. No lamprey samples were collected in 2017. In previous years, a sample of commercially harvested lamprey were measured for length, sex, and weight.

## **CAPE ROMANZOF HERRING FISHERY**

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

Local residents harvest herring in Hooper Bay, Kokechik Bay, and Scammon Bay for subsistence purposes. A few fishermen in the Yukon River Delta report harvesting herring along the coast near Black River and Kwiguk Pass for subsistence use. It is speculated that these herring are migrating toward southern Norton Sound. Some Yukon River Delta residents harvest herring spawn-on-kelp (*Fucus* sp) north of Stebbins in southern Norton Sound. Information regarding the commercial herring fisheries in the Cape Romanzof District since 1980 can be found in Estensen et al. 2015.

Because of turbid water in the Cape Romanzof area, it is typically not possible to estimate herring biomass using aerial survey techniques. Herring biomass has been estimated using a combination of information from aerial surveys, test and commercial catches, spawn deposition, and age composition. Qualitative spawn deposition surveys were conducted from 1992 through 2003 (Bue et al. 2011). Although these surveys were discontinued in 2004 because of budget limitations, ADF&G attempts to make periodic observations of herring biomass and spawn deposition. No observation flights were flown in 2017.

In previous years, the AYK region herring biomass projection was based on an age-structured assessment (ASA) model. The ASA model requires age composition information, harvest data, and good aerial survey biomass estimates from each of the northeastern Bering Sea stocks. Test fishing projects and aerial surveys were not conducted in any of the AYK herring districts in 2017, and these data have been severely limited since 2006. Data deficiencies make it impossible to continue using the ASA model to project herring biomass. The 2017 projected biomass was an average of the long-term (1981–2014) biomass estimates from “good” (rating 3 or higher) aerial surveys in AYK districts. The 2017 projected biomass for the Cape Romanzof District was forecast to be 3,638 tons and the minimum biomass threshold is 1,500 tons. Based on the *Bering Sea Herring Fishery Management Plan* (5AAC 27.060), the exploitation rate shall not exceed 20% of the estimated biomass. Therefore, the allowable harvest was 728 tons. The 2018 projected biomass is 3,638 tons, providing an allowable harvest of 728 tons.

## **ACKNOWLEDGEMENTS**

Employees of the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, Yukon Delta Fisheries Development Association, Bering Sea Fishermen Association, Tanana Chiefs Conference, Association of Village Council Presidents, Yukon River Drainage Fisheries Association, and other agencies and organizations worked long and irregular hours at various locations throughout the Yukon Area collecting data presented in this report; we gratefully

acknowledge their hard work. We also thank the AYK Regional Management Supervisor, Chuck Brazil, for his guidance, support, and review of this report.

## REFERENCES CITED

- ADF&G (Alaska Department of Fish and Game). 2004. Escapement goal review of select AYK region salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-01, Anchorage.
- ADF&G (Alaska Department of Fish and Game). 2001. 2001 Yukon Area subsistence, personal use, and commercial salmon fisheries outlook and management strategies. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-16, Anchorage.
- ADF&G (Alaska Department of Fish and Game). 1986. Annual management report, 1986, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.
- Andersen, D. B., C. L. Brown, R. J. Walker, and K. Elkin. 2004. Traditional ecological knowledge and contemporary subsistence harvest of non-salmon fish in the Koyukuk River drainage, Alaska. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 282, Anchorage.
- Andersen, D. B., and C. L. Scott. 2010. An update on the use of subsistence-caught fish to feed sled dogs in the Yukon River drainage, Alaska. Final Report 08-250. U.S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program.
- Brannian, L. K., M. J. Evenson, and J. R. Hilsinger. 2006. Escapement goal recommendations for select Arctic-Yukon-Kuskokwim region salmon stocks, 2007. Alaska Department of Fish and Game, Fishery Manuscript No. 06-07, Anchorage.
- Brown, C. L., J. Burr, K. Elkin, and R. J. Walker. 2005. Contemporary subsistence uses and population distribution of non-salmon fish in Grayling, Anvik, Shageluk, and Holy Cross. Federal Subsistence Fishery Monitoring Program, Final Project No. 02-037-2. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Fishery Information Service, Anchorage, Alaska.
- Brown, R. J., C. Brown, N. M. Braem, W. K. Carter III, and N. Legere. 2011. Strategic plan for research of whitefish species in the Yukon and Kuskokwim river drainages in Alaska; summary and recommendations. U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, Fisheries Resource Monitoring Program, Yukon and Kuskokwim Coregonid Strategic Plan Study 08-206, Alaska. <http://alaska.fws.gov/asm/pdf/fisheries/reports/08-2062011.pdf>
- Bue, F., S. J. Hayes, E. Newland, D. F. Evenson, K. Clark, B. M. Borba, W. H. Busher and M. Horne-Brine. 2011. Annual management report for the Yukon and Northern Areas, 2006. Alaska Department of Fish and Game, Fishery Management Report No. 11-29 Anchorage.
- Buklis, L. S. 1993. Documentation of Arctic-Yukon-Kuskokwim Region salmon escapement goals in effect as of the 1992 fishing season. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A93-03, Anchorage.
- Busher, W. H., T. Hamazaki, and D. M. Jallen. 2009. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-73, Anchorage.
- Carlson, J. G. 2017. Abundance and run timing of adult salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 2016. United States Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Fisheries Resource Monitoring Program, Alaska Fisheries Data Series Number 2017-3, Fairbanks Alaska.
- Clark, J. H. 2001. Biological escapement goals for Andreafsky River chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-07, Anchorage.
- Clark, J. H., and G. J. Sandone. 2001. Biological escapement goal for Anvik River chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-06, Anchorage.

## REFERENCES CITED (Continued)

- Clark, R. A., D. M. Eggers, A. R. Munro, S. J. Fleischman, B. G. Bue, and J. J. Hasbrouck. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript No. 14-06, Anchorage.
- Cleary, P. M., and T. Hamazaki. 2008. Fall chum salmon mark-recapture abundance estimation on the Tanana and Kantishna rivers, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 08-35, Anchorage.
- Cochran, W. G. 1977. Sampling techniques, third edition. John Wiley and Sons, New York.
- Conitz, J. M. 2017. Abundance and run timing of adult salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 2017. United States Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Fisheries Resource Monitoring Program, Alaska Fisheries Data Series Number 2018-4, Fairbanks Alaska.
- Conitz, J. M., K.G. Howard, and M. J. Evenson. 2012. Escapement goal recommendations for select Arctic-Yukon-Kuskokwim Region salmon stocks, 2013. Alaska Department of Fish and Game, Fishery Manuscript No. 12-07, Anchorage.
- Conitz, J. M., K. G. Howard, and M. J. Evenson. 2015. Escapement goal recommendations for select Arctic-Yukon-Kuskokwim Region salmon stocks, 2016. Alaska Department of Fish and Game, Fishery Manuscript No. 15-08, Anchorage.
- DeCovich, N. A., and K. G. Howard. 2011. Genetic stock identification of Chinook salmon harvest on the Yukon River 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-65, Anchorage.
- Department of Interior. 2011. Fish and Wildlife Service. 50 CFR Part 100. Subsistence Management Regulations for the Harvest of Fish and Shellfish on Federal Public Lands and Waters in Alaska. Subpart C & D, 2011-13.
- Eggers, D. M., M. J. Witteveen, T. T. Baker, D. F. Evenson, J. M. Berger, H. A. Hoyt, H. L. Hildebrand, W. D. Templin, C. Habicht, and E. C. Volk. 2011. Results from sampling the 2006–2009 commercial and subsistence fisheries in the Western Alaska Salmon Stock Identification Program. (PDF 11,719 kB). Alaska Department of Fish and Game, Special Publication No. 11-10, Anchorage.
- Eggers, D. M. 2001. Biological escapement goals for Yukon River fall chum salmon. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A01-10, Anchorage.
- Estensen, J. L., E. J. Newland, B. M. Borba, S. N. Schmidt, D. M. Jallen, and K. M. Hilton. 2015. Annual management report Yukon Area, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 15-19, Anchorage.
- Evenson, M. J. 2002. Optimal production of Chinook salmon from the Chena and Salcha Rivers. Alaska Department of Fish and Game, Fishery Manuscript Series No. 02-01, Anchorage.
- Flannery B. G., and J. K. Wenburg. 2015. Application of mixed-stock analysis for Yukon River chum salmon. U.S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report for Study 10-205, Anchorage, Alaska.
- Fleischman, S. J., and D. F. Evenson. 2010. Run reconstruction, spawner-recruit analysis, and escapement goal recommendation for summer chum salmon in the East Fork of the Andreafsky River. Alaska Department of Fish and Game, Fishery Manuscript No. 10-04, Anchorage.
- Fleischman, S. J., and B. M. Borba. 2009. Escapement estimation, spawner-recruit analysis, and escapement goal recommendation for fall chum salmon in the Yukon River drainage. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-08, Anchorage.
- Hunsinger, E. 2018. Migration losses caused small population decline for Alaska in 2017. State of Alaska Department of Labor and Workforce Development, News Release No. 18-01. [labor.state.ak.us/news/2018/news18-01.pdf](http://labor.state.ak.us/news/2018/news18-01.pdf) (Accessed April 2018).

## REFERENCES CITED (Continued)

- Jallen, D. M., S. K. S. Decker, and T. Hamazaki. 2015. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2012. Alaska Department of Fish and Game, Fishery Data Series No. 15-28, Anchorage.
- Jallen, D. M., S. K. S. Decker, and T. Hamazaki. 2017. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2013. Alaska Department of Fish and Game, Fisheries Data Series No. 17-08, Anchorage.
- JTC (Joint Technical Committee of the Yukon River U.S./Canada Panel). 2010. Yukon River salmon 2009 season summary and 2010 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A10-01, Anchorage.
- JTC (Joint Technical Committee of the Yukon River U.S./Canada Panel). 2012. Yukon River salmon 2011 season summary and 2012 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A12-01, Anchorage.
- JTC (Joint Technical Committee of the Yukon River U.S./Canada Panel). 2018. Yukon River salmon 2017 season summary and 2018 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A18-01, Anchorage.
- Melegari, J. L. 2014. Abundance and run timing of adult fall chum salmon in the Chandalar River, Yukon Flats National Wildlife Refuge, Alaska, 2013. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Data Series Number 2014-12, Fairbanks, Alaska.
- Pfisterer, C. T., T. Hamazaki, and B. C. McIntosh. 2017. Updated passage estimates for the Pilot Station sonar project, 1995-2015. Alaska Department of Fish and Game, Fishery Data Series No. 17-46, Anchorage.
- Schmidt, S. N., S. Garcia, and H. Carroll. 2015. Yukon River king salmon stock status, action plan and summer chum salmon fishery, 2015; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 15-20 Anchorage.
- Schumann, K. J., B. C. McIntosh, and B. P. Gray. 2017. Sonar estimation of salmon passage in the Yukon River near Pilot Station, 2015. Alaska Department of Fish and Game, Fishery Data Series No. 17-32, Anchorage.
- Tanasichuk, R. 2002. Proceedings of the PSARC (Pacific Scientific Advice Review Committee) salmon subcommittee meeting, May 13-14, 2012. Canadian Science Advisory Secretariat, Proceedings Series 2002/013.
- Volk, E. C., M. J. Evenson, and R. A. Clark. 2009. Escapement goal recommendations for select Arctic-Yukon-Kuskokwim Region salmon stocks, 2010. Alaska Department of Fish and Game, Fishery Manuscript No.09-07, Anchorage.
- Ward, T. and N. Horn. 2003. Kuskokwim River salmon management working group support. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A03-40, Anchorage.

## **TABLES AND FIGURES**

Table 1.—Guideline harvest ranges and midpoints for commercial harvest of Chinook, summer chum, and fall chum salmon, Yukon Area, Alaska, 2017.

Chinook salmon						
District or Subdistrict	Guideline harvest range <sup>a</sup>					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	60,000	89.1	90,000	91.6	120,000	92.9
3	1,800	2.7	2,000	2.0	2,200	1.7
4	2,250	3.3	2,550	2.6	2,850	2.2
5-B, 5-C	2,400	3.6	2,600	2.6	2,800	2.2
5-D	300	0.4	400	0.4	500	0.4
6	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 <sup>b</sup>					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	251,000	62.9	503,000	62.9	755,000	62.9
3	6,000	1.6	12,500	1.6	19,000	1.6
4-A <sup>c</sup>	113,000	28.2	225,500	28.2	338,000	28.2
4-B, 4-C	16,000	3.9	31,500	3.9	47,000	3.9
5-B, 5-C, 5-D	1,000	0.3	2,000	0.3	3,000	0.3
6	13,000	3.2	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0
Anvik River Management Area roe cap of 100,000 pounds. <sup>d</sup>						
Fall chum salmon						
District or Subdistrict	Guideline harvest range <sup>e</sup>					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4	5,000	6.9	22,500	11.4	40,000	12.5
5-B, 5-C	4,000	5.5	20,000	10.2	36,000	11.2
5-D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0
Subdistrict 5-A range of 0 to 4,000 pounds of roe. <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 to 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 salmon and a separate guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe was established in November 1998.

Table 2.–Yukon Area regulatory subsistence salmon fishing schedule.

Area	Regulatory subsistence fishing periods	Open fishing times
Coastal District	7 days per week	M/T/W/TH/F/SA/SU - 24 hours/day
District 1	Two 36-hour periods per week	Mon 8 PM to Wed 8 AM / Thu 8 PM to Sat 8 AM
District 2	Two 36-hour periods per week	Wed 8 PM to Fri 8 AM / Sun 8 PM to Tue 8 AM
District 3	Two 36-hour periods per week	Wed 8 PM to Fri 8 AM / Sun 8 PM to Tue 8 AM
District 4	Two 48-hour periods per week	Sun 6 PM to Tue 6 PM / Wed 6 PM to Fri 6 PM
Koyukuk and Innoko Rivers	7 days per week	M/T/W/TH/F/SA/SU - 24 hours/day
Subdistricts 5-A, -B, -C	Two 48-hour periods per week	Tue 6 PM to Thu 6 PM / Fri 6 PM to Sun 6 PM
Subdistrict 5-D	7 days per week	M/T/W/TH/F/SA/SU - 24 hours/day
Subdistricts 6-A, -B	Two 42-hour periods per week	Mon 6 PM to Wed Noon / Fri 6 PM to Sun Noon
Old Minto Area	5 days per week	Friday 6 PM to Wednesday 6 PM

*Note:* This schedule was altered during the 2017 season based on Chinook salmon run strength.

Table 3.–Total utilization in numbers of salmon by district and country, Yukon River drainage, 2017.

District	Fishery	Chinook <sup>a</sup>	Summer Chum <sup>a</sup>	Fall Chum <sup>a</sup>	Coho <sup>a</sup>	Pink <sup>a</sup>
Coastal	Subsistence <sup>b</sup>	1,053	14,005	561	435	1,324
	Commercial	–	–	–	–	–
	Test Fish Sales	–	–	–	–	–
	Total	1,053	14,005	561	435	1,324
1	Subsistence <sup>b</sup>	4,580	22,507	4,587	1,046	743
	Commercial	168	345,395	328,410	95,982	0
	Test Fish Sales	0	1,819	1,246	63	0
	Total	4,748	369,721	334,243	97,091	743
2	Subsistence <sup>b</sup>	5,023	24,694	4,175	1,263	375
	Commercial	0	47,770	134,668	33,277	0
	Test Fish Sales	0	0	0	0	0
	Total	5,023	72,464	138,843	34,540	375
3	Subsistence <sup>b</sup>	2,296	3,760	1,304	497	2
	Commercial	–	–	–	–	–
	Total	2,296	3,760	1,304	497	2
Total	Subsistence <sup>b</sup>	12,952	64,966	10,627	3,241	2,444
Lower Yukon Area	Commercial	168	393,165	463,078	129,259	0
	Test Fish Sales	0	1,819	1,246	63	0
	Total	13,120	459,950	474,951	132,563	2,444
4	Subsistence <sup>b</sup>	9,783	16,527	9,609	529	13
	Commercial	0	159,051	1,402	0	0
	Total	9,783	175,578	11,011	529	13
5	Subsistence <sup>b</sup>	14,523	5,033	60,438	1,007	0
	Commercial	–	–	1,952	0	–
	Total	14,523	5,033	62,390	1,007	0
6	Subsistence <sup>b</sup>	842	911	4,419	2,536	0
	Commercial	0	4,300	23,270	9,656	0
	Personal use	125	438	626	200	0
	Total	967	5,649	28,315	12,392	0
Total	Subsistence <sup>b</sup>	25,148	22,471	74,466	4,072	13
Upper Yukon Area	Commercial	0	163,351	26,624	9,656	0
	Personal use	125	438	626	200	0
	Total	25,273	186,260	101,716	13,928	13
Total	Subsistence <sup>b</sup>	38,100	87,437	85,093	7,313	2,457
Yukon Area (Alaska)	Commercial	168	556,516	489,702	138,915	0
	Personal use	125	438	626	200	0
	Test Fish sales	0	1,819	1,246	63	0
	Sport Fish <sup>c</sup>	–	–	–	–	–
	Total	38,393	646,210	576,667	146,491	2,457
Total	Domestic	–	0	0	0	0
	Aboriginal (mainstem) <sup>b</sup>	3,500	0	1,000	0	0
Canada	Test Fish harvest	–	–	–	–	–
	Commercial	0	0	2,404	0	0
	Subtotal	3,500	0	3,404	0	0
	Porcupine Aboriginal	131	0	2,312	71	0
	Total	3,631	0	5,716	71	0
Grand Total		42,024	646,210	582,383	146,562	2,457

Note: En dash indicates fishery did not occur.

<sup>a</sup> Commercial harvest includes fish sold in the round and headed and gutted. Does not include subsistence harvest from coastal communities of Hooper Bay and Scammon Bay.

<sup>b</sup> Data are preliminary.

<sup>c</sup> Assume majority of chum salmon harvested during summer season.

Table 4.–Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2017.

Commercial operation (Processing location/buying station)	Product	District
Kwik'pak Fisheries LLC 2909 Arctic Blvd Anchorage, AK 99503 (Emmonak/Mountain Village)	Fresh Salmon Frozen Salmon Salmon Roe	1 and 2
Fish People Corporation 2540 NE MLK Jr Blvd Portland, OR 97212 (St. Mary's)	Fresh Salmon	2
Yukon River Gold LLC. 107 Fairside Dr. Lynden, WA 98264 (Kaltag)	Fresh Salmon Frozen Salmon Salmon Roe	4
Interior Alaska Fish Processors 2400 Davis Rd. Fairbanks, AK 99701 (Fairbanks, Yukon Bridge, Nenana)	Fresh/Frozen Salmon Salmon Roe Salted/Brined Salmon Smoked Salmon	5 and 6
David Dausel P.O. Box 80291 Fairbanks, AK 99708 (Fairbanks)	Fresh Salmon	6
John Krieg 3641 Dubia Rd North Pole, AK 99705 (Fairbanks)	Fresh Salmon	6
Gregory Taylor 1477 Chena Point Ave. Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon	6
Edmund Lord P.O. Box 183 Nenana, AK 99760 (Nenana)	Fresh Salmon	6
Robert Pierce Sr. P.O. Box 614 Nenana, AK 99760 (Nenana)	Fresh Salmon	6

Table 5.–Summer season subsistence fishing openings and allowed gear.

District or Subdistrict	Management Actions				
	Regulatory schedule with 6-inch mesh	Selective gear <sup>a</sup>	Reduced schedule with 6-inch mesh	Surgical opening with 7.5-inch mesh	Regulatory schedule with 7.5-inch mesh
South Coastal	31 May	N/A	N/A	N/A	18 Jun
District 1 and North Coastal	31 May	11 Jun	10 hour openings June 19 and June 20	12 hour opening June 18	June 21: open around commercial <sup>b</sup>
District 2	02 Jun	11 Jun	10 hour openings June 19 and June 20	12 hour opening June 18	June 21: open around commercial <sup>b</sup>
District 3	06 Jun	11 Jun	18 Jun	24 hour opening June 20	21 Jun
4-A Lower	09 Jun	14 Jun	N/A	N/A	21 Jun
4-A Upper	11 Jun	17 Jun	N/A	N/A	25 Jun
4-A and 4-B	N/A	19 Jun	N/A	N/A	25 Jun
5-A, 5-B, and 5-C	27 Jun	23 Jun	N/A	N/A	27 Jun
5-D and Koyukuk, and Innoko rivers	N/A	N/A	N/A	N/A	All season
6-A, 6-B <sup>c</sup>	N/A	N/A	N/A	N/A	12 Jun

*Note:* The action took effect in the area beginning on the date listed. N/A indicates an action did not take place in that district or subdistrict. Mesh size listed is the maximum allowable size; any smaller mesh gillnets could be used. Subsistence fishing for non-salmon species with 4-inch or smaller mesh gillnets was allowed during closures. The use of fish wheels was allowed during all gillnet and selective gear openings. Prior to the start of the management actions listed here and once Fall season began in each district, subsistence fishing returned to 7 days per week except around commercial openings.

<sup>a</sup> During openings with selective gear, fishermen could use beach seines, dip nets, and fish wheels. All Chinook salmon were required to be immediately released to the water alive.

<sup>b</sup> Subsistence fishing was open Monday thru Saturday, for 10-hour period each day.

<sup>c</sup> Subdistricts 6A and 6B remained on their regulatory schedule of two 42-hour periods per week until September 27. In Subdistrict 6C, the regulatory schedule of two 42-hour periods per week was not altered in 2017.

Table 6.—Chinook and summer chum salmon commercial harvest by district, period, and gear type, for Districts 1, 2, 4, and 6, Yukon Area, 2017.

District 1															
Period	Starting time	Start date	Ending time	End date	Hours fished	Gear type <sup>a</sup>	Mesh size	Number of fishermen	Chinook salmon		Summer chum salmon			Pink Salmon	
									Number caught and released	Number caught but not sold	Number	Pounds	Avg wt	Number	
1	3:00 PM	10 Jun	3:00 AM	11 Jun	12	DN/BS		62	153		1,105	6,854	6.2	0	
2	3:00 PM	12 Jun	3:00 AM	13 Jun	12	DN/BS		88	344		8,473	52,067	6.1	0	
3	3:00 PM	13 Jun	3:00 AM	14 Jun	12	DN/BS		117	376		8,886	54,255	6.1	0	
4	3:00 PM	14 Jun	3:00 AM	15 Jun	12	DN/BS		73	230		4,006	24,974	6.2	0	
5	3:00 PM	15 Jun	3:00 AM	16 Jun	12	DN/BS		73	363		4,150	25,287	6.1	0	
6	3:00 PM	16 Jun	3:00 AM	17 Jun	12	DN/BS		133	597		15,726	96,851	6.2	0	
7	3:00 PM	17 Jun	3:00 AM	18 Jun	12	DN/BS		111	373		9,011	54,902	6.1	0	
8	3:00 PM	19 Jun	3:00 AM	20 Jun	12	DN/BS		115	675		17,059	102,063	6.0	0	
9	3:00 PM	20 Jun	3:00 AM	21 Jun	12	DN/BS		109	413		11,578	69,511	6.0	0	
10	3:00 PM	21 Jun	3:00 AM	22 Jun	12	DN/BS		108	352		11,399	68,635	6.0	0	
11	9:00 PM	23 Jun	1:00 AM	24 Jun	4	GN	5.5	176		616	20,841	132,285	6.3	0	
12	9:00 PM	27 Jun	1:00 AM	26 Jun	4	GN	5.5	175		652	27,040	169,254	6.3	0	
13	4:00 PM	28 Jun	10:00 PM	28 Jun	6	GN	5.5	187		664	34,379	214,683	6.2	0	
14	5:00 PM	29 Jun	11:00 PM	29 Jun	6	GN	5.5	199		916	25,259	156,463	6.2	0	
15	5:00 PM	01 Jul	1:00 AM	02 Jul	8	GN	6	199		892	28,629	183,217	6.4	0	
16	5:00 PM	03 Jul	1:00 AM	04 Jul	8	GN	6	162		537	16,570	107,343	6.5	0	
17	5:00 PM	05 Jul	1:00 AM	06 Jul	8	GN	6	200	5	449	48,118	307,555	6.4	0	
18	5:00 PM	07 Jul	1:00 AM	08 Jul	8	GN	6	182		422	34,250	220,953	6.5	0	
19	5:00 PM	10 Jul	2:00 AM	11 Jul	9	GN	6	180		238	15,208	98,306	6.5	0	
20	5:00 PM	12 Jul	2:00 AM	13 Jul	9	GN	6	99		75	1,490	9,272	6.2	0	
21	5:00 PM	14 Jul	2:00 AM	15 Jul	9	GN	6	41		17	580	3,603	6.2	0	
22	5:00 PM	15 Jul	2:00 AM	16 Jul	9	GN	6	40		34	1,638	10,232	6.2	0	
									1	188					
District 1 subtotal:					208				284	3,882 <sup>b</sup>	5,700 <sup>b</sup>	345,395	2,168,565	6.3	0

-continued-

Table 6.–Page 2 of 4.

District 2															
Period	Starting time	Start date	Ending time	End date	Hours fished	Gear type <sup>a</sup>	Mesh size	Number fishermen	Chinook salmon		Summer chum salmon			Pink Salmon	
									Number caught and released	Number caught but not sold	Number	Pounds	Avg wt	Number	
1	9:00 PM	21 Jun	3:00 AM	22 Jun	6	DN/BS		56	143		5,416	32,459	6.0	0	
2	9:00 PM	23 Jun	3:00 AM	24 Jun	6	DN/BS		71	81		6,868	40,370	5.9	0	
3	7:00 PM	26 Jun	3:00 AM	27 Jun	8	DN/BS		69	96		8,537	50,436	5.9	0	
4	4:00 PM	28 Jun	11:59 PM	28 Jun	8	DN/BS		76	112		8,936	52,537	5.9	0	
5	4:00 PM	30 Jun	11:59 PM	30 Jun	8	DN/BS		76	194		6,821	39,679	5.8	0	
6	4:00 PM	04 Jul	11:59 PM	04 Jul	8	DN/BS		39	39		1,584	8,927	5.6	0	
7	4:00 PM	06 Jul	11:59 AM	06 Jul	8	DN/BS		55	77		5,488	31,792	5.8	0	
8	6:00 PM	11 Jul	8:00 PM	11 Jul	2	GN	6	50		53	2,560	16,105	6.3	0	
9	6:00 PM	13 Jul	8:00 PM	13 Jul	2	GN	6	43		24	1,560	9,718	6.2	0	
									1	37					
District 2 subtotal:					56				114	743 <sup>b</sup>	114 <sup>b</sup>	47,770	282,023	5.9	0
Lower Yukon Area, summer season,															
Districts 1 and 2 subtotal: <sup>c</sup>					264				388	4,625 <sup>b</sup>	5,814 <sup>b</sup>	393,165	2,450,588	6.2	0
Subdistricts 6-A, 6-B, and 6-C															
Period	Starting time	Start date	Ending time	End date	Hours		Gear type	Mesh size	Number fishermen <sup>e</sup>	Chinook salmon		Summer chum salmon			Pink Salmon
					6-AB	fished				Number caught and released	Number caught but not sold	Number	Pounds	Avg wt	Number
1	6:00 PM	14 Jul	12:00 PM	16 Jul	42	FW/GN	7.5		<sup>e</sup>						
2	6:00 PM	17 Jul	12:00 PM	19 Jul	42	FW/GN	7.5		<sup>e</sup>						
3	6:00 PM	21 Jul	12:00 PM	23 Jul	42	FW/GN	7.5		<sup>e</sup>						
4	6:00 PM	24 Jul	12:00 PM	26 Jul	42	FW/GN	7.5		<sup>e</sup>						
5	6:00 PM	28 Jul	12:00 PM	30 Jul	42	FW/GN	7.5		<sup>e</sup>						
6	6:00 PM	31 Jul	12:00 PM	02 Aug	42	FW/GN	7.5		<sup>e</sup>						
7	6:00 PM	04 Aug	12:00 PM	06 Aug	42	FW/GN	7.5		<sup>e</sup>						
8	6:00 PM	07 Aug	12:00 PM	09 Aug	42	FW/GN	7.5		<sup>e</sup>						
District 6 subtotal:					336				3	62	185 <sup>c</sup>	4,300	24,943	5.8	0
Upper Yukon Area, summer season,															
Districts 4 and 6 subtotal: <sup>c, e</sup>					1,110				13	103	185 <sup>c</sup>	163,351	820,282	5.8	0
Yukon Area, summer season,															
Districts 1 through 6 total:					1,374				401	4,728	5,999 <sup>c</sup>	556,516	3,270,870	5.9	0

-continued-

Table 6.–Page 3 of 4.

Subdistrict 4-A															
Period	Starting time	Start date	Ending time	End date	Hours fished 6-AB	Gear type	Mesh size	Number fishermen	Chinook salmon		Summer chum salmon			Pink Salmon	
									Number caught and released	Number caught but not sold	Number	Pounds	Avg wt	Number	
1	6:00 PM	25 Jun	11:59 PM	25 Jun	6	FW <sup>d</sup>					0	0		0	
2	12:00 AM	26 Jun	11:59 PM	26 Jun	24	FW <sup>d</sup>		8			5,640	28,200	5.0	0	
3	12:00 AM	27 Jun	11:59 PM	27 Jun	24	FW <sup>d</sup>		6			4,912	24,610	5.0	0	
4	12:00 AM	28 Jun	11:59 PM	28 Jun	24	FW <sup>d</sup>		8			7,223	36,115	5.0	0	
5	12:00 AM	29 Jun	11:59 PM	29 Jun	24	FW <sup>d</sup>		9			11,490	57,360	5.0	0	
6 & 7	12:00 AM	30 Jun	11:59 PM	01 Jul	48	FW <sup>d</sup>		<sup>e</sup>			1,931	9,655	5.0	0	
8	12:00 AM	02 Jul	11:59 PM	02 Jul	24	FW <sup>d</sup>		9			9,723	48,615	5.0	0	
9	12:00 AM	03 Jul	11:59 PM	03 Jul	24	FW <sup>d</sup>		9			8,795	43,975	5.0	0	
10	12:00 AM	04 Jul	11:59 PM	04 Jul	24	FW <sup>d</sup>		9			6,607	33,035	5.0	0	
11	12:00 AM	05 Jul	11:59 PM	05 Jul	24	FW <sup>d</sup>		8			6,357	31,785	5.0	0	
12	12:00 AM	06 Jul	11:59 PM	06 Jul	24	FW <sup>d</sup>		9			6,697	33,405	5.0	0	
13	12:00 AM	07 Jul	11:59 PM	07 Jul	24	FW <sup>d</sup>		9			7,306	36,530	5.0	0	
14	12:00 AM	08 Jul	11:59 PM	08 Jul	24	FW <sup>d</sup>		8			6,343	31,715	5.0	0	
15	12:00 AM	09 Jul	11:59 PM	09 Jul	24	FW <sup>d</sup>		8			8,069	40,345	5.0	0	
16	12:00 AM	10 Jul	11:59 PM	10 Jul	24	FW <sup>d</sup>		8	5		4,704	23,520	5.0	0	
17	12:00 AM	11 Jul	11:59 PM	11 Jul	24	FW <sup>d</sup>		8			4,930	24,650	5.0	0	
18	12:00 AM	12 Jul	11:59 PM	12 Jul	24	FW <sup>d</sup>		6	2		3,270	16,350	5.0	0	
19	12:00 AM	13 Jul	11:59 PM	13 Jul	24	FW <sup>d</sup>		7			3,134	15,670	5.0	0	
20	12:00 AM	14 Jul	11:59 PM	14 Jul	24	FW <sup>d</sup>		8	2		3,804	19,020	5.0	0	
21	12:00 AM	15 Jul	11:59 PM	15 Jul	24	FW <sup>d</sup>		8			3,800	19,000	5.0	0	
22	12:00 AM	16 Jul	11:59 PM	16 Jul	24	FW <sup>d</sup>		8	4		6,231	31,155	5.0	0	
23	12:00 AM	17 Jul	11:59 PM	17 Jul	24	FW <sup>d</sup>		10	4		8,861	44,305	5.0	0	
24	12:00 AM	18 Jul	11:59 PM	18 Jul	24	FW <sup>d</sup>		10	5		6,880	34,400	5.0	0	
25	12:00 AM	19 Jul	11:59 PM	19 Jul	24	FW <sup>d</sup>		10	8		5,878	29,590	5.0	0	
26	12:00 AM	20 Jul	11:59 PM	20 Jul	24	FW <sup>d</sup>		9			4,276	21,380	5.0	0	
27	12:00 AM	21 Jul	11:59 PM	21 Jul	24	FW <sup>d</sup>		10	11		4,514	22,574	5.0	0	
28 & 29	12:00 AM	22 Jul	11:59 PM	23 Jul	24	FW <sup>d</sup>		<sup>e</sup>			1,212	6,060	5.0	0	
30	12:00 AM	24 Jul	11:59 PM	24 Jul	24	FW <sup>d</sup>		0			0	0		0	
31	12:00 AM	25 Jul	11:59 PM	25 Jul	24	FW <sup>d</sup>		0			0	0		0	
32 & 33	12:00 AM	29 Jul	11:59 PM	30 Jul	48	FW/GN	6.0	<sup>e</sup>			3,770	18,850	5.0	0	
34	12:00 AM	31 Jul	6:00 PM	31 Jul	24	FW/GN	6.0	5			2,694	13,470	5.0	0	
									0	0					
District 4 subtotal:					774			10	41 <sup>b</sup>	0 <sup>b</sup>	159,051	795,339	5.0		

-continued-

Table 6.–Page 4 of 4.

---

*Note:* Chinook salmon caught in gillnets were not allowed to be sold throughout the summer and fall season. Chinook salmon caught in dip nets, beach seines, and fish wheels were required to be immediately released alive. DN = dip net; BS = beach seine; GN = gillnet; R= restricted mesh size; FW = fish wheel.

- <sup>a</sup> Under commercial fishing regulations adopted by the Alaska Board of Fisheries in 2013, the department may allow the use of dip nets and beach seines.
- <sup>b</sup> Includes Chinook salmon caught but not sold in the fall season.
- <sup>c</sup> No commercial fishing occurred in District 3 or District 5.
- <sup>d</sup> Fish wheels were to be manned at all times. Chinook salmon caught in fish wheels were to be released immediately back to the water alive.
- <sup>e</sup> Fewer than 5 commercial fishermen participated in the fishery. Number of fishermen not provided to preserve confidentiality.

Table 7.—Commercial sales in number of salmon by statistical area, Yukon Area, 2017.

Statistical Area	Chinook <sup>a, b</sup>	Summer Chum <sup>a</sup>	Fall Chum <sup>a</sup>	Coho <sup>a</sup>	Pink <sup>a</sup>	Total salmon
334-11	0	13,769	2,195	1,097	0	17,061
12	26	46,543	66,241	15,411	0	128,221
13	4	20,718	35,177	5,529	0	61,428
14	13	31,578	27,291	1,771	0	60,653
15	51	34,659	46,009	10,685	0	91,404
16	46	31,913	32,711	28,437	0	93,107
17	28	138,283	98,773	27,993	0	265,077
18	0	27,932	20,013	5,059	0	53,004
19	0	0	0	0	0	0
Subtotal District 1 <sup>b</sup>	168	345,395	328,410	95,982	0	769,955
334-21	0	5,744	11,613	4,506	0	21,863
22	0	31,990	47,318	15,619	0	94,927
23	0	3,925	44,301	7,035	0	55,261
24	0	5,218	27,400	5,940	0	38,558
25	0	893	4,036	177	0	5,106
Subtotal District 2	0	47,770	134,668	33,277	0	215,715
334-31	—	—	—	—	—	—
32	—	—	—	—	—	—
Subtotal District 3	—	—	—	—	—	—
Total Lower Yukon	168	393,165	463,078	129,259	0	985,670
334-42	—	—	—	—	—	—
43	—	—	—	—	—	—
44	—	—	—	—	—	—
45	—	—	—	—	—	—
46	0	159,051	1,402	0	0	160,453
47	—	—	—	—	—	—
Subtotal District 4	—	159,051	1,402	0	—	160,453
334-51	—	—	—	—	—	—
52	—	—	1,952	0	—	1,952
53	—	—	0	0	—	0
54	—	—	—	—	—	—
55	—	—	—	—	—	—
Subtotal District 5	—	—	1,952	0	—	1,952
334-61	0	0	0	0	—	0
62	0	4,300	8,587	3,735	0	16,622
63	0	0	14,683	5,921	—	20,604
Subtotal District 6	0	4,300	23,270	9,656	—	37,226
Total Upper Yukon	0	163,351	26,624	9,656	0	199,631
Grand Total Yukon Area	168	556,516	489,702	138,915	0	1,185,301

<sup>a</sup> Commercial harvest includes fish sold in the round and headed and gutted. Does not include test fishery sales.

<sup>b</sup> Chinook salmon were only sold for one commercial period during fall season.

Table 8.—Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2017.

District/ Subdistrict	Number of fishermen <sup>a</sup>	Chinook	Summer Chum	Fall Chum	Coho	Pink
1	338	168	345,395	328,410	95,982	0
2	157	0	47,770	134,668	33,277	0
Subtotal	457	168	393,165	463,078	129,259	0
3	—	—	—	—	—	—
Total Lower Yukon	457	168	393,165	463,078	129,259	0
Anvik River	—	—	—	—	—	—
4-A	10	0	159,051	1,402	0	—
4-BC	—	—	—	—	—	—
Subtotal						
District 4	10	0	159,051	1,402	0	—
5-ABC	4	—	—	1,952	0	—
5-D	—	—	—	—	—	—
Subtotal						
District 5	4	—	—	1,952	0	—
6	5	0	4,300	23,270	9,656	—
Total Upper Yukon	19	0	163,351	26,624	9,656	—
Total Alaska	476	168	556,516	489,702	138,915	0
Total Canada	8	—	0	2,404	0	0
Grand Total	484	168	556,516	492,106	138,915	0

<sup>a</sup> Number of unique permits fished by district, subdistrict, or area. Totals by area may not add up due to transfers between districts or subdistricts.

Table 9.–Fall chum and coho salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3, and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2017.

District 1																			
Period	Starting time	Start date	Ending time	End date	Hours		Mesh size	Number fishermen	Fall chum salmon			Coho salmon			Chinook salmon				
					Drift	Set			Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number caught but not sold <sup>a</sup>	Number caught and released
1	3:00 PM	7/17	3:00 AM	7/18	12	12	6	170	61,431	429,572	7.0	46	309	6.7	168	1,804	10.7		
2	3:00 PM	7/20	3:00 AM	7/21	12	12	6	180	12,361	83,872	6.8	160	1,031	6.4				103	
3	3:00 PM	7/22	3:00 AM	7/23	12	12	6	102	3,279	21,955	6.7	150	844	5.6				23	
4	3:00 PM	7/24	9:00 PM	7/24	6	6	6	219	20,522	153,995	7.5	210	1,189	5.7				23	
5	4:00 PM	7/27	10:00 PM	7/27	6	6	6	237	28,837	221,977	7.7	381	2,271	6.0				12	
6	3:00 PM	8/2	11:59 PM	8/2	9	9	6	213	18,490	140,020	7.6	887	5,103	5.8				12	1
7	2:00 PM	8/8	8:00 PM	8/8	6	6	6	153	3,017	22,673	7.5	784	4,554	5.8				6	
8	1:00 PM	8/11	10:00 PM	8/11	7	9	6	215	43,295	333,159	7.7	1,819	11,599	6.4				3	
9	6:00 PM	8/12	10:00 PM	8/12	4	4	6	210	42,423	322,376	7.6	2,764	16,901	6.1				2	
10	6:00 PM	8/15	11:00 PM	8/15	5	5	6	205	23,060	170,380	7.4	5,076	31,663	6.2				2	
11	12:00 PM	8/20	9:00 PM	8/20	9	9	6	213	22,510	164,810	7.3	19,044	119,431	6.3					
12	5:00 PM	8/22	9:00 PM	8/22	4	4	6	209	9,895	70,487	7.1	8,499	53,309	6.3				1	
13	3:00 PM	8/25	9:00 PM	8/25	6	6	6	180	12,604	89,353	7.1	18,157	118,103	6.5					
14	3:00 PM	8/27	9:00 PM	8/27	6	6	6	191	10,274	70,996	6.9	13,011	83,721	6.4					
15	12:00 PM	8/30	9:00 PM	8/30	9	9	6	165	7,005	48,314	6.9	12,343	79,944	6.5					
16	2:00 PM	8/31	8:00 PM	8/31	6	6	6	174	6,741	45,845	6.8	7,576	49,025	6.5					
17	2:00 PM	9/3	8:00 PM	9/3	6	6	6	126	1,177	7,380	6.3	1,953	12,434	6.4				1	
18	2:00 PM	9/6	8:00 PM	9/6	6	6	6	116	1,489	9,927	6.7	3,122	19,387	6.2					
District 1 subtotal:					131	133		318	328,410	2,407,091	7.3	95,982	610,818	6.4	168	1,804	10.7	188	1

-continued-

Table 9.–Page 2 of 4.

District 2																		
Period	Starting time	Start date	Ending time	End date	Hours fished	Mesh	Number fishermen	Fall chum salmon			Coho salmon			Chinook salmon				
								Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number caught but not sold <sup>a</sup>	Number caught and released
1	6:00 PM	7/21	10:00 PM	7/21	4	6	63	8,871	61,645	6.9	0	0					18	
2	5:00 PM	7/26	9:00 PM	7/26	4	6	70	6,808	50,725	7.5	9	51	5.7				4	
3	8:00 PM	7/29	11:59 PM	7/29	4	6	93	13,418	102,909	7.7	40	257	6.4				5	
4	5:00 PM	7/31	9:00 PM	7/31	4	6	50	4,416	33,094	7.5	36	195	5.4				4	
5	4:00 PM	8/4	8:00 PM	8/4	4	6	84	5,239	39,441	7.5	194	1,080	5.6				4	
6	5:00 PM	8/9	9:00 PM	8/9	4	6	68	2,428	18,262	7.5	288	1,597	5.5				1	
7	5:00 PM	8/13	7:00 PM	8/13	2	6	60	10,058	75,511	7.5	75	436	5.8				1	
8	3:00 PM	8/15	4:00 PM	8/15	1	6	48	10,256	78,755	7.7	304	1,862	6.1					
9	7:00 PM	8/16	9:00 PM	8/16	2	6	104	20,752	155,352	7.5	2,115	12,874	6.1					
10	2:00 PM	8/18	10:00 PM	8/18	8	6	103	20,472	148,581	7.3	5,004	30,081	6.0					
11	1:00 PM	8/22	6:00 PM	8/22	5	6	88	7,614	54,813	7.2	4,594	27,866	6.1					
12	3:00 PM	8/23	9:00 PM	8/23	6	6	91	6,820	47,329	6.9	5,659	34,515	6.1					
13	2:00 PM	8/24	9:00 PM	8/24	7	6	59	4,720	33,172	7.0	3,592	22,082	6.1					
14	4:00 PM	8/27	7:00 PM	8/27	3	6	72	4,323	30,755	7.1	3,681	23,091	6.3					
15	1:00 PM	8/28	9:00 PM	8/28	8	6	79	8,473	59,618	7.0	7,686	47,801	6.2					
District 2 subtotal:					66		144	134,668	989,962	7.4	33,277	203,788	6.1	0	0		37	1

-continued-

Table 9.–Page 3 of 4.

					Hours fished		Fall chum salmon			Coho salmon			Chinook salmon					
					Drift	Set	Number fishermen	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number caught but not sold <sup>a</sup>	Number caught and released
Lower Yukon Area, fall season, Districts 1, 2, and 3 subtotal:					197	199	438	463,078	3,397,053	7.3	129,259	814,606	6.3	168	1,804	10.7	225	2
Subdistrict 4-A																		
							Fall chum salmon			Coho salmon			Chinook salmon					
Period	Starting time	Start date	Ending time	End date	Hours fished	Number fishermen	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number caught but not sold <sup>a</sup>	Number caught and released	
1	12:00 AM	8/1	12:00 PM	8/1	24	0												
2	12:00 AM	8/2	12:00 PM	8/2	24	0												
3	12:00 AM	8/3	12:00 PM	8/3	24	0												
4	12:00 AM	8/4	12:00 PM	8/4	24	0												
5	12:00 AM	8/5	12:00 PM	8/5	24	0												
6	12:00 AM	8/6	6:00 PM	8/6	18	0												
7	12:00 AM	8/7	12:00 PM	8/7	24	0												
8	12:00 AM	8/8	12:00 PM	8/8	24	4	736	5,286	7.2									
9	12:00 AM	8/9	12:00 PM	8/9	24	3	236	1,699	7.2									
10	12:00 AM	8/10	12:00 PM	8/10	24	3	380	2,727	7.2									
11	12:00 AM	8/11	12:00 PM	8/11	24	0												
12	12:00 AM	8/12	12:00 PM	8/12	24	2	50	360	7.2									
13	12:00 AM	8/13	12:00 PM	8/13	24	0												
14	12:00 AM	8/14	12:00 PM	8/14	24	0												
District 4 subtotal:					330	5	1,402	10,072	7.2	0	0		0	0		0	0	
Subdistricts 5-B and 5-C																		
							Fall chum salmon			Coho salmon			Chinook salmon					
Period	Starting time	Start date	Ending time	End date	Hours fished	Number fishermen	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number	Pounds	Avg wt	Number caught but not sold <sup>a</sup>	Number caught and released	
1	6:00 PM	8/4	12:00 PM	8/7	66	0												
2	12:00 PM	8/7	12:00 PM	8/14	168	4	823	6,171	7.5									
3	12:00 PM	8/14	12:00 PM	8/21	168	3	1,129	8,468	7.5									
4	12:00 PM	8/21	12:00 PM	8/28	168	0												
5	12:00 PM	8/28	12:00 PM	9/4	168	0												
6	12:00 PM	9/4	12:00 PM	9/11	168	0												
7	12:00 PM	9/11	12:00 PM	9/18	168	0												
8	12:00 PM	9/18	12:00 PM	9/25	168	0												
9	12:00 PM	9/25	12:00 PM	9/30	132	0												
District 5 subtotal:					1,374	4	1,952	14,639	7.5	0	0		0	0		0	0	

-continued-

Table 9.–Page 4 of 4.

Subdistricts 6-A, 6-B, and 6-C																		
							Fall chum salmon			Coho salmon			Chinook salmon					
	Starting	Start	Ending	End	Hours	Number	Avg			Avg			Avg			Number caught	Number caught	
Period	time	date	time	date	fished	fishermen	Number	Pounds	wt	Number	Pounds	wt	Number	Pounds	wt	but not sold <sup>a</sup>	and released	
1	6:00 PM	8/11	12:00 PM	8/13	42	0												
2	6:00 PM	8/14	12:00 PM	8/16	42	0												
3	6:00 PM	8/18	12:00 PM	8/20	42	0												
4	6:00 PM	8/21	12:00 PM	8/23	42	0												
5	6:00 PM	8/25	12:00 PM	8/27	42	1	811	5,698	7.0									
6	6:00 PM	8/28	12:00 PM	8/30	42	0												
7	6:00 PM	9/1	12:00 PM	9/3	42	0												
8	6:00 PM	9/4	12:00 PM	9/6	42	0												
9	6:00 PM	9/8	12:00 PM	9/10	42	0												
10	6:00 PM	9/11	12:00 PM	9/13	42	0												
11	6:00 PM	9/15	12:00 PM	9/17	42	2	897	5,382	6.0	270	1,350	5.0						
12	6:00 PM	9/18	12:00 PM	9/20	42	3	1,845	12,915	7.0	622	3,732	6.0						
13	6:00 PM	9/22	12:00 PM	9/24	42	4	4,931	34,461	7.0	1,621	9,594	5.9						
14	6:00 PM	9/25	11:59 PM	9/30	126	4	11,372	80,696	7.1	5,753	33,883	5.9						
15	8:00 AM	10/3	4:00 PM	10/4	32	4	3,414	24,126	7.1	1,390	8,160	5.9						
District 6 subtotal:					704	4	23,270	163,278	7.0	9,656	56,719	5.9	0	0		0	0	
Upper Yukon Area, fall season,																		
Districts 4, 5, and 6 subtotals:					2,408	13	26,624	187,989	7.1	9,656	56,719	5.9	0	0		0	0	
Yukon Area, fall season,																		
Districts 1–6 total:					2,607	451	489,702	3,585,042	7.3	138,915	871,325	6.3	168	1,804	10.7	225	2	

Note: No commercial fishing occurred in District 3 and Subdistricts 4-B, 4-C, 5-A, and 5-D. Blank cells indicate no data.

<sup>a</sup> Chinook salmon caught but not sold during fall season are added in summer season harvest.

Table 10.—Subsistence and personal use salmon harvest estimates, including commercially related and test fishery harvests provided for subsistence use, and related information, Yukon Area, 2017.

Community	Number of fishing households <sup>b</sup>	Number of dogs <sup>c</sup>	Estimated harvest				Primary gear used <sup>a</sup>			
			Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels	Other
Hooper Bay	101	348	320	7,969	139	222	90	11	0	0
Scammon Bay	79	206	733	6,036	422	213	78	0	0	1
Coastal District total	180	554	1,053	14,005	561	435	168	11	0	1
Nunam Iqua <sup>c</sup>	29	58	235	1,759	52	20	29	0	0	0
Alakanuk <sup>c</sup>	74	216	846	5,035	426	201	25	40	0	8
Emmonak <sup>c, d</sup>	101	172	1,732	6,937	2,739	723	19	78	0	4
Kotlik <sup>c</sup>	82	170	1,767	8,776	1,370	102	28	55	0	0
District 1 subtotal	286	616	4,580	22,507	4,587	1,046	101	173	0	12
Mountain Village <sup>c</sup>	103	234	1,118	7,593	1,617	769	5	91	0	7
Pitkas Point <sup>c</sup>	19	48	507	1,623	172	40	0	18	0	1
St. Marys <sup>c</sup>	69	147	961	5,147	780	223	8	54	0	7
Pilot Station <sup>c</sup>	69	132	825	5,031	1,070	91	0	60	0	9
Marshall <sup>c</sup>	77	172	1,612	5,300	536	140	0	58	0	19
District 2 subtotal	337	733	5,023	24,694	4,175	1,263	13	281	0	43
Russian Mission	52	225	1,368	2,645	671	483	10	42	0	0
Holy Cross	26	65	836	245	329	0	3	24	0	0
Shageluk	15	48	92	870	304	14	14	1	0	0
District 3 subtotal	93	338	2,296	3,760	1,304	497	27	67	0	0
Lower Yukon River total	716	1,687	11,899	50,961	10,066	2,806	141	521	0	55
Anvik	26	61	731	330	296	11	5	20	0	1
Grayling	30	91	751	738	272	0	1	29	0	0
Kaltag	39	79	2,048	193	149	4	0	35	4	0
Nulato	69	187	2,269	1,414	1,748	82	0	66	2	0
Koyukuk	18	88	648	96	166	6	0	17	2	0
Galena	67	220	2,246	1,229	4,774	136	23	39	5	0
Ruby	17	64	593	115	104	24	5	12	0	0
District 4 Yukon River subtotal	266	790	9,286	4,115	7,509	263	34	218	13	1
Huslia	32	244	453	8,762	478	154	32	0	0	0
Hughes	6	44	9	778	74	20	6	0	0	0
Allakaket	22	149	22	2,872	1,495	92	18	0	0	4
Alatna	3	11	13	0	53	0	3	0	0	0
Bettles	0	66	0	0	0	0	0	0	0	0
Koyukuk River subtotal	63	514	497	12,412	2,100	266	59	0	0	4
District 4 subtotal	329	1,304	9,783	16,527	9,609	529	93	218	13	5

-continued-

Table 10.–Page 2 of 3.

Community	Number of fishing households <sup>b</sup>	Number of dogs <sup>c</sup>	Estimated harvest				Primary gear used <sup>a</sup>			
			Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels	Other
Tanana	47	318	2,962	3,086	21,957	874	24	2	21	0
Rampart <sup>d</sup>	3	3	155	10	0	0	3	0	0	0
Fairbanks (FNSB) <sup>d, e</sup>	51	278	2,521	1,413	3,075	112	50	0	1	0
Stevens Village	0	121	0	0	0	0	0	0	0	0
Birch Creek	1	11	20	0	0	0	1	0	0	0
Beaver	14	53	609	102	0	0	10	0	4	0
Fort Yukon <sup>c</sup>	84	300	4,282	101	3,696	4	52	1	31	0
Circle <sup>d</sup>	11	104	714	0	2,182	0	4	0	7	0
Central <sup>d</sup>	0	0	0	0	0	0	0	0	0	0
Eagle <sup>d, f</sup>	31	212	1,730	0	19,126	0	20	0	11	0
Other District 5 <sup>d, g</sup>	15	16	860	321	12	1	15	0	0	0
District 5 Yukon River subtotal	257	1,416	13,853	5,033	50,048	991	179	3	75	0
Venetie	31	199	604	0	9,272	16	25	0	0	6
Chalkyitsik	10	41	66	0	1,118	0	7	0	3	0
Chandalar and Black Rivers subtotal	41	240	670	0	10,390	16	32	0	3	6
District 5 subtotal	298	1,656	14,523	5,033	60,438	1,007	211	3	78	6
Manley <sup>d</sup>	7	33	103	16	809	750	6	0	1	0
Minto <sup>d</sup>	6	53	101	234	18	0	5	0	1	0
Nenana <sup>d</sup>	20	93	493	385	2,460	1,413	15	0	5	0
Fairbanks (FNSB) <sup>d, e</sup>	50	302	270	707	1,740	562	49	0	1	0
Other District 6 <sup>d, h</sup>	11	29	0	7	18	11	7	0	0	4
District 6 Tanana River subtotal	94	510	967	1,349	5,045	2,736	82	0	8	4
Upper Yukon River total	721	3,470	25,273	22,909	75,092	4,272	386	221	99	15
Alaska, Yukon Area total	1,617	5,711	38,225	87,875	85,719	7,513	695	753	99	71
AK, Yukon Area percentages of the total	-	-	17%	40%	39%	3%	43%	47%	6%	4%
Included in the communities above:										
Survey community subtotal	1,412	4,591	30,278	81,156	52,184	3,645	521	753	72	67
Retained from commercial fisheries <sup>i</sup>	-	-	2,187	1,099	422	253	-	-	-	-
Subsistence permit subtotal	162	1,120	6,637	2,478	28,814	2,628	134	0	27	1
Test fishery subtotal	-	-	1,000	3,626	4,095	1,019	-	-	-	-
District 6 commercial retained <sup>j</sup>	-	-	185	177	0	21	-	-	-	-

-continued-

Table 10.–Page 2 of 3.

- 
- <sup>a</sup> Primary gear is the gear type used to harvest the largest number of salmon by each household. Other gear types included dip nets, fyke nets, jigging, spear and beach seines.
  - <sup>b</sup> Does not include 41 households that fished with a Tolovana River pike permit, or 15 households that fished in more than one permit area.
  - <sup>c</sup> Includes salmon distributed from test fishery projects.
  - <sup>d</sup> Permit data from permits returned by March 28, 2018.
  - <sup>e</sup> Fairbanks (FNSB) North Star Borough; may include Fairbanks, Ester, Fox, North Pole, Salcha, Two Rivers and Ft Wainwright
  - <sup>f</sup> Permit holders harvested 1,498 Chinook and 14,110 fall chum salmon above the mainstem Yukon River sonar project located near the community of Eagle
  - <sup>g</sup> Other District 5 includes residents of Anchorage, Auke Bay, Central, Eagle River, Manley, Minto, Nenana, Northway, Soldotna, Tok, Wasilla, and Wiseman, who obtained a household permit and fished in a Yukon River required permit area.
  - <sup>h</sup> Other District 6 includes residents of Anchorage, Wasilla, and the Upper Tanana River drainage communities of Delta Junction, Dot Lake, Northway, and Tok who obtained a permit and fished in the Tanana River.
  - <sup>i</sup> Estimated number of salmon retained from commercial fisheries and used for subsistence in the Coastal District and Districts 1-3; included in subsistence harvest estimates.
  - <sup>j</sup> Number of salmon retained from commercial fisheries and used for subsistence in District 6. These salmon were added to permit harvest totals from District 6 communities.

Table 11.—Summary of 2017 salmon escapement counts compared to existing goals.

Stock/location	Assessment method	Goal type	Goals	2017 Escapement
<u>Chinook Salmon Stock</u>				
E. Fork Andreafsky	Weir	SEG	2,100–4,900	2,970
W. Fork Andreafsky	Aerial survey	SEG	640–1,600	942
Anvik	Aerial survey	SEG	1,100–1,700	1,101
Nulato (Forks Combined)	Aerial survey	SEG	940–1900	943
Gisasa	Weir	none	–	1,083
Henshaw	Weir	none	–	677
Chena	Tower/Sonar	BEG	2,800–5,700	4,201 <sup>a</sup>
Salcha	Tower/Sonar	BEG	3,300–6,500	4,195 <sup>a</sup>
Goodpaster	Tower	none	–	2,769
Canadian Upper Yukon River	Sonar-harvest	IMEG	42,500–55,000	68,315
<u>Summer Chum Salmon Stock</u>				
Yukon Drainagewide	Sonar	BEG	500,000–1,200,000	3,009,490 <sup>b</sup>
E. Fork Andreafsky	Weir	BEG	>40,000	55,532
Anvik	Sonar	BEG	350,000–700,000	415,139
Gisasa	Weir	none	–	73,584
Henshaw	Weir	none	–	360,687
Chena	Tower/Sonar	none	–	21,156 <sup>c</sup>
Salcha	Tower/Sonar	none	–	29,093 <sup>c</sup>
<u>Fall Chum Salmon Stock</u>				
Yukon Drainagewide	Bayesian	SEG	300,000–600,000	1,648,000
Chandalar	Sonar	BEG	74,000–152,000	509,115
Tanana	Regression	BEG	61,000–136,000	516,331
Delta	Ground Surveys	BEG	6,000–13,000	48,783
Fishing Branch	Weir/Sonar	IMEG	22,000–49,000	48,524
Canadian Upper Yukon River	Sonar-Harvest	IMEG	70,000–104,000	401,585
<u>Coho Salmon Stock</u>				
Delta Clearwater River	Boat Survey	SEG	5,200–17,000	9,617

*Note:* Biological escapement goal (BEG), sustainable escapement goal (SEG) and interim management escapement goal (IMEG).

<sup>a</sup> Visual and sonar counts were combined for missed days to derive a preliminary estimate.

<sup>b</sup> Drainagewide escapement based on pilot station sonar and East Fork Andreafsky escapement estimates doubled with above sonar commercial harvest removed.

<sup>c</sup> Due to high water events during the season and terminating the project earlier than normal, the passage estimate is considered incomplete.

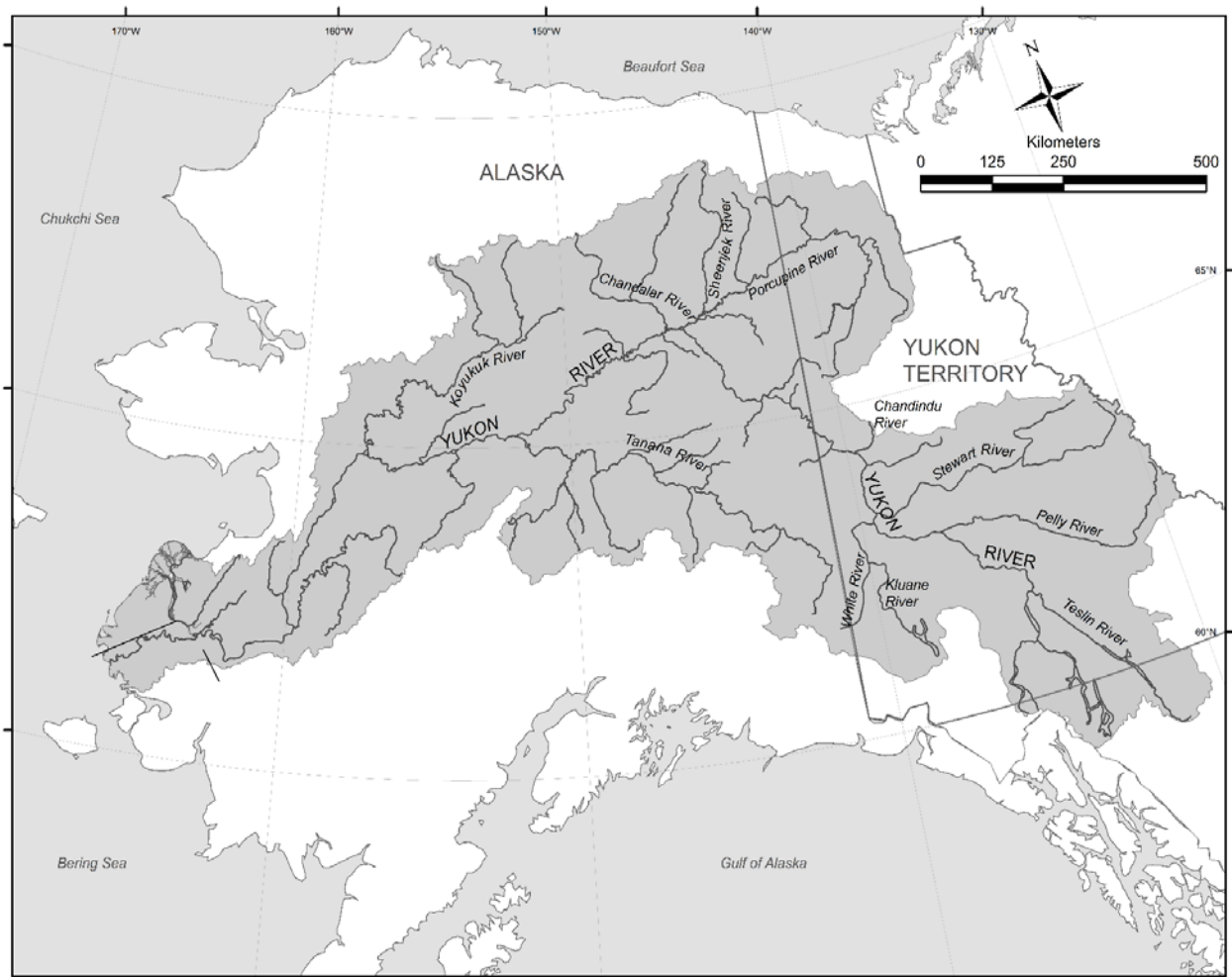


Figure 1.—Map of the Yukon River drainage.

