

Fishery Management Report No. 12-23

Annual Management Report Yukon and Northern Areas 2010

by

Jeffrey L. Estensen,

Steve Hayes,

Stacey Buckelew,

Dayna Green,

and

Daniel J. Bergstrom

May 2012

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		all standard mathematical signs, symbols and abbreviations	
deciliter	dL		AAC		
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H _A
hectare	ha			base of natural logarithm	e
kilogram	kg	all commonly accepted		catch per unit effort	CPUE
kilometer	km	professional titles	e.g., Dr., Ph.D., R.N., etc.	coefficient of variation	CV
liter	L			common test statistics	(F, t, χ^2 , etc.)
meter	m	at	@	confidence interval	CI
milliliter	mL	compass directions:		correlation coefficient	
millimeter	mm	east	E	(multiple)	R
		north	N	correlation coefficient	
Weights and measures (English)		south	S	(simple)	r
cubic feet per second	ft ³ /s	west	W	covariance	cov
foot	ft			degree (angular)	°
gallon	gal	copyright	©	degrees of freedom	df
inch	in	corporate suffixes:		expected value	E
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
		et cetera (and so forth)	etc.	logarithm (base 10)	log
Time and temperature		exempli gratia		logarithm (specify base)	log ₂ , 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 ₀
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		(rejection of the null hypothesis when true)	α
Physics and chemistry		letters	Jan,...,Dec	probability of a type II error	
all atomic symbols		registered trademark	®	(acceptance of the null hypothesis when false)	β
alternating current	AC	trademark	™	second (angular)	"
ampere	A	United States		standard deviation	SD
calorie	cal	(adjective)	U.S.	standard error	SE
direct current	DC	United States of America (noun)	USA	variance	
hertz	Hz	U.S.C.	United States Code	population sample	Var var
horsepower	hp				
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. 12-23

**ANNUAL MANAGEMENT REPORT YUKON AND NORTHERN AREAS
2010**

by

Jeffrey L. Estensen,

Steve Hayes,

Stacey Buckelew,

Dayna Green,

and

Daniel J. Bergstrom

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

May 2012

This investigation was partially funded by Yukon River Salmon U.S./Canada Negotiation Studies Grant Awards No.NA76FP0208-1 from the U.S. Department of Commerce.

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 and Dayna Green
Alaska Department of Fish and Game, Division of Commercial Fisheries,
1300 College Road, Fairbanks AK, 99701 USA*

and

*Steve Hayes, Stacey Buckelew, and Daniel L. Bergstrom
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage AK, 99518, USA*

This document should be cited as:

Estensen, J. L., S. Hayes, S. Buckelew, D. Green, and D. J. Bergstrom. 2012. Annual management report for the Yukon and Northern Areas, 2010. Alaska Department of Fish and Game, Fishery Management Report No. 12-23, 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.....	iv
LIST OF FIGURES.....	iv
LIST OF APPENDICES	iv
PREFACE.....	x
ABSTRACT	1
YUKON AREA.....	1
Introduction	1
SALMON FISHERY	2
Description of Area and District Boundaries.....	2
Fishery Resources.....	2
Management	3
Alaska Salmon Fisheries Descriptions	9
Commercial Fishery.....	9
Subsistence Fishery	11
Federal Subsistence Management.....	14
Commercial-Related Harvests	14
Personal Use Fishery	15
Lower Yukon Area	16
Upper Yukon Area.....	18
Sport Fishery.....	20
Canadian Harvests of Yukon River Salmon	21
U.S./Canada Yukon River Salmon Panel and Treaty Negotiations	21
R&E Funds.....	22
Upper Yukon River Chinook Salmon	22
Upper Yukon River Fall Chum Salmon	23
Fishing Branch River Fall Chum Salmon.....	24
MARINE FISHERIES INFORMATION	25
Introduction	25
South Alaska Peninsula Salmon Fisheries.....	25
Salmon Bycatch in the Bering Sea and Gulf of Alaska Groundfish Fisheries.....	26
Norton Sound.....	27
Northern Bering Sea Pelagic Trawl Survey.....	28
Salmon Spawning Escapement.....	28
Aerial Survey Escapement Assessment Methods	28
Escapement Goals.....	29
AREA SALMON REPORT 2010	30
Alaska Board of Fisheries Actions 2010	30
Federal Subsistence Management Actions 2010	31
Total Yukon River Drainage Salmon Harvest 2010	31
Alaska Subsistence Fishery 2010	32
Subsistence Harvest Reporting 2010	32
Survey Program 2010	32
Subsistence Permit Program 2010	32

TABLE OF CONTENTS (Continued)

	Page
Subsistence Salmon Use from Test Fisheries 2010	33
Alaska Personal Use Fishery 2010	33
Yukon Area Chinook and Summer Chum Salmon Fishery Summary 2010.....	33
Chinook Salmon Management Overview 2010	34
Summer Chum Salmon Management Overview 2010.....	36
Summer Season Subsistence Fishery 2010.....	36
Districts 1, 2, and 3.....	38
District 4.....	38
District 5.....	38
District 6.....	39
Coastal District, Koyukuk, and Innoko Rivers.....	39
Summer Season Commercial Fishery 2010.....	39
Districts 1, 2, and 3.....	40
Districts 4-6.....	41
Yukon Area Fall Chum and Coho Salmon Fishery Summary 2010.....	42
Fall Chum Salmon Management Overview 2010.....	42
Coho Salmon Management Overview 2010	43
Fall Season Subsistence Fishery 2010	43
Fall Season Commercial Fishery 2010	44
Canadian Fisheries 2010.....	45
Canadian Commercial Fishery 2010.....	45
Chinook Salmon.....	45
Fall Chum and Coho Salmon	47
Canadian Aboriginal, Domestic, and Recreational Fisheries 2010.....	49
Aboriginal Fishery	49
Domestic Fishery	51
Recreational Fishery	51
Escapement 2010.....	51
Summer Season Escapement 2010	51
Chinook Salmon Escapement.....	53
Summer Chum Salmon Escapement	56
Fall Season Escapement 2010.....	57
Fall Chum Salmon Escapement.....	57
Coho Salmon Escapement.....	59
Enforcement 2010.....	60
Outlook for 2011	60
Chinook Salmon	60
Summer Chum Salmon.....	60
Fall Chum Salmon	61
Coho Salmon	62
CAPE ROMANZOF DISTRICT HERRING FISHERY 2010	62
Introduction	62
Commercial Fishery	63
Subsistence Fishery	63
Subsistence Fishery 2010.....	63
Stock Status	64
Variable Mesh Gillnet Test Fishery.....	64

TABLE OF CONTENTS (Continued)

	Page
Herring Outlook for 2011	64
OTHER MARINE AND FRESHWATER FINFISH FISHERIES 2010	65
Subsistence Fishery	65
Commercial Fishery	66
Yukon River Whitefish Fishery Summary	66
Harvest Sampling	67
SHEEFISH	68
Yukon River Arctic Lamprey Fishery Summary 2010	69
Harvest Sampling	70
Assessment	70
NORTHERN AREA	72
Description of Area	72
Subsistence Fisheries	72
Commercial Fisheries	72
ACKNOWLEDGEMENTS	73
REFERENCES CITED	74
TABLES AND FIGURES	79
APPENDIX A	111
APPENDIX B	199
APPENDIX C	231
APPENDIX D	263
APPENDIX E	279
APPENDIX F	307
APPENDIX G	313
APPENDIX H	321

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, 2010.	80
2 Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 2010. ...	81
3 Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2010.	83
4 Total utilization in numbers of salmon by district and country, Yukon River drainage, 2010.	84
5 Subsistence and personal use salmon harvest estimates, including commercially related and test fish harvests provided for subsistence use and related information, Yukon Area, 2010.	86
6 Reported subsistence and personal use salmon harvested under the authority of a permit, listed by permit area, Yukon Area, 2010.	89
7 Chinook and summer chum salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3 and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2010.	90
8 Commercial salmon and salmon roe sales by statistical area, Yukon Area, 2010.	92
9 Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2010.	94
10 Number of salmon sold from ADF&G test fishing programs, Yukon area, 2010.	95
11 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, 2010.	96

LIST OF FIGURES

Figure	Page
1 Map of the Yukon River drainage.	98
2 Map of the Alaska portion of the Yukon River drainage showing communities and fishing districts.	99
3 District 1 showing statistical areas, Yukon Area.	100
4 District 2 showing statistical areas, Yukon Area.	101
5 District 3 showing statistical areas, Yukon Area.	102
6 District 4 showing statistical areas, Yukon Area.	103
7 District 5 showing statistical areas, Yukon Area.	104
8 District 6 showing statistical areas, Yukon Area.	105
9 Anvik River management area, Yukon Area.	106
10 Fairbanks nonsubsistence area.	107
11 Set Gillnet Only Area of District 1, Lower Yukon Area.	108
12 Select fall chum salmon monitoring projects, Yukon River drainage.	109
13 The Northern management area.	110

LIST OF APPENDICES

Appendix	Page
A1 List of indigenous fishes found in the Yukon Area.	112
A2 Yukon River drainage.	113
A3 Alaska and Canadian total utilization of Yukon River Chinook, chum, and coho salmon, 1961–2010.	115
A4 Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2010.	117
A5 Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1967–2010.	120
A6 Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2010.	124

LIST OF APPENDICES (Continued)

Appendix	Page
A7 Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961–2010.....	128
A8 Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1976–2010.....	132
A9 Number of commercial salmon fishing permit holders making at least one delivery by district and season, Yukon Area, 1971–2010.....	133
A10 Commercial salmon pack by species and type of processing, Yukon Area, 1960–2010.....	136
A11 Estimated average prices per pound paid to fishermen, Yukon Area, 1964–2010.....	138
A12 Value of commercial salmon fishery to Yukon Area fishermen, 1977–2010.....	139
A13 Average weight of salmon harvests in the commercial fishery, Yukon Area, 1964–2010.....	141
A14 Commercial Chinook salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974–2010.....	142
A15 Commercial summer chum salmon guideline harvest ranges (GHR), Yukon Area, 1990–2010.....	143
A16 Commercial fall chum salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974–2010.....	144
A17 Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.....	146
A18 Summer chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.....	154
A19 Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.....	160
A20 Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.....	167
A21 Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1980–2010.....	174
A22 Percent age composition of combined commercial and subsistence salmon harvest by species, Yukon River drainage, 1982–2009.....	179
A23 Yukon River Chinook salmon historical harvest percentage by stock group for the United States and Canada, 1981–2010.....	183
A24 Salmon fishery projects conducted in the Alaska portion of the Yukon River drainage in 2010.....	184
A25 Selected environmental and salmon catch information, Yukon River drainage, 1961–2010.....	188
A26 Total catch and estimated catch of Western Alaska (including Canadian Yukon River) Chinook salmon (in thousands of fish) taken in Japanese high seas salmon gillnet fisheries and total catch of Chinook salmon taken in foreign, joint-venture, and U.S. domestic trawl fisheries, 1964–2010.....	190
A27 List of emergency orders pertaining to the Districts 1–6 Chinook and summer chum salmon fishery, Yukon Area, 2010.....	192
A28 List of emergency orders pertaining to the Districts 1–6 fall chum and coho salmon fishery, Yukon Area, 2010.....	196
B1 Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1961–2010.....	200
B2 Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 1, Lower Yukon Area, 1974–2010.....	202
B3 Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 2, Lower Yukon Area, 1978–2010.....	206
B4 Commercial Chinook salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1974–2010.....	209
B5 Commercial summer chum salmon directed harvest (in numbers of fish) and effort data, Districts 1 and 2, Lower Yukon Area, 1967–2010.....	211
B6 Commercial summer chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.....	212
B7 Numbers of commercially caught fall chum salmon harvest (in thousands of fish) by period, District 1, Yukon Area, 1978–2010.....	214
B8 Commercial fall chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.....	218
B9 Commercial coho salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.....	220

LIST OF APPENDICES (Continued)

Appendix	Page
B10 Daily and cumulative CPUE for Chinook salmon in the set gillnet test fishery, Lower Yukon River, 2010.....	222
B11 Daily and cumulative CPUE for Chinook salmon set gillnet test fishery sites in 2010, compared to historic and late year average run timing, 1989 to 2008.....	224
B12 Big Eddy and Middle Mouth summer chum salmon daily and cumulative index, cooperative 5.5" mesh drift gillnet test fishery, Lower Yukon River, 2010.	225
B13 Fall chum and coho salmon, daily and cumulative catch per unit effort (CPUE), index, cooperative drift gillnet (6") test fishery, Big Eddy and Middle Mouth sites combined, Lower Yukon River, 2001 to 2009 compared to 2010.	227
B14 Fall chum salmon daily and cumulative catch per unit effort (CPUE) index, Big Eddy and Middle Mouth sites combined, cooperative drift net test fishery, Lower Yukon River, 2001 to 2009 compared to 2010.....	229
B15 Coho salmon daily and cumulative catch per unit effort (CPUE) index, Big Eddy and Middle Mouth sites combined, cooperative drift net test fishery, Lower Yukon River, 2001 to 2009 compared to 2010..	230
C1 Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 2010.	232
C2 Commercial set gillnet salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2010.....	233
C3 Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2010.....	234
C4 Commercial Chinook sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Cook Inlet, 1974–2010.....	235
C5 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2010.	237
C6 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974–2010.	238
C7 Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974–2010.	239
C8 Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.	240
C9 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974–2010.....	242
C10 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2010.	246
C11 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1974–2010.	248
C12 Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974–2010.	249
C13 Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.	250
C14 Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2010.	252
C15 Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1974–2010.....	253
C16 Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1974–2010.	255
C17 Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.	256
C18 Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2010.....	258
C19 Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.....	260
C20 Summary of test fish wheel projects conducted in the Upper Yukon Area, 2010.....	262

LIST OF APPENDICES (Continued)

Appendix	Page
D1 Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and Yukon Area, 2000–2010.	264
D2 Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area 2000–2010.	266
D3 Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area 2000–2010.	268
D4 Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 2000–2010.	270
D5 Subsistence salmon harvests taken under authority of a permit in portions of District 5, Yukon Area, 1974–2010.	272
D6 Subsistence salmon harvests taken under authority of a permit, Tanana River drainage, 1973–2010.	274
D7 Personal use salmon harvests taken under authority of a permit, Tanana River drainage, 1987–2010.	277
E1 Yukon River drainage salmon spawning escapement goals for selected species and streams, 2007–2010.	280
E2 Detailed preliminary salmon spawning escapement estimates for the Yukon River drainage, 2010.	281
E3 Pilot Station sonar project estimates, Yukon River drainage, 1995, and 1997–2010.	285
E4 Chinook salmon aerial survey indices for selected spawning areas in the Alaska portion of the Yukon River drainage, 1961–2010.	286
E5 Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1961–2010.	288
E6 Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1961–2010.	290
E7 Summer chum salmon escapements for selected spawning areas in the Alaska portion of the Yukon River drainage, 1973–2010.	293
E8 Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaska portions of the Yukon River drainage, 1971–2010.	296
E9 Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Canadian portions of the Yukon River drainage, 1971–2010.	299
E10 Yukon River fall chum salmon estimated brood year production and return per spawner estimates 1974–2010.	302
E11 Coho salmon passage estimates or escapement estimates for selected spawning areas in the Alaska portion of the Yukon River drainage, 1972–2010.	304
F1 Waters open to commercial fishing in the Cape Romanzof District.	308
F2 Commercial Pacific herring fishery data, Cape Romanzof District, 1980–2010.	309
F3 Subsistence herring harvest (st) and effort data by community, Cape Romanzof, 1975–2010.	311
F4 Subsistence harvest of herring roe on kelp by community, Cape Romanzof, 1993–2010.	312
G1 Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2000–2010.	314
G2 Reported subsistence and personal use fish harvested under authority of a permit, listed by permit area, Yukon area, 2010.	316
G3 Commercial freshwater finfish harvest, Lower Yukon Area, 1978–2010.	317
G4 Commercial freshwater finfish harvest, Upper Yukon Area, 1971–2010.	318
G5 Freshwater finfish salmon during the commercial salmon fishing season by district, Upper Yukon Area, 1988–2010.	320
H1 Commercial freshwater finfish harvest and sales, Colville River, Northern Areas, 1964–2010.	322

A select list of acronyms, abbreviations, and symbols, in this report, listed alphabetically, are as follows:

ABWE	Alaska Bureau of Wildlife Enforcement
ADF&G	Alaska Department of Fish and Game
Agreement	Interim Yukon River Salmon Agreement
ASL	Age, sex, and length data
AVCP	Association of Village Council Presidents
AYK	Arctic-Yukon-Kuskokwim
BASIS	Bering Arctic Subarctic Integrated Surveys
BEG	Biological Escapement Goal
BLM	Bureau of Land Management
BOF	Alaska Board of Fisheries
BSFA	Bering Sea Fishermen's Association
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
CPUE	Catch per unit effort
DFO	Canadian Department of Fisheries and Oceans
EEZ	U.S. Exclusive Economic Zone
EO	Emergency Order
FWP	Division of Fish and Wildlife Protection
IFMP	Integrated Fisheries Management Plan
JTC	Joint Technical Committee of the U.S. Canada Panel
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
Panel	U.S./Canada Yukon River Panel
PST	Pacific Salmon Treaty
R&E Fund	U.S./Canada Restoration and Enhancement Fund
SEG	Sustainable Escapement Goal
TCC	Tanana Chiefs Conference, Inc.
U.S.	United States
UFA	Comprehensive Land Claim Umbrella Final Agreement
USFWS	United States Fish and Wildlife Services
VHF	Very High Frequency
YRDFA	Yukon River Drainage Fisheries Association
YSC	Yukon Salmon Committee

PREFACE

This report summarizes the 2010 season and historical information concerning management of the subsistence, commercial and personal use fisheries of the Yukon–Northern Area of the Arctic-Yukon-Kuskokwim (AYK) Region. Data from selected management and research projects are included in this report. A more complete documentation of project results is presented in separate reports.

Data in this report supersedes information found in previous management reports. An attempt has been made to update information and correct errors in earlier reports.

This report is organized into major sections:

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

Yukon Area salmon information is provided in Appendices A, B, C, D, and E, Cape Romanzof herring information is provided in Appendix F. Yukon Area freshwater finfish information is provided in Appendix G, and Northern Area information is provided in Appendix H.

ABSTRACT

The 2010 Yukon and Northern Area management report summarizes management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries in the Yukon and Northern Areas of Alaska. The report provides the Yukon Area status of salmon stocks in 2010 with reference to historical data, presents an outlook for the 2011 fishing season, and provides data on the utilization of salmon species by commercial and subsistence (aboriginal) harvests, personal use (domestic), and sport (recreational) fishery. Alaska and Canada fisheries are summarized as the Yukon River is a transboundary river. The report further compiles summaries of selected Yukon River projects (e.g., mark–recapture, sonar, stock identification) and a review of salmon bycatch in the groundfish and pollock fisheries of the Bering Sea and the Gulf of Alaska. Complete documentation of these projects and results may appear in separate reports. 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, and a comprehensive report of the 2010 salmon fisheries, by summer and fall season, and makes comparisons with previous years, 2) Cape Romanzof District Herring Fishery: this section presents a description of the area, fishery resources, fisheries and management practices, and summary of the 2010 herring fishery, and 3) Other Marine and Freshwater Finfish Fisheries: this section presents a description of the fishery resources and freshwater finfish fisheries other than salmon and herring and 4) Northern Area, which includes a description of the area and documentation of the Colville River commercial freshwater finfish fishery.

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

YUKON AREA

INTRODUCTION

The Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G) is responsible for the management of state subsistence, personal use, and commercial fisheries in the Yukon Area. This annual management report details the activities of ADF&G in the Yukon Area during 2010.

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). Important commercial and subsistence fisheries include salmon and herring. Other marine and freshwater finfish are harvested primarily for subsistence use. A list of indigenous fishes found in the Yukon Area is provided in Appendix A1.

SALMON FISHERY

DESCRIPTION OF AREA AND DISTRICT BOUNDARIES

The Yukon River is the largest river in Alaska and the fifth largest drainage in North America. The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska, and flows over 2,300 miles to its terminus at the Bering Sea. It drains an area of approximately 330,000 square miles and approximately 222,000 square miles of the state. With the possible exception of a few fish taken near the mouth or in the adjacent coastal waters, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 97,580 residents), there are approximately 21,900 rural residents in the Alaska portion of the drainage (U.S. Census Bureau American Fact Finder <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none>, Accessed May 2011), 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 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 district boundaries were originally established in 1961 and redefined in 1962, 1974, 1978, 1994, and 1996. The Lower Yukon Area (Districts 1, 2, and 3) includes the Yukon River drainage from the mouth to Old Paradise Village at river mile 301. The Coastal District was established in 1994, redefined in 1996, and is open only to subsistence fishing. The Upper Yukon Area (Districts 4, 5, and 6) is that portion of the Yukon River drainage upstream of Old Paradise Village to the border with Canada. The districts and subdistricts are further divided into 28 statistical areas for management and reporting purposes (Figures 3–9). The Yukon River mileages at specific locations are listed in Appendix A2.

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

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 during late May or early June and continue to migrate upriver through mid-July.

The chum salmon return is 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 (early June to mid-July at the river mouth); rapid maturation in freshwater; and smaller body size (average 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 (mid-July to early September at the mouth); robust body shape; and larger body size (average 7 to 8 pounds). Fall chum salmon primarily spawn in the upper portion of the drainage in streams that are spring fed. Major fall chum salmon spawning areas include the Tanana, Porcupine, and Chandalar river drainages, as well as various streams in Yukon Territory, Canada, including the mainstem Yukon River. Fall chum salmon run size is typically much smaller than that of summer chum salmon.

Coho salmon enter the Yukon River from late July through September. Coho salmon weigh on average approximately 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 approximately 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 Ruby (river mile 601) (ADF&G 1983). In the past decade, pink salmon have exhibited an abundance cycle alternating between high and low every 2 years, with high abundance typically observed during the 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 (L. Barton, Fisheries Biologist, ADF&G, Fairbanks, personal communication 1988), Tanana River upstream of confluence with Kantishna River (B. Borba, Commercial Fisheries Biologist, ADF&G, Fairbanks; personal communications 2004), Anvik (M. Erickson, Fisheries Biologist, ADF&G, Anchorage; personal communication 1989), Andreafsky (Tobin and Harper 1995) and Gisasa (Wiswar 1999) river drainages.

MANAGEMENT

The policy of ADF&G is to manage salmon runs to the extent possible for maximum sustained yield, unless otherwise directed by State regulation (*Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222)). ADF&G has managed salmon fisheries in the Yukon Area over the past few decades with the dual goal of maintaining important fisheries while at the same time achieving desired escapements consistent with the *Sustainable Salmon Fisheries Policy*. Management of the Yukon River salmon fishery is complex due to the inability to determine stock specific abundance and timing, overlapping multispecies salmon runs, increasing efficiency of the fishing fleet, allocation issues, and immense geographic expanse of the Yukon River drainage. 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 to provide for spawning escapements to ensure sustainable yields, Yukon River salmon fisheries must be managed conservatively.

Salmon fisheries within the Yukon River drainage may harvest stocks that are up to several weeks and over a thousand miles from their spawning grounds. Since the Yukon River commercial fishery is a mixed stock fishery, 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 commercial fishing occurs. Within the Yukon River drainage, only stocks within the Tanana and Anvik rivers can be managed as terminal harvest areas.

ADF&G uses an adaptive management strategy that evaluates run strength inseason to determine a harvestable surplus above escapement requirements and subsistence uses. Management plans, guideline harvest ranges (GHR) established by the BOF, and emergency order (EO) authority, which is used to implement time and area openings or closures and mesh size restrictions, are the primary tools used by ADF&G to manage the commercial salmon fisheries. 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. Management of commercial fisheries for coho salmon is conditional to the abundance of fall chum salmon. Typically coho salmon harvest is incidental to the fall chum salmon fishery; however, ADF&G now has options to conduct late season coho salmon directed commercial fishing if certain stipulations are met.

During the fishing season, management is based on preseason projections and inseason run assessment. Inseason run assessment includes abundance indices from test fisheries, passage estimates from various sonars, and spawning escapement and harvest data. Since 1995, the main river sonar project at Pilot Station has provided inseason estimates of salmon passage for fisheries management. The level of commercial, subsistence, and personal use harvests can be adjusted through the use of EOs to control time and area of openings and closures. News releases announcing emergency orders are broadcast on local radio stations, VHF radio where available, transmitted by fax, posted on the state web site (<http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>), and emailed to select communities, processors, buyers, and fishermen. Additionally, most processors and buyers are notified of the emergency order by telephone.

In response to the guidelines established in the *Sustainable Salmon Fisheries Policy*, the BOF classified Yukon River Chinook and fall chum salmon stocks as yield concerns during the September 2000 work session. This determination was based on the inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest level in 2001. In addition, the BOF classified Yukon River summer chum salmon and Toklat and Fishing Branch River fall chum salmon stocks as management concerns. This determination was based on the chronic inability to meet existing escapement goals for the summer chum salmon stock since 1998 and for the Toklat and Fishing Branch River's fall chum salmon stocks since 1997.

During the January 2001 BOF meeting, action plans were developed through public process to guide ADF&G in managing each stock of concern. The action plans contained goals, measurable and implementable objectives, and provisions including fishery management actions needed to achieve rebuilding goals in proportion to each fishery's use of and hazards posed to a salmon stock. Regulatory actions adopted by the BOF to protect the Yukon River stocks of concern included a 70% reduction of commercial fishing time during the South Peninsula/Area M June

fishery, the adoption of the *Yukon River King Salmon Management Plan* (5 AAC 05.360), changes to the Yukon River summer chum and fall chum salmon management plans, and adoption of a subsistence salmon fishing schedule for the Yukon River. The BOF determined that the subsistence fishing schedule should provide a reasonable opportunity for subsistence users during years of normal to below average salmon run strength. The schedule was enacted to spread the harvest throughout the river, to reduce the impact on a particular stock, and spread subsistence harvest opportunity among users. The goal of the schedule is to provide windows of time during which salmon migrate upriver unexploited. If inseason run strength assessment projects indicate that there is sufficient surplus above escapement and subsistence uses to allow a commercial fishery, the subsistence fishing schedule reverts to the pre-2001 subsistence fishing schedule.

During the January 2007 BOF meeting, Yukon River stocks of concern were re-evaluated. Chinook salmon stock was continued as a yield concern, summer chum salmon stock was discontinued as a management concern, and fall chum salmon stock was discontinued as a stock of concern (Bergstrom et al. 2009; Borba et al. 2009; Howard et al. 2009). Because low yields of Chinook salmon have continued in the Yukon River since 2010 the BOF continued their stock of yield concern status at the 2010 Arctic Yukon Kuskokwim (AYK) meeting.

Conservation management strategies under the management action plan adopted by the BOF allow for successful achievement of escapement goals. The highest management priority is to provide for escapement in both Alaska and Canada. From 2002 to 2005, Chinook salmon management strategies shifted from commercial openings occurring at the first quarter point of the run to the midpoint of the run or later. This strategy provided for conservation of early pulses that are largely comprised of fish bound for Canada before commercial activity started in the lower river. Based on preseason projections and inseason run assessments in 2006 and 2007, commercial fishing was scheduled to commence near the first quarter point of the Chinook salmon run and harvest spread over the midpoint of the run. Beginning in 2008 through 2010, poor Chinook salmon runs did not provide for a Chinook salmon directed commercial fishery, and in 2008 through 2009, management strategies reduced subsistence fishing time.

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 users while aiming to reestablish the historic range of harvest levels by other users. Additionally, when the projected commercial harvest is 0–67,350 Chinook salmon, a specific percentage of harvest determined by the BOF should be allocated by district or subdistrict based on the low end of the established guideline harvest ranges. At the 2009 BOF meeting, the management plan was amended by the BOF to allow closure to all salmon fishing in a district or subdistrict if run assessment information indicates an insufficient abundance of Chinook salmon.

The Yukon River summer chum salmon run is managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan* (5 AAC 05.362). The intent of this plan is to conservatively manage harvests in order to provide for escapement needs and subsistence use priority before other consumptive uses such as commercial, sport, and personal use fishing. Since 2001, this management plan allows for varying levels of harvest opportunity depending on the run size projection. If project run size is 700,000 to 1,000,000 summer chum salmon and a district, subdistrict, or tributary is projected to meet its escapement goals, then a

directed commercial fishery may be opened in the immediate area. When the run size is projected to be greater than 900,000 fish based on Pilot Station sonar project, a directed summer chum salmon commercial fishing may be opened to harvest the available surplus. When the projected commercial harvest range is 0–400,000 summer chum salmon, a specific percentage of harvest determined by the BOF should be allocated by district or subdistrict based on the low end of the established guideline harvest ranges. In 2010, the BOF modified the management plan to allow a commercial harvest up to 50,000 fish if the run size is between 900,000 and 1,000,000 fish, distributed by district or subdistrict in proportion to the guideline harvest levels.

The fall chum salmon run is managed according to the guidelines described in the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 AAC 01.249). This plan stipulates that directed fall chum salmon commercial fisheries may only be allowed on the projected surplus of the run above 500,000 fall chum salmon for the entire Yukon River drainage. There is an exception to this plan where commercial fishing may be allowed in portions of the drainage where escapement and subsistence needs are projected to be exceeded. Early management actions are based on the preseason outlook derived from the relationship between summer and fall chum salmon. Typically, initiation of commercial fishing does not occur until the quarter to midpoint of the run (first week to middle of August) when information from inseason assessment projects can provide a reasonable projection of run strength. In some cases, commercial fishing is allowed during the transition between summer and fall season (July 16) if there is a large abundance of summer chum salmon in the lower river.

Management of directed coho salmon fishing during the fall season is complicated by an overlapping run of more abundant fall chum salmon stocks. With the coho salmon run is managed according to the guidelines described in the *Yukon River Coho Salmon Management Plan* (5 AAC 05.369). This plan allows a directed coho salmon commercial fishery when it is judged that there is a surplus of coho salmon available and the fall chum salmon run is above the 500,000 fish threshold necessary to allow a directed fall chum salmon fishery. Thus, commercial harvest of coho salmon is dependent upon the abundance of fall chum salmon and accompanying management strategies used to harvest fall chum salmon. However, modifications to the *Yukon River Coho Salmon Management Plan* (5 AAC 05.369) were made in 2010 (see section Alaska Board of Fisheries Actions 2010) that provide coho salmon directed commercial opportunity when fall chum salmon directed commercial fishing is not allowed.

Since 1998, below average runs and poor commercial market conditions resulted in limited exploitation of summer and fall chum salmon. In 2007, both the strength of the run and renewed market interest allowed for summer chum salmon directed commercial opportunity. While commercial fishing has occurred, redevelopment of this fishery is hindered by management strategies taken to reduce incidental harvest of co-migrating Chinook salmon. Since 2008, despite the strength of preceding summer chum salmon runs, the fall chum salmon run has not been large enough to provide for commercial opportunity. From 2008 to 2010, management actions have been taken to delay commercial fishing to provide for escapement and subsistence use.

Various government and non-government agencies operate projects in the Yukon Area and in Canada to obtain the biological information necessary for management of salmon runs (Appendix A24). These projects include:

1. *Catch and Effort Assessment:* The harvest and effort of commercial, subsistence, personal use, and sport salmon fisheries were assessed for the Alaska portion of the Yukon River drainage. Commercial salmon fishing was monitored from June through October using fish tickets of commercial sales of salmon. In the majority of the Yukon Area, there is no regulatory requirement for fishermen to report their subsistence salmon harvest. The subsistence salmon harvest from communities is estimated through a voluntary survey program. The program uses a variety of techniques to assess subsistence fishing harvest and effort, including interviews, questionnaires, and catch calendars. In areas of the drainage with road access, fishermen must obtain a subsistence or personal use household permit on which their daily harvest is recorded. The subsistence and personal use fishery harvest is also monitored by these permits. Similarly, sport fishing harvest and effort is estimated using mail-out questionnaires to sport fishing permit holders. Weekly teleconferences were held from May to 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 dissemination fisheries information.
2. *Test Fishing:* ADF&G operates a test fishing project in the lower Yukon River at South, Middle, and North Mouths. The project utilizes set gillnets from June through July 15 to index Chinook salmon runs. Additionally, test fishing that utilizes drift gillnets from June through August provide an index of the Chinook, summer chum, fall chum, and coho salmon runs. Catch rates and species composition from these test fisheries provide run timing, age composition, and an index of relative abundance for interannual comparisons. Since 2009, an offshore test salmon fishing feasibility study has been operated in Hooper Bay, approximately 30 miles south of the Yukon River mouth. The coastal test fishery assesses run abundance, species composition, and run timing information of salmon bound for the Yukon River in offshore waters to assist with timely management decisions. A test fishery in Mountain Village has been operated by the Asa'carsarmiut Traditional Council to index fall chum and coho salmon run timing and relative abundance using drift gillnets. Additionally, beginning in 2010, a test fishery in Mountain Village was operated by YDFDA to index Chinook salmon run timing and relative abundance using drift gillnets. Test fish wheels equipped with video monitoring systems were used to index salmon and non-salmon passage based on CPUE at the following locations: 1) on the south (left) bank of the mainstem Yukon River near the community of Tanana (fall season only); 2) in the area known as "Rapids" between the communities of Tanana and Rampart on the mainstem Yukon River; and 3) downstream of the community of Nenana on the Tanana River.
3. *Main River Sonar Projects:* Hydroacoustic equipment, including both split-beam and DIDSON (Dual frequency IDentification SONar), was operated in the mainstem Yukon River at 2 locations near Pilot Station to obtain inseason salmon passage estimates by species and near Eagle in the mainstem Yukon River bordering Canada to estimate passage of Chinook and chum salmon.

4. *Tributary Sonar Projects:* Hydroacoustic equipment was operated in the Anvik and Sheenjek rivers to estimate summer and fall chum salmon spawning escapements, respectively. Hydroacoustic equipment was also operated in the Chandalar River to estimate fall chum salmon escapement. *Age, Sex, and Size Composition:* Biological data were collected from salmon harvested in commercial, and subsistence fisheries, as well as test fisheries and escapement projects located throughout the Yukon River drainage. Samples were collected using gillnets, fish wheels, beach seines, weir traps, and carcass surveys. Scales were collected from salmon harvested to determine age composition of the runs. Chum salmon carcass sampling uses vertebra instead of scales for aging because of resorption problems. Sex was determined by examining internal reproductive organs or external characteristics. Length was measured from mid-eye to fork of tail.
5. *Aerial and Ground Surveys of Salmon Spawning Streams:* Aerial surveys were flown to monitor spawning escapements in major spawning tributaries throughout the Yukon River drainage. Surveys for Chinook and summer chum salmon were flown in July and August. Fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage in October and November. Additionally, aerial and ground surveys were conducted in the Nenana River drainage to estimate fall chum and coho salmon escapement in October and November.
6. *Tower Projects:* Tower counting projects were used on the Chena and Salcha rivers to estimate escapement of Chinook and summer chum salmon from July through August. A tower project was also operated on the Goodpaster River in the Tanana River drainage to estimate Chinook and summer chum salmon escapement during July.
7. *Weir Projects:* Weirs were operated on the East Fork Andreafsky River, Gisasa River, and Henshaw Creek from June to August in order to estimate Chinook and summer chum salmon escapement.
8. *Other Projects:*
 - i. The presence of Ichthyophonus in Chinook salmon was monitored in the Lower Yukon Area at Emmonak and in the Upper Yukon Area at Eagle.
 - ii. Little information is known about the rearing habitat for juvenile Chinook salmon in non-natal streams in the Yukon River. In July and August, juvenile Chinook salmon were captured to determine whether they rear in tributary streams between the U.S./Canada border and the Tanana River confluence. Additionally, non-natal stream rearing habitat characteristics were described for juvenile Chinook salmon.

Scale pattern analysis, age composition estimates, and geographic distribution has been used by ADF&G on an annual basis from 1981 through 2003 to estimate stock composition of Chinook and chum salmon in Yukon River harvests. In 2004, the feasibility of using genetic analysis in replacement of scale pattern analysis to assess stock composition was first tested (JTC 2011). 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. 2010). Salmon stock composition using genetic techniques demonstrates promise as a useful tool for fisheries management on the Yukon River in future years.

In 2010, ADF&G's Division of Commercial Fisheries permanent full time staff assigned to the Yukon Area included 14 positions: 2 area management biologists (one summer, one fall), 2

assistant area management biologists, 9 research biologists, and one field office assistant. In addition, approximately 30 seasonal employees assisted in seasonal management and research projects. ADF&G staff also assisted with the enforcement of regulations in cooperation with the Department of Public Safety, Division of Fish and Wildlife Protection (FWP).

ALASKA SALMON FISHERIES DESCRIPTIONS

Commercial Fishery

The first recorded commercial salmon harvest in the Alaska portion of the Yukon River drainage occurred in 1918. Relatively large harvests of Chinook, chum, and coho salmon were taken during 1919 to 1921 (ADF&G 1985). The majority of these harvests were taken outside of the river mouth because of restrictions imposed within the river. The early commercial fishery was closed from 1925 to 1931 because of concerns for the large inriver subsistence fishery. Commercial fishing for Chinook salmon was resumed at a reduced level in 1932 and has continued since that time. Commercial harvests of chum and/or coho salmon occurred during 1918 to 1921, 1952 to 1954, 1956, and since 1961. Pink salmon commercial harvests to date within the Yukon River have been very small due to an extremely limited market (Appendix A21).

From 1954 to 1960, a 65,000 Chinook salmon commercial harvest quota was in effect for the Alaska portion of the Yukon River. Of this total, not more than 50,000 fish could be taken below the mouth of the Anuk River (river mile 63), not more than 10,000 fish could be taken in the area between the mouths of the Anuk and Anvik rivers, and not more than 5,000 Chinook salmon could be taken upstream from the confluence of the Anvik River. The current Chinook salmon guideline harvest ranges have been in effect since 1981 (Appendix A14). Chinook salmon commercial harvests began increasing during the late 1970s (Appendix A4), likely due to increased fleet efficiency and the duration of above average run sizes. Concern for possible over-exploitation resulted in more conservative fisheries management; therefore, reduced harvests occurred during the late 1980s into the 1990s. The drastic decline of salmon stocks from 1998 through 2002 significantly changed the character of Yukon River salmon fisheries and, since 2001 the management action plan adopted by the BOF, has been conservative.

Historically, the first commercial opening occurred at the first quarter point of the run. ADF&G uses inseason information from the Emmonak test fishery, subsistence harvest reports, and Pilot Station sonar project passage estimates to assess salmon run timing and strength. As the run progresses upriver, other projects provide additional run assessment information. From 2002 to 2005, management strategies for Chinook salmon shifted from first quarter point commercial openings to openings at the midpoint of the run or later. This interim strategy was designed to pass fish upstream for escapement and provide for cross-border commitments to Canada and subsistence uses during years of poor Chinook salmon run sizes. A drawback to this approach is the concentration of commercial harvest on stocks migrating during the latter half of the run. Therefore, the harvest is not spread out over the entire run and commercial harvest opportunity could be foregone if a strong run materializes. The preferred strategy for managing commercial fisheries is to begin fishing during near the first quarter point and spread the harvest over the midpoint of the run. Additional harvest can occur later in the season, depending on stock assessment information from escapement projects.

Based on preseason projections and inseason run assessments in 2006 and 2007, commercial fishing was scheduled to commence near the first quarter point of the Chinook salmon run and

harvest spread over the midpoint of the run. During 2008 to 2010, preseason projects anticipated below average to poor run sizes. Despite a portion of the Chinook salmon surplus that had gone unharvested in 2001, 2003, and 2004, poor run sizes in 2007 to 2010 did not provide for a Chinook salmon directed commercial fishery. In 2010, a conservative preseason management plan was developed to conserve Chinook salmon. The plan maintained providing for escapement goals and treaty obligations as the highest management priority and subsistence fishing as the highest priority use. No directed Chinook salmon commercial fishery was anticipated or eventuated during the season. As opposed to the 2009 summer commercial season, riverwide reductions to the subsistence fishing schedule were not enacted; therefore, the sale of Chinook salmon incidentally caught in the directed summer chum salmon fishery was allowed. This action was different from the 2009 season, when subsistence fishing was reduced beyond the regulatory windowed schedule and the BOF adopted an emergency regulation from July 1 to July 16 restricting the sale of Chinook salmon taken incidentally during the commercial summer chum salmon season in Districts 1–5.