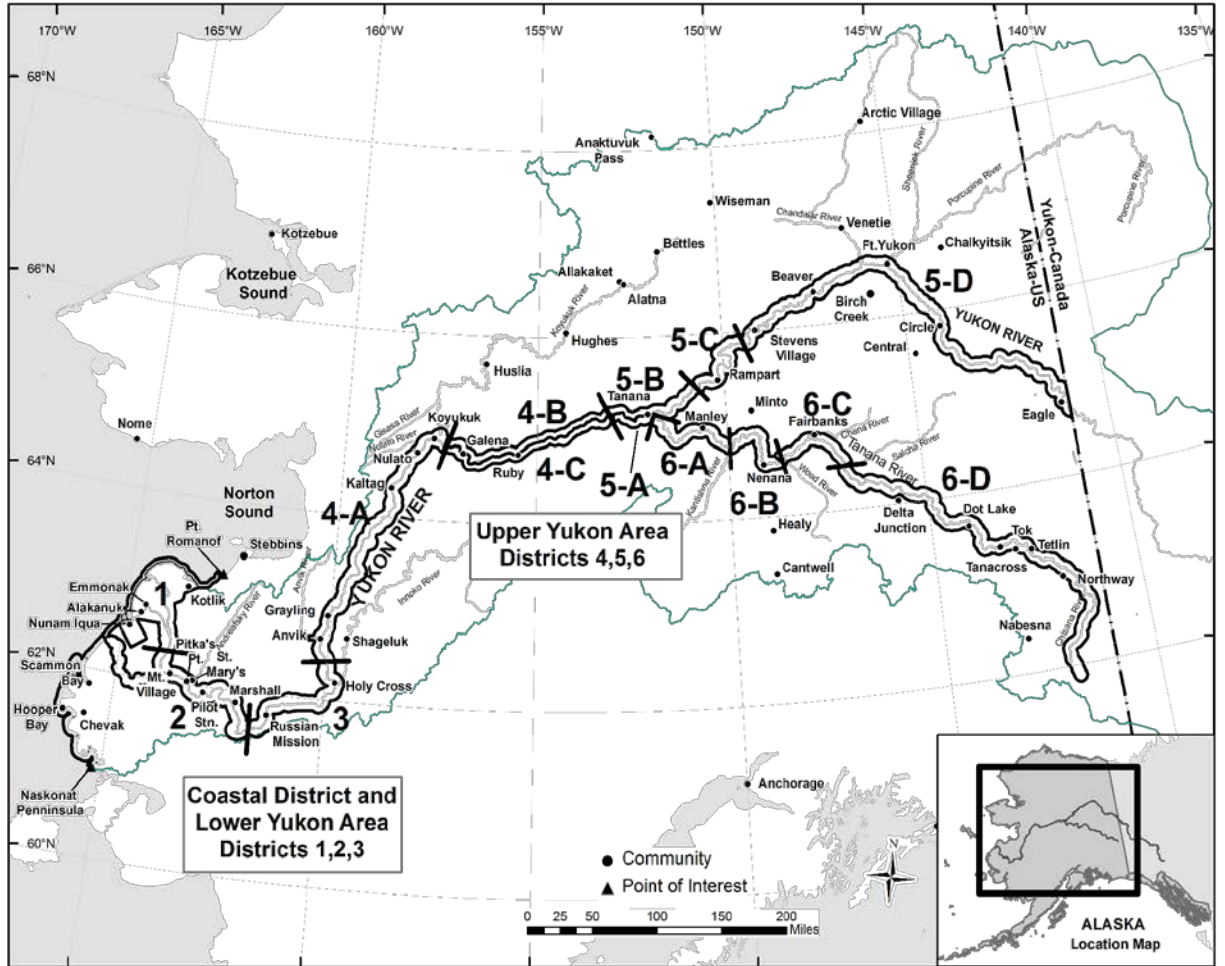


Figure 2.—Map of the Alaska portion of the Yukon River drainage showing communities and fishing districts.

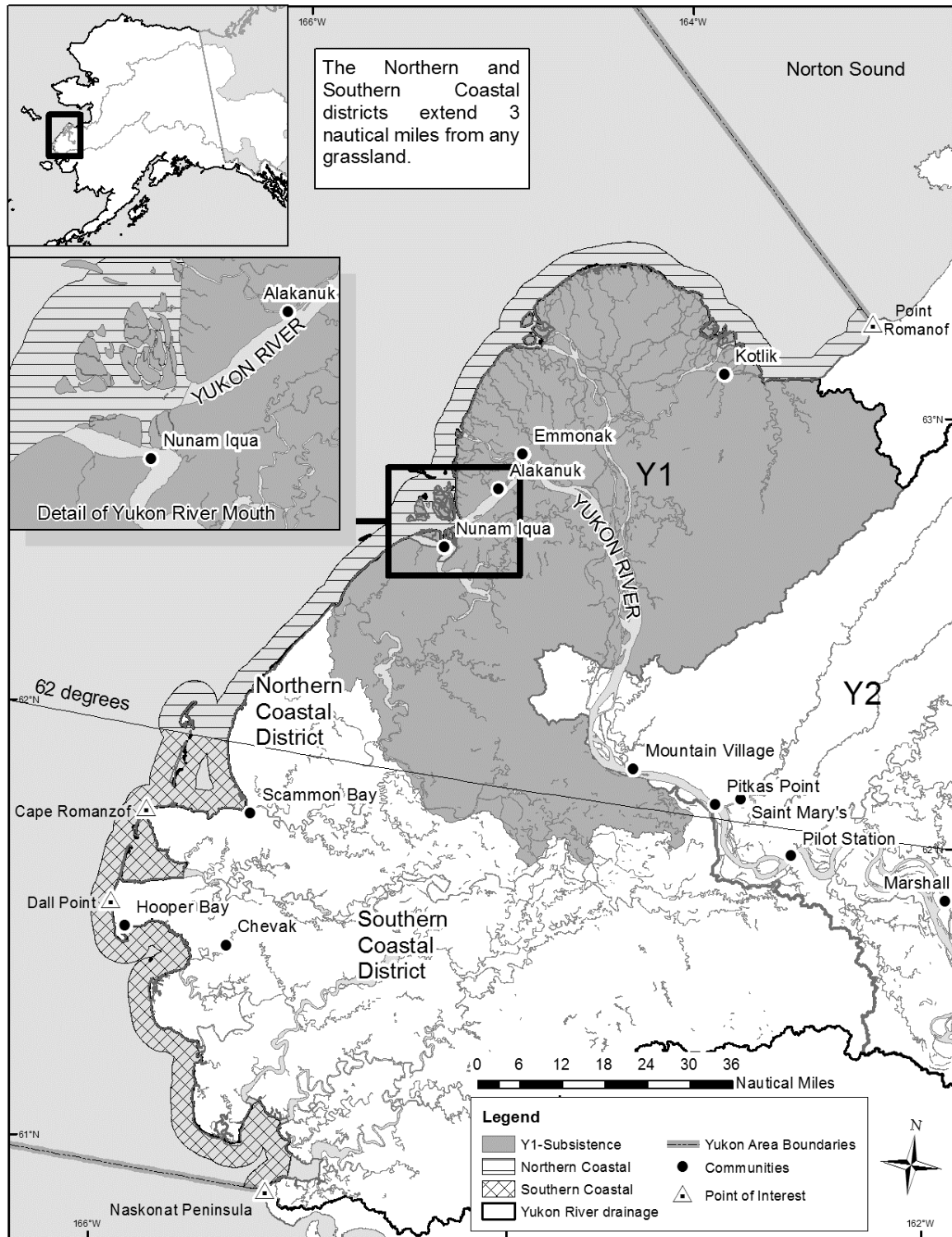


Figure 3.—Map of the Yukon Area District 1 and the Coastal District including the northern and southern areas.

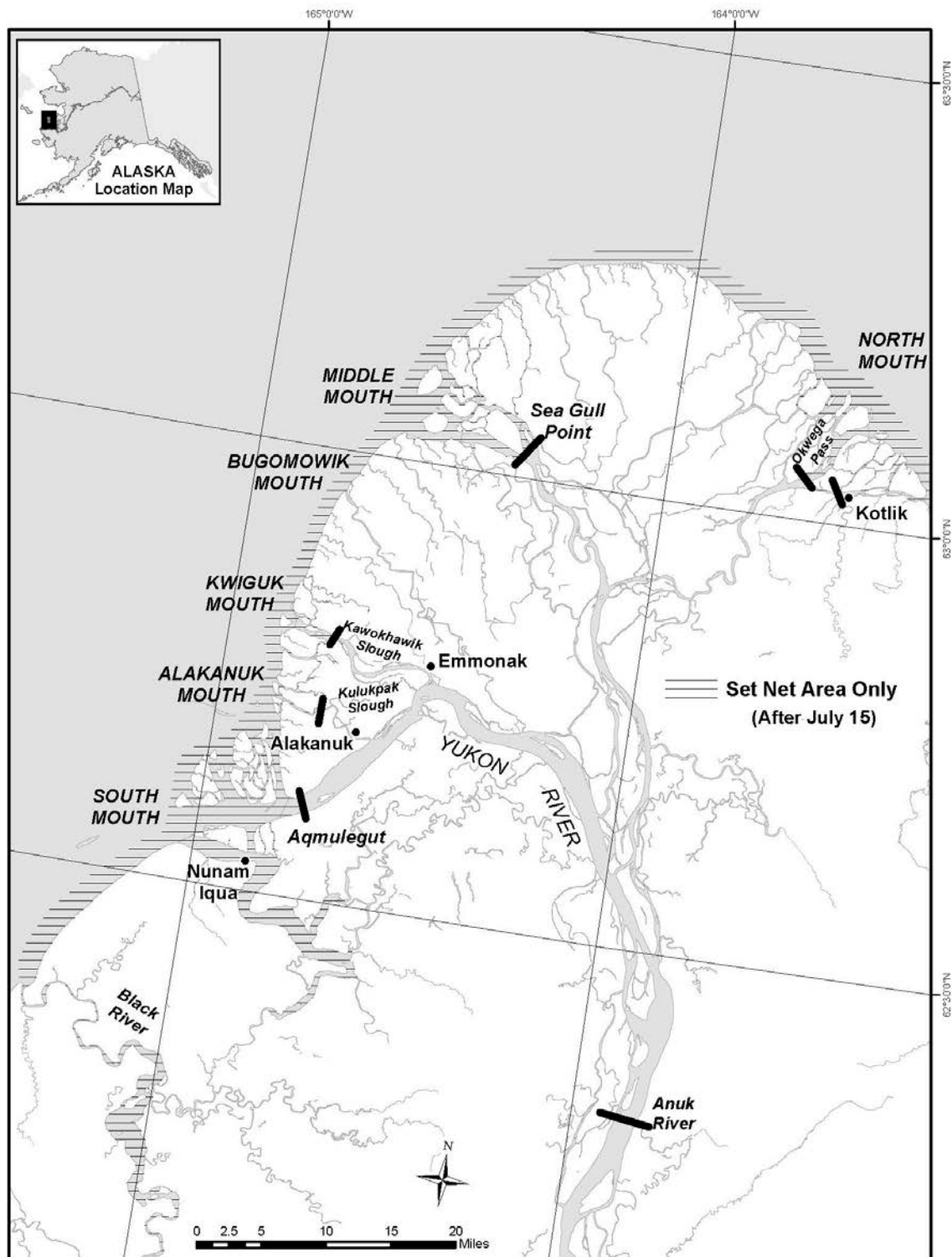


Figure 4.—Set Gillnet Only Area of District 1, Yukon Area.

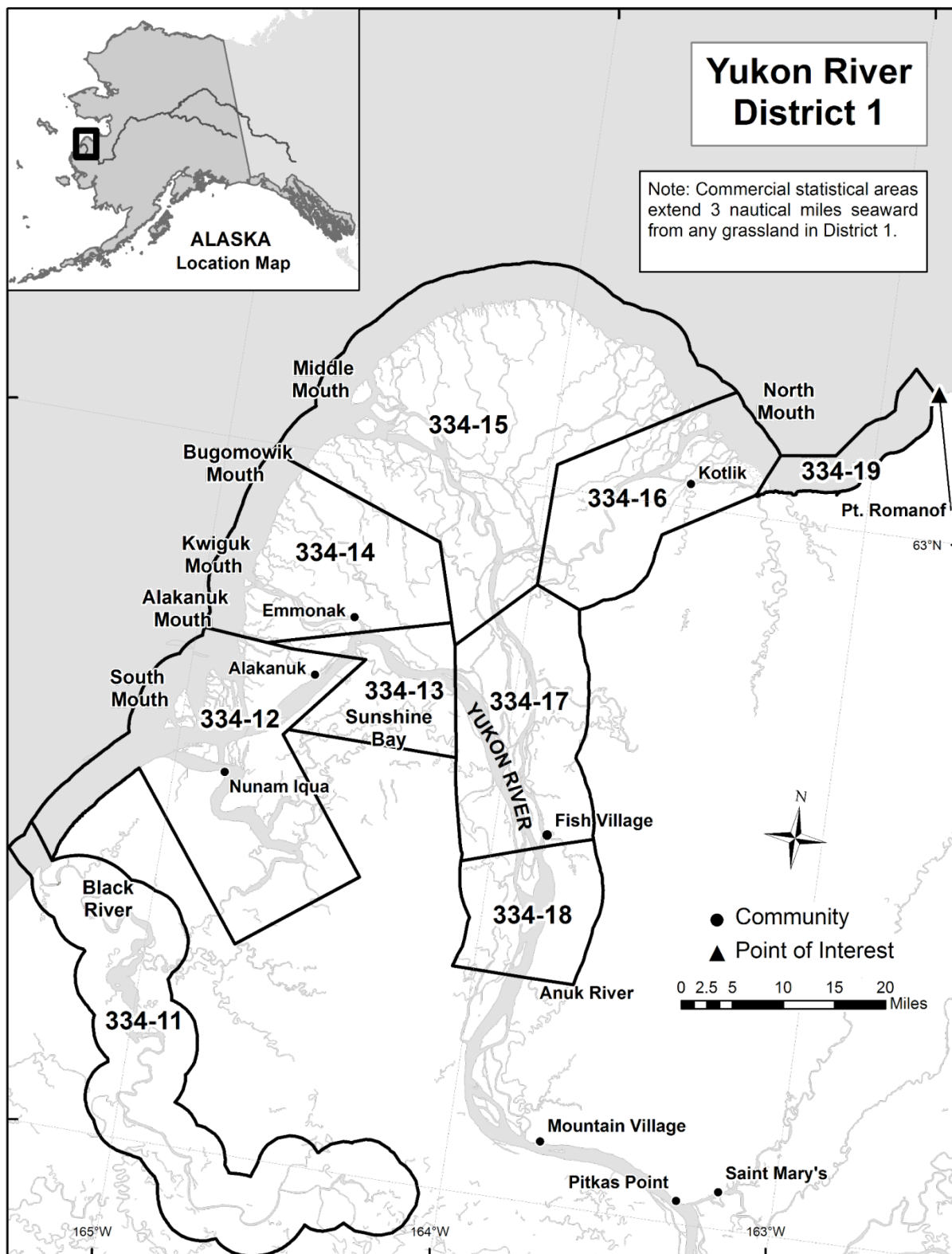


Figure 5.—District 1 showing statistical areas, Yukon Area.

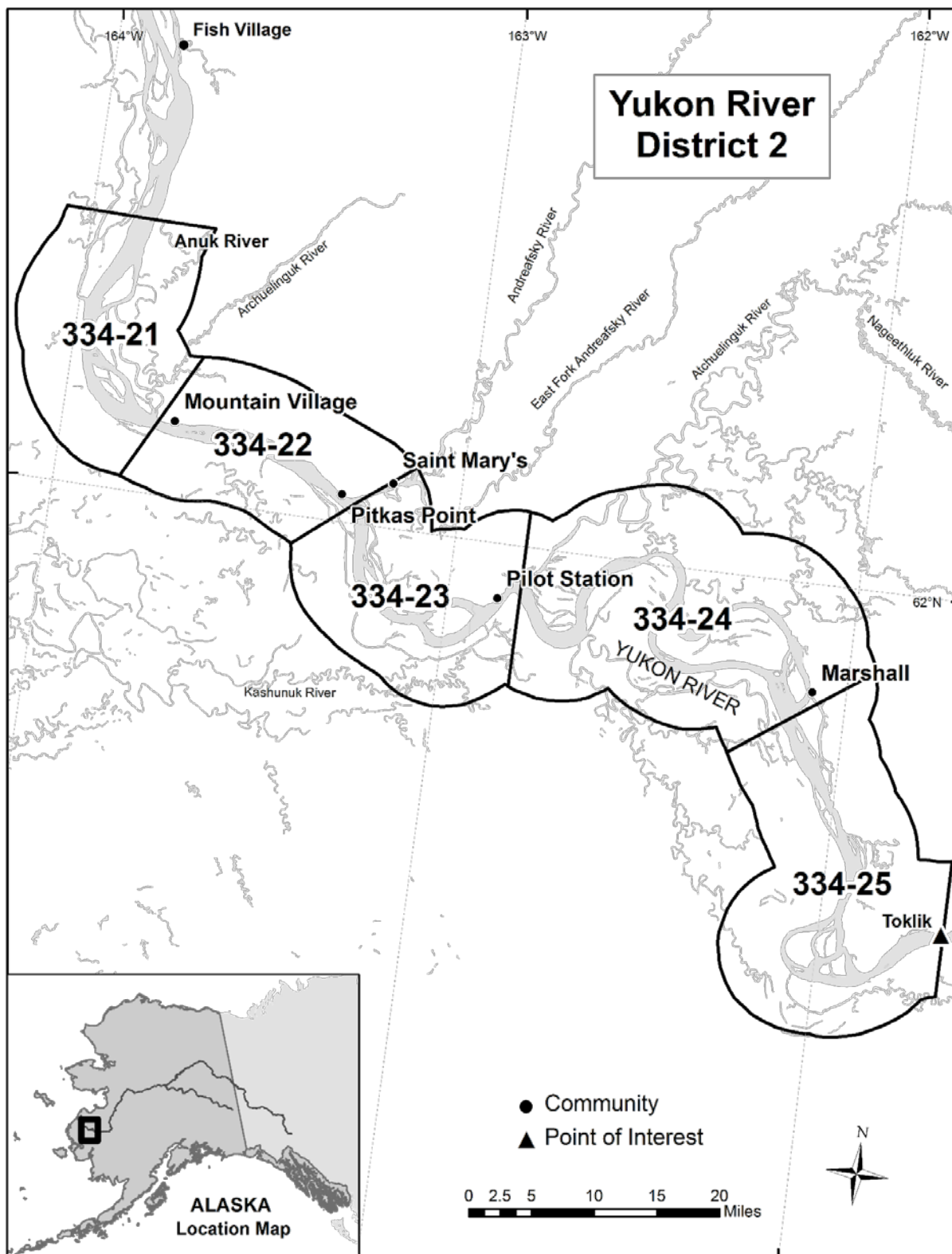


Figure 6.—District 2 showing statistical areas, Yukon Area.

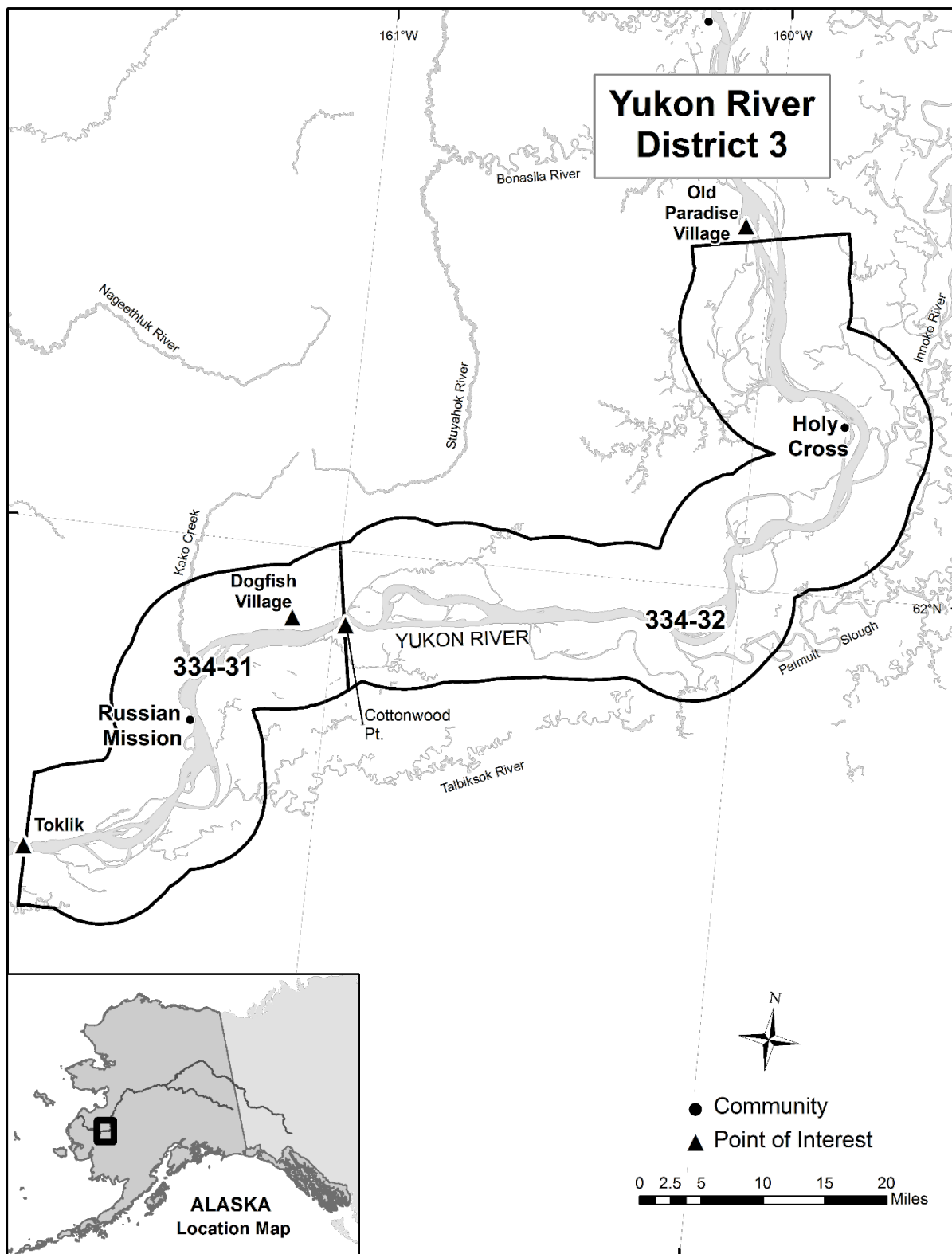


Figure 7.—District 3 showing statistical areas, Yukon Area.

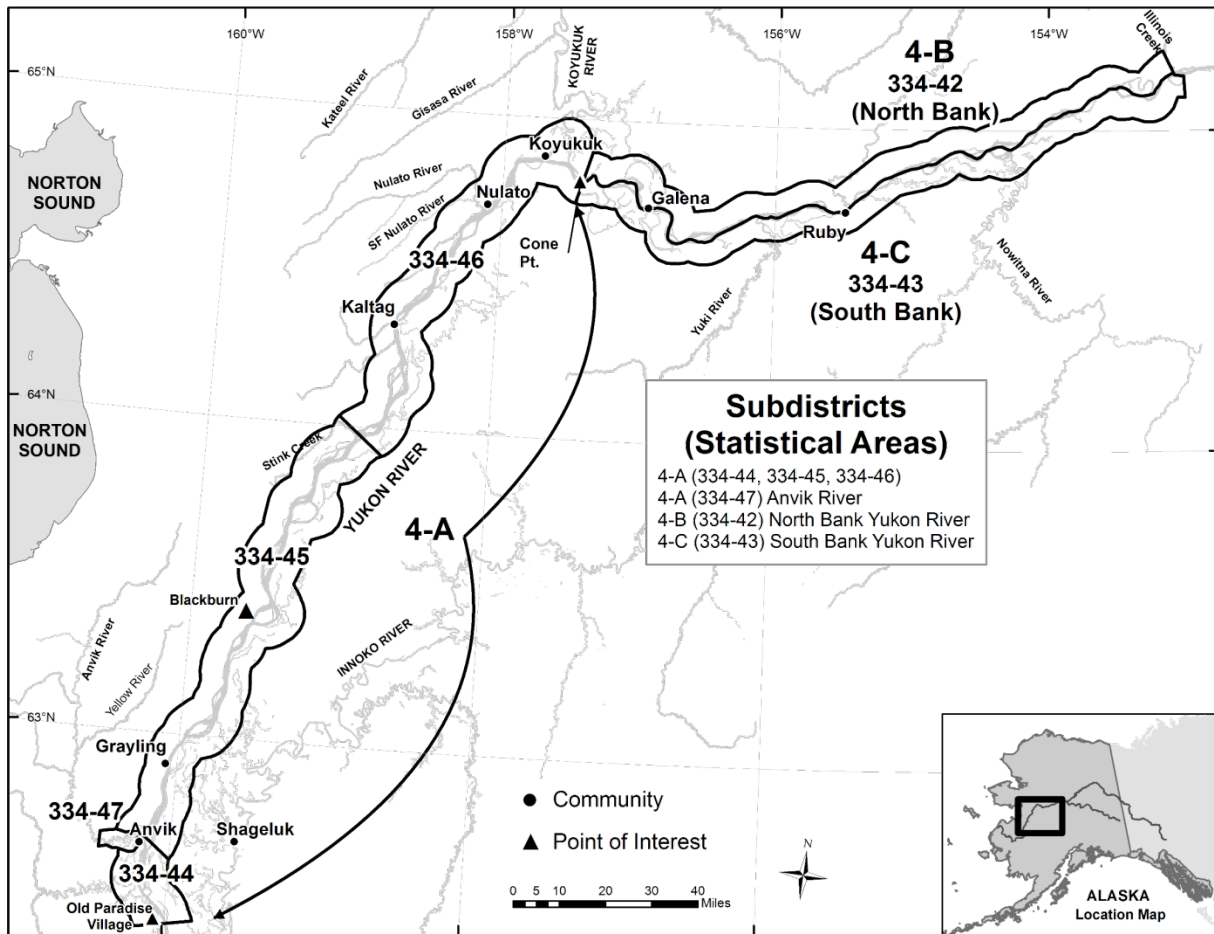
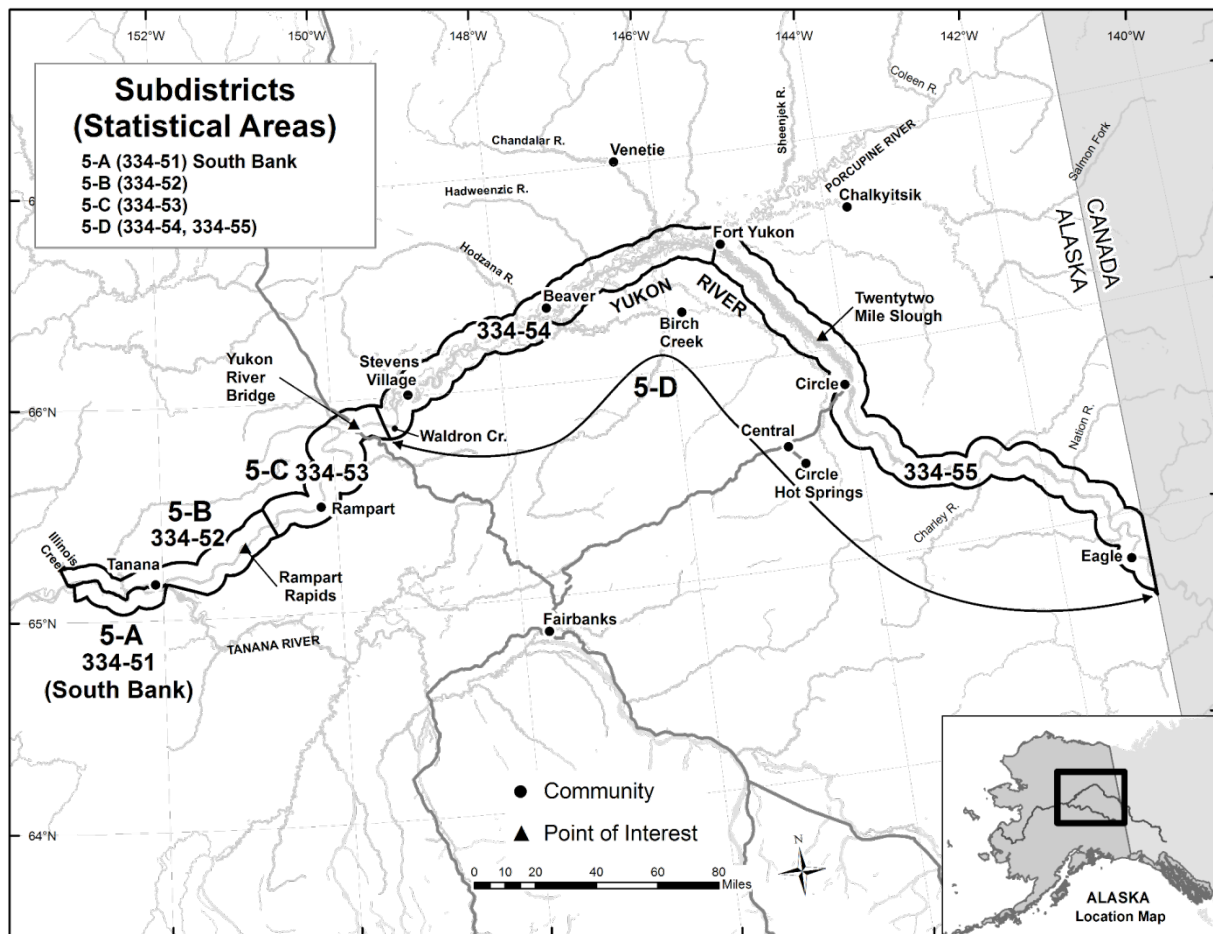


Figure 8.—District 4 showing statistical areas, Yukon Area.



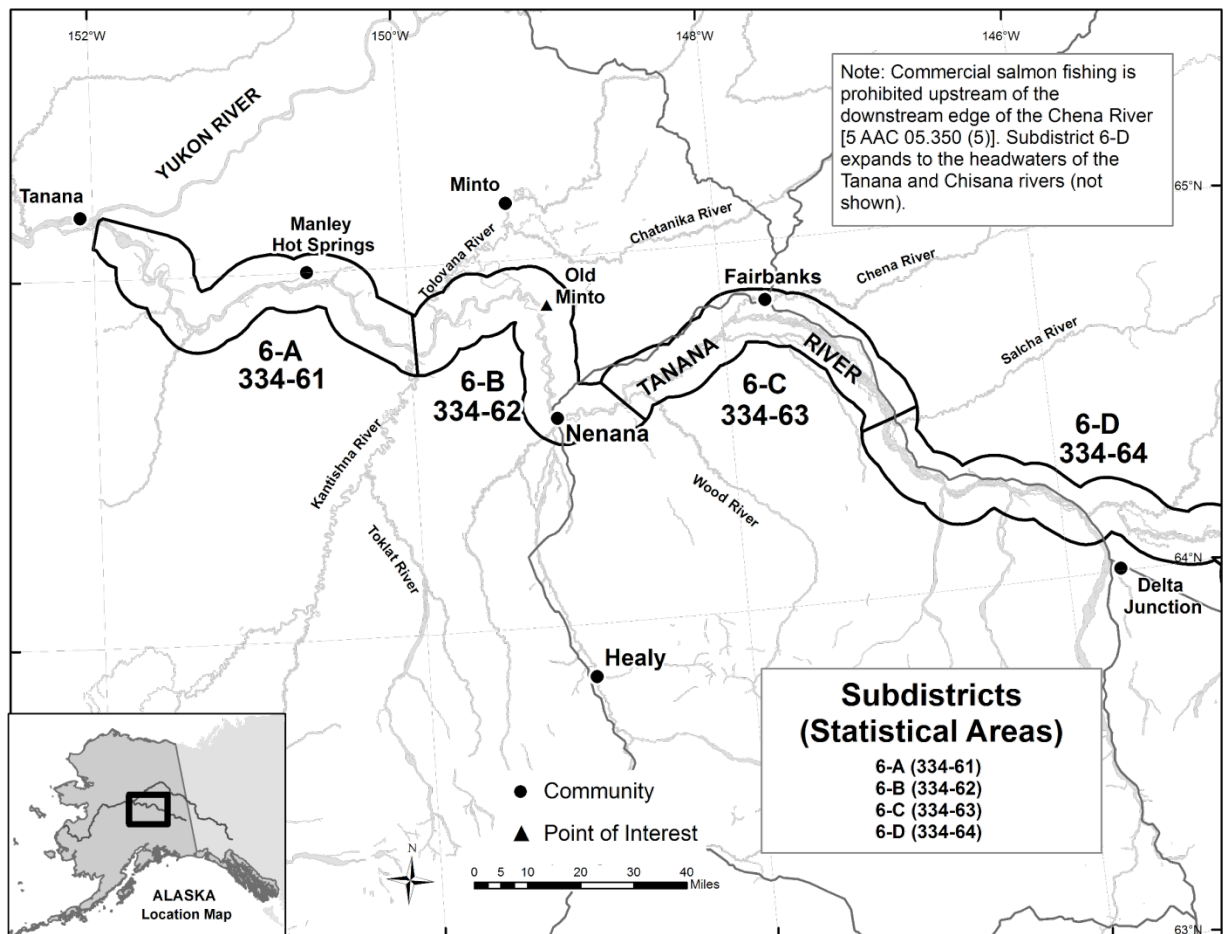


Figure 10.—District 6 showing statistical areas, Yukon Area.

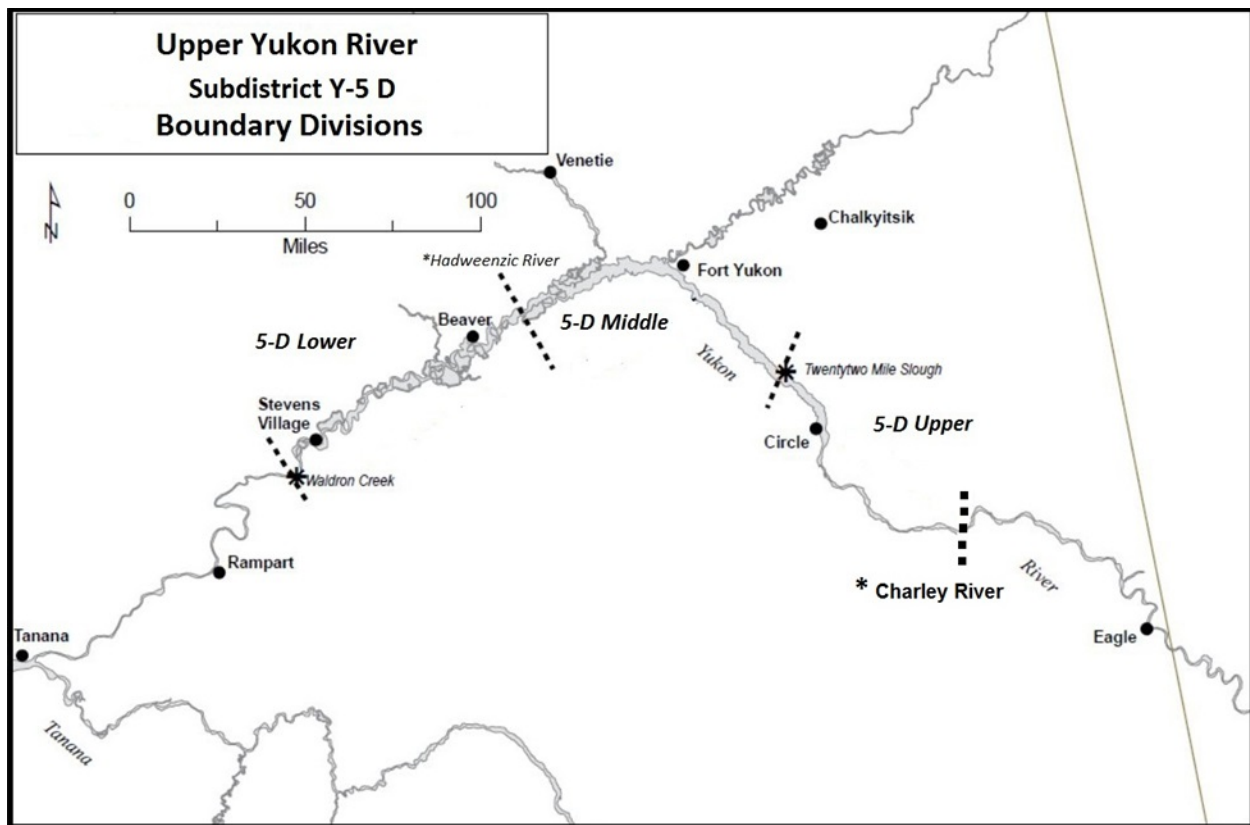


Figure 11.—Subdistrict 5-D Boundary Divisions, Yukon Area.

**5 AAC 99.015 Joint Board Nonsubsistence Areas.**

(4) The Fairbanks Nonsubsistence Area is comprised of the following: within Unit 20(A), as defined by 5 AAC 92.450(20) (A), east of the Wood River drainage and south of the Rex Trail but including the upper Wood River drainage south of its confluence with Chicken Creek; within Unit 20(B), as defined by 5 AAC 92.450(20) (B), the North Star Borough and that portion of the Washington Creek drainage east of the Elliot Highway; within Unit 20(D) as defined by 5 AAC 92.450(20) (D), west of the Tanana River between its confluence with the Johnson and Delta Rivers, west of the east bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage; and within Unit 25(C), as defined by 5 AAC 92.450(25) (C), the Preacher and Beaver Creek drainages.

**Legend**

□ Fairbanks Nonsubsistence Area

..... Roads

• Communities

0 25 50 Miles

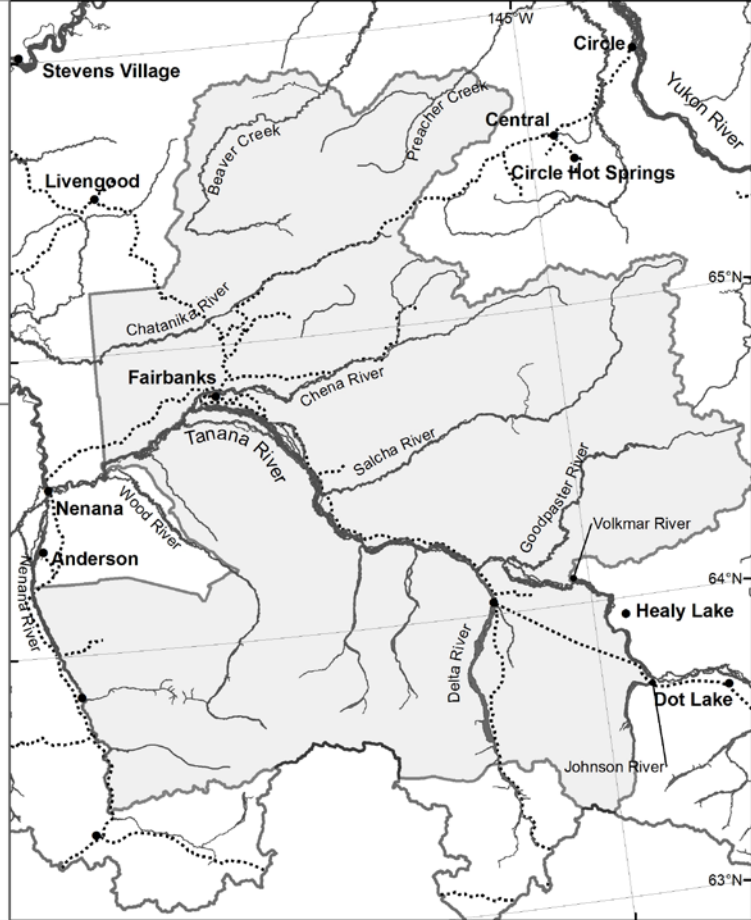


Figure 12.—The Fairbanks Nonsubsistence Area.

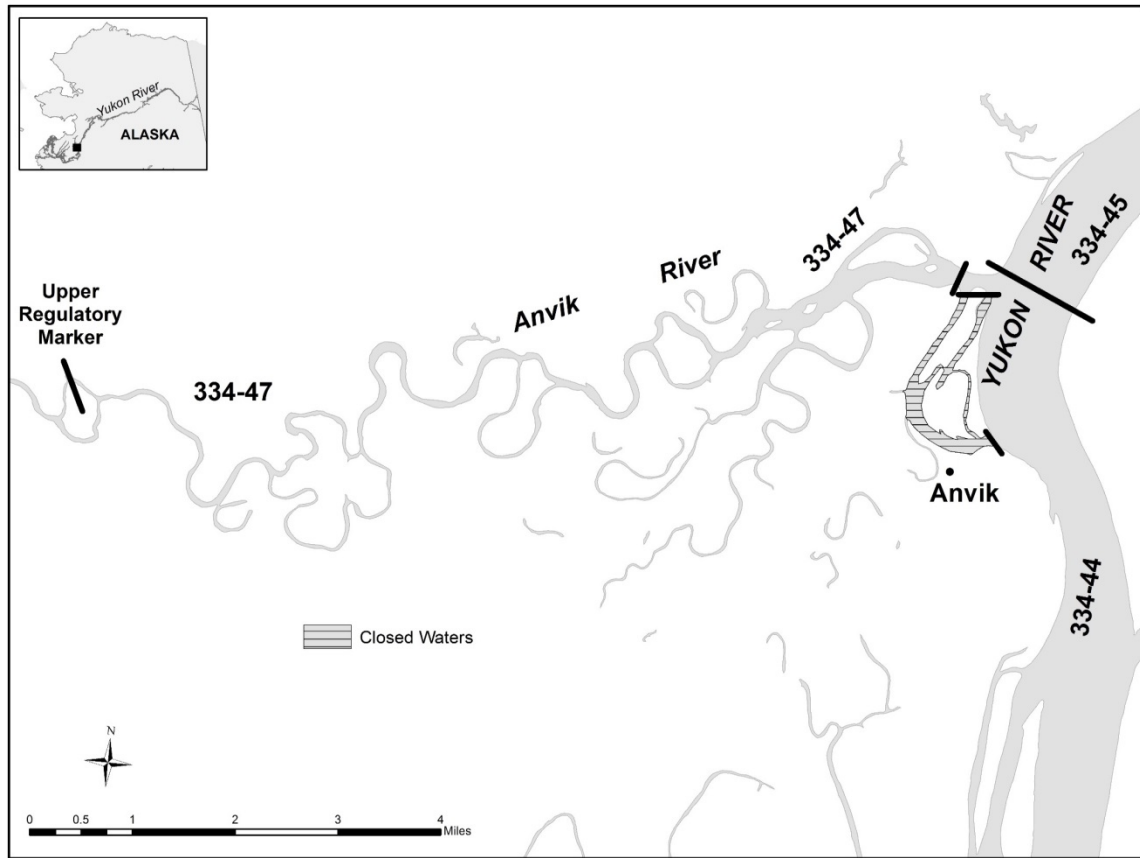


Figure 13.—Anvik River Management Area, Yukon Area.



## **APPENDIX A**

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

Species Code <sup>a</sup>	Scientific Name	Common Name
601	<i>Lampetra camtschatica</i>	Arctic Lamprey
570	<i>Stenodus leucichthys</i>	Inconnu (Sheefish)
588	<i>Coregonus nasus</i>	Broad Whitefish
589	<i>Coregonus pidschian</i>	Humpback Whitefish
583	<i>Coregonus sardinella</i>	Least Cisco
585	<i>Coregonus laurettae</i>	Bering Cisco
586	<i>Prosopium cylindraceum</i>	Round Whitefish
587	<i>Prosopium coulteri</i>	Pygmy Whitefish
610	<i>Thymallus arcticus</i>	Arctic Grayling
550	<i>Salvelinus namaycush</i>	Lake Trout
520	<i>Salvelinus alpinus</i>	Arctic Char
530	<i>Salvelinus malma</i>	Dolly Varden
410	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon
420	<i>Oncorhynchus nerka</i>	Sockeye Salmon
430	<i>Oncorhynchus kisutch</i>	Coho Salmon
440	<i>Oncorhynchus gorbuscha</i>	Pink Salmon
450	<i>Oncorhynchus keta</i>	Chum Salmon
513	<i>Osmerus mordax</i>	Rainbow Smelt
514	<i>Hypomesus olidus</i>	Pond Smelt
500	<i>Esox lucius</i>	Northern Pike
630	<i>Dallia pectoralis</i>	Alaska Blackfish
650	<i>Couesius plumbeus</i>	Lake Chub
640	<i>Catostomus catostomus</i>	Longnose Sucker
670	<i>Percopsis omiscomaycus</i>	Trout Perch
590	<i>Lota lota</i>	Burbot (lush)
661	<i>Pungitius pungitius</i>	Ninespine Stickleback
162	<i>Cottus cognatus</i>	Slimy Sculpin
ESTUARINE		
113	<i>Eleginus gracilis</i>	Saffron Cod
122	<i>Liopsetta glacialis</i>	Arctic Flounder
127	<i>Limanda aspera</i>	Yellowfin Sole
129	<i>Platichthys stellatus</i>	Starry Flounder
192	<i>Hexagrammos stelleri</i>	Whitespotted Greenling
230	<i>Clupea pallasii</i>	Pacific Herring
516	<i>Mallotus villosus</i>	Capelin
NA	<i>Megalocottus platycephalus</i>	Belligerent Sculpin

Note: Includes fishes found in the Yukon River drainage in Canada.

<sup>a</sup> The species code is a 3-digit number that identifies the species of fish caught on harvest fish tickets.

Appendix A2.–Yukon River drainage mileages.

<u>Location</u>	<u>Mileage from Mouth</u>	<u>Location</u>	<u>Mileage from Mouth</u>
NORTH MOUTH (APOON PASS)		Holy Cross	279
Kotlik	6	Mouth, Koserefski River	286
Hamilton	26	Old Paradise Village	301
MIDDLE MOUTH (KWIKPAK, KAWANAK PASS)			
Choolunawick	16		
Akers Camp	26	<u>(District 3/4 Boundary)</u>	
New Hamilton	34	Mouth, Bonasila River	306
		Anvik	317
SOUTH MOUTH (KWIKLUAK PASS)		Mouth, Anvik River	318
		Grayling	336
Mouth, Black River	-18	Mouth, Thompson Creek	349
Flat Island	0	Blackburn	370
Sheldon Point	5	Eagle Slide	402
Tin Can Point	8	Mouth, Rodo River	447
Alakanuk	17	Kaltag	450
Emmonak-Kwiguk (Kwiguk Pass)	24	Mouth, Nulato River	483
Sunshine Bay	24	Nulato	484
Aproka Pass (upstream mouth)	35	Koyukuk	502
Kwipak Pass (upstream mouth)	44	Mouth, Koyukuk River	508
Head of Passes	48	Mouth, Gisasa River	564
Fish Village	52	Huslia	711
Mouth, Anuk River	63	Mouth, Dakli River	755
		Mouth, Hogatza River	780
<u>(District 1/2 Boundary)</u>		Hughes	881
Patsys Cabin	71	Mouth, Kanuti River	935
Mountain Village	87	Alatna (Mouth, Alatna R.)	956
Old Andreafsky	97	Allakaket	956
Pitkas Point	103	Mouth, South Fork	986
Mouth, Andreafsky River	104	Mouth, John River	1,117
St. Marys	107	Bettles	1,121
Pilot Station	122	Middle Fork	1,141
Mouth, Atcheulinguk		Cold Foot	1,174
(Chulinak) River	126	Wiseman	1,186
Pilot Village	138	Bishop Rock	514
Marshall (Fortuna Ledge)	161	Prospect Point	519
Upstream Mouth Owl Slough	163	Galena	530
Ingrihak	170	Whiskey Creek	555
Ohogamuit	185	Mouth, Yuki River	562
Toklik	191	Ruby	581
		Mouth, Melozitna River	583
<u>(District 2/3 Boundary)</u>		Horner Hot Springs	605
Kakamut	193	Kokrines	608
Russian Mission	213	Mouth, Nowitna River	612
Dogfish Village	227	Birches	647
Paimuit	251	Kallands-Mouth of Illinois Creek	664
Mouth, Innoko River	274		
(South Slough)			
Shageluk	328		
Holikachuk	383		

-continued-

<u>Location</u>	<u>Mileage from Mouth</u>	<u>Location</u>	<u>Mileage from Mouth</u>
<u>(District 4/5 Boundary)</u>		Fort Yukon	1,002
Mouth, Tozitna River	681	Mouth, Porcupine River	1,002
Tanana Village	695	Mouth, Black River	1,026
Mouth, Tanana River	695	Chalkyitsik	1,084
		Mouth, Salmon Fork R.	1,142
<u>(District 5/6 Boundary)</u>		Mouth, Sheenjek River	1,054
Manley Hot Springs	765	Mouth, Coleen River	1,157
Mouth, Kantishna River	793	Mouth, Salmon Trout R.	1,193
Mouth, Toklat River	838	U.S. - Canadian Border	1,219
Mouth, Sushana R.	850	Old Crow	1,259
Mouth, Bearpaw River	887	Fishing Branch R.	1,600
Outlet, L. Minchumina	959	spawning area	
Minto	835	Circle	1,061
Nenana	860	Woodchopper	1,110
Mouth, Nenana River	860	Mouth, Charley River	1,124
Mouth, Wood River	894	Mouth, Kandik River	1,135
Rosie Creek Bluffs	912	Mouth, Nation River	1,166
Mouth, Chena R. (Fairbanks)	920	Mouth, Tatonduk River	1,186
		Mouth, Seventymile River	1,194
Mouth, Salcha River	965	Eagle	1,213
Benchmark #735 Slough	991		
Mouth, Little Delta R.	1,000	<u>U.S.-Canadian border</u>	<u>1,224</u>
Mouth, Delta Creek	1,014	Mouth, Fortymile River	1,269
Mouth, Clear Creek	1,015	Dawson	1,319
(Richardson-Clearwater)		Mouth, Klondike River	1,320
Mouth, Shaw Creek	1,021	Mouth, Sixty Mile River	1,369
Mouth, Delta River	1,031	Mouth, Stewart River	1,375
(Big Delta)		McQuesten	1,455
Delta Junction	1,041	Stewart Crossing	1,491
Mouth, Goodpaster River	1,049	Mayo	1,520
Bluff Cabin Slough	1,050	Mouth, Hess River	1,594
Outlet, Clearwater Lake	1,052	Mouth, White River	1,386
Outlet, Clearwater Crk	1,053	Mouth, Donjek River	1,455
(Delta Clearwater)		Mouth Kluane River	1,541
Mouth, Gerstle River	1,059	Outlet Kluane L.	1,587
Outlet, Healy Lake	1,071	Burwash Landing	1,595
Outlet, Lake George	1,086	Kluane	1,625
Tanacross	1,128	Fort Selkirk	1,477
Outlet, Tetlin Lake	1,188	Mouth, Pelly River	1,478
Mouth, Nabesna River	1,210	Pelly Crossing	1,510
Northway Junction	1,214	Mouth, MacMillan River	1,542
Mouth, Chisana River	1,215	Ross River	1,602
Mouth, Sheep Creek	1,297	Minto	1,499
Rampart Rapids	731	Mouth Tatchun Creek	1,530
Rampart	763	Carmacks	1,547
Mouth, Hess Creek	789	Mouth, Little Salmon River	1,583
Mouth, Ray River	817	Mouth, Big Salmon River	1,621
Highway Bridge -	820	Mouth, N. Big Salmon R.	1,641
Pipeline Crossing		Mouth, S. Big Salmon R.	1,657
Mouth, Dall River	841	Outlet, Big Salmon Lake	1,714
Stevens Village	847	Mouth, Teslin River	1,654
Mouth, Hodzana River	897	Roaring Bull Rapids	1,707
Beaver	932	Johnson's Crossing	
Mouth Hadweenzic River	952	(Outlet, Teslin L.)	1,756
Mouth, Chandalar River		Teslin	1,780
(Venetie Landing)	982		
Venetie	1,025		

-continued-

---

<u>Location</u>	<u>Mileage from Mouth</u>
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mi. Creek	1,851
Mouth, McNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Outlet, Marsh Lake	1,764
Mouth, M'Clintock River	1,769
Outlet, Little Atlin L.	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross	1,810
(Outlet L. Bennett)	
Bennett	1,835

---

Appendix A3.–Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1997–2017.

Year	Lower Yukon Area <sup>a</sup>			Subtotal
	District 1	District 2	District 3	
1997	66,384	39,363	–	105,747
1998	25,413	16,806	0	42,219
1999	37,161	27,133	538	64,832
2000	4,735	3,783	–	8,518
2001	–	–	–	–
2002	11,089	11,440	–	22,529
2003	22,709	14,220	–	36,929
2004	28,403	24,145	–	52,548
2005	16,694	13,413	–	30,107
2006	23,748	19,843	315	43,906
2007	18,616	13,306	190	32,112
2008	2,530	2,111	–	4,641
2009	90	226	–	316
2010	5,744	4,153	–	9,897
2011 <sup>b</sup>	36 <sup>c</sup>	46 <sup>c</sup>	–	82
2012 <sup>b</sup>	0	0	–	0
2013 <sup>b</sup>	0	0	–	0
2014 <sup>b</sup>	0	0	–	0
2015 <sup>b</sup>	0	0	–	0
2016 <sup>b</sup>	0	0	–	0
2017	168 <sup>c</sup>	0	–	168
<hr/>				
2012–2016 Average	0	0	0	0
<hr/>				
2007–2016 Average	2,702	1,984	19	4,705

-continued-

Year	Upper Yukon Area <sup>d</sup>								
	District 4			District 5			District 6		
	Number	Roe	Estimated Harvest <sup>c</sup> <sup>e</sup>	Number	Roe	Estimated Harvest <sup>e</sup>	Number	Roe	Estimated Harvest <sup>e</sup>
1997	1,450	14	1,457	3,678	0	3,678	1,966	3,211	2,728
1998	–	–	–	517	0	517	882	260	963
1999	1,437	0	1,437	2,604	0	2,604	402	1,096	689
2000	0	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	771	0	771	836	896	1,066
2003	562	0	562	1,134	0	1,134	1,813	0	1,813
2004	–	–	–	1,546	0	1,546	2,057	0	2,057
2005	–	–	–	1,469	0	1,469	453	0	453
2006	–	–	–	1,839	0	1,839	84	0	84
2007	0	0	0	1,241	0	1,241	281	0	281
2008	0	0	0	–	–	–	0	0	0
2009	0	0	0	–	–	–	0	0	0
2010	0	0	0	–	–	–	0	0	0
2011	–	–	–	–	–	–	0	0	0
2012	0	0	0	–	–	–	0	0	0
2013	0	0	0	–	–	–	0	0	0
2014	0	0	0	–	–	–	0	0	0
2015	0	0	0	–	–	–	0	0	0
2016	–	–	–	–	–	–	0	0	0
2017	–	–	–	–	–	–	0	0	0
2012–2016 Average	0	0	0	0	0	0	0	0	0
2007–2016 Average	0	0	0	124	0	124	28	0	28

-continued-

Appendix A3.–Page 3 of 3.

Year	Upper Yukon Area Subtotal			Total		
	Number	Roe	Estimated Harvest <sup>e</sup>	Alaska Harvest	Canada Harvest	Yukon River
1997	7,094	3,225	7,863	113,610	5,311	118,921
1998	1,399	260	1,480	43,699	390	44,089
1999	4,443	1,096	4,730	69,562	3,160	72,722
2000	–	–	–	8,518	–	8,518
2001	–	–	–	–	1,351	1,351
2002	1,607	896	1,837	24,366	708	25,074
2003	3,509	0	3,509	40,438	2,672	43,110
2004	3,603	0	3,603	56,151	3,785	59,936
2005	1,922	0	1,922	32,029	4,066	36,095
2006	1,923	0	1,923	45,829	2,332	48,161
2007	1,522	0	1,522	33,634	–	33,634
2008	0	0	0	4,641	1	4,642
2009	0	0	0	316	364	680
2010	0	0	0	9,897	0	9,897
2011	0	0	0	82	4	86
2012	0	0	0	0	0	0
2013	0	0	0	0	2	2
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	168	0	168
2012-2016 Average	0	0	0	0	0	0
2007-2016 Average	152	0	152	4,857	37	4,894

Appendix A4.—Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1997–2017.

Year	Lower Yukon Area			Subtotal
	District 1 <sup>a</sup>	District 2 <sup>a</sup>	District 3	
1997	59,915	18,242	—	78,157
1998	21,270	6,848	0	28,118
1999	16,181	11,702	0	27,883
2000	3,315	3,309	—	6,624
2001	—	—	—	—
2002	6,327	4,027	—	10,354
2003	3,579	2,583	—	6,162
2004	13,993	5,782	—	19,775
2005	23,965	8,313	—	32,278
2006	21,816	25,543	116	47,475
2007	106,790	69,432	1	176,223
2008	67,459	58,139	—	125,598
2009	71,335	86,571	—	157,906
2010	102,267	80,948	—	183,215
2011	163,439	103,071	—	266,510
2012	150,800	57,049	—	207,849
2013	207,871	171,272	—	379,143
2014	198,240	229,107	—	427,347
2015	172,639	181,447	—	354,086
2016	293,522	228,267	—	521,789
2017	345,395	47,770	—	393,165
2012–2016 Average	204,614	173,428		378,043
2007–2016 Average	153,436	126,530		279,967

-continued-

Year	Upper Yukon Area <sup>c</sup>								
	District 4			District 5			District 6		
	Number	Roe	Estimated Harvest <sup>d</sup>	Number	Roe	Estimated Harvest <sup>d</sup>	Number	Roe	Estimated Harvest <sup>d</sup>
1997	2,062	74,231	124,671	137	0	137	14,886	9,036	25,287
1998	–	–	–	96	13	110	397	140	570
1999	1,267	0	1,267	115	0	115	124	24	148
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	6	0	6	3,198	16	3,218
2003	62	0	62	0	0	0	4,461	0	4,461
2004	–	–	–	25	0	25	6,610	0	6,610
2005	–	–	–	0	0	0	8,986	0	8,986
2006	–	–	–	20	0	20	44,621	0	44,621
2007	7,304	0	7,304 <sup>e</sup>	0	0	0	14,674	0	14,674
2008	23,746	0	23,746 <sup>e</sup>	–	–	–	1,842	0	1,842
2009	4,589	0	4,589 <sup>e</sup>	–	–	–	7,777	0	7,777
2010	44,207	0	44,207 <sup>f</sup>	–	–	–	5,466	0	5,466
2011	–	–	–	–	–	–	8,651	0	8,651
2012	108,222	0	108,222	–	–	–	3,504	0	3,504
2013	100,507	0	100,507	–	–	–	5,937	0	5,937
2014	96,385	0	96,385	–	–	–	6,912	0	6,912
2015	–	–	–	–	–	–	4,770	0	4,770
2016	–	–	–	–	–	–	4,020	0	4,020
2017	159,051	–	159,051	–	–	–	4,300	0	4,300
2012–2016 Average	116,041	0	101,705				5,029	0	5,029
2007–2016 Average	68,001	0	54,994				6,355	0	6,355

-continued-

## Appendix A4.–Page 3 of 3.

Year	Upper Yukon Area Subtotal <sup>c</sup>			Total		
	Number	Roe	Estimated Harvest <sup>d</sup>	Number	Roe	Estimated Harvest <sup>d</sup>
1997	17,085	83,267	150,095	95,242	83,267	228,252
1998	493	153	680	28,611	153	28,798
1999	1,506	24	1,530	29,389	24	29,413
2000	–	–	–	6,624	–	6,624
2001	–	–	–	–	–	–
2002	3,204	16	3,224	13,558	16	13,578
2003	4,523	0	4,523	10,685	0	10,685
2004	6,635	0	6,635	26,410	0	26,410
2005	8,986	0	8,986	41,264	0	41,264
2006	44,641	0	44,641	92,116	0	92,116
2007	21,978	0	21,978	198,201	0	198,201
2008	25,588	0	25,588	151,186	0	151,186
2009	12,366	0	12,366	170,272	0	170,272
2010	49,673	0	49,673	232,888	0	232,888
2011	8,651	0	8,651	275,161	0	275,161
2012	111,726	0	111,726	319,575	0	319,575
2013	106,444	0	106,444	485,587	0	485,587
2014	103,297	0	103,297	530,644	0	530,644
2015	4,770	0	4,770	358,856	0	358,856
2016	4,020	0	4,020	525,809	0	525,809
2017	163,351	0	163,351	556,516	0	556,516
2012–2016 Average	66,051	0	66,051	444,094	0	444,094
2007–2016 Average	44,851	0	44,851	324,818	0	324,818

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> All fish sold in the round.

<sup>b</sup> Number of males and females harvested to produce 935 pounds of roe.

<sup>c</sup> Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and Chinook salmon roe. Does not include department test fishery sales.

<sup>d</sup> The estimated harvest is the number of fish sold in the round plus the estimated number of females caught to produce the roe sold plus the estimated number of unsold males.

<sup>e</sup> The number of female fish from which roe were extracted is the number harvested. Males not purchased and recorded as caught but not sold are included in personal use tables.

<sup>f</sup> Both males and females were purchased and are included in the number harvested.

Appendix A5.—Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1997–2017.

Year	Lower Yukon Area			Subtotal
	District 1 <sup>a</sup>	District 2 <sup>a</sup>	District 3 <sup>a</sup>	
1997	27,483	24,326	—	51,809
1998	—	—	—	—
1999	9,987	9,703	—	19,690
2000	—	—	—	—
2001	—	—	—	—
2002	—	—	—	—
2003	5,586	—	—	5,586
2004	660	—	—	660
2005	130,525	—	—	130,525
2006	101,254	39,905	—	141,159
2007	38,852	35,826	—	74,678
2008	67,704	41,270	—	108,974
2009	11,911	12,072	—	23,983
2010	545	270	—	815
2011	127,735	100,731	—	228,466
2012	139,842	129,284	—	269,126
2013	106,588	106,274	—	212,862
2014	51,829	59,138	—	110,967
2015	100,562	74,214	—	174,776
2016	226,576	213,340	—	439,916
2017	328,410	134,668	—	463,078
2012-2016				
Average	125,079	116,450		241,529
2007-2016				
Average	87,214	77,242		164,456

-continued-

Appendix A5.–Page 2 of 3.

Year	Upper Yukon Area								
	District 4			District 5			District 6		
	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>
1997	2,458	0	2,458	2,446	1,194	3,640	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	681	0	681	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	1,315	0	1,315	–	–	–	4,095	0	4,095
2004	–	–	–	0	0	0	3,450	0	3,450
2005	–	–	–	0	0	0	49,637	0	49,637
2006	–	–	–	10,030	0	10,030	23,353	0	23,353
2007	–	–	–	427	0	427	15,572	0	15,572
2008	0	0	0	4,556	0	4,556	5,735	0	5,735
2009	–	–	–	–	–	–	1,286	545	1,893
2010	–	–	–	–	–	–	1,735	0	1,735
2011	–	–	–	1,246	0	1,246	9,267	0	9,267
2012	811	0	811	2,419	0	2,419	17,336	0	17,336
2013	–	–	–	1,041	0	1,041	24,148	0	24,148
2014	–	–	–	1,264	0	1,264	3,368	0	3,368
2015	–	–	–	1,048	0	1,048	15,646	0	15,646
2016	–	–	–	7,542	0	7,542	18,053	0	18,053
2017	1,402	0	1,402	1,952	138	1,952 <sup>d</sup>	22,890	290	23,270
2012-2016									
Average				2,663	0	2,663	15,710	0	15,710
2007-2016									
Average	406	0	406	2,443	0	2,443	11,215	55	11,275

-continued-

Appendix A5.–Page 3 of 3.

Year	Upper Yukon Area			Total Estimated Harvest	Canada Total	Grand Total
	Subtotal		Estimated Harvest <sup>c</sup>			
	Numbers <sup>a</sup>	Roe <sup>b</sup>				
1997	4,904	1,194	6,098	57,907	8,068	65,975
1998	—	—	—	—	—	—
1999	681	0	681	20,371	10,402	30,773
2000	—	—	—	—	1,319	1,319
2001	—	—	—	—	2,198	2,198
2002	—	—	—	—	3,065	3,065
2003	5,410	0	5,410	10,996	9,030	20,026
2004	3,450	0	3,450	4,110	7,365	11,475
2005	49,637	0	49,637	180,162	11,931	192,093
2006	33,383	0	33,383	174,542	4,096	178,638
2007	15,999	0	15,999	90,677	7,109	97,786
2008	10,291	0	10,291	119,265	4,062	123,327
2009	1,286	545	1,893	25,876	293	26,169
2010	1,735	0	1,735	2,550	2,186	4,736
2011	10,513	0	10,513	238,979	5,312	244,291
2012	20,566	0	20,566	289,692	3,205	292,897
2013	25,189	0	25,189	238,051	3,369	241,420
2014	4,632	0	4,632	115,599	2,485	118,084
2015	16,694	0	16,694	191,470	2,862	194,332
2016	25,595	0	25,595	465,511	1,745	467,256
2017	26,244	428	26,624 <sup>e</sup>	489,702	2,404	492,106
2012-2016						
Average	18,535	0	18,535	260,065	2,733	262,798
2007-2016						
Average	13,250	55	13,311	177,767	3,263	181,030

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to calculate average.

<sup>a</sup> Harvest reports in numbers of fish sold in the round.

<sup>b</sup> Sales reported in numbers of fish sold in the round and pounds of unprocessed roe, which may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

<sup>d</sup> The number of females harvested to produce the roe sold is included in the subsistence harvest estimate.

<sup>e</sup> Includes headed and gutted fish sold and used to produce roe sold.

Appendix A6.—Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1997–2017.

Year	Lower Yukon Area			Subtotal
	District 1 <sup>a</sup>	District 2 <sup>a</sup>	District 3 <sup>a</sup>	
1997	21,450	13,056	—	34,506
1998	—	1	—	1
1999	855	746	—	1,601
2000	—	—	—	—
2001	—	—	—	—
2002	—	—	—	—
2003	9,757	—	—	9,757
2004	1,583	—	—	1,583
2005	36,533	—	—	36,533
2006	39,323	14,482	—	53,805
2007	21,720	21,487	—	43,207
2008	13,946	19,246	—	33,192
2009	5,994	1,582	—	7,576
2010	1,027	1,028	—	2,055
2011	45,336	24,195	—	69,531
2012	39,757	29,063	—	68,820
2013	27,306	31,458	—	58,764
2014	54,804	48,602	—	103,406
2015	66,029	54,860	—	120,889
2016	113,669	67,208	—	180,877
2017	95,982	33,277	—	129,259
2012–2016				
Average	60,313	46,238		106,551
2007–2016				
Average	38,959	29,873		68,832

-continued-

Appendix A6.–Page 2 of 3.

Year	Upper Yukon Area								
	District 4			District 5			District 6		
	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>	Numbers <sup>a</sup>	Roe <sup>b</sup>	Estimated Harvest <sup>c</sup>
1997	814	0	814	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	367	0	367	–	–	–	15,119	0	15,119
2004	–	–	–	0	0	0	18,649	0	18,649
2005	–	–	–	0	0	0	21,778	0	21,778
2006	–	–	–	–	–	–	11,137	0	11,137
2007	–	–	–	–	–	–	1,368	0	1,368
2008	0	0	0	91	0	91	2,408	0	2,408
2009	–	–	–	–	–	–	457	258	742
2010	–	–	–	–	–	–	1,700	0	1,700
2011	–	–	–	0	0	0	6,784	0	6,784
2012	0	0	0	634	0	634	5,335	0	5,335
2013	–	–	–	0	0	0	7,439	0	7,439
2014	–	–	–	0	0	0	1,286	0	1,286
2015	–	–	–	0	0	0	8,811	0	8,811
2016	–	–	–	54	0	54	20,551	0	20,551
2017	0	0	0	0	0	0	9,436	126	9,656
2012–2016									
Average				138	0	138	8,684	0	8,684
2007–2016									
Average	0	0	0	111	0	111	5,614	26	5,642

-continued-

Year	Upper Yukon Area			Alaska Total Harvest
	Subtotal		Estimated Harvest <sup>c</sup>	
	Numbers <sup>a</sup>	Roe <sup>b</sup>		
1997	814	0	814	35,320
1998	—	—	—	1
1999	—	—	—	1,601
2000	—	—	—	0
2001	—	—	—	0
2002	—	—	—	0
2003	15,486	0	15,486	25,243
2004	18,649	0	18,649	20,232
2005	21,778	0	21,778	58,311
2006	11,137	0	11,137	64,942
2007	1,368	0	1,368	44,575
2008	2,499	0	2,499	35,691
2009	457	258	742	8,318
2010	1,700	0	1,700	3,755
2011	6,784	0	6,784	76,315
2012	5,969	0	5,969	74,789
2013	7,439	0	7,439	66,203
2014	1,286	0	1,286	104,692
2015	8,811	0	8,811	129,700
2016	20,605	0	20,605	201,482
2017	9,436	126	9,656 <sup>d</sup>	138,915
2012–2016				
Average	8,822	0	8,822	115,373
2007–2016				
Average	5,692	26	5,720	74,552

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to calculate average.

<sup>a</sup> Harvest reports in numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

<sup>c</sup> Estimated harvest is the number of fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the ratio of pounds of roe to females to produce roe was calculated at 1:1.

<sup>d</sup> Includes headed and gutted fish sold and used to produce roe sold.

Appendix A7.—Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1997–2017.

Year	Lower Yukon Area				Upper Yukon Area				Upper Yukon Area				Total			
	Set or Drift Gillnet				Set Gillnet				Fish wheel							
	Permits		Permits		Permits		Permits		Permits		Permits		Permits		Permits	
	Issued	<sup>a</sup>	Fished	<sup>b</sup>	Issued	<sup>a</sup>	Fished	<sup>b</sup>	Issued	<sup>a</sup>	Fished	<sup>b</sup>	Issued	<sup>a</sup>	Fished	
1997	705		640		72		18		163		35		940		693	
1998	704		643		72		6		160		22		936		671	
1999	704		632		72		13		162		23		938		668	
2000	704		561		72		0		160		0		936		561	
2001	700		0		72		0		156		0		928		0	
2002	702		540		72		12		156		12		930		564	
2003	703		557		72		7		157		20		932		584	
2004	692		551		67		9		137		14		896		574	
2005	691		581		67		6		135		15		893		602	
2006	686		574		66		10		128		26		880		610	
2007	684		566		66		6		124		24		874		596	
2008	681		474		64		2		124		20		869		496	
2009	678		391		61		2		122		10		861		403	
2010	670		444		58		0		115		11		843		455	
2011	665		437		55		0		115		9		835		446	
2012	662		475		52		0		106		19		820		494	
2013	653		451		51		0		103		16		807		467	
2014	653		468		47		0		100		14		800		482	
2015	649		480		46		0		98		6		793		486	
2016	647		483		46		1		95		8		788		492	
2017	648		457		46		1		95		18		789		476	
2012-2016																
Average	656		462		50		0		104		13		811		475	

<sup>a</sup> Information obtained from CFEC. Permits issued is the number of active permanent and interim permits.

<sup>b</sup> Data obtained from ADF&G fish ticket database. Only permits that made at least one commercial delivery are included.

Appendix A8.—Number of commercial salmon fishing permit holders making at least one delivery by district and season, Yukon Area, 1997–2017.

Chinook and Summer Chum Salmon Season									
Year	Lower Yukon Area				Upper Yukon Area				Yukon Area
	District 1	District 2	District 3	Subtotal <sup>a</sup>	District 4	District 5	District 6	Subtotal	Total
1997	457	188	0	639	39	29	15	83	722
1998	434	231	0	643	0	18	10	28	671
1999	412	217	5	631	5	26	6	37	668
2000	350	214	0	562	0	0	0	0	562
2001	<sup>b</sup> —	—	—	—	—	—	—	—	—
2002	322	223	0	540	0	18	6	24	564
2003	351	217	0	556	3	16	7	26	582
2004	396	212	0	549	0	14	6	20	569
2005	370	228	0	578	0	12	5	17	595
2006	379	214	6	569	0	15	10	25	594
2007	359	220	3	564	5	12	10	27	591
2008	266	181	0	444	8	0	5	13	457
2009	213	166	0	376	6	0	5	11	387
2010	264	181	0	440	5	0	5	10	450
2011	228	182	0	403	0	0	5	5	408
2012	242	178	0	413	11	0	3	14	427
2013	220	174	0	384	9	0	2	11	395
2014	231	183	0	405	10	0	1	11	416
2015	270	177	0	435	0	0	2	2	437
2016	245	198	0	435	0	0	2	2	437
2017	284	114	0	388	10	0	3	13	401
2012–2016									
Average	242	182	0	414	6	0	2	8	422

-continued-

Appendix A8.–Page 2 of 3.

Fall Chum and Coho Salmon Season									
Year	Lower Yukon Area				Upper Yukon Area				Yukon Area
	District 1	District 2	District 3	Subtotal <sup>a</sup>	District 4	District 5	District 6	Subtotal	Total
1997	176	130	0	304	3	8	0	11	315
1998	0	0	0	0	0	0	0	0	0
1999	146	110	0	254	4	0	0	4	258
2000	0	0	0	0	0	0	0	0	0
2001	<sup>b</sup> –	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	0	0	0
2003	75	0	0	75	2	0	5	7	82
2004	26	0	0	26	0	0	6	6	32
2005	177	0	0	177	0	0	7	7	184
2006	219	71	0	286	0	4	11	15	301
2007	181	122	0	300	0	2	8	10	310
2008	251	177	0	428	0	3	8	11	439
2009	165	130	0	292	0	0	2	2	294
2010	72	18	0	90	0	0	4	4	94
2011	234	169	0	395	0	2	5	7	402
2012	267	201	0	449	4	3	5	13	462
2013	251	197	0	436	0	1	6	7	443
2014	256	199	0	441	0	2	2	4	445
2015	266	184	0	440	0	1	5	6	446
2016	275	197	0	459	0	4	4	8	467
2017	318	144	0	438	5	4	4	13	451
2012–2016									
Average	263	196	0	445	1	2	4	8	453

-continued-

Appendix A8.–Page 3 of 3.

Combined Season <sup>c</sup>									
Year	Lower Yukon Area				Upper Yukon Area				Yukon Area
	District 1	District 2	District 3	Subtotal <sup>a</sup>	District 4	District 5	District 6	Subtotal	Total
1997	463	221	0	640	39	31	15	85	725
1998	434	231	0	643	0	18	10	28	671
1999	422	238	5	632	6	26	6	38	670
2000	349	214	0	561	0	0	0	0	561
2001	<sup>b</sup> –	–	–	–	–	–	–	–	–
2002	322	223	0	540	0	18	6	24	564
2003	358	217	0	557	3	16	8	27	584
2004	399	212	0	551	0	14	9	23	574
2005	392	228	0	581	0	12	9	21	602
2006	396	224	6	574	0	20	16	36	610
2007	366	236	3	566	5	13	12	30	596
2008	297	208	0	474	8	3	11	22	496
2009	226	172	0	391	6	0	6	12	403
2010	274	183	0	444	5	0	6	11	455
2011	260	201	0	437	0	2	7	9	446
2012	284	210	0	475	11	3	5	23	498
2013	264	211	0	451	9	1	6	16	467
2014	277	216	0	468	10	2	2	14	482
2015	299	207	0	480	0	1	5	6	486
2016	288	216	0	483	0	4	5	9	492
2017	338	157	0	457	10	4	5	19	476
2012–2016									
Average	282	212	0	471	6	2	5	14	485

<sup>a</sup> Since 1984 the subtotal for the Lower Yukon Area was the unique number of permits fished. Some individual fishers in the Lower Yukon Area may have operated in more than one district during the year.

<sup>b</sup> No commercial fishing.

<sup>c</sup> Combined seasons numbers will differ as the data represent the total number of unique permits fished during the entire season.

Appendix A9.—Type of commercial salmon processing, Yukon Area, 1997–2017.

Year	Fresh-Frozen (round wt. in lb)				Salmon Roe (lb)
	Chinook	Coho	Chum	Pink	
1997	2,324,306	255,228	1,089,678	0	190,359
1998	779,936	9	191,692	0	28,919
1999	1,368,658	10,342	352,970	0	50,696
2000	158,776	0	50,782	0	6,286
2001	—	—	—	0	—
2002	472,678	—	93,416 <sup>a</sup>	0	931
2003	841,748	165,757	144,942	0	0
2004	1,142,053	117,295	165,587	0	0
2005	597,191	410,398	1,637,483	0	273
2006	857,552	390,502	1,844,981	0	0
2007	594,003	331,412	1,884,881	0	5,939
2008	65,558	241,028	1,851,890	46,564	29,094
2009	4,194	55,464	1,260,797	0	4,709
2010	127,846	23,986	1,457,912	0	0
2011	985 <sup>b</sup>	516,498	3,483,462	0	0
2012	—	457,466	3,810,797	0	0
2013	—	454,839	4,497,391	0	0
2014	—	712,839	4,152,050	189,953	0
2015	—	935,921	3,513,754	29,774	0
2016	—	1,265,741	6,453,560	445,692	0
2017	1,804 <sup>b</sup>	871,325 <sup>c</sup>	6,855,911 <sup>c</sup>	0	554

Note: En dash indicates no commercial fishing activity occurred. Roe includes unprocessed roe sold by fishermen and estimated production of roe from in the round purchases.

<sup>a</sup> Chum salmon sold during summer season only.

<sup>b</sup> Chinook salmon sold during fall season.

<sup>c</sup> Includes headed and gutted fish sold and used to produce roe sold.

Appendix A10.—Estimated average price per pound paid to fishermen, Yukon Area, 1997–2017.

Year	Lower Yukon Area					Upper Yukon Area							
	Chinook	Summer Chum	Fall Chum	Coho	Pink	Chinook	Chinook Roe	Summer Chum	Summer Chum Roe	Fall Chum	Fall Chum Roe	Coho	Coho Roe
1997	2.46	0.10	0.22	0.32	—	0.97	1.62	0.07	1.08	0.17	1.75	0.20	—
1998	2.51	0.14	—	—	—	0.91	2.00	0.18	1.90	—	—	—	—
1999	3.80	0.10	0.25	0.35	—	1.10	2.11	0.18	2.25	0.20	—	—	—
2000	4.57	0.17	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—	—
2002	3.77	0.06	—	—	—	0.75	1.75	0.32	2.25	—	—	—	—
2003	2.37	0.05	0.15	0.10	—	0.80	—	0.27	—	0.10	—	0.05	—
2004	2.80	0.05	0.25	0.05	—	0.77	—	0.27	—	0.05	—	0.06	—
2005	3.43	0.05	0.32	0.32	—	0.87	—	0.25	—	0.14	—	0.12	—
2006	3.94	0.05	0.20	0.20	—	1.30	—	0.16	—	0.14	—	0.19	—
2007	3.73	0.19	0.27	0.39	—	1.33	—	0.25	2.36	0.20	—	0.20	—
2008	4.64	0.40	0.55	0.97	0.10	—	—	0.25	3.00	0.27	—	0.20	—
2009	5.00	0.50	0.70	1.00	—	—	—	0.26	3.00	0.19	—	0.15	—
2010	5.00	0.70	1.00	1.50	—	—	—	0.23	—	0.23	—	0.26	—
2011	5.00 <sup>a</sup>	0.75	1.00	1.00	—	—	—	0.26	—	0.22	—	0.15	—
2012	—	0.75	1.00	1.25	—	—	—	0.37	—	0.19	—	0.25	—
2013	—	0.75	0.75	1.10	—	—	—	0.30	—	0.16	—	0.17	—
2014	—	0.60	0.75	1.00	0.07	—	—	0.29	—	0.25	—	0.38	—
2015	—	0.60	0.60	0.70	0.12	—	—	0.23	—	0.14	—	0.12	—
2016	—	0.60	0.68	1.00	0.14	—	—	0.26	—	0.14	—	0.13	—
2017	5.50 <sup>a</sup>	0.60	0.60	1.00	—	—	—	0.34	—	0.15	1.84	0.15	2.00
2012–2016													
Average	—	0.66	0.76	1.01	0.07	—	—	0.29	—	0.18	—	0.21	—

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Chinook salmon sold in fall season only.

Appendix A11.–Value of commercial salmon fishery to Yukon Area fishermen, 1997–2017.

Summer Season								
Year	Chinook			Summer Chum			Pink	Total Season
	Lower Yukon Value	Upper Yukon Value	Subtotal	Lower Yukon Value	Upper Yukon Value	Subtotal	Lower Yukon Value	
1997	5,450,433	110,713	5,561,146	56,535	96,806	153,341	–	5,714,487
1998	1,911,370	17,285	1,928,655	26,415	821	27,236	–	1,955,891
1999	4,950,522	74,475	5,024,997	19,687	1,720	21,407	–	5,046,404
2000	725,606	–	725,606	8,633	–	8,633	–	734,239
2001	–	–	–	–	–	–	–	–
2002	1,781,996	20,744	1,802,740	4,342	6,176	10,518	–	1,813,258
2003	1,871,202	40,957	1,912,159	1,585	6,879	8,464	–	1,920,623
2004	3,063,667	38,290	3,101,957	8,884	9,645	18,529	–	3,120,486
2005	1,952,109	24,415	1,976,524	11,004	13,479	24,483	–	2,001,007
2006	3,290,367	32,631	3,322,998	23,862	42,988	66,850	–	3,389,848
2007	1,939,114	27,190	1,966,304	220,715	34,421	255,136	–	2,221,440
2008	325,470	–	325,470	326,930	65,840	392,770	4,656	718,240
2009	20,970	–	20,970	514,856	20,430	535,286	–	556,256
2010	639,230	–	639,230	823,967	61,534	885,501	–	1,524,731
2011	4,925	–	4,925	1,301,008	12,966	1,313,974	–	1,318,899
2012	–	–	–	980,424	137,817	1,118,241	–	1,118,241
2013	–	–	–	1,721,524	152,110	1,873,634	–	1,873,634
2014	–	–	–	1,648,866	154,959	1,803,825	13,672	1,817,593
2015	–	–	–	1,259,908	7,166	1,267,074	1,674	1,269,200
2016	–	–	–	1,903,490	6,030	1,909,520	54,800	1,964,341
2017	9,922	–	9,922	1,470,353	276,682	1,747,035	–	1,756,957
2012-2016								
Average				1,497,427	91,616	1,594,459	23,382	1,608,602

-continued-

Appendix A11.–Page 2 of 2.

Fall Season										
Total Season	Year	Fall Chum			Coho			Pink	Total Season	Total Value
		Lower Yukon Value	Upper Yukon Value	Subtotal	Lower Yukon Value	Upper Yukon Value	Subtotal	Lower Yukon Value		
5,714,487	1997	86,526	7,252	93,778	79,973	1,062	81,035	–	174,813	5,889,300
1,955,891	1998	–	–	–	–	–	–	–	–	1,955,891
5,046,404	1999	35,639	876	36,515	3,620	0	3,620	–	40,135	5,086,539
734,239	2000	–	–	–	–	–	–	–	–	734,239
–	2001	–	–	–	–	–	–	–	–	–
1,813,258	2002	–	–	–	–	–	–	–	–	1,813,258
1,920,623	2003	5,993	3,398	9,391	18,168	5,095	23,263	–	32,654	1,953,277
3,120,486	2004	1,126	848	1,974	2,774	6,372	9,146	–	11,120	3,131,606
2,001,007	2005	316,698	48,159	364,857	83,793	19,182	102,975	–	467,832	2,468,839
3,389,848	2006	202,637	33,806	236,443	50,299	11,137	61,436	–	297,879	3,687,727
2,221,440	2007	144,256	16,907	161,163	127,869	1,368	129,237	–	290,400	2,511,840
718,240	2008	428,969	22,089	451,058	216,777	3,717	220,494	–	671,552	1,389,792
556,256	2009	108,778	1,286	110,064	52,176	457	52,633	–	162,697	718,953
1,524,731	2010	5,428	2,761	8,189	20,535	442	20,977	–	29,166	1,553,897
1,318,899	2011	1,628,329	16,115	1,644,444	472,199	6,792	478,991	–	2,123,435	3,442,334
1,118,241	2012	1,385,498	28,355	1,413,853	534,523	7,428	541,951	–	1,955,804	3,074,045
1,873,634	2013	1,154,172	25,744	1,179,916	453,998	7,115	461,113	–	1,641,029	3,514,663
1,817,593	<sup>b</sup> 2014	621,975	8,156	630,131	706,569	2,380	708,949	19	1,339,099	3,156,692
1,269,200	<sup>b</sup> 2015	762,142	15,683	777,825	616,165	6,877	623,042	2,017	1,402,884	2,672,084
1,964,341	<sup>b</sup> 2016	2,093,566	22,477	2,116,043	1,143,823	15,540	1,159,363	8,863	3,284,269	5,248,610
1,756,957	2017	2,038,232	29,176	2,067,408	814,580	8,778	823,358	–	2,890,766	4,647,722
2012-2016										
1,608,602	Average	1,203,471	20,083	1,223,554	691,015	7,868	698,884	3,633	1,924,617	3,533,219

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Chinook salmon sold during the fall season.

<sup>b</sup> Since 2014, the value includes coho salmon sold during the summer season.

Appendix A12.—Average weight of salmon harvested in the commercial fishery, Yukon Area, 1997–2017.

Year	Lower Yukon Area <sup>a</sup>					Upper Yukon Area <sup>a</sup>			
	Chinook	Summer	Fall	Coho	Pink	Chinook	Summer	Fall	Coho
		Chum	Chum				Chum	Chum	
1997	20.9	7.2	7.6	7.3	–	15.4	5.9	6.4	6.5
1998	18.0	6.7	–	–	–	13.2	6.1	–	–
1999	20.1	7.1	7.2	6.5	–	14.8	6.1	6.4	–
2000	18.0	7.7	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	19.9	7.2	–	–	–	15.9	6.0	–	–
2003	21.4	7.3	7.2	7.4	–	14.6	6.1	6.1	6.0
2004	20.8	6.9	6.8	7.0	–	13.8	5.7	4.9	5.7
2005	18.9	6.8	7.8	7.1	–	14.6	6.0	7.1	6.9
2006	19.0	6.8	7.2	6.2	–	13.1	6.1	7.0	5.1
2007	17.9	6.5	7.1	7.5	–	13.5	5.8	5.4	5.0
2008	14.1	6.6	7.2	6.8	3.3	–	7.3	7.8	7.6
2009	13.3	6.5	6.6	6.9	–	–	5.4	5.2	6.8
2010	12.9	6.4	6.7	6.7	–	–	5.3	6.9	6.0
2011	12.0	6.5	7.1	6.8	–	–	5.7	6.8	6.5
2012	–	6.3	6.9	6.2	–	–	4.6	7.0	5.0
2013	–	6.1	7.2	7.0	–	–	4.8	6.2	5.6
2014	–	6.4	7.5	6.8	3.5	–	5.2	7.0	4.8
2015	–	5.9	7.3	7.3	4.0	–	6.5	6.7	6.2
2016	–	6.1	7.0	6.3	3.5	–	5.9	6.3	5.9
2017	10.7	6.2	7.3	6.3	–	–	5.0	7.1	5.9
2007–2016									
Average	7.0	6.3	7.1	6.8	1.4	1.3	5.6	6.5	5.9

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Data obtained from weight samples or from fish ticket information.

Appendix A13.—Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017.

Year	Coastal	District 1				District 2			
	Subsistence <sup>a</sup>	Subsistence	Commercial <sup>b</sup>	Test Fish		Subsistence	Commercial <sup>b</sup>	Test Fish	
				Sales	Total			Sales	Total
1997	1,139	7,550	66,384	2,791	76,725	9,350	39,363	20	48,733
1998	391	7,242	25,413	878	33,533	9,455	16,806	48	26,309
1999	1,111	6,848	37,161	1,049	45,058	10,439	27,133	156	37,728
2000	563	5,891	4,735	275	10,901	9,935	3,783	322	14,040
2001	2,882	7,089	—	0	7,089	13,442	—	0	13,442
2002	1,122	5,603	11,089	494	17,186	8,954	11,440	34	20,428
2003	1,850	6,332	22,709	619	29,660	9,668	14,220	61	23,949
2004	2,038	5,880	28,403	722	35,005	9,724	24,145	70	33,939
2005	848	5,058	16,694	310	22,062	9,156	13,413	0	22,569
2006	883	5,122	23,748	817	29,687	8,039	19,843	0	27,882
2007	1,198	6,059	18,616	792	25,467	10,553	13,306	57	23,916
2008	1,492	6,163	2,530	0	8,693	8,826	2,111	0	10,937
2009	905	4,125	90	0	4,215	6,135	226	0	6,361
2010	1,300	5,856	5,744	0	11,600	8,676	4,153	0	12,829
2011	769	6,255	36	0	6,291	8,069	46	0	8,115
2012	2,104	4,313	0	0	4,313	6,881	0	0	6,881
2013	1,542	1,634	0	0	1,634	1,104	0	0	1,104
2014	563	1,356	0	0	1,356	616	0	0	616
2015	966	1,919	0	0	1,919	1,185	0	0	1,185
2016	886 <sup>c</sup>	2,766 <sup>c</sup>	0	0	2,766	3,161 <sup>c</sup>	0	0	3,161
2017	1,053 <sup>c</sup>	4,580 <sup>c</sup>	168	0	4,748	5,023 <sup>c</sup>	0	0	5,023
2012–2016									
Average	1,212	2,398	0	0	2,398	2,589	0	0	2,589
2007–2016									
Average	1,173	4,045	2,702	79	6,825	5,521	1,984	6	7,511

-continued-

Appendix A13.–Page 2 of 6.

Year	District 3			Lower Yukon Area Subtotals <sup>a</sup>			
	Subsistence	Commercial	Total	Subsistence	Commercial	Test Fish	
						Sales	Total
1997	6,311	–	6,311	24,350	105,747	2,811	132,908
1998	4,514	0	4,514	21,602	42,219	926	64,747
1999	7,715	538	8,253	26,113	64,832	1,205	92,150
2000	3,914	–	3,914	20,303	8,518	597	29,418
2001	6,361	–	6,361	29,774	–	0	29,774
2002	4,139	–	4,139	19,818	22,529	528	42,875
2003	5,002	–	5,002	22,852	36,929	680	60,461
2004	4,748	–	4,748	22,390	52,548	792	75,730
2005	5,131	–	5,131	20,193	30,107	310	50,610
2006	5,374	315	5,689	19,418	43,906	817	64,141
2007	4,651	190	4,841	22,461	32,112	849	55,422
2008	5,855	–	5,855	22,336	4,641	0	26,977
2009	2,924	–	2,924	14,089	316	0	14,405
2010	4,299	–	4,299	20,131	9,897	0	30,028
2011	4,134	–	4,134	19,227	82	0	19,309
2012	2,362	–	2,362	15,660	0	0	15,660
2013	444	–	444	4,724	0	0	4,724
2014	48	–	48	2,583	0	0	2,583
2015	447	–	447	4,517	0	0	4,517
2016	901 <sup>c</sup>	–	901	7,714 <sup>c</sup>	0	0	7,714
2017	2,296 <sup>c</sup>	–	2,296	12,952 <sup>c</sup>	168	0	13,120
2012–2016							
Average	840	–	840	7,040	28	0	7,040
2007–2016							
Average	2,607	190	2,626	13,344	4,292	85	18,134

-continued-

Appendix A13.–Page 3 of 6.

Year	District 4				District 5			
	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total
1997	12,006	1,450	7	13,463	18,049	3,678	0	21,727
1998	15,801	–	–	15,801	14,802	517	0	15,319
1999	11,238	1,437	0	12,675	14,330	2,604	0	16,934
2000	6,264	–	–	6,264	8,854	–	–	8,854
2001	10,152	–	–	10,152	13,566	–	–	13,566
2002	9,456	–	–	9,456	13,401	771	0	14,172
2003	12,771	562	0	13,333	19,191	1,134	0	20,325
2004	16,269	–	–	16,269	15,666	1,546	0	17,212
2005	13,964	–	–	13,964	17,424	1,469	0	18,893
2006	12,022	–	–	12,022	15,924	1,839	0	17,763
2007	11,831	0	0	11,831	19,165	1,241	0	20,406
2008	10,619	0	0	10,619	11,626	–	–	11,626
2009	9,514	0	0	9,514	8,917	–	–	8,917
2010	12,888	0	0	12,888	10,397	–	–	10,397
2011	9,893	–	–	9,893	10,493	–	–	10,493
2012	7,662	0	0	7,662	6,466	–	–	6,466
2013	2,901	0	0	2,901	4,541	–	–	4,541
2014	132	0	0	132	288	–	–	288
2015	771	–	–	771	1,849	–	–	1,849
2016	6,015 <sup>c</sup>	–	–	6,015	7,082 <sup>c</sup>	–	–	7,082
2017	9,783 <sup>c</sup>	–	–	9,783	14,523 <sup>c</sup>	–	–	14,523
2012–2016								
Average	3,496	0	0	3,496	4,045	–	–	4,045
2007–2016								
Average	7,223	0	0	7,223	8,082	1,241	0	8,207

-continued-

Appendix A13.–Page 4 of 6.

Year	District 6						Upper Yukon Area Subtotals					
	Commercial			Personal	Test Fish		Commercial			Personal	Test Fish	
	Subsistence	Commercial	Related <sup>d</sup>	Use	Sales	Total	Subsistence	Commercial	Related <sup>d</sup>	Use	Sales	Total
1997	2,712	1,966	762	313	0	5,753	32,767	7,094	769	313	0	40,943
1998	1,919	882	81	357	0	3,239	32,522	1,399	81	357	0	34,359
1999	1,624	402	288	331	0	2,645	27,192	4,443	288	331	0	32,254
2000	983	-	-	75	0	1,058	16,101	0	0	75	0	16,176
2001	2,327	-	-	122	0	2,449	26,045	0	0	122	0	26,167
2002	1,067	836	230	126	0	2,259	23,924	1,607	230	126	0	25,887
2003	2,145	1,813	0	204	0	4,162	34,107	3,509	0	204	0	37,820
2004	1,388	2,057	0	201	0	3,646	33,323	3,603	0	201	0	37,127
2005	1,828	453	0	138	0	2,419	33,216	1,922	0	138	0	35,276
2006	1,229	84	0	89	0	1,402	29,175	1,923	0	89	0	31,187
2007	1,717	281	0	136	0	2,134	32,713	1,522	0	136	0	34,371
2008	605	0	0	126	0	731	22,850	0	0	126	0	22,976
2009	1,285	0	0	127	0	1,412	19,716	0	0	127	0	19,843
2010	1,143	0	0	162	0	1,305	24,428	0	0	162	0	24,590
2011	1,367	0	0	89	0	1,456	21,753	0	0	89	0	21,842
2012	627	0	0	71	0	698	14,755	0	0	71	0	14,826
2013	367	0	0	42	0	409	7,809	0	0	42	0	7,851
2014	283	0	0	1	0	284	703	0	0	1	0	704
2015	440	0	0	5	0	445	3,060	0	0	5	0	3,065
2016	816 <sup>c</sup>	0	0	57	0	873	13,913 <sup>c</sup>	0	0	57	0	13,970
2017	842 <sup>c</sup>	0	0	125	0	967	25,148 <sup>c</sup>	0	0	125	0	25,273
2012–2016												
Average	507	0	0	35	0	542	8,048	0	0	35	0	8,083
2007–2016												
Average	865	28	0	82	0	975	16,170	152	0	82	0	16,404

-continued-

Alaska Yukon Area Totals							
Year	Subsistence <sup>a</sup>	Commercial	Commercial Related <sup>d</sup>	Personal Use	Test Fish Sales	Sport Fish	Total
1997	57,117	112,841	769	313	2,811	2,174	176,025
1998	54,124	43,618	81	357	926	654	99,760
1999	53,305	69,275	288	331	1,205	1,023	125,427
2000	36,404	8,518	0	75	597	276	45,870
2001	55,819	0	0	122	0	679	56,620
2002	43,742	24,136	230	126	528	486	69,248
2003	56,959	40,438	0	204	680	2,719	101,000
2004	55,713	56,151	0	201	792	1,513	114,370
2005	53,409	32,029	0	138	310	483	86,369
2006	48,593	45,829	0	89	817	739	96,067
2007	55,174	33,634	0	136	849	960	90,753
2008	45,186	4,641	0	126	0	409	50,362
2009	33,805	316	0	127	0	863	35,111
2010	44,559	9,897	0	162	0	474	55,092
2011	40,980	82	0	89	0	474	41,625
2012	30,415	0	0	71	0	345	30,831
2013	12,533	0	0	42	0	166	12,741
2014	3,286	0	0	1	0	0	3,287
2015	7,577	0	0	5	0	13	7,595
2016	21,627 <sup>c</sup>	0	0	57	0	0	21,684
2017	38,100 <sup>c</sup>	168	0	125	0	<sup>e</sup>	38,393
2012–2016							
Average	15,088	0	0	35	0	105	15,228
2007–2016							
Average	29,514	4,857	0	82	85	370	34,908

-continued-

Canada: Yukon Territories Totals								
Mainstem Yukon							Porcupine Aboriginal	Total Canadian
Year	Non-Commercial		Sport	Test fish <sup>f</sup>	Commercial	Subtotal		
	Domestic	Aboriginal						
1997	288	8,888	1,230		5,311	15,717	811	16,528
1998	24	4,687	—	737	390	5,838	99	5,937
1999	213	8,804	177	—	3,160	12,354	114	12,468
2000	—	4,068	—	761	—	4,829	50	4,879
2001	89	7,421	146	767	1,351	9,774	370	10,144
2002	59	7,139	128	1,036	708	9,070	188	9,258
2003	115	6,121	275	263	2,672	9,446	173	9,619
2004	88	6,483	423	167	3,785	10,946	292	11,238
2005	99	6,376	436	—	4,066	10,977	394	11,371
2006	63	5,757	606	—	2,332	8,758	314	9,072
2007	—	4,175	2	617	—	4,794	300	5,094
2008	—	2,885	0	513	1	3,399	314	3,713
2009	17	3,791	125	—	364	4,297	461	4,758
2010	—	2,455	1	—	—	2,456	250	2,706
2011	—	4,550	40	—	4	4,594	290	4,884
2012	—	2,000	—	—	0	2,000	200	2,200
2013	—	1,902	—	—	2	1,904	242	2,146
2014	—	100	—	—	—	100	3	103
2015	—	1,000	—	—	—	1,000	204	1,204
2016	—	2,768	0	—	1	2,769	177	2,946
2017	—	3,500 <sup>c</sup>	0	—	0	3,500	131	3,631
2012–2016								
Average	—	1,554	—	—	1	1,920	165	1,720
2007–2016								
Average	17	2,563	28	565	62	3,330	244	2,975

Note: En dash indicates no fishing activity occurred. Blank cells indicate insufficient information to generate average or data not available.

<sup>a</sup> Includes harvest from the Coastal District communities of Hooper Bay and Scammon Bay.

<sup>b</sup> Includes estimates of illegal sales in years when it occurred.

<sup>c</sup> Data are preliminary.

<sup>d</sup> Commercial related refers to the estimated harvest of female Chinook salmon to produce roe sold.

<sup>e</sup> Data are unavailable at this time.

<sup>f</sup> Canadian Chinook salmon test fishery is conducted for management purposes, the fish harvested are retained and given to Aboriginal or domestic users, but are not reported under those categories.

<sup>g</sup> Includes Alaska subsistence harvest and Canadian domestic, test fishery, and Aboriginal harvests.

Appendix A14.—Summer chum salmon total utilization in numbers of fish by district and area, Yukon River drainage, 1997–2017.

Year	Coastal		District 1			District 2			
	Subsistence	Subsistence <sup>a</sup>	Commercial	Test Fish		Subsistence	Commercial	Test Fish	
				Sales	Total			Sales	Total
1997	15,711	27,248	59,915	2,557	89,720	26,971	18,242	33	45,246
1998	1,362	26,888	21,270	2,935	51,093	26,280	6,848	84	33,212
1999	13,461	20,169	16,181	799	37,149	24,137	11,702	37	35,876
2000	13,177	24,079	3,315	561	27,955	25,331	3,309	87	28,727
2001	13,916	22,771	—	0	22,771	26,303	—	0	26,303
2002	14,796	24,107	6,327	164	30,598	23,554	4,027	54	27,635
2003	13,968	19,701	3,579	37	23,317	16,773	2,583	82	19,438
2004	8,262	20,620	13,993	217	34,830	25,931	5,782	0	31,713
2005	14,357	27,695	23,965	134	51,794	24,277	8,313	0	32,590
2006	24,171	27,881	21,816	456	50,153	31,655	25,543	0	57,198
2007	16,121	24,209	106,790	10	131,009	23,507	69,432	0	92,939
2008	18,120	22,767	67,459	80	90,306	24,291	58,139	0	82,430
2009	12,797	23,998	71,335	0	95,333	21,089	86,571	0	107,660
2010	22,425	25,172	102,267	0	127,439	23,738	80,948	0	104,686
2011	18,305	28,590	163,439	0	192,029	24,692	103,071	0	127,763
2012	23,241	35,370	150,800	1,274	187,444	32,566	57,049	1,138	90,753
2013	23,135	28,516	207,871	2,304	238,691	32,499	171,272	0	203,771
2014	19,304	23,894	198,240	0	222,134	26,134	229,107	0	255,241
2015	20,468	21,641	172,639	2,494	196,774	24,557	181,447	0	206,004
2016	11,844 <sup>b</sup>	26,738 <sup>b</sup>	293,522	380	320,640	27,622 <sup>b</sup>	228,267	0	255,889
2017	14,005 <sup>b</sup>	22,507 <sup>b</sup>	345,395	1,819	369,721	24,694 <sup>b</sup>	47,770	0	72,464
2012–2016									
Average	19,598	27,232	204,614	1,290	233,137	28,676	173,428	228	202,332
2007–2016									
Average	18,576	26,090	153,436	654	180,180	26,070	126,530	114	152,714

-continued-

Appendix A14.–Page 2 of 5.

Year	District 3			Lower Yukon Area Subtotals <sup>a</sup>			
	Subsistence	Commercial	Total	Subsistence	Commercial	Test Fish Sales	Total
1997	10,316	–	10,316	80,246	78,157	2,590	160,993
1998	6,472	0	6,472	61,002	28,118	3,019	92,139
1999	5,748	0	5,748	63,515	27,883	836	92,234
2000	3,687	–	3,687	66,274	6,624	648	73,546
2001	1,309	–	1,309	64,299	–	0	64,299
2002	2,506	–	2,506	64,963	10,354	218	75,535
2003	5,858	–	5,858	56,300	6,162	119	62,581
2004	2,958	–	2,958	57,771	19,775	217	77,763
2005	5,766	–	5,766	72,095	32,278	134	104,507
2006	3,534	116	3,650	87,241	47,475	456	135,172
2007	2,056	1	2,057	65,893	176,223	10	242,126
2008	2,971	–	2,971	68,149	125,598	80	193,827
2009	1,146	–	1,146	59,030	157,906	0	216,936
2010	1,341	–	1,341	72,676	183,215	0	255,891
2011	2,733	–	2,733	74,320	266,510	0	340,830
2012	8,690	–	8,690	99,867	207,849	2,412	310,128
2013	4,692	–	4,692	88,842	379,143	2,304	470,289
2014	3,748	–	3,748	73,080	427,347	0	500,427
2015	3,127	–	3,127	69,793	354,086	2,494	426,373
2016	3,064 <sup>b</sup>	–	3,064	69,268 <sup>b</sup>	521,789	380	591,437
2017	3,760 <sup>b</sup>	–	3,760	64,966 <sup>b</sup>	393,165	1,819	459,950
2012–2016							
Average	4,664	–	4,664	80,170	378,043	1,518	459,731
2007–2016							
Average	3,357	1	3,357	74,092	279,967	768	354,826

-continued-

Appendix A14.–Page 3 of 5.

Year	District 4					District 5			
	Subsistence	Commercial	Commercial Related <sup>c</sup>	Anvik River <sup>d</sup>	Total	Subsistence	Commercial	Commercial Related <sup>c</sup>	Total
1997	24,230	2,062	109,061	13,548	148,901	4,520	137	0	4,657
1998	18,046	–	–	–	18,046	2,314	96	14	2,424
1999	15,339	1,267	0	–	16,606	2,276	115	0	2,391
2000	7,046	–	–	–	7,046	3,641	–	–	3,641
2001	4,588	–	–	–	4,588	2,856	–	–	2,856
2002	15,971	–	–	–	15,971	5,610	6	0	5,616
2003	17,513	62	0	–	17,575	5,545	0	0	5,545
2004	14,959	–	–	–	14,959	3,411	25	0	3,436
2005	12,350	–	–	–	12,350	6,800	0	0	6,800
2006	14,997	–	–	–	-	11,830	20	0	11,850
2007	16,256	7,304	0	–	23,560	8,881	0	0	8,881
2008	13,517	23,746	0	–	37,263	3,537	–	–	3,537
2009	14,958	4,589	0	–	19,547	5,298	–	–	5,298
2010	11,720	44,207	0	–	55,927	3,555	–	–	3,555
2011	13,166	–	–	–	13,166	7,709	–	–	7,709
2012	21,555	108,222	0	–	129,777	4,892	–	–	4,892
2013	13,761	100,507	0	–	114,268	11,417	–	–	11,417
2014	9,981	96,385	0	–	106,366	3,108	–	–	3,108
2015	9,777	–	–	–	9,777	3,745	–	–	3,745
2016	13,728 <sup>b</sup>	–	–	–	13,728	4,990 <sup>b</sup>	–	–	4,990
2017	16,527 <sup>b</sup>	159,051	–	–	175,578	5,033 <sup>b</sup>	–	–	5,033
2012–2016									
Average	13,760	101,705	0	–	74,783	5,630	–	–	5,630
2007–2016									
Average	13,842	54,994	0	–	52,338	5,713	0	0	5,713

-continued-

Appendix A14.–Page 4 of 5.

Year	District 6						Upper Yukon Area Subtotals					
	Commercial		Personal	Test Fish		Total	Commercial		Personal	Test Fish		Total
	Subsistence	Commercial	Related <sup>c</sup>	Use	Sales		Subsistence	Commercial	Related <sup>c</sup>	Use	Sales	
1997	3,824	14,886	10,401	391	0	29,502	32,574	17,085	133,010	391	0	183,060
1998	6,004	397	173	84	0	6,658	26,364	493	187	84	0	27,128
1999	2,654	124	24	382	0	3,184	20,269	1,506	24	382	0	22,181
2000	1,111	–	–	30	0	1,141	11,798	0	0	30	0	11,828
2001	412	–	–	146	0	558	7,856	–	–	146	0	8,002
2002	512	3,198	19	175	0	3,904	22,093	3,204	19	175	0	25,491
2003	2,914	4,461	0	148	0	7,523	25,972	4,523	0	148	0	30,643
2004	1,793	6,610	0	231	0	8,634	20,163	6,635	0	231	0	27,029
2005	2,014	8,986	0	152	0	11,152	21,164	8,986	0	152	0	30,302
2006	1,010	44,621	0	262	0	45,893	27,837	44,641	0	262	0	57,743
2007	1,896	14,674	0	184	0	16,754	27,033	21,978	0	184	0	49,195
2008	1,311	1,842	0	138	0	3,291	18,365	25,588	0	138	0	44,091
2009	1,253	7,777	0	308	0	9,338	21,509	12,366	0	308	0	34,183
2010	422	5,466	0	319	0	6,207	15,697	49,673	0	319	0	65,689
2011	825	8,651	0	439	0	9,915	21,700	8,651	0	439	0	30,790
2012	678	3,504	0	321	0	4,503	27,125	111,726	0	321	0	139,172
2013	1,094	5,937	0	138	0	7,169	26,272	106,444	0	138	0	132,854
2014	731	6,912	0	235	0	7,878	13,820	103,297	0	235	0	117,352
2015	252	4,770	0	220	0	5,242	13,774	4,770	0	220	0	18,764
2016	96 <sup>b</sup>	4,020	0	176 <sup>b</sup>	0	4,292	18,814 <sup>b</sup>	4,020	0	176 <sup>b</sup>	0	23,010
2017	911 <sup>b</sup>	4,300	0	438 <sup>b</sup>	0	5,649	22,471 <sup>b</sup>	163,351	0	438 <sup>b</sup>	0	186,260
2012–2016												
Average	570	5,029	0	218	0	5,817	19,961	66,051	0	218	0	86,230
2007–2016												
Average	856	6,355	0	248	0	7,459	20,411	44,851	0	248	0	65,510

-continued-

Appendix A14.–Page 5 of 5.

Alaska Yukon Area Totals							
Year	Subsistence <sup>a</sup>	Commercial	Commercial Related <sup>c</sup>	Personal Use	Test Fish Sales	Sport Fish <sup>e</sup>	Total
1997	112,820	95,242	133,010	391	2,590	662	344,715
1998	87,366	28,611	187	84	3,019	421	119,688
1999	83,784	29,389	24	382	836	555	114,970
2000	78,072	6,624	0	30	648	161	85,535
2001	72,155	–	0	146	0	82	72,383
2002	87,056	13,558	19	175	218	384	101,410
2003	82,272	10,685	0	148	119	1,638	94,862
2004	77,934	26,410	0	231	217	203	104,995
2005	93,259	41,264	0	152	134	435	135,244
2006	115,078	92,116	0	262	456	583	208,495
2007	92,926	198,201	0	184	10	245	291,566
2008	86,514	151,186	0	138	80	371	238,289
2009	80,539	170,272	0	308	0	174	251,293
2010	88,373	232,888	0	319	0	1,183	322,763
2011	96,020	275,161	0	439	0	294	371,914
2012	126,992	319,575	0	321	2,412	271	449,571
2013	115,114	485,587	0	138	2,304	1,423	604,566
2014	86,900	530,644	0	235	0	374	618,153
2015	83,567	358,856	0	220	2,494	194	445,331
2016	88,082 <sup>b</sup>	525,809	0	176 <sup>b</sup>	380	264	614,711
2017	87,437 <sup>b</sup>	556,516	0	438 <sup>b</sup>	1,819	<sup>f</sup>	646,210
2012–2016							
Average	100,131	444,094	0	218	1,518	505	546,466
2007–2016							
Average	94,503	324,818	0	248	768	479	420,816

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Includes harvest from the Coastal District communities of Hooper Bay and Scammon Bay.

<sup>b</sup> Data are preliminary.

<sup>c</sup> Commercial related refers to the estimated number of females and incidental males harvested to produce roe sold, excluding the Anvik River. Beginning in 2006, the numbers of females harvested are included in the total commercial harvest.

<sup>d</sup> Only roe has been sold in the Anvik River commercial fishery. The commercial related harvest shown is the estimated number of females harvested to produce roe sold.

<sup>e</sup> Estimated sport fish harvest for all chum salmon (assumes majority of chums caught during summer season) in Alaska portion of the drainage.

<sup>f</sup> Data are unavailable at this time.

Appendix A15.–Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017.

	Coastal		District 1			District 2				
Year	Subsistence	<sup>a</sup>	Subsistence	Commercial	Test Fish Sales <sup>b</sup>	Total	Subsistence	Commercial	Test Fish Sales <sup>b</sup>	Total
1997	0		3,132	27,483	867	31,482	4,680	24,326	0	29,006
1998	34		3,163	—	—	3,163	4,482	—	—	4,482
1999	204		6,502	9,987	1,149	17,638	4,594	9,703	22	14,319
2000	89		5,294	—	—	5,294	1,425	—	—	1,425
2001	559		3,437	—	—	3,437	3,256	—	—	3,256
2002	284		1,881	—	—	1,881	1,618	—	—	1,618
2003	146		2,139	5,586	0	7,725	2,901	—	—	2,901
2004	320		2,067	660	0	2,727	2,421	—	—	2,421
2005	70		2,889	130,525	87	133,501	3,257	—	—	3,257
2006	187		3,902	101,254	0	105,156	4,015	39,905	0	43,920
2007	234		4,390	38,852	0	43,242	3,472	35,826	0	39,298
2008	386		2,823	67,704	0	70,527	3,522	41,270	0	44,792
2009	158		1,917	11,911	0	13,828	1,563	12,072	0	13,635
2010	186		3,202	545	0	3,747	1,419	270	0	1,689
2011	315		3,434	127,735	0	131,169	2,578	100,731	0	103,309
2012	11		7,622	139,842	74	147,538	3,332	129,284	92	132,708
2013	149		3,673	106,588	121	110,382	4,878	106,274	0	111,152
2014	252		4,072	51,829	30	55,931	5,817	59,138	0	64,955
2015	198		5,877	100,562	50	106,489	6,258	74,214	0	80,472
2016	762	<sup>c</sup>	4,602	<sup>c</sup> 226,576	668	231,846	4,533	<sup>c</sup> 213,225	0	217,758
2017	561	<sup>c</sup>	4,587	<sup>c</sup> 328,410	1,246	334,243	4,175	<sup>c</sup> 134,668	0	138,843
2012-2016										
Average	274		5,169	125,079	189	130,437	4,964	116,427	18	121,409
2007-2016										
Average	265		4,161	87,214	94	91,470	3,737	77,230	9	80,977

-continued-

Appendix A15.–Page 2 of 6.

Year	District 3			Lower Yukon Area Subtotals <sup>a</sup>			
	Subsistence	Commercial	Total	Subsistence	Commercial	Test Fish Sales <sup>b</sup>	Total
1997	787	–	787	8,599	51,809	867	61,275
1998	1,561	–	1,561	9,240	–	–	9,240
1999	415	–	415	11,715	19,690	1,171	32,576
2000	598	–	598	7,406	–	–	7,406
2001	700	–	700	7,952	–	–	7,952
2002	164	–	164	3,947	–	–	3,947
2003	738	–	738	5,924	5,586	0	11,510
2004	298	–	298	5,106	660	0	5,766
2005	1,304	–	1,304	7,520	130,525	87	138,132
2006	480	–	480	8,584	141,159	0	149,743
2007	925	–	925	9,021	74,678	0	83,699
2008	1,821	–	1,821	8,552	108,974	0	117,526
2009	937	–	937	4,575	23,983	0	28,558
2010	1,325	–	1,325	6,132	815	0	6,947
2011	354	–	354	6,681	228,466	0	235,147
2012	637	–	637	11,602	269,126	166	280,894
2013	1,764	–	1,764	10,464	212,862	121	223,447
2014	2,457	–	2,457	12,598	110,967	30	123,595
2015	1,388	–	1,388	13,721	174,776	50	188,547
2016	997 <sup>c</sup>	–	997	10,894 <sup>c</sup>	439,801	668	451,363
2017	1,304 <sup>c</sup>	–	1,304	10,627 <sup>c</sup>	463,078	1,246	474,951
2012-2016							
Average	1,449		1,449	11,856	241,506	207	253,569
2007-2016							
Average	1,261		1,261	9,424	164,445	104	173,972

-continued-

Appendix A15.–Page 3 of 6.

Year	District 4				District 5			
	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total
1997	11,734	2,458	0	14,192	55,258	2,446	1,474	59,178
1998	7,898	–	–	7,898	31,393	–	–	31,393
1999	9,174	681	0	9,855	53,580	–	–	53,580
2000	1,759	–	–	1,759	9,920	–	–	9,920
2001	3,352	–	–	3,352	20,873	–	–	20,873
2002	1,549	–	–	1,549	10,976	–	–	10,976
2003	9,750	1,315	0	11,065	28,270	–	–	28,270
2004	7,797	–	–	7,797	40,670	0	0	40,670
2005	9,405	–	–	9,405	51,663	0	0	51,663
2006	6,335	–	–	6,335	52,158	10,030	0	62,188
2007	8,576	–	–	8,576	53,731	427	0	54,158
2008	7,412	0	0	7,412	57,258	4,556	0	61,814
2009	7,382	–	–	7,382	38,083	–	–	38,083
2010	6,788	–	–	6,788	44,334	–	–	44,334
2011	7,260	–	–	7,260	51,885	1,246	0	53,131
2012	18,055	811	0	18,866	54,350	2,419	0	56,769
2013	15,191	–	–	15,191	76,098	1,041	0	77,139
2014	15,936	–	–	15,936	51,197	1,264	0	52,461
2015	13,274	–	–	13,274	50,260	1,048	0	51,308
2016	10,034 <sup>c</sup>	–	–	10,034	58,840 <sup>c</sup>	7,542	0	66,382
2017	9,609 <sup>c</sup>	1,402	0	11,011	60,438 <sup>c</sup>	1,952 <sup>e</sup>	0	62,390
2012-2016								
Average	14,498			14,660	58,149	2,663	0	60,812
2007-2016								
Average	10,991	406	0	11,072	53,604	2,443	0	55,558

-continued-

Appendix A15.–Page 4 of 6.

Year	District 6						Upper Yukon Area Subtotals					
	Subsistence <sup>e</sup>	Commercial	Commercial	Personal	Test Fish		Subsistence <sup>g</sup>	Commercial	Commercial	Personal	Test Fish	
			Related <sup>d</sup>	Use	Sales <sup>b</sup>	Total			Related <sup>d</sup>	Use	Sales <sup>b</sup>	Total
1997	19,550	–	–	284	–	19,834	86,542	4,904	1,474	284	–	93,204
1998	14,370	–	–	2	–	14,372	53,661	–	–	2	–	53,663
1999	15,471	–	–	262	–	15,733	78,225	681	0	262	–	79,168
2000	310	–	–	1	–	311	11,989	–	–	1	–	11,990
2001	3,526	–	–	10	–	3,536	27,751	–	–	10	–	27,761
2002	3,202	–	–	3	–	3,205	15,727	–	–	3	–	15,730
2003	12,986	4,095	0	394	–	17,475	51,006	5,410	0	394	–	56,810
2004	8,953	3,450	0	230	–	12,633	57,420	3,450	0	230	–	61,100
2005	22,946	49,637	0	133	–	72,716	84,014	49,637	0	133	–	133,784
2006	16,925	23,353	0	333	–	40,611	75,418	33,383	0	333	–	109,134
2007	29,893	15,572	0	173	–	45,638	92,200	15,999	0	173	–	108,372
2008	16,135	5,735	0	181	–	22,051	80,805	10,291	0	181	–	91,277
2009	16,079	1,286	0	78	–	17,443	61,544	1,286	0	78	–	62,908
2010	11,391	1,735	0	3,209	–	16,335	62,513	1,735	0	3,209	–	67,457
2011	14,376	9,267	0	347	–	23,990	73,521	10,513	0	347	–	84,381
2012	15,302	17,336	0	410	–	33,048	87,707	20,566	0	410	–	108,683
2013	11,631	24,148	0	383	–	36,162	102,920	25,189	0	383	–	128,492
2014	12,798	3,368	0	278	–	16,444	79,931	4,632	0	278	–	84,841
2015	9,345	15,646	0	80	–	25,071	72,879	16,694	0	80	–	89,653
2016	4,882 <sup>c</sup>	18,053	0	283 <sup>c</sup>	–	23,218	73,756 <sup>c</sup>	25,595	0	283 <sup>c</sup>	–	99,634
2017	4,419 <sup>c</sup>	23,270 <sup>f</sup>	0	626 <sup>c</sup>	–	28,315	74,466 <sup>c</sup>	26,624 <sup>f</sup>	0	626 <sup>c</sup>	–	101,716
2012-2016												
Average	10,792	15,710	0	287		26,789	83,439	18,535	0	287		102,261
2007-2016												
Average	14,183	11,215	0	542		25,940	78,778	13,250	0	542		92,570

-continued-

Appendix A15.–Page 5 of 6.