Summer chum salmon commercial harvests increased greatly during the 1980s as a result of regulation changes (e.g., mesh size specifications and earlier openings), greater availability of processing facilities and tendering, higher exvessel prices, development of Japanese markets, and the occurrence of several very large run sizes (Appendix A5). In February 1990, the BOF established a riverwide guideline harvest range of 400,000 to 1,200,000 summer chum salmon (Appendix A15).

Guideline harvest ranges for districts and subdistricts were established by the BOF based on the 1975 to 1989 average harvest shares. Summer chum salmon commercial harvests declined from 1990 through 1993 in response to below average run sizes. Beginning in 1994, declining chum salmon flesh markets limited the harvest, particularly in the lower river. In March 1994, the BOF adopted the *Anvik River Chum Salmon Fishery Management Plan* (5 AAC 05.368.), which established regulations allowing for a commercial summer chum salmon roe fishery within the Anvik River. Low commercial harvests, related to low summer chum salmon runs and decreasing market interest, continued riverwide through 2003. Additionally, in order to conserve summer chum salmon, inseason management actions were taken to reduce subsistence fishing beyond the regulatory schedule and restrict subsistence gear types. Beginning in 2004, the summer chum salmon run strength began to increase following poor run sizes from 1998 to 2002. However, most of the available surplus went unharvested between 2002 and 2006 due to a lack of market interest. By 2007 the strengthened run size coupled with renewed market interest allowed for directed commercial opportunity in Districts 1 and 2 and, since 2008, in Subdistrict 4-A. Despite harvestable surpluses available in 2007 through 2010, the redevelopment of this fishery is hindered by management strategies taken to reduce incidental harvest of co-migrating Chinook salmon. In response to poor Chinook salmon runs, summer chum salmon directed periods have generally been scheduled to occur when Chinook salmon abundance is expected to be low or after the majority of the run have passed through the lower river. In 2010, while the summer chum salmon run size was anticipated to provide for escapements, support a normal subsistence harvest, and provide a surplus for commercial harvest, commercial harvest activity was delayed early in the season in effort to protect weak Chinook salmon run sizes.

The directed commercial fishery for fall chum salmon began in 1961. Fall chum salmon commercial harvests increased beginning in 1979 (Appendix A6). Low fall chum salmon

spawning escapements in the mid-1980s resulted in more conservative management and therefore reduced commercial harvests from 1986 to 1990. Guideline harvest ranges for fall chum salmon were reduced by the BOF in 1986, but the upper end increased to their original levels in 1990 (Appendix A16). The BOF adopted the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 AAC 01.249) in March 1994. The management plan has been reviewed and modified by the BOF several times since then, the most recent one occurring in 2010 (see section Alaska Board of Fisheries Actions 2010).

Coho salmon runs to the Yukon River are of lesser magnitude than fall chum salmon. Typically, coho salmon were harvested incidentally to the directed fall chum salmon commercial fishery (Appendix A7). Management of directed coho salmon commercial fishing is complicated by their overlapping run timing with fall chum salmon stocks. Prior to 1999, no regulation was in place guiding the commercial harvest of coho salmon. In response, in November of 1998, the BOF adopted the *Yukon River Coho Salmon Management Plan* (5 AAC 05.369) that provided guidance for directed coho salmon commercial fishing. Since then, this plan has been revised several times. The most recent modifications were adopted by the BOF in January 2010 (see section Alaska Board of Fisheries Actions 2010).

The majority of commercial fishermen are residents of the Yukon River drainage (Table 2). The commercial salmon processors, buyers, and catcher-sellers operating on the Yukon River in 2010 can be referenced in Table 3. The cash income derived from the commercial salmon fishery has assisted many area residents in their subsistence life-style. For example, income earned from commercial fishing is often used to obtain hunting and fishing gear such as nets, boats, and outboard motors, which are utilized in subsistence activities. Most commercial fishermen operate outboard powered skiffs of 18 to 24 feet in length. Very few skiffs utilize gillnet rollers or power reels of any type. Use of larger outboard motors (greater than 100 horsepower), VHF radios, and fish finders have increased the fleet efficiency.

The majority of the Yukon Area salmon harvest is presently processed as a fresh or frozen product in contrast to earlier years when canning and salting was more important (Appendix A10). Currently, most salmon are processed at shore based or floating operations or transported by aircraft outside the area for processing. However, limited “value added” products such as smoked salmon and salmon sausage are now being produced within the Yukon Area.

Subsistence Fishery

Yukon Area communities have a long tradition of harvesting salmon for subsistence use. Fishing activities are usually based from a fish camp or a home community. Extended family groups, representing 2 or more households, often work together to harvest, cut, and preserve salmon for subsistence use. Some households from Yukon River tributary communities, such as Shageluk and Venetie, may operate or share in the operation of fish camps along the mainstem Yukon River (Figure 2). The majority of subsistence and personal use harvests are made up of Chinook, chum, and coho salmon.

Subsistence salmon fishing activities in the Yukon Area typically begin in late May and continue through early October with salmon fishing in May and October highly dependent upon river ice conditions. Subsistence salmon harvested for human consumption are commonly dried, smoked, or frozen. There is usually little wastage of fish taken for subsistence purposes, although damp weather may cause some drying fish to spoil and some fish are lost to disease (e.g. *Ichthyophonus*) or predation (e.g. birds and/or bears).

In addition to human consumption, salmon are fed to dogs, which are used for recreation, transportation, and as haul animals. Small (“jacks”), summer chum, fall chum, and coho salmon are primarily harvested to feed dogs in the Upper Yukon Area (Andersen and Scott 2010). Most of the subsistence salmon used for dog food are dried summer chum salmon or “cribbed” (frozen in the open air) fall chum and coho salmon. The practice of keeping sled dogs is more common in the Upper Yukon Area than in the Lower Yukon Area. During the active fishing season all areas feed scraps from salmon processing to dogs. Relatively few whole fresh salmon are fed to dogs in the Lower Yukon Area but due to the larger numbers of dogs in the Upper Yukon Area harvesting salmon for dogs throughout the summer is more common. A gradual reduction in the need for salmon as dog food began around 1930 when airplanes began replacing sled dogs as the primary mail and supply carrier. This decline accelerated in the 1960s with the introduction of snow machines to Interior Alaska (Andersen and Scott 2010). Beginning in the early 1980s, there was a renewed interest in recreational use and racing of sled dogs, thereby increasing the number of subsistence salmon harvested for dog food. From 1991 to present day there has been a decline in the number of households with dog teams (Andersen and Scott 2010). The decline is due in part to poor chum salmon runs from 1998 to 2002 combined with the steep rise in cost of equipment (boat, motor, nets, fuel) needed to harvest fish for dog food.

Subsistence and personal use fishermen in the Yukon Area primarily use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are used throughout the Yukon Area, whereas under state regulations, drift gillnets are only allowed from the mouth of the Yukon River to approximately 18 miles below the community of Galena (River Mile 530) to harvest salmon. Drift gillnets are allowed under federal permits in Subdistricts 4-B and 4-C for a portion of the summer during regulatory openings. Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are essentially used only in the Upper Yukon Area where water conditions and fishing locations are more suitable. Building materials, such as logs and young spruce trees used for the raft, axle and axle stanchion, lead, and basket construction are also more available in the Upper Yukon Area.

Subsistence salmon fishing in the Yukon Area primarily occurs in nonpermit areas where harvest information is estimated by the annual subsistence survey. Permit areas include the entire Tanana River and portions of the Yukon River that are accessible from the road system. Fishing households are required to obtain a subsistence or personal use permit and submit records of their harvests in these areas (Figure 2). Subsistence permits are used to document harvest data, otherwise much harvest would go unreported because of the transient nature of these fishermen and the fact that most do not reside in a surveyed community.

A personal use fishery was implemented in 1986 and currently takes place in the Fairbanks Nonsubsistence Area (Figure 10). The management area was established in 1992 due to the heavy demand urban fishermen could potentially place on the resource. In this nonsubsistence area, fishermen must possess a personal use household permit and a resident sport fish license. State regulations dictate that personal use fishing has a lower priority than subsistence fishing. Similar to subsistence fishing permits, data collected from personal use permits allow managers to track harvest.

Commercial fishing occurs in portions of the Yukon Area and residents may participate in both commercial and subsistence salmon fishing. Commercially harvested salmon may be retained for subsistence use. In some areas, subsistence fishing is separated from commercial fishing by closures before, during, and after commercial periods, while in other areas subsistence fishing

and commercial fishing may occur concurrently. The BOF adopted regulations which separated subsistence and commercial fishing periods beginning in 1993 in Districts 1, 2, and 3 and in 1994 in Subdistrict 4-A. By regulation, once the commercial salmon season is open, subsistence salmon fishing is allowed continuously except for 18 hours immediately before, during, and 12 hours after each District 1, 2, or 3 summer season commercial salmon fishing period. During the fall season in Districts 1, 2, and 3, subsistence salmon fishing may not occur 12 hours immediately before, during, and 12 hours after each commercial fishing period. Separation of fishing times allows for better enforcement of commercial regulations and management of the fisheries. Currently, salmon or their eggs harvested during subsistence openings cannot be legally bought or sold under State of Alaska regulations. During a typical salmon fishing season, substantially more time is allowed for subsistence and personal use salmon fishing than for commercial fishing.

In January 2001, the BOF modified regulations by adopting a subsistence salmon fishing schedule. The BOF judged that this subsistence fishing schedule should provide a reasonable opportunity for subsistence fishermen to obtain an average subsistence harvest during years of normal to below average salmon run strength. The schedule was enacted to spread the harvest throughout the river, to reduce the impact on a particular stock, and spread subsistence harvest opportunity among users. The goal of the schedule is to provide windows of time during which salmon migrate upriver unexploited.

The subsistence salmon schedule is based on current, or past, fishing schedules and is implemented chronologically, consistent with migratory timing, as the salmon run progresses upstream. The commissioner may alter this schedule for conservation by EO if preseason or inseason run indicators show it is necessary. The schedule for subsistence salmon fishing is as follows:

- (1) Coastal District, Innoko, Koyukuk, and Kantishna rivers, and Subdistrict 5-D: 7 days per week;
- (2) Districts 1, 2, 3: two 36-hour periods a week;
- (3) District 4 and Subdistricts 5-B and 5-C: two 48-hour periods a week;
- (4) Subdistrict 5-A and District 6: two 42-hour periods a week; and
- (5) Old Minto Area: 5 days per week.

If inseason run strength assessment projects indicate that there is sufficient surplus above escapement and subsistence requirements to allow a commercial fishery, the subsistence fishing schedule then reverts to the pre-2001 subsistence fishing schedule.

Prior to 2001, the upper portion of District 4 (Subdistricts 4-B and 4-C) and in Subdistricts 5-B and 5-C, subsistence salmon fishing was allowed 7 days per week until 24 hours prior to and following the commercial salmon fishing season. In these areas, subsistence salmon fishing periods coincide with commercial salmon fishing periods. Additional subsistence-only salmon fishing periods are also allowed during the commercial salmon fishing season. In Subdistrict 5-A, subsistence fishing was allowed 7 days per week until 24 hours prior to the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed 7 days per week throughout the fishing season. Subsistence fishing within the lower Tanana River drainage is allowed during two 42-hour periods per week throughout the fishing season unless altered by

EO. In the upper Tanana River drainage, subsistence fishing is allowed 7 days per week throughout the fishing season.

Federal Subsistence Management

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 mandates that rural subsistence users have a priority over other users to take wildlife on Federal public lands where recognized customary and traditional use patterns exist and required the creation of Regional Advisory Councils (RAC) to enable rural residents to have a meaningful role in Federal subsistence management. On October 1, 1999, the Secretaries of Interior and Agriculture published regulations to expand Federal management of subsistence fisheries to Alaska rivers, lakes, and limited marine waters within, and adjacent to, Federal public lands. The Secretary of Interior and the Secretary of Agriculture delegated their authority in Alaska to the Federal Subsistence Board (FSB) to manage fish and wildlife resources for subsistence uses on Federal public land, including waters running through or next to these lands. Federal subsistence fishing regulations are adopted by the FSB. The RACs provide recommendations and information to the FSB, review policies and management plans, provide a public forum, and deal with other matters relating to subsistence uses. The FSB or 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 2009). In general, the regulations are the same as those issued for subsistence taking of fish under Alaska Statutes (AS 16.05.060); however, differences in regulations do exist. In some cases, State regulations can be superseded by a Federal Special Action.

Commercial-Related Harvests

Distinguishing between subsistence and commercial harvests is more difficult in salmon fisheries where commercial fishermen extract and sell only roe. Stripped carcasses are a byproduct of the commercial roe fishery and are available for fishermen to utilize for consumptive purposes. Subsistence harvests are defined strictly as harvests occurring under subsistence fishing regulations. Neither salmon nor their eggs harvested under subsistence regulations can be legally bought or sold under State of Alaska regulations; however, commercially harvested salmon may be retained by fishermen for consumptive use. Salmon taken during commercial fishing operations that provide fishermen both personal and commercial use are specially assigned to a commercial-related harvest category.

Commercial chum salmon roe fisheries began in 1978 in the Upper Yukon Area. Historically, the commercial-related harvest was a small proportion of the subsistence harvest and was easily absorbed. During this time, ADF&G's subsistence survey questions were not structured to identify the commercial-related harvests, and it is believed that commercial-related salmon harvests were reported primarily as subsistence harvests. Beginning in 1981 and through most years to 1997, the number of female summer chum salmon carcasses available from the commercial roe fishery, including the incidental harvest of male chum salmon, was greater than the subsistence utilization levels documented prior to commercial roe fisheries in Subdistrict 4-A. In 1984, the Division of Subsistence conducted the first subsistence surveys directly addressing the amount of commercial-related harvests in the communities of Kaltag and Nulato.

These surveys attempted to exclude the commercial-related summer chum salmon used from the subsistence harvest. As a result, the subsistence summer chum salmon harvest estimates for Kaltag and Nulato in 1984 were below harvest estimates for previous years. From 1986 to 1989, efforts to identify commercial-related summer chum salmon harvest from the Subdistrict 4-A subsistence harvest estimates were continued (Sandone 1991). Although, during the transition, it is probable that some portion of the commercial-related harvest was still being reported as subsistence harvest. It was not until 1990 that the survey questions and fishermen reports resulted in satisfactory separation into subsistence and commercial-related harvests. From 1998 to 2006, due to a series of poor summer chum salmon runs followed by poor market conditions, no summer chum salmon roe fisheries occurred. Beginning in 2007, following increased market interest and strengthening run sizes, commercial exploitation of summer chum salmon roe was renewed in Subdistrict 4-A at a much smaller scale than before 1998.

All salmon caught by commercial fishermen during a commercial fishing period are required by regulation to be reported on fish tickets, including the number of males and number of female salmon harvested to produce roe sold. Prior to 1990, commercial harvest included the number of fish sold in the round plus the number of females taken to produce the roe sold. Since 1990, by regulation, commercial-related harvests are considered to be the number of female salmon taken to produce the roe sold plus the incidental harvest of male salmon. ADF&G estimates the number of male and female chum salmon harvested during a commercial fishing by using the average pounds of roe per female and the sex ratio calculated during each commercial fishing period.

In 1994, the BOF adopted regulations that allowed a terminal commercial summer chum salmon fishery on the Anvik River. A commercial summer chum salmon roe fishery occurred on the Anvik River from 1994 through 1997. The Anvik River commercial summer chum salmon fishery only involved the sale of roe and resulted in additional chum salmon carcasses becoming available to subsistence users. Commercial-related harvests in the Anvik River fishery are based only on the number of female chum salmon harvested to produce roe. The gear types utilized in this fishery allow for the release of male chum salmon and other non-targeted salmon species.

Personal Use Fishery

In 1986, subsistence fishing was limited to rural Alaska residents. The BOF created personal use salmon fisheries in the Yukon Area for nonrural state residents. The regulation directed that fishermen residing within nonrural areas be considered personal use fishermen regardless of where they fished. Correspondingly, fishermen residing in rural areas were considered subsistence fishermen regardless of where they fished. The residents of the greater Fairbanks area were considered non-rural fishermen. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents domiciled in nonrural areas were prohibited from participating in subsistence fisheries. During that time, nonrural residents harvested salmon under personal use fishing regulations wherever they fished. Personal use fishing is a lower priority use of the fish resource than subsistence fishing.

Effective July 1, 1990, the Alaska Supreme Court struck down the rural residency requirement for subsistence participation (McDowell vs. State). In that ruling, the Alaska Constitution prevented the allocation of fish and wildlife resources to people based on the location of their residence. The result was that every Alaska resident became eligible for subsistence fishing. In effect, this decision made the personal use category obsolete in the Yukon Area.

During a special session in 1992, the legislature revised the subsistence law to allow the Joint Boards of Fisheries and Game to divide the state into subsistence and nonsubsistence areas. Inside the nonsubsistence areas, personal use fishing could be authorized by BOF, and the regulations, which allowed subsistence fishing, were repealed. The Fairbanks Nonsubsistence Area (Figure 10), the only nonsubsistence area created in the Yukon Area, consists of the Fairbanks North Star Borough and surrounding areas. During the 1993 fishing season, personal use fishery regulations were implemented in this area. In October 1993, the state superior court ruled in the Kenaitze case that the nonsubsistence area provision of the 1992 subsistence law was unconstitutional because it discriminated between different areas of the state. All Alaska residents again qualified as subsistence users during the 1994 fishing season.

On May 9, 1995, the Alaska Supreme Court reversed the superior court's ruling, upholding the constitutionality of the nonsubsistence areas. Once again, the Joint Boards of Fisheries and Game adopted regulations that reestablished the Fairbanks Nonsubsistence Area. No subsistence fishing is allowed within any nonsubsistence areas; however, personal use fishing regulations are applicable. The nonsubsistence area regulations primarily affect salmon fishermen within Subdistrict 6-C, which is entirely within the boundaries of the Fairbanks Nonsubsistence Area. By regulation, Subdistrict 6-C personal use salmon fishery has a household permit limit of 10 Chinook, 75 summer chum, and 75 fall chum and coho salmon combined. Additionally, the fishery has a harvest limit of 750 Chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined.

Lower Yukon Area

Since the beginning of the commercial salmon fishery in 1918, the majority of the Yukon River harvest has occurred in Districts 1 and 2. With the advent of the Commercial Fisheries Entry Commission (CFEC) limited entry program in 1976, the number of fishery participants stabilized, while the efficiency of the fleet increased. From 2005 through 2009, an average of 807 CFEC gillnet permits have been issued annually in the Lower Yukon Area (Appendix A8), which is a 13% increase from the previous 5 year average. All Lower Yukon Area permits are designated for gillnet and allow either set or drift gillnets to be operated. With some restrictions, permit holders may transfer fishing effort between Districts 1, 2, and 3 during the season. Drift gillnets are the predominant gear type used within Districts 1, 2, and 3. Set gillnets are more commonly used in coastal areas within the Yukon River delta (during the fall season commercial fishermen must register to operate within the "set gillnet only area" (Figure 11).

In 1960, Chinook salmon harvest quotas were eliminated for Districts 1 and 2. Since 1981, a 60,000 to 120,000 Chinook salmon guideline harvest range has been in effect for Districts 1 and 2 combined (Appendix A14). In District 3, a guideline harvest range of 1,800 to 2,200 Chinook salmon was established in 1979. These guideline harvest ranges are currently still in effect.

From 1961 through 1980, the commercial fishing season was opened by a published regulatory date and fishing regulated by scheduled weekly periods. Commercial fishing periods during the Chinook salmon migration occurred 4 days per week during 1961 to 1967. Fishing time was reduced to 3.5 days per week beginning in 1968, 3 days per week in 1974, and 2.5 days per week in 1977. From 1982 to 1986, 24-hour fishing periods generally occurred twice weekly, and, in 1987, 12-hour periods for Districts 1 and 2 were first used. Since 1989, commercial periods have been generally 6, 9, or 12 hours in duration. Given the poor run salmon run sizes since 1998, fishing restrictions have been necessary. Directed Chinook salmon commercial fishing has only

been allowed if run sizes allow for a harvestable surplus above escapement requirements and subsistence needs.

The summer season salmon gillnet fishery currently operates under unrestricted (no mesh size limited) and restricted mesh size fishery openings, depending on the target species. Unrestricted openings are directed at Chinook salmon in the lower Yukon River, although summer chum salmon are also incidentally caught. In years of poor chum salmon abundance, a restricted mesh size of greater than 8 inches may be implemented to target Chinook salmon while reducing the incidental catch of chum salmon. Typically, the restricted commercial openings limits mesh size to a maximum of 6 inches, which targets summer chum salmon. Since 1967, the sale of salmon species caught incidentally during the Chinook salmon directed commercial fishery has been allowed.