Year	Alaska Yukon Area Totals						Canada: Yukon Area Totals					
	Subsistence <sup>a</sup>	Commercial	Commercial Related <sup>d</sup>	Personal Use	Test Fish Sales <sup>b</sup>	Total	Mainstem Yukon River				Porcupine	
							Domestic	Aboriginal	Commercial	Subtotal	Aboriginal	Total
1997	95,141	56,713	1,474	284	867	154,479	0	1,238	8,068	9,306	6,294	15,600
1998	62,901	–	–	2	–	62,903	0	1,795	0	1,795	6,159	7,954
1999	89,940	20,371	0	262	1,171	111,744	0	3,234	10,402	13,636	6,000	19,636
2000	19,395	–	–	1	–	19,396	0	2,927	1,319	4,246	5,000	9,246
2001	35,703	–	–	10	–	35,713	3	3,077	2,198	5,278	4,594	9,872
2002	19,674	–	–	3	–	19,677	0	3,167	3,065	6,232	1,860	8,092
2003	56,930	10,996	0	394	0	68,320	0	1,493	9,030	10,523	382	10,905
2004	62,526	4,110	0	230	0	66,866	0	2,180	7,365	9,545	205	9,750
2005	91,534	180,162	0	133	87	271,916	13	2,035	11,931	13,979	4,593	18,572
2006	84,002	174,542	0	333	0	258,877	0	2,521	4,096	6,617	5,179	11,796
2007	101,221	90,677	0	173	0	192,071	0	2,221	7,109	9,330	4,500	13,830
2008	89,357	119,265	0	181	0	208,803	0	2,068	4,062	6,130	3,436	9,566
2009	66,119	25,269	0	78	0	91,466	0	820	293	1,113	898	2,011
2010	68,645	2,550	0	3,209	0	74,404	0	1,523	2,186	3,709	2,078	5,787
2011	80,202	238,979	0	347	0	319,528	0	1,000	5,312	6,312	1,851	8,163
2012	99,309	289,692	0	410	166	389,577	0	700	3,205	3,905	3,118	7,023
2013	113,384	238,051	0	383	121	351,939	18	500	3,369	3,887	2,283	6,170
2014	92,529	115,599	0	278	30	208,436	19	546	2,485	3,050	1,983	5,033
2015	86,600	191,470	0	80	50	278,200	35	1,000	2,862	3,897	556	4,453
2016	84,650 <sup>c</sup>	465,396	0	283 <sup>c</sup>	668	550,997	0	1,000	1,745	2,745	3,005	5,750
2017	85,093 <sup>c</sup>	489,702	0	626 <sup>c</sup>	1,246	576,667	0	1,000	2,404	3,404	2,312	5,716
2012-2016												
Average	95,294	260,042	0	287	207	355,830	14	749	2,733	3,497	2,189	5,686
2007-2016												
Average	88,202	177,695	0	542	104	266,542	7	1,138	3,263	4,408	2,371	6,779

-continued-

Appendix A15.–Page 6 of 6.

Yukon River Drainage (Alaska/Canada) Totals						
Year	Subsistence <sup>a,g</sup>	Commercial	Commercial Related <sup>d</sup>	Personal Use	Alaska Test Fish <sup>b</sup>	Total
1997	102,673	64,781	1,474	284	867	170,079
1998	70,855	0	0	2	–	70,857
1999	99,174	30,773	0	262	1,171	131,380
2000	27,322	1,319	0	1	–	28,642
2001	43,377	2,198	0	10	–	45,585
2002	24,701	3,065	0	3	–	27,769
2003	58,805	20,026	0	394	0	79,225
2004	64,911	11,475	0	230	0	76,616
2005	98,175	192,093	0	133	87	290,488
2006	91,702	178,638	0	333	0	270,673
2007	107,942	97,786	0	173	0	205,901
2008	94,861	123,327	0	181	0	218,369
2009	67,837	25,562	0	78	0	93,477
2010	72,246	4,736	0	3,209	0	80,191
2011	83,053	244,291	0	347	0	327,691
2012	103,127	292,897	0	410	166	396,600
2013	116,185	241,420	0	383	121	358,109
2014	95,077	118,084	0	278	30	213,469
2015	88,191	194,332	0	80	50	282,653
2016	88,655 <sup>c</sup>	467,141	0	283 <sup>c</sup>	668	556,747
2017	88,405 <sup>c</sup>	492,106	0	626 <sup>c</sup>	1,246	582,383
2012-2016						
Average	98,247	262,775	0	287	207	361,516
2007-2016						
Average	91,717	180,958	0	542	104	273,321

Note: En dash indicates no fishing activity occurred. Blank cells indicate insufficient information to generate averages.

<sup>a</sup> Includes harvest from the Coastal District communities of Hooper Bay and Scammon Bay.

<sup>b</sup> The number of salmon sold by ADF&G test fisheries.

<sup>c</sup> Data are preliminary.

<sup>d</sup> Estimated number of females harvested to produce roe sold.

<sup>e</sup> The number of females harvested to produce the roe sold is included in the subsistence harvest estimate.

<sup>f</sup> Includes headed and gutted fish sold and used to produce roe sold.

<sup>g</sup> Includes Alaska Yukon River subsistence and Canadian Domestic and Aboriginal harvests.

Appendix A16.–Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1997–2017.

Year	Coastal	District 1				District 2			
	Subsistence <sup>a</sup>	Subsistence	Commercial	Test Fish Sales <sup>b</sup>	Total	Subsistence	Commercial	Test Fish Sales <sup>b</sup>	Total
1997	0	1,823	21,450	498	23,771	2,424	13,056	0	15,480
1998	349	2,171	–	–	2,171	2,297	1	0	2,298
1999	74	1,730	855	236	2,821	2,793	746	0	3,539
2000	222	1,067	–	–	1,067	2,351	–	–	2,351
2001	548	1,274	–	–	1,274	1,440	–	–	1,440
2002	248	1,295	–	–	1,295	1,233	–	–	1,233
2003	292	1,260	9,757	0	11,017	1,586	–	–	1,586
2004	63	1,175	1,583	0	2,758	1,500	–	–	1,500
2005	279	976	36,533	0	37,509	1,110	–	–	1,110
2006	335	1,177	39,323	0	40,500	2,459	14,482	0	16,941
2007	110	2,265	21,720	0	23,985	2,347	21,487	0	23,834
2008	116	1,211	13,946	0	15,157	1,997	19,246	0	21,243
2009	246	847	5,994	0	6,841	1,057	1,582	0	2,639
2010	124	1,122	1,027	0	2,149	557	1,023	0	1,580
2011	55	1,127	45,335	0	46,462	823	24,184	0	25,007
2012	93	3,350	39,757	39	43,146	1,346	29,063	0	30,409
2013	287	1,224	27,306	1	28,531	1,080	31,458	0	32,538
2014	204	1,782	54,804	0	56,586	1,769	48,602	0	50,371
2015	174	2,100	66,029	8	68,137	3,002	54,860	0	57,862
2016	355 <sup>c</sup>	1,236 <sup>c</sup>	113,669	11	114,916	1,133 <sup>c</sup>	67,208	0	68,341
2017	435 <sup>c</sup>	1,046 <sup>c</sup>	95,982	63	97,091	1,263 <sup>c</sup>	33,277	0	34,540
2012-2016									
Average	223	1,938	60,313	12	62,263	1,666	46,238	0	47,904
2007-2016									
Average	176	1,626	38,959	6	40,591	1,511	29,871	0	31,382

-continued-

Appendix A16.–Page 2 of 6.

Year	District 3			Lower Yukon Area Subtotals <sup>a</sup>			
	Subsistence	Commercial	Total	Subsistence <sup>a</sup>	Commercial	Test Fish Sales <sup>b</sup>	Total
1997	766	–	766	5,013	34,506	498	40,017
1998	400	–	400	5,217	1	0	5,218
1999	610	–	610	5,207	1,601	236	7,044
2000	94	–	94	3,734	–	–	3,734
2001	0	–	0	3,262	–	–	3,262
2002	115	–	115	2,891	–	–	2,891
2003	711	–	711	3,849	9,757	0	13,606
2004	284	–	284	3,022	1,583	0	4,605
2005	217	–	217	2,582	36,533	0	39,115
2006	83	–	83	4,054	53,805	0	57,859
2007	739	–	739	5,461	43,207	0	48,668
2008	410	–	410	3,734	33,192	0	36,926
2009	321	–	321	2,471	7,576	0	10,047
2010	353	–	353	2,156	2,050	0	4,206
2011	36	–	36	2,041	69,519	0	71,560
2012	556	–	556	5,345	68,820	39	74,204
2013	371	–	371	2,962	58,764	1	61,727
2014	340	–	340	4,095	103,406	0	107,501
2015	428	–	428	5,704	120,889	8	126,601
2016	140 <sup>c</sup>	–	140	2,864 <sup>c</sup>	180,877	11	183,752
2017	497 <sup>c</sup>	–	497	3,241 <sup>c</sup>	129,259	63	132,563
2012-2016							
Average	367		367	4,194	106,551	12	110,757
2007-2016							
Average	369		369	3,683	68,830	6	72,519

-continued-

Appendix A16.–Page 3 of 6.

124

Year	District 4				District 5			
	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total	Subsistence	Commercial	Commercial Related <sup>d</sup>	Total
1997	3,754	814	0	4,568	3,583	–	–	3,583
1998	2,593	–	–	2,593	2,839	–	–	2,839
1999	2,049	–	–	2,049	4,241	–	–	4,241
2000	1,068	–	–	1,068	4,987	–	–	4,987
2001	2,266	–	–	2,266	7,674	–	–	7,674
2002	1,023	–	–	1,023	2,076	–	–	2,076
2003	5,773	367	0	6,140	3,887	–	–	3,887
2004	4,766	–	–	4,766	1,423	–	–	1,423
2005	2,971	–	–	2,971	2,159	–	–	2,159
2006	1,302	–	–	1,302	3,779	–	–	3,779
2007	2,952	–	–	2,952	3,366	–	–	3,366
2008	1,490	0	0	1,490	3,203	91	–	3,294
2009	3,986	–	–	3,986	2,498	–	–	2,498
2010	1,730	–	–	1,730	3,604	–	–	3,604
2011	2,072	–	–	2,072	1,389	–	–	1,389
2012	3,556	0	0	3,556	3,092	634	0	3,726
2013	4,940	–	–	4,940	1,298	0	0	1,298
2014	3,062	–	–	3,062	2,030	0	0	2,030
2015	1,941	–	–	1,941	2,462	0	0	2,462
2016	826 <sup>c</sup>	–	–	826	861 <sup>c</sup>	54	0	915
2017	529 <sup>c</sup>	0	0	529	1,007 <sup>c</sup>	0	0	1,007
2012-2016								
Average	2,865			2,865	1,949	138	0	2,086
2007-2016								
Average	2,656	0	0	2,656	2,380	130	0	2,458

-continued-

Appendix A16.–Page 4 of 6.

	District 6						Upper Yukon Area Subtotals					
	Year	Subsistence	Commercial	Personal	Test Fish	Total	Subsistence	Commercial	Commercial	Personal	Test Fish	Total
			Related <sup>d</sup>	Use	Sales <sup>b</sup>				Related <sup>d</sup>	Use	Sales <sup>b</sup>	
1997	1997	11,595	–	–	350	11,945	18,932	814	0	350		20,096
1998	1998	7,472	–	–	9	7,481	12,904	–	–	9		12,913
1999	1999	9,394	–	–	147	9,541	15,684	–	–	147		15,831
2000	2000	5,150	–	–	0	5,150	11,205	–	–	0		11,205
2001	2001	8,966	–	–	34	9,000	18,906	–	–	34		18,940
2002	2002	9,499	–	–	20	9,519	12,598	–	–	20		12,618
2003	2003	10,363	15,119	0	549	26,031	20,023	15,486	0	549		36,058
2004	2004	11,584	18,649	0	233	30,466	17,773	18,649	0	233		36,655
2005	2005	19,538	21,778	0	107	41,423	24,668	21,778	0	107		46,553
2006	2006	10,571	11,137	0	279	21,987	15,652	11,137	0	279		27,068
2007	2007	7,845	1,368	0	135	9,348	14,163	1,368	0	135		15,666
2008	2008	8,428	2,408	0	50	10,886	13,121	2,499	0	50		15,670
2009	2009	7,051	457	285	70	7,863	13,535	457	285	70		14,347
2010	2010	5,555	1,700	0	1,062	8,317	10,889	1,700	0	1,062		13,651
2011	2011	6,842	6,784	0	232	13,858	10,303	6,784	0	232		17,319
2012	2012	9,540	5,335	0	100	14,975	16,188	5,969	0	100		22,257
2013	2013	5,257	7,439	0	109	12,805	11,495	7,439	0	109		19,043
2014	2014	7,911	1,286	0	174	9,371	13,003	1,286	0	174		14,463
2015	2015	8,000	8,811	0	145	16,956	12,403	8,811	0	145		21,359
2016	2016	4,271 <sup>c</sup>	20,551	0	266 <sup>c</sup>	25,088	5,958 <sup>c</sup>	20,605	0	266 <sup>c</sup>		26,829
2017	2017	2,536 <sup>c</sup>	9,656 <sup>h</sup>	0	200 <sup>c</sup>	12,392	4,072 <sup>c</sup>	9,656 <sup>e</sup>	0	200 <sup>c</sup>		13,928
2012-2016												
Average	Average	6,996	8,684	0	159	15,839	11,809	8,822	0	159		20,790
2007-2016												
Average	Average	7,070	5,614	29	234	12,947	12,106	5,692	29	234		18,060

-continued-

Appendix A16.–Page 5 of 6.

Year	Alaska Yukon Area Totals							Canada: Yukon Territories Totals		
	Subsistence <sup>a</sup>	Commercial	Commercial	Personal	Test Fish	Sport	Total	Mainstem	Porcupine	Total
			Related <sup>d</sup>	Use	Sales <sup>b</sup>	Fish		Yukon River <sup>f</sup>	Aboriginal	
1997	23,945	35,320	0	350	498	1,470	61,583	2	298	300
1998	18,121	1	0	9	0	758	18,889	0	214	214
1999	20,891	1,601	0	147	236	609	23,484	0	100	100
2000	14,939	–	–	0	–	554	15,493	0	37	37
2001	22,168	–	–	34	–	1,202	23,404	0	0	0
2002	15,489	–	–	20	–	1,092	16,601	26	449	475
2003	23,872	25,243	0	549	0	1,477	51,141	7	523	530
2004	20,795	20,232	0	233	0	1,623	42,883	5	175	180
2005	27,250	58,311	0	107	0	627	86,295	0	11	11
2006	19,706	64,942	0	279	0	1,000	85,927	1	111	112
2007	19,624	44,575	0	135	0	597	64,931	2	500	502
2008	16,855	35,691	0	50	0	341	52,937	0	200	200
2009	16,006	8,033	285	70	0	964	25,358	0	0	0
2010	13,045	3,750	0	1,062	0	944	18,801	0	12	12
2011	12,344	76,303	0	232	0	463	89,342	0	63	63
2012	21,533	74,789	0	100	39	131	96,592	0	10	10
2013	14,457	66,203	0	109	1	266	81,036	0	10	10
2014	17,098	104,692	0	174	0	1,855	123,819	0	133	133
2015	18,107	129,700	0	145	8	593	148,553	0	0	0
2016	8,822 <sup>c</sup>	201,482	0	266 <sup>c</sup>	11	29	210,610	0	0	0
2017	7,313 <sup>c</sup>	138,915	0	200 <sup>c</sup>	63	<sup>g</sup>	146,491	0	71	71
2012-2016										
Average	16,003	115,373	0	159	12	575	132,122	0	31	31
2007-2016										
Average	15,789	74,522	29	234	6	618	91,198	0	93	93

-continued-

## Appendix A16.–Page 6 of 6.

Yukon River Drainage (Alaska/Canada) Totals							
Year	Subsistence <sup>a,h</sup>	Commercial	Commercial Related <sup>d</sup>	Personal Use	Alaska Test Fish <sup>b</sup>	Sport Fish	Total
1997	24,243	35,322	0	350	498	1,470	61,883
1998	18,335	1	0	9	0	758	19,103
1999	20,991	1,601	0	147	236	609	23,584
2000	14,976	0	0	0	0	554	15,530
2001	22,168	0	0	34	0	1,202	23,404
2002	15,938	17	0	20	0	1,101	17,076
2003	24,395	25,243	0	549	0	1,484	51,671
2004	20,970	20,236	0	233	0	1,624	43,063
2005	27,261	58,311	0	107	0	627	86,306
2006	19,817	64,942	0	279	0	1,001	86,039
2007	20,124	44,575	0	135	0	599	65,433
2008	17,055	35,691	0	50	0	341	53,137
2009	16,006	8,033	285	70	0	964	25,358
2010	13,057	3,750	0	1,062	0	944	18,813
2011	12,407	76,303	0	232	0	463	89,405
2012	21,543	74,789	0	100	39	131	96,602
2013	14,467	66,203	0	109	1	266	81,046
2014	17,231	104,692	0	174	0	1,855	123,952
2015	18,107	129,700	0	145	8	593	148,553
2016	8,822 <sup>c</sup>	201,482	0	266 <sup>c</sup>	11	29	210,610
2017	7,384 <sup>c</sup>	138,915	0	200	63	<sup>g</sup>	146,562
2012-2016							
Average	16,034	115,373	0	159	12	575	132,153
2007-2016							
Average	15,882	74,522	29	234	6	619	91,291

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average or data not available.

<sup>a</sup> Includes harvest from the Coastal District communities of Hooper Bay and Scammon Bay.

<sup>b</sup> The number of fish sold by ADF&G test fisheries.

<sup>c</sup> Data are preliminary.

<sup>d</sup> Estimated number of females harvested to produce roe sold.

<sup>e</sup> Includes headed and gutted fish sold and used to produce roe sold.

<sup>f</sup> Includes Domestic, commercial, test, Sport, and Aboriginal harvest from the Mainstem Yukon River.

<sup>g</sup> Data are unavailable at this time.

<sup>h</sup> Includes Alaska Yukon River subsistence harvest and Canadian Aboriginal harvest.

Appendix A17.—Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1997–2017.

Year	Coastal District			District 1			District 2		
	Subsistence	Commercial	Total	Subsistence	Commercial	Total	Subsistence	Commercial	Total
1997	265	0	265	69	0	69	115	0	115
1998	3,732	0	3,732	1,590	0	1,590	1,550	0	1,550
1999	626	0	626	32	0	32	21	0	21
2000	998	0	998	301	0	301	235	0	235
2001	394	–	394	9	–	9	0	–	0
2002	5,892	0	5,892	1,028	0	1,028	1,282	0	1,282
2003	1,470	0	1,470	207	0	207	117	0	117
2004	7,926	0	7,926	615	0	615	1,138	0	1,138
2005	2,505	0	2,505	390	0	390	232	0	232
2006	2,814	0	2,814	1,114	0	1,114	900	0	900
2007	1,548	0	1,548	382	0	382	185	0	185
2008	3,779	0	3,779	3,053	13,391	16,444	1,025	709	1,734
2009	2,143	0	2,143	132	0	132	15	0	15
2010	2,464	0	2,464	787	0	787	1,049	0	1,049
2011	2,098	0	2,098	53	0	53	125	0	125
2012	2,444	0	2,444	1,619	0	1,619	880	0	880
2013	809	0	809	115	0	115	140	0	140
2014	2,635	0	2,635	3,292	49,317	52,609	920	5,434	6,354
2015	1,865	0	1,865	388	7,326	7,714	363	52	415
2016	6,497 <sup>a</sup>	0	6,497	1,806 <sup>a</sup>	125,070	126,876	254 <sup>a</sup>	2,268	2,522
2017	1,324 <sup>a</sup>	0	1,324	743 <sup>a</sup>	0	743	375 <sup>a</sup>	0	375
2012-2016									
Average	2,850	0	2,850	1,444	36,343	37,787	511	1,551	2,062
2007-2016									
Average	2,628	0	2,628	1,163	19,510	20,673	496	846	1,342

-continued-

Appendix A17.–Page 2 of 5.

129

District 3					Lower Yukon Area Subtotals				
Year	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total	
1997	0	—	0	0	449	0	0	449	
1998	1,617	0	0	1,617	8,489	0	0	8,489	
1999	0	0	0	0	679	0	0	679	
2000	28	—	0	28	1,562	0	0	1,562	
2001	0	—	—	0	403	—	—	403	
2002	0	—	0	0	8,202	0	0	8,202	
2003	130	—	0	130	1,924	0	0	1,924	
2004	6	—	0	6	9,685	0	0	9,685	
2005	0	—	0	0	3,127	0	0	3,127	
2006	25	0	0	25	4,853	0	0	4,853	
2007	3	0	0	3	2,118	0	0	2,118	
2008	456	—	—	456	8,313	14,100	—	22,413	
2009	9	—	—	9	2,299	0	—	2,299	
2010	2	—	—	2	4,302	0	—	4,302	
2011	9	—	—	9	2,285	0	—	2,285	
2012	100	—	—	100	5,043	0	—	5,043	
2013	12	—	—	12	1,076	0	—	1,076	
2014	11	—	—	11	6,858	54,751	—	61,609	
2015	0	—	—	0	2,616	7,378	—	9,994	
2016	11 <sup>a</sup>	—	—	11	8,568 <sup>a</sup>	127,338	—	135,906	
2017	2 <sup>a</sup>	0	—	2	2,444 <sup>a</sup>	0	—	2,444	
2012-2016									
Average	27	—	—	27	4,832	37,893	—	42,726	
2007-2016									
Average	61	0	0	61	4,348	20,357	0	24,705	

-continued-

Appendix A17.–Page 3 of 5.

130

Year	District 4				District 5			
	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total
1997	34	0	0	34	0	0	0	0
1998	700	–	0	700	0	0	0	0
1999	2	0	0	2	0	0	0	0
2000	31	–	–	31	0	–	–	0
2001	0	–	–	0	0	–	–	0
2002	221	–	–	221	0	0	0	0
2003	243	0	0	243	0	0	0	0
2004	12	–	–	12	0	0	0	0
2005	7	–	–	7	0	0	0	0
2006	1	–	–	1	0	0	0	0
2007	0	0	0	0	0	0	0	0
2008	1,023	0	0	1,023	276	0	0	0
2009	2	0	0	2	0	–	–	0
2010	0	0	0	0	0	–	–	0
2011	40	–	–	40	0	0	0	0
2012	104	0	0	104	3	0	0	0
2013	0	0	0	0	0	0	0	0
2014	66	0	0	66	8	0	0	8
2015	16	–	0	16	13	0	0	13
2016	117 <sup>a</sup>	–	0	117	34 <sup>a</sup>	0	0	34
2017	13 <sup>a</sup>	0	0	13	0 <sup>a</sup>	0	0	0
2012-2016								
Average	61	0	0	61	12	0	0	11
2007-2016								
Average	137	0	0	137	33	0	0	6

-continued-

Appendix A17.–Page 4 of 5.

131

Year	District 6				Upper Yukon Area Subtotals			
	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total	Subsistence	Commercial	Commercial Related <sup>b</sup>	Total
1997	0	0	0	0	34	0	0	34
1998	0	0	0	0	700	0	0	700
1999	0	0	0	0	2	0	0	2
2000	0	–	–	0	31	0	0	31
2001	0	–	–	0	0	–	0	0
2002	0	0	0	0	221	0	0	221
2003	0	0	0	0	243	0	0	243
2004	0	0	0	0	12	0	0	12
2005	0	0	0	0	7	0	0	7
2006	0	0	0	0	1	0	0	1
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	1,299	0	0	1,299
2009	0	0	0	0	2	0	0	2
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	40	0	0	40
2012	0	0	0	0	107	0	0	107
2013	0	0	0	0	0	0	0	0
2014	0	0	0	0	74	0	0	74
2015	0	0	0	0	29 <sup>a</sup>	0	0	29
2016	0 <sup>a</sup>	0	0	0	151 <sup>a</sup>	0	0	151
2017	0 <sup>a</sup>	0	0	0	13 <sup>a</sup>	0	0	13
2012-2016								
Average	0	0	0	0	72	0	0	72
2007-2016								
Average	0	0	0	0	170	0	0	170

-continued-

Alaska Yukon Area Totals					
Year	Subsistence	Commercial	Commercial Related <sup>b</sup>	Sport Fish	Total
1997	483	0	0	0	483
1998	9,189	0	0	85	9,274
1999	681	0	0	0	681
2000	1,593	0	0	0	1,593
2001	403	0	0	0	403
2002	8,423	0	0	0	8,423
2003	2,167	0	0	24	2,191
2004	9,697	0	0	33	9,730
2005	3,134	0	0	0	3,134
2006	4,854	0	0	54	4,908
2007	2,118	0	0	0	2,118
2008	9,612	14,100	0	0	23,712
2009	2,301	0	0	0	2,301
2010	4,302	0	0	0	4,302
2011	2,325	0	0	0	2,325
2012	5,150	0	0	51	5,201
2013	1,076	0	0	0	1,076
2014	6,932	54,751	0	0	61,683
2015	2,645	7,378	0	136	10,159
2016	8,719 <sup>a</sup>	127,338	0	70	136,127
2017	2,457 <sup>a</sup>	0	0	<sup>c</sup>	2,457
2012-2016					
Average	4,904	37,893	0	51	42,849
2007-2016					
Average	4,518	20,357	0	26	24,900

*Note:* En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Data are preliminary.

<sup>b</sup> Commercial related refers to the estimated number of females and males harvested to produce roe sold.

<sup>c</sup> Data are unavailable at this time.

Appendix A18.—Yukon River Chinook salmon historical harvest percentage by stock group for the United States and Canada, 1997–2017.

Year <sup>a</sup>	Lower	Middle	Upper		Total
			U.S.	Canada	
1997	26.4	16.8	48.2	8.6	56.9
1998	32.7	17.4	44.2	5.6	49.8
1999	40.1	6.3	44.5	9.1	53.6
2000	33.9	12.3	44.1	9.7	53.8
2001	31.6	16.0	36.5	15.9	52.4
2002	19.4	29.2	39.3	12.1	51.4
2003	6.8	28.9	55.4	8.9	64.3
2004	15.3	28.8	46.8	9.1	55.9
2005	20.7	21.4	46.4	11.5	57.9
2006	17.6	27.6	46.1	8.7	54.9
2007	13.0	30.6	51.1	5.4	56.4
2008	17.0	28.0	48.4	6.6	55.0
2009	11.1	31.4	45.3	12.2	57.5
2010	17.8	32.7	44.8	4.7	49.5
2011	13.9	29.8	45.6	10.7	56.3
2012	13.3	34.8	44.8	7.1	51.9
2013	13.4	21.0	49.5	16.1	65.6
2014 <sup>b</sup>	28.9	25.2	42.9	3.0	45.9
2015 <sup>b</sup>	13.5	31.3	41.5	13.7	55.2
2016 <sup>b</sup>	13.4	29.4	45.2	12.0	57.2
2017 <sup>b</sup>	8.3	31.9	51.2	8.6	59.8
Average					
1997-2016	20.0	24.9	45.5	9.5	55.1
2012-2016	16.5	28.3	44.8	10.4	55.1

<sup>a</sup> 1981–2013 does not include the subsistence harvest from the Coastal District communities of Hooper Bay and Scammon Bay. 2014–2016 includes the subsistence harvest from Hooper Bay and Scammon Bay.

<sup>b</sup> Data preliminary.

Appendix A19.—Salmon fishery projects conducted in the Alaska portion of the Yukon River drainage in 2017.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Building & Maintaining Public Support of Salmon Resource Management	Yukon River Drainage, Alaska	Annual river-wide meeting for fishermen to discuss Yukon River fishery issues and provide State and Federal managers with input from YR communities.	Feb-Apr	YRDFA, USFWS, ADF&G	All aspects R&M Funding
Yukon River Preseason Salmon Preparation Meeting	Yukon River drainage, Alaska	Annual river-wide forum for fishermen to interact with state and federal managers for sharing input and prepare for the coming fishing season.	April	YRDFA, ADF&G, USFWS	All aspects R&E Funding
Commercial Catch and Effort Assessment	Alaska portion of the Yukon River drainage	1) Document and estimate the catch and associated effort of the Alaska Yukon River and; 2) Commercial salmon fishery via receipts (fish tickets) of commercial sales of salmon.	Jun-Oct	ADF&G	All aspects
Commercial Catch Sampling and Monitoring	Alaska portion of the Yukon River drainage	1) Determine age, sex and size of Chinook, chum and coho salmon harvested in Alaska Yukon River commercial fisheries and; 2) Monitor Alaska commercial fishery openings and closures.	Jun-Oct	ADF&G, ADPS	All aspects Enforcement
Subsistence and Personal Use Catch and Effort Assessment	Alaska portion of the Yukon River drainage	Document and estimate the catch and associated effort of the Alaska Yukon River subsistence salmon fishery via interviews, catch calendars, mail-out questionnaires, telephone interviews, and subsistence fishing permits, and of the personal use fishery based on fishery permits.	Ongoing	ADF&G, YRDFA	All aspects Assistants in Communities
Sport Catch, Harvest and Effort Assessment	Alaska portion of the Yukon River drainage	Document and estimate the catch, harvest, and associated effort of the Alaska Yukon River sport fishery via post-season mail-out questionnaires.	Postseason	ADF&G	All aspects
Biological Sampling of Yukon River Salmon	Yukon, RM 17-1,002	Collect genetics samples and age, sex, and length information from subsistence caught Chinook salmon.	Jun-Aug	Spearfish Research	All aspects
Yukon River Chinook Microsatellite Baseline	Yukon River drainage	Survey standardized microsatellites and Yukon River Chinook salmon both U.S. and Canada populations.	Ongoing	ADF&G, USFWS, DFO	TI Funding R&E Funding

-continued-

Appendix A19.–Page 2 of 6.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Yukon River Salmon Stock Identification	Yukon River drainage	Estimate Chinook salmon stock composition of the various Yukon River drainage harvests through genetic stock identification, age compositions, and geographical distribution of catches and escapements.	Ongoing	ADF&G	All aspects TI Funding
Yukon Delta Smolt	Yukon Delta (mouths and delta platform)	1) Determine the composition and spatio-temporal variation in prey species of juvenile Chinook salmon; 2) Determine the quality of dominate juvenile Chinook salmon prey;3) Assess the relationship between prey quality and juvenile Chinook salmon size and condition during summer; 4) Evaluate juvenile Chinook salmon spatial distribution and habitat use in relation to prey communities in Yukon River tributaries and delta habitats; and 5) evaluate spatio-temporal differences in juvenile Chinook salmon condition, size, and energy content.	May-Aug	NOAA-AFSC & Spearfish Research & YDFDA	All aspects
Local and Traditional Knowledge (LTK) of Freshwater Aspects of Chinook Salmon Life Cycle, Yukon River	St. Marys, Anvik, Huslia, Allakaket, and Fort Yukon	1) Identify and map the specific fresh-water habitat areas where local residents have personal experience through fishing or other activities;2) Conduct in-depth ethnographic interviews to document LTK of these areas regarding such factors as spawning density and behavior, water quality, migratory access; 3) Compare ethnographic data to results of area enumeration projects for potential correlation; 4) Consult the Anadromous Waters Catalog regarding identified areas and compare with results of key respondent interviews/maps.	Dec 2013 – Jun 2018	ADF&G	All aspects
Patterns and Trends in Subsistence Salmon Fishing on the Yukon River	Alakanuk, Marshall, Nulato, Galena, Beaver, and Eagle.	1) Compare community and household harvest databases; conduct quality and control assessment; 2) Analyze the databases to identify harvest patterns and trends that influence harvest activities for 3 salmon species (Chinook, summer chum and fall chum salmon) in 6 communities.	Dec 2013 – Feb 2018	ADF&G	All aspects
Customary Trade Barter as part of a Continuum of Exchange Practices in 3 Upper Yukon River Region Communities	Fort Yukon, Manley Hot Springs and Venetie	1) Use ethnographic methods to describe how customary trade practices fit within the overall subsistence use of salmon in the Upper Yukon Area, both historically and in present time; 2) administer household surveys to document the scope and local nature of barter and customary trade. Describe exchange networks and transactions in terms of the species and the way fish is processed and traded, quantify transactions; 3) improve understanding of the role of customary trade within a continuum of exchange practices, including any potential effects on the practice as a result of poor Chinook salmon runs.	Dec 2013 – Jan 2018	ADF&G & YRDFA	ADF&G data entry, analysis and final report. YRDFA data collection and some write-up.

-continued-

Appendix A19.–Page 3 of 6.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
YRDFA Weekly Teleconferences	Yukon River drainage	Acts as a forum for fishermen along the Yukon River to interact with state and federal managers for the collection and dissemination of fisheries information.	May–Sep	YRDFA	All aspect OSM Funding
Lower Yukon River Set Gillnet Test Fishing	South, Middle, and North mouths of the Yukon River Delta, RM 20	1) Index Chinook salmon run timing and abundance using set gillnets and; 2) Sample captured salmon for age, sex, size composition information.	Jun–Aug	ADF&G, YDFDA	All aspects
Lower Yukon River Drift Test Fishing	South, Middle, and North mouths of the Yukon River Delta, RM 20	1) Index Chinook, summer and fall chum, and coho salmon run timing and abundance using drift gillnets and; 2) Sample captured salmon for age, sex, size composition information.	Jun–Aug	ADF&G, YDFDA	All aspects
Mountain Village Drift Gillnet Test Fishing	Mainstem Yukon River, RM 87	1) Index fall chum and coho salmon run timing and relative abundance using drift gillnets and; 2) Sample captured salmon for age, sex, size composition information.	Jul–Sep	Sandone Consulting LLC, ATC, ADF&G	All aspects R&M funding
East Fork Weir, Andreafsky River	RM 20 East Fork, Yukon RM 124	Estimate daily escapement, with age, sex and size composition, of Chinook and summer chum salmon into the East Fork of the Andreafsky River.	Jun–Aug	USFWS	All aspects OSM Funding
Anvik River Sonar	RM 40 Anvik River, Yukon RM 358	1) Estimate daily escapement of summer chum salmon to the Anvik River and; 2) Estimate age, sex, and size composition of the summer chum salmon escapement.	Jun–Jul	ADF&G	All aspects AKSSF Funding
Inseason Monitoring of Subsistence Salmon Harvests	Marshall, Yukon RM 161	Collected inseason data by conducting door-to-door salmon harvest surveys during the fishing season with reference to: 1) local research assistant capacity with staff oversight; 2) financial costs; 3) community response; provide regular updates to managers; and 4) currently producing report outlining results.	May–Jan	ADF&G	All aspects
Yukon River Sonar	Pilot Station, RM 123	Estimate Chinook and summer and fall chum salmon passage in the mainstem Yukon River. Apportionment of species including coho salmon and other finfish.	May–Sep	ADF&G	All aspects
Gisasa River Weir	RM 3 Gisasa River, Koyukuk River drainage, RM 567	1) Estimate daily escapement of Chinook and summer chum salmon into the Gisasa River and; 2) Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements.	June–Aug	USFWS	All aspects OSM Funding
Henshaw Creek Weir	RM 1 Henshaw Creek, Koyukuk River drainage, RM 976	1) Estimate daily escapement of Chinook and summer chum salmon into Henshaw Creek and; 2) Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements.	Jun–Aug	TCC, USFWS-OSM	All aspects oversight & funding report write-up

-continued-

Appendix A19.–Page 4 of 6.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Chandalar River Sonar	RM 14 Chandalar River, Yukon RM 996	1) Estimate fall chum salmon passage using DIDSON sonars in the Chandalar River.	Aug–Sept	USFWS	All aspects TI Funding
Yukon River Sonar	Eagle, RM 1,213	1) Estimate daily passage of Chinook and chum salmon in the mainstem Yukon River using both split-beam and DIDSON and; 2) Estimate age, sex, and size composition of salmon captured in the test nets.	Jul–Oct	ADF&G, DFO	All aspects, technical support, TI Funding, ADF&G GF
Nenana River Escapement Surveys	Nenana River drainage, RM 860	Aerial surveys for numbers and distribution of coho and chum salmon in 10 tributaries of the Nenana River below Healy Creek.	Sep–Oct	ADF&G	All aspects
Delta River Ground Surveys	Tanana River drainage RM 1,031	1) Estimate fall chum salmon spawning escapement in Delta River and; 2) Sample fall chum salmon carcasses for age, sex, and size composition information.	Oct–Dec	ADF&G	All aspects
Chena River Tower	RM 45 Chena River, Tanana River drainage, RM 921	Estimate daily escapement of Chinook and summer chum salmon into the Chena River.	Jul–Aug	ADF&G	All aspects AYKSSF Funding
Salcha River Tower	RM 4 Salcha River, Tanana River drainage, RM 967	Estimate daily escapement of Chinook and summer chum salmon into the Salcha River.	Jul–Aug	ADF&G	All aspects AYKSSF Funding
Upper Tanana Escapement Surveys	Tanana River drainage, RM 991-1,053	Boat survey for number and distribution of coho salmon in a tributary of the Tanana River drainage.	Oct	ADF&G	All aspects
Goodpaster River Tower	RM 45 Goodpaster River, Tanana River drainage, RM 1,049	Estimate daily escapement of Chinook and summer chum salmon into the Goodpaster River.	Jul–Aug	BSFA	All aspects Pogo Mine funding
Upper Yukon River Chum Salmon Genetic Stock Identification	Yukon River drainage	Establish the feasibility of using DNA markers for genetic stock identification of chum salmon in the Yukon River.	Jun–Oct	USFWS	All aspects
Yukon River Inseason Salmon Harvest Interviews	Alakanuk, Marshall, Russian Mission, Holy Cross, Kaltag, Huslia, Galena, Nenana, Ft. Yukon and Eagle	Collect qualitative inseason subsistence salmon harvest information through weekly interviews.	May–Aug	YRDFA, USFWS	All aspects OSM funding
Migratory Timing and Harvest Information of Chinook Salmon Stocks	Yukon River drainage	Enlarge existing allozyme and develop a DNA database to characterize the genetic diversity of Chinook salmon in the Yukon River within the U.S. and Canada. U.S. collections include microsatellites and allozyme. Canadian collections include microsatellites.	Jun–Aug	USFWS-OSM, ADF&G, DFO	All aspects

-continued-

Appendix A19.–Page 5 of 6.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
In-river coded-wire-tag (CWT) recovery (Whitehorse Hatchery tags)	Yukon River drainage	Collection of Chinook salmon heads from all operating project that are marked with no adipose fin and sent to lab to extract data tag (Appendix A17).	May-Sep	ADF&G	Decoding
Yukon River Community Support and Engagement for BLM Resource Management Planning	Bering Sea-Western Interior & Central Yukon BLM Planning Regions	Assistance and support to Yukon River communities for engaging BLM in 20 year Resource Management Planning in the Bering Sea-Western Interior and Central Yukon BLM planning regions	Jan-Dec	YRDFA	All aspects of PEW Charitable Trust funding
Yukon River Education & Outreach/Young Fishers program	Yukon River drainage, Alaska	Assistance to Yukon River communities for engaging young fishers and providing support for understanding and engagement with fisheries management for increasing future leadership	Jan-Dec	YRDFA	All aspects of National Fish & Wildlife funding
Salmon Know No Borders: 2017 Yukon River Exchange	Yukon River drainage, Alaska & Canada	Yukon River Education Exchange between Alaska and Canada	Apr-Oct	YRDFA/YS SC	Shared aspects of R&E Funding
Building & Maintaining Public Support of Salmon Resource Management; Newsletters	Yukon River drainage, Alaska & Canada	YRDFA newsletter (2 annually) communications for YR fishers and communities focused on management, science and sustaining YR salmon runs	Jan-Dec	YRDFA, USFWS. ADF&G	All aspects R&M Funding
Customary Trade in the Upper Yukon River	Manley Hot Springs, Fort Yukon, Venetie	This project examined customary trade in the upper Yukon and found that customary trade can only be understood in relation to the equally complex process of sharing and barter as part of a continuum of exchange that serves to distribute subsistence resources within and between communities.	ended Dec 2017	YRDFA, ADF&G.	Shared aspects of OSM Funding
Value of Salmon	Russian Mission, Nenana, Fort Yukon	Results show that study communities value salmon primarily as a food representing their culture. Salmon is an essential nutritious, local food which sustains and connects people to their culture and is a teaching tool enabling them to pass on the heart of their culture.	Ended Dec 2017	YRDFA	North Pacific Research Board
Learning From Tradition	Lower Yukon River	6 Elders from Lower Yukon met to discuss, in Yup'ik, their experiences and observations of salmon over their lifetimes and their knowledge and observations of the Chinook salmon decline	Thru Jan 2018	YRDFA, CEC	National Science Foundation

-continued-

Acronyms:

ADF&G	= Alaska Department of Fish and Game
ADPS	= Alaska Department of Public Safety
AFSC	= Alaska Fisheries Science Center
APU	= Alaska Pacific University
ATC	= Asacarsarmiut Tribal Council
AVCP	= Association of Village Council Presidents, Inc.
AYKSSF	= Arctic-Yukon-Kuskokwim Sustainable Salmon Fund
BLM	= Bureau of Land Management
BSFA	= Bering Sea Fishermen's Association
CEC	= Career Educational Center
DFO	= Department of Fisheries and Oceans (Canada)
DIDSON	= Dual-frequency Identification Sonar
DNA	= Deoxyribonucleic acid
LLC	= Limited Liability Company
NOAA	= National Oceanic and Atmospheric Association
OSM	= Office of Subsistence Management
R&E	= Yukon River Panel Restoration and Enhancement Program
R&M	= Research and Management Fund
TCC	= Tanana Chiefs Conference, Inc.
TI	= Treaty Implementation Funds
USFWS	= United States Fish and Wildlife Service
YDFDA	= Yukon Delta Fisheries Development Association
YRDFA	= Yukon River Drainage Fisheries Association
YSSC	= Yukon Salmon Subcommittee

Appendix A20.—Selected environmental and salmon catch information, Yukon River drainage, 1997–2017.

Year	Average Nome April Air Temp (°F)	Tanana River Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Yukon Delta Area <sup>a</sup>	First Summer Chum Caught Yukon Delta Area <sup>a</sup>	First District 1 Commercial Period
1997	27 <sup>b</sup>	4/30	5/15	5/22	5/25	6/11
1998	26	4/20	5/22	5/28	5/25	6/15
1999	17	4/29 <sup>c</sup>	5/29	6/6	6/13	6/22
2000	21	5/1	5/29	6/3	6/5	6/24
2001	22	5/8	6/5	6/7	6/9	N/A
2002	20	5/7	5/24	5/31	5/30	6/20
2003	26	4/29	5/17	5/22	5/30	6/16
2004	29	4/24	5/8	5/18	5/27	6/17
2005	15	4/28	5/17	5/25	6/1	6/24
2006	12 <sup>d</sup>	5/2	5/29	6/6	6/7	6/19
2007	27 <sup>d</sup>	4/27	5/18	6/3	6/12	6/18
2008	15 <sup>d</sup>	5/5	5/24	6/3	6/16	7/2
2009	17 <sup>d</sup>	5/1	5/26	6/5	6/10	6/20
2010	20 <sup>d</sup>	4/29	5/22 <sup>e</sup>	6/9	6/10	6/28
2011	18 <sup>f</sup>	5/4	5/22	5/31	6/4	6/24
2012	20 <sup>f</sup>	4/23	5/25	6/8	6/9	6/29
2013	21 <sup>f</sup>	5/20	6/3	6/10	6/10	6/18
2014	28	4/25	5/9	5/19	5/15	6/9
2015	21 <sup>g</sup>	4/24	5/19	5/27	5/24	6/11
2016	34	4/23	5/3	5/23	5/16	6/7
2017	31	5/1	5/14	5/26	5/21	6/10
1997–2016						
Average	22	4/30	5/21	5/30	6/1	6/18

<sup>a</sup> Subsistence or test fishery.

<sup>b</sup> Average April air temperature was 9 degrees fahrenheit above normal.

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

<sup>d</sup> Source: [http://climate.gi.alaska.edu/AKCityClimo/AK\\_Climo\\_Sum.html](http://climate.gi.alaska.edu/AKCityClimo/AK_Climo_Sum.html)

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

<sup>f</sup> Source: [http://akclimate.org/AKCityClimo/2011/Apr/Apr\\_2011.html](http://akclimate.org/AKCityClimo/2011/Apr/Apr_2011.html)

<sup>g</sup> Source: <http://www.aos.org/2016-yukon-chinook-forecasting/>

Appendix A21.–List of harvest/escapement monitoring and incubation/rearing projects involving salmon in the Canadian portion of the Yukon River drainage in 2017.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Aboriginal Catch Monitoring	Yukon communities	1) To determine weekly catches and effort in the aboriginal fishery, and; 2) To implement components of the UFA and AFS.	Jul–Oct	YFN's DFO	Joint Project
Recreational Catch Monitoring	Yukon River mainstem and tributaries	1) To determine the recreational harvest by species including the date, sex, whether released or retained, and fishing location, and; 2) Salmon caught are reported through the YSCCC program.	Jul– Oct	DFO	All aspects
Commercial Catch Monitoring	Yukon River mainstem	1) To determine weekly catches and effort in the Canadian commercial fishery (Chinook and chum) and; 2) to collect other information as required.	Jul–Oct	DFO	All aspects
Escapement Surveys and Biological Sampling	Throughout upper Yukon River drainage	1) To conduct surveys of spawning fish by foot, boat, air etc.; 2) To collect ASL and genetic tissue samples from spawning populations, and; 3) To enumerate and recover tags in terminal areas.	Jul–Oct	R&E Projects DFO YFNs AFS	All aspects
Porcupine River Sonar - Chinook	Old Crow RM 1,257	1) Installation and operation of 2 ARIS sonars to 1) estimate Chinook salmon daily passage, and 2) to conduct biological sampling for species apportionment, age, sex and length.	Jul–Aug	VGG & DFO	All aspects
Porcupine River Sonar - Chum	Old Crow RM 1,257	1) Operation of 2 ARIS sonars to 1) estimate chum salmon daily passage, and 2) conduct biological sampling for species apportionment, age, sex and length.	Aug–Oct	VGG & DFO	All aspects
Whitehorse Rapids Fishway	Whitehorse RM 1,745	1) To enumerate wild and hatchery-reared Chinook salmon returns to the Whitehorse fishway area and; 2) obtain age, size, sex and tag data.	Jul–Aug	YFGA	All aspects
Blind Creek Weir	Pelly River RM 1,478	1) To enumerate Chinook salmon escapement, recover tags and; 2) collect ASL data and DNA samples.	Jul–Aug	JW&A	All aspects
Big Salmon Sonar	Big Salmon River RM 1,621	1) Installation and operation of a DIDSON sonar program for Chinook salmon, and; 2) obtain carcass ASL samples.	Jul–Aug	Metla Env. Inc., JW&A	All aspects

-continued-

Appendix A21.–Page 2 of 3.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Pelly River Sonar	Pelly River mainstem RM 1,478	1) Develop an accurate, inseason stock assessment tool to estimate the annual passage rates for Chinook salmon in the Pelly River; and 2) conduct test netting for species apportionment, and to collect ASL samples.	Jul–Aug	Selkirk First Nation & EDI	All aspects
Whitehorse Rapids Fish Hatchery and Coded-Wire Tagging Project	Whitehorse RM 1,745	1) To rear and release ~150K Chinook salmon fry produced from Whitehorse Rapids Fishway broodstock, and; 2) To mark fry with a CWT, adipose clip, and release upstream of the Whitehorse hydroelectric facility.	Ongoing	YG and YEC, YF&GA, DFO	All aspects Coded-wire tagging
McIntyre Incubation Facility and Coded-Wired Tagging Project	Whitehorse RM 1,745	1) To incubate up to 120K Chinook salmon eggs from brood stock collected in Yukon River spawning tributaries, and/or the Whitehorse Rapids Fishway, and; 2) To rear, mark with CWT, adipose clip, and release fry to natal streams and/or restoration sites.	Ongoing	YC, YEC, TKC, DFO	Field work, project monitoring, technical support
Big Salmon River Juvenile Chinook Assessment	Big Salmon River RM 1,621	1) Operation of Rotary Screw Trap, Gee minnow traps and seine nets to capture juvenile Chinook salmon and use CPUE and mark-recapture to initiate development of an abundance index 2) sample juvenile chinook salmon to monitor change in size through the season.	May–Aug	DFO & Metla Env. Inc.	All aspects
Takhini River Chinook Salmon Restoration Investigation	Takhini River RM 1,718	1) Quantify and characterize habitats used by, and relative fish abundance of, Takhini River Chinook salmon as a) summer-rearing juveniles and b) migrating and spawning adults; 2) establish a baseline understanding of current abundance and distribution in the system.	Jul-Aug	DFO	All aspects

-continued-

Appendix A21.–Page 3 of 3.

Project Name	Location, River Mile (RM)	Primary Objective(s)	Duration	Agency	Responsibility
Impacts to the Kluane Fall Chum Salmon Stock from a Major Hydrological Change	Kluane Lake and River RM 1,587 (Lake Outlet)	1) Describe baseline and current habitat use of spawning and incubating chum salmon; 2) Assess suitability of habitat given recent reduction in flow; 3) project likely impact of changes.	Sept - March	DFO	All aspects
Overwintering Limitations to Juvenile Chinook	Yukon River (Whitehorse) RM 1,745	1) Describe and characterize habitats used by Yukon juvenile Chinook salmon during the winter and how it differs from habitat used in the summer months	Jan-March	DFO	All aspects

Acronyms:

ASL = Age Sex Length- term that refers to the collection of biological information.

AFS = Aboriginal Fisheries Strategy

BM&A = B. Mercer and Associates

CWT = Coded Wire Tag

DFO = Department of Fisheries and Oceans Canada

DNA = Deoxyribonucleic acid

EDI = Environmental Dynamics Incorporated

YG = Government of Yukon-Environment Yukon

VGG = Vuntut Gwitch'in Government

JW&A = Jane Wilson & Associates

Metla Env. Inc = Metla Environmental Incorporated

TKC = Ta'an Kwa'chan Council

UFA = Umbrella Final Agreement

YC = Yukon College

YEC = Yukon Energy Corporation

YFN's = Yukon First Nations

YFGA = Yukon Fish and Game Association

YSCCC = Yukon Salmon Conservation Catch Card

Appendix A22.–List of emergency orders and their descriptions for Districts 1–6 in the Chinook and summer chum salmon fishery, Yukon Area, 2017.

---

EO Number: 3-S-SY-01-17

Effective Date: May 31, 2017

In the Coastal District and Districts 1–6, Effective 8:00 p.m. Wednesday, May 31, four-inch or less mesh gillnets may not exceed 60 feet in length during subsistence salmon fishing closures.

EO Number: 3-S-SY-02-17

Effective Date: May 31, 2017

In the Southern Portion of the Coastal District, from the Naskonat Peninsula north to 62 degrees latitude, salmon may only be taken with gillnets of six-inch or less mesh size from 6:00 p.m. Wednesday, May 31, until 6:00 p.m. Monday, July 10.

EO Number: 3-S-SY-03-17

Effective Date: May 31, 2017

In the Northern Portion of the Coastal District from 62 degrees North latitude to Point Romanof, including all state marine waters, salmon may be taken for subsistence with six-inch or less mesh gillnets from 8:00 p.m. Thursday to 8:00 a.m. Saturday and from 8:00 p.m. Monday to 8:00 a.m. Wednesday.

Additionally, in District 1, including the Black River, salmon may be taken for subsistence with six-inch or less mesh gillnets from 8:00 p.m. Thursday to 8:00 a.m. Saturday and from 8:00 p.m. Monday to 8:00 a.m. Wednesday.

EO Number: 3-S-SY-04-17

Effective Date: June 2, 2017

This emergency order establishes a weekly fishing schedule in Districts 2 and 3 from 8:00 p.m. Wednesday to 8:00 a.m. Friday and from 8:00 p.m. Sunday to 8:00 a.m. Tuesday with six-inch or less mesh gillnets until further notice.

In District 2, effective 8:00 a.m., Friday, June 2, salmon may be taken for subsistence use from 8:00 p.m. Wednesday to 8:00 a.m. Friday and from 8:00 p.m. Sunday to 8:00 a.m. Tuesday with six-inch or less mesh gillnets.

Additionally, in District 3, effective 8:00 a.m., Tuesday, June 6 Salmon may be taken for subsistence use from 8:00 p.m. Wednesday to 8:00 a.m. Friday and from 8:00 p.m. Sunday to 8:00 a.m. Tuesday with six-inch or less mesh gillnets.

EO Number: 3-S-SY-05-17

Effective Date: June 9, 2017

This emergency order closes unrestricted subsistence fishing and establishes a regulatory subsistence fishing schedule in Subdistrict 4-A consisting of two 48-hour periods per week with six-inch or less mesh. Drift gillnets may be used for king and chum salmon from June 10 through August 2 during open fishing periods in Subdistrict 4-A.

Effective 6:00 p.m., Friday, June 9, subsistence fishing closes in the lower portion of Subdistrict 4-A, from  $\frac{3}{4}$  mile downstream of Old Paradise Village upstream to Stink Creek, and the Anvik Special Management Area. Effective 6:00 p.m. Sunday, June 11, fishing opens on the regulatory schedule of two 48-hour periods per week from 6:00 p.m. Sundays to 6:00 p.m. Tuesdays and from 6:00 p.m. Wednesdays to 6:00 p.m. Fridays. Salmon may be taken with six-inch or less mesh set and drift gillnets and fish wheels during open fishing periods.

Additionally, in the upper portion of Subdistrict 4-A, from Stink Creek upstream to Cone Point, effective 12:01 a.m. Saturday, June 10, salmon may be taken by drift gillnets. Effective 6:00 p.m. Tuesday, June 13, subsistence fishing closes. Effective 6:00 p.m. Wednesday, June 14, fishing opens on the regulatory schedule of two 48-hour periods per week from 6 p.m. Wednesdays to 6 p.m. Fridays and from 6 p.m. Sundays to 6 p.m. Tuesdays. Salmon may be taken with six-inch or less mesh set and drift gillnets and fish wheels during open fishing periods.

---

-continued-

EO Number: 3-S-SY-06-17

Effective Date: June 10, 2017

---

The commercial fishing season opens in District 1 effective 3:00 p.m. Saturday June 10. King salmon may be retained but not sold in the gillnet fishery.

EO Number: 3-S-SY-07-17

Effective Date: June 10, 2017

---

This emergency order establishes one 12-hour commercial fishing period in District 1 and allows the taking of salmon by CFEC salmon gillnet permit holders for commercial purposes with beach seine or dip net gear only. Effective 3:00 p.m. Saturday, June 10, in District 1, salmon may be taken for commercial purposes from 3:00 p.m. Saturday, June 10 to 3:00 a.m. Sunday, June 11. Commercial fishermen using dip net or beach seine gear are required to immediately release incidentally-caught king salmon back to the water alive. King salmon caught and released must be recorded on a fish ticket. Subsistence fishing is currently on the regulatory schedule of two 36-hour periods per week and will be closed before, during, and after this commercial opening.

EO Number: 3-S-SY-08-17

Effective Date: June 11, 2017

---

Effective 4:00 a.m. Sunday June 11, in the Northern Portion of the Coastal District from 62 degrees North latitude to Point Romanof, including all state marine waters, and District 1, including the Black River, salmon may be taken from 4:00 a.m. Sundays to 2:00 p.m. Mondays, a 34-hour period, and from 4:00 a.m. to 2:00 p.m. Tuesdays through Saturdays, six 10-hour periods.

Dip nets may be used for subsistence salmon fishing and all king salmon caught with a dip net must be released to the water alive. Beach seines may be used for subsistence salmon fishing and all king salmon caught with a beach seine must be released to the water alive. Subsistence fishing with dip nets and beach seines will be closed one hour before, during, and one hour after commercial periods.

EO Number: 3-S-SY-09-17

Effective Date: June 11, 2017

---

In District 2, effective 4:00 a.m. Sunday, June 11, this emergency order closes subsistence fishing with gillnets and opens subsistence fishing with dip nets and beach seines for 24 hours a day, seven days per week. All king salmon caught in dip net and beach seine gear must be released alive immediately.

EO Number: 3-S-SY-10-17

Effective Date: June 11, 2017

---

In District 3, effective 8:00 a.m. Sunday, June 11, this emergency order closes subsistence fishing with gillnets and opens subsistence fishing with dip nets and beach seines for 24 hours a day, seven days per week. All king salmon caught in dip net and beach seine gear must be released alive immediately.

EO Number: 3-S-SY-11-17

Effective Date: June 11, 2017

---

In the lower portion of Subdistrict 4-A, from  $\frac{3}{4}$  mile downstream of Old Paradise Village upstream to Stink Creek, including the Anvik River Management Area, subsistence fishing is open from 6:00 p.m. Sunday, June 11 to 6:00 p.m. Tuesday, June 13 with six-inch or smaller mesh set and drift gillnets and fish wheels.

Effective 6:00 p.m. Tuesday, June 13, subsistence salmon fishing in the lower portion of Subdistrict 4-A will close.

---

-continued-

In the upper portion of Subdistrict 4-A, from Stink Creek upstream to Cone Point, subsistence salmon fishing is open with 7.5 inch or smaller mesh gillnets. Effective 6:00 p.m., Sunday, June 11, subsistence salmon fishing will be open for two 48-hour periods per week from 6:00 p.m. Sunday, June 11, to 6:00 p.m. Tuesday, June 13, and from 6:00 p.m. Wednesday, June 14 to 6:00 p.m. Friday, June 16 with six-inch or smaller mesh gillnets and fish wheels.

Effective 6:00 p.m. Friday, June 16, subsistence salmon fishing in the upper portion of Subdistrict 4-A will close.

---

EO Number: 3-S-SY-12-17

Effective Date: June 14, 2017

---

Effective 6:00 a.m. Wednesday, June 14, in the lower portion of Subdistrict 4-A, from  $\frac{3}{4}$  miles downstream of Old Paradise Village upstream to Stink Creek, and the Anvik Special Management Area, salmon may be taken 24 hours a day, seven days a week with dip nets, beach seines, and live-release fish wheels.

Effective 6:00 a.m. Saturday, June 17, in the upper portion of Subdistrict 4-A, from Stink Creek upstream to Cone Point, salmon may be taken 24 hours a day, seven days a week with dip nets, beach seines, and live-release fish wheels.

All king salmon must be released to the water alive in the upper and lower portions of Subdistrict 4-A from dip nets, beach seines, and live-release fish wheels.

---

EO Number: 3-S-SY-13-17

Effective Date: June 12, 2017

---

This emergency order establishes a weekly commercial fishing schedule of six 12-hour periods per week in District 1 and allows the taking of salmon by CFEC salmon gillnet holders for commercial purposes with beach seine or dip net gear only. Commercial fishermen using dip net or beach seine gear are required to immediately release incidentally-caught king salmon back to the water alive. King salmon caught and released must be recorded on a fish ticket.

Effective 3:00 p.m. Monday, June 12, in District 1, salmon may be taken for commercial purposes for six 12-hour periods per week from:

- 3:00 p.m. Mondays to 3:00 a.m. Tuesdays
- 3:00 p.m. Tuesdays to 3:00 a.m. Wednesdays
- 3:00 p.m. Wednesdays to 3:00 a.m. Thursday
- 3:00 p.m. Thursday to 3:00 a.m. Fridays
- 3:00 p.m. Fridays to 3:00 a.m. Saturdays
- 3:00 p.m. Saturdays to 3:00 a.m. Sundays

Subsistence fishing will be closed for one hour before, during, and one hour after commercial periods.

---

EO Number: 3-S-SY-14-17

Effective Date: June 18, 2017

---

In Subdistricts 4-B and 4-C, from Cone Point to Illinois Creek, salmon may not be taken effective 6:00 p.m. Sunday, June 18.

---

EO Number: 3-S-SY-15-17

Effective Date: June 19, 2017

---

Effective 6:00 p.m. Monday, June 19, salmon may be taken for subsistence using dip nets, beach seines and live release fish wheels in Subdistricts 4-B and 4-C from Cone Point upstream to Illinois Creek. Fishing with selective gear is open 24 hours a day, seven days a week until further notice. All king salmon must be released to the water alive.

---

-continued-

EO Number: 3-S-SY-16-17

Effective Date: June 18, 2017

---

Effective 6:00 p.m. Sunday, June 18, In the Southern Portion of the Coastal District, from the Naskonat Peninsula north to 62 degrees latitude, salmon may be taken with gillnets of seven and one-half inch or less mesh.

EO Number: 3-S-SY-17-17

Effective Date: June 18, 2017

---

Effective 12:00 p.m. Sunday, June 18, the subsistence fishery with dip net and beach seine is discontinued in the Northern Portion of the Coastal District from 62 degrees North latitude to Point Romanof, including all state marine waters, and District 1, including the Black River.

Effective 12:00 p.m. Sunday, June 18, fishing will immediately reopen for one 12-hour period with gillnets of seven and one-half inch or less mesh in the Northern Portion of the Coastal District and District 1.

Effective 4:00 a.m. Monday, June 19, this emergency order establishes a weekly fishing schedule of six 10-hour periods per week with gillnets of six-inch or less mesh in the Northern Portion of the Coastal District and District 1.

EO Number: 3-S-SY-18-17

Effective Date: June 18, 2017

---

This emergency order opens one additional fishing period in District 2 and District 3 with gillnets of seven and one-half inch or less mesh. In anticipation of commercial openings, this emergency order places District 2 on a schedule of six 10-hour openings each week.

Effective 12:00 p.m. Sunday, June 18 in District 2, and 8:00 p.m. Sunday, June 18 in District 3, subsistence fishing with dip nets and beach seines is closed.

In District 2, effective 12:00 p.m. Sunday, June 18 to 11:59 p.m. Sunday, June 18, fishing will be open with gillnets of seven and one-half inch or less mesh for one 12-hour period.

In District 2, effective 8:00 a.m. Monday, June 19, subsistence fishing is open for six 10-hour periods per week from 8:00 a.m. to 6:00 p.m. each day from Mondays through Saturdays with gillnets of six-inch or less mesh.

In District 3, effective 8:00 p.m. Sunday, June 18, subsistence fishing is open on the regulatory schedule of two 36-hour per week periods from 8:00 p.m. Sundays to 8:00 a.m. Tuesdays, and from 8:00 p.m. Wednesdays to 8:00 a.m. Fridays with gillnets of six-inch or less mesh and fish wheels.

In District 3, effective 12:00 p.m. Tuesday, June 20 to 12:00 p.m. Wednesday, June 21, fishing will be open with gillnets of seven and one-half inch or less mesh and fish wheels for one additional 24-hour period.