Through the late 1960s the incidental catch of summer chum salmon in the Chinook salmon directed commercial fishery was limited by the use of 8 inch minimum stretched mesh gillnets. Beginning in 1970, fishermen could substitute up to 50 fathoms of gillnet of any mesh size in Districts 1 and 2. In 1973, all mesh size restrictions were lifted during the Chinook salmon migration from June 1 through early July. A regulation was adopted in 1973 specifying that gillnets of 6 inch mesh size or less could be fished in Districts 1 and 2 after a specified date in early July to target chum salmon. Prior to the 1976 fishing season, a regulation was adopted which established a flexible range of dates (from June 27 to July 5 in Districts 1 and 2, and from July 5 to 15 in District 3) after which only gillnets of 6 inch maximum mesh size could be used. A regulation was then later adopted prior to the 1985 fishing season that eliminated specific dates and implemented EO authority for establishing restricted mesh size periods (6 inch maximum mesh size) in Districts 1, 2, and 3. Beginning in 2011 a new regulation will take effect to prohibit commercial fishermen from using gillnets with a mesh size larger than 7.5 inches. Recent studies show that larger mesh sizes selectively harvest a greater proportion of older, larger, and predominantly female fish (Howard and Evenson 2010). The goal of the net size reduction is to allow more females and larger size Chinook salmon to reach the spawning grounds.

During the fall season in the lower Yukon River, fall chum salmon are typically the primary species of management focus, with the harvest of coho salmon incidental in the fall fisheries. Historically, approximately 80% of the total area fall chum salmon commercial harvest and 87% of the commercial coho salmon harvest occurs within the Lower Yukon Area (Districts 1, 2, and 3). The vast majority of commercial permit holders fish in the Lower Yukon Area.

In 1961, fall chum salmon directed commercial fishing periods began. Commercial harvests of fall chum salmon in the Lower River Area from 1961 through 1968 averaged about 41,000 fish. During this time, almost all of the commercial harvest was from the Lower Yukon Area. In 1969, commercial harvests in the Lower Yukon Area increased dramatically averaging nearly 145,000 fish through 2009. During this timeframe, approximately 76 % of the areas commercial harvest occurred in the Lower Yukon Area. The increase in harvest observed in 1969 was a result of ADF&G expanding commercial fisheries in the area by liberalizing regulations and encouraging processors to explore and develop new fishing grounds (ADF&G 1969). In 1974, a 200,000 fall chum salmon harvest quota was implemented for the Lower Yukon Area. This action was necessary to stabilize harvests in light of increased fishing effort and to allow commercial harvest in the newly established Upper Yukon River Districts (District 4, 5, and 6) (ADF&G 1985). In 1979, fishing time was reduced to 2 days per week and the quota was replaced by a

flexible guideline harvest range of 120,000 to 220,000 fish (ADF&G 1979). Beginning in 1983, a summer season closure date on July 15 was established in the Lower Yukon Area to protect the early portion of the fall chum salmon run and to provide more time to evaluate the fall chum salmon run strength. In addition, two 12-hour periods per week were allowed in Districts 1 and 2, and fishing time in District 3 was reduced from 3 periods per week to 2 periods (Bergstrom et al. 1997).

Since 1990, commercial fishing periods have typically been 12 hours or less in the Set Gillnet Only Area (Figure 11), and 6 or 9 hours in the remaining Lower Yukon Area. In the Coastal Area Only, set gillnets are allowed during commercial fishing periods. More commercial fishing opportunity has been allowed in the coastal Set Gillnet Only Area because of the influence of tides on gear efficiency. Currently, the guideline harvest for fall chum salmon in the Lower Yukon Area is 60,000 to 220,000 fish.

Upper Yukon Area

Prior to 1974, the Yukon River drainage above the confluence of the Koyukuk River was designated as a single district (District 4). By regulation, commercial fishing was allowed 7 days per week until the quota of 2,000 Chinook salmon had been harvested. Later in the season the fishery was reopened to harvest fall chum and coho salmon. When the combined quota of 2,000 fall chum and coho salmon was taken, the fishery was closed for the season. These quotas allowed for limited commercial activity in the Upper Yukon Area. Fish wheels and set gillnets are the legal gear types for commercial salmon fishing in the Upper Yukon Area, with fish wheels accounting for roughly 95% of the commercial harvest of summer chum salmon. Fishermen may not transfer fishing activity between districts in the Upper Yukon Area.

In recognition of the burgeoning upriver commercial fishery and increased participation by fishermen, the BOF adopted several major regulation changes prior to the 1974 fishing season. District 4 was divided and reduced in size, and 2 new districts, Districts 5 and 6, were defined. Additionally, the weekly commercial salmon fishing period was reduced from 7 to 5 days per week. Regulations also provided for increased upriver commercial harvest quotas.

Since 1974, the BOF has continued to enact a number of major regulation changes in the Upper Yukon Area. Weekly fishing periods were reduced in all districts (except the upper portion of District 5) from 5 to 4 days per week and split period (two 48-hour periods) fishing schedules were established in 1980. Beginning in 1979, quotas for Chinook salmon and for fall chum and coho salmon combined were replaced with a flexible guideline harvest range, District 4 boundaries were redefined, and new subdistricts were created to allow for stock specific management of fall chum and coho salmon. The designation of District 4 subdistricts has remained static since the regulation change in 1981. District 5 was first divided into 2 sections in 1979 and then further divided in 1981 to 4 subdistricts (Figure 7). Prior to 1993, the guideline harvest range for fall chum and coho salmon was combined for the 2 species in the Upper Yukon Area. In 1993, regulations were changed to exclude coho salmon from this guideline harvest range. Since 1990, the duration of fishing periods has dramatically decreased throughout the Upper Yukon Area, and increasing emphasis has been placed on managing fishing periods using inseason measurements of run timing and strength.

In the spring of 1988, the BOF met in special session to receive testimony on current and proposed salmon management practices on the Tanana River. This special session was a result of large-scale illegal salmon and salmon roe sales documented in 1987 in portions of Districts 5

and 6. The BOF adopted regulations for District 6 which included: 1) reducing the commercial and subsistence fishing schedule from two 48-hour periods to two 42-hour periods per week, 2) specifying that no more than one 42-hour commercial fishing period would occur per week during the fall season (repealed to open and close by EO by BOF in 2004), 3) requiring subsistence salmon fishing permits for the entire Tanana River drainage, and 4) establishing subsistence reporting requirements inseason for a portion of Subdistrict 6-B and all of Subdistrict 6-C. In 2007, the BOF removed the commercial fishing time restriction of no more than 42 hours in the Tanana River after August 15 because fishing effort has significantly decreased in recent years and management has shifted to regulating harvest using variable fishing times to achieve escapement goals.

The BOF further instructed ADF&G to manage District 6 on the basis of existing guideline harvest ranges, specifying that these guidelines could be exceeded only if it was determined that doing so would not jeopardize meeting subsistence and escapement requirements. Based on concerns for fall chum salmon spawning escapements in the Toklat River, the BOF in February 1990 reduced the commercial fishing time allowed for Subdistricts 5-A and 6-A to no more than one 24-hour period per week during the fall fishing season. These restrictions were lifted during the 1998 fishing season but were reinstated after that year because escapement objectives were not met. When the BOF integrated the *Toklat River Fall Chum Salmon Rebuilding Management Plan* into the *Yukon River Drainage Fall Chum Salmon Management Plan* in 2004, the restriction was removed by default. The openings and closures of commercial fishing periods were then regulated by EO authority, allowing fishery managers the discretion to determine the duration of commercial periods. The fisheries on the Tanana River are considered terminal harvest areas and are managed by emergency order. Indicators of run timing and strength are used inseason to determine harvestable surpluses.

In most of the Upper Yukon Area, summer chum salmon is difficult to market due to high transportation costs and the degradation of flesh caused by freshwater and advancing sexual maturity. In contrast, the quality of summer chum salmon roe is considered excellent by the industry. As a result, the sales of summer chum salmon roe increased from 1980 to 1997. Due to the scale of the summer chum salmon roe fishery in Subdistrict 4-A and difficulty in estimating the associated harvest, the guideline harvest range for Subdistrict 4-A was established in February 1990 as 113,000 to 338,000 summer chum salmon or the equivalent of 61,000 to 183,000 pounds of roe. In addition, regulations were adopted stipulating that no more than 183,000 pounds of summer chum salmon roe from Subdistrict 4-A harvests could be sold annually, and, once the roe cap is reached, fishing effort may continue but sale is limited to chum salmon in the round. Additionally, regulations were adopted that required salmon catch be reported on fish tickets in numbers of fish (both females and incidentally caught males) by CFEC permit holders during commercial fishing periods in Subdistrict 4-A. In 2004 the BOF adopted additional regulations in Subdistrict 4-A designed to conserve chum salmon in years of low abundance. If chum salmon conservation measures are necessary, by EO authority, the commercial fish wheel fishing season may be closed and reopened with the use of set gillnet gear in replacement of wheels.

In March 1994, the BOF adopted the *Anvik River Chum Salmon Fishery Management Plan* (5 AAC 05.368.). The intent is to allow a harvest of available Anvik River summer chum salmon above spawning escapement goals and to decrease the harvest pressure on non-Anvik River summer chum salmon stocks located in the mainstem Yukon River. Under this plan, the Anvik

River may be opened to summer chum salmon commercial fishing if a surplus beyond the escapement goal of 500,000 fish is available. All Chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive.

During the November 1994 BOF meeting, the *Anvik River Chum Salmon Fishery Management Plan* was amended to allow use of the following gear types: hand operated beach and purse seines, fish wheels with live boxes, and a single set gillnet not to exceed 25 fathoms in length and not larger than 5.25 inch mesh. The management plan also included a provision that gillnets be attended at all times to release Chinook salmon. Beginning in 1994, the lower 12 miles of the Anvik River were opened to commercial fishing (Figure 9). Hand beach seines have been the dominant gear type utilized and only summer chum salmon roe has been sold from the Anvik River fishery. A cap of 100,000 pounds of summer chum salmon roe was established by the BOF in March 1996.

Sport Fishery

In general, sport fish salmon harvests in the Yukon Area are minor compared to commercial and subsistence harvests. Sport fishing effort for salmon in the Yukon River drainage is directed primarily at Chinook and coho salmon with little effort directed at chum salmon. In this report, all of the chum salmon harvested in the sport fishery are categorized as summer chum salmon. Although a portion of the genetically distinct fall chum salmon stock may be taken by sport fishermen, most of the sport chum salmon harvest is thought to be made up of summer chum salmon, because: 1) the run is much more abundant in tributaries where the most sport fishing occurs, and 2) the chum salmon harvest is typically incidental to efforts directed at Chinook salmon, which overlap in run timing with summer chum salmon.

Most of the drainage's sport fishing effort occurs in the Tanana River drainage along the road system. From 2005 to 2009 the Tanana River made up 80% of the total Yukon River drainage Chinook salmon harvest, 35% of the summer chum salmon harvest, and 43% of the coho salmon harvest, on average. In the Tanana River, most Chinook and chum salmon are harvested from the Chena, Salcha, and Chatanika rivers, while most coho salmon are harvested from the Delta Clearwater and Nenana river systems. In the Yukon River, most sport fishing effort takes place on the Anvik and Andreafsky rivers.

In 2010, an Emergency Order was issued on July 26 that closed the Chena River to all sport fishing for Chinook salmon (including catch-and-release) effective July 28. On August 17 two Emergency Orders were issued to close all waters of the Yukon and Tanana river drainages to the retention of chum salmon effective August 20. These actions remained in effect throughout the entire 2010 salmon season.

Alaska sport fishing effort and harvests are monitored annually through a statewide sport fishery postal survey. Harvest estimates are typically not available until approximately one calendar year after the fishing season; therefore, the 2010 harvest estimates will not be available in this report. The total 2009 sport harvest of salmon in the Alaska portion of the Yukon River drainage (including the Tanana River) was estimated at 863 Chinook, 174 summer chum, and 964 coho salmon (Appendix A17, A18, and A20). The recent 5 year (2005–2009) average Yukon River drainage sport salmon harvest was estimated at 691 Chinook, 362 summer chum, and 706 coho salmon (Appendix A17, A18, and A20).

In 1988, the BOF established a guideline harvest range of 300 to 700 Chinook salmon for the Salcha River sport fishery. In 1990, the BOF established a guideline harvest range of 300 to 600 Chinook salmon for the Chena River sport fishery. In 2001, the BOF eliminated the guideline harvest ranges. Sport fish harvests are now managed to achieve the established escapement goals. Since 2005, all freshwater sport fishing guides and guide businesses operating in Alaska have been required to be licensed. In addition, sport fishing guides and businesses are required to report sport fish harvest and fish released by species in logbooks. From 2006 to 2009, guided sport harvest in the Yukon River drainage (excluding the Tanana River drainage) averaged 97 Chinook and 414 coho salmon (Sigurdsson and Powers 2009).

CANADIAN HARVESTS OF YUKON RIVER SALMON

DFO has provided annual harvest data from the Canadian portion of the Yukon River drainage since 1962. The first recorded commercial salmon harvest in the Canadian portion of the Yukon River drainage occurred in 1903, when 70,000 pounds of Chinook and fall chum salmon were taken (ADF&G 1985). Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917 and continuously from 1918 to 1947 (Appendix A3). No harvest records are available from 1948 to 1957. Harvest records document the annual salmon harvest by species since 1958 and also by user group since 1961.

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

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

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty, which would enhance the coordination of management for salmon stocks that spawn in the Canadian portion of the Yukon River drainage. Reaching a comprehensive long-term agreement remained a formidable challenge through the mid-1990s. In February 1995, an agreement was formalized and an interim Yukon River Salmon Agreement (Agreement) went into effect. A U.S./Canada Yukon River Panel (Panel) was formed to implement the Agreement. The focus of the Panel was on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. In December 2002, the United States and Canada signed an agreement that set salmon harvest share target ranges based on a postseason assessment of run strength for Chinook and fall chum salmon into the Canadian mainstem of the Yukon River. Under the Agreement, the Alaska and Canadian fisheries will be managed consistent with stock rebuilding and conservation objectives that have been jointly developed. The Yukon River Panel meets annually during the fall to resume management recommendations. The Panel advises the United States and Canadian Governments on conservation and management of the salmon originating in the Canadian portion of the Yukon River. In recognition of the changing dynamics of the fishery and the spirit of the agreement, interim management objectives are reviewed and agreed upon jointly each spring prior to the salmon returns.

In 1995 a 6 year stabilization plan was completed to prevent further declines in spawning escapement of Canadian Yukon River mainstem Chinook salmon by achieving an escapement of at least 18,000 Chinook salmon annually. In April 1996, the Panel agreed to the first 6 years of a

rebuilding plan for recognizing the desirability of rebuilding stocks. In April 1996, in effort to rebuild Canadian mainstem Chinook salmon stocks, the Panel agreed to an interim minimum spawning escapement objective of 28,000 fish for 6 years beginning in 1996. The U.S. obligation was to deliver 44,800 to 47,800 Chinook salmon to the Canadian mainstem Yukon River. The Canadian contribution was to manage the harvest of Chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 Chinook salmon.

For Canadian Yukon River mainstem fall chum salmon, a 12 year plan was agreed upon to rebuild the stock by achieving a spawning escapement of more than 80,000 fish for all brood years by 2001. The U.S. obligation was to deliver to the Canadian border on the mainstem Yukon River a set number of fall chum salmon agreed to upon the rebuilding schedule. The Canadian contribution was to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

For the 2010 season, the U.S./Canada panel agreed to one year Canadian interim management escapement goal (IMEG) ranges of 42,500 to 55,000 Chinook salmon and 70,000 to 104,000 fall chum salmon based on the Eagle sonar project. In addition to escapement needs, Alaska is obligated to share harvestable surpluses of the Canadian run component, with Canada receiving 20% to 26% of the available total allowable catch (TAC) for Canadian bound Chinook salmon and 29% to 35% of the available TAC for Canadian bound fall chum salmon. Based on the current projected run size, it is anticipated that approximately 7,000 Chinook and 20,000 fall chum salmon or more, depending on run strength, would fulfill harvest sharing commitments specified in the Agreement. The IMEG range for the Fishing Branch River is 22,000 to 49,000 fall chum salmon based on the Fishing Branch River weir count.

R&E Funds

The Panel makes recommendations to the management agencies in Alaska and Canada and also administers the U.S./Canada Restoration and Enhancement Fund (R&E Fund). A key component of the Agreement is administration of the R&E Fund by the Panel to address the restoration and enhancement of Canadian spawned salmon stocks. The U.S. will contribute \$1,200,000 per year into the R&E Fund. Monies from the R&E Fund shall be disbursed by the Yukon River Panel according to the following rules:

1. 50% of the annual available funds shall be disbursed on Canadian programs and projects approved by the Canadian section of the Yukon River Panel based on recommendations by the Canadian section of the JTC and found by the Panel as a whole to be consistent with the Principles and Guidelines for Restoration, Conservation and Enhancement Programs and Projects until amended by the parties; and
2. The balance of annual available funds shall be disbursed at the direction of the Panel as a whole based on recommendations by the JTC as a whole.

Upper Yukon River Chinook Salmon

Cooperative Canada/U.S. management of Canadian-origin Yukon River Chinook salmon was based on an agreed escapement goal range for rebuilt stocks of 33,000 to 43,000 fish for many years. This goal was developed from, and was subsequently monitored by, a mark-recapture

program located just upstream of the international border on the Yukon River. Since 2005, the Parties have developed a new and improved technique, the Eagle sonar project, to assess the abundance of salmon migrating into Canada. Estimates derived from the mark-recapture program were consistently lower than those produced from the sonar project. Based on the disparity between the mark-recapture and sonar project estimates of Canadian border passage, it was inappropriate to continue to apply the longstanding escapement goal based on mark-recapture to escapement estimates derived from the sonar project.

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

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

In 2010, the JTC recommended that the IMEG be established as a range to allow for the uncertainty of information from assessment projects. The JTC reached consensus for an upper bound of 55,000 and agreed to adopt the lower bound of 42,500 after discussion with the Yukon River Panel. The Chinook Salmon Escapement Goal working group will continue to examine other data that may be used in recommending a revised escapement goal for future years. Ongoing analysis includes the use of a habitat capacity approach, which may be useful in improving other analyses.

Upper Yukon River Fall Chum Salmon

The upper Yukon River escapement goal specified within the *Yukon River Salmon Agreement* is >80,000 fall chum salmon. This goal was achieved 15 times within the 28 year period from 1982 to 2010. The DFO fall chum salmon mark-recapture program was conducted from 1982 to 2008 while the joint U.S./Canada Eagle sonar project was conducted from 2006 to 2009. The mark-recapture estimates generally agreed with the Eagle sonar project estimates within the 2006 to 2008 period when the 2 programs were conducted concurrently. The JTC recommended using the Eagle sonar project as the primary assessment tool for the Canadian border passage estimate starting in 2008.

The upper Yukon River escapement goal was reviewed in 2001 and after considerable analysis of the available data a recommendation was made for a biological escapement goal (BEG) of

60,000 to 129,000 fall chum salmon (Eggers 2001). However, due to concerns over the quality of the data and analytical issues, the BEG recommendation was not accepted during a Pacific Scientific Advice Review Committee (PSARC) review.

For 2010, the JTC recommended that the upper Yukon River fall chum salmon escapement goal be established as a range from 70,000 to 104,000. This range was developed as 0.8 to 1.2 times the estimated spawners at maximum sustained yield (86,600) which was derived from data that included the 2009 returns from the exceptional 2005 spawning escapement of 477,498.

Fishing Branch River Fall Chum Salmon

The escapement goal specified within the *Yukon River Salmon Agreement* is a range of 50,000 to 120,000 fall chum salmon to the Fishing Branch River. This goal has been achieved only 10 times since 1974 and only 5 times since 1985 when the weir program went back into operation. The Fishing Branch escapement goal was reviewed in 2001 and, after considerable analysis of the available data, a recommendation was made for a BEG of 27,000 to 56,000 fall chum salmon (Eggers 2001). However, due to concerns over the quality of the data and analytical issues, the BEG recommendation was not accepted during a PSARC review.