EO Number: 3-S-SY-19-17

Effective Date: June 23, 2017

---

Effective 6:00 p.m. Friday, June 23, in Subdistricts 5-A, 5-B and 5-C, from the western edge of the mouth of Illinois Creek upstream to the ADF&G regulatory marker located approximately two miles downstream of Waldron Creek, salmon fishing with gillnets will close and immediately reopen with live-release fish wheels, dip nets and beach seines. Fishing with selective gear opens for 24 hours a day, seven days a week until further notice and all king salmon must be released to the water alive.

EO Number: 3-S-SY-20-17

Effective Date: June 21, 2017

---

This emergency order closes subsistence fishing which was open 24 hours a day, seven days a week in the Old Minto Area and Subdistricts 6-A and 6-B, from the mouth of the Tanana River upstream to the regulatory marker at the mouth of the Wood River.

---

-continued-

Effective 12:00 p.m. Wednesday, June 21, in Subdistricts 6-A and 6-B, from the mouth of the Tanana River upstream to the regulatory marker at the mouth of the Wood River, subsistence fishing will close. Effective 6:00 p.m. Friday, June 23, subsistence fishing will reopen on the regulatory schedule of two 42-hour periods per week from 6:00 p.m. Fridays to 12:00 p.m. Sundays, and from 6:00 p.m. Mondays to 12:00 p.m. Wednesdays. Fishing is open with gillnets of seven and one-half inch or less mesh and fish wheels.

Effective 6:00 p.m. Friday, June 23, in the Old Minto Area, subsistence fishing will close and immediately reopen on the regulatory schedule of 5 days per week from 6:00 p.m. Fridays to 6:00 p.m. Wednesdays. Fishing is open with gillnets of seven and one-half inch or less mesh and fish wheels.

---

EO Number: 3-S-SY-21-17

Effective Date: June 21, 2017

---

This emergency order establishes a weekly fishing schedule of six 10-hour periods per week in the Northern Portion of the Coastal District from 62 degrees North latitude to Point Romanof, including all state marine waters, and District 1, including the Black River. Effective 4:00 a.m. Wednesday, June 21, salmon may be taken for six 10-hour periods per week from 4:00 a.m. to 2:00 p.m. Mondays through Saturdays, with gillnets of seven and one-half inch or less mesh.

---

EO Number: 3-S-SY-22-17

Effective Date: June 21, 2017

---

The commercial salmon fishing season opens in District 2 effective 9:00 p.m. Wednesday, June 21. King salmon may be retained but not sold in the gillnet fishery.

---

EO Number: 3-S-SY-23-17

Effective Date: June 21, 2017

---

Salmon may be taken for commercial purposes in District 2 for two 6-hour commercial periods. CFEC salmon gillnet holders may harvest chum salmon for commercial purposes with beach seine or dip net gear only. Commercial fishermen using dip net or beach seine gear are required to immediately release incidentally-caught king salmon back to the water alive. King salmon caught and released must be recorded on a fish ticket.

Effective 9:00 p.m. Wednesday, June 21, in District 2, salmon may be taken for commercial purposes for two 6-hour periods from:

9:00 p.m. Wednesday, June 21 to 3:00 a.m. Thursday, June 22

9:00 p.m. Friday, June 23 to 3:00 a.m. Saturday, June 24

Subsistence fishing is currently on a schedule of six 10-hour openings per week and will be closed for 3 hours before, during, and 5 hours after commercial periods.

---

EO Number: 3-S-SY-24-17

Effective Date: June 20, 2017

---

Mesh restrictions in District 2 and District 3 for subsistence fishing are lifted. In anticipation of commercial openings, this emergency order places District 2 on a schedule of six 10-hour openings each week. Subsistence fishing is open on the regulatory schedule in District 3, with one additional 24-hour period.

In District 2, subsistence fishing is currently open for six 10-hour periods per week from 8:00 a.m. to 6:00 p.m. each day from Mondays through Saturdays with gillnets of six-inch or less mesh. Effective 8:00 a.m. Wednesday, June 21, subsistence fishing is open for six 10-hour periods per week from 8:00 a.m. to 6:00 p.m. each day from Mondays through Saturdays with gillnets of seven and one-half or less mesh.

---

-continued-

In District 3, effective 12:00 p.m. Tuesday, June 20, subsistence fishing will be open for one additional 24-hour period from 12:00 p.m. Tuesday, June 20 to 12:00 p.m. Wednesday, June 21 with gillnets of seven and one-half inch or less mesh and fish wheels.

In District 3, effective 8:00 p.m. Wednesday, June 21, subsistence fishing is open on the regulatory schedule of two 36-hour per week openings from 8:00 p.m. Wednesdays to 8:00 a.m. Fridays, and from 8:00 p.m. Sundays to 8:00 a.m. Tuesdays with gillnets of seven and one-half inch or less mesh and fish wheels.

---

EO Number: 3-S-SY-25-17

Effective Date: June 21, 2017

---

In the lower portion of Subdistrict 4-A, from  $\frac{3}{4}$  miles downstream of Old Paradise Village upstream to Stink Creek, and the Anvik Special Management Area, effective 6:00 p.m. Wednesday June 21, fishing with selective gear will close and immediately reopen on the regulatory schedule of two 48-hour periods per week from 6:00 p.m. Wednesdays to 6:00 p.m. Fridays and from 6:00 p.m. Sundays to 6:00 p.m. Tuesdays with fish wheels and gillnets of seven and one half-inch or smaller mesh gillnets.

In the upper portion of Subdistrict 4-A, from Stink Creek upstream to Cone Point, effective 6:00 p.m. Sunday, June 25, fishing with selective gear will close and immediately reopen the regulatory schedule of two 48-hour periods per week from 6:00 p.m. Wednesdays to 6:00 p.m. Fridays and from 6:00 p.m. Sundays to 6:00 p.m. Tuesdays with fish wheels and gillnets of seven and one half-inch or smaller mesh gillnets.

---

EO Number: 3-S-SY-26-17

Effective Date: June 25, 2017

---

Effective 6:00 p.m. Sunday, June 25, salmon fishing with dip nets and live release fish wheels is closed in Subdistricts 4-B and 4-C from Cone Point upstream to Illinois Creek. Fishing is immediately reopened with fish wheels and gillnets of seven and one-half inch or smaller mesh on the regulatory schedule of two 48-hour periods per week from 6:00 p.m. Sundays to 6:00 p.m. Tuesdays, and 6:00 p.m. Wednesdays to 6:00 p.m. Fridays.

---

EO Number: 3-S-SY-27-17

Effective Date: June 22, 2017

---

Effective 3:00 a.m. Thursday, June 21, commercial fishing with dip nets and beach seines is closed. Effective 9:00 p.m. Friday, June 23, commercial fishing with gillnets is open in District 1. This emergency order establishes two commercial periods in District 1 for two 4-hour periods from 9:00 p.m. Friday June 23 to 1:00 a.m. Saturday, June 24, and from 9:00 p.m. Sunday June 25 to 1:00 a.m. Monday, June 26. CFEC salmon gillnet holders may take salmon for commercial purposes with gillnets of five and one-half inch or less mesh no more than 30 meshes deep. King salmon caught and retained for subsistence must be recorded on a fish ticket.

---

EO Number: 3-S-SY-28-17

Effective Date: June 25, 2017

---

Effective 6:00 p.m. Sunday, June 25, the commercial salmon fishing season is open in Subdistrict 4-A, from  $\frac{3}{4}$  miles downstream of Old Paradise Village upstream to Cone Point. Commercial fishing is open 24 hours a day, seven days a week until 11:59 p.m. Saturday, July 1. Fishermen may use live release fish wheels. Any incidentally caught king salmon must be released alive and recorded on fish tickets.

---

-continued-

EO Number: 3-S-SY-29-17

Effective Date: June 26, 2017

Effective 4:00 a.m. Monday, June 26, salmon may be taken 24 hours per day, seven days per week with gillnets of seven and one-half inch or less mesh in the Northern Portion of the Coastal District from 62 degrees North latitude to Point Romanof, including all state marine waters, and District 1, including the Black River. Subsistence fishing will close two hours before, during, and two hours after commercial periods.

Effective 8:00 a.m. Monday, June 26, salmon may be taken 24 hours per day, seven days per week with gillnets of seven and one-half inch or less mesh in District 2. Subsistence fishing will close two hours before, during, and two hours after commercial periods.

EO Number: 3-S-SY-30-17

Effective Date: June 27, 2017

Subsistence fishing in District 1 is open 24 hours a day, seven days a week with gillnets of seven and one-half inch or less mesh except for closures two hours before, during, and two hours after commercial periods. Subsistence fishing will be closed for two 10-hour periods from:

2:00 p.m. until 11:59 p.m. Tuesday, June 27

3:00 p.m. Thursday, June 29 to 1:00 a.m. Friday, June 30

In District 1, salmon may be taken only with gillnets that have a mesh size of five and one-half inches or less and that are not more than 30 meshes in depth for commercial purposes for two 6-hour periods from:

4:00 p.m. to 10:00 p.m. Tuesday, June 27

5:00 p.m. to 11:00 p.m. Thursday, June 29

King salmon caught and retained for subsistence from commercial openings must be recorded on a fish ticket.

EO Number: 3-S-SY-31-17

Effective Date: June 26, 2017

This emergency order establishes three 8-hour commercial periods in District 2. CFEC salmon gillnet holders may harvest chum salmon for commercial purposes with beach seine or dip net gear only. Commercial fishermen using dip net or beach seine gear are required to immediately release incidentally-caught king salmon back to the water alive. King salmon caught and released must be recorded on a fish ticket.

Subsistence fishing in District 2 is open 24 hours a day, seven days a week with gillnets of seven and one-half inch or less mesh except for closures two hours before, during, and two hours after commercial periods. Subsistence fishing is closed for three 12-hour periods from; 5:00 p.m. Monday, June 26 to 5:00 a.m. Tuesday, June 27, from 5:00 p.m. Wednesday, June 28 to 5:00 a.m. Thursday, June 29, and from 5:00 p.m. Friday, June 30 to 5:00 a.m. Saturday, July 1.

Effective 7:00 p.m. Monday, June 26, in District 2, salmon may be taken for commercial purposes for three 8-hour periods from: 7:00 p.m. Monday, June 26 to 3:00 a.m. Tuesday, June 27, 7:00 p.m. Wednesday, June 28 to 3:00 a.m. Thursday, June 29, and from 7:00 p.m. Friday, June 30 to 3:00 a.m. Saturday, July 1.

---

-continued-

EO Number: 3-S-SY-32-17

Effective Date: June 27, 2017

In Subdistricts 5-A, 5-B and 5-C, from the western edge of the mouth of Illinois Creek upstream to the ADF&G regulatory marker located approximately two miles downstream of Waldron Creek the following provisions are in effect:

Effective 6:00 p.m. Tuesday, June 27, salmon fishing with live-release fish wheels, dip nets and beach seines will close.

Effective 6:00 p.m. Tuesday, June 27, fishing will open with fish wheels and gillnets of seven and one-half inch or less mesh on the regulatory schedule of two 48-hour periods per week from 6:00 p.m. Tuesdays to 6:00 p.m. Thursdays, and from 6:00 p.m. Fridays to 6:00 p.m. Sundays.

EO Number: 3-S-SY-33-17

Effective Date: June 28, 2017

Effective 2:00 p.m. Wednesday June 28, in District 2, subsistence fishing will be closed for two 12-hour periods from; 2:00 p.m. Wednesday, June 28 to 2:00 a.m. Thursday, June 29, and from 2:00 p.m. Friday, June 30 to 2:00 a.m. Saturday, July 1.

Effective 4:00 p.m. Wednesday, June 28, in District 2, salmon may be taken for commercial purposes for two 8-hour periods from: 4:00 p.m. until 11:59 p.m. Wednesday, June 28, and from 4:00 p.m. until 11:59 p.m. Friday, June 30. Permit holders may fish with dip nets and beach seines. All king salmon caught in dip net and beach seine gear must be released immediately and returned to the water alive.

EO Number: 3-S-SY-34-17

Effective Date: July 1, 2017

Effective 11:59 p.m. Saturday, July 1, in Subdistrict 4-A, from  $\frac{3}{4}$  miles downstream of Old Paradise Village upstream to Cone Point, commercial salmon fishing is open 24 hours a day, seven days a week, until 12:01 a.m. Sunday, October 1.

EO Number: 3-S-SY-35-17

Effective Date: July 1, 2017

Effective 3:00 p.m. Saturday July 1, in District 1, subsistence fishing will be closed for four 12-hour periods from:

3:00 p.m. Saturday, July 1 until 3:00 a.m. Sunday, July 2

3:00 p.m. Monday, July 3 until 3:00 a.m. Tuesday, July 4

3:00 p.m. Wednesday, July 5 until 3:00 a.m. Thursday, July 6

3:00 p.m. Friday, July 7 until 3:00 a.m. Saturday, July 8

In District 1, salmon may be taken only with gillnets of six-inch or less mesh for commercial purposes for four 8-hour periods from:

5:00 p.m. Saturday, July 1 until 1:00 a.m. Sunday, July 2

5:00 p.m. Monday, July 3 until 1:00 a.m. Tuesday, July 4

5:00 p.m. Wednesday, July 5 until 1:00 a.m. Thursday, July 6

5:00 p.m. Friday, July 7 until 1:00 a.m. Saturday, July 8

---

-continued-

EO Number: 3-S-SY-36-17

Effective Date: July 4, 2017

Subsistence fishing in District 2 is open 24 hours a day, seven days a week with gillnets of seven and one-half inch or less mesh except for closures two hours before, during, and two hours after commercial periods. Effective 2:00 p.m. Tuesday July 4, in District 2, subsistence fishing will be closed for two 12-hour periods from:

2:00 p.m. Tuesday, July 4 until 2:00 a.m. Wednesday, July 5

2:00 p.m. Thursday, July 6 until 2:00 a.m. Friday, July 7

Additionally, this emergency order establishes two 8-hour commercial periods in District 2. CFEC salmon gillnet holders may harvest chum salmon for commercial purposes with beach seine or dip net gear only. Commercial fishermen using dip net or beach seine gear are required to immediately release incidentally-caught king salmon back to the water alive. King salmon caught and released must be recorded on a fish ticket. Effective 4:00 p.m. Tuesday, July 4, in District 2, salmon may be taken for commercial purposes for two 8-hour periods from:

4:00 p.m. Tuesday, July 4 until 11:59 p.m. Tuesday, July 4

4:00 p.m. Thursday, July 6 until 11:59 p.m. Thursday, July 6

---

EO Number: 3-S-SY-37-17

Effective Date: July 10, 2017

Subsistence fishing in District 1 is open 24 hours a day, seven days a week with gillnets of seven and one-half inch or less mesh except for closures two hours before, during, and two hours after commercial periods. Effective 3:00 p.m. Monday July 10, in District 1, subsistence fishing will be closed for four 13-hour periods from:

3:00 p.m. Monday, July 10 to 4:00 a.m. Tuesday, July 11

3:00 p.m. Wednesday, July 12 to 4:00 a.m. Thursday, July 13

3:00 p.m. Friday, July 14 to 4:00 a.m. Saturday, July 15

3:00 p.m. Saturday, July 15 to 4:00 a.m. Sunday, July 16

Additionally, this emergency order establishes four commercial periods in District 1 and allows the taking of salmon by CFEC salmon gillnet holders for commercial purposes with gillnets of six-inch or less mesh. King salmon caught and retained for subsistence must be recorded on a fish ticket. Effective 5:00 p.m. Monday, July 10, in District 1, salmon may be taken for commercial purposes for four 9-hour periods from:

5:00 p.m. Monday, July 10 to 2:00 a.m. Tuesday, July 11

5:00 p.m. Wednesday, July 12 to 2:00 a.m. Thursday, July 13

5:00 p.m. Friday, July 14 to 2:00 a.m. Saturday, July 15

5:00 p.m. Saturday, July 15 to 2:00 a.m. Sunday, July 16

---

EO Number: 3-S-SY-38-17

Effective Date: July 11, 2017

Subsistence fishing in District 2 is open 24 hours a day, seven days a week with gillnets of seven and one-half inch or less mesh except for closures two hours before, during, and two hours after commercial periods. Effective 4:00 p.m. Tuesday July 11, in District 2, subsistence fishing will be closed for two 6-hour periods from:

4:00 p.m. until 10:00 p.m. Tuesday, July 11

4:00 p.m. until 10:00 p.m. Thursday, July 13

---

-continued-

Additionally, this emergency order closes commercial fishing with dip nets and beach seines, and establishes two 2-hour commercial periods in District 2. CFEC salmon gillnet holders may take summer chum salmon for commercial purposes with gillnets of six inch or less mesh. King salmon caught and retained for subsistence must be recorded on a fish ticket. Effective 6:00 p.m. Tuesday, July 11, in District 2, salmon may be taken only with gillnets of six-inch or less mesh for commercial purposes for two 2-hour periods from:

6:00 p.m. until 8:00 p.m. Tuesday, July 11

6:00 p.m. until 8:00 p.m. Thursday, July 13

---

EO Number: 3-S-SY-39-17

Effective Date: July 14, 2017

---

This emergency order opens the commercial salmon fishing season and prohibits the sale of king salmon in District 6 of the Upper Yukon Area effective 6:00 p.m. Friday, July 14, 2017.

---

EO Number: 3-S-SY-40-17

Effective Date: July 14, 2017

---

This emergency order establishes a commercial salmon schedule and allows the taking of salmon for commercial purposes in District 6 of the Upper Yukon Area. Fishermen may use gillnets of seven and one-half inch or less mesh and fish wheels. Effective 6:00 p.m. Friday, July 14, in District 6, commercial fishing will be open for two 42-hour fishing periods per week from 6:00 p.m. Mondays until 12:00 p.m. noon Wednesdays and from 6:00 p.m. Fridays until 12:00 p.m. noon Sundays.

Appendix A23.–List of emergency orders pertaining to the Fall Yukon in Districts 1-6 fall chum and coho salmon fishery, Yukon Area, 2017.

---

EO Number: 3-S-FY-01-17

Effective Date: July 16, 2017

---

Effective 4:00 a.m. Sunday, July 16, 2017, emergency order 3-S-SY-01-17 that restricted 4 inch mesh or less gillnets to a maximum of 60 feet in length for subsistence fishing in the Coastal District and Districts 1-3 is rescinded.

EO Number: 3-S-FY-02-17

Effective Date: July 16, 2017

---

Effective 4:00 a.m. Sunday, July 16, 2017, emergency order 3-S-SY-29-17 that closed subsistence fishing in Districts 1 and 2 two hours before, during, and after commercial periods is rescinded.

EO Number: 3-S-FY-03-17

Effective Date: July 21, 2017

---

Effective 8:00 a.m. Friday, July 21, the commercial salmon fishing season in District 3 is open.

EO Number: 3-S-FY-04-17

Effective date: July 16, 2017

---

Effective 12:01 a.m. Sunday, July 16, the closed waters in the portion of Yukon Area District 1 from Apoon Pass to the latitude of Point Romanof, are farther than three nautical miles seaward from any grassland bank. This emergency order also amends the District 1 boundaries described in 5 AAC 05.200(a) to include waters up to three nautical miles offshore and extend 1 nautical mile south from the mouth of the Black River for both commercial and subsistence fishing to be consistent with the commercial fishing boundaries described in 5 AAC 05.350.(2) Closed waters.

EO Number: 3-S-FY-05-17

Effective Date: July 17, 2017

---

A 12-hour commercial salmon fishing period is scheduled from 3:00 p.m. Monday, July 17, until 3:00 a.m. Tuesday, July 18, in District 1 including the Setnet Only Area. The provision contained in emergency order 3-S-SY-06-17 prohibiting the sale of incidentally caught king salmon is suspended for king salmon harvested during this period.

EO Number: 3-S-FY-06-17

Effective Date: July 20, 2017

---

A 12-hour commercial salmon fishing period is scheduled from 3:00 p.m. Thursday, July 20, until 3:00 a.m. Friday, July 21, in District 1 including the Setnet Only Area. The provision contained in emergency order 3-S-SY-06-17 prohibiting the sale of incidentally caught king salmon remains in effect for the remainder of the 2017 commercial fishery.

EO Number: 3-S-FY-07-17

Effective Date: July 21, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 10:00 p.m. Friday, July 21, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 3:00 p.m. Friday, July 21, and reopen at 10:00 a.m. Saturday, July 22. The sale of Chinook salmon is prohibited.

---

-continued-

EO Number: 3-S-FY-08-17

Effective Date: July 22, 2017

---

A 12-hour commercial salmon fishing period is scheduled from 3:00 p.m. Saturday, July 22, until 3:00 a.m. Sunday, July 23, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 12:00 noon Saturday, July 22, and reopen at 6:00 a.m. Sunday, July 23.

EO Number: 3-S-FY-09-17

Effective Date: July 25, 2017

---

Effective 6:00 p.m. Tuesday, July 25, this emergency order rescinds the portion of emergency order 3-S-SY-01-17 that restricted subsistence fishing with four inch mesh or less gillnets to a maximum of 60 feet in length in Subdistrict 4-A, and that portion of emergency order 3-S-SY-25-17 that placed subsistence salmon fishing in Yukon Area Subdistrict 4-A on a regulatory schedule of two 48-hour periods per week. Subsistence salmon fishing in Subdistrict 4-A will be on a weekly schedule from 6:00 p.m. Tuesdays until 6:00 p.m. Sundays.

EO Number: 3-S-FY-10-17

Effective Date: July 24, 2017

---

A 6-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 9:00 p.m. Monday, July 24, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 11:00 a.m. Monday, July 24, and reopen at 12:01 a.m. Tuesday, July 25.

EO Number: 3-S-FY-11-17

Effective Date: July 26, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 9:00 p.m. Wednesday, July 26, in District 2. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-12-17

Effective Date: July 29, 2017

---

This emergency order rescinds the provisions of 3-S-SY-34-17 fishing periods and live release fish wheel gear. Salmon may be taken in for one commercial period in Subdistrict 4-A from 12:01 a.m. Saturday, July 29, until 6:00 p.m. Sunday, August 6. Commercial fishermen may use set gillnets restricted to a maximum mesh size of six inches or fish wheels. This emergency order allows king salmon may be retained but not sold during the commercial fishery. Subsistence salmon fishing in Subdistrict 4-A will be open concurrently with this commercial period.

EO Number: 3-S-FY-13-17

Effective Date: July 30, 2017

---

Effective 6:00 p.m. Sunday, July 30, the commercial salmon fishing season is open in Subdistricts 4-B and 4-C.

EO Number: 3-S-FY-14-17

Effective Date: July 30, 2017

---

Effective 6:00 p.m. Sunday, July 30, this emergency order rescinds the portion of emergency order 3-S-SY-01-17 that restricted subsistence fishing with four inch mesh or less gillnets to a maximum of 60 feet in length in Subdistricts 4-B and 4-C, and that portion of emergency order 3-S-SY-26-17 that placed subsistence salmon fishing in Yukon Area Subdistricts 4-B and 4-C on a regulatory schedule of two 48-hour periods per week. Subsistence salmon fishing in Subdistricts 4-B and 4-C will be on a weekly schedule from 6:00 p.m. Sundays until 6:00 p.m. Fridays.

---

-continued-

EO Number: 3-S-FY-15-17

Effective Date: July 27, 2017

---

A 6-hour commercial salmon fishing period is scheduled from 4:00 p.m. until 10:00 p.m. Thursday, July 27, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 10:00 a.m. Thursday, July 27, and reopen at 4:00 a.m. Friday, July 28.

EO Number: 3-S-FY-16-17

Effective Date: July 29, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 8:00 p.m. Saturday, July 29, until 12:00 midnight Saturday, July 29, in District 2. For this commercial period, subsistence salmon fishing in District 1 will close at 3:00 p.m. Saturday, July 29, and reopen at 12:00 noon Sunday, July 30. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-17-17

Effective Date: July 31, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 9:00 p.m. Monday, July 31, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 3:00 p.m. Monday, July 31, and reopen at 9:00 a.m. Tuesday, August 1. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-18-17

Effective Date: August 2, 2017

---

A 9-hour commercial salmon fishing period is scheduled from 3:00 p.m. Wednesday, August 2, until 12:00 midnight Wednesday, August 2, in District 1 including the Setnet Only Area.

EO Number: 3-S-FY-19-17

Effective Date: August 4, 2017

---

Effective 6:00 p.m. Friday, August 4, the commercial salmon fishing season in Subdistricts 5-A, 5-B, and 5-C is open. Salmon may be taken in Subdistricts 5-B and 5-C from 6:00 p.m. Friday, August 4 until further notice. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-20-17

Effective Date: August 8, 2017

---

Effective 6:00 p.m. Tuesday, August 8, this emergency order rescinds the portion of emergency order 3-S-SY-01-17 that restricted subsistence fishing with four inch mesh or less gillnets to a maximum of 60 feet in length in Subdistricts 5-A, 5-B, and 5-C and that portion of emergency order 3-S-SY-32-17 that placed subsistence salmon fishing in Yukon Area Subdistricts 5-A, 5-B, and 5-C on a regulatory schedule of two 48-hour periods per week. Subsistence salmon fishing schedule in Subdistricts 5-A, 5-B, and 5-C is from 6:00 p.m. Tuesdays until 6:00 p.m. Sundays.

EO Number: 3-S-FY-21-17

Effective Date: August 4, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 4:00 p.m. until 8:00 p.m. Friday, August 4, in District 2. The sale of Chinook salmon is prohibited.

---

-continued-

EO Number: 3-S-FY-22-17

Effective Date: August 7, 2017

---

A 8-day commercial salmon fishing period is scheduled from 12:01 a.m. Monday, August 7, until 11:59 p.m. Monday, August 14 in Subdistrict 4-A. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-23-17

Effective Date: August 8, 2017

---

A 6-hour commercial salmon fishing period is scheduled from 2:00 p.m. until 8:00 p.m. Tuesday, August 8, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 12:00 noon Tuesday, August 8, and reopen at 8:00 a.m. Wednesday, August 9.

EO Number: 3-S-FY-24-17

Effective Date: August 9, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 9:00 p.m. Wednesday, August 9, in District 2. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-25-17

Effective Date: August 11, 2017

---

Effective 6:00 p.m. Friday, August 11, commercial salmon fishing in District 6 will be on a two 42-hour period per week schedule from 6:00 p.m. Fridays until 12:00 noon Sundays and from 6:00 p.m. Mondays until 12:00 noon Wednesdays. This emergency order rescinds 3-S-SY-40-17 and establishes a commercial salmon fishing schedule in Yukon Area District 6. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-26-17

Effective Date: August 10, 2017

---

Effective 12:01 a.m. Thursday, August 10, subsistence salmon fishing in District 4 is open seven days a week, 24 hours per day.

EO Number: 3-S-FY-27-17

Effective Date: August 13, 2017

---

Effective 6:00 p.m. Sunday, August 13, subsistence salmon fishing in Subdistricts 5-A, 5-B, and 5-C is open seven days a week, 24 hour per day.

EO Number: 3-S-FY-28-17

Effective Date: August 11, 2017

---

A 9-hour commercial salmon fishing period is scheduled from 1:00 p.m. until 10:00 p.m. Friday, August 11 in the Setnet Only Area of District 1. A 7-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 10:00 p.m. Friday, August 11 in the remainder of District 1. For this commercial period, subsistence salmon fishing in District 1 will close at 12:00 noon Friday, August 11, and reopen at 10:00 a.m. Saturday, August 12.

EO Number: 3-S-FY-29-17

Effective Date: August 12, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 10:00 p.m. Saturday, August 12, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 3:00 p.m. Saturday, August 12, and reopen at 10:00 a.m. Sunday, August 13.

---

-continued-

EO Number: 3-S-FY-30-17

Effective Date: August 13, 2017

---

A 2-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 7:00 p.m. Sunday, August 13, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 2:00 p.m. Sunday, August 13, and reopen at 7:00 a.m. Monday, August 14. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-31-17

Effective Date: August 15, 2017

---

A 1-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 4:00 p.m. Tuesday, August 15, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 1:00 p.m. Tuesday, August 15, and reopen at 6:00 p.m. Tuesday, August 15. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-32-17

Effective Date: August 15, 2017

---

A 3-hour commercial salmon fishing period is scheduled from 6:00 p.m. until 9:00 p.m. Tuesday, August 15, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 3:00 p.m. Tuesday, August 15, and reopen at 9:00 a.m. Wednesday, August 16.

EO Number: 3-S-FY-33-17

Effective Date: August 15, 2017

---

The previously announced District 1 commercial salmon fishing period in emergency order 3-S-FY-32-17 is extended by 2 hours and will now end at 11:00 p.m. Tuesday, August 15.

EO Number: 3-S-FY-34-17

Effective Date: August 16, 2017

---

A 4-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 9:00 p.m. Wednesday, August 16, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 1:00 p.m. Wednesday, August 16, and reopen at 9:00 a.m. Thursday, August 17. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-35-17

Effective Date: August 16, 2017

---

The previously announced District 2 commercial salmon fishing period in emergency order 3-S-FY-34-17 is reduced by 2 hours and will now be a 2-hour period from 7:00 p.m. until 9:00 p.m. Wednesday, August 16.

EO Number: 3-S-FY-36-17

Effective Date: August 11, 2017

---

This emergency order rescinds the portion of emergency order 3-S-SY-01-17 that restricted subsistence fishing with four inch mesh or less gillnets to a maximum of 60 feet in length. This emergency order will be effective 6:00 p.m. Friday, August 11 in District 6 and effective 12:01 a.m. Monday, August 14 in Subdistrict 5-D.

EO Number: 3-S-FY-37-17

Effective Date: August 18, 2017

---

A 8-hour commercial salmon fishing period is scheduled from 2:00 p.m. until 10:00 p.m. Friday, August 18, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 12:00 p.m. Friday, August 18, and reopen at 10:00 a.m. Saturday, August 19. The sale of Chinook salmon is prohibited.

---

-continued-

EO Number: 3-S-FY-38-17

Effective Date: August 20, 2017

A 9-hour commercial salmon fishing period is scheduled from 12:00 p.m. until 9:00 p.m. Sunday, August 20, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 9:00 a.m. Sunday, August 20, and reopen at 11:00 p.m. Sunday, August 20.

EO Number: 3-S-FY-39-17

Effective Date: August 22, 2017

A 3-hour commercial salmon fishing period is scheduled from 1:00 p.m. until 4:00 p.m. Tuesday, August 22, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 12:00 noon Tuesday, August 21, and reopen at 10:00 a.m. Wednesday, August 23. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-40-17

Effective Date: August 22, 2017

A 4-hour commercial salmon fishing period is scheduled from 5:00 p.m. until 9:00 p.m. Tuesday, August 22, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 4:00 p.m. Tuesday, August 22, and reopen at 11:00 p.m. Tuesday, August 22.

EO Number: 3-S-FY-41-17

Effective Date: August 22, 2017

This emergency order extends the current commercial salmon fishing period in District 2 scheduled in emergency order 3-S-FY-39-17 for 2 hours. The current period will close at 6:00 p.m. Tuesday, August 22 in District 2. All other provisions in emergency order 3-S-FY-39-17 remain in effect.

EO Number: 3-S-FY-42-17

Effective Date: August 23, 2017

A 6-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 9:00 p.m. Wednesday, August 23, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 2:00 p.m. Wednesday, August 23, and reopen at 11:00 p.m. Wednesday, August 23. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-43-17

Effective Date: August 24, 2017

A 7-hour commercial salmon fishing period is scheduled from 2:00 p.m. until 9:00 p.m. Thursday, August 24, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 1:00 p.m. Thursday, August 24, and reopen at 9:00 p.m. Thursday, August 24. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-44-17

Effective Date: August 25, 2017

A 6-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 9:00 p.m. Friday, August 25, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 2:00 p.m. Friday, August 25, and reopen at 11:00 p.m. Friday, August 25.

---

-continued-

EO Number: 3-S-FY-45-17

Effective Date: August 27, 2017

---

A 6-hour commercial salmon fishing period is scheduled from 3:00 p.m. until 9:00 p.m. Sunday, August 27, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 1:00 p.m. Sunday, August 27, and reopen at 11:00 p.m. Sunday, August 27.

EO Number: 3-S-FY-46-17

Effective Date: August 27, 2017

---

A 3-hour commercial salmon fishing period is scheduled from 4:00 p.m. until 7:00 p.m. Sunday, August 27, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 2:00 p.m. Sunday, August 27, and reopen at 9:00 p.m. Sunday, August 27. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-47-17

Effective Date: August 28, 2017

---

A 8-hour commercial salmon fishing period is scheduled from 1:00 p.m. until 9:00 p.m. Monday, August 28, in District 2. For this commercial period, subsistence salmon fishing in District 2 will close at 1:00 p.m. Monday, August 28, and reopen at 11:00 p.m. Monday, August 28. The sale of Chinook salmon is prohibited.

EO Number: 3-S-FY-48-17

Effective Date: August 30, 2017

---

A 9-hour commercial salmon fishing period is scheduled from 12:00 p.m. until 9:00 p.m. Wednesday, August 30, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 10:00 a.m. Wednesday, August 30, and reopen at 11:00 p.m. Wednesday, August 30.

EO Number: 3-S-FY-49-17

Effective Date: August 31, 2017

---

A 6-hour commercial salmon fishing period is scheduled from 2:00 p.m. until 8:00 p.m. Thursday, August 31, in District 1 including the Setnet Only Area. For this commercial period, subsistence salmon fishing in District 1 will close at 12:00 noon Thursday, August 31, and reopen at 10:00 p.m. Thursday, August 31. For this commercial period, subsistence fishing with all gillnets in the Pastolik and Pastoliak Rivers, and within 500 yards of the mouths of both rivers, is closed from 12:00 noon Thursday, August 31 until 10:00 p.m. Thursday, August 31.

EO Number: 3-S-FY-50-17

Effective Date: September 3, 2017

---

This emergency order establishes two commercial salmon fishing periods in Yukon Area District 1. Salmon may be taken in District 1, including the Setnet Only Area, from 2:00 p.m. until 8:00 p.m. Sunday, September 3, and again from 2:00 p.m. until 8:00 p.m. Wednesday, September 6. For these commercial periods, subsistence salmon fishing in District 1 will close at 12:00 noon Sunday, September 3, and reopen at 10:00 p.m. Sunday, September 3, and be closed again from 12:00 noon Wednesday, September 6 until 10:00 p.m. Wednesday, September 6. For these commercial periods, subsistence fishing for non-salmon species with gillnets in the Pastolik and Pastoliak Rivers, and within 500 yards of the mouths of both rivers, is closed from 12:00 noon Sunday, September 3, and reopen at 10:00 p.m. Sunday, September 3, and be closed again from 12:00 noon Wednesday, September 6 until 10:00 p.m. Wednesday, September 6.

---

-continued-

EO Number: 3-S-FY-51-17

Effective Date: September 4, 2017

---

Effective 12:00 noon Monday, September 4, subsistence salmon fishing in the mainstem Porcupine River will be open from 12:00 noon Mondays until 12:00 noon Fridays.

EO Number: 3-S-FY-52-17

Effective Date: September 27, 2017

---

The commercial fishing period in District 6 that is scheduled to close at 12:00 noon Wednesday, September 27 will remain open until 6:00 p.m. Friday, September 30. All other provisions contained in emergency order 3-S-FY-25-17 remain in effect.

EO Number: 3-S-FY-53-17

Effective Date: September 30, 2017

---

Effective 11:59 p.m. Saturday, September 30, the commercial salmon fishing season in Districts 4 and 5 will close.

EO Number: 3-S-FY-54-17

Effective Date: October 1, 2017

---

Effective 12:00 noon Wednesday, September 27, subsistence salmon fishing in District 6, and personal use salmon fishing in Subdistrict 6-C will be open seven days a week, 24 hours per day.

EO Number: 3-S-FY-55-17

Effective Date: October 1, 2017

---

Effective 12:01 a.m. Sunday, October 1, the coho salmon directed commercial fishing season will open in District 6, and close at 11:59 p.m. Thursday, October 5. Salmon may be taken in District 6 for one period from 8:00 a.m. Tuesday, October 3, until 4:00 p.m. Wednesday, October 4. This commercial fishing period will occur concurrently with the subsistence and personal use fishing periods.



## **APPENDIX B**

Appendix B1.—Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1997–2017.

Year	Unrestricted Mesh Size <sup>a,b</sup>			7.5-inch Maximum Mesh Size <sup>a,c</sup>				6-inch Maximum Mesh Size <sup>a</sup>			Selective Gear <sup>d</sup>
	Chinook			Summer Chum	Chinook			Summer Chum	Chinook	Summer Chum	Summer Chum
	District 1	District 2	Total	Districts 1 and 2	District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1997	63,062	39,052	102,114	49,953					3,611	28,204	
1998	24,202	16,806	41,008	20,314					1,211	7,804	
1999	37,145	27,119	64,264	27,883							
2000	4,735	3,783	8,518	6,624							
2001	—	—	—	—	—	—	—	—	—	—	
2002	11,089	11,440	22,529	10,354							
2003	22,708	14,220	36,928	6,162							
2004	28,401	24,145	52,546	19,775							
2005	16,619	13,413	30,032	32,278							
2006	23,728	19,356	43,084	35,574					478	11,785	
2007	13,558	9,238	22,796	11,311					9,121	164,911	
2008									4,348	125,598	
2009	<sup>e</sup>								131	157,906	
2010									9,897	183,215	
2011	<sup>e</sup>								0	266,510	
2012	<sup>e</sup>								0	207,849	
2013	<sup>e, f</sup>								0	189,935	189,208
2014	<sup>e, f</sup>								0	154,498	272,849
2015	<sup>e, f</sup>								0	126,872	227,214
2016	<sup>e, f</sup>								0	340,643	181,146
2017	<sup>e, f</sup>								0	258,122	135,043
<hr/>											
2012–2016											
Average									0	203,959	217,604
2007–2016											
Average	13,558	9,238	22,796	11,311					2,350	191,794	

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate either insufficient information to generate average, or commercial fishing did occur but gear type was not allowed. ADF&G test fishery sales are not included.

<sup>a</sup> Does not include Chinook caught during the fall season fishery.

<sup>b</sup> Primarily 8.0 to 8.5-inch mesh size used from early June to early July.

<sup>c</sup> In 2010, the BOF adopted new regulation stating the maximum mesh size of gillnets to be used within the Yukon River drainage was 7.5 inches. This went into effect for the 2011 fishing season.

<sup>d</sup> In 2013, the BOF adopted the use of dip nets and beach seines in the summer chum directed commercial fishery. Chinook salmon must be released alive from these gear types.

<sup>e</sup> In summer chum directed commercial fisheries with gillnets restricted to 6-inch maximum mesh size, the sale of incidentally caught Chinook salmon was prohibited throughout portions or all of the summer season.

<sup>f</sup> In 2013, the BOF adopted new gear types for use in the summer chum directed commercial fishery: dip nets, beach seines, and 5.5-inch mesh gillnets not exceeding 30 meshes in depth.

Appendix B2.–Commercial Chinook salmon harvest (in numbers of fish) for fall and summer seasons combined by statistical area, Lower Yukon Area, 1997–2017.

District 1									
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1997	4,570	5,865	2,844	6,648	12,460	4,703	21,443	7,851	66,384
1998	226	1,741	654	1,591	7,264	1,934	7,822	4,181	25,413
1999	1,454	2,604	3,112	3,798	4,057	935	13,130	8,071	37,161
2000	78	1,057	144	389	640	85	1,259	1,083	4,735
2001	–	–	–	–	–	–	–	–	–
2002	1,001	1,271	449	742	2,993	69	2,338	2,224	11,087
2003	1,601	4,714	1,089	1,514	4,756	437	3,518	5,080	22,709
2004	975	2,505	1,965	1,502	4,285	1,783	9,270	6,118	28,403
2005	2,137	1,531	944	592	2,580	1,650	3,926	3,334	16,694
2006	2,252	2,106	1,558	928	3,507	2,476	6,201	4,720	23,748
2007	1,116	1,419	1,555	855	4,890	1,168	5,828	1,785	18,616
2008	50	440	209	263	372	226	628	342	2,530
2009	1	16	4	3	36	17	10	3	90
2010	252	824	213	358	1,266	985	1,570	276	5,744
2011	1	8	1	0	4	17	4	1	36
2012	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0
2017	0	26	4	13	51	46	28	0	168
2012–2016									
Average	0	0	0	0	0	0	0	0	0
2007–2016									
Average	142	271	198	148	657	241	804	241	2,702

-continued-

Appendix B2.–Page 2 of 2.

Year	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1997	13,939	13,344	2,280	6,104	3,696	39,363	–	–	–
1998	2,203	6,081	2,245	4,613	1,664	16,806	0	0	0
1999	4,666	8,565	2,623	6,923	4,356	27,133	0	538	538
2000	1,433	964	415	457	511	3,780	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	2,140	3,044	1,992	2,712	1,546	11,434	–	–	–
2003	2,965	5,454	993	2,104	2,704	14,220	–	–	–
2004	5,879	8,326	3,459	3,819	2,662	24,145	–	–	–
2005	3,292	5,905	1,397	347	2,472	13,413	–	–	–
2006	3,750	8,457	2,700	3,425	1,511	19,843	315	0	315
2007	2,818	5,509	2,458	1,375	1,146	13,306	190	0	190
2008	420	654	670	252	115	2,111	–	–	–
2009	39	106	56	2	23	226	–	–	–
2010	389	1,690	890	1,184	0	4,153	–	–	–
2011	2	16	6	22	0	46	–	–	–
2012	0	0	0	0	0	0	–	–	–
2013	0	0	0	0	0	0	–	–	–
2014	0	0	0	0	0	0	–	–	–
2015	0	0	0	0	0	0	–	–	–
2016	0	0	0	0	0	0	–	–	–
2017	0	0	0	0	0	0	–	–	–
2012–2016									
Average	0	0	0	0	0	0			
2007–2016									
Average	367	798	408	284	128	1,804	190	0	190

*Note:* En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average. ADF&G test fishery sales not included. Values include Chinook salmon harvested in both summer and fall seasons. ADF&G test fishery sales not included.

Appendix B3.—Commercial summer chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1997–2017.

District 1									
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1997	10,764	9,519	6,190	10,374	5,429	1,650	10,719	5,270	59,915
1998	54	2,583	441	2,275	5,115	730	6,601	3,471	21,270
1999	1,128	1,667	1,653	2,979	816	141	3,845	3,952	16,181
2000	146	537	207	650	631	60	546	538	3,315
2001	—	—	—	—	—	—	—	—	—
2002	193	1,303	374	1,519	858	4	1,277	799	6,327
2003	90	588	117	292	690	188	566	1,048	3,579
2004	667	885	1,446	904	2,694	870	4,171	2,356	13,993
2005	4,260	2,791	1,658	2,697	3,631	1,985	3,970	2,973	23,965
2006	4,310	3,181	1,915	899	2,315	1,441	4,382	3,373	21,816
2007	3,724	15,690	14,297	10,746	15,816	8,801	25,753	11,963	106,790
2008	1,200	9,216	5,521	9,224	6,219	5,937	17,423	12,719	67,459
2009	730	7,457	9,120	9,569	12,979	4,930	23,532	3,018	71,335
2010	3,881	19,138	5,707	12,405	12,116	9,484	32,994	6,542	102,267
2011	150	28,715	20,807	39,517	19,948	10,720	35,634	7,948	163,439
2012	4,240	43,096	21,516	25,364	1,126	432	53,037	1,989	150,800
2013	36	55,130	20,303	35,431	19,303	6,198	67,662	3,808	207,871
2014	16,781	52,300	14,698	27,699	12,182	761	61,940	11,879	198,240
2015	18,693	33,245	8,485	19,045	17,974	7,414	47,244	20,539	172,639
2016	24,855	39,657	31,585	29,592	27,717	20,964	105,501	13,651	293,522
2017	13,769	46,543	20,718	31,578	34,659	31,913	138,283	27,932	345,395
2012–2016									
Average	12,921	44,686	19,317	27,426	15,660	7,154	67,077	10,373	204,614
2007–2016									
Average	7,429	30,364	15,204	21,859	14,538	7,564	47,072	9,406	153,436

-continued-

Appendix B3.–Page 2 of 2.

Year	District 2						District 3		
							334-31		Estimated Harvest <sup>a</sup>
	334-21	334-22	334-23	334-24	334-25	Total	Number	Roe	
1997	7,126	7,938	673	1,667	838	18,242	–	–	–
1998	710	2,350	1,079	2,351	358	6,848	0	0	0
1999	1,758	3,269	1,457	3,415	1,803	11,702	0	0	0
2000	1,552	961	327	220	249	3,309	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	1,105	997	862	794	269	4,027	–	–	–
2003	1,153	855	218	181	176	2,583	–	–	–
2004	1,724	1,439	1,350	1,061	208	5,782	–	–	–
2005	2,852	3,978	850	105	528	8,313	–	–	–
2006	6,325	10,523	2,080	5,805	810	25,543	116	0	116
2007	21,356	32,583	9,310	1,740	4,443	69,432	1	0	1
2008	15,326	14,017	16,781	10,145	1,870	58,139	–	–	–
2009	13,583	48,571	19,717	3,053	1,647	86,571	–	–	–
2010	9,575	23,029	14,474	33,870	0	80,948	–	–	–
2011	15,959	27,109	20,506	37,868	1,629	103,071	–	–	–
2012	12,129	20,952	12,317	11,651	0	57,049	–	–	–
2013	10,458	96,662	29,860	34,292	0	171,272	–	–	–
2014	22,806	94,595	50,069	61,637	0	229,107	–	–	–
2015	15,708	74,315	43,855	38,827	8,742	181,447	–	–	–
2016	22,739	102,263	42,503	50,073	10,689	228,267	–	–	–
2017	5,744	31,990	3,925	5,218	893	47,770	–	–	–
2012–2016									
Average	16,768	77,757	35,721	39,296	3,886	173,428	–	–	–
2007–2016									
Average	15,964	53,410	25,939	28,316	2,902	126,530	1	0	1

*Note:* En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average. ADF&G test fishery sales not included.

<sup>a</sup> Estimated harvest includes both males and females harvested to produce roe sold.

Appendix B4.–Commercial fall chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1997–2017.

	District 1									
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	334-19 <sup>a</sup>	Total
1997	0	2,870	3,452	3,768	3,943	1,596	6,747	5,107		27,483
1998	—	—	—	—	—	—	—	—		—
1999	4	1,931	474	1,182	1,934	1,439	1,103	1,920		9,987
2000	—	—	—	—	—	—	—	—		—
2001	—	—	—	—	—	—	—	—		—
2002	—	—	—	—	—	—	—	—		—
2003	0	2,784	177	310	958	0	381	976		5,586
2004	0	509	25	67	0	0	19	40		660
2005	117	16,840	8,735	25,330	8,253	31,864	29,546	9,840		130,525
2006	163	16,212	9,929	9,973	7,538	9,568	32,200	15,671		101,254
2007	0	6,395	8,550	4,951	1,423	2,130	12,562	2,841		38,852
2008	22	16,471	6,018	9,138	5,152	7,090	16,072	7,741		67,704
2009	66	1,355	457	301	4,576	2,118	2,415	623		11,911
2010	0	211	0	13	83	10	167	61		545
2011	11	10,019	3,673	10,142	34,153	35,432	27,230	7,075		127,735
2012	2,068	34,698	4,039	12,305	23,870	11,351	37,810	13,701		139,842
2013	240	21,188	7,304	11,192	12,175	5,484	43,824	5,181		106,588
2014	658	8,509	2,659	6,092	6,193	2,643	19,391	5,684		51,829
2015	9,666	21,198	6,032	6,450	13,118	11,488	26,401	6,209		100,562
2016	2,758	60,695	15,780	19,998	19,537	13,461	68,882	25,465	0	226,576
2017	2,195	66,241	35,177	27,291	46,009	32,711	98,773	20,013	0	328,410
2012-2016										
Average	3,078	29,258	7,163	11,207	14,979	8,885	39,262	11,248		125,079
2007-2016										
Average	1,549	18,074	5,451	8,058	12,028	9,121	25,475	7,458		87,214

-continued-

Appendix B4.–Page 2 of 2.

Year	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1997	5,040	9,827	2,316	5,972	1,171	24,326	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	1,536	2,836	3,254	1,910	167	9,703	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	3,362	21,069	11,060	4,414	0	39,905	–	–	–
2007	8,619	17,068	8,245	1,894	0	35,826	–	–	–
2008	10,027	11,630	11,507	7,424	682	41,270	–	–	–
2009	1,107	7,988	1,593	235	1,149	12,072	–	–	–
2010	3	27	165	0	75	270	–	–	–
2011	14,239	33,639	18,123	32,063	2,667	100,731	–	–	–
2012	14,454	34,658	26,646	53,526	0	129,284	–	–	–
2013	18,476	27,663	16,379	40,955	2,801	106,274	–	–	–
2014	5,949	19,112	11,186	22,891	0	59,138	–	–	–
2015	8,450	20,433	21,486	22,702	1,143	74,214	–	–	–
2016	37,155	104,917	44,412	7,383	19,473	213,340	–	–	–
2017	11,613	47,318	44,301	27,400	4,036	134,668	–	–	–
2012-2016									
Average	16,897	41,357	24,022	29,491	4,683	116,450			
2007-2016									
Average	11,848	27,714	15,974	18,907	2,799	77,242			

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average. ADF&G test fishery sales not included.

<sup>a</sup> Statistical area 334-19 was created in 2016.

Appendix B5.–Commercial coho salmon harvest (in numbers of fish) by statistical area, Yukon Area, 1997–2017.

Year	District 1									Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	334-19 <sup>a</sup>	
1997	0	1,355	2,322	2,414	2,742	4,153	5,180	3,284		21,450
1998	–	–	–	–	–	–	–	–		–
1999	3	261	36	45	184	176	88	62		855
2000	–	–	–	–	–	–	–	–		–
2001	–	–	–	–	–	–	–	–		–
2002	–	–	–	–	–	–	–	–		–
2003	0	4,890	305	656	1,939	0	576	1,391		9,757
2004	128	772	201	290	0	0	50	142		1,583
2005	98	4,249	1,069	4,020	1,560	17,728	6,615	1,194		36,533
2006	7	3,034	2,467	2,315	3,508	15,280	10,196	2,516		39,323
2007	0	1,320	2,361	1,983	993	6,331	7,091	1,641		21,720
2008	35	3,122	1,024	1,274	838	2,456	3,712	1,485		13,946
2009	0	227	124	11	1,566	2,486	1,493	87		5,994
2010	0	204	5	6	142	102	445	123		1,027
2011	21	5,257	1,851	4,696	9,424	9,101	12,724	2,261		45,335
2012	33	3,739	331	1,229	8,683	7,241	14,523	3,978		39,757
2013	33	4,995	1,248	2,360	4,810	2,609	9,993	1,258		27,306
2014	712	5,380	3,441	4,648	9,127	5,286	20,007	6,203		54,804
2015	6,176	12,451	2,606	3,897	8,589	9,072	19,200	4,038		66,029
2016	2,302	24,930	9,529	3,424	14,313	19,005	29,352	10,814	0	113,669
2017	1,097	15,411	5,529	1,771	10,685	28,437	27,993	5,059	0	95,982
2012-2016										
Average	1,851	10,299	3,431	3,112	9,104	8,643	18,615	5,258		60,313
2007-2016										
Average	931	6,163	2,252	2,353	5,849	6,369	11,854	3,189		38,959

-continued-

Appendix B5.–Page 2 of 2.

Year	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1997	2,197	6,449	1,238	3,025	147	13,056	–	–	–
1998	–	–	–	–	–	–	–	–	–
1999	147	238	248	65	48	746	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	2,138	7,250	3,745	1,349	0	14,482	–	–	–
2007	4,195	12,354	3,253	1,685	0	21,487	–	–	–
2008	3,275	6,076	4,594	4,680	621	19,246	–	–	–
2009	370	1,085	100	8	19	1,582	–	–	–
2010	7	105	606	0	305	1,023	–	–	–
2011	6,184	8,091	3,705	5,987	217	24,184	–	–	–
2012	4,748	10,750	5,584	7,981	0	29,063	–	–	–
2013	3,951	11,041	7,225	8,911	330	31,458	–	–	–
2014	5,397	19,757	12,310	11,138	0	48,602	–	–	–
2015	6,566	21,057	14,355	11,027	1,855	54,860	–	–	–
2016	14,666	30,970	17,886	2,645	1,041	67,208	–	–	–
2017	4,506	15,619	7,035	5,940	177	33,277	–	–	–
2012-2016									
Average	7,066	18,715	11,472	8,340	645	46,238			
2007-2016									
Average	4,936	12,129	6,962	5,406	439	29,871			

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average. ADF&G test fishery sales not included.

<sup>a</sup> Statistical area 334-19 was created in 2016.

Appendix B6.–Commercial pink salmon harvest by statistical area, Lower Yukon Area, 1997–2017.

Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	334-19 <sup>a</sup>	Total
1997	0	0	0	0	0	0	0	0		0
1998	0	0	0	0	0	0	0	0		0
1999	0	0	0	0	0	0	0	0		0
2000	0	0	0	0	0	0	0	0		0
2001	–	–	–	–	–	–	–	–		–
2002	0	0	0	0	0	0	0	0		0
2003	0	0	0	0	0	0	0	0		0
2004	0	0	0	0	0	0	0	0		0
2005	0	0	0	0	0	0	0	0		0
2006	0	0	0	0	0	0	0	0		0
2007	0	0	0	0	0	0	0	0		0
2008	1,341	4,128	858	1,095	2,376	1,858	1,441	294		13,391
2009	0	0	0	0	0	0	0	0		0
2010	0	0	0	0	0	0	0	0		0
2011	0	0	0	0	0	0	0	0		0
2012	0	0	0	0	0	0	0	0		0
2013	0	0	0	0	0	0	0	0		0
2014	7,531	26,685	2,265	3,391	3,318	56	5,678	393		49,317
2015	4,139	2,484	44	72	187	248	100	52		7,326
2016	16,494	61,702	7,173	3,934	7,758	12,585	14,469	955	0	125,070
2017	0	0	0	0	0	0	0	0	0	0
2012-2016										
Average	5,633	18,174	1,896	1,479	2,253	2,578	4,049	280		36,343
2007-2016										
Average	2,951	9,500	1,034	849	1,364	1,475	2,169	169		19,510

-continued-

Appendix B6.–Page 2 of 2.

Year	334-21	334-22	334-23	334-24	334-25	Total
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	–	–	–	–	–	–
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	346	363	0	0	0	709
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	1,216	4,213	5	0	0	5,434
2015	17	35	0	0	0	52
2016	1,091	1,177	0	0	0	2,268
2017	0	0	0	0	0	0
2012-2016						
Average	465	1,085	1	0	0	1,551
2007-2016						
Average	267	579	1	0	0	846

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

<sup>a</sup> Statistical area 334-19 was created in 2016.

Appendix B7.–Daily and cumulative CPUE for Chinook salmon in the 8.5-inch set gillnet test fishery, Big Eddy and Middle Mouth sites combined, lower Yukon River, 2017.

Chinook Salmon in 8.5" Set Gillnets						
Date	2017				Average 1989–2016 <sup>a</sup>	
	Daily Catch	Daily CPUE	Cumulative CPUE	Proportion	Cumulative CPUE	Proportion
5/29	0	0.00	0.00	0.00	0.22	0.01
5/30	0	0.00	0.00	0.00	0.35	0.01
5/31	0	0.00	0.00	0.00	0.48	0.02
6/1	2	0.08	0.08	0.00	0.56	0.02
6/2	1	0.04	0.13	0.00	0.74	0.03
6/3	2	0.08	0.21	0.01	0.87	0.04
6/4	5	0.21	0.42	0.01	1.02	0.04
6/5	9	0.38	0.79	0.03	1.24	0.05
6/6	19	0.59	1.39	0.05	1.56	0.06
6/7	19	0.40	1.78	0.06	1.93	0.08
6/8	6	0.13	1.91	0.07	2.24	0.09
6/9	31	0.67	2.58	0.09	2.83	0.12
6/10	54	0.75	3.33	0.12	3.35	0.14
6/11	43	0.90	4.23	0.15	3.89	0.16
6/12	75	1.56	5.79	0.21	4.60	0.19
6/13	62	1.29	7.08	0.25	5.42	0.22
6/14	48	1.00	8.08	0.29	6.22	0.26
6/15	14	0.39	8.47	0.30	7.02	0.29
6/16	54	1.13	9.59	0.34	7.95	0.33
6/17	65	1.35	10.95	0.39	8.88	0.36
6/18	70	1.46	12.41	0.44	9.89	0.41
6/19	56	1.17	13.57	0.49	10.80	0.44
6/20	55	1.15	14.72	0.53	11.70	0.48
6/21	56	1.17	15.89	0.57	12.71	0.52
6/22	39	0.81	16.70	0.60	13.71	0.56
6/23	32	0.67	17.36	0.62	14.75	0.60
6/24	70	1.46	18.82	0.67	15.80	0.65
6/25	59	1.23	20.05	0.72	16.79	0.69
6/26	40	0.83	20.89	0.75	17.80	0.73
6/27	61	1.27	22.16	0.79	18.64	0.76
6/28	31	0.86	23.02	0.83	19.47	0.80
6/29	29 <sup>b</sup>	1.21	24.23	0.87	20.18	0.83
6/30	12	0.50	24.73	0.89	20.76	0.85
7/1	7	0.29	25.02	0.90	21.33	0.87
7/2	16	0.67	25.68	0.92	21.88	0.90
7/3	2	0.08	25.77	0.92	22.36	0.92
7/4	7	0.29	26.06	0.93	22.73	0.93
7/5	6	0.25	26.31	0.94	23.04	0.95

-continued-

Appendix B7.–Page 2 of 2.

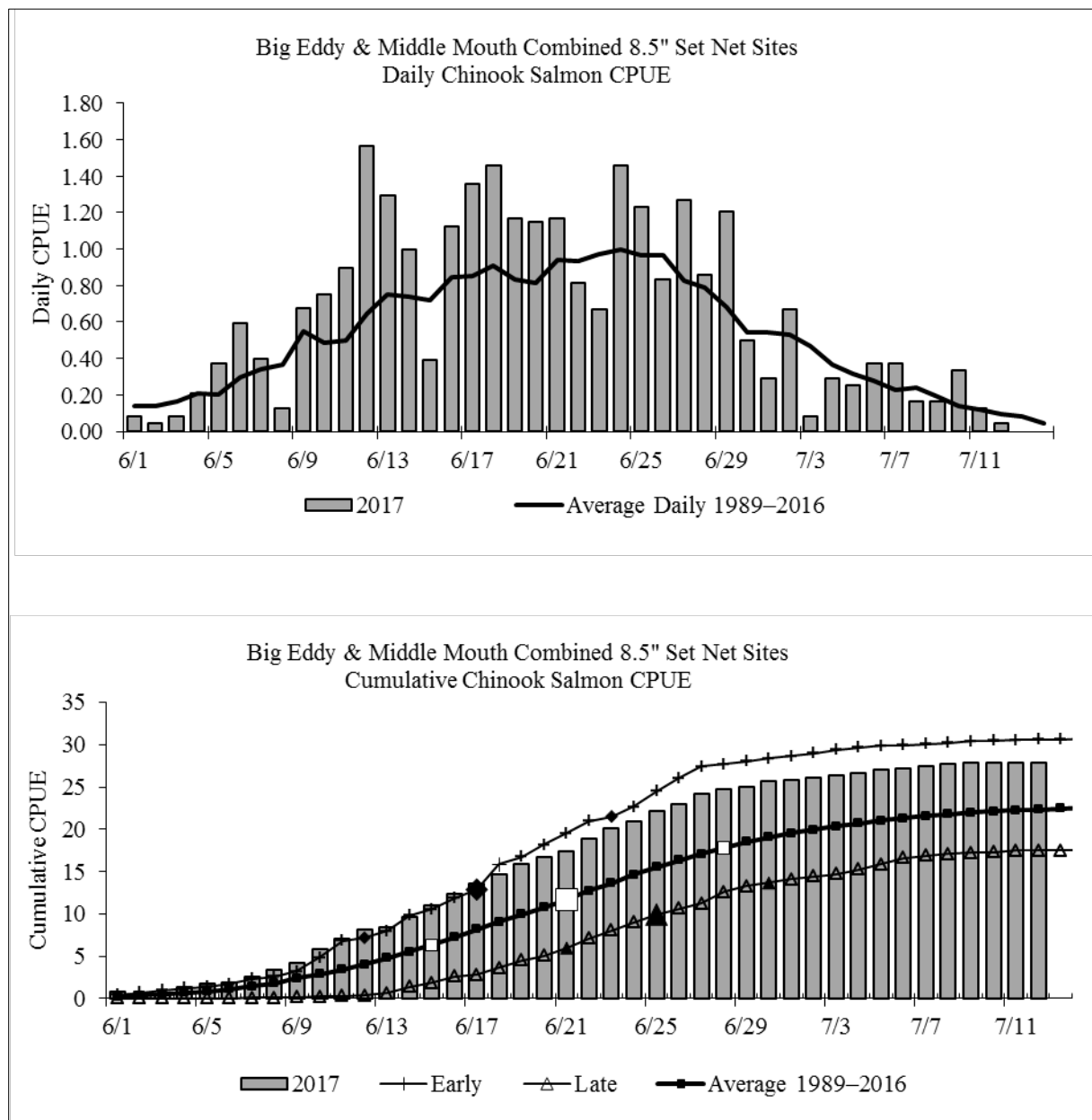
Chinook Salmon in 8.5" Set Gillnets						
Date	2017				Average 1989–2016 <sup>a</sup>	
	Daily Catch	Daily CPUE	Cumulative CPUE	Proportion	Cumulative CPUE	Proportion
7/6	9	0.38	26.68	0.96	23.32	0.96
7/7	9	0.38	27.06	0.97	23.55	0.97
7/8	4	0.17	27.23	0.98	23.78	0.98
7/9	4	0.17	27.39	0.98	23.96	0.98
7/10	8	0.33	27.73	0.99	24.09	0.99
7/11	3	0.13	27.85	1.00	24.21	0.99
7/12	1	0.04	27.89	1.00	24.29	1.00
7/13	0	0.00	27.89	1.00	24.38	1.00
Total	1,195		27.89		24.38	

*Note:* The box within the cumulative CPUE column indicates the first quarter point, midpoint, and third quarter point of the cumulative CPUE.