The inability to reach the 50,000 to 120,000 goal, particularly when considering the goal was achieved once over the 2 fall chum salmon 4 year cycles preceding 2008 when escapements to the upper Yukon River in Canada were rebuilding, led the JTC to question whether the lack of success was more related to an unrealistically high goal rather than other factors. As a result, a JTC Escapement Goal Working Group revisited the goal and attempted to address some of the issues raised during the PSARC review of the 2001 recommendation (Eggers 2001) which ultimately led to its rejection. Although there are some approaches that can improve data quality and analysis of a BEG, the working group recommended postponing this analysis until the returns from the recent high escapement of 119,058 fall chum salmon in 2005 were documented.

For the 2008 to 2010 period, the JTC recommended an IMEG range of 22,000 to 49,000 Fishing Branch River fall chum salmon. This recommendation is based on the Bue and Hasbrouck¹ method of determining a sustainable escapement goal (SEG) and has been used in Alaska. The Fishing Branch River SEG analyses incorporated weir counts from 1985 to 2007 (22 years; excluding 1990) and the contrast in these escapements, i.e., the ratio of the highest to lowest count (24:1). The escapement goal range reflects the approximated 25 and 75 percentiles of the 22 years of weir counts.

The SEG range encompasses the escapement levels that preliminary analysis of the stock recruitment information indicates will produce maximum returns and maximum sustainable yield, 22,188 and 39,400 respectively. However, while weir counts provide good estimates of spawning escapement, the stock specific harvest data necessary for robust stock recruitment estimates is lacking, lending a high degree of uncertainty to the current estimates.

¹ Bue, B. G. and J. J. Hasbrouck. (Unpublished). Escapement goal review of salmon stocks of Upper Cook Inlet, Report to the Alaska Board of Fisheries, 2001. Alaska Department of Fish and Game, Anchorage.

MARINE FISHERIES INFORMATION

INTRODUCTION

Yukon River salmon migrate into the Bering Sea during the spring and summer after typically spending one winter rearing in fresh water. Information on stock origin from tagging, scale pattern analysis, parasites, and genetic analysis indicate that Yukon River salmon are present throughout the Bering Sea, in regions of the North Pacific Ocean south of the Aleutian chain, and the Gulf of Alaska during their ocean migration (Healey, 1991; Salo 1991). Yukon River salmon have the potential to be captured by fisheries that harvest mixed stocks of salmon, other species of fish (bycatch), and by illegal fishing activities throughout their oceanic distribution.

Several U.S. fisheries are currently managed to limit the interception and bycatch of salmon stocks that include Yukon River salmon. These fisheries include salmon fisheries in the South Alaska Peninsula area and U.S. groundfish trawl fisheries in both the Gulf of Alaska (GOA) and Bering Sea-Aleutian Islands (BSAI) management areas. Information on the South Alaska Peninsula fisheries and salmon bycatch in the Bering Sea and Gulf of Alaska groundfish fisheries are included here along with information on High Seas Driftnet enforcement activities by the United States Coast Guard and National Marine Fisheries Service. Relative abundance estimates of juvenile chum and Chinook salmon in the northern Bering Sea from pelagic trawl surveys by the Alaska Fisheries Science Center, Auke Bay Laboratories are also included as a leading ecosystem indicator of stock status for Yukon River chum and Chinook salmon.

SOUTH ALASKA PENINSULA SALMON FISHERIES

The first documented commercial harvests from the South Unimak and Shumagin Islands June fisheries occurred in 1911. During the early to mid-1960s, the South Unimak and Shumagin Islands fisheries were open to commercial salmon fishing 5 days per week. From 1967 to 1970, fishing occurred 7 days per week regardless of the Bristol Bay sockeye salmon run strength. Special regulatory meetings were held annually and resulted in different regulations every year from 1971 to 1974.

In 1975, the BOF implemented an allocation plan in which the South Unimak and Shumagin Islands June fisheries were granted an annual guideline harvest level (GHL) based on the projected Bristol Bay inshore sockeye salmon harvest. Based on historical catch data, 6.8% of the forecasted inshore Bristol Bay harvest was allocated to the South Unimak June fishery and 1.5% was allocated to the Shumagin Islands June fishery. Portions of the GHL were assigned to discrete time periods so the harvest would be spread throughout June. Concerns over large harvests of chum salmon in the early 1980s and a weak fall Yukon River chum salmon run resulted in a chum salmon cap that, if reached, would result in closure of the fishery for the remainder of June. Between 1986 and 2000, the chum salmon cap was as high as 700,000 fish (1992–1997) and as low as 350,000 fish (1998–2000).

In January 2001, the BOF modified the South Unimak and Shumagin Islands June salmon fishery management plan. These modifications were in effect through the 2003 season and included the elimination of the sockeye salmon GHL and the chum salmon cap. Fishing time for any gear group was reduced to a maximum of 16 hours per day. Fishing time by seine and drift gillnet gear was limited to a maximum of 48 hours in a floating 7 day period with no more than two 16 hour periods on consecutive days in any 7 day period. Purse seine and drift gillnet fishing

periods through June 24 occurred at the same time in the South Unimak and Shumagin Islands fisheries.

From June 10 through June 24, in 2001 through 2003, set gillnet gear could be operated on consecutive days for 16 hour fishing periods as long as the set gillnet sockeye to chum salmon ratio was above the recent 10 year average in each fishery. If the set gillnet sockeye to chum salmon ratio fell below the recent 10 year average in either of the fisheries (South Unimak or Shumagin Islands), that fishery was closed for one period.

After June 24, in either the South Unimak or Shumagin Islands fisheries, if the ratio of sockeye to chum salmon, for all gear combined, was 2:1 or less on any day, the next fishing period was 6 hours in duration for all gear groups in that fishery. If the ratio of sockeye to chum salmon was 2:1 or less for 2 consecutive fishing periods in either fishery, the season was closed for the remainder of June for all gear groups. If the sockeye to chum salmon ratio was greater than 2:1, a 6 hour fishing period could be extended to a maximum of 16 hours.

Prior to the 2004 fishing season, many of the restrictions in place from 2001 to 2003 were replaced by a set fishing schedule, which is currently in effect. Sockeye salmon harvests from 2004 through 2009 averaged 642,981 in the South Unimak and 649,701 in the Shumagin Islands June fisheries for an average total harvest of 1,292,682. This average total harvest was lower than the 1975–2000 average but above the 2001–2003 average. Chum salmon harvests from 2004 through 2009 for the South Unimak and Shumagin Islands June fisheries average 168,168 and 267,701 fish respectively. The average chum salmon harvest was below the 1975–2000 average total harvest, and above the 2001–2003 average.

SALMON BYCATCH IN THE BERING SEA AND GULF OF ALASKA GROUNDFISH FISHERIES

U.S. groundfish fisheries in the BSAI and GOA regions are managed under the Magnuson-Stevens Fisheries Conservation and Management Act by the North Pacific Fishery Management Council (NPFMC) and are regulated by the National Marine Fisheries Service (NMFS) Alaska Regional Office. Annual summaries and inseason information on Pacific salmon bycatch in the Bering Sea and Gulf of Alaska groundfish fisheries are provided by the Alaska Regional Office as part of NMFS catch accounting system (NMFS 2010). Bycatch of Chinook and non-Chinook salmon (principally chum salmon) in the BSAI remained near historic low levels in 2010; however, a large number of Chinook salmon was captured as bycatch in the GOA groundfish fisheries (Appendix 26). Estimated bycatch of Chinook salmon during 2010 was 12,530 in BSAI groundfish fisheries and 54,183 in GOA groundfish fisheries. Estimated bycatch of non-Chinook salmon species during 2010 was 14,977 in BSAI groundfish fisheries and 2,008 in GOA groundfish fisheries.

Pollock directed fisheries in the Bering Sea have been the primary groundfish fishery of concern for salmon bycatch as they account for over 80% of the total Chinook salmon bycatch and over 90% of the non-Chinook salmon bycatch in the BSAI groundfish fisheries. Harvests are managed in the BSAI pollock fishery by setting an annual TAC for pollock and allocating the catch to various sectors of the fishery as specified by the American Fisheries Act in 1998. These allocations are divided into 2 seasons 40% to the winter roe season (January 20 to June 10; A-season) and 60% to summer/fall season (June 10 to November 1; B-season). Chinook salmon

bycatch occurs in both the winter season (63%) and the summer/fall season; non-Chinook salmon are caught almost entirely during the summer/fall season (99%).

A variety of regulatory measures have been used to limit salmon bycatch in the GOA and BSAI groundfish fisheries. These measures include: classifying salmon as a prohibited species, salmon savings areas, and a voluntary rolling hotspot system (VRHS). Prohibited species within US groundfish fisheries must be either discarded or donated through the Pacific Salmon Donation Program, which allows for distribution of salmon taken as bycatch to economically disadvantaged individuals by tax exempt organizations. Chinook and Chum Salmon Savings Areas were created in the mid-1990s as part of the BSAI groundfish fisheries. These savings areas enabled cap-and-closure measures to limit salmon bycatch in the Bering Sea pollock fishery. Savings areas are based on locations with historically high spatial and temporal levels of salmon bycatch and were closed to fishing once salmon bycatch levels reached a specified cap. In 2006, fishing vessels participating in the VRHS were exempted from the salmon savings areas. The VRHS is intended to increase the ability of the pollock fishery to minimize salmon bycatch by adaptively defining area closures with inseason bycatch information.

Escalating numbers of Chinook salmon captured as bycatch in the BSAI pollock fishery in 2006 and 2007 prompted a review of alternative management measures used to limit the bycatch of Chinook salmon and an environmental impact assessment of Chinook salmon bycatch in the Bering Sea pollock fishery (NMFS 2009a and 2009b). Following these reviews, the NPFMC recommended amendment 91 (see <http://www.fakr.noaa.gov/sustainablefisheries/bycatch/default.htm>) be added to the BSAI Groundfish Fisheries Management Plan for the Bering Sea pollock fishery. Amendment 91 has been approved by the Secretary of Commerce and will be implemented by NMFS during the 2011 fishing season. Amendment 91 establishes a bycatch hard-cap of 60,000 Chinook salmon and a performance cap of 47,591 Chinook salmon for vessels participating in an incentive plan agreement (IPA). Chinook salmon bycatch quotas are allocated to each season and sector of the fishery based on bycatch caps, historical Chinook salmon bycatch, and pollock harvest allocations; however, provisions are made in the amendment to transfer unused quotas under the approval of the NMFS Alaska Regional Office. Performance caps establish benchmark performance criteria of incentive plan agreements, the primary tool used to minimize salmon bycatch. Sectors that exceed their proportion of the performance cap more than two times in any 7 year period while participating in an IPA will have their hard cap reduced to their proportion of the performance cap. Salmon still retain their classification of a prohibited species; however, amendment 91 establishes benchmark performance criteria for incentive plan agreements such as the VRHS that have been used or may be used in the future to avoid salmon bycatch in the Bering Sea pollock fishery.

NORTON SOUND

A small portion of Yukon River bound Chinook and chum salmon are known to be intercepted in the Norton Sound coastal commercial fisheries (Gaudet and Schaefer 1982). Chinook salmon runs have been weak to the Eastern Norton Sound since 1998; however, runs of chum, coho, and pink salmon have been average to well above average (Menard 2010). The Chinook salmon commercial harvest in 2010 was 120 fish and occurred during the coho salmon commercial fishery which started the last week in July. The Chinook salmon harvest in that time period is believed to be local stocks.

In the last 10 years, the subsistence fishery in Norton Sound took from 4,000 to 9,000 Chinook salmon and took place where the majority of Yukon River stocks may be intercepted by Norton Sound residents.

NORTHERN BERING SEA PELAGIC TRAWL SURVEY

Pelagic trawl surveys in the northern Bering Sea shelf were initiated in 2002 as part of the Bering Arctic Subarctic Integrated Surveys (BASIS: 2002–2007). BASIS was developed by member nations of the North Pacific Anadromous Fish Commission (NPAFC) (United States, Russia, Japan, Canada, and Korea) to improve our understanding of marine ecology of salmon in the Bering Sea. The United States (Alaska Fisheries Science Center, Auke Bay Laboratories) has continued pelagic trawl surveys in the northern Bering Sea in support of the Bering Sea Integrated Ecosystem Research Project (BSIERP) in 2009 and 2010. Salmon catches during these multi-disciplinary trawl surveys provide a unique opportunity to evaluate the status of salmon stocks during their juvenile life-history stage. A different (smaller) trawl design was used during the first sampling year in the northern Bering Sea and it is unclear what effect this may have had on the relative abundance estimate. Relative abundance estimates from the survey in 2002 are not included in the abundance index. The northern Bering Shelf is the index area for Yukon River salmon based on genetic stock composition of the juvenile population (Murphy et al. 2009; Chris Kondzela, NOAA, Juneau, personal communication, February 2012). Juvenile salmon present in the northern Bering Sea in 2007 and 2008 will be the primary contributors to the 2011 return (Chinook and chum salmon primarily return after 3 to 4 years in the ocean). The increase in juvenile abundance in 2007 supports the expectation that the 6-year-old component of the Chinook salmon run and the 5-year-old component of the chum salmon run will be higher in 2011 than the previous 3 years (Murphy et al., 2009).

SALMON SPAWNING ESCAPEMENT

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

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.

Aerial Survey Escapement Assessment Methods

The Yukon River drainage is too extensive for complete comprehensive escapement coverage of all salmon spawning streams. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft form an integral component of the escapement assessment program. The greatest advantage of aerial surveys is the cost-effectiveness of obtaining escapement information throughout an extremely vast and remote area. Another advantage to aerial surveillance is that current or potential habitat-related problems arising from natural or man-induced causes can be identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used.

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

Aerial escapement estimates are obtained from as many spawning streams as possible within the confines of fiscal, personnel, and weather constraints. However, selected spawning streams or "index areas" 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.

More comprehensive assessment projects employing such techniques as intensified ground surveys, mark-recapture programs, counting towers, weirs, radiotelemetry, and hydroacoustics are also conducted. These projects tend to provide estimates of total salmon abundance and are often less dependent upon weather and water conditions. Most escapement monitoring projects are located on selected major spawning streams or terminal areas that have escaped beyond fisheries; however, there are some projects used for assessment within the drainage and are technically representing escapement only beyond that point on the river and may not represent terminal areas. Non-terminal projects include projects such as the mainstem Yukon River sonar project operations at Pilot Station and Eagle. There are both advantages and disadvantages related to each type of assessment method. Regardless of the method utilized, the overall objective of escapement assessment in the Yukon Area is to estimate abundance (or provide indices of relative abundance), timing, and distribution of spawning salmon populations throughout the drainage. A summary of projects conducted in the drainage in 2010 that produced estimates of abundance are provided in Appendix E2.

While most of these projects are designed to monitor salmon escapements in selected major spawning streams, 2 projects have been implemented to estimate salmon abundance in the mainstem Yukon River. The ADF&G Pilot Station sonar project estimates total salmon passage by species through the lower Yukon River at river mile 123 near Pilot Station, typically through September 7. Hydroacoustic techniques at the Pilot Station site are used to estimate passage of fish and a comprehensive drift gillnet sampling program is conducted to apportion sonar counts by species. Additionally, ADF&G and DFO cooperatively operate sonar systems annually (below the community of Eagle, Alaska) from July 1 through October 6 since 2005. This project provides estimates of abundance of Chinook and chum salmon entering the Canadian portion of the mainstem Yukon River.

Escapement Goals

BEGs have been established for several Yukon River drainage salmon spawning streams or areas (Appendix E1). Escapement goals (EG) for Chinook, summer chum, and fall chum salmon were reviewed for the 2010 BOF cycle (Volk et al. 2009). The EGs developed or modified through

this process are primarily presented as ranges. The underlying principle in establishing an EG is that maintenance of average or better spawning escapements should provide for sustained yield consistent with historic levels (*Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222.) and *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223.)). The use of EG ranges should allow for uncertainty associated with measurement techniques, observed variability in the salmon stock measured, changes in climate and oceanographic conditions, and varying abundance within related populations of the salmon stock being measured. BEG means a level of escapement that provides the highest potential to produce maximum sustainable yield. SEG means a level of escapement known to provide for sustainable yield over a 5 to 10 year period.

Most of the EG ranges established within the Yukon River drainage represent the number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance, i.e., they are predicated upon some measure of historic averages. Establishment of escapement goals based upon a rigorous analysis of maximum sustained yield is not possible at this time due to the nature of the Yukon River mixed stock fisheries, lack of stock identification data, and consequential inability to reconstruct total inriver stock-specific returns. Consequently, most escapement goals are based upon aerial survey index estimates that do not represent total escapement but are assumed to reflect relative spawner abundance when using standard survey methods under acceptable survey conditions. However, the goals established for Anvik River summer chum salmon (Clark and Sandone 2001), East Fork Andreafsky River summer chum salmon (Fleischman and Evenson 2010) and selected fall chum salmon spawning stocks (Eggers 2001) represent the desired range for total spawning abundance as they are based upon a more comprehensive database. In 2010 the most significant change affecting fall chum salmon EGs included changing the Yukon River drainagewide goal from a BEG to a SEG (Fleischman and Borba 2009). At this time, the analysis did not include the component stocks and they remain listed as BEGs based on Eggers (2001) analysis.

AREA SALMON REPORT 2010

ALASKA BOARD OF FISHERIES ACTIONS 2010

The BOF met in Fairbanks, Alaska, in late January of 2010 and made several changes to the regulations pertaining to Yukon Area fisheries management. The following is a summary of BOF actions at that meeting:

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

4. The *Yukon River Fall Chum Salmon Management Plan* was modified by lowering the threshold required to allow a directed fall chum salmon commercial fishery from a run size of 600,000 fall chum salmon to 500,000 fall chum salmon. This modification also changed the threshold in the *Yukon River Coho Salmon Management Plan* from a run size of 550,000 fall chum salmon to 500,000 fall chum salmon in order to conduct a coho salmon directed commercial fishery.
5. The *Yukon River Coho Salmon Management Plan* was modified to allow for late season harvest of coho salmon if the department determines there is a harvestable surplus of coho salmon above escapement needs and those necessary for subsistence uses and that a directed coho salmon commercial fishery will not have a significant impact on escapement or allocation of fall chum salmon.
6. The subsistence fishing schedule in Subdistrict 4-A was changed to two 48-hours periods per week, regardless of commercial fishing periods.
7. The Innoko River subsistence fishing schedule was changed to open 7 days per week.
8. The *King Salmon Management Plan* was amended by adding a new subsection that ADF&G may use emergency order authority to close all salmon fishing in a district or portion of a district if run assessment information indicates an insufficient abundance of Chinook salmon.
9. The subsistence fishing schedule in Subdistricts 4-B and 4-C was modified to open from 6:00 p.m. Sundays until 6:00 p.m. Fridays when commercial fishing closures last longer than 5 days.
10. Effective in 2011, the maximum mesh size for subsistence, commercial, and personal use gillnets in the Yukon River drainage will be 7.5 inches.

FEDERAL SUBSISTENCE MANAGEMENT ACTIONS 2010

The Federal Subsistence Board (FSB) met in January 2011 to review proposals regarding regulation changes to the Code of Federal Regulations under the Federal Subsistence Management Program on Federal public lands within the State of Alaska. The following summary is for informational purposes only and is not intended to detail, reflect, or fully interpret reasons for the FSB's actions. In total 19 proposals were taken up for review by the FSB, of which 9 were relevant to federal fishery regulations on the Yukon River and 4 were withdrawn and 2 proposals were rejected. The FSB deferred on 2 proposals, one which requested that Federal public waters of Yukon River Subdistrict 5-D be further subdivided into 3 subdistricts to provide managers additional flexibility to more precisely regulate harvest while conserving Chinook salmon run that spawn in the upper Yukon River and another which requested that customary trade in the Yukon River Fisheries Management Area be prohibited in any year when Chinook salmon runs are insufficient to fully satisfy subsistence needs and subsistence fisheries are restricted. Due to deference on the latter proposal, the FSB took no action on one proposal to limit customary trade of Chinook salmon in the Yukon River Management Area and require a customary trade recordkeeping form.

TOTAL YUKON RIVER DRAINAGE SALMON HARVEST 2010

The total 2010 harvest for the Yukon River drainage, including Canada, was 56,656 Chinook, 299,517 summer chum, 80,005 fall chum, and 18,451 coho salmon (Table 4). The 2010 estimated total Yukon River drainage harvests compared to the recent 5 year (2005–2009)

averages were as follows: Chinook salmon, 26% below average (Appendix A17); summer chum salmon, 43% above average (Appendix A18); fall chum salmon, 63% below average (Appendix A19); and coho salmon, 71% below average (Appendix A20). The subsistence harvest in the Alaska coastal districts (Scammon Bay and Hooper Bay) of 1,300 Chinook, 22,425 summer chum, 186 fall chum, and 124 coho salmon (Table 5) brought the total Yukon River area harvest to 57,956 Chinook salmon, 321,978 summer chum, 80,191 fall chum, and 18,575 coho salmon (Appendices A17–A20).

ALASKA SUBSISTENCE FISHERY 2010

Subsistence Harvest Reporting 2010

A preliminary total of 44,721 Chinook, 88,692 summer chum, 71,854 fall chum, and 14,107 coho salmon were estimated to have been harvested with 1,504 households estimated to have participated in the Yukon Area subsistence and personal use fisheries in 2010 (Table 5). The Yukon Area includes the Alaska portion of the Yukon River drainage and the communities with the Coastal District. Harvest estimates include salmon given away by test fishing projects (Jallen and Hamazaki 2011).

Historical estimates of the subsistence harvest based on surveys and permit harvest information for salmon species are shown in Appendices D1 through D4. Historical subsistence permit harvest information for fisheries currently in regulation is summarized in Appendices D5 and D6.

Survey Program 2010

The majority of communities within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the harvest of each salmon species from these communities, ADF&G has implemented a voluntary survey program. Household subsistence salmon surveys were conducted in the Lower Yukon Area in September and continued in the Upper Yukon Area through October. The survey program utilizes subsistence catch calendars, postseason household interviews, and postseason household telephone interviews, as well as postcards to collect harvest information.

Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the 2010 postseason survey. Based on survey information collected in 2010, an estimated 1,277 households harvested a preliminary estimate of 36,469 Chinook; 82,206 summer chum; 37,404 fall chum; and 6,741 coho salmon in the survey portion of the Yukon Area, which includes the coastal communities of Hooper Bay and Scammon Bay (Table 5). These totals include salmon retained for subsistence from commercial fishing periods and test fish projects.

Subsistence Permit Program 2010

In some portions of the Yukon Area, subsistence fishermen are required to obtain an annual household permit prior to fishing for salmon and/or non-salmon fish species. These areas include the Tanana River drainage, the Yukon River drainage between the upper end of Garnet Island (below Rampart) and the Dall River (above the Yukon River Bridge) and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border. In these areas, fishermen are required to document their subsistence salmon harvest on the household permit and return them to ADF&G at the end of the fishing season. A total of 538

subsistence permits were issued in 2010, of which, approximately 366 subsistence permits were issued to harvest salmon (Table 6). Subsistence salmon permits issued compares to the 5 year average (2005–2009) of 318 permits and the 10 year average (2000–2009) of 313 permits (Appendices D5 and D6). Additionally, subsistence fishing permits are required annually for the harvest of northern pike *Esox lucius* in the Tolovana River drainage (designated ST) and for non-salmon fish species in the Upper Tanana River drainage (designated SU).

A total of 229 subsistence permit holders (including Stevens Village) indicated they fished in 2010. The preliminary reported harvest (including Stevens Village) from permits totaled 5,013 Chinook, 1,236 summer chum, 28,425 fall chum, and 5,606 coho salmon, 2,834 whitefish species, 120 sheefish (*Stenodus leucichthys*), 42 burbot (*Lota lota*), 250 pike, 104 suckers (*Catostomus* sp.), and 196 Arctic grayling (*Thymallus arcticus*) (Table 6 and Appendix G2).

Note that estimates for Stevens Village in Table 5 are a combination of permit and survey data and do not reflect strictly permit totals. Because of its unique location, fishermen in Stevens Village harvested salmon in both the permitted and survey areas. The Stevens Village permit information was used to supplement the postseason survey of the community.

Subsistence Salmon Use from Test Fisheries 2010

In order to monitor and manage the Yukon Area salmon fisheries, ADF&G operates, or oversees, several test fishing projects. The fish harvested during operation of these projects are provided to the local community to supplement their subsistence harvests. In 2010, the test fishery projects throughout the drainage provided a total of 2,959 Chinook, 4,951 summer chum, 2,238 fall chum, and 558 coho salmon to households for subsistence use (Table 5). Residents of the communities of Alakanuk, Emmonak, Hooper Bay, Kotlik, Mountain Village, Pilot Station, and Scammon Bay were the primary recipients of fish from the test fisheries. Salmon caught in the test fisheries were assumed to replace fish that would have been obtained through normal fishing activities; therefore, salmon given away from the test fisheries were added into the subsistence harvest for that community.

ALASKA PERSONAL USE FISHERY 2010

A household permit is required for personal use fishing in the portion of the Tanana River drainage within the Fairbanks Nonsubsistence Area (Figure 10). Fishermen are required to document their personal use harvest on household permits and return them to ADF&G at the end of the season.

In 2010, 67 personal use salmon permits were issued (Table 6; Appendices D7 and G2). This compares to the recent 5 year average (2005–2009) of 59 permits. In addition, 8 personal use whitefish and sucker permits were issued in 2010 to fishermen in the Fairbanks Nonsubsistence Area. Personal use fishermen reported harvest was 162 Chinook, 319 summer chum, 3,208 fall chum, and 1,062 coho salmon. Additionally, 206 whitefish, 1 sheefish, 3 burbot, 7 pike, 66 suckers, and 5 Arctic grayling were reported taken under the personal use fisheries (Appendices D7 and G2).

YUKON AREA CHINOOK AND SUMMER CHUM SALMON FISHERY SUMMARY 2010

In response to the guidelines established in the *Sustainable Salmon Fisheries Policy*, the BOF classified the Yukon River Chinook salmon stock as a yield concern in its September 2000 work

meeting. This determination was based on the inability to maintain expected yields, or harvestable surpluses, above the stock's escapement needs since 1998 and the anticipated low harvest level in 2001. The classification of yield concern was continued at the BOF meetings in 2004, 2007, and 2009 based on continued low yields of Chinook salmon in the Yukon River (Howard et al. 2009). In addition, the BOF classified the Yukon River summer chum salmon stock as a management concern at its September 2000 work meeting, based on the chronic inability to meet escapement goals since 1998. The classification was maintained at the 2004 BOF meeting. Beginning in 2002, the Yukon River summer chum salmon showed a marked improvement in abundance with the drainagewide optimum escapement goal, and the 2006 run count past the Pilot Station sonar project was the second largest recorded. The improved abundance led to the declassification as stock of concern by the BOF in 2007. Since that time, run abundance has shifted to near average levels and has provided for a harvestable surplus for subsistence and commercial fishing.

The projected run size for Chinook salmon in 2010 was anticipated to be 155,600–226,200 fish, which is a below average to average run size. The 2010 season was entered with the prospect that subsistence conservation measures, much less severe than those used in 2009, may be necessary inseason in an effort to share the available harvest and meet escapement goals. Conservation measures, if required, would include voluntary reductions, shifting harvest to other species, spreading the harvest over the duration of the run, reducing extended sharing, and keeping harvested fish in the local area. It was anticipated that no directed Chinook salmon commercial fishery would occur in 2010. The 2010 summer chum salmon preseason outlook anticipated a run size similar to 2009, with approximately 1.3 million fish. The 2010 run was anticipated to provide for escapements, normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs had provided for a harvestable surplus each year since 2003. If inseason indicators of run strength suggested a sufficient abundance of fish to allow for a commercial fishery, the harvestable surplus for Alaska commercial fishery could range from 250,000 to 500,000 summer chum salmon. The actual commercial harvest of summer chum salmon in 2010 was anticipated to be affected by the potentially poor Chinook salmon run.

Chinook Salmon Management Overview 2010

The drainagewide 2010 run size was projected to be between 155,600 and 226,200 Chinook salmon. Due to poor production since 2007, the upper end of this range was deemed unlikely and Alaska fishery management was based on the lower end of this preseason projection. Thus, the 2010 Yukon River Chinook salmon run size was likely to be below average to average.

Before the 2010 season, ADF&G developed a preseason management strategy with input from USFWS, fishermen, tribal council representatives, and other stakeholders to prepare for the event of a low run. ADF&G and USFWS staff distributed the inseason management approaches as the 2010 Yukon River Salmon Fisheries informational flyer. The resulting preseason strategy was to enter the 2010 season with the prospect that subsistence conservation measures, much less severe than those used in 2009, may be necessary to share the available subsistence harvest and meet escapement goals. Conservation measures if required were to include promoting voluntary reductions, such as encouraging a shift in harvest to other species, spreading harvest out over the duration of the run, reductions in extended sharing, and keeping fish harvested within the village or local area.

It was unlikely that there would be a directed Chinook salmon commercial fishery in 2010 on the mainstem Yukon River. However, because the Tanana River is managed independently as a terminal fishery, there may have been opportunity to commercially harvest less than 1,000 Chinook salmon.

YRDFA facilitated weekly teleconferences to provide managers, fishermen, tribal council representatives, and other stakeholders the opportunity to share information, provide input, and discuss inseason management options. During YRDFA inseason weekly teleconferences, ADF&G and USFWS staff provided run assessment and management strategies. Subsistence fishermen provided reports on fishing efforts and were encouraged to provide input on management strategies.

Inseason run strength assessment of Chinook and summer chum salmon was based on the lower river test fisheries at Emmonak/Middle Mouth and Mountain Village, the Pilot Station sonar project, and subsistence fishermen catch reports. In addition, genetic samples collected in the lower river test fisheries and at Pilot Station sonar project were analyzed inseason to determine stock contribution and to project abundance of the Canadian Chinook salmon stocks.

The summer season began with a near average ice breakup in the lower river; however, shorefast sea ice lingering outside the mouth of the river contributed to the late migration of Chinook salmon (Appendix A25). The first pulse of Chinook salmon was observed at the Lower Yukon Test Fishery (LYTF) project on June 16–21, a second pulse on June 23–25, and a third on June 27–28. The first quarter point, midpoint, and third quarter point were June 19 (4 days late), June 25 (5 days late), and July 1 (4 days late), respectively (Appendix B10). The LYTF finished with a cumulative CPUE of 18.67, approximately 15% below the historical average (Appendix B11). The preliminary Pilot Station sonar project estimate was approximately 113,400 Chinook salmon as compared to the 1995–2009 average passage of 142,200 fish (Appendix E3). The first quarter point, midpoint, and third quarter point were on June 22, June 26, and June 30 respectively.

Through the month of June, the Chinook salmon run was assessed to be large enough to provide for escapement and subsistence uses based upon the preseason outlook and late run timing. Most subsistence salmon fishermen delayed their fishing effort due to gas prices and low fish abundance early in the season. The regulatory “windowed” subsistence salmon fishing schedule was initiated on June 7 in District 1 and was implemented chronologically upriver as the run progressed upstream. Persistent wet and cold weather conditions around the Yukon River Delta led many subsistence fishermen to abstain from harvesting the first pulse of Chinook salmon due to the poor processing conditions. Throughout the drainage there were episodes of high water events with heavy debris loads which preempted subsistence fishing.

In Subdistrict 5-D, when it became evident that the Chinook salmon run would fall short of the U.S./Canada Yukon Treaty obligation, fishermen were asked to consider conservation measures such as voluntary harvest reductions, shifting harvest to other species, spreading harvest out over the duration of the run, reducing extended sharing, and keeping fish harvested within the village or local area. It was understood that fishing had been difficult this year due to water conditions and high fuel costs. Imposing fishing restriction at the time would have increased hardships. The hope was to provide fishermen the flexibility to work around their own unique fishing conditions to effectively conserve Chinook salmon where they could.

Summer Chum Salmon Management Overview 2010

The strength of the summer chum salmon run in 2010 was dependent on production from the 2006 (age-4 fish) and 2005 (age-5 fish) escapements, as these age classes dominate the run. The total run during 2005 and 2006 was approximately 2.6 and 4.0 million summer chum salmon, respectively, though tributary escapements were highly variable.

Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years, and it was expected that the total run in the Yukon River would be similar to the 2009 run of approximately 1.3 million fish. The high seas BASIS study indicated a decline in chum salmon in 2004 and 2005 but 2006 and 2007 results showed an increase. Juvenile chum salmon collected in the BASIS study in 2006 and 2007 would correspond to dominant age class returns (age-5 and age-4, respectively) in 2010.

The 2010 summer chum salmon run was anticipated to provide for escapements, support 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 7 years (2003–2009). If inseason indicators of run strength developed as anticipated, the commercially harvestable surplus in Alaska was expected to range from 250,000 to 500,000 summer chum salmon. The actual commercial harvest of summer chum salmon in 2010 was expected to be affected by a poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon-directed fisheries.

The Yukon River summer chum salmon run was managed according to the guidelines described in the *Yukon River Summer Chum Salmon Management Plan* (5 AAC 05.362.). The management plan provides for escapement needs and subsistence use priority before other consumptive uses such as commercial, sport, and personal use fishing. The plan allows for varying levels of harvest opportunity depending on the run size projection. ADF&G uses the best available data to assess the run including: preseason run outlooks, Pilot Station sonar project passage estimate, test fishing indices, age and sex composition, subsistence and commercial harvest reports, and information from escapement monitoring projects.

The summer chum salmon run passage at the Pilot Station sonar project was approximately 1.33 million fish (Appendix E3). The first quarter point, midpoint, and third quarter point were on June 23, June 28, and July 1, respectively. Summer chum salmon management decisions were delayed until the third quarter point of the Chinook salmon run at LYTF. At this point, the summer chum salmon run was peaking and a total run size of 1.4 million fish was projected.

The total commercial harvest for Districts 1, 2, 6, and Subdistrict 4-A combined was 232,888 summer chum salmon, which is 195% above the 2000–2009 average harvest of 78,294 fish (Table 4; Appendix A18).

Summer Season Subsistence Fishery 2010

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

Subsistence fishing for Chinook and summer chum salmon was open 7 days a week prior to commencement of the *Yukon River King Salmon Management Plan* regulatory schedule on June 7. Breakup timing was near average in the lower river; however persistent shorefast sea ice contributed to the late migration of Chinook salmon. Wet and cold weather in the Yukon River Delta made for poor processing conditions, and many fishermen did not harvest Chinook salmon from the first pulse. The schedules for the Coastal District and the Koyukuk and Innoko rivers (7 days a week) and the Tanana River (two 42-hour periods per week) remained open on their regulatory schedules as these areas have less efficient fishing conditions and/or do not harvest Canadian-bound salmon.

During the 2010 season, Chinook and summer chum salmon run strength assessment was based on the lower river test fisheries (LYTF) at Emmonak (LYTF) and Mountain Village, the Pilot Station sonar project, and subsistence fishermen catch reports. In addition, genetic samples collected in the lower river test fishery and at Pilot Station sonar project were analyzed inseason to determine stock contribution and to project abundance of the Canadian Chinook salmon stocks. The summer season began with a near average ice breakup in the lower river (Appendix A25). However, shorefast sea ice lingering outside the mouth of the river contributed to the late migration of Chinook salmon. The quarter points of the run were 4 to 5 days later than the historic average (Appendix B10), and the LYTF project finished with a cumulative CPUE approximately 15% below the historical average. The preliminary Pilot Station sonar project estimate was approximately 25% below the 10 year average.

Because of the below average to average outlook for Chinook salmon in 2010, the subsistence salmon fishing schedule was planned to be implemented early in the season until the salmon run size was projected to be of sufficient strength to warrant relaxing or additional conservation measures appeared necessary. Subsistence fishing closures were not enacted due to periods of high water and debris coinciding with Chinook salmon pulses. Managers decided to leave the regulatory windows in place and to not force fishermen to take additional risks during openings or fish less efficiently. As the run progressed through Subdistrict 5-D, it became apparent that border passage goals would not be met. Fishermen were asked to consider voluntary harvest restrictions such as spreading harvest over the duration of the run, keeping salmon in their home community, reducing extended sharing, and harvesting other species. Managers understood that water conditions and high fuel costs made fishing difficult in 2010 and did not impose additional hardship on fishermen by reducing the regulatory schedule further. A commercial processor (Kwikpak Fisheries), located in Emmonak, donated 115 Chinook salmon harvested in summer chum salmon directed commercial fisheries to Fort Yukon and Canada (Jack Schultheis, Kwik'pak Fisheries General Manager, Emmonak, personal communication, 2010).

Throughout the summer fishing season, additional subsistence fishing opportunities for non-salmon fish species were available during subsistence salmon period closures. Stipulations for harvesting non-salmon species during closed salmon periods required the use of gillnets with a maximum mesh size of 4 inches and a maximum length of 60 feet as well as the prohibition of fish wheel operation. ADF&G had authority to discontinue these harvest opportunities of non-salmon species if they were found ineffective at adequately reducing salmon harvest.

Subsistence harvest information was gathered during the summer season from fishermen reports to ADF&G's Emmonak office and an inseason survey program organized by YRDFA. Through these sources, subsistence fishermen in the lower river reported poor catches of Chinook salmon that were insufficient to meet their needs. As the run progressed upriver, subsistence fishermen

in the middle river reported a mix of good to below average catches as well as a higher amount of smaller Chinook salmon in their catches compared to the last several years. Subsistence fishermen in the upper river generally reported meeting their subsistence needs but that the run appeared to be weaker than last year's run. Upriver subsistence fishermen using fish wheels particularly noticed lower catches and an increase in the percentage of smaller fish caught compared to previous years.

Commonly cited reasons for not meeting needs: the fishing schedule conflicted with work opportunities, fishing periods were too short and families could not afford to travel back and forth to fish camps, and fishing took place during poor weather conditions for fish preservation. High water and debris occurred throughout the summer and fall seasons. Fishermen in some communities lost fish wheels or other gear or reduced their fishing time in response to poor conditions. Additional factors contributing to the inability to meet subsistence salmon needs included fuel shortages, high fuel prices, health, elders unable to fish, lack of fishing gear, participating on fire-fighting crews, and mechanical problems.

Districts 1, 2, and 3

Subsistence salmon fishing in the Lower Yukon River districts followed the regulatory subsistence salmon fishing schedule of two 36-hour periods per week beginning June 7 in District 1, June 9 in District 2, and June 13 in District 3. Beginning June 28 in District 1 and July 1 in District 2, commercial salmon fishing opened and subsistence salmon fishing remained open except for 18 hours before, during, and 12 hours following each commercial salmon fishing period. Beginning July 16 and 17 in Districts 1 and 2, respectively, subsistence salmon fishing schedule was allowed 7 days per week until the fall season subsistence schedule began in mid-August.

Commercial salmon fishing did not open in District 3 due to the lack of buyer interest; therefore, subsistence fishing was based on a regulatory schedule allowing two 36-hour periods per week. The regulatory schedule was in effect from June 13 to July 18, after which subsistence fishing was allowed 7 days per week until the fall season subsistence schedule began.

In Districts 1, 2, and 3 from June 1 to July 15 all Chinook salmon taken for subsistence use were required to have both lobes of the tail fin removed.

District 4

Subsistence salmon fishing in District 4 followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week. The regulatory subsistence schedule began on June 16 in 4-A and on June 23 in Subdistricts 4-B and 4-C. Based on market interest, commercial fishing was allowed in Subdistrict 4-A beginning July 7, and subsistence fishing was not altered by the commercial salmon periods. The regulatory schedule was in effect until July 26, after which subsistence fishing was allowed 5 days per week until the fall subsistence schedule began.

No commercial fishing periods occurred in Subdistricts 4-B and 4-C, accordingly the subsistence salmon fishing remained on a schedule of two 48-hour fishing periods throughout the summer season.

District 5

Subsistence salmon fishing in Subdistricts 5-A, 5-B, and 5-C followed the regulatory subsistence salmon fishing schedule of two 48-hour periods per week beginning June 29. Subdistrict 5-A

typically targets salmon bound for the Tanana River and is managed using the *Tanana River Salmon Management Plan*. Beginning August 4, subsistence salmon fishing was allowed 7 days per week until the fall subsistence schedule began.

Subsistence salmon fishing in Subdistrict 5-D was allowed 7 days per week throughout the summer season. In Subdistrict 5-D when it became evident that the Chinook salmon run would fall short of the U.S./Canada Yukon Treaty obligation to pass adequate numbers into Canadian escapements and provide for harvest sharing, fishermen were asked to consider conservation measures such as voluntary harvest reductions, shifting harvest to other species, spreading harvest out over the duration of the run, reducing extended sharing, and keeping fish harvested within the village or local area.