<sup>a</sup> Historical average includes years 1989–2000, 2002–2008, and 2010–2011.

<sup>b</sup> Last day of operation for the Big Eddy setnet site.

Appendix B8.—Daily and cumulative CPUE for the 2017 Chinook salmon set gillnet test fishery compared to the average daily and cumulative CPUE from 1989–2017.



*Note:* The symbols along the cumulative index lines represent the first quarter point, midpoint, and third quarter point of the cumulative index. Historical averages do not include 2001, 2009, and 2012–2016. In 2015, the setnet site at the Big Eddy site was discontinued after June 29 and only the setnet operated at the Middle Mouth site was used for the remainder of the season.

Appendix B9.—Daily and cumulative CPUE for summer chum salmon in the cooperative 5.5-inch mesh drift gillnet test fishery, Big Eddy and Middle Mouth sites combined, lower Yukon River, 2017.

Summer Chum Salmon in 5.5" Drift Gillnet												
Date	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined			
	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE
5/25	0	0.00	0.00	0.00					0	10.26	0.00	10.26
5/26	1	1.54	0.00	1.54					1	0.00	0.00	10.26
5/27	0	0.00	0.00	1.54					0	0.00	0.00	10.26
5/28	4	6.32	0.00	7.85					4	1.50	0.00	11.76
5/29	6	9.23	0.00	17.09					6	6.15	0.00	17.91
5/30	15	23.20	0.00	40.28					15	0.00	0.00	17.91
5/31	9	14.13	0.00	54.41					9	1.54	0.00	19.44
6/1	9	14.01	0.00	68.42					9	0.00	0.00	19.44
6/2	5	7.69	0.00	76.11					5	0.00	0.00	19.44
6/3	9	14.17	0.00	90.28					9	19.54	0.00	38.98
6/4	2	3.16	0.00	93.44					2	10.35	0.00	49.34
6/5	1	6.32	0.00	99.76	0	0.00			1	79.65	0.01	128.99
6/6	19	29.23	0.00	128.99	0	0.00			19	54.00	0.01	182.99
6/7	54	100.99	0.01	229.98	48	63.62	0.02	63.62	102	166.39	0.03	349.37
6/8	25	37.73	0.01	267.71	3	4.54	0.02	68.17	28	40.24	0.03	389.61
6/9	79	129.75	0.01	397.46	11	17.37	0.03	85.53	90	31.74	0.03	421.35
6/10	68	212.31	0.02	609.77	5	15.08	0.03	100.62	73	45.63	0.03	466.98 <sup>a</sup>
6/11	103	164.03	0.03	773.80	2	2.79	0.03	103.41	105	13.59	0.03	480.57
6/12	121	3260.00	0.15	4,033.80	81	240.95	0.10	344.36	202	66.79	0.04	547.36 <sup>a</sup>
6/13	107	3092.00	0.27	7,125.80	51	73.37	0.12	417.73	158	241.76	0.06	789.12 <sup>a</sup>
6/14	66	420.87	0.28	7,546.67	91	140.37	0.17	558.10	157	216.37	0.07	1,005.49 <sup>a</sup>
6/15	57	175.38	0.29	7,722.05	81	111.56	0.20	669.67	138	283.75	0.09	1,289.24 <sup>a</sup>
6/16	156	3787.69	0.43	11,509.74	241	394.20	0.32	1063.87	397	526.04	0.13	1,815.29 <sup>a</sup>
6/17	116	3123.08	0.55	14,632.82	73	110.94	0.35	1174.81	189	1,032.79	0.20	2,848.08 <sup>a</sup>
6/18	78	242.59	0.56	14,875.41	67	95.72	0.38	1270.53	145	274.35	0.22	3,122.42 <sup>a</sup>
6/19	91	1586.67	0.62	16,462.08	159	295.81	0.46	1566.34	250	49.55	0.23	3,171.98 <sup>a</sup>
6/20	94	1633.71	0.68	18,095.79	77	110.41	0.50	1676.75	171	28.74	0.23	3,200.72 <sup>a</sup>
6/21	55	335.34	0.70	18,431.13	248	407.32	0.62	2084.07	303	1,457.75	0.33	4,658.46 <sup>a</sup>
6/22	60	157.83	0.70	18,588.96	147	218.71	0.68	2302.78	207	256.65	0.35	4,915.11

-continued-

Appendix B9.–Page 2 of 2.

179

Summer Chum Salmon in 5.5" Drift Gillnet												
Date	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined			
	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE
6/23	109	192.82	0.71	18,781.78	25	38.89	0.69	2,341.68	134	231.72	0.37	5,146.83
6/24	145	1,482.38	0.76	20,264.16	50	78.98	0.72	2,420.66	195	1561.36	0.48	6,708.19
6/25	82	354.13	0.78	20,618.29	69	96.96	0.75	2,517.62	151	451.09	0.51	7,159.28
6/26	53	161.85	0.78	20,780.14	15	23.28	0.75	2,540.90	68	185.12	0.53	7,344.40
6/27	71	1,174.29	0.83	21,954.42	130	256.01	0.83	2,796.91	201	1430.29	0.63	8,774.70
6/28	10	31.58	0.83	21,986.00	108	166.53	0.88	2,963.44	118	198.11	0.65	8,972.81
6/29	127	2,032.00	0.91	24,018.00	21	43.85	0.89	3,007.29	148	2075.85	0.79	11,048.66
6/30	77	119.27	0.91	24,137.27	25	36.38	0.90	3,043.67	102	155.65	0.81	11,204.31
7/1	67	736.00	0.94	24,873.27	14	41.13	0.91	3,084.80	81	777.13	0.86	11,981.44
7/2	32	49.23	0.94	24,922.51	40	61.97	0.93	3,146.76	72	111.20	0.87	12,092.64
7/3	2	6.32	0.94	24,928.82	16	25.04	0.94	3,171.80	18	31.35	0.87	12,123.99
7/4	126	804.15	0.97	25,732.97	22	33.69	0.95	3,205.49	148	837.84	0.93	12,961.83
7/5	51	529.47	0.99	26,262.45	17	25.13	0.96	3,230.62	68	554.61	0.97	13,516.44
7/6	17	104.62	0.99	26,367.06	3	4.75	0.96	3,235.37	20	109.36	0.98	13,625.80
7/7	28	86.15	1.00	26,453.22	31	57.34	0.98	3,292.71	59	143.49	0.99	13,769.29
7/8	14	22.11	1.00	26,475.32	15	21.96	0.98	3,314.67	29	44.06	0.99	13,813.35
7/9	6	9.43	1.00	26,484.75	5	7.58	0.98	3,322.24	11	17.01	0.99	13,830.37
7/10	-	-	1.00	26,484.75	20	39.86	1.00	3,362.11	20	39.86	1.00	13,870.23
7/11	7	11.05	1.00	26,495.81	7	10.77	1.00	3,372.88	14	21.82	1.00	13,892.05
7/12	2	6.32	1.00	26,502.12	0	0.00	1.00	3,372.88	2	6.32	1.00	13,898.37
7/13	0	0.00	1.00	26,502.12	0	0.00	1.00	3,372.88	0	0.00	1.00	13,898.37
7/14	0	0.00	1.00	26,502.12	0	0.00	1.00	3,372.88	0	0.00	1.00	13,898.37
7/15	3	9.47	1.00	26,511.60	0	0.00	1.00	3,372.88	3	9.47	1.00	13,907.84
Total	2,438			26,511.60	2,018			3,372.88	4,456			13,907.84

Note: The box within the cumulative index column indicates the first quarter point, midpoint, and third quarter point of the cumulative index.

<sup>a</sup> Evening drifts at Big Eddy cancelled.

<sup>b</sup> All drifts at Big Eddy canceled.

Appendix B10.–Fall chum and coho salmon, daily and cumulative catch per unit of effort (CPUE), cooperative drift gillnet (6") test fishery, Big Eddy and Middle Mouth sites combined, Lower Yukon Area, 2001 to 2016 compared to 2017.

Date	2001 to 2016 Median			2017				2001 to 2016 Median			2017			
	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE	Daily CPUE	Proportion	Cumulative CPUE	Daily Catch	Daily CPUE	Proportion	Cumulative CPUE
7/16	14.35	0.01	14.35	6	4.82	0.00	4.82	0.00	0.00	0.00	0	0.0	0.00	0.00
7/17	14.61	0.03	39.70	5	11.88	0.00	16.71 <sup>a</sup>	0.00	0.00	0.00	0	0.0	0.00	0.00 <sup>a</sup>
7/18	7.15	0.05	68.37	122	97.28	0.03	113.98	0.00	0.00	0.00	0	0.0	0.00	0.00
7/19	17.93	0.07	91.32	15	11.73	0.03	125.71	0.00	0.00	0.00	0	0.0	0.00	0.00
7/20	6.18	0.08	109.64	2	2.00	0.03	127.71 <sup>a</sup>	0.00	0.00	0.00	0	0.0	0.00	0.00 <sup>a</sup>
7/21	4.72	0.09	126.22	5	4.03	0.03	131.73	0.00	0.00	0.00	0	0.0	0.00	0.00
7/22	3.87	0.10	150.40	0	0.00	0.03	131.73	0.00	0.00	0.00	0	0.0	0.00	0.00
7/23	5.44	0.12	158.64	13	9.69	0.04	141.42 <sup>a</sup>	0.00	0.00	0.36	0	0.0	0.00	0.00 <sup>a</sup>
7/24	8.74	0.12	166.88	48	57.89	0.05	199.31 <sup>a</sup>	0.00	0.00	0.36	0	0.0	0.00	0.00 <sup>a</sup>
7/25	7.05	0.13	168.10	18	14.07	0.06	213.38	0.00	0.00	0.36	0	0.0	0.00	0.00
7/26	3.06	0.13	186.54	102	75.79	0.08	289.17	0.00	0.00	0.80	2	1.5	0.00	1.49
7/27	6.67	0.16	223.44	89	116.09	0.11	405.26 <sup>a</sup>	0.00	0.00	0.83	1	1.3	0.00	2.79 <sup>a</sup>
7/28	27.16	0.18	273.55	128	94.82	0.13	500.08	0.69	0.00	2.52	0	0.0	0.00	2.79
7/29	20.67	0.21	319.07	55	41.91	0.14	541.98	0.66	0.01	2.99	0	0.0	0.00	2.79
7/30	14.28	0.23	352.16	6	4.54	0.14	546.52	1.48	0.01	4.26	0	0.0	0.00	2.79
7/31	9.65	0.26	360.63	0	0.00	0.14	546.52	0.82	0.02	6.90	0	0.0	0.00	2.79
8/1	30.69	0.32	408.04	124	89.91	0.17	636.43	1.69	0.02	9.19	5	3.6	0.01	6.42
8/2	16.49	0.34	444.62	61	87.14	0.19	723.58 <sup>a</sup>	1.43	0.04	11.29	0	0.0	0.01	6.42 <sup>a</sup>
8/3	11.64	0.38	504.06	9	6.77	0.19	730.35	1.96	0.06	16.34	0	0.0	0.01	6.42
8/4	2.38	0.38	531.17	0	0.00	0.19	730.35	0.73	0.06	18.08	0	0.0	0.01	6.42
8/5	3.75	0.42	538.58	4	3.01	0.19	733.36	2.58	0.07	22.80	0	0.0	0.01	6.42
8/6	5.82	0.44	560.73	1	0.74	0.19	734.10	2.98	0.08	29.38	2	1.5	0.01	7.90
8/7	15.80	0.45	568.70	72	42.77	0.20	776.87	1.48	0.08	33.71	0	0.0	0.01	7.90
8/8	14.09	0.45	573.59	15	14.94	0.21	791.81 <sup>a</sup>	4.79	0.11	38.34	4	4.0	0.02	11.88 <sup>a</sup>
8/9	8.61	0.47	596.74	6	4.57	0.21	796.38	5.39	0.15	45.53	0	0.0	0.02	11.88
8/10	15.10	0.47	661.92	38	30.71	0.22	827.09	4.67	0.17	60.09	3	2.4	0.02	14.31
8/11	2.11	0.48	693.42	118	166.59	0.26	993.68 <sup>a</sup>	6.92	0.20	72.66	3	4.2	0.02	18.54 <sup>a</sup>
8/12	22.04	0.51	769.13	455	385.87	0.36	1,379.54	11.14	0.25	86.91	11	9.3	0.04	27.87
8/13	21.91	0.59	804.79	486	639.12	0.53	2,018.67	17.34	0.29	107.27	22	28.9	0.07	56.80
8/14	20.15	0.59	838.88	241	241.50	0.59	2,260.17	13.38	0.32	116.66	17	17.0	0.10	73.84
8/15	10.40	0.61	952.37	108	189.20	0.64	2,449.37 <sup>a</sup>	6.87	0.37	124.45	9	15.77	0.12	89.61 <sup>a</sup>

-continued-

Appendix B10.–Page 2 of 2.

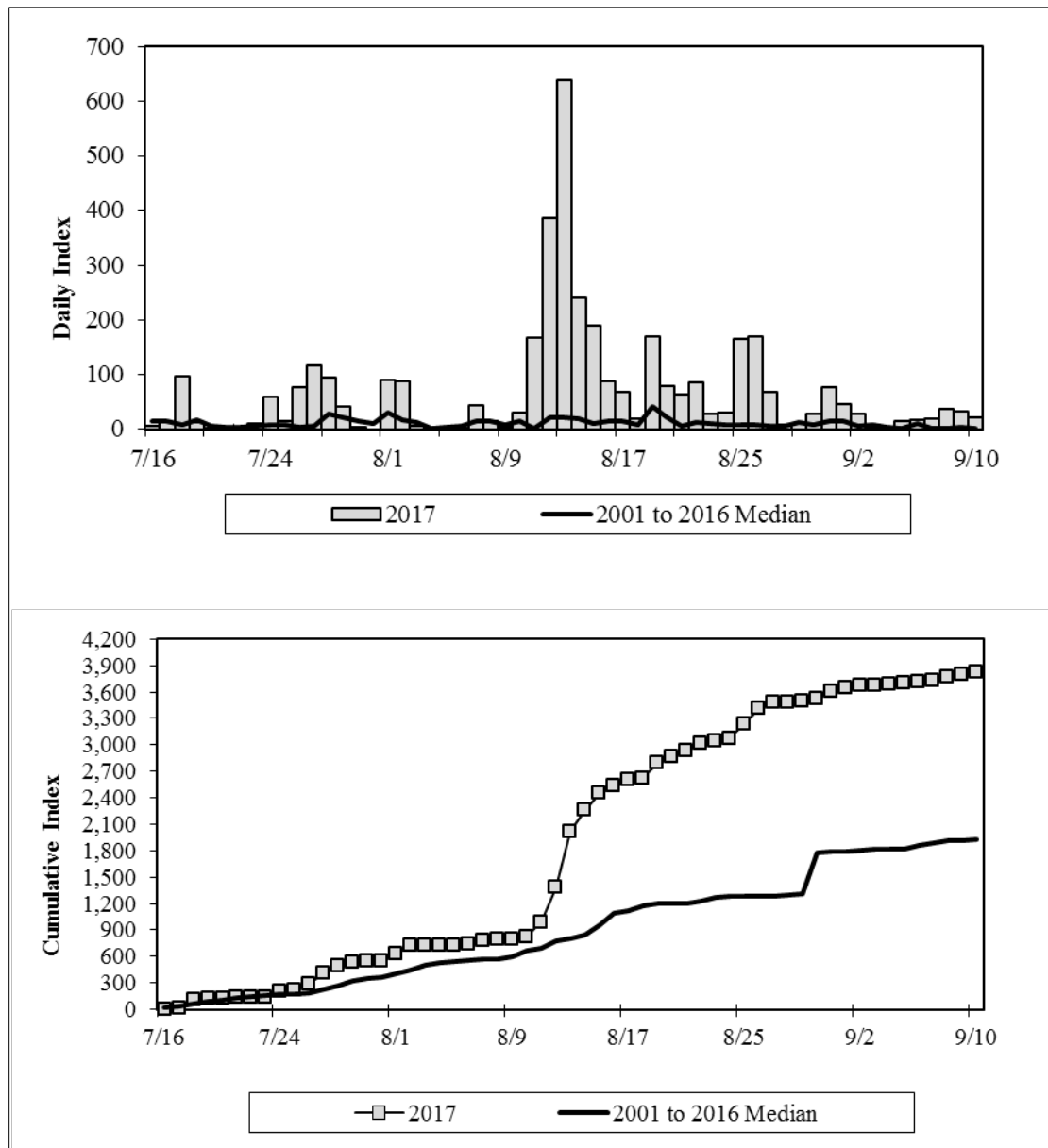
181

2001 to 2016 Median				2017				2001 to 2016 Median				2017			
	Daily		Cumulative	Daily	Daily	Cumulative		Daily		Cumulative	Daily	Daily	Cumulative		
Date	CPUE	Proportion	CPUE	Catch	CPUE	Proportion	CPUE	CPUE	Proportion	CPUE	Catch	CPUE	Proportion	CPUE	
8/16	14.34	0.73	1,089.35	103	87.04	0.66	2,536.41	12.69	0.39	143.69	11	9.30	0.13	98.90	
8/17	14.66	0.75	1,121.51	87	67.14	0.68	2,603.55	14.72	0.46	174.68	20	15.43	0.15	114.34	
8/18	9.20	0.77	1,174.11	24	18.34	0.69	2,621.89	10.39	0.49	182.04	22	16.82	0.17	131.15	
8/19	40.41	0.81	1,198.04	234	170.70	0.73	2,792.59	20.58	0.59	203.85	77	56.17	0.25	187.32	
8/20	21.70	0.86	1,203.38	49	78.40	0.75	2,870.99 <sup>a</sup>	18.47	0.62	248.16	42	67.20	0.34	254.52 <sup>a</sup>	
8/21	5.42	0.87	1,207.24	83	63.85	0.77	2,934.83 <sup>a</sup>	8.97	0.69	256.12	27	20.77	0.36	275.29 <sup>a</sup>	
8/22	12.47	0.89	1,224.10	57	86.58	0.79	3,021.42 <sup>a</sup>	13.70	0.73	269.72	17	25.82	0.40	301.11 <sup>a</sup>	
8/23	11.11	0.90	1,262.23	27	27.58	0.80	3,048.99	7.63	0.77	289.63	17	17.36	0.42	318.48	
8/24	8.19	0.91	1,281.34	17	30.00	0.80	3,078.99	8.82	0.79	315.53	9	15.88	0.44	334.36	
8/25	9.03	0.92	1,284.47	57	164.82	0.85	3,243.81 <sup>a</sup>	7.29	0.86	345.56	33	95.42	0.57	429.78 <sup>a</sup>	
8/26	7.32	0.95	1,286.45	150	169.81	0.89	3,413.62 <sup>a</sup>	5.00	0.88	350.93	50	56.60	0.64	486.38 <sup>a</sup>	
8/27	6.87	0.97	1,288.40	41	67.86	0.91	3,481.48	5.64	0.94	356.32	29	48.00	0.70	534.38	
8/28	5.37	0.99	1,291.87	8	8.42	0.91	3,489.91 <sup>a</sup>	4.54	0.95	377.56	13	13.68	0.72	548.07 <sup>a</sup>	
8/29	12.53	1.00	1,310.97	9	9.31	0.91	3,499.22 <sup>a</sup>	8.91	0.79	378.70	10	10.35	0.74	558.41 <sup>a</sup>	
8/30	9.17	1.00	1,778.63	15	29.03	0.92	3,528.25 <sup>a</sup>	11.05	0.83	413.91	26	50.32	0.80	608.74 <sup>a</sup>	
8/31	15.79	1.00	1,784.00	44	75.97	0.94	3,604.22 <sup>a</sup>	12.92	0.85	417.87	24	41.44	0.86	650.17 <sup>a</sup>	
9/1	13.85	1.00	1,794.22	59	45.39	0.95	3,649.60	15.39	0.87	433.26	25	19.23	0.88	669.41	
9/2	6.15	1.00	1,804.22	37	28.55	0.96	3,678.16	10.80	0.87	433.26	14	10.80	0.90	680.21	
9/3	8.03	1.00	1,814.10	2	3.16	0.96	3,681.31 <sup>a</sup>	8.33	0.88	446.34	1	1.58	0.90	681.79 <sup>a</sup>	
9/4	4.71	1.00	1,818.81	4	3.16	0.96	3,684.47	4.53	0.89	453.58	4	3.16	0.90	684.95	
9/5	1.79	1.00	1,820.60	15	15.72	0.97	3,700.19 <sup>a</sup>	7.16	0.90	460.74	10	10.48	0.92	695.43 <sup>a</sup>	
9/6	9.97	1.00	1,864.81	11	17.37	0.97	3,717.56 <sup>a</sup>	11.05	0.94	471.79	6	9.47	0.93	704.90 <sup>a</sup>	
9/7	1.54	1.00	1,889.28	25	19.61	0.98	3,737.17	5.32	0.96	506.53	7	5.49	0.94	710.39	
9/8	2.02	1.00	1,911.39	36	36.61	0.99	3,773.78	4.62	0.97	524.99	22	22.37	0.97	732.76	
9/9	3.95	1.00	1,915.34	23	32.09	0.99	3,805.87	3.37	0.98	534.99	16	22.33	0.99	755.09	
9/10	0.67	1.00	1,923.23	10	21.05	1.00	3,826.93	2.36	0.99	535.76	2	4.21	1.00	759.30	
Total				3,579			3,826.93				613			759.30	

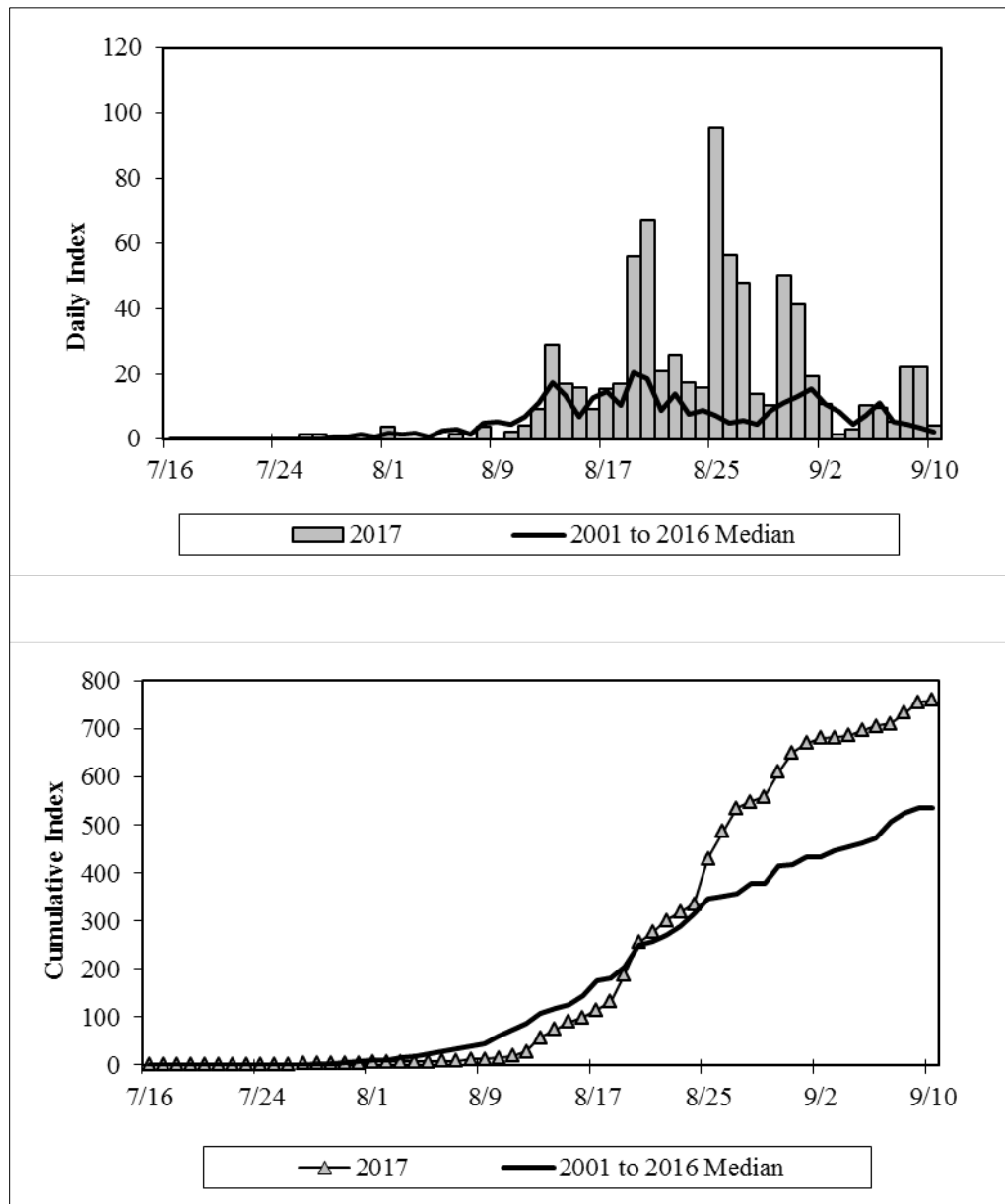
Note: The box within the cumulative index column indicates the first quarter point, midpoint, and third quarter point of the cumulative index.

<sup>a</sup> One or more drifts cancelled.

Appendix B11.—Fall chum salmon daily and cumulative catch per unit of effort (CPUE), Big Eddy and Middle Mouth sites combined, cooperative driftnet test fishery, Lower Yukon River, 2001–2016 compared to 2017.



Appendix B12.—Coho salmon daily and cumulative catch per unit of effort (CPUE), Big Eddy and Middle Mouth sites combined, cooperative driftnet test fishery, Lower Yukon River, 2001–2016 compared to 2017.





## **APPENDIX C**

Appendix C1.—Commercial salmon harvest by statistical area and gear type, Upper Yukon Area, 2017.

Statistical Area	Number of Fishermen <sup>a</sup>	Chinook			Summer Chum			Fall Chum			Coho		
		FW	SGN	Total	FW	SGN	Total	FW	SGN	Total	FW	SGN	Total
334-42	—	—	—	—	—	—	—	—	—	—	—	—	—
334-43	—	—	—	—	—	—	—	—	—	—	—	—	—
334-44	—	—	—	—	—	—	—	—	—	—	—	—	—
334-45	—	—	—	—	—	—	—	—	—	—	—	—	—
334-46	10	0	—	0	157,831	—	157,831	1,402	0	1,402	0	0	0
334-47	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal													
District 4	10	—	—	—	157,831	—	157,831	1,402	0	1,402	0	0	0
334-51	—	—	—	—	—	—	—	—	—	—	—	—	—
334-52	4	—	—	—	—	—	—	1,669	283	1,952	0	0	0
334-53	0	—	—	—	—	—	—	0	0	0	0	0	0
334-54	—	—	—	—	—	—	—	—	—	—	—	—	—
334-55	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal													
District 5	4	—	—	—	—	—	—	1,669	283	1,952	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	3	0	0	0	4,300	0	4,300	8,587	0	8,587	3,735	0	3,735
334-63	2	0	0	0	0	0	0	14,683	0	14,683	5,921	0	5,921
Subtotal													
District 6	5	0	0	0	4,300	0	4,300	23,270	0	23,270	9,656	0	9,656
Upper Yukon													
Area Total	19	0	0	0	162,131	0	162,131	26,341	283	26,624	9,656	0	9,656

Note: En dash indicates no commercial fishing activity occurred. FW = Fish wheel, SGN = Set gillnet.

<sup>a</sup> The number of fishermen is the unique number of permits fished.

Appendix C2.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1997–2017.

Year	334-44			334-45			334-46			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	0	0	0	0	0	0	0	0	0	0	0	0
2003	–	–	–	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–	–	–	–
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	–	–	–	–	–	–	–	–	–	–	–	–
2016	–	–	–	–	–	–	–	–	–	–	–	–
2017	0	0	0	0	0	0	0	0	0	0	0	0

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the number of females estimated to have produced the roe sold. Since 1990, the estimated number of females is based on a District 4 sampling program that estimated average roe weight per female by statistical area, period, and gear type.

Appendix C3.—Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1997–2017.

Year	334-42			334-43			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	326	14	333	1,124	0	1,124	1,450	14	1,457
1998	—	—	—	—	—	—	—	—	—
1999	233	0	233	1,204	0	1,204	1,437	0	1,437
2000	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	562	0	562	562	0	562
2004	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—
2007	—	—	—	—	—	—	—	—	—
2008	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—

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

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the number of females estimated to have produced the roe sold. Since 1990, the estimated number of females is based on a District 4 sampling program that estimated average roe weight per female by statistical area, period, and gear type.

Appendix C4.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017.

Year	334-51			334-52			334-53			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	0	0	0	1,314	0	1,314	1,757	0	1,757	3,071	0	3,071
1998	0	0	0	279	0	279	196	0	196	475	0	475
1999	–	–	–	1,468	0	1,468	721	0	721	2,189	0	2,189
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	307	0	307	257	0	257	564	0	564
2003	–	–	–	711	0	711	197	0	197	908	0	908
2004	–	–	–	1,317	0	1,317	229	0	229	1,546	0	1,546
2005	–	–	–	1,297	0	1,297	172	0	172	1,469	0	1,469
2006	–	–	–	1,358	0	1,358	481	0	481	1,839	0	1,839
2007	–	–	–	1,064	0	1,064	177	0	177	1,241	0	1,241
2008	–	–	–	0	0	0	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	0	0	0	–	–	–	–	–	–
2012	–	–	–	0	0	0	–	–	–	–	–	–
2013	–	–	–	0	0	0	–	–	–	–	–	–
2014	–	–	–	0	0	0	–	–	–	–	–	–
2015	–	–	–	0	0	0	–	–	–	–	–	–
2016	–	–	–	0	0	0	–	–	–	–	–	–
2017	–	–	–	0	0	0	–	–	–	–	–	–

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the number of females estimated to have produced the roe sold. Since 1990, the estimated number of females is based on a District 4 sampling program that estimated average roe weight per female by statistical area, period, and gear type.

Appendix C5.—Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1997–2017.

Year	334-54			334-55			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	262	0	262	345	0	345	607	0	607
1998	11	0	11	31	0	31	42	0	42
1999	81	0	81	334	0	334	415	0	415
2000	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—
2002	0	0	0	207	0	207	207	0	207
2003	0	0	0	226	0	226	226	0	226
2004	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—
2007	—	—	—	—	—	—	—	—	—
2008	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—

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

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the number of females estimated to have produced the roe sold. Since 1990, the estimated number of females is based on a District 4 sampling program that estimated average roe weight per female by statistical area, period, and gear type.

Appendix C6.—Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017.

Year	334-61			334-62			334-63			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	38	0	38	1,662	2,816	2,334	266	395	356	1,966	3,211	2,728
1998	217	0	217	431	208	496	234	52	250	882	260	963
1999	0	0	0	269	734	462	133	362	228	402	1,096	690
2000	—	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—
2002	0	0	0	732	896	962	104	0	104	836	896	1,066
2003	0	0	0	1,445	0	1,445	368	0	368	1,813	0	1,813
2004	0	0	0	1,542	0	1,542	515	0	515	2,057	0	2,057
2005	0	0	0	391	0	391	62	0	62	453	0	453
2006	0	0	0	0	0	0	84	0	84	84	0	84
2007	0	0	0	106	0	106	175	0	175	281	0	281
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0
2012–2016												
Average	0	0	0	0	0	0	0	0	0	0	0	0
2007–2016												
Average	0	0	0	11	0	11	18	0	18	28	0	28

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

Appendix C7.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4—A, Upper Yukon Area, 1997–2017.

Year	334-44					334-45				
	Roe Expansion				Estimated Harvest <sup>e</sup>	Roe Expansion				Estimated Harvest <sup>e</sup>
	Number <sup>a</sup>	Roe <sup>b</sup>	Males <sup>c</sup>	Females <sup>d</sup>		Number <sup>a</sup>	Roe <sup>b</sup>	Males <sup>c</sup>	Females <sup>d</sup>	
1997	0	14,188	10,905	15,118	26,023	0	526	342	570	912
1998	—	—	—	—	—	—	—	—	—	—
1999	—	—	—	—	—	—	—	—	—	—
2000	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—
2002	—	—	—	—	—	—	—	—	—	—
2003	—	—	—	—	—	—	—	—	—	—
2004	—	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—	—
2007	<sup>f</sup> 5,359	—	—	—	5,359	—	—	—	—	—
2008	<sup>f</sup> —	—	—	—	—	—	—	—	—	—
2009	<sup>f</sup> 3,890	—	—	—	3,890	699	—	—	699	699
2010	<sup>g</sup> —	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—	—
2012	<sup>g</sup> —	—	—	—	—	—	—	—	—	—
2013	<sup>g</sup> —	—	—	—	—	—	—	—	—	—
2014	<sup>g</sup> —	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—	—
2017	<sup>g</sup> —	—	—	—	—	—	—	—	—	—
2012–2016										
Average										
2007–2016										
Average	4,625				4,625	699			699	699

-continued-

Appendix C7.—Page 2 of 3.

334-46						Subtotal 334-44, 45, and 46				
Roe Expansion						Roe Expansion				
Year	Number <sup>a</sup>	Roe <sup>b</sup>	Males <sup>c</sup>	Females <sup>d</sup>	Estimated Harvest <sup>e</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Males <sup>c</sup>	Females <sup>d</sup>	Estimated Harvest <sup>e</sup>
1997	0	41,587	29,207	44,247	73,454	0	56,301	40,454	59,935	100,389
1998	—	—	—	—	—	—	—	—	—	—
1999	—	—	—	—	—	—	—	—	—	—
2000	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—
2002	—	—	—	—	—	—	—	—	—	—
2003	—	—	—	—	—	—	—	—	—	—
2004	—	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—	—
2007	<sup>f</sup> 1,945	—	—	—	1,945	7,304	—	—	—	7,304
2008	<sup>f</sup> 23,746	—	—	—	23,746	23,746	—	—	—	23,746
2009	<sup>f</sup> —	—	—	—	—	4,589	—	—	—	4,589
2010	<sup>g</sup> 44,207	—	—	—	44,207	44,207	—	—	—	44,207
2011	—	—	—	—	—	—	—	—	—	—
2012	<sup>g</sup> 108,222	—	—	—	108,222	108,222	—	—	—	108,222
2013	<sup>g</sup> 100,507	—	—	—	100,507	100,507	—	—	—	100,507
2014	<sup>g</sup> 96,385	—	—	—	96,385	96,385	—	—	—	96,385
2015	—	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—	—
2017	<sup>g</sup> 159,051	—	—	—	159,051	159,051	—	—	—	159,051
2012–2016										
Average	101,705				101,705	101,705				101,705
2007–2016										
Average	62,502				62,502	54,994				54,994

-continued-

## Appendix C7.–Page 3 of 3.

Year	334-47 (Anvik River)				Total (Subdistrict 4-A and Anvik)				
	Roe Expansion			Estimated	Roe Expansion				Estimated
	Number <sup>a</sup>	Roe <sup>b</sup>	Females <sup>d</sup>		Number <sup>a</sup>	Roe <sup>b</sup>	Males <sup>c</sup>	Females <sup>d</sup>	
1997	0	13,067	13,548	13,548	0	69,368	40,454	73,483	113,937
1998	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–
2004	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–
2006	–	–	–	–	–	–	–	–	–
2007	<sup>f</sup>	–	–	–	7,304	–	–	–	7,304
2008	<sup>f</sup>	–	–	–	23,746	–	–	–	23,746
2009	<sup>f</sup>	–	–	–	4,589	–	–	–	4,589
2010	<sup>g</sup>	–	–	–	44,207	–	–	–	44,207
2011	–	–	–	–	–	–	–	–	–
2012	<sup>g</sup>	–	–	–	108,222	–	–	–	108,222
2013	<sup>g</sup>	–	–	–	100,507	–	–	–	100,507
2014	<sup>g</sup>	–	–	–	96,385	–	–	–	96,385
2015	–	–	–	–	–	–	–	–	–
2016	–	–	–	–	–	–	–	–	–
2017	<sup>g</sup>	–	–	–	159,051	–	–	–	159,051
2012–2016									
Average					101,705				101,705
2007–2016									
Average					54,994				54,994

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe.

<sup>c</sup> The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Since 1990, the estimated number is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, period, and gear type.

<sup>d</sup> The estimated number of females to produce the roe sold. Since 1991, the estimated number of females that produce the roe sold is based on a District 4 sample roe weight per female by statistical area, period, and gear type.

<sup>e</sup> From 1990–2006 the estimated harvest is the number of fish sold in the round plus the estimated number of females and the estimated number of unsold males harvested to produce the roe sold. Beginning in 2007 the actual numbers of female fish from which roe were extracted are included in the total harvest. Males were recorded as caught but not sold, thus are accounted for in personal use totals.

<sup>f</sup> The number of female fish from which roe were extracted is the number harvested. Males were not purchased and are accounted for in personal use totals.

<sup>g</sup> Both males and females were purchased and are included in the number harvested.

Appendix C8.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1997–2017.

Year	334-42				334-43				Total				
	Roe Expansion				Roe Expansion				Roe Expansion				
	Number <sup>a</sup>	Roe <sup>b</sup>	Females <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Females <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Females <sup>c</sup>	Males <sup>e</sup>	Harvest <sup>d</sup>
1997	1,942	4,786	5,199	10,484	120	77	81	250	2,062	4,863	5,280	5,454	12,796
1998	—	—	—	—	—	—	—	—	—	—	—	—	—
1999	153	0	0	153	1,114	0	0	1,114	1,267	0	0	0	1,267
2000	—	—	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—	—
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	62	0	0	62	62	0	0	0	62
2004	—	—	—	—	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—	—	—	—	—
2007	—	—	—	—	—	—	—	—	—	—	—	—	—
2008	—	—	—	—	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—	—	—	—	—

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe.

<sup>c</sup> The estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produced the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, period, and gear type.

<sup>d</sup> The estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold plus the estimated number of males caught but not sold.

<sup>e</sup> The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Since 1990, the estimated number is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, period, and gear type.

Appendix C9.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017.

Year	334-51			334-52			334-53			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	0	0	0	0	0	0	125	0	125	125	0	125
1998	0	0	0	37	13	51	59	0	59	96	13	110
1999	0	0	0	74	0	74	40	0	40	114	0	114
2000	—	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—
2002	0	0	0	0	0	0	6	0	6	6	0	6
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	3	0	3	22	0	22	25	0	25
2005	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	20	0	0	0	0	0	20	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	—	—	—	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—	—	—	—

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold.

<sup>c</sup> The estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold

Appendix C10.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1997–2017.

Year	334-54			334-55			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	12	0	12	0	0	0	12	0	12
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	1	0	1	1	0	1
2000	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—
2007	—	—	—	—	—	—	—	—	—
2008	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—

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

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe.

<sup>c</sup> The estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold plus. Since 1990, the estimated number of females needed to produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

Appendix C11.—Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017.

Year	334-61			334-62			334-63			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	3,162	0	3,162	9,168	6,525	16,709	2,556	2,511	5,416	14,886	9,036	25,287
1998	56	0	56	202	109	337	139	31	177	397	140	570
1999	0	0	0	102	0	102	22	24	46	124	24	148
2000	—	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—
2002	0	0	0	2,711	16	2,731	487	0	487	3,198	16	3,218
2003	0	0	0	3,953	0	3,953	508	0	508	4,461	0	4,461
2004	0	0	0	2,447	0	2,447	4,163	0	4,163	6,610	0	6,610
2005	0	0	0	5,404	0	5,404	3,582	0	3,582	8,986	0	8,986
2006	0	0	0	37,758	0	37,758	6,863	0	6,863	44,621	0	44,621
2007	0	0	0	10,627	0	10,627	4,047	0	4,047	14,674	0	14,674
2008	0	0	0	1,194	0	1,194	648	4	652	1,842	4	1,846
2009	590	0	590	4,979	0	4,979	2,208	0	2,208	7,777	0	7,777
2010	0	0	0	5,466	0	5,466	0	0	0	5,466	0	5,466
2011	0	0	0	4,964	0	4,964	3,687	0	3,687	8,651	0	8,651
2012	0	0	0	3,151	0	3,151	353	0	353	3,504	0	3,504
2013	0	0	0	5,937	0	5,937	0	0	0	5,937	0	5,937
2014	0	0	0	6,912	0	6,912	0	0	0	6,912	0	6,912
2015	0	0	0	4,589	0	4,589	181	0	181	4,770	0	4,770
2016	0	0	0	4,020	0	4,020	0	0	0	4,020	0	4,020
2017	0	0	0	4,300	0	4,300	0	0	0	4,300	0	4,300
2012–2016												
Average	0	0	0	4,922	0	4,818	107	0	89	5,029	0	5,029
2007–2016												
Average	59	0	59	5,184	0	5,104	1,112	0	1,012	6,355	0	6,356

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Reported as numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe.

<sup>c</sup> The estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold plus. Since 1990, the estimated number of females needed to produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

Appendix C12.—Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1997–2017.

Year	334-46 <sup>a</sup>			334-42			334-43			Total		
	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>
1997	—	—	—	463	0	463	1,995	0	1,995	2,458	0	2,458
1998	—	—	—	—	—	—	—	—	—	—	—	—
1999	—	—	—	104	0	104	577	0	577	681	0	681
2000	—	—	—	—	—	—	—	—	—	—	—	—
2001 <sup>e</sup>	—	—	—	—	—	—	—	—	—	—	—	—
2002	—	—	—	—	—	—	—	—	—	—	—	—
2003	—	—	—	—	—	—	1,315	0	1,315	1,315	0	1,315
2004	—	—	—	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—	—	—	—
2006	0	0	0	—	—	—	—	—	—	0	0	0
2007	—	—	—	—	—	—	—	—	—	—	—	—
2008	0	0	0	—	—	—	—	—	—	0	0	0
2009	—	—	—	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—	—	—	—
2012	811	0	811	—	—	—	—	—	—	811	0	811
2013	—	—	—	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—	—	—	—
2017	1,402	0	1,402	—	—	—	—	—	—	1,402	0	1,402
2012-2016												
Average												
2007-2016												
Average												
406 0 406 406 0 406												

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> In Subdistrict 4-A (Statistical Area 334-41), from 1977 to 2001, commercial fishing, by regulation, was not allowed during fall season. Additionally, in 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

<sup>b</sup> Harvest reported in numbers of fish sold in the round.

<sup>c</sup> Pounds of salmon roe sold.

<sup>d</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period, by statistical area and gear type.

<sup>e</sup> Guideline harvest range (GHR) included Subdistrict 4-A.

Appendix C13.—Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1997–2017.

Year	334-51			334-52			334-53			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	0	0	0	1,595	1,194	3,069	0	0	0	1,595	1,194	3,069
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	–	–	–	–	–	–
2004	0	0	0	–	–	–	–	–	–	0	0	0
2005	–	–	–	0	0	0	0	0	0	0	0	0
2006	–	–	–	–	–	–	10,030	–	10,030	10,030	0	10,030
2007	–	–	–	385	–	385	42	–	42	427	0	427
2008	0	0	0	4,556	–	4,556	0	0	0	4,556	0	4,556
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	1,246	–	1,246	0	0	0	1,246	0	1,246
2012	–	–	–	2,419	–	2,419	0	0	0	2,419	0	2,419
2013	–	–	–	1,041	–	1,041	0	0	0	1,041	0	1,041
2014	–	–	–	1,264	–	1,264	0	0	0	1,264	0	1,264
2015	–	–	–	1,048	–	1,048	0	0	0	1,048	0	1,048
2016	–	–	–	7,542	–	7,542	0	0	0	7,542	0	7,542
2017	–	–	–	1,952	138	1,952 <sup>d</sup>	0	0	0	1,952	138	1,952 <sup>d</sup>
2012-2016												
Average				2,663		2,663	0	0	0	2,663	0	2,663
2007-2016												
Average				2,438		2,438	5	0	5	2,443	0	2,443

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Harvest reported in numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

<sup>d</sup> The number of females harvested to produce the roe sold is included in the subsistence harvest estimate.

Appendix C14.—Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1997–2017.

Year	334-54			334-55			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	40	0	40	811	0	811	851	0	851
1998	—	—	—	—	—	—	—	—	—
1999	—	—	—	—	—	—	—	—	—
2000	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—
2002	—	—	—	—	—	—	—	—	—
2003	—	—	—	—	—	—	—	—	—
2004	—	—	—	—	—	—	—	—	—
2005	—	—	—	—	—	—	—	—	—
2006	—	—	—	—	—	—	—	—	—
2007	—	—	—	—	—	—	—	—	—
2008	—	—	—	—	—	—	—	—	—
2009	—	—	—	—	—	—	—	—	—
2010	—	—	—	—	—	—	—	—	—
2011	—	—	—	—	—	—	—	—	—
2012	—	—	—	—	—	—	—	—	—
2013	—	—	—	—	—	—	—	—	—
2014	—	—	—	—	—	—	—	—	—
2015	—	—	—	—	—	—	—	—	—
2016	—	—	—	—	—	—	—	—	—
2017	—	—	—	—	—	—	—	—	—

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

<sup>a</sup> Harvest reported in numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

Appendix C15.—Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017.

Year	334-61			334-62			334-63			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	—	—	—	—	—	—	—	—	—	—	—	—
1998	—	—	—	—	—	—	—	—	—	—	—	—
1999	—	—	—	—	—	—	—	—	—	—	—	—
2000	—	—	—	—	—	—	—	—	—	—	—	—
2001	—	—	—	—	—	—	—	—	—	—	—	—
2002	—	—	—	—	—	—	—	—	—	—	—	—
2003	—	—	—	3,778	0	3,778	317	0	317	4,095	0	4,095
2004	—	—	—	3,450	0	3,450	—	—	—	3,450	0	3,450
2005	—	—	—	49,637	0	49,637	—	—	—	49,637	0	49,637
2006	—	—	—	23,353	0	23,353	—	—	—	23,353	0	23,353
2007	—	—	—	15,572	0	15,572	—	—	—	15,572	0	15,572
2008	4,029	—	4,029	1,706	0	1,706	—	—	—	5,735	0	5,735
2009	1286	545	1,893	—	—	—	—	—	—	1,286	545	1,893
2010	—	—	—	1,735	0	1,735	—	—	—	1,735	0	1,735
2011	—	—	—	9,267	0	9,267	—	—	—	9,267	0	9,267
2012	—	—	—	17,336	0	17,336	—	—	—	17,336	0	17,336
2013	—	—	—	24,148	0	24,148	—	—	—	24,148	0	24,148
2014	1,568	0	1,568	1,800	0	1,800	—	—	—	3,368	0	3,368
2015	808	0	808	14,771	0	14,771	67	0	67	15,646	0	15,646
2016	0	0	0	12,990	0	12,990	5,063	0	5,063	18,053	0	18,053
2017	0	0	0	8,207	290	8,587 <sup>d</sup>	14,683	0	14,683	22,890	290	23,270
2012-2016												
Average	792	0	792	14,209	0	14,209	2,565	0	2,565	15,710	0	15,710
2007-2016												
Average	1,538	136	1,660	11,036	0	11,036	2,565	0	2,565	11,215	55	11,275

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Harvest reported in numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

<sup>d</sup> Includes headed and gutted fish sold and used to produce roe.

Appendix C16.–Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1997–2017.

Year	334-46 <sup>a</sup>			334-42			334-43			Total		
	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>	Number <sup>b</sup>	Roe <sup>c</sup>	Harvest <sup>d</sup>
1997	–	–	–	19	0	19	795	0	795	814	0	814
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	–	–	–	367	0	367	367	0	367
2004	–	–	–	–	–	–	–	–	–	–	–	–
2005	–	–	–	–	–	–	–	–	–	–	–	–
2006	0	0	0	–	–	–	–	–	–	–	–	–
2007	–	–	–	–	–	–	–	–	–	–	–	–
2008	0	0	0	–	–	–	–	–	–	–	–	–
2009	–	–	–	–	–	–	–	–	–	–	–	–
2010	–	–	–	–	–	–	–	–	–	–	–	–
2011	–	–	–	–	–	–	–	–	–	–	–	–
2012	0	0	0	–	–	–	–	–	–	–	–	–
2013	–	–	–	–	–	–	–	–	–	–	–	–
2014	–	–	–	–	–	–	–	–	–	–	–	–
2015	–	–	–	–	–	–	–	–	–	–	–	–
2016	–	–	–	–	–	–	–	–	–	–	–	–
2017	0	0	0	–	–	–	–	–	–	0	0	0

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

<sup>a</sup> In Subdistrict 4-A (Statistical Area 334-41), from 1977 to 2001, commercial fishing, by regulation, was not allowed during fall season. Additionally, in 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

<sup>b</sup> Harvest reports in numbers of fish sold in the round.

<sup>c</sup> Pounds of salmon roe sold.

<sup>d</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period.

Appendix C17.–Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1997–2017.

Year	334-61			334-62			334-63			Total		
	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>	Number <sup>a</sup>	Roe <sup>b</sup>	Harvest <sup>c</sup>
1997	–	–	–	–	–	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	–	–	–	–	–	–	–	–	–	–	–	–
2003	–	–	–	14,984	0	14,984	135	0	135	15,119	0	15,119
2004	–	–	–	18,649	0	18,649	–	–	–	18,649	0	18,649
2005	–	–	–	21,778	0	21,778	–	–	–	21,778	0	21,778
2006	–	–	–	11,137	0	11,137	–	–	–	11,137	0	11,137
2007	–	–	–	1,368	0	1,368	–	–	–	1,368	0	1,368
2008	2,160	0	2,160	248	0	248	–	–	–	2,408	0	2,408
2009	457	258	742	–	–	–	–	–	–	457	258	742
2010	–	–	–	1,700	0	1,700	–	–	–	1,700	0	1,700
2011	–	–	–	6,784	0	6,784	–	–	–	6,784	0	6,784
2012	–	–	–	5,335	0	5,335	–	–	–	5,335	0	5,335
2013	–	–	–	7,439	0	7,439	–	–	–	7,439	0	7,439
2014	318	0	318	968	0	968	–	–	–	1,286	0	1,286
2015	447	0	447	8,361	0	8,361	3	0	3	8,811	0	8,811
2016	0	0	0	13,285	0	13,285	7,266	0	7,266	20,551	0	20,551
2017	0	0	0	3,515	126	3,735 <sup>d</sup>	5,921	0	5,921	9,436	126	9,656 <sup>d</sup>
2012-2016												
Average	255	0	255	7,078	0	7,078	3,635	0	3,635	8,684	0	8,684
2007-2016												
Average	676	52	733	5,054	0	5,054	3,635	0	3,635	5,614	26	5,642

Note: En dash indicates no commercial fishing activity occurred. Blank cells indicate insufficient information to generate average.

<sup>a</sup> Harvest reports in numbers of fish sold in the round.

<sup>b</sup> Pounds of salmon roe sold.

<sup>c</sup> The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

<sup>d</sup> Includes headed and gutted fish sold and used to produce roe.

## **APPENDIX D**

Appendix D1.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011 Average	2012-2016 Average
Hooper Bay	430	388	183	584	252	1,090	1,210	455	534	284	320	367	715
Scammon Bay	768	1,104	722	716	517	1,014	332	108	432	602	733	765	498
Coastal District total	1,198	1,492	905	1,300	769	2,104	1,542	563	966	886	1,053	1,133	1,212
Nunam Iqua	907	163	200	404	250	195	12	62	210	190	235	385	134
Alakanuk	1,257	1,238	634	944	1,464	1,081	275	214	436	470	846	1,107	495
Emmonak	2,326	2,696	1,634	2,194	2,172	1,864	553	463	612	939	1,732	2,204	886
Kotlik	1,569	2,066	1,657	2,314	2,369	1,173	794	617	661	1,187	1,767	1,995	886
District 1 subtotal	6,059	6,163	4,125	5,856	6,255	4,313	1,634	1,356	1,919	2,786	4,580	5,692	2,402
Mountain Village	2,077	1,645	1,482	1,601	2,063	1,789	266	178	370	809	1,118	1,774	682
Pitkas Point	320	544	265	580	246	261	37	79	44	156	507	391	115
St. Marys	3,573	1,756	1,929	2,800	1,734	2,344	215	68	261	1,043	961	2,358	786
Pilot Station	2,028	1,597	1,258	1,585	1,340	1,078	258	163	382	639	825	1,562	504
Marshall	2,555	3,284	1,201	2,110	2,686	1,409	328	128	128	512	1,612	2,367	501
District 2 subtotal	10,553	8,826	6,135	8,676	8,069	6,881	1,104	616	1,185	3,159	5,023	8,452	2,589
Russian Mission	1,301	2,949	978	924	1,550	1,711	236	16	365	321	1368	1,540	530
Holy Cross	2,902	2,509	1,745	3,098	2,231	576	204	0	68	557	836	2,497	281
Shageluk	448	397	201	277	353	75	4	32	14	22	92	335	29
District 3 subtotal	4,651	5,855	2,924	4,299	4,134	2,362	444	48	447	900	2,296	4,373	840
Lower Yukon River total	21,263	20,844	13,184	18,831	18,458	13,556	3,182	2,020	3,551	6,845	11,899	18,516	5,831
Anvik	1,321	1,433	796	1,069	1,052	435	121	0	58	241	731	1,134	171
Grayling	1,500	1,761	1,133	2,122	1,374	1,081	226	3	22	370	751	1,578	340
Kaltag	1,456	2,403	1,970	3,191	2,488	1,346	348	10	119	1,358	2,048	2,302	636
Nulato	2,431	1,250	1,551	2,989	1,538	1,955	602	0	33	1,957	2,269	1,952	909
Koyukuk	811	513	982	867	1,349	614	898	52	26	612	648	904	440
Galena	2,511	2,232	1,370	1,357	1,434	742	275	1	372	993	2,246	1,781	477
Ruby/Kokrines	1,594	637	542	1,102	482	1,316	357	6	68	344	593	871	418
District 4 subtotal	11,624	10,229	8,344	12,697	9,717	7,489	2,827	72	698	5,875	9,286	10,522	3,392
Huslia	146	255	969	65	121	165	62	38	34	77	453	311	75
Hughes	8	61	101	63	10	0	6	13	4	17	9	49	8
Allakaket	53	58	90	63	42	5	6	8	35	45	22	61	20
Alatna	0	16	10	0	3	0	0	0	0	1	13	6	0
Bettles	0	0	0	0	0	3	0	1	0	0	0	0	1
Koyukuk River subtotal	207	390	1,170	191	176	173	74	60	73	140	497	427	104
District 4 total (incl. Koyukuk R.)	11,831	10,619	9,514	12,888	9,893	7,662	2,901	132	771	6,015	9,783	10,949	3,496

-continued-

Appendix D1.–Page 2 of 2.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2006-2010 Average	2012-2016 Average
Tanana	5,498	3,981	2,950	3,215	2,936	2,100	1,200	88	141	2,129	2,962	3,716	1,132
Rampart	250	136	528	262	201	190	35	0	1	35	155	275	52
Fairbanks <sup>b</sup>	2,510	1,898	1,509	1,670	2,186	558	610	14	263	1,318	2,521	1,955	553
Stevens Village	610	753	405	469	415	330	239	0	0	178	0	530	149
Birch Creek	113	32	15	73	49	0	0	0	0	0	20	56	0
Beaver	1,244	546	516	198	356	71	107	0	69	165	609	572	82
Fort Yukon	4,076	1,991	846	1,683	2,472	2,141	1,561	93	480	1,283	4,282	2,214	1,112
Circle	1,057	519	372	324	297	280	157	0	129	207	714	514	155
Central	334	48	167	90	66	66	21	0	56	53	0	141	39
Eagle	1,999	1,068	446	867	728	167	175	76	395	864	1,730	1,022	335
Other <sup>c</sup>	472	362	541	779	777	477	125	0	7	306	860	586	183
District 5 subtotal (excluding Chandalar and Black Rivers)	18,163	11,334	8,295	9,630	10,483	6,380	4,230	271	1,541	6,538	13,853	11,581	3,792
Venetie	1,002	292	622	767	10	86	311	12	308	536	604	539	251
Chalkyitsik	0	0	0	0	0	0	0	5	0	22	66	0	5
Chandalar/Black River subtotal	1,002	292	622	767	10	86	311	17	308	558	670	539	256
District 5 total	19,165	11,626	8,917	10,397	10,493	6,466	4,541	288	1,849	7,096	14,523	12,120	4,048
Manley	333	106	345	337	287	174	165	92	121	230	103	282	156
Minto	82	12	0	43	61	99	60	0	23	35	101	40	43
Nenana	893	322	458	658	681	296	87	139	263	464	493	602	250
Fairbanks <sup>d</sup>	409	108	396	91	330	58	49	41	33	87	145	267	54
Other <sup>e</sup>	0	57	86	14	8	0	6	11	0	0	0	33	3
District 6 Tanana R. total	1,717	605	1,285	1,143	1,367	627	367	283	440	816	842	1,223	507
Upper Yukon River total	32,713	22,850	19,716	24,428	21,753	14,755	7,809	703	3,060	13,927	25,148	24,292	8,051
Alaska, Yukon Area total	55,174	45,186	33,805	44,559	40,980	30,415	12,533	3,286	7,577	21,658	38,100	43,941	15,094
Personal Use (District 6) <sup>f</sup>	136	126	127	162	89	71	42	1	5	57	125	128	35

<sup>a</sup> Data are preliminary.

<sup>b</sup> Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

<sup>c</sup> Other permit holders who fished in District 5 but did not reside in the communities listed.

<sup>d</sup> Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

<sup>e</sup> Other permit holders who fished in District 6 but did not reside in the communities listed.