District 6

Subsistence salmon fishing in District 6, with the exception the Old Minto Area, followed a regulatory subsistence salmon fishing schedule of two 42-hour periods per week throughout the summer season. The Old Minto Area was open to subsistence salmon fishing 5 days per week.

In District 6, five commercial fishing periods were scheduled beginning July 5. Subsistence fishing periods were open concurrently with commercial salmon periods.

Coastal District, Koyukuk, and Innoko Rivers

Subsistence salmon fishing in the Coastal District, Koyukuk River, and the Innoko River was allowed 7 days per week throughout the entire summer season.

Summer Season Commercial Fishery 2010

Due to the poor run size, no commercial periods targeting Chinook salmon were allowed in the Yukon River mainstem or in the Tanana River during 2010. The summer chum salmon commercial fishery was managed conservatively by opening the commercial fishing season near the third quarter point of the Chinook salmon run, after the majority of Canadian-origin fish had passed. After the first opening was announced, test fishery information showed an abrupt decline in summer chum salmon entering the river. ADF&G took unprecedented action to cancel the period on short notice to avoid harvesting a significant number Chinook salmon. ADF&G scheduled 8 commercial fishing periods targeting summer chum salmon in District 1 and 7 periods in District 2 (Table 7). No other commercial fishing periods were cancelled in the lower river, as it was anticipated that the delayed opening of the commercial fishery and unseasonably high water would reduce the incidental harvest of Chinook salmon. Additionally, 8 summer chum salmon directed openings were scheduled in Subdistrict 4-A and 5 openings were scheduled in District 6 (Table 7). The commercial harvest of summer chum salmon was below the low end of the guideline harvest range for all districts and subdistricts.

The total commercial harvest for Districts 1, 2, 6, and Subdistrict 4-A combined was 232,888 summer chum salmon, which is 195% above the 2000–2009 average harvest of 78,294 fish (Appendix A5, Tables 8 and 9). The summer chum salmon harvest was the highest since 1968. Incidental to the summer chum salmon directed fishery, 9,897 Chinook salmon were harvested in Districts 1 and 2 (Appendix A4). The Chinook salmon harvest was 59% below the 2000–2009 average harvest of 24,591 Chinook salmon (Appendix A4). The 2010 Chinook salmon harvest was the fifth lowest commercial harvest since statehood.

A total of 450 permit holders participated in the summer chum salmon commercial fishery, which was approximately 17% below the 2000–2009 average of 545 permit holders (Appendix A9). The Lower Yukon Area (Districts 1, 2, and 3) and Upper Yukon Area (Districts 4, 5, and 6) are separate Commercial Fisheries Entry Commission (CFEC) permit areas. A total of 440 permit holders fished in the Lower Yukon Area in 2010, which was approximately 16% below the 2000–2009 average of 526. In the Upper Yukon Area, 10 permit holders fished, which was approximately 45% below the 2000–2009 average of 18 (Appendix A9).

Yukon River fishermen in Alaska received an estimated \$1.5 million for their Chinook and summer chum salmon harvest in 2010, approximately 16% below the 2005–2009 average of \$1.8 million (Appendix A12). Two buyer-processors operated in the Lower Yukon Area. Lower Yukon River fishermen received an estimated average price per pound of \$5.00 for incidentally harvested Chinook salmon and \$0.70 for summer chum salmon (Appendix A11). The average income for Lower Yukon Area fishermen in 2010 was \$3,325. Two buyer-processors operated in the Upper Yukon Area. Upper Yukon Area fishermen received an estimated average price per pound of \$0.23 for summer chum salmon (Appendix A11). No Chinook salmon were sold in the Upper Yukon Area. The average income for Upper Yukon Area fishermen that participated in the 2010 fishery was \$5,594. No fish from the ADF&G test fish were sold (Table 10).

Districts 1, 2, and 3

No directed Chinook salmon commercial fishery occurred in 2010. However, based on the projected run estimate for summer chum salmon, ADF&G scheduled fifteen summer chum salmon directed commercial periods, restricted to 6 inch maximum mesh size, in the lower river districts, beginning in District 1 on June 28 (Table 7). Additionally, the department attempted to schedule these chum salmon-directed commercial periods when Chinook salmon abundance was low. A short commercial fishing period was announced for June 26 in District 1, with nets restricted to 6 inch maximum mesh size, as a test to determine the chum salmon to Chinook salmon catch ratio. At this late point in the Chinook salmon run, it was expected that incidental harvest of Chinook salmon would be low and any Chinook salmon catches would be small and bound for lower river tributaries; however, test fishery information showed an abrupt drop in the summer chum salmon entering the river, so ADF&G took an unprecedented action, with the cooperation of the primary fish buyer, to cancel the commercial period on short notice to avoid harvesting Chinook salmon. The commercial period was delayed until June 28, which landed a catch of 2,122 Chinook and 30,282 chum salmon (Table 7). Fishing was again delayed until July 1 when the commercial fishery resumed on a more regular schedule for Districts 1 and 2.

A total of 9,897 Chinook salmon were incidentally harvested in Districts 1 and 2 combined (Appendices B1 to B4). The commercial harvest was 57% below the 2000–2009 average harvest in the lower Yukon River of 23,290 fish (Table 4; Appendix A17). The average weight of Chinook salmon in the 2010 commercial harvest was 12.9 pounds, which was 27% below the 2000–2009 average weight of 16.3 pounds (Appendix A13). Chinook salmon age composition from the District 1 restricted (6 inch or smaller mesh) commercial harvest was <1% age-3, 36% age-4, 47% age-5, 16% age-6, and less than 1% age-7 fish; the sex composition of the fish sampled ($n=890$) was 30% female. Chinook salmon age composition from the District 2 restricted (6 inch or smaller mesh) commercial harvest was <1% age-3, 31% age-4, 52% age-5, 16% age-6, 1% age-7 fish; the sex composition of the fish sampled ($n=474$) was 34% female (Schumann and Dubois 2011).

The actual 2010 Chinook salmon run was much weaker than the preseason projection and early inseason assessment projects indicated. Preliminary Chinook salmon passage at Eagle sonar project was 35,074 fish (JTC 2011), yielding a border passage of approximately 34,500 fish, which was below the 42,500–55,000 escapement goal and did not provide for the Canadian harvest share (Appendix E5). These numbers are preliminary and subject to change.

Summer chum salmon management decisions were delayed until the third quarter point of the Chinook salmon run at LYTF (Appendix B12). At this point, the summer chum salmon run was peaking and a total run size of 1.4 million fish was projected. The cumulative commercial harvest for the lower districts was 183,215 summer chum salmon, which was 65% above the 2000-2009 average harvest in the lower Yukon River of 64,711 fish (Table 4; Appendices A5, B5, B6). The average weight of summer chum salmon in the 2010 commercial harvest was 6.4 pounds, which was consistent with the 2000-2009 average weight of 6.2 pounds (Appendix A13). Summer chum salmon age composition from the District 1 restricted (6 inch or smaller mesh) commercial harvest was 4% age-3, 67% age-4, 28% age-5, and 1% age-6 fish. The sex composition of fish sampled ($n=1,259$) was 42% female. Summer chum salmon age composition from the District 2 restricted (6 inch or smaller mesh) commercial harvest was 5% age-3, 71% age-4, 23% age-5, and 1% age-6 fish. The sex composition of fish sampled ($n=625$) in District 2 was 42% (Schumann and Dubois 2011).

There was no commercial harvest of Chinook or summer chum salmon in District 3 (Appendices B4 and B6).

Districts 4-6

Historically, the Subdistrict 4-A fishery targets summer chum salmon with the dominant gear type being fish wheels. Since 1998, limited salmon markets have resulted in lower effort and subsequently lower harvest rates in District 4.

In 2010 a market for summer chum salmon did exist in Subdistrict 4-A. Management of the summer chum salmon commercial fishery was dependent on the available surplus, fishing effort, and buyer input. Based upon preseason contacts with potential buyers in Subdistrict 4-A, directed commercial fishing for summer chum salmon began July 7 and was concurrent with subsistence salmon fishing periods. There were 8 scheduled summer chum salmon directed commercial openings (Table 7). Any Chinook salmon caught incidentally during openings were to be kept for subsistence use or released alive; no Chinook salmon were commercially harvested in Subdistrict 4-A (Appendix C4). The first four 12-hour commercial fishing periods in Subdistrict 4-A were low effort; therefore, commercial fishing was allowed to continue for 21 days until the end of the summer fishing season. A total cumulative harvest of 44,207 summer chum salmon were harvested in Subdistrict 4-A (Table 4; Appendix C9). The summer chum salmon age composition was 22.9% age-3, 70.2% age-4, and 6.9% age-5. The sex composition of summer chum salmon sampled ($n=636$ fish) was 60.7% female (Schumann and Dubois 2011).

The Anvik River had an escapement of approximately 396,173 summer chum salmon, which was less than 500,000 fish required to allow an inriver commercial fishery (Appendix E6). Thus, the Anvik River Management Area remained closed to commercial fishing in 2010.

There were no buyers interested in purchasing salmon from Subdistricts 4-B and 4-C (Appendices C5 and C10). Additionally, no commercial fishing periods were announced for

District 5 in an effort to provide adequate numbers of Canadian-origin Chinook salmon to the spawning grounds (Appendices C6, C7, C11, and C12).

District 6 was managed using inseason assessment information provided by projects operated in the Tanana River drainage. Information from the Nenana test fish wheel and from the Chena and Salcha rivers counting towers escapement estimates were used as indicators of run strength and timing. By July 24, a harvestable surplus of summer chum salmon was identified. Based on the available surplus and market interest, ADF&G scheduled the first commercial fishing period to target chum salmon in District 6 on July 19. ADF&G scheduled 7 commercial fishing periods and the preliminary cumulative harvest was 5,466 summer chum salmon (Table 7, Appendix A18). Approximately 162 Chinook salmon were reported as caught but not sold during commercial periods in District 6. No Chinook salmon were sold commercially in District 6 (Appendix C8).

In the District 6 salmon commercial harvest, 5,466 summer chum salmon were harvested (Appendix C13). Of these 589 fish commercially caught were aged. The summer chum salmon age composition was 25.7% age-3, 66.2% age-4, and 8.1% age-5. Females were 50.6% (Schumann and Dubois 2011).

YUKON AREA FALL CHUM AND COHO SALMON FISHERY SUMMARY 2010

Fall Chum Salmon Management Overview 2010

Management of the Yukon Area fall season commercial salmon fisheries is in accordance with the *Policy for the Management of Sustainable Salmon Fisheries* (5 ACC 39.222.), the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 ACC 1.249.), the *Yukon River Coho Salmon Management Plan* (5 ACC 05.369.), and the *Tanana River Salmon Management Plan* (5 AAC 05.367.). Both the fall chum and coho salmon management plans were modified at the 2010 Alaska Board of Fisheries Arctic-Yukon-Kuskokwim finfish meeting (see section Alaska Board of Fisheries Actions 2010).

The fall chum salmon plan incorporates U.S./Canada treaty obligations for border passage of fall chum salmon and provides guidelines necessary for escapement and prioritized uses. It directs ADF&G to use the best available information from preseason projections, passage estimates past Pilot Station sonar project, lower river test fisheries, subsistence and commercial fishing reports, and, as the run progresses upriver, information from escapement projects. The plan provides provisions that allow incremental levels of subsistence salmon fishing balanced with requirements to attain escapement objectives during low runs. Commercial fishing is generally allowed only on the surplus above 500,000 fall chum salmon. Adding complexity to the management of the Yukon River fall season is the pulsed entry pattern of fall chum salmon and the run size disparity between fall chum salmon with overlapping coho salmon runs.

Fall season management strategies were formulated in cooperation with the USFWS. Management decisions made early in the fall season are based primarily on the adjusted preseason fall chum salmon outlook. As the fall chum salmon run progressed, management decisions start incorporating relative abundance and run timing information from Pilot Station sonar project and the drift gillnet test fisheries located at Emmonak and Mountain Village. Pilot Station sonar project provides daily passage estimates of fall chum salmon used to derive inseason run size projections. These projections trigger management actions in accordance with the fall chum salmon management plan. Relationships in run timing and run strength from the

drift gillnet test fisheries, as well as subsistence fishing reports, are compared for consistency with the Pilot Station sonar project estimates as a method to check that all projects appear to be operating correctly. Individual pulses are tracked as they move upriver and Pilot Station sonar project is used to estimate the abundance of each pulse.

The preseason projection for 2010 was for a run size of 552,000 to 828,000 fall chum salmon. The projection was refined to 600,000 fish based on the 2010 summer chum salmon return and its relationship to past fall chum salmon run sizes. That level of abundance was anticipated to be adequate to meet escapement goals while supporting normal subsistence fishing activities.

Overall, fall chum salmon passage in the Lower Yukon River was about 3 days late (Appendix B13). Four pulses of fall chum salmon were observed entering the mouth of Yukon River between July 16 and September 7. The first pulse passed the LYTF project on August 6 and was about 2 days in duration (Appendix B14). Based on passage estimates at Pilot Station sonar project, the pulse consisted of approximately 24,000 fish. The second pulse passed the LYTF on August 9, was about 2 days in duration, and consisted of approximately 40,000 fish (Appendix B14). The largest pulse passed the LYTF on August 16, was 4 days in duration, and consisted of just over 100,000 fish (Appendix B14). A final pulse lasting 2 days passed the LYTF on August 31 and consisted of approximately 20,000 fish (Appendix B14). As in 2008 and 2009, Pilot Station sonar project operated an additional week into September while Mountain Village test fishery operated through September 19. No significant pulses of fall chum salmon were detected at either project late in the season.

The preliminary 2010 Yukon River drainagewide total run size estimate of 489,000 fall chum salmon is based on the postseason expanded escapement and estimated harvests. This run size was below both the preseason projection of 552,000 to 828,000 salmon and the projection provided by the summer to fall chum salmon relationship of 600,000 fish (Appendix E9).

Coho Salmon Management Overview 2010

Yukon River coho salmon have a slightly later, but overlapping, run timing with that of fall chum salmon. In managing the coho salmon run, ADF&G follows guidelines adopted by the BOF in the *Yukon River Coho Salmon Management Plan* (5 AAC 05.369.). In most years, fall chum salmon is the primary species of management concern during the fall season. The coho salmon management plan allows a directed coho salmon commercial fishery only under specific conditions.

The coho salmon outlook for 2010 was for an average run based on a slightly below average parent year escapement and the assumption of average survival to spawning. The 2010 coho salmon run was late and had 3 pulses past Pilot Station sonar project, with the largest occurring on August 30. The cumulative passage estimate of 142,000 coho salmon past Pilot Station sonar project was below the historical average of 151,000 fish (Appendix E10).

Fall Season Subsistence Fishery 2010

The fall season began by regulation on July 16 with subsistence fishing on the pre-2001 schedule: Districts 1, 2, 3, and Subdistrict 5-D were open 7 days per week, 24 hours a day, while District 4 and Subdistricts 5-A, 5-B, and 5-C were on a 5 days per week schedule. Subsistence fishing efforts in Districts 4 and 5 were hindered by high water level and debris early in the fall season. To mitigate for poor fishing conditions, ADF&G liberalized the subsistence fishing

schedule in Districts 4 and Subdistricts 5-A, 5-B, and 5-C to 7 days per week, 24 hours per day schedule to provide additional fishing opportunity.

Until approximately mid-August, the historical midpoint of the run past Pilot Station sonar project, fall chum salmon management primarily relied on the preseason outlook. As the run progressed and projections from the inseason assessment projects became more reliable, management decisions were primarily based on information from those projects. At that point, 2 pulses of fall chum salmon had passed Pilot Station sonar project and assessment indicated a weaker than anticipated run, with projections of less than 400,000 fish. At that abundance level, based on the fall chum salmon management plan, commercial fishing was not allowed, and restrictions to subsistence fishing were possible. ADF&G placed the mainstem districts (excluding Subdistrict 5-D) on the regulatory windowed schedule of two 36-hour periods per week in Districts 1, 2, and 3 and two 48-hour periods per week in District 4 and Subdistricts 5-A, 5-B, and 5-C. The third and largest of 4 pulses of fall chum salmon passed Pilot Station sonar project on August 16. Inseason projections continued to show fall chum salmon abundance to be less than 400,000 fish. In addition, ADF&G began to have concerns about fall chum salmon passage at the Canadian border meeting the goal of 80,000 fall chum salmon (70,000 for escapement plus 10,000 for harvest share). In response, ADF&G implemented subsistence restrictions by cancelling one subsistence fishing period in the mainstem districts (no restrictions were imposed in Subdistricts 5-A and 5-D). It became apparent in early September, based on passage information from the Eagle sonar project that the Canadian border passage goal was going to be met. As a result, no subsistence fishing restrictions were imposed in Subdistrict 5-D and the subsistence fishing schedules in the mainstem districts were liberalized. The last, and smallest of the 4 fall chum salmon pulses, passed Pilot Station sonar project on August 31. The subsistence schedules in Districts 2, 3, and 4 were liberalized to 7 days per week on September 5, on September 6 in District 1, and on September 21 in Subdistricts 5-A, 5-B, and 5-C (Subdistrict 5-D was on a 7 day a week subsistence schedule throughout the fall season).

Subsistence and personal use fishing in District 6 were open for two 42-hour per week fishing periods throughout the season and were open concurrent with the late season commercial fishing periods. By October 1, in accordance with the management plans at the close of the commercial fishing season, personal use periods in Subdistrict 6-C remained on the two 42-hour fishing periods per week while subsistence fishing in Subdistricts 6-A and 6-B was relaxed to 7 days a week.

Fall Season Commercial Fishery 2010

A limited late season coho salmon directed commercial fishery was prosecuted in Districts 1 and 2 under the guidelines of the modified *Yukon River Coho Salmon Management Plan* (5 AAC 05.369.), and a salmon directed commercial fishery was prosecuted in District 6. There were 2 commercial periods in District 1, one period in District 2, and 3 periods in District 6 (Table 11). A total of 2,550 fall chum salmon were harvested commercially in the Alaska portion of the drainage: 815 in the Lower Yukon Area and 1,735 in the Upper Yukon Area (Tables 4 and 11, Appendices A19 and B8). A total of 3,750 coho salmon were harvested in the Alaska portion of the drainage: 2,050 in the Lower Yukon Area and 1,700 in the Upper Yukon Area (Tables 4 and 11, Appendices A20 and B9). Commercial harvests for both species were below their respective most recent 5 and 10 year averages and among the lowest on record (Appendices A19 and A20). All salmon were sold in the round and no salmon roe was sold separately. In District 6, male salmon were selectively purchased.

A total of 94 individual permit holders participated in the 2010 fall chum and coho salmon fishery; 90 for Districts 1 and 2 combined, 4 in District 6 (Appendix A9). Overall, fishing effort in 2010 was below the 2003 to 2009 averages.

The average price per pound for fall chum salmon paid to fishermen in the Lower Yukon Area was \$1.00 which was above the most recent 5 year average of \$0.41/lb (Appendix A11). Fishermen in the Upper Yukon Area were paid \$0.23/lb for fall chum salmon which was above the most recent 5 year average of \$0.19/lb (Appendix A11). The average price for coho salmon in the lower river was \$1.50/lb, while fishermen received \$0.26/lb in the upper river (Appendix A11). The exvessel value for the total harvest was \$29,166: \$8,189 for fall chum salmon and \$20,977 for coho salmon (Appendix A12). All exvessel values were below their respective most recent 5 year averages.

CANADIAN FISHERIES 2010

A total of 2,647 Chinook salmon, 5,787 chum salmon, and 12 coho salmon were harvested in the 2010 Canadian fisheries (Table 4; Appendices A17, A19, and A20), including fish harvested in Canadian commercial, sport, domestic and test fisheries (JTC 2011).

Canadian Commercial Fishery 2010

A total of 2,186 chum salmon were harvested in the Canadian Yukon River commercial fishery in 2010 (Table 4; Appendix A19). The catch was No Chinook or coho salmon were commercially harvested. The chum salmon harvest was 43% of the 10 year (2000–2009) average commercial harvest of approximately 5,047 salmon (Appendix A19). Since 1997, poor catches have resulted from below average run sizes of Canadian-origin Yukon River Chinook and chum salmon.