<sup>f</sup> Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix D2.– Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011 Average	2012-2016 Average
Hooper Bay	12,234	12,007	9,195	17,020	13,460	15,799	13,629	13,236	11,870	6,324	7,969	12,783	12,172
Scammon Bay	3,887	6,113	3,602	5,405	4,845	7,442	9,506	6,068	8,598	5,520	6,036	4,770	7,427
Coastal District total	16,121	18,120	12,797	22,425	18,305	23,241	23,135	19,304	20,468	11,844	14,005	17,554	19,598
Nunam Iqua	2,325	1,949	2,280	2,267	2,077	1,977	2,651	2,010	2,239	2,130	1,759	2,180	2,201
Alakanuk	7,611	6,881	5,152	7,722	7,447	9,012	7,520	9,120	4,469	6,595	5,035	6,963	7,343
Emmonak	9,256	9,646	9,038	10,918	12,468	15,829	8,209	7,143	9,973	8,976	6,937	10,265	10,026
Kotlik	5,017	4,291	7,528	4,265	6,598	8,552	10,136	5,621	4,960	9,000	8,776	5,540	7,654
District 1 subtotal	24,209	22,767	23,998	25,172	28,590	35,370	28,516	23,894	21,641	26,701	22,507	24,947	27,224
Mountain Village	8,104	7,559	7,204	7,071	9,355	9,031	11,861	7,059	6,063	8,750	7,593	7,859	8,553
Pitkas Point	515	1,246	994	633	585	1,153	2,186	1,588	1,225	1,485	1,623	795	1,527
St. Marys	8,107	6,451	5,831	7,443	6,760	10,763	9,167	5,570	8,216	7,377	5,147	6,918	8,219
Pilot Station	3,711	6,012	4,888	6,196	4,182	5,716	5,299	5,728	4,702	4,405	5,031	4,998	5,170
Marshall	3,070	3,023	2,172	2,395	3,810	5,903	3,986	6,189	4,351	5,180	5,300	2,894	5,122
District 2 subtotal	23,507	24,291	21,089	23,738	24,692	32,566	32,499	26,134	24,557	27,197	24,694	23,463	28,591
Russian Mission	759	2,400	849	528	1,225	2,508	3,967	3,181	2,626	1,798	2,645	1,152	2,816
Holy Cross	320	441	194	463	363	1,147	262	97	421	991	245	356	584
Shageluk	977	130	103	350	1,145	5,035	463	470	80	264	870	541	1,262
District 3 subtotal	2,056	2,971	1,146	1,341	2,733	8,690	4,692	3,748	3,127	3,053	3,760	2,049	4,662
Lower Yukon River total	49,772	50,029	46,233	50,251	56,015	76,626	65,707	53,776	49,325	56,951	50,961	50,460	60,477
Anvik	5,250	340	277	451	220	1,371	830	2,052	777	1,117	330	1,308	1,229
Grayling	641	660	1,429	1,612	838	2,616	618	1,617	509	878	738	1,036	1,248
Kaltag	109	916	50	102	163	186	67	954	216	467	193	268	378
Nulato	356	468	133	416	246	254	401	158	6	1,001	1,414	324	364
Koyukuk	995	1,104	1,378	352	890	828	4,459	300	0	119	96	944	1,141
Galena	571	758	1,718	1,702	3,414	718	179	377	1,059	1,689	1,229	1,633	804
Ruby/Kokrines	416	655	603	1,971	775	3,891	681	29	88	678	115	884	1,073
District 4 subtotal	8,338	4,901	5,588	6,606	6,546	9,864	7,235	5,487	2,655	5,949	4,115	6,396	6,238
Huslia	3,243	4,377	2,554	1,349	3,166	7,306	3,241	2,325	3,110	3,568	8,762	2,938	3,910
Hughes	1,213	944	1,723	878	954	428	829	889	1,499	1,196	778	1,142	968
Allakaket	3,451	3,229	4,924	2,864	2,368	3,850	2,116	1,276	2,455	2,150	2,872	3,367	2,369
Alatna	11	66	163	23	132	100	340	0	58	639	0	79	227
Bettles	0	0	6	0	0	7	0	4	0	0	0	1	2
Koyukuk River subtotal	7,918	8,616	9,370	5,114	6,620	11,691	6,526	4,494	7,122	7,553	12,412	7,528	7,477
District 4 total (incl. Koyukuk R.)	16,256	13,517	14,958	11,720	13,166	21,555	13,761	9,981	9,777	13,502	16,527	13,923	13,715

-continued-

Appendix D2.–Page 2 of 2.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011	2012-2016
												Average	Average
Tanana	5,229	2,877	4,665	1,856	4,381	4,333	9,565	2,612	3,162	3,742	3,086	3,802	4,683
Rampart	25	27	112	161	67	71	5	70	0	39	10	78	37
Fairbanks <sup>b</sup>	564	119	44	427	688	172	1,350	300	575	461	1,413	368	572
Stevens Village	254	163	6	28	43	188	50	0	0	500	0	99	148
Beaver	41	27	22	22	393	27	12	0	0	23	102	101	12
Fort Yukon	2,365	230	275	722	1,297	0	225	19	0	13	101	978	51
Circle	200	5	0	37	48	0	66	0	0	0	0	58	13
Central	0	0	2	0	0	0	0	0	0	0	0	0	0
Eagle	15	14	0	25	2	0	50	0	0	0	0	11	10
Other <sup>c</sup>	81	25	29	144	790	101	94	91	8	180	321	214	95
District 5 subtotal (Excluding Chandalar and Black Rivers)	8,774	3,487	5,155	3,422	7,709	4,892	11,417	3,092	3,745	4,958	5,033	5,709	5,621
Venetie	107	50	143	0	0	0	0	0	0	0	0	60	0
Chalkyitsik	0	0	0	133	0	0	0	16	0	0	0	27	3
Chandalar/Black River subtotal	107	50	143	133	0	0	0	16	0	0	0	87	3
District 5 total	8,881	3,537	5,298	3,555	7,709	4,892	11,417	3,108	3,745	4,958	5,033	5,796	5,624
Manley	140	144	367	102	142	58	45	182	9	32	16	179	65
Minto	82	9	1	8	27	64	258	24	0	4	234	25	70
Nenana	1,419	753	506	83	471	370	642	275	60	19	385	646	273
Fairbanks <sup>d</sup>	255	94	372	183	185	114	143	237	183	41	269	218	144
Other <sup>e</sup>	0	311	7	46	0	72	6	13	0	0	7	73	18
District 6 Tanana R. total	1,896	1,311	1,253	422	825	678	1,094	731	252	96	911	1,141	570
Upper Yukon River total	27,033	18,365	21,509	15,697	21,700	27,125	26,272	13,820	13,774	18,556	17,438	20,861	19,909
Alaska, Yukon Area total	92,926	86,514	80,539	88,373	96,020	126,992	115,114	86,900	83,567	87,351	87,437	88,874	99,985
Personal Use (District 6) <sup>f</sup>	184	138	308	319	439	321	138	235	220	176	438	278	218

<sup>a</sup> Data are preliminary.

<sup>b</sup> Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

<sup>c</sup> Other permit holders who fished in District 5 but did not reside in the communities listed.

<sup>d</sup> Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

<sup>e</sup> Other permit holders who fished in District 6 but did not reside in the communities listed.

<sup>f</sup> Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix D3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits, and test fishery projects, Yukon Area, 2007–2017.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011	2012-2016
												Average	Average
Hooper Bay	64	329	41	116	267	1	91	137	79	105	139	163	83
Scammon Bay	170	57	117	70	48	10	58	115	119	657	422	92	192
Coastal District total	234	386	158	186	315	11	149	252	198	762	561	256	274
Nunam Iqua	152	59	41	143	51	210	93	128	210	111	52	89	150
Alakanuk	1,348	423	116	860	881	449	328	593	1,067	748	426	726	637
Emmonak	2,360	1,670	1,589	1,718	1,540	5,890	2,165	2,465	3,244	2,501	2,739	1,775	3,253
Kotlik	530	671	171	481	962	1,073	1,087	886	1,356	1,225	1,370	563	1,125
District 1 subtotal	4,390	2,823	1,917	3,202	3,434	7,622	3,673	4,072	5,877	4,585	4,587	3,153	5,166
Mountain Village	1,073	926	926	133	800	685	2,174	1,484	1,398	1,204	1,617	772	1,389
Pitkas Point	44	101	76	10	30	9	65	400	172	232	172	52	176
St. Marys	825	830	106	387	611	1,423	1,009	2,037	1,611	1,021	780	552	1,420
Pilot Station	741	917	265	833	575	1,031	777	796	1,346	913	1,070	666	973
Marshall	789	748	190	56	562	184	853	1,100	1,731	1,106	536	469	995
District 2 subtotal	3,472	3,522	1,563	1,419	2,578	3,332	4,878	5,817	6,258	4,476	4,175	2,511	4,952
Russian Mission	530	578	205	104	11	282	804	365	449	235	671	286	427
Holy Cross	248	920	627	21	94	339	855	1,840	763	583	329	382	876
Shageluk	147	323	105	1,200	249	16	105	252	176	171	304	405	144
District 3 subtotal	925	1,821	937	1,325	354	637	1,764	2,457	1,388	989	1,304	1,072	1,447
Lower Yukon River total	8,787	8,166	4,417	5,946	6,366	11,591	10,315	12,346	13,523	10,050	10,066	6,736	11,565
Anvik	429	317	176	169	202	569	763	1,028	680	527	296	259	713
Grayling	317	1,012	490	202	1,152	804	471	1,451	1,184	499	272	635	882
Kaltag	910	620	200	658	196	2,830	583	2,828	1,255	680	149	517	1,635
Nulato	1,345	729	552	1,049	652	2,729	2,995	3,839	2,248	2,681	1,748	865	2,898
Koyukuk	927	1,177	578	792	1,388	1,331	5,308	998	2,838	297	166	972	2,154
Galena	1,471	1,364	4,306	1,968	2,739	2,947	602	3,368	2,542	3,319	4,774	2,370	2,556
Ruby/Kokrines	1,959	657	134	1,026	592	4,408	2,505	972	713	526	104	874	1,825
District 4 subtotal	7,358	5,876	6,436	5,864	6,921	15,618	13,227	14,484	11,460	8,529	7,509	6,491	12,664
Huslia	272	64	86	403	183	1,909	722	579	736	333	478	202	856
Hughes	0	127	288	0	64	2	535	348	490	621	74	96	399
Allakaket	939	1,345	572	521	92	508	687	510	524	391	1,495	694	524
Alatna	7	0	0	0	0	18	20	15	64	0	53	1	23
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River subtotal	1,218	1,536	946	924	339	2,437	1,964	1,452	1,814	1,345	2,100	993	1,802
District 4 total (incl. Koyukuk R.)	8,576	7,412	7,382	6,788	7,260	18,055	15,191	15,936	13,274	9,874	9,609	7,484	14,466

-continued-

## Appendix D3.–Page 2 of 2.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011 Average	2012-2016 Average
Tanana	21,596	17,478	19,595	14,984	21,728	20,465	31,546	14,131	19,627	21,204	21,957	19,076	21,395
Rampart	250	1,000	1,000	735	340	190	100	0	186	0	0	665	95
Fairbanks <sup>b</sup>	2,126	659	229	822	1,696	793	1,160	1,406	2,454	2,143	3,075	1,106	1,591
Stevens Village	199	643	770	2,706	911	277	840	6,700	0	4,500	0	1,046	2,463
Beaver	354	13	120	37	122	174	21	323	76	228	0	129	164
Ft. Yukon	8,264	14,252	2,829	6,006	7,188	12,659	16,453	8,025	6,257	7,527	3,696	7,708	10,184
Circle	1,286	3,198	110	927	299	161	1,397	1,277	1,652	1,288	2,182	1,164	1,155
Central	0	0	0	0	0	0	0	0	0	18	0	0	4
Eagle	18,676	15,269	10,941	15,008	17,455	18,731	18,871	17,450	17,185	15,765	19,126	15,470	17,600
Other <sup>c</sup>	46	3,183	71	120	208	443	121	222	229	17	12	726	206
District 5 subtotal (Excluding Chandalar and Black Rivers)	52,797	55,695	35,665	41,345	49,947	53,893	70,509	49,534	47,666	52,690	50,048	47,090	54,858
Venetie	721	1,563	2,373	2,989	1,938	295	5,340	1,538	2,423	5,358	9,272	1,917	2,991
Chalkyitsik	213	0	45	0	0	162	249	125	171	550	1,118	52	251
Chandalar/Black River subtotal	934	1,563	2,418	2,989	1,938	457	5,589	1,663	2,594	5,908	10,390	1,968	3,242
District 5 total	53,731	57,258	38,083	44,334	51,885	54,350	76,098	51,197	50,260	58,598	60,438	49,058	58,101
Manley	3,419	2,490	4,126	2,696	2,333	2,164	1,539	2,579	1,697	414	809	3,013	1,679
Minto	155	28	0	70	1,500	2	593	472	140	40	18	351	249
Nenana	21,863	6,585	7,623	6,802	5,268	8,665	3,112	2,810	3,151	2,269	1,430	9,628	4,001
Fairbanks <sup>d</sup>	3,325	340	3,460	678	4,317	3,876	5,651	5,190	3,496	884	1,114	2,424	3,819
Other <sup>e</sup>	1,131	6,692	870	1,145	958	595	736	1,747	861	1,275	1,048	2,159	1,043
District 6 Tanana R. total	29,893	16,135	16,079	11,391	14,376	15,302	11,631	12,798	9,345	5,165	4,419	17,575	10,848
Upper Yukon River total	92,200	80,805	61,544	62,513	73,521	87,707	102,920	79,931	72,879	73,637	74,466	74,117	83,415
Alaska, Yukon Area total	101,221	89,357	66,119	68,645	80,202	99,309	113,384	92,529	86,600	84,449	85,093	81,109	95,254
Personal Use (District 6) <sup>f</sup>	173	181	78	3,209	347	410	383	278	80	283	626	798	287

<sup>a</sup> Data are preliminary.

<sup>b</sup> Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

<sup>c</sup> Other permit holders who fished in District 5 but did not reside in the communities listed.

<sup>d</sup> Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

<sup>e</sup> Other permit holders who fished in District 6 but did not reside in the communities listed.

<sup>f</sup> Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix D4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, Yukon Area, 2007–2017.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011 Average	2012-2016 Average
Hooper Bay	26	66	24	45	0	7	73	118	95	121	222	32	83
Scammon Bay	84	50	222	79	55	86	214	86	79	234	213	98	140
Coastal District total	110	116	246	124	55	93	287	204	174	355	435	130	223
Nunam Iqua	92	24	71	73	23	18	83	153	229	58	20	57	108
Alakanuk	857	157	194	449	431	252	167	443	581	184	201	418	325
Emmonak	1,032	717	401	362	472	2,660	517	613	852	717	723	597	1,072
Kotlik	284	313	181	238	201	420	457	573	438	274	102	243	432
District 1 subtotal	2,265	1,211	847	1,122	1,127	3,350	1,224	1,782	2,100	1,233	1,046	1,314	1,938
Mountain Village	1,027	518	413	127	261	256	271	202	723	437	769	469	378
Pitkas Point	38	130	45	116	37	53	41	123	72	22	40	73	62
St. Marys	97	591	151	92	230	141	124	408	391	115	223	232	236
Pilot Station	263	268	203	189	145	329	136	568	305	136	91	214	295
Marshall	922	490	245	33	150	567	508	468	1,511	409	140	368	693
District 2 subtotal	2,347	1,997	1,057	557	823	1,346	1,080	1,769	3,002	1,119	1,263	1,356	1,663
Russian Mission	259	372	96	300	0	319	152	124	154	6	483	205	151
Holy Cross	213	38	120	0	0	237	0	103	246	134	0	74	144
Shageluk	267	0	105	53	36	0	219	113	28	0	14	92	72
District 3 subtotal	739	410	321	353	36	556	371	340	428	140	497	372	367
Lower Yukon River total	5,351	3,618	2,225	2,032	1,986	5,252	2,675	3,891	5,530	2,492	2,806	3,042	3,968
Anvik	807	40	137	28	19	214	97	197	46	184	11	206	148
Grayling	271	25	318	132	119	26	34	403	212	35	0	173	142
Kaltag	204	45	40	0	258	928	306	514	18	53	4	109	364
Nulato	130	195	171	242	118	41	125	454	48	0	82	171	134
Koyukuk	189	84	198	254	137	62	3,267	50	416	1	6	172	759
Galena	425	558	2,353	549	1,013	276	170	718	654	201	136	980	404
Ruby/Kokrines	168	291	314	148	312	1,806	345	335	185	226	24	247	579
District 4 subtotal	2,194	1,238	3,531	1,353	1,976	3,353	4,344	2,671	1,579	700	263	2,058	2,529
Huslia	592	100	323	289	70	165	342	265	294	93	154	275	232
Hughes	100	0	89	0	13	0	18	17	16	0	20	40	10
Allakaket	66	152	43	88	13	38	236	109	40	33	92	72	91
Alatna	0	0	0	0	0	0	0	0	12	0	0	0	2
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River subtotal	758	252	455	377	96	203	596	391	362	126	266	388	336
District 4 total (incl. Koyukuk R.)	2,952	1,490	3,986	1,730	2,072	3,556	4,940	3,062	1,941	826	529	2,446	2,865

-continued-

Appendix D4.–Page 2 of 2.

Community	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	2007-2011	2012-2016
												Average	Average
Tanana	2,369	1,511	2,373	2,314	312	3,060	1,135	1,788	2,434	639	874	1,776	1,811
Rampart	50	0	0	24	0	0	0	0	2	2	0	15	1
Fairbanks <sup>b</sup>	26	7	13	2	2	0	0	0	0	101	112	10	20
Stevens Village	0	0	90	428	0	0	0	0	0	50	0	104	10
Beaver	354	6	0	1	0	2	0	2	0	0	0	72	1
Fort Yukon	567	1,618	2	244	1,040	4	7	201	2	1	4	694	43
Circle	0	0	13	164	0	5	150	0	0	38	0	35	39
Central	0	0	0	0	0	0	0	0	0	0	0	0	0
Eagle	0	0	0	1	1	0	0	1	0	0	0	0	0
Other <sup>c</sup>	0	61	7	0	0	21	0	0	0	0	1	14	4
District 5 subtotal (Excluding Chandalar and Black Rivers)	3,366	3,203	2,498	3,178	1,355	3,092	1,292	1,992	2,438	831	991	2,720	1,929
Venetie	0	0	0	159	34	0	6	0	24	0	16	39	6
Chalkyitsik	0	0	0	267	0	0	0	38	0	33	0	53	14
Chandalar/Black River subtotal	0	0	0	426	34	0	6	38	24	33	16	92	20
District 5 total	3,366	3,203	2,498	3,604	1,389	3,092	1,298	2,030	2,462	864	1,007	2,812	1,949
Manley	1,126	1,901	2,308	1,832	1,482	1,374	447	1,177	1,263	323	750	1,730	917
Minto	155	0	0	0	0	0	266	37	270	0	0	31	115
Nenana	4,487	2,775	3,475	2,313	3,304	5,904	1,762	2,138	2,712	2,293	920	3,271	2,962
Fairbanks <sup>d</sup>	609	230	577	212	1,109	1,502	2,576	3,689	3,108	978	362	547	2,371
Other <sup>e</sup>	1,468	3,522	691	1,198	947	760	206	870	647	677	504	1,565	632
District 6 Tanana River total	7,845	8,428	7,051	5,555	6,842	9,540	5,257	7,911	8,000	4,271	2,736	7,144	6,996
Upper Yukon Area total	14,163	13,121	13,535	10,889	10,303	16,188	11,495	13,003	12,403	5,961	4,272	12,402	11,810
Alaska, Yukon Area total	19,624	16,855	16,006	13,045	12,344	21,533	14,457	17,098	18,107	8,808	7,313	15,575	16,001
Personal Use (District 6) <sup>f</sup>	135	50	70	1,062	232	100	109	174	145	266	200	310	159

<sup>a</sup> Data are preliminary.

<sup>b</sup> Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

<sup>c</sup> Other permit holders who fished in District 5 but did not reside in the communities listed.

<sup>d</sup> Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

<sup>e</sup> Other permit holders who fished in District 6 but did not reside in the communities listed.

<sup>f</sup> Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix D5.—Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2007–2017.

Community	2007	2008	2009	2010	2011	2012 <sup>a</sup>	2013	2014 <sup>a</sup>	2015	2016 <sup>a, b</sup>	2017 <sup>a, b</sup>	Estimated Total		
												Even Years Average	Odd Years Average	All Years Average
Hooper Bay	113	1,013	957	219	210	1,101	302	712	451	4,007	319	1,410	407	909
Scammon Bay	1,435	2,766	1,186	2,245	1,888	1,343	507	1,923	1,414	2,490	1,005	2,153	1,286	1,720
Coastal District	1,548	3,779	2,143	2,464	2,098	2,444	809	2,635	1,865	6,497	1,324	3,564	1,693	2,628
Nunam Iqua	170	757	61	306	8	1,051	0	670	352	352	484	627	118	373
Alakanuk	32	494	24	151	13	174	92	970	15	715	100	501	35	268
Emmonak	51	641	5	206	0	199	0	588	7	228	0	372	13	193
Kotlik	129	1,161	42	124	32	195	23	1,064	14	505	159	610	48	329
District 1	382	3,053	132	787	53	1,619	115	3,292	388	1,800	743	2,110	214	1,162
Mountain Village	87	500	6	217	24	207	0	233	57	89	148	249	35	142
Pitkas Point	66	15	0	143	0	2	2	45	288	48	0	51	71	61
St. Mary's	32	367	5	543	1	643	0	614	18	104	176	454	11	233
Pilot Station	0	34	3	22	0	23	131	27	0	3	5	22	27	24
Marshall	0	26	0	21	66	5	7	1	0	5	46	12	15	13
District 2	185	942	14	946	91	880	140	920	363	249	375	787	159	473
Russian Mission	3	436	0	2	0	76	12	8	0	0	0	104	3	54
Holy Cross	0	20	0	0	0	0	0	0	0	2	1	4	0	2
Shageluk	0	0	9	0	9	24	0	3	0	9	1	7	4	5
District 3	3	456	9	2	9	100	12	11	0	11	2	116	7	61
Anvik	0	23	2	0	0	0	0	0	0	0	0	5	0	3
Grayling	0	200	0	0	40	0	0	39	0	33	0	54	8	31
Kaltag	0	383	0	0	0	0	0	0	0	73	0	91	0	46
Nulato	0	35	0	0	0	0	0	8	0	0	0	9	0	4
Koyukuk	0	67	0	0	0	0	0	0	0	0	0	13	0	7
Galena	0	31	0	0	0	3	0	6	16	11	8	10	3	7
Ruby	0	184	0	0	0	0	0	13	0	0	0	39	0	20
Huslia	0	100	0	0	0	101	0	0	0	0	0	40	0	20
Hughes	0	0	0	0	0	0	0	0	0	0	5	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	1,023	2	0	40	104	0	66	16	117	13	262	12	137

-continued-

Appendix D5.–Page 2 of 2.

Community	2007	2008	2009	2010	2011	2012 <sup>a</sup>	2013	2014 <sup>a</sup>	2015	2016 <sup>a, b</sup>	2017 <sup>a, b</sup>	Estimated Total		
												Even Years Average	Odd Years Average	All Years Average
Tanana	0	80	0	0	0	3	0	8	13	34	0	25	3	14
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	196	0	0	0	0	0	0	0	0	0	39	0	20
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	276	0	0	0	3	0	8	13	34	0	64	3	33
Survey Totals	2,118	9,529	2,300	4,199	2,291	5,150	1,076	6,932	2,645	8,708	2,457	6,904	2,086	4,495
CI (95%)	739	1,818	1,184	1,209	918	1,155	387	1,356	612	3,097	748	1,727	768	1,248

*Note:* Averages do not include the current year. CI (95%) is the annual 95% confidence interval.

<sup>a</sup> Includes pink salmon given to communities from test fishery projects.

<sup>b</sup> Data are preliminary.

Appendix D6.—Reported harvest of salmon and other fish species from subsistence permits issued in the Yukon and Koyukuk rivers, 2007–2017.

Year	Number of permits		Percent returned	Number reporting harvest	Reported harvest									
	Issued	Returned			Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2007	187	171	91%	118	6,999	890	22,681	76	723	58	47	84	193	488
2008	188	175	93%	111	4,313	192	20,581	7	420	105	71	73	93	395
2009	167	162	97%	94	3,794	189	13,117	123	519	46	46	74	76	265
2010	207	198	96%	122	4,059	814	17,612	191	491	68	22	73	40	157
2011	191	188	98%	117	4,276	1,619	20,447	3	723	70	17	119	160	395
2012	164	159	97%	87	1,749	344	20,316	26	663	100	11	30	21	59
2013	124	118	95%	72	1,203	1,715	21,649	150	291	37	15	23	39	107
2014	100	97	97%	51	77	461	20,355	1	738	201	8	37	10	67
2015	106	105	99%	55	792	583	21,706	2	487	143	14	76	7	96
2016 <sup>a</sup>	146	145	99%	99	2,820	680	19,231	141	662	53	9	52	9	36
2017 <sup>a</sup>	156	154	99%	120	6,022	1,760	24,395	113	870	114	19	53	6	49
2012-2016														
Average	128	125	97%	73	1,328	757	20,651	64	568	107	11	44	17	73
2007-2016														
Average	158	152	96%	93	3,008	749	19,770	72	572	88	26	64	65	207

*Note:* Reported information from permits issued in the Yukon River (portions of Subdistricts 5-C and 5-D) and the South Fork of the Koyukuk River.

<sup>a</sup> Data are preliminary.

Appendix D7.—Reported harvest of salmon and other fish species from subsistence permits issued in Subdistricts 6-A, 6-B and 6-D of the Tanana River, 2007–2017.

Year	Number of permits				Number reporting harvest	Reported harvest									
	Issued		Returned	Percent returned		Summer		Fall	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
	Salmon	Pike				chum	chum								
2007	135	118	239	94%	125	1,472	1,896	16,298	6,647	2,603	24	52	2,009	50	37
2008	169	146	292	93%	152	601	1,000	10,510	6,017	2,942	4	18	1,603	48	93
2009	139	113	243	96%	125	1,273	1,253	13,845	6,744	3,472	29	73	662	127	98
2010	160	96	235	92%	107	954	422	10,813	5,415	2,343	52	20	177	64	39
2011	157	70	219	96%	112	1,015	825	12,726	6,124	4,072	32	122	200	118	80
2012	136	106	221	91%	110	603	494	12,881	8,099	3,281	47	47	795	142	45
2013	167	77	230	94%	113	366	1,094	11,425	5,190	2,386	10	52	377	190	100
2014	123	106	224	98%	123	272	712	11,602	7,326	2,864	11	19	611	91	16
2015	128	120	247	100%	120	356	234	9,273	7,815	3,004	22	9	814	28	34
2016 <sup>a</sup>	110	201	301	97%	180	410	636	3,701	3,048	2,620	16	34	1,131	23	1
2017 <sup>a</sup>	106	93	198	99%	92	657	734	4,419	2,515	1,393	13	12	224	8	0
2012-2016															
Average	133	122	245	1	129	401	634	9,776	6,296	2,831	21	32	746	95	39
2007-2016															
Average	142	115	245	1	127	732	857	11,307	6,243	2,959	25	45	838	88	54

*Note:* Reported information from permits issued in the Tanana River includes the Kantishna River and Tolovana River pike fishery.

<sup>a</sup> Data are preliminary.

Appendix D8.—Reported harvest of salmon and other fish species from personal use permits issued in Subdistrict 6-C of the Tanana River, 2007–2017.

Year	Number of permits			Percent returned	Number reporting harvest	Reported harvest									
	Issued		Summer Chinook			Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling		
	Salmon	Whitefish <sup>a</sup>													
2007	65	3	66	97%	32	136	184	173	135	4	1	0	1	0	0
2008	51	6	56	98%	29	126	138	181	50	41	2	0	2	157	0
2009	57	11	68	100%	28	127	308	78	70	48	1	0	0	315	0
2010	67	8	73	97%	41	162	319	3,209	1,062	206	1	3	7	66	5
2011	67	7	71	96%	38	89	439	347	232	62	1	1	0	142	0
2012	60	12	70	97%	32	71	321	410	100	22	0	0	0	233	0
2013	53	14	66	99%	36	42	138	383	132	89	1	1	3	118	0
2014	50	21	71	100%	33	1	235	278	174	145	3	0	0	270	0
2015	42	22	64	100%	28	5	220	80	145	280	1	0	1	323	1
2016 <sup>b</sup>	57	21	78	100%	39	57	176	283	266	271	1	0	7	181	6
2017 <sup>b</sup>	82	14	96	100%	49	125	438	626	200	117	1	1	4	165	0
2012-2016															
Average	54	15	68	98%	33	42	271	300	157	120	1	0	1	217	0
2007-2016															
Average	57	11	67	98%	34	85	256	547	238	118	2	1	2	181	1

Note: Reported information from permits issued in the salmon and whitefish/sucker fishery (combined harvest).

<sup>a</sup> Whitefish and sucker fishery permits.

<sup>b</sup> Data are preliminary.

Appendix D9.—Estimated and reported subsistence and personal use harvest of miscellaneous fish species, Yukon Area, 2007–2017.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016 <sup>a</sup>	2017 <sup>a</sup>	Average 2007-2011	Average 2012-2016
Survey estimates <sup>b</sup>													
Whitefish <sup>c</sup>	64,338	54,729	51,778	50,232	44,890	70,486	64,766	84,889	79,740	70,051	65,084	53,193	73,986
Northern pike	25,947	16,053	8,061	14,086	14,270	18,450	11,264	14,582	20,109	24,592	22,596	15,683	17,799
Sheefish	13,203	10,154	7,861	9,231	10,139	17,094	15,553	12,583	12,828	14,459	12,910	10,118	14,503
Survey reported													
Burbot	3,500	3,273	2,027	2,743	2,477	2,422	2,115	2,016	3,364	2,502	2,811	2,804	2,484
Arctic lamprey	12,584	803	1,699	10,863	6,037	1,243	2,608	19,888 <sup>d</sup>	42,237 <sup>d</sup>	17,609	19,357	6,397	16,717
Tomcod	7,121	6,391	2,709	3,978	6,797	4,023	5,221	10,020	4,697	5,795	6,661	5,399	5,951
Arctic grayling	2,296	857	667	1,571	1,273	2,674	1,435	1,772	1,832	1,518	1,452	1,333	1,846
Longnose suckers	225	25	59	273	286	95	180	90	—	—	—	174	122
Arctic char	181	184	43	148	205	216	167	—	—	—	—	152	192
Alaska blackfish	131,712	110,356	47,320	68,873	87,064	62,731	63,235	92,080	97,586	90,207	109,888	89,065	81,168
Sockeye salmon	493	213	216	263	279	405	258	—	—	—	—	293	332
Herring <sup>e</sup>	—	—	—	—	—	10,449	9,082	17,164	24,591	15,959	16,492	#DIV/0!	15,449
Permit Reported													
Whitefish <sup>b</sup>	3,328	3,402	4,039	3,040	4,851	3,966	2,766	3,747	3,771	3,558	2,380	3,732	3,562
Northern pike	2,094	1,678	733	257	319	825	403	648	891	1,186	281	1,016	791
Sheefish	83	111	76	121	103	147	48	215	166	70	128	99	129
Burbot	99	89	119	45	140	58	68	27	23	43	32	98	44
Arctic grayling	525	488	363	201	475	104	210	83	131	62	49	410	118
Longnose suckers	243	298	518	170	414	396	347	371	358	214	179	329	337
Yukon Area totals from subsistence survey communities and permit areas													
Whitefish <sup>b</sup>	67,666	58,131	55,817	53,272	49,741	74,452	67,532	88,636	83,511	73,609	67,464	56,925	77,548
Northern pike	28,041	17,731	8,794	14,343	14,589	19,275	11,667	15,230	21,000	25,778	22,877	16,700	18,590
Sheefish	13,286	10,265	7,937	9,352	10,242	17,241	15,601	12,798	12,994	14,529	13,038	10,216	14,633
Burbot	3,599	3,362	2,146	2,788	2,617	2,480	2,183	2,043	3,387	2,545	2,843	2,902	2,528
Arctic grayling	2,821	1,345	1,030	1,772	1,748	2,778	1,645	1,855	1,963	1,580	1,501	1,743	1,964
Longnose suckers	468	323	577	443	700	491	527	461	358	214	179	502	410

-continued-

*Note:* En dash indicates information was not collected.

- <sup>a</sup> Data are preliminary.
- <sup>b</sup> Subsistence whitefish, pike, and a sheefish estimates in surveyed communities is based on a stratified random sample of households as designated for the estimation of subsistence salmon harvests, and may not reflect harvest of those households targeting non-salmon species.
- <sup>c</sup> Whitefish includes various *Coregonus* species and round whitefish (*Prosopium cylindraceum*).
- <sup>d</sup> Harvest of Arctic lamprey reported on postcards was incorporated into totals reported on surveys. This is the total number reported on surveys and postcards.
- <sup>e</sup> Starting in 2012, households in the Lower Yukon including the Coastal District were asked about harvest of herring. Household responses for herring include smelt and unspecified species.

## **APPENDIX E**

Appendix E1.—Origins of Yukon River drainage salmon spawning escapement goals by species.

Stock/Location	Goal Type	Goals	Year Established	Primary Source
<u>Chinook Salmon Stock</u>				
E. Fork Andreafsky River	SEG	2,100–4,900	2010	Volk et al. (2009)
W. Fork Andreafsky River	SEG	640–1,600	2005	ADF&G (2004)
Anvik River	SEG	1,100–1,700	2005	ADF&G (2004)
Nulato River (Forks Combined)	SEG	940–1,900	2005	ADF&G (2004)
Chena River	BEG	2,800–5,700	2001	Evenson (2002)
Salcha River	BEG	3,300–6,500	2001	Evenson (2002)
Canadian Upper Yukon River	IMEG	42,500–55,000	2010	JTC (2010)
<u>Summer Chum Salmon Stock</u>				
Yukon River Drainage	BEG	500,000–1,200,000	2016	Hamazaki and Conitz (2015)
E. Fork Andreafsky River	SEG	>40,000	2010	Fleischman and Evenson (2010)
Anvik River	BEG	350,000–700,000	2005	ADF&G (2004)
<u>Fall Chum Salmon Stock</u>				
Yukon River Drainage	SEG	300,000–600,000	2010	Fleischman and Borba (2009)
Tanana River	BEG	61,000–136,000	2001	Eggers (2001)
Delta River	BEG	6,000–13,000	2001	Eggers (2001)
Chandalar River	BEG	74,000–152,000	2001	Eggers (2001)
Canadian Upper Yukon River	IMEG	70,000–104,000	2010	JTC (2010)
Fishing Branch River	IMEG	22,000–49,000	2008	JTC (2008)
<u>Coho Salmon Stock</u>				
Delta Clearwater River	SEG	5,200–17,000	2004	ADF&G (2004)

*Note:* Sustainable escapement goal (SEG), biological escapement goal (BEG), and interim management escapement goal (IMEG). Sheenjek River and Upper Yukon Tributaries fall chum salmon goals were discontinued in 2016.

Appendix E2.—Detailed preliminary salmon spawning escapement estimates for the Yukon River drainage, 2017.

Stream (method)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Andreafsky River							
West Fork (fixed wing)	7/20	Fair	942	11,655	—	—	ADF&G
East Fork (weir count) <sup>a</sup>	6/14–7/31	—	2,970	55,532	—	—	USFWS
Andreafsky Subtotal			3,912	67,187	—	—	
Yukon River Near Pilot Station (sonar)	5/30–9/7	—	(263,014)	(3,093,735)	(1,829,931)	(166,529)	ADF&G
Anvik River (sonar)	6/15–7/26	—	—	415,139	—	—	ADF&G
Anvik River (fixed wing) <sup>b</sup>							
Goblet Creek to Sonar Site	7/20	Good	21	(453)	—	—	ADF&G
Sonar Site to Yellow River	7/20	Good	24	(2,797)	—	—	ADF&G
Yellow River to Swift River	7/20	Good	198	(7,385)	—	—	ADF&G
Swift River to Otter Creek	7/20	Good	185	(6,560)	—	—	ADF&G
Otter Creek To McDonald Creek	7/20	Good	511	(9,930)	—	—	ADF&G
Beaver Creek	7/20	Good	42	(1,615)	—	—	ADF&G
Swift River	7/20	Good	34	(4,722)	—	—	ADF&G
Otter Creek	7/20	Good	86	(4,729)	—	—	ADF&G
Anvik Subtotal			1,101	415,139	—	—	
Nulato River (fixed wing)							
North Fork	7/22	Good	500	7,882	—	—	ADF&G
South Fork	7/22	Good	443	4,890	—	—	ADF&G
Nulato Subtotal			943	12,772	—	—	
Total Lower Yukon River (downstream of Koyukuk River)			5,956	495,098	—	—	
Koyukuk River Drainage							
Gisasa River (weir project) <sup>c</sup>	6/17–7/31	—	1,083	73,584	—	—	USFWS
Henshaw Creek (weir project)	6/24–8/5	—	677	360,687	—	—	TCC
Koyukuk River Drainage Subtotal			1,760	434,271	—	—	
Total Yukon River (downstream of Tanana River)			7,716	929,369	—	—	

-continued-

Appendix E2.–Page 2 of 3.

Stream (method)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Tanana River Drainage							
Nenana River Drainage (helicopter)							
Nenana River (Teklanika R.–upstream 8 miles)	10/23	Good	–	–	4	862	ADF&G
Seventeenmile Slough	10/23	Good	–	–	0	1,942	ADF&G
Lost Slough (eastern floodplain)	10/23	Good	–	–	7,384	1,771	ADF&G
Julius Creek	10/23	Incomplete	–	–	0	0	ADF&G
Clear Creek	10/23	Fair	–	–	0	9	ADF&G
Glacier Creek	10/23	Fair	–	–	0	0	ADF&G
Wood Creek	10/23	Good	–	–	0	2,025	ADF&G
Teklanika River Spings	10/23	Poor	–	–	–	20	ADF&G
Nenana Subtotal			–	–	7,388	6,629	
Chena River (counting tower/sonar)	6/24–8/6	–	4,201	21,156	–	–	ADF&G
Salcha River (counting tower/sonar)	6/25–8/9	–	4,195	29,093	–	–	ADF&G
Delta River							
Foot Survey (peak count)	11/14, 11/1	Good	–	–	48,783	597	ADF&G
Goodpaster River (counting tower)	7/9–7/28	–	2,767	–	–	–	BSFA
Total Tanana River			11,163	50,249	56,171	7,226	
Chandalar River (sonar) <sup>d</sup>	8/6–9/27, 10/9	–	–	–	509,115	–	USFWS
Porcupine River Drainage (US)							
Yukon River near Eagle (sonar) <sup>d</sup>	6/27–10/6, 10/17	–	(73,313)	–	(419,099)	–	ADF&G/DFO
Total Alaska Portion of Drainage Observed Escapements			18,879	979,618	565,286	7,226	

-continued-

Appendix E2.–Page 3 of 3.

Stream (method)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Yukon Territory Streams							
Porcupine River Drainage (Canada)							
Porcupine River (sonar minus Canada Harvest) <sup>d</sup>	6/29–10/15	–	1,060	–	65,506	–	DFO <sup>e</sup>
Fishing Branch (weir) <sup>d</sup>	8/26–10/25	–	–	–	(48,524)	–	DFO <sup>e</sup>
Mainstem Yukon River Sites - Canada							
Kluane River (fixed-wing)	10/19	Fair	–	–	(16,625)	–	DFO <sup>e</sup>
Pelly River (sonar) <sup>d</sup>	7/3–8/15	–	(9,081)	–	–	–	DFO <sup>e</sup>
Big Salmon River (sonar)	7/16–8/19	–	(5,672)	–	–	–	DFO <sup>e</sup>
Takhini River (sonar) <sup>f</sup>	7/25, 8/10–9/5	–	–	–	(1,872)	–	DFO <sup>e</sup>
Takhini River (aerial)	8/29	Good	(415)	–	–	–	DFO <sup>e</sup>
Whitehorse Fishway (fish ladder with window)	7/24–9/5	–	(1,226)	–	–	–	DFO <sup>e</sup>
Subtotal Mainstem Sites			(16,394)	–	(18,497)	–	
Canadian Mainstem Yukon River							
Border Passage Estimate (Eagle sonar minus U.S. harvest)			(71,815)	–	(404,989)	–	ADF&G/DFO
Canadian Escapement Estimate (Border Passage minus Canada Harvest) <sup>g</sup>			68,315	–	401,585	–	ADF&G/DFO
Total Yukon Territory <sup>h</sup>			69,375	–	467,091	–	
Yukon River Drainage Total Observed Escapements			88,254	979,618	1,032,377	7,226	

*Note:* Data in parentheses are not included in subtotals or totals. Surveys rated anything other than “Good” or “Fair” should not be used without reviewing the entire history of the system to determine relevance. (<http://sf.adfg.state.ak.us/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx>).

<sup>a</sup> East Fork Andreafsky River weir documented 401 sockeye and 30,044 pink salmon, 2017.

<sup>b</sup> Anvik River aerial survey documented 480 sockeye salmon, 2017.

<sup>c</sup> Gisasa River weir documented 13 sockeye salmon, 2017.

<sup>d</sup> Includes postseason expansion for targeted salmon speices.

<sup>e</sup> Yukon Territory counts provided by DFO but are operated by various contractors mostly funded by Restoration and Enhancement Funds.

<sup>f</sup> Includes pre-season expansion of Chinook salmon.

<sup>g</sup> Canadian "border passage" estimate for Yukon Territory streams (excluding the Porcupine River). Canadian harvest has not been removed.

<sup>h</sup> Yukon Territory counts include Canadian mainstem Yukon River escapement estimate plus Porcupine River.

Appendix E3.—Pilot Station sonar project estimates with standard error, Yukon River drainage, 1995 and 1997–2017.

Year <sup>a</sup>	Chinook	SE	Summer chum	SE	Fall chum	SE	Coho <sup>b</sup>	SE	Pink	SE	Other <sup>c</sup>	SE	Total
1995	221,357	18,313	3,620,102	63,095	1,148,916	45,081	115,569	17,209	53,165	12,495	716,201	39,891	5,905,014
1997	199,763	20,535	1,359,117	39,612	579,767	20,278	118,065	10,827	3,872	2,017	376,841	26,532	2,689,881
1998	108,038	51,703	824,901	39,270	375,222	12,387	146,365	9,403	103,416	6,806	210,677	39,574	1,824,098
1999	184,218	57,953	969,459	47,296	451,505	15,253	76,174	5,356	3,947	1,741	337,701	18,069	2,077,396
2000	54,560	6,601	448,665	14,395	273,206	12,539	206,365	10,208	61,389	6,958	262,627	14,695	1,338,373
2001 <sup>d</sup>	121,089	9,106	442,546	14,703	408,961	19,343	160,272	11,811	2,846	1,343	265,749	12,076	1,429,320
2002	151,713	24,298	1,097,769	31,062	367,886	17,508	137,077	7,689	123,698	11,745	405,534	21,246	2,334,172
2003	318,088	17,359	1,183,009	36,869	923,540	36,052	280,552	20,301	11,370	2,251	379,651	17,604	3,155,631
2004	200,761	12,145	1,344,213	30,363	633,368	22,206	207,844	11,933	399,339	20,531	391,939	19,875	3,240,290
2005 <sup>e</sup>	259,214	25,807	2,572,586	47,944	1,894,078	67,359	194,622	17,823	61,122	6,866	424,531	20,116	5,430,841
2006	228,763	16,836	3,780,760	94,500	964,238	27,749	163,889	11,044	183,006	14,376	531,047	37,610	5,971,623
2007	170,246	15,523	1,875,491	45,224	740,195	28,175	192,406	11,708	126,282	13,655	761,657	37,154	3,936,864
2008	175,046	12,989	1,849,553	41,667	636,525	18,251	145,378	8,441	580,127	52,427	306,225	38,132	3,795,389
2009 <sup>d</sup>	177,796	15,885	1,477,186	42,490	274,227	23,436	240,779	17,758	34,529	7,658	589,916	31,373	2,862,338
2010	145,088	89,628	1,415,027	93,896	458,103	24,800	177,724	7,592	917,731	48,439	569,905	63,425	3,833,506
2011	148,797	12,264	2,051,501	47,104	873,877	25,933	149,533	12,626	9,754	1,813	453,537	20,113	3,748,542
2012	127,555	11,339	2,136,476	48,046	778,158	37,802	130,734	9,602	420,344	36,366	464,058	22,476	4,151,339
2013	136,805	20,001	2,849,683	69,667	865,295	43,937	110,515	14,162	6,126	3,948	732,009	34,535	4,788,210
2014	163,895	11,389	2,020,309	60,127	706,630	37,630	283,421	17,089	679,126	36,469	584,831	27,192	4,551,897
2015	146,859	18,820	1,591,505	59,825	669,483	24,776	121,193	8,884	39,690	7,560	853,989	45,440	3,498,988
2016	176,898	11,226	1,921,748	48,946	994,760	39,170	168,297	11,187	1,364,849	52,975	355,365	24,548	5,095,025
2017	263,014	17,696	3,093,735	84,048	1,829,931	54,179	166,320	20,382	166,529	18,991	796,199	39,097	6,439,149
Averages													
1995-2016	172,217		1,753,886		715,140		167,942		246,939		474,952		3,602,797
2007-2016	156,899		1,918,848		699,725		171,998		417,856		567,149		4,026,210

Note: To calculate a 90% Confidence interval, multiply the Standard Error (SE) by 1.645. The sonar project did not operate at full capacity in 1996.

<sup>a</sup> Estimates for all years were generated with the most current apportionment model.

<sup>b</sup> Estimate may not include entire run. From 2008 to present, operations were extended to September 7, instead of the usual end date of August 31.

<sup>c</sup> Includes sockeye salmon, cisco, whitefish, sheefish, burbot, suckers, Dolly Varden, and Northern pike.

<sup>d</sup> High water levels were experienced all season in 2001, and in 2009 during the summer season with extreme low water during the fall season, and therefore, passage estimates are considered speculative.

<sup>e</sup> Estimates include extrapolations for the dates June 10 to June 18 to account for the time before the DIDSON was deployed.

Appendix E4.—Chinook salmon aerial survey indices for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017.

Year	Andreafsky River		Anvik River		Nulato River		Gisasa River	
	East Fork	West Fork	Drainagewide Total	Index Area <sup>a</sup>	North Fork <sup>b</sup>	South Fork	Both Forks	
1997	1,140	1,510	3,979	2,690				144
1998	1,027	1,249 <sup>d</sup>	709 <sup>d</sup>	648 <sup>d</sup>	507	546	1,053	889
1999	<sup>c</sup>	870 <sup>d</sup>	950 <sup>d</sup>	950 <sup>d</sup>				
2000	1,018		1,721	1,394				
2001	1,059	565	1,420	1,177	1,116	768	1,884 <sup>e</sup>	1,298
2002	1,447	917	1,713	1,329	687	897	1,584	506
2003	1,116 <sup>d</sup>	1,578	973 <sup>d</sup>	973 <sup>d</sup>				
2004	2,879	1,317	3,679	3,304	856	465	1,321	731
2005	1,715	1,492	2,421	1,922	323	230	553	958
2006	591 <sup>d</sup>	824	1,886	1,776 <sup>f</sup>	620	672	1,292	843
2007	1,758	976	1,529	1,497	1,928	1,078	2,583	593
2008	278 <sup>d</sup>	262 <sup>d</sup>	992 <sup>d</sup>	827 <sup>d</sup>	463	543	922	487
2009	84 <sup>d</sup>	1,678	832	590	1,418	842	2,260	515
2010	537 <sup>d</sup>	858	974	721	356	355	711	264
2011	620	1,173	642	501	788	613	1,401	906
2012	<sup>c</sup>	227 <sup>d</sup>	722	451	682	692	1,374	
2013	1,441	1,090	940	656	586	532	1,118	201
2014	<sup>c</sup>	1,695	1,584	800				
2015	2,167 <sup>d</sup>	1,356 <sup>d</sup>	2,616		999	565	1,564	558
2016	<sup>c</sup>							
2017	<sup>c</sup>	942	1,101 <sup>d</sup>	894	500	443	943	
SEG	<sup>g</sup>	<sup>h</sup> 640–1,600	1,100–1,700		<sup>e</sup>		940–1,900	
Average								
1997–2016	1,180	1,091	1,594	1,234	809	628	1,401	635
2007–2016	984	1,035	1,203	755	903	653	1,492	503
2012–2016	1804	1092	1466	636	756	596	1352	380

Note: Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.

<sup>a</sup> Anvik River Index Area includes mainstem counts between Yellow River and McDonald Creek.

<sup>b</sup> Nulato River mainstem aerial survey counts below the forks are included with the North Fork.

<sup>c</sup> Aerial survey was not flown due to run timing and/or water/weather conditions.

<sup>d</sup> Incomplete, poor timing, and/or poor survey conditions resulting in minimal or inaccurate counts.

<sup>e</sup> In 2001, the Nulato River escapement goal was established for both forks combined.

<sup>f</sup> Index area includes counts from Beaver Creek to McDonald Creek.

<sup>g</sup> Sustainable Escapement Goal.

<sup>h</sup> Aerial escapement goal was discontinued in 2010. Weir-based goal replaced East Fork Andreafsky River aerial survey goal.

Appendix E5.—Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017.

Year	East Fork Andreafsky River		Nulato River	Henshaw Creek		Gisasa River		Chena River		Salcha River		Goodpaster River
	Weir		Tower	Weir		Weir		Tower		Tower		Tower
	No. Fish	% Fem.	No. Fish	No. Fish	% Fem.	No. Fish	% Fem.	No. Fish	% Fem.	No. Fish	% Fem.	No. Fish
1997	3,186	36.8	4,766			3,764	26.0	13,390	25.6	18,514	41.8	
1998	4,034	29.0	1,536			2,414	16.2	4,745	28.4	5,027	26.1	
1999	3,444	28.6	1,932			2,644	26.4	6,485	45.6	9,198	44.6	
2000	1,609	54.3	908	193	29.7	2,089	34.4	4,694 <sup>b</sup>	21.7	4,595	34.3	
2001	1,148	<sup>c</sup>	<sup>c</sup>	1,091	36.3	3,052	49.2	9,696	30.1	13,328	32.1	
2002	4,123	21.1	2,696	649	30.8	2,025	20.7	6,967 <sup>b</sup>	27.3	9,000 <sup>d</sup>	29.8	
2003	4,336	45.3	1,716 <sup>e</sup>	748	38.4	1,901	38.1	11,100 <sup>d</sup>	31.8	15,500 <sup>d</sup>	36.6	
2004	8,045	37.3		1,248	21.3	1,774	30.1	9,645	43.9	15,761	54.2	3,673
2005	2,239	50.2		1,059	41.4	3,111	34.0	<sup>c</sup>	30.6	5,988	47.5	1,184
2006	6,463	42.6			<sup>c</sup>	3,031	28.2	2,936	32.1	10,679	38.1	2,479
2007	4,504	44.7		740	24.9	1,427	39.0	3,806	27.3	6,425	31.0	1,581
2008	4,242	34.8		766	27.7	1,738	16.2	3,208	29.0	5,415 <sup>d</sup>	33.7	1,880
2009	3,004	46.0		1,637	49.0	1,955	29.3	5,253	40.0	12,774	33.9	4,280
2010	2,413	48.6		857	49.6	1,516	29.0	2,382	20.6	6,135	26.6	1,167
2011	5,213	20.2		1,796	33.9	2,692	19.5	<sup>c</sup>	22.7	7,200 <sup>d</sup>	42.1	1,325
2012	2,517	28.0		922	43.0	1,323	17.0	2,220 <sup>f</sup>	39.1	7,165	50.9	752
2013	1,998	40.4		772	44.8	1,126	34.1	1,859	40.3	5,465	50.5	723
2014	5,949	44.3			<sup>c</sup>	1,589	19.2	7,192 <sup>g</sup>	33.1	<sup>c</sup>	32.0	1,236 <sup>h</sup>
2015	5,474	39.7		2,391	40.7	1,319	29.5	6,294	39.0	6,288 <sup>j</sup>	37.0	2,353
2016	2,676	49.7		1,354	47.5	1,395	27.2	6,665 <sup>g</sup>	22.8	2,675 <sup>g</sup>	38.8	2,435
2017 <sup>i</sup>	2,970	25.9		677	41.8	1,083	27.8	4,201 <sup>c</sup>	45.3	4,195 <sup>c</sup>	41.2	2,769
BEG <sup>k</sup>								2,800–5,700		3,300–6,500		
SEG <sup>l</sup>	2,100–4,900											
Average												
1997–2016	3,831	39	2,259	1,082	37	2,094	28	6,030	32	8,796	38	1,928
2007–2016	3,799	40		1,248	40	1,608	26	4,320	31	6,616	38	1,773
2012–2016	3,723	40		1,360	44	1,350	25	4,846	35	5,398	42	1,500

-continued-

*Note:* Unless otherwise noted blank cells indicate years when project did not operate.

- <sup>a</sup> Past mark–recapture experiments utilizing electrofishing techniques for the first event have shown that carcass surveys (second event) tend to be biased with respect to sex and length. Therefore, an adjustment factor is applied.
- <sup>b</sup> Mark–recapture population estimate.
- <sup>c</sup> Project operations were hindered by high water conditions for much of the season.
- <sup>d</sup> Estimate includes an expansion for missed counting days based on average run timing.
- <sup>e</sup> Weir counts.
- <sup>f</sup> Estimate includes an expansion for missed counting days based on using two DIDSON sonars to assess Chinook salmon passage.
- <sup>g</sup> Due to high water, estimate incomplete and represents minimum escapement.
- <sup>h</sup> Project operated for 18 days due to high water.
- <sup>i</sup> Data are preliminary.
- <sup>j</sup> Final estimate uses a binomial mixed-effects model to create passage estimates for the period of missed counts prior to start of tower operations on July 12.
- <sup>k</sup> Biological escapement goals (BEG) established by the Alaska Board of Fisheries, January 2001.
- <sup>l</sup> Sustainable escapement goal (SEG).

Appendix E6.—Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1997–2017.

Year	Tincup Creek <sup>a</sup>	Tatchun Creek <sup>b</sup>	Little Salmon River <sup>a</sup>	Big Salmon River <sup>a,c</sup>	Nisutlin River <sup>a,d</sup>	Ross River <sup>a,e</sup>	Wolf River <sup>a,f</sup>	Blind Creek	Chandindu River	Big Salmon Sonar	Klondike River Sonar	Teslin River Sonar
1997	193	1198	1,025	1,345	277		322 <sup>g</sup>	957				
1998	53	405	361	523	145		66	373	132			
1999		252	495	353	330		131	892	239			
2000	19 <sup>g</sup>	276 <sup>g</sup>	46	113	20		32		4 <sup>h</sup>			
2001	39 <sup>g</sup>		1,035	1,020	481		154		129 <sup>g</sup>			
2002			526	1,149	280		84					
2003			1,658	3,075	687		292	1,115	185 <sup>j</sup>			
2004			1,140	762	330		226	792				
2005			1,519	952	807	363	260	525		5,584		
2006			1,381	1,140	601		114	677		7,308		
2007			451	601	137		54	304		4,504		
2008			93	303			22	276		1,329		
2009			821	1,827	497		134	716		9,261	5,147	
2010			63	656	288		94	270		3,817	803	
2011			38	405			81	360		5,156	1,181	
2012								157		2,584		3,396
2013								312		3,242		9,916
2014								602		6,321		17,507
2015								964		10,071		20,410
2016								664		6,691		
2017 <sup>k</sup>									1	5,672		
IMEG												
Averages												
1997–2016	76	533	710	948	375	363	138	586	138	5,489	2,377	12,807
2007–2016			293	758	307		77	463		5,298	2,377	12,807
2012–2016								540		5,782		12,807

-continued-

Year	Whitehorse Fishway		Canadian Mainstem		
	Count	Percent Hatchery Contribution	Border Passage Estimate <sup>m</sup>	Harvest	Spawning Escapement Estimate <sup>n</sup>
1997	2,084	24	69,538	15,717	53,821
1998	777	95	41,335	5,838	35,497
1999	1,118	74	49,538	12,354	37,184
2000	677	69	30,699	4,829	25,870
2001	988	36	62,333	9,774	52,559
2002	605	39	51,428	9,070	42,358
2003	1,443	70	90,037	9,446	80,591
2004	1,989	76	59,415	10,946	48,469
2005	2,632	57	78,962	10,977	67,985
2006	1,720	47	71,388	8,758	62,630
2007	427	56	39,698	4,794	34,904
2008	399	54	37,282	3,399	33,883
2009	828	47	69,575	4,297	65,278
2010	672	49	34,470	2,456	32,014
2011	1,534	48	50,901	4,594	46,307
2012	1,030	59	34,656	2,000	32,656
2013	1,139	67	30,573	1,904	28,669
2014	1,601	78	63,431	100	63,331
2015	1,465	60	83,674	1,000	82,674
2016	1,556	42	71,567	2,769	68,798
2017	1,226	39	71,815	3,500	68,315
IMEG					42,500–55,000 <sup>o</sup>
Averages					
1997–2016	1,234	57	56,025	6,251	49,774
2007–2016	1,065	56	51,583	2,731	48,851
2012–2016	1,358	61	56,780	1,555	55,226

-continued-

*Note:* Blank cells indicate no data. En dashes indicate not enough information to generate an average.

- <sup>a</sup> Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted.
- <sup>b</sup> All foot surveys prior to 1997. The 1997–2000 data were from weir counts.
- <sup>c</sup> Counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.
- <sup>d</sup> One Hundred Mile Creek to Sidney Creek.
- <sup>e</sup> Big Timber Creek to Lewis Lake.
- <sup>f</sup> Wolf Lake to Fish Lake outlet except where otherwise indicated.
- <sup>g</sup> Foot survey.
- <sup>h</sup> High water delayed project installation, therefore, counts are incomplete.
- <sup>i</sup> Resistance board weir tested for 3 weeks.
- <sup>j</sup> Combination resistance board weir and conduit weir tested and operational from July 10–30.
- <sup>k</sup> Data are preliminary.
- <sup>l</sup> Did not operate due to high water.
- <sup>m</sup> Estimated total border passage excluding Porcupine River based on 3 area index (Little Salmon, Big Salmon and Nisutlin aerial survey) plus Canadian harvest from 1982–2001, on radio tagging proportion study from 2002–2004, and on Eagle sonar for 2005–2017.
- <sup>n</sup> Estimated total spawning escapement excluding Porcupine River based on 3 area index for 1982–2001, and on border passage estimate minus Canadian harvest for 2002–2015.
- <sup>o</sup> Interim Management Escapement Goal (IMEG) range of 42,500–55,000 was established in 2010 and continued through 2015.

Appendix E7.—Summer chum salmon escapements for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017.

Year	Andreafsky River				Anvik River	Rodo River	Kaltag Creek	Nulato River			
	East Fork		West Fork	Sonar	Aerial	Tower	South Fork	North Fork <sup>a</sup>	Mainstem		
	Aerial <sup>b</sup>	Weir	Aerial <sup>b</sup>				Aerial <sup>b</sup>	Aerial <sup>b</sup>	Tower		
1997	—	51,139	—	605,752	2,775 <sup>c</sup>	48,018	—	—	157,975		
1998	—	67,720	—	487,301	—	8,113	—	—	49,140		
1999	—	32,587	—	437,356	—	5,339	—	—	30,076		
2000	2,094 <sup>c</sup>	24,785	18,989 <sup>c</sup>	196,349	—	6,727	—	—	24,308		
2001	—	2,134 <sup>d</sup>	—	224,059	—	—	—	—	—		
2002	—	44,194	—	459,058	—	13,583	—	—	72,232		
2003	—	22,461	—	256,920	—	3,056	—	—	19,590		
2004	—	64,883	—	365,353	—	5,247	—	—	—		
2005	—	20,127	—	525,391	—	22,093	—	—	—		
2006	3,100 <sup>c</sup>	102,260	617	605,487	—	—	7,772	11,658	—		
2007	—	69,642	—	459,038	—	—	21,825	15,277	—		
2008	9,300	57,259	25,850	374,933	—	—	12,070	10,715	—		
2009	736	8,770	3,877	193,098	621	—	2,120	567	—		
2010	1,982	72,893	24,380	396,174	—	—	1,891	1,038	—		
2011	12,889	100,473	10,020	642,529	6,011	—	9,454	8,493	—		
2012	— <sup>c</sup>	56,680	— <sup>c</sup>	484,091	15,606	—	20,600	14,948	—		
2013	10,965	61,234	9,685	577,876	—	—	13,695	13,230	—		
2014	—	37,793	—	399,796	—	—	—	—	—		
2015 <sup>e</sup>	6,004 <sup>c</sup>	48,809	2,836 <sup>c</sup>	374,968	3,685	—	4,102	9,525	—		
2016	—	50,362	—	337,821	—	—	—	—	—		
2017	—	55,532	11,655	415,139	—	—	4,890	7,882	—		
Escapement Objective	>40,000 <sup>f</sup>		350,000–700,000 <sup>g</sup>								
Averages											
1997–2016	5,884	49,810	12,032	420,168	5,740	14,022	10,392	9,495	58,887		
2007–2016	6,979	56,392	12,775	424,032	6,481	—	10,720	9,224	—		
2012–2016	8,485	50,976	6,261	434,910	9,646	—	12,799	12,568	—		

-continued-

Appendix E7.—Page 2 of 3.

234

Year	Henshaw Creek	Gisasa River		Hogatza River		Tozitna River	Chena River		Salcha River	
	Weir	Aerial <sup>b</sup>	Weir	Clear & Caribou Cr.	Clear Creek	Weir and Aerial <sup>b</sup>	Aerial <sup>b</sup>	Tower	Aerial <sup>b</sup>	Tower
1997		686 <sup>c</sup>	31,800	1,821 <sup>c</sup>	76,454	428 <sup>d</sup>	594 <sup>c</sup>	9,439 <sup>d</sup>	3,968 <sup>c</sup>	35,741
1998		—	21,142	120 <sup>c,h</sup>	212 <sup>d</sup>	7 <sup>d</sup>	24 <sup>c</sup>	5,901	370 <sup>c</sup>	17,289
1999		—	10,155	—	11,283	—	520	9,165	150	23,221
2000	24,457	—	11,410	—	19,376	480	105	3,515	228	20,516
2001	34,777	—	17,946	—	3,674	12,527	2	4,773	—	14,900
2002	25,249	—	33,481	—	13,150	18,789	—	1,021 <sup>d</sup>	78	27,012 <sup>d</sup>
2003	21,400	—	25,999	—	6,159	8,487	—	573 <sup>d</sup>	—	—
2004	86,474	—	37,851	—	15,661	25,003	—	15,163 <sup>d</sup>	—	47,861
2005	237,481	—	172,259	—	26,420	39,700	219	16,873 <sup>d</sup>	4,320	194,933
2006	—	1,000	261,305	—	29,166 <sup>i</sup>	22,629	469	35,109 <sup>d</sup>	152	113,960
2007	44,425	—	46,257	—	6,029 <sup>i</sup>	8,470	—	4,999	— <sup>c</sup>	13,069
2008	96,731	20,470	36,938	—	—	9,133	37	1,300 <sup>d</sup>	— <sup>c</sup>	2,213 <sup>d</sup>
2009	156,933	1,060	25,904	3,981 <sup>h</sup>	—	8,434	—	16,516	—	31,035
2010	105,398	1,096	47,669	840 <sup>h</sup>	—	—	—	7,560	—	22,185
2011	248,247	13,228	95,796	3,665 <sup>h</sup>	—	11,351	4,600	— <sup>d</sup>	819	— <sup>d</sup>
2012	292,082	— <sup>d</sup>	83,423	23,022 <sup>h</sup>	—	—	— <sup>c</sup>	6,882 <sup>j</sup>	— <sup>c</sup>	46,252
2013	285,008	9,300 <sup>d</sup>	80,055	—	— <sup>c</sup>	—	— <sup>c</sup>	21,372	— <sup>c</sup>	60,981
2014	— <sup>d</sup>	—	32,523	—	—	—	—	13,303 <sup>k</sup>	—	— <sup>d</sup>
2015	238,529	5,601	42,747	6,080	—	—	—	8,620 <sup>k</sup>	— <sup>c</sup>	12,812 <sup>k</sup>
2016	286,780	—	66,670	—	—	—	—	6,493 <sup>k</sup>	—	2,897 <sup>k</sup>
2017	360,687	—	73,584	—	—	—	—	21,156 <sup>k</sup>	—	29,093 <sup>k</sup>
Escapement Objective										
Averages										
1997–2016	145,598	6,555	59,067	5,647	18,871	12,726	730	9,925	1,261	40,405
2007–2016	194,904	8,459	55,798	7,518	6,029	9,347	2,319	9,672	819	23,931
2012–2016	275,600	7,451	61,084	14,551	—	—	—	11,334	—	30,736

-continued-

*Note:* Unless otherwise noted blank cells indicate years prior to the project being operational. En dash indicates years in which no information was collected.

- <sup>a</sup> Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
- <sup>b</sup> Aerial survey counts are peak counts only, survey rating is fair or good unless otherwise noted.
- <sup>c</sup> Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.
- <sup>d</sup> Incomplete count due to late installation, early removal, or high water events.
- <sup>e</sup> Data are preliminary.
- <sup>f</sup> Sustainable escapement goal established by the Alaska Board of Fisheries, January 2010.
- <sup>g</sup> Biological escapement goal established by the Alaska Board of Fisheries, 2005.
- <sup>h</sup> Consists of Clear Creek only.
- <sup>i</sup> Project operated as a video monitoring system on Clear Creek. Video was also conducted on Caribou Creek from 2004–2007 (15,345; 14,605; 24,039; and 17,728 respectively).
- <sup>j</sup> Estimate includes an expansion for missed counting days based on using two DIDSON sonars to assess chum salmon passage.
- <sup>k</sup> Due to high water, DIDSON sonar was used and preliminary species apportionment was estimated using average run timing.

Appendix E8.–Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaska portions of the Yukon River Drainage, 1997–2017.

Year	Yukon River Mainstem Sonar Estimate	Alaska									
		Tanana River Drainage							Upper Yukon River Drainage		
		Kantishna River			Upper Tanana River				Chandalar River		Sheenjek River
		Toklat River	Abundance Estimate	Delta River	Bluff Cabin Slough	Abundance Estimate	Tanana River Estimate				
		<sup>a</sup>	<sup>b</sup>	<sup>c</sup>	<sup>d</sup>	<sup>e</sup>	<sup>f</sup>		<sup>g</sup>	<sup>h</sup>	
1997	579,767	14,511		7,705	5,707 <sup>c</sup>	71,661	88,641		211,914	80,423 <sup>i</sup>	
1998	375,222	15,605		7,804	3,549 <sup>c</sup>	62,384	82,475		83,899	33,058	
1999	451,505	4,551	27,199	16,534	7,559 <sup>c</sup>	97,843	109,309		92,685	14,229	
2000	273,206	8,911	21,450	3,001	1,595 <sup>j</sup>	34,844	55,983		71,048	30,084 <sup>k</sup>	
2001	408,961	6,007 <sup>l</sup>	22,992	8,103	1,808	96,556 <sup>m</sup>	116,012		112,664	53,932	
2002	367,886	28,519	56,665	11,992	3,116 <sup>j</sup>	109,961	163,421		94,472	31,642	
2003	923,540	21,492	87,359	22,582	10,600	193,418	263,302		221,343	44,047 <sup>n</sup>	
2004	633,368	35,480	76,163	25,073	10,270	123,879	187,409		169,848	37,878	
2005	1,894,078	17,779 <sup>o</sup>	107,719	28,132	11,964	337,755	372,758		526,838	485,886 <sup>p,q</sup>	
2006	964,238		71,135	14,055		202,669	233,193		254,778	175,620 <sup>p,q</sup>	
2007	740,195		81,843	18,610		320,811	357,016		243,805	69,184 <sup>p,q</sup>	
2008	636,525			23,055	1,198 <sup>j</sup>		264,200		178,278	50,348 <sup>p,q</sup>	
2009	274,227 <sup>r</sup>			13,492	2,900		159,828			54,126 <sup>p,q</sup>	
2010	458,103			17,993	1,610		212,660		167,532	24,669	
2011	873,877			23,639	2,655		270,846		298,223	97,976 <sup>p,q</sup>	
2012	778,158			9,377 <sup>j</sup>			102,096		205,791	104,701 <sup>p,q</sup>	
2013	865,295	9,161 <sup>d</sup>		31,955	5,554		275,089		252,710		
2014	706,630			32,480 <sup>j</sup>	4,095		215,393		221,421		
2015	669,483	8,422 <sup>d</sup>		33,401 <sup>j</sup>	6,020		149,265		164,486		
2016 <sup>s</sup>	994,760	16,885 <sup>d</sup>		21,913 <sup>j</sup>	4,936		199,639		295,023		
2017	1,829,931			48,783			516,331		509,115		
Escapement <sup>t</sup>	300,000	15,000 <sup>u</sup>		6,000		46,000 <sup>v</sup>	61,000		74,000	50,000 <sup>u</sup>	
Objective	600,000	33,000		13,000		103,000	136,000		152,000	104,000	
Average											
1997–2016	715,516 <sup>w</sup>	15,610	61,392	18,545	5,008	150,162	193,927		203,514	86,738	
2007–2016	747,003 <sup>w</sup>	–	81,843	22,592	3,621	320,811	220,603		225,252	66,834	
2012–2016	802,865	11,489	–	25,825	5,151	–	188,296		227,886	104,701	

-continued-

*Note:* Yukon River mainstem sonar historical estimates were revised in 2016, using selectivity parameters.

- <sup>a</sup> Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987-1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse, unless otherwise indicated.
- <sup>b</sup> Fall chum salmon abundance estimate for the Kantishna and Toklat River drainages is based on a mark–recapture program.
- <sup>c</sup> Population estimate generated from replicate foot surveys and stream life data (area under the curve method), unless otherwise noted.
- <sup>d</sup> Aerial survey count, unless otherwise indicated.
- <sup>e</sup> Fall chum salmon abundance estimate for the upper Tanana River drainage is based on a mark-recapture program. Upper Tanana River consists of that portion upstream of the confluences with the Kantishna River.
- <sup>f</sup> Tanana River abundance estimates from 1995-1998 are based on the relationship of the Upper Tanana to the Kantishna River abundance estimates, and 2008-2012 are based on the relationship of the Tanana estimate (1995-2007) with the Delta River escapements. The estimates since 2013 are based on regression with Mainstem Yukon 1995-2012 (excluding 2005) minus Tanana River harvests.
- <sup>g</sup> Split-beam sonar estimate 1995 to 2006, DIDSON in since 2007, project was aborted in 2009. Sonar counts were expanded to represent the remainder of the run after the project was terminated for the season.
- <sup>h</sup> Single-beam sonar estimate beginning in 1981, split-beam sonar estimate 2002 to 2004, DIDSON from 2005 to 2012. Sonar counts were expanded to represent the remainder of the run after the project was terminated for the season.
- <sup>i</sup> Data interpolated due to high water from 29 August until 3 September 1997, during buildup to peak passage.
- <sup>j</sup> Peak foot survey count.
- <sup>k</sup> Project ended early (September 12) because of low water.
- <sup>l</sup> Minimal estimate because Sushana River was breached by the main channel and uncountable.
- <sup>m</sup> Low numbers of tags deployed and recovered resulted in an estimate with an extremely large confidence interval (95% CI +/- 41,072).
- <sup>n</sup> Project ended on peak daily passages due to late run timing, estimate was expanded based on run timing (87%) at Rampart.
- <sup>o</sup> Minimal estimate because of late timing of ground surveys with respect to peak of spawning.
- <sup>p</sup> Sonar counts include both banks in 1985-1987, 2005-2009, and 2011-2012.
- <sup>q</sup> In addition to the historical right bank count , the left bank was enumerated with DIDSON (right bank count for 2005-2009 and 2011-2012 was 266,963, 106,397, 39,548, 35,912, 28,480, 49,080 and 57,823 respectively, not including end of season expansions, and is used to compare to the escapement goal).
- <sup>r</sup> Mainstem Yukon River sonar project (located near Pilot Station) encountered record low water levels during the fall season causing difficulties with species apportionment and catchability. Fall chum salmon estimate is suspected of being conservative and should not be used in averages or run reconstructions.
- <sup>s</sup> Data are preliminary.
- <sup>t</sup> Escapement Goal (EG) includes individual tributary BEGs and drainagewide SEG.
- <sup>u</sup> EG discontinued in 2010 for Toklat River and 2016 for Sheenjek River.
- <sup>v</sup> The BEG for the Tanana River as a whole is 61,000 to 136,000. However it includes the Toklat plus and the Upper Tanana which was broke out for comparison to the upper Tanana River abundance estimates.
- <sup>w</sup> Does not include 2009.

Appendix E9.–Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Canadian portions of the Yukon River Drainage, 1997–2017.

Year	Porcupine Drainage			Canadian Mainstem					
	Fishing Branch	Porcupine River	Mainstem Yukon River	Kluane	Teslin	Border Passage	Spawning Escapement		
	River <sup>a</sup>	Sonar	Index <sup>b</sup>	River <sup>b, c</sup>	River <sup>b, d</sup>	Estimate <sup>e</sup>	Harvest	Estimate <sup>f</sup>	
1997	27,031		2,189	3,350	207	94,725	9,306	85,419	
1998	13,687		7,292	7,337	235	48,047	1,795	46,252	
1999	12,958			5,136	19 <sup>g</sup>	72,188 <sup>h</sup>	13,636	58,552	
2000	5,057		933 <sup>g</sup>	1,442	204	57,978 <sup>h</sup>	4,246	53,732	
2001	21,737		2,453	4,884	5	38,769 <sup>h</sup>	5,278	33,491	
2002	13,636		973	7,147	64	104,853 <sup>h</sup>	6,232	98,621	
2003	29,713		7,982	39,347	390	153,656 <sup>h</sup>	10,523	143,133	
2004	20,417		3,440	18,982	167	163,625 <sup>h</sup>	9,545	154,080	
2005	119,058		16,425	34,600	585	451,477	13,979	437,498	
2006	30,954		6,553	18,208	620	227,515 <sup>i</sup>	6,617	220,898	
2007	32,150					246,317 <sup>i</sup>	9,330	236,987	
2008	19,086 <sup>j</sup>					174,028 <sup>i</sup>	6,130	167,898	
2009	25,828					94,739	1,113	93,626	
2010	15,413					121,498	3,709	117,789	
2011	13,085 <sup>j</sup>					211,878	6,312	205,566	
2012	22,399					141,567	3,905	137,662	
2013	<sup>k</sup>	35,615				204,149	3,887	200,262	
2014	<sup>k</sup>	17,756				159,846	3,050	156,796	
2015	8,351	21,396				112,555	3,897	108,658	
2016 <sup>l</sup>	29,397	54,395				148,012	2,745	145,267	
2017	48,524	67,818		16,265		404,989	3,404	401,585	
EO <sup>m</sup>	50,000-120,000							>80,000	
IMEG	22,000-49,000 <sup>n</sup>							70,000-104,000 <sup>o</sup>	
Average									
1997–2016	25,553	–	5,360	14,043	250	151,371	6,262	145,109	
2007–2016	20,714	–	–	–	–	161,459	4,408	157,051	
2012–2016	20,049	32,291	–	–	–	153,226	3,497	149,729	

-continued-

- <sup>a</sup> Weir counts with expansions through October 25, unless otherwise indicated.
- <sup>b</sup> Aerial survey count, unless otherwise indicated.
- <sup>c</sup> Index area includes Duke River to end of spawning sloughs below Swede Johnston Creek.
- <sup>d</sup> Index area includes Boswell Creek area (5 km below to 5 km above confluence).
- <sup>e</sup> Border passage estimate is based on mark-recapture from 1980-2005, 2006 to present is based on sonar minus harvest from Eagle residents upstream of deployment.
- <sup>f</sup> Excludes Fishing Branch River escapement (estimated border passage minus Canadian mainstem harvest).
- <sup>g</sup> Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
- <sup>h</sup> 1999 to 2004 border passage estimates were revised using a stratified "SPAS" analysis.
- <sup>i</sup> Mark–recapture border passage estimates include 217,810, 235,956, and 132,048 from 2006 to 2008 respectively, during transition to sonar.
- <sup>j</sup> Incomplete count caused by late installation and/or early removal of project or high water events.
- <sup>k</sup> Fishing Branch River weir did not operate.
- <sup>l</sup> Preliminary data.
- <sup>m</sup> Escapement objective (EO) based on US/Canada Treaty Obligations, some years stabilization or rebuilding goals are applied.
- <sup>n</sup> Interim management escapement goal (IMEG) established for 2008-2010 based on percentile method and carried forward.
- <sup>o</sup> Interim management escapement goal (IMEG) established for 2010 based on brood table of Canadian origin mainstem stocks (1982 to 2003).

Appendix E10.—Yukon River fall chum salmon estimated brood year production and return per spawner estimates 1974–2017.

Year	(P) Escapement <sup>b</sup>	Estimated Annual Totals		Estimated Brood Year Return								(R)	(R/P)
				Number of Salmon <sup>a</sup>				Percent				Total Brood	Return/
		Catch	Run	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Year Return <sup>a</sup>	Spawner
1974	689,500	478,875	1,168,375	112,594	658,928	97,484	0	0.13	0.76	0.11	0.00	869,006	1.26
1975	2,244,500	473,062	2,717,562	199,167	1,739,055	67,869	125.43	0.10	0.87	0.03	0.00	2,006,215	0.89
1976	564,100	339,043	903,143	144,839	649,362	139,223	4,874	0.15	0.69	0.15	0.01	938,297	1.66
1977	733,550	447,918	1,181,468	113,474	1,092,332	198,398	5,022	0.08	0.78	0.14	0.00	1,409,226	1.92
1978	564,800	434,030	998,830	22,577	375,175	108,597	0	0.04	0.74	0.21	0.00	506,349	0.90
1979	1,366,000	615,377	1,981,377	46,428	922,553	312,865	4,045	0.04	0.72	0.24	0.00	1,285,892	0.94
1980	342,400	488,305	830,705	10,044	413,107	217,086	3,888	0.02	0.64	0.34	0.01	644,124	1.88
1981	572,000	682,257	1,254,257	52,300	992,883	346,349	9,548	0.04	0.71	0.25	0.01	1,401,079	2.45
1982	251,700	373,175	624,875	11,767	498,054	179,143	712.79	0.02	0.72	0.26	0.00	689,678	2.74
1983	521,200	525,016	1,046,216	15,637	940,386	234,649	2,408	0.01	0.79	0.20	0.00	1,193,080	2.29
1984	365,950	412,322	778,272	7,616	428,455	181,370	10,113	0.01	0.68	0.29	0.02	627,553	1.71
1985	710,300	515,481	1,225,781	48,968	910,788	321,809	3,247	0.04	0.71	0.25	0.00	1,284,813	1.81
1986	545,900	318,028	863,928	0	510,352	374,707	5,266	0.00	0.57	0.42	0.01	890,325	1.63
1987	730,550	406,143	1,136,693	14,741	627,899	351,764	8,293	0.01	0.63	0.35	0.01	1,002,697	1.37
1988	359,100	353,685	712,785	41,692	211,997	163,670	13,100 <sup>c</sup>	0.10	0.49	0.38	0.03	430,458	1.20
1989	549,400	545,166	1,094,566	3,320	303,890	415,009 <sup>c</sup>	22,234	0.00	0.41	0.56	0.03	744,452	1.36
1990	504,750	352,264	857,014	762.584	696,763 <sup>c</sup>	458,542	32,739	0.00	0.59	0.39	0.03	1,188,806	2.36
1991	608,450	439,096	1,047,546	4,404 <sup>c</sup>	1,122,992	396,858	12,959	0.00	0.73	0.26	0.01	1,537,213	2.53
1992	423,500	148,846	572,346	7,411	702,799	209,889	4,123	0.01	0.76	0.23	0.00	924,224	2.18
1993	385,600	91,015	476,615	8,327	480,678	108,088	3,228	0.01	0.80	0.18	0.01	600,321	1.56
1994	960,050	169,225	1,129,275	4,603	237,709	149,185	1,691 <sup>c</sup>	0.01	0.60	0.38	0.00	393,188	0.41
1995	1,150,000	461,180	1,611,180	2,502	266,344	72,706 <sup>c</sup>	374.93	0.01	0.78	0.21	0.00	341,928	0.30
1996	879,800	260,923	1,140,723	419.176	174,798 <sup>c</sup>	134,111	8,313	0.00	0.55	0.42	0.03	317,641	0.36
1997	538,050	170,079	708,129	3,257 <sup>c</sup>	239,803	118,592	3,406	0.01	0.66	0.32	0.01	365,058	0.68
1998	281,600	70,823	352,423	637.374	270,222	59,255	7,117	0.00	0.80	0.18	0.02	337,231	1.20
1999	288,000	131,176	419,176	29,158	720,883	185,422	13,065	0.03	0.76	0.20	0.01	948,528	3.29
2000	223,900	28,553	252,453	8,635	315,741	109,960	0	0.02	0.73	0.25	0.00	434,335	1.94
2001	329,900	45,026	374,926	144,616	2,054,394	704,752	34,040	0.05	0.70	0.24	0.01	2,937,803	8.91
2002	398,800	27,485	426,285	0	463,628	239,755	13,872	0.00	0.65	0.33	0.02	717,254	1.80
2003	713,100	79,079	792,179	25,306	860,872	461,417	17,499	0.02	0.63	0.34	0.01	1,365,094	1.91

-continued-

## Appendix E10.–Page 2 of 2.

Year	(P) Escapement <sup>b</sup>	Estimated Annual Totals Catch Run		Estimated Brood Year Return								(R)	(R/P)
				Number of Salmon <sup>a</sup>				Percent				Total Brood	Return/
				Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Year Return <sup>a</sup>	Spawner
2004	576,600	76,296	652,896	0	352,936	158,710	2,068	0.00	0.69	0.31	0.00	513,714	0.89
2005	1,887,000	290,418	2,177,418	2,409	404,796	94,096	5,362	0.00	0.80	0.19	0.01	506,663	0.27
2006	923,200	270,486	1,193,686	26,614	395,053	345,251	30,190	0.03	0.50	0.43	0.04	797,108	0.86
2007	929,000	205,667	1,134,667	83,239	857,948	189,357	6,513	0.07	0.75	0.17	0.01	1,137,057	1.22
2008	612,650	217,983	830,633	10,115	844,715	402,275	7,628	0.01	0.67	0.32	0.01	1,264,732	2.06
2009	514,300	93,319	607,619	12,027	775,222	414,074	22,954	0.01	0.63	0.34	0.02	1,224,276	2.38
2010	494,450	80,005	574,455	1,900	491,771	244,844	9,188	0.00	0.66	0.33	0.01	747,703	1.51
2011	891,300	327,376	1,218,676	23,994	482,841	182,406	2,246	0.03	0.70	0.26	0.00	691,487	0.78
2012	679,700	396,589	1,076,289	68,716	1,166,421	319,881	18,875	0.04	0.74	0.20	0.01	1,573,894 <sup>d</sup>	>2.32
2013	827,950	357,960	1,185,910	29,169	1,853,953	650,986		0.01	0.73	0.26		2,534,109 <sup>e</sup>	>3.06
2014	724,250	213,217	937,467	55,608									
2015	536,900	282,455	819,355										
2016	831,200	555,985	1,387,185										
2017	1,648,000	583,688	2,231,688										
Avg. 2016	679,650	308,149	987,799										
Min 2011	223,900	27,485	252,453	0	174,798	59,255	0	0.00	0.41	0.03	0.00	317,641	0.27
Max 2011	2,244,500	682,257	2,717,562	199,167	2,054,394	704,752	34,040	0.15	0.87	0.56	0.04	2,937,803	8.91
	674,341	All Brood Years (1974–2011)		32,776	644,424	240,777	8,983	0.03	0.68	0.28	0.01	943,295	1.72
	524,355	Even Brood Years (1974–2011)		21,696	457,451	209,108	8,152	0.03	0.66	0.30	0.01	696,407	1.50
	824,326	Odd Brood Years (1974–2011)		43,857	831,398	272,446	9,293	0.03	0.71	0.25	0.01	1,156,994	1.94

Note: Minimums and maximum indicate the lowest and highest values for each year presented through 2011. Average value is through the year 2016. Current brood year data is preliminary as is 2017 harvest estimate. Since 2015 estimates of drainagewide escapement have been based on Bayesian analysis.

<sup>a</sup> The estimated number of salmon which returned are based upon annual age composition observed in Lower Yukon test fishery gillnets each year, weighted by test fishery catch per unit effort.

<sup>b</sup> Contrast in escapement data is 10.02.

<sup>c</sup> Based upon expanded test fishery age composition estimates for years in which the test fishery terminated early both in 1994 and 2000.

<sup>d</sup> Brood year return for 3, 4, and 5 year fish, indicate that production (R/P) from brood year 2012 was at least 2.32. Recruits estimated for incomplete brood year, denoted by shaded values.

<sup>e</sup> Brood year return for 3 and 4 year fish, indicate that production (R/P) from brood year 2013 was at least 3.06. Recruits estimated for incomplete brood year, denoted by shaded values.

Appendix E11.—Coho salmon passage estimates or escapement estimates for selected spawning areas in the Alaska portion of the Yukon River drainage, 1997–2017.

Year	Yukon River	Upper Tanana River Drainage									
	Mainstem	Nenana River Drainage						Delta	Clearwater	Richardson	
	Sonar Estimate <sup>a</sup>	Lost Slough	Nenana Mainstem <sup>b</sup>	Wood Creek	Seventeen Mile Slough	Clearwater River <sup>c</sup>	Lake and Outlet	Clearwater River			
1997	118,065	1,524 (h)	1,446 (h)			1,996 (h)	11,525 (b)	2,775 (b)			
1998	146,365	1,360 (h) <sup>e</sup>	2,771 (h) <sup>e</sup>			1,413 (g/b)	11,100 (b)	2,775 (b)			
1999	76,174	1,002 (h) <sup>e</sup>	745 (h) <sup>e</sup>	370 (h)		662 (h) <sup>e</sup>	10,975 (b)				
2000	206,365	55 (h) <sup>e</sup>	68 (h) <sup>e</sup>			879 (h) <sup>e</sup>	9,225 (b)	1,025 (b)		2,175 (h)	
2001	160,272	242 (h)	859 (h)	699 (h)		3,753 (h)	46,985 (b)	4,425 (b)		1,531 (f)	
2002	137,077	0 (h)	328 (h)	935 (h)		1,910 (h)	38,625 (b)	5,900 (b)		874 (f)	
2003	280,552	85 (h)	658 (h)	3,055 (h)		4,535 (h)	102,800 (b)	8,800 (b)		6,232 (h)	
2004	207,844	220 (h)	450 (h)	840 (h)		3,370 (h)	37,550 (b)	2,925 (b)		8,626 (h)	
2005	194,622	430 (h)	325 (h)	1,030 (h)		3,890 (h)	34,293 (b)	2,100 (b)		2,024 (h)	
2006	163,889	194 (h)	160 (h)	634 (h)		1,916 (h)	16,748 (b)	4,375 (b)		271 (h)	
2007	192,406	63 (h)	520 (h)	605 (h)		1,733 (h)	14,650 (b)	2,075 (b)		553 (h)	
2008	145,378	1,342 (h)	1,539 (h)	578 (h)		1,652 (h)	7,500 (b)	1,275 (b)		265 (h)	
2009	240,779 <sup>f</sup>	410 (h)		470 (h)		680 (h)	16,850 (b)	5,450 (b)		155 (h)	
2010	177,724	1,110 (h)	280 (h)	340 (h)		720 (h)	5,867 (b)	813 (b)		1,002 (h)	
2011	149,533	369 (h)				912 (h)	6,180 (b)	2,092 (b)		575 (h)	
2012	130,734		106 (h)			405 (h)	5,230 (b)	396 (h)		515 (h)	
2013	110,515	721 (h)		55 (h)		425 (h)	6,222 (b)	2,221 (h)		647 (h)	
2014	283,421	333 (h)	378 (h)	649 (h)		886 (h)	4,285 (b)	434 (h)		1,941 (h)	
2015	121,193	242 (h)	1,789 (h)	1,419 (h)		3,890 (h)	19,533 (b)	1,621 (h)		3,742 (h)	
2016	168,297	334 (h)	1,680 (h)	1,327 (h)		2,746 (h)	6,767 (b)	1,421 (h)		1,350 (h)	
2017 <sup>g</sup>	166,320	1,278 (h)	862 (h)	2,025 (h)		1,942 (h)	9,617 (b)				
SEG <sup>h</sup>							5,200-17,000				
Averages											
1997–2016	166,865 <sup>f</sup>	528	830	867		1,919	20,646	2,784		1,910	
2007–2016	164,356 <sup>f</sup>	547	899	680		1,405	9,308	1,780		1,075	
2012–2016	162,832	408	988	863		1,670	8,407	1,219		1,639	

-continued-

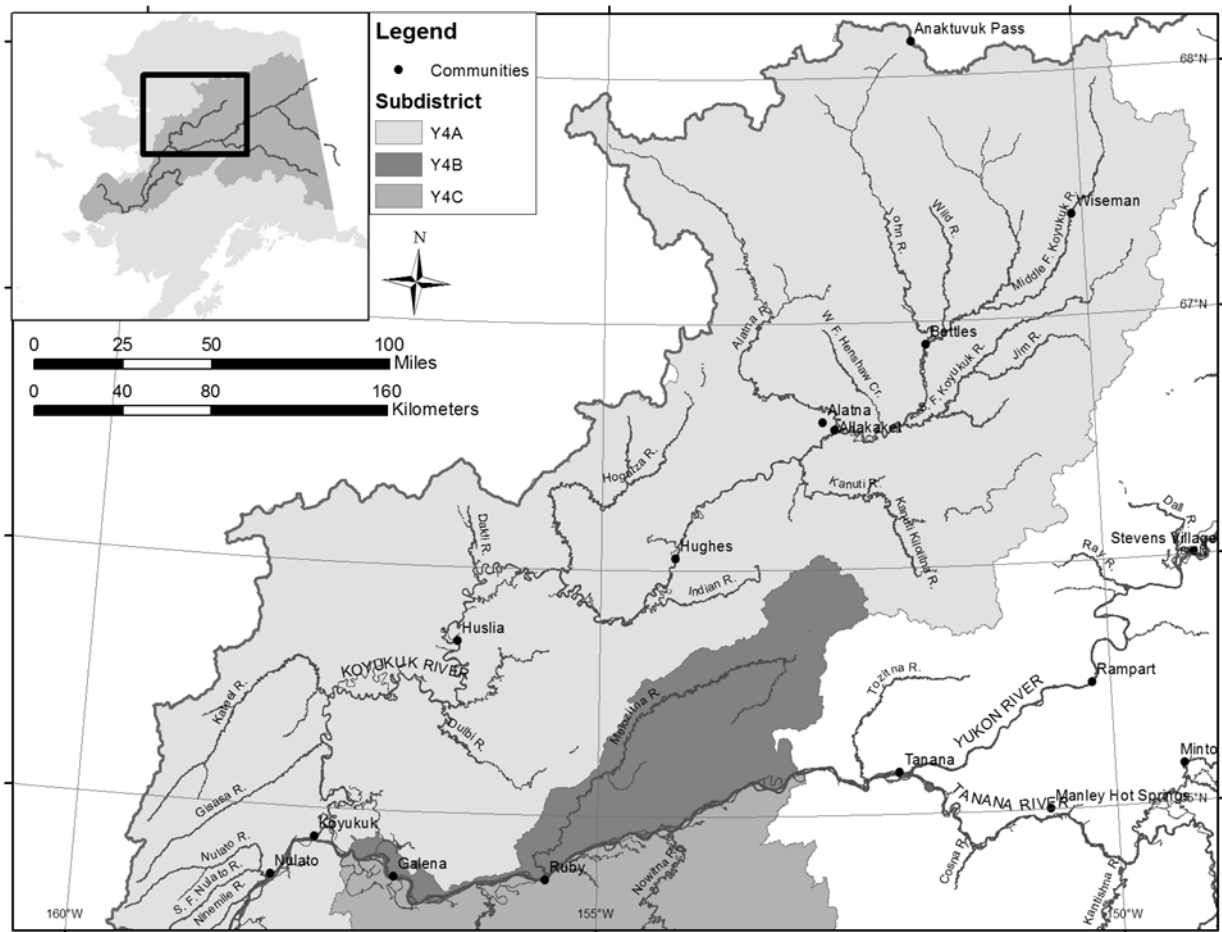
## Appendix E11.–Page 2 of 2.

---

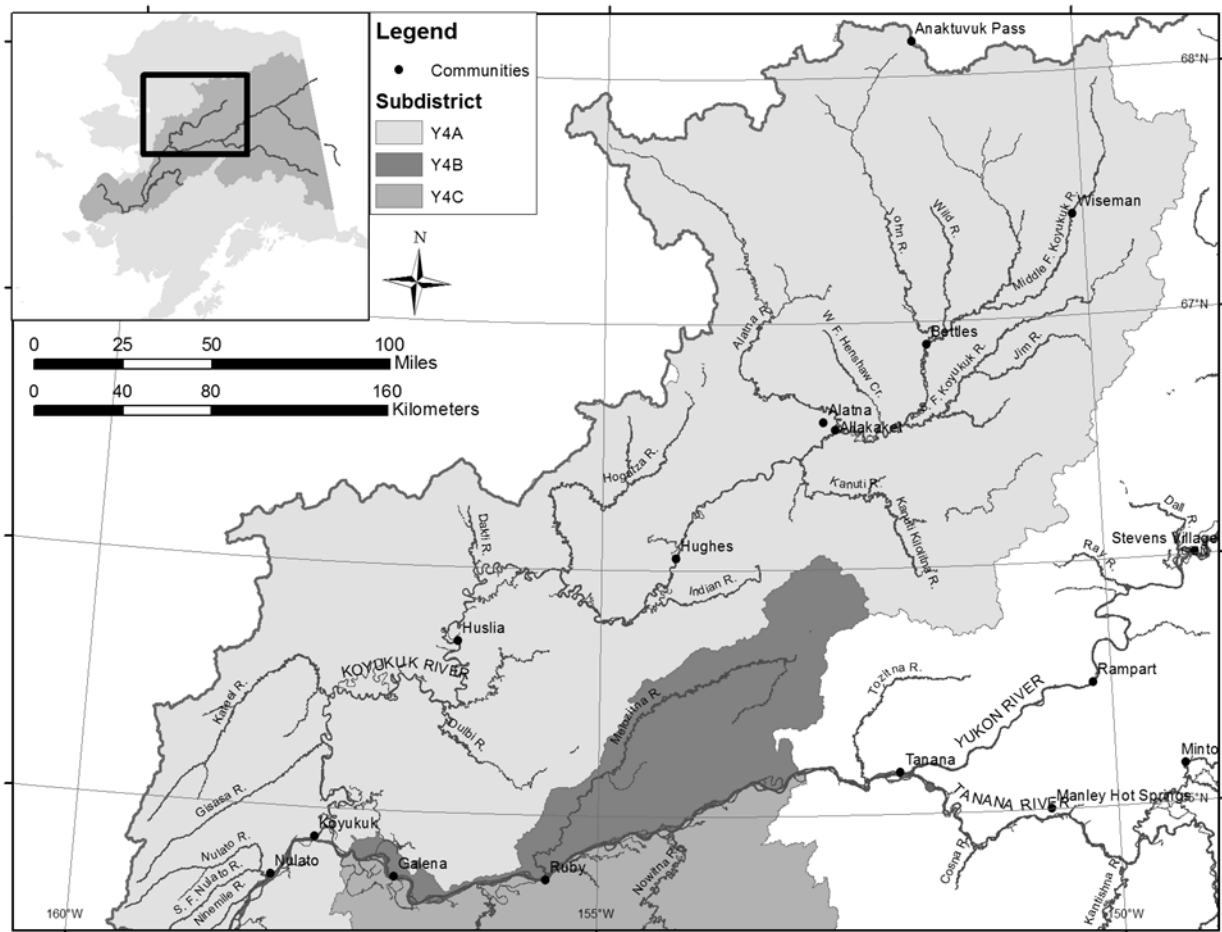
*Note:* Only peak counts presented. Survey rating is fair to good, unless otherwise noted. Denotations of survey methods include: (b)=boat, (f)=fixed wing, (g)=ground/foot, (h)=helicopter, and (u)=undocumented.

- <sup>a</sup> Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run. Yukon River mainstem sonar historical estimates were revised in 2016, using new selectivity parameters.
- <sup>b</sup> Index area includes mainstem Nenana River between confluence's of Lost Slough and Teklanika River.
- <sup>c</sup> Index area is lower 17.5 miles of system surveys conducted during the period October 21 through 27.
- <sup>d</sup> No survey of Wood Creek due to obstruction in creek.
- <sup>e</sup> Poor survey.
- <sup>f</sup> Pilot Station sonar project encountered record low water levels during the fall season causing difficulties with species apportionment and catchability. Coho salmon are suspected of being over estimated therefore this value should not be used in averages or run reconstructions.
- <sup>g</sup> Data are preliminary.
- <sup>h</sup> Sustainable escapement goal (SEG) established January 2004, (replaces BEG of greater than 9,000 fish established March, 1993).

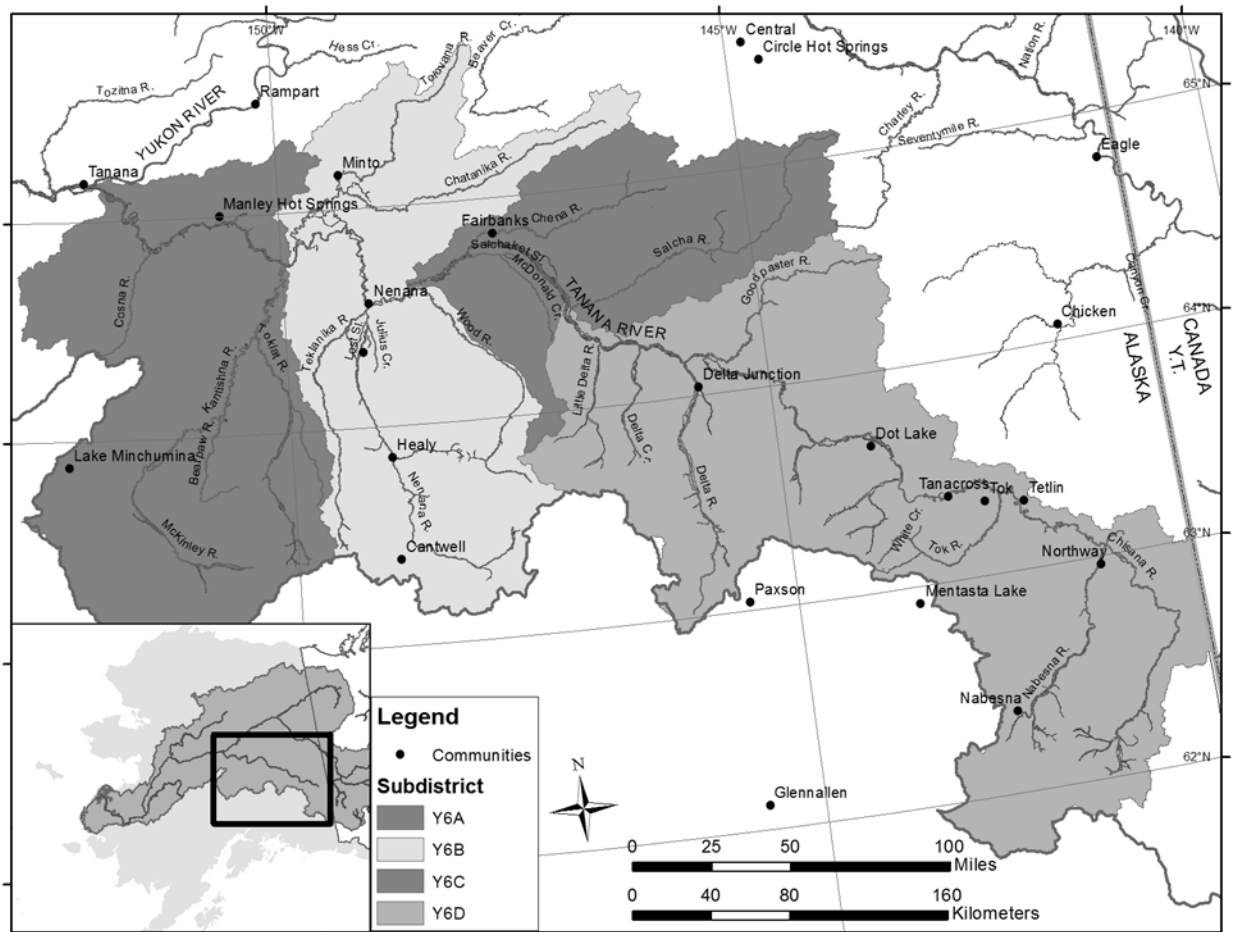
Appendix E12.—The lower Yukon River drainage.



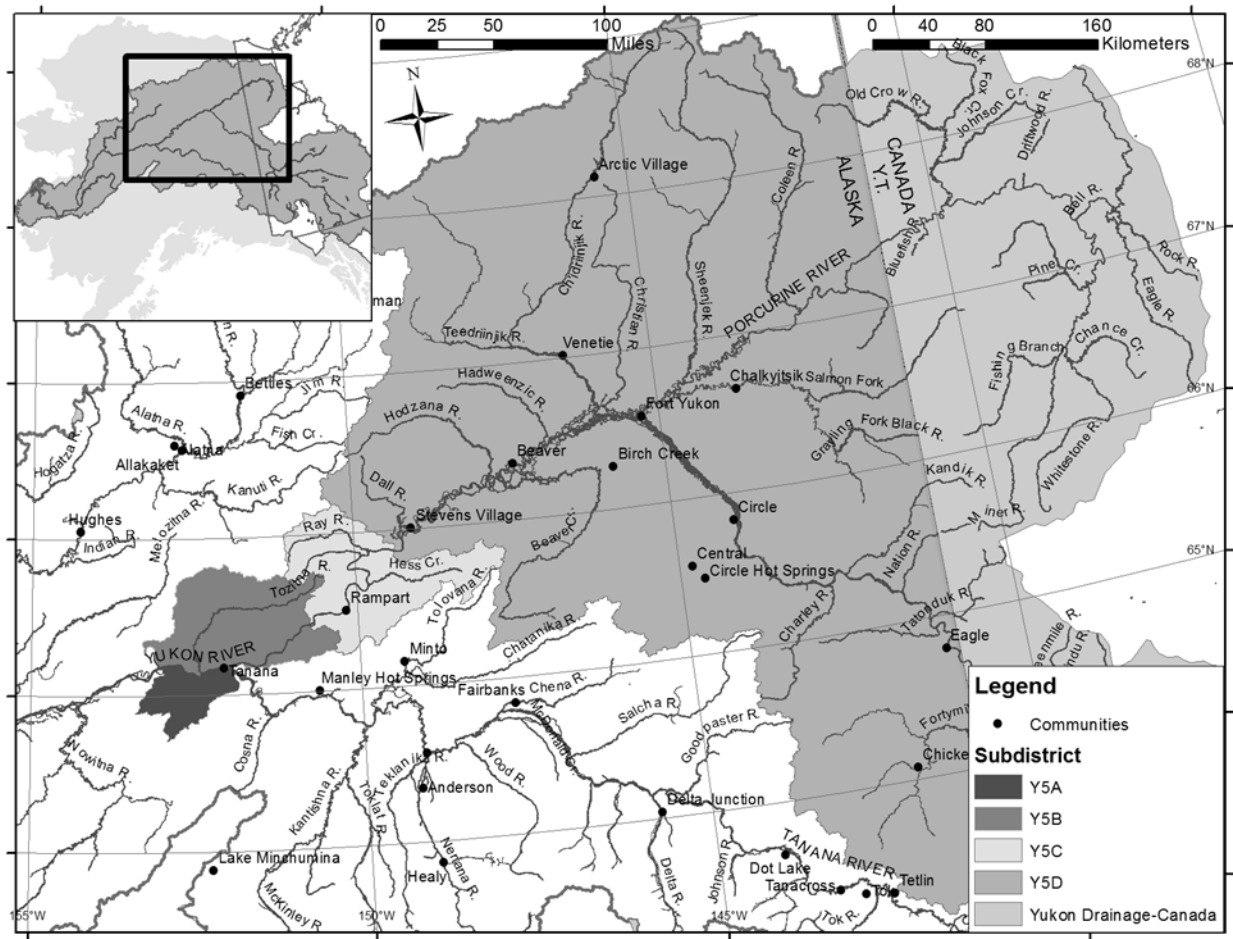
Appendix E13.–The Koyukuk River drainage.



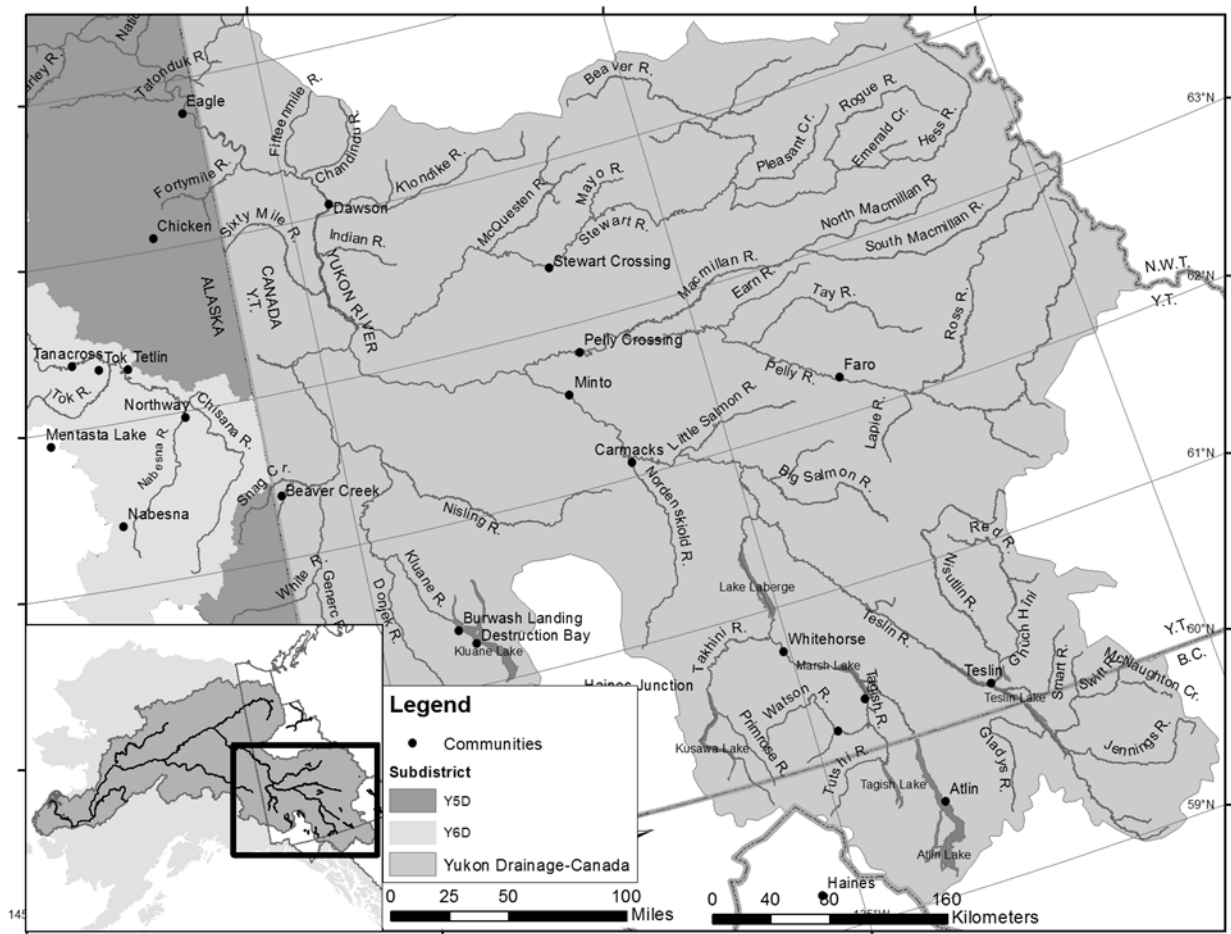
Appendix E14.—The Tanana River drainage.



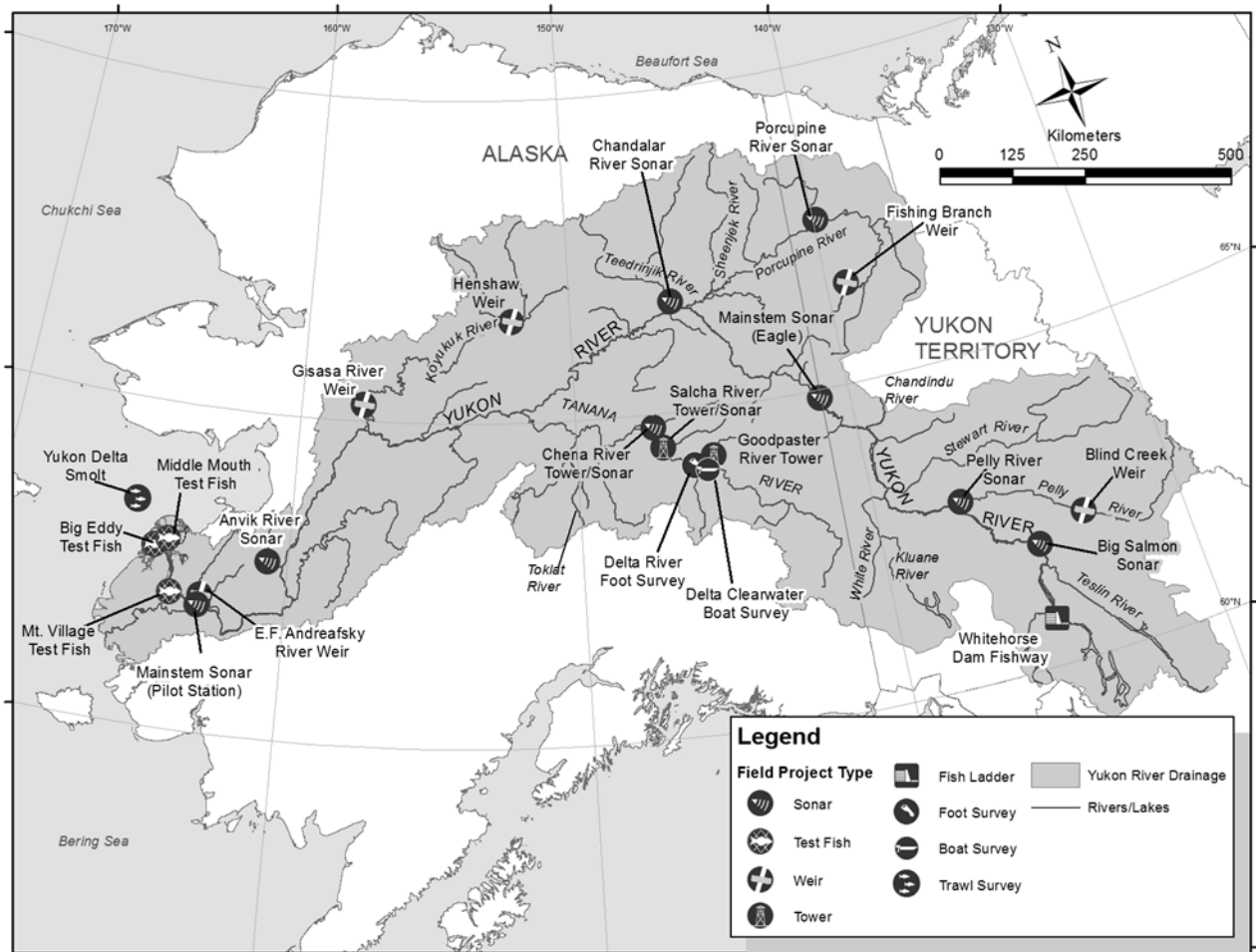
Appendix E15.—The middle Yukon River and Porcupine River drainages.



Appendix E16.—The upper Yukon River drainage in Canada.



Appendix E17.—Select salmon monitoring projects, Yukon River drainage.



Appendix E18.—Reconstructed drainagewide Yukon River Chinook salmon run size, 1982–2017.

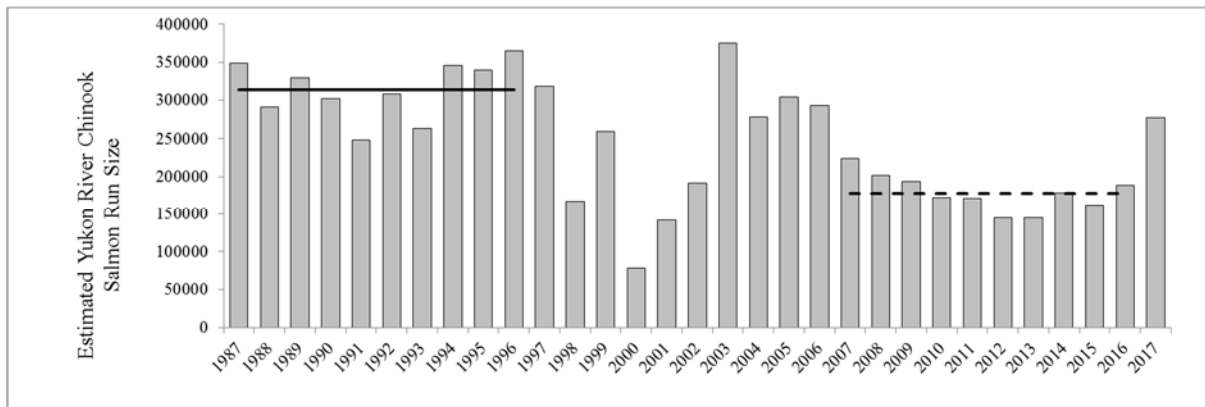
Year	Canadian origin Chinook Total Run	Harvest Below Pilot Station Sonar <sup>a</sup>	Total Andreafsky River <sup>b</sup>	Pilot Station Sonar	Drainagewide Total Run <sup>c</sup>
1982	147,587		2,125		295,174
1983	160,220		0		320,440
1984	111,035		3,566		222,069
1985	145,360	132,290	3,865		290,720
1986	159,082	93,632	3,060		318,164
1987	174,129	124,374	4,022		348,258
1988	145,676	87,944	2,682		291,351
1989	164,516	91,661	2,488		329,033
1990	151,188	87,383	4,048		302,376
1991	124,382	92,515	4,482		248,763
1992	154,219	110,053	3,032		308,438
1993	131,527	91,824	8,620		263,055
1994	172,885	104,372	15,602		345,769
1995	169,789	116,607	11,682	210,741	339,030
1996	182,504	88,455	5,910		365,007
1997	161,700	112,525	6,372	199,763	318,660
1998	88,282	51,397	8,068	108,038	167,503
1999	110,446	68,633	6,888	184,218	259,739
2000	52,842	20,660	3,218	54,560	78,438
2001	85,663	18,915	2,296	121,089	142,300
2002	81,487	31,660	8,246	151,713	191,619
2003	149,979	47,911	8,672	318,088	374,671
2004	117,247	61,717	16,090	200,761	278,568
2005	123,612	40,469	4,478	259,015	303,962
2006	119,485	50,802	12,926	228,763	292,491
2007	87,899	44,656	9,008	170,246	223,910
2008	62,637	17,837	8,484	175,046	201,367
2009	87,682	10,252	6,008	177,796	194,056
2010	59,741	22,435	4,826	145,088	172,349
2011	71,726	12,407	10,426	148,797	171,630
2012	48,494	11,889	5,034	127,555	144,478
2013	37,177	3,952	3,996	136,805	144,753
2014	64,886	2,407	11,898	163,895	178,200
2015	87,323	3,942	10,948	146,859	161,749
2016	82,702	6,301	5,352	176,898	188,551
2017	92,622	9,212	5,940	263,014	278,166
Averages					
1987-1996	157,081	99,519	6,257	210,741	314,108
1997-2006	109,074	50,469	7,725	182,601	240,795
2007-2016	69,027	13,608	7,598	156,899	178,104

<sup>a</sup> Harvest below Pilot station sonar includes commercial and subsistence harvest in statistical area codes 334-11 through 334-19 and 334-21 through 334-23.

<sup>b</sup> East Fork Andreafsky River weir escapement count multiplied by two.

<sup>c</sup> Drainagewide total run for 1982-1994 and 1996 is the Canadian origin Chinook total run size and doubled. Drainagewide total run for 1995 and 1997-2017 is the sum of harvest below Pilot station sonar, East fork Andreafsky weir count doubled and the Pilot station sonar count.

Appendix E19.—Historical Estimated Yukon River Chinook salmon drainagewide run size, various methods, 1987–2017.



*Note:* Total run size for 1987–1994 and 1996 is the Canadian-origin run size doubled. Run size for 1995 and 1997–2017 is measured at Pilot station sonar and includes escapement and harvest below the sonar. The solid black line is the 1987–1996 average run size. The dashed line is the 10-year average run size (2007–2016).



## **APPENDIX F**

Appendix F1.—Commercial freshwater finfish harvest, Lower Yukon Area, 1997–2017.

Year	Permits	Sheefish		Bering Cisco		Other Whitefish <sup>a</sup>		Lamprey	
	Fished	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1997	0	—	—	—	—	—	—	—	—
1998	0	—	—	—	—	—	—	—	—
1999	0	—	—	—	—	—	—	—	—
2000	0	—	—	—	—	—	—	—	—
2001	0	—	—	—	—	—	—	—	—
2002	0	—	—	—	—	—	—	—	—
2003	23	—	—	—	—	—	—	84,965 <sup>b</sup>	23,960
2004	0	—	—	—	—	—	—	0	0
2005	13	266	1,688	241	362 <sup>c</sup>	2,669	4,265	0	0
2006	23	472	2,912	4,497	5,519	1,932	2,832	3,056 <sup>b</sup>	715
2007	23	416	2,906	2,451	2,951	1,748	3,145	0	0
2008	16	0	0	8,642	9,380	695	692	0	0
2009	31	0	0	9,066	9,743	750	763	1,520 <sup>d</sup>	465
2010	21	0	0	14,048	14,945 <sup>e</sup>	420	439	0	0
2011	19	0	0	11,386	12,523	253	258	0	0
2012	20	0	0	11,099	12,705	231	237	0	0
2013	17	0	0	16,901	19,442	120	123	0	0
2014	38	0	0	25,604	31,268	42	50	52,512 <sup>b</sup>	15,386
2015	30	0	0	23,670	28,391	15	16	23,232 <sup>b</sup>	4,298 <sup>f</sup>
2016	33	0	0	26,329	30,764	13	12	8,830 <sup>b</sup>	2,031
2017	27	0	0	16,779	19,479	70	60	0	0
2012–2016									
Average	27.6	0	0	20,721	24,514	84	88	16,915	4,343
2007–2016									
Average	25	42	291	14,920	17,211	429	574	8,609	2,218

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> Other whitefish species include general whitefish, least cisco, broad whitefish, and humpback whitefish. From 2008 onward, only includes least cisco.

<sup>b</sup> Number of lamprey equals pounds of lamprey divided by the average lamprey weight from St. Mary's or Mountain Village (0.282 pounds in 2003; 0.234 pounds in 2006; 0.293 pounds in 2014; 0.185 pounds in 2015; and 0.23 pounds in 2016).

<sup>c</sup> In response to market conditions, commercial whitefish fishing began to target Bering Cisco; therefore harvest of this species is separated from other whitefish species.

<sup>d</sup> Number of lamprey equals pounds of lamprey divided by the average lamprey weight in Grayling (0.306 pounds).

<sup>e</sup> Includes 160 pounds of Bering cisco harvested in January 2010 under permit authorized in fall 2009.

<sup>f</sup> Includes 1,543 pounds of lamprey that were harvested in the YDFDA test fishery but were unable to be distributed for subsistence. These fish were purchased from the test fishery catch but were not included in the value of the fishery.

Appendix F2.–Commercial freshwater finfish harvest, Upper Yukon Area, 1997–2017.

Year	Permits Fished	Upper Yukon Area				
		Whitefish <sup>a</sup>		Lamprey		Avg weight (lb) <sup>b</sup>
		Number	Pounds	Number	Pounds	
1997	– <sup>c</sup>	908	1,160	–	–	
1998	0	–	– <sup>d</sup>	–	–	
1999	0	–	–	–	–	
2000	0	–	–	–	–	
2001	0	–	–	–	–	
2002	0	–	–	–	–	
2003	15	–	–	99,624	25,697	0.258
2004	0	–	–	0	0	
2005	0	–	–	0	0	
2006	9	–	–	33,933	7,481	0.220
2007	1	–	–	191 <sup>e</sup>	42	0.220 <sup>e</sup>
2008	10	–	–	41,749	11,137	0.267
2009	11	–	–	48,117	14,745	0.306
2010	22	–	–	108,837	30,713	0.282
2011	3	–	–	2,660 <sup>f</sup>	783	0.294 <sup>f</sup>
2012	4	–	–	1,539	336	0.218
2013	11	–	–	45,805	11,613	0.254
2014	17	–	–	91,785	28,734	0.313
2015	11	–	–	149,371	33,260	0.223
2016	5	–	–	8,691	2,031	0.234
2017	0	–	–	0	0	
2012–2016						
Average	10			59,438	15,195	0.248
2007–2016						
Average	10			49,875	13,339	0.261

Note: En dash indicates no commercial fishing activity occurred. Blanks indicate not enough information to generate average.

<sup>a</sup> Whitefish species include general whitefish, least cisco, broad whitefish, humpback whitefish, and sheefish.

<sup>b</sup> Average weight of lamprey harvested in Grayling used to calculate number of lamprey harvested in the commercial fishery.

<sup>c</sup> Number of permits issued not reported.

<sup>d</sup> Requests for commercial whitefish fishing permits were denied because of the additional pressure placed on non-salmon species during poor salmon runs.

<sup>e</sup> No harvest sampling was conducted; the average lamprey weight in Grayling from 2006 was used to calculate the number of lamprey harvested.

<sup>f</sup> No harvest sampling was conducted; the average weight of lamprey collected in Grayling from 2009 and 2010 was used to calculate the number of lamprey harvested.

Appendix F3.–Freshwater finfish sales during the commercial salmon fishing season by district, Yukon Area, 1997–2017.

Year	Lower Yukon	Lower Yukon Area		Upper Yukon	District 4		District 5				District 6	
	Area	Sheefish		Area	Whitefish		Whitefish		Sheefish		Whitefish	
	Permits Fished	Number	Pounds	Permits Fished	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1997	0	0	0	3	0	0	270	301	0	0	4	8
1998	9	16	254	2	0	0	116	88	0	0	0	0
1999	–	–	–	0	0	0	0	0	0	0	0	0
2000	16	27	478	0	–	–	–	–	–	–	–	–
2001	–	–	–	0	–	–	–	–	–	–	–	–
2002	1	1	17	2	0	0	0	0	0	0	60	120
2003	0	0	0	7	40 <sup>a</sup>	113	0	0	0	0	129	297
2004	0	0	0	6	–	–	4	15	0	0	53	112
2005	0	0	0	3	–	–	0	0	0	0	66 <sup>a</sup>	175
2006	0	0	0	3	–	–	0	0	0	0	99	397
2007	15	29	457	2	0	0	0	0	0	0	55	152
2008	0	0	0	3	0	0	271	264	38	338	95 <sup>b</sup>	292
2009	0	0	0	0	0	0	–	–	–	–	0	0
2010	0	0	0	2	0	0	–	–	–	–	18	72
2011	0	0	0	2	–	–	0	0	0	0	37	148
2012	0	0	0	1	0	0	0	0	0	0	10	25
2013	0	0	0	1	0	0	0	0	0	0	22	56
2014	0	0	0	2	0	0	5 <sup>c</sup>	20	38	456	0	0
2015	0	0	0	2	–	–	11	30	45	515	300	811
2016	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	2	0	0	0	0	0	0	128	635
2012–2016												
Average	0	0	0	1	0	0	3	10	17	194	66	178
2007–2016												
Average	2	3	46	2	0	0	36	39	15	164	54	156

Note: En dash indicates no commercial fishing activity occurred.

<sup>a</sup> A small number of sheefish or pike were also sold (less than 5 fish).

<sup>b</sup> The sale of fish sold did not include number of fish; therefore, number of fish was estimated using average weight (3.07 pounds) from 2007 and 2010 in District 6.

<sup>c</sup> Three humpback whitefish, one broad whitefish, and one general whitefish.

## **APPENDIX G**

Appendix G1.—Waters open to commercial herring fishing in the Cape Romanzof District.