Chinook Salmon

The commercial fishery was closed throughout the 2010 Chinook salmon season. The inseason Chinook salmon run status indicated that there would not be a sufficient run to support a commercial fishery. The average commercial Chinook salmon catch for 2000–2009 was 1,910 fish (Appendix A17). Since 1997, there has been a marked decrease in commercial catch of Upper Yukon River Chinook salmon, resulting from a limited market as well as reduced fishing opportunities in some years due to below average run sizes.

In 2010, 16 of 21 eligible Canadian Upper Yukon River commercial fishing licenses were issued. Eighteen commercial licenses were issued in 2008 and 2009, 17 in 2007, 20 in 2005 and 2006, and 21 in 2003 and 2004 (JTC 2011).

The total run of Upper Yukon River Chinook salmon in 2010 was expected to be below average to average. The preseason outlook range was 78,000 to 113,000 Chinook salmon, which included an adjustment to reflect a recent trend where actual runs were lower than the preseason outlooks.

Upper Yukon River Chinook salmon are managed under the umbrella of the Yukon River Salmon Agreement (YRSA). The Yukon River Panel adopted the IMEG range of 42,500–55,000 Upper Yukon River Chinook salmon in 2010. This goal was adopted by DFO and included in the 2010 Integrated Fisheries Management Plan (IFMP) for Yukon River Chinook salmon in Canada. This is the first year that this IMEG has been used. In 2010, the success of achieving this goal was to be assessed using the Eagle sonar project estimate minus catches from fisheries

occurring upstream of the sonar project, namely U.S. subsistence catch near the community of Eagle, Alaska and the catch data from Canadian fisheries.

Canadian fishing opportunities in 2010 were dependent upon inseason assessments of run strength. As in previous years, a Chinook salmon decision matrix was developed preseason and was included as part of the IFMP. The decision matrix provided detailed guidance for the management of fisheries linked to specific inseason run abundance levels. The 2010 decision matrix summarized the management reference points, general allocation plans, and anticipated management responses under different run size scenarios (refer to JTC 2011 for inseason fishery management decision matrix for Upper Yukon River Chinook salmon).

It is important to note that the incorporation of an escapement goal range of 42,500–55,000 in 2010 resulted in the following decision thresholds:

- i. The commercial and domestic fisheries would not open unless it was expected that the border escapement would be greater than 51,000 Chinook salmon based on the Eagle sonar project. The recreational fishery default regulation is that it is open until closed, therefore, the recreational fishery would be closed at a run <51,000. A border escapement of this magnitude was sufficient to allow for an unrestricted First Nation fishery (Green Zone);
- ii. Consideration would be given to restricting First Nation fisheries if the run size to the border was in the 30,000 to 51,000 range. All other fisheries would not be permitted to target Chinook salmon (Yellow Zone); and
- iii. Closures in First Nation fisheries would be expected if the run projection was <30,000 (Red Zone).

Management discretion was to be used when the inseason projections were close to the trigger points.

In recent years, the opening of the commercial fishery has frequently been delayed in response to conservation concerns and/or uncertainties concerning the status of the run. Assessment of the 2010 Chinook salmon run was based on information from the Eagle sonar project. The final year the DFO mark–recapture program was implemented was 2008.

Early in the 2010 season, information from the U.S. test fishery at Emmonak and the Pilot Station sonar project on the lower Yukon River suggested that the 2010 Upper Yukon River Chinook salmon run would be lower or at the low end of the adjusted preseason outlook range (78,000 to 113,000 Chinook salmon). Because the run was late entering the river, the early season run size projections, which are very sensitive to the run timing information used, were very uncertain. By the beginning of July, Pilot Station sonar project numbers indicated that the preseason forecast had been optimistic. Further upriver, as the run was migrating into Canada, border escapement run projections were usually produced twice weekly, based on data from the Eagle sonar project estimate, considering timing information from the fish wheel project at Rampart Rapids, and assuming average subsistence Alaska harvest. Border escapement run projections were expanded based on what is considered to be the most likely timing scenario (i.e., early, average, or late timing) given the information at hand. The intent of applying different expansions is to ensure that the projections cover an appropriate range of the potential run timing scenarios.

In 2010, the inseason Chinook salmon run projections remained primarily at the low end of the Yellow Zone and at times dipped into the Red Zone. This prompted regular teleconferences with First Nation managers to update them on run projections. Projections were well below the decision threshold that would have triggered a commercial fishery; consequently, the Chinook salmon commercial fishery was closed throughout the 2010 season.

Fall Chum and Coho Salmon

Late run timing resulted in limited opportunities for commercial fishery openings during the fall chum salmon season. Only 2,186 fall chum salmon were harvested during 4 commercial fishery openings (Appendix A19). Since 1997, there has been a marked decrease in commercial catches of Upper Yukon River fall chum salmon that have resulted from a limited market as well as reduced fishing opportunities in some years due to below average run sizes.

No coho salmon were recorded in the 2010 commercial fishery. The harvest of coho salmon is negligible within the Upper Yukon River commercial, domestic, recreational, and aboriginal fisheries. This is thought to be related to a combination of low abundance and limited availability of this species based on migration timing.

The preseason outlook for the Upper Yukon River fall chum salmon run in 2010 was a run of 137,000 to 207,000 fish. A run near the lower end of this range would constitute a below average run, whereas, a run near the upper end of this range would constitute an above average run.

Similar to Chinook salmon, Upper Yukon River fall chum salmon are also managed according to provisions of the YRSA. The Yukon River Panel meets annually to recommend the Upper Yukon River fall chum salmon escapement goal. Since the brood year escapements achieved the level defined in the YRSA for a rebuilt Upper Yukon River fall chum salmon stock, the Yukon River Panel maintained the longstanding escapement goal of >80,000 fall chum salmon for 2006 to 2009. For 2010, the Yukon River Panel adopted an escapement goal range of 70,000 to 104,000 fall chum salmon. The range was established to offer more flexibility with respect to uncertainties associated with management. Spawning escapement was to be measured using Eagle sonar project estimates minus catch data from U.S. and Canadian fisheries occurring upstream of the sonar project location.

The decision matrix, adopted by DFO for the management of Upper Yukon River chum salmon and included in the 2010 IFMP, provides detailed guidance for specific inseason decisions. The 2010 matrix takes into account the changeover from the mark-recapture program to the use of the Eagle Sonar project and the escapement goal range therefore differs slightly from the matrix used from 2006 to 2009 (refer to JTC 2011 for inseason fishery management decision matrix for Upper Yukon River fall chum salmon). The Red Zone includes run projections of less than 40,000 fall chum salmon when closures in all fisheries could be expected. The Yellow Zone includes run projections within the 40,000 to 73,000 range; within this zone, commercial, domestic and recreational fisheries would be closed and the First Nation fishery would likely be reduced with restrictions increasingly more severe the closer the run projection was to the lower end of the Yellow Zone. The Green Zone includes run size projections greater than 73,000 fall chum salmon and indicated that First Nation fisheries would be unrestricted and harvest opportunities within the commercial, domestic, and recreational fisheries would be considered, depending on run abundance and international harvest sharing provisions. The difference between the lower end of the escapement goal range (70,000) and the trigger point for the Green Zone is 3,000 fall chum salmon, which is the number of chum salmon needed to allow an

unrestricted Canadian aboriginal fishery. Management discretion is used when the inseason projections are close to the trigger points.

Genetic stock identification data were used in conjunction with the Pilot Station sonar project estimates to develop a preliminary index of the Canadian-origin fish run size estimates. These data have been useful in recent years since they provide an early indication of potential Upper Yukon River run strength as the fish move through the lower section of the Yukon River in Alaska. Other data such as the Rampart Rapids Video Test Fish Wheel project results were used to assess run timing for use in projection models. In 2010, projections from the Eagle sonar project were used for the third year for inseason management. Prior to 2008, the Canadian inseason management regime was based primarily on the DFO tagging program.

Inseason decisions on fishery openings/closures for Upper Yukon River fall chum salmon were made in a similar way to those for Chinook salmon. Pilot Station sonar project estimates and historic run timing early in the 2010 fall chum salmon season indicated that the run would be unlikely to perform as well as the preseason forecast. There is much uncertainty associated with the chum salmon early inseason forecasts due to the unpredictable size, timing, and destination of the pulses. Inseason forecasts of the Canadian fall chum salmon run are based on Eagle sonar project estimates and informed by run timing information from downstream indicators (Pilot Station sonar project and Rampart Rapids) as well as genetic estimates of run composition from the Pilot Station test fishery.

As per the decision matrix, a “border escapement” projection of >73,000 was required before fishing opportunities were provided in the commercial fishery. Since it was anticipated, based on harvest in recent years, that the Alaska subsistence fishery upstream of the Eagle sonar project would take about 15,000 chum salmon, a projection of >88,000 at the Eagle sonar project site was required to meet the border escapement objective. The average subsistence catch above the Eagle sonar project from 2006 to 2008 was close to 16,000, with a range from approximately 12,000 to 19,000.

The objective of management actions in 2010 was to ensure that the conservation objective (70,000–104,000 escapement goal range) was achieved. Eagle sonar project guided projections between August 18 and September 19 were in the Yellow Zone, and no commercial fisheries were opened. Projections then entered the Green Zone and continued to improve until the end of the Eagle sonar project on October 6. The commercial and domestic fisheries were opened for 24 hours from September 22–23, which is late in the season for the first opening of these fisheries.

The total 2010 commercial fall chum salmon catch of 2,186 fish was 43% of the 2000 to 2009 average of 5,047 (Table 4; Appendix A19). Within the 2000–2009 period, the commercial fall chum salmon catch ranged from 293 in 2009, when the run was late and the fishery was closed most of season due to conservation concerns, to 11,931 fall chum salmon in 2005 (Appendix A19). The fall chum salmon commercial fishery is somewhat of a misnomer as virtually all of the catch is used for what could be termed personal needs; few fish are sold. This situation could change with the recent development of local value-added products such as smoked fall chum salmon and salmon caviar.

CANADIAN ABORIGINAL, DOMESTIC, AND RECREATIONAL FISHERIES 2010

Aboriginal Fishery

In 2010, as part of the implementation of the Yukon River Final Agreements (comprehensive land claim agreements), the collection of inseason harvest information for the Upper Yukon River was conducted by First Nations within their respective Traditional Territories. Before the start of the fishing season, locally hired surveyors distributed catch calendars to known fishermen and asked them to voluntarily record catch and effort information on a daily basis. Interviews were then conducted inseason to obtain more detailed catch, effort, gear, and location information at fish camps or in the community, 1 to 3 times weekly. In most cases, weekly summaries were completed by the surveyors and e-mailed to the DFO office in Whitehorse. Late or incomplete information was obtained postseason and reviewed by First Nation staff in conjunction with DFO (JTC 2011).

Based on a preseason outlook for a below average to average run of 78,000 to 113,000 Upper Yukon River Chinook salmon in 2010, the Yukon River Panel was advised that it was prudent to consider that conservation measures would likely be required in Canadian fisheries (i.e. commercial, domestic and recreational fisheries). DFO hosted frequent teleconferences with the First Nations throughout the Chinook salmon run to provide updated information on run timing and abundance, as well as to announce potential changes to fishing plans in other fisheries. DFO recommended that Yukon First Nations develop individual community harvest plans to address conservation concerns for Chinook salmon. Approaches to reductions in harvest varied, but generally the First Nations accepted the need for conservation and implemented harvest monitoring measures in order to stay below what would be considered a normal harvest (JTC 2011).

Given the preseason outlook and the inseason information, it was apparent prior to fishing season that the 2010 border escapement was unlikely to be met and that conservation measures would likely be required in the aboriginal fishery. In response to this information, the majority of fishermen decided not to open their fish camps; the needs of Yukon River aboriginal communities were not met in 2010 (JTC 2011).

In 2010, the Upper Yukon River aboriginal Chinook salmon catch was estimated to be 2,455, including 1,591 reported harvest, and an added adjustment of 864 Chinook salmon to account for underreporting; this was based on recent harvest averages during years of conservation. This estimate was 69% below the 8,000 Chinook salmon considered to be the harvest of a full unrestricted fishery. While intensive surveys of First Nation communities regarding salmon harvest carried out between 1996 to 2001, provided accurate harvest data, recent data has been less robust, indicating the need to incorporate the adjusted harvest numbers. The total harvested (2,455) in the First Nation Fishery was 55% below the recent 10 year average (2000–2009) of 5,421 fish and is the lowest on record since the 1970s (JTC 2011).

The 2010 harvest recorded by Tr'ondëk Hwëch'in in the Dawson area was 525 Chinook salmon, approximately 52% of the recent 10 year average. Ross River Dena Council, fishing on the upper Pelly River, reported a harvest of 54, 81% below their 2000–2009 average. The Selkirk First Nation in the Pelly area and Little Salmon Carmacks First Nation (LSCFN) in the Carmacks area, are normally the 2 largest aboriginal fisheries in the mid-area of the upper Yukon River drainage. The harvest reported by Selkirk First Nation was 488, 64% below the 2000–2009 average of 1,374. Little Salmon Carmacks First Nation did not report a harvest for 2010, but 34

Chinook salmon were recorded by the locally hired fish surveyor and a DFO employee during a one day visit of area camps. The 2000–2009 average for LSCFN is 1,365 fish. A harvest of 310 Chinook salmon was reported by the First Nation of Na-Cho Nyäk Dun on the Stewart River; 39% of the 2000–2009 average of 799 fish. The Teslin Tlingit Council (TTC) voluntarily closed fishing completely for the 2010 season. They experienced 98% compliance by community members and reported a total of 41 Chinook salmon harvest, 93% below the 2000–2009 average of 560 fish. The Ta'an Kwach'an Council (TKC), fishing in the vicinity of Lake Laberge near Whitehorse, reported a catch of 139 Chinook salmon, more than three times the recent 10 year average of 38. The increase in harvest from TKC was largely due to the creation of a culture camp (JTC 2011).

For Upper Yukon River fall chum salmon, there was uncertainty concerning the 2010 preseason run projection, but First Nation fishing restrictions were not expected. As inseason information became available it became apparent that the run was late, but would support an unrestricted First Nation fishery. This fishery is managed in a similar fashion to the Chinook salmon fishery using an abundance-based approach (JTC 2011).

The 2010 Upper Yukon River fall chum salmon harvest reported in the aboriginal fishery totaled 1,523 fish. An adjustment of 500 fall chum salmon was added to the reported value of 1,023 to account for underreporting. The chum salmon adjusted value was based on recent average harvests during conservation years (JTC 2011).

The Tr'ondëk Hwëch'in First Nation fishery in the Dawson area reported 1,023 fall chum salmon, 41% lower than the previous 10 year average of 1,738 fall chum salmon. Little Salmon Carmacks First Nation did not report a harvest in 2010, but their 2000–2009 average was 210. The Selkirk First Nation at Pelly Crossing did not report a harvest either; their recent 10 year average was 316. Averages of fall chum salmon derived from a 7 year harvest study conducted by LGL Limited from 1996 to 2002 in the Pelly and Carmacks areas were 433 and 460, respectively. These data from the Yukon River Drainage Basin Harvest Study were used to calculate average catches for Pelly and Carmacks in the absence of complete harvest reports. There is an ongoing effort to finalize the 2010 fall chum salmon catch data (JTC 2011).

Catch estimates of salmon on the Porcupine River near Old Crow are determined from locally conducted interviews using the catch calendar and a voluntary recording system described above. The Vuntut Gwitch'in Government (VGG) also conducted an intensive door to door survey, postseason. There was significant flooding during the 2010 season and many community members were not able to fish, but 191 Chinook salmon were reported harvested. This data was finalized from the results of the survey. The 10 year average is 280 Chinook salmon (JTC 2011).

Preseason run-size forecasts indicated that conservation measures might be required for Porcupine River chum salmon during the 2010 season. There was great uncertainty associated with the preseason forecast and with early inseason forecasts. While early genetics information from the LYTF project indicated that the run might form a larger portion of the run than average, later genetics reports indicated the contrary. High water interfered with some downstream assessment projects (Sheenjek sonar project), and made it difficult to develop better run size estimates until Fishing Branch weir counts and CPUE analysis indicated that the run would be either low in the yellow management zone or in the red zone. High water at this time prevented community members from fishing and therefore, no official restrictions were implemented (JTC 2011).

Preliminary data suggests that VGG citizens were not able to fulfill their needs in 2010. Only 2,078 fall chum salmon were harvested in the Old Crow aboriginal fishery, which is 32% below the 2000–2009 average harvest of 3,065 chum salmon. Data was finalized after the postseason survey results (JTC 2011).

Coho salmon were not recorded in the upper Yukon River fisheries (aboriginal, commercial, domestic and recreational) but 12 coho salmon were reportedly harvested in the Porcupine aboriginal fishery. The harvest of coho salmon is usually negligible within the upper Yukon River fisheries. This is thought to be related to a combination of low abundance and limited availability of this species based on late migration timing. Within the Porcupine River drainage there is often some aboriginal fishing for coho salmon that occurs with nets set under the ice (JTC 2011).

Domestic Fishery

The domestic fishery was closed during the Chinook salmon season and opened concurrently with the commercial fishery for 4 openings during the fall chum salmon season. In recent years domestic fishermen have targeted Chinook salmon, although historically fall chum salmon were targeted in some years. There was no reported domestic fishing for fall chum salmon in 2010. The average domestic fishery catch of Chinook and fall chum salmon for the 1974 to 2009 period is 393 and 529, respectively; domestic fishery catches were not recorded prior to 1974 (JTC 2011).

Recreational Fishery

In 1999, the Yukon Salmon Sub-Committee (SSC) introduced a mandatory Yukon Salmon Conservation Catch Card (YSCCC) in an attempt 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 by mail by late fall. The information requested includes the number, species, sex, size, date, and location of all salmon caught and released (JTC 2011).

In 2010, due to conservation concerns, the daily catch and possession limits of Chinook salmon in the recreational fishery were reduced to zero effective at midnight July 9. Chinook salmon had not yet reached the areas where most recreational fishing normally occurs by this date. However, the 2010 recreational catch is one female Chinook salmon caught and retained, and one male Chinook salmon caught and released; both fish are considered illegal/accidental harvest. The average retained Chinook salmon catch within the 2000–2009 period was 306 fish (JTC 2011).

Most recreational fishing occurs on the mainstem Yukon River in close proximity to the Tatchun Creek confluence. Of the 2 salmon caught; one was caught in the Tatchun area and the other in the Mayo River (JTC 2011).

For the 2010 season, the daily catch and possession limits of fall chum salmon in the recreational fishery remained at 2 and 4, respectively. There are no reports of fall chum salmon caught (JTC 2011).

ESCAPEMENT 2010

Summer Season Escapement 2010

ADF&G undertakes a triennial review of salmon escapement goals in conjunction with the BOF meeting cycle. Chinook, summer chum, and fall chum salmon were reviewed for the 2010 BOF

cycle. This review is governed by the state's *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222) and *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223) adopted in 2001. Under these policies ADF&G determines either a BEG or a SEG (ADF&G 2004; Brannian et al. 2006). A BEG refers to a level of escapement that provides the highest potential to produce maximum sustainable yield. An SEG identifies a level of escapement known to provide for sustainable yield over at least a 5 to 10 year period.

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

Beginning in December of 2002, ADF&G undertook the first full review of its escapement goals following the adoption of 2001 policies. An escapement goal review team, consisting of staff from the Divisions of Sport Fish and Commercial Fisheries, met 5 times over a 14 month period. Federal agency biologists and representatives of Tribal and fishing groups were invited to attend and participate in the meetings. The team's recommendations were presented to the Alaska Board of Fisheries in January 2004 and formally adopted by ADF&G in 2005. During this review, analyses for escapement goals established in 2001 were updated, and most goals were converted from point goals to goal ranges. Given the thoroughness of escapement goal review in 2001 and 2004, no changes were recommended for the February 2007 BOF meeting.

In preparation for the January 2010 BOF meeting, ADF&G completed another review process for escapement goals. Formal meetings, open to agencies and public, were held in October and December of 2008. Draft analyses were distributed to the public for review and comment in March 2009. A final document summarizing the escapement goal review was submitted in December 2009 (Volk et al. 2009). There were 3 escapement goals revised and 2 escapement goals were discontinued in the Yukon Management Area.

Five Chinook salmon aerial survey goals were converted to escapement goal ranges and formally adopted in 2005, using the method devised by Bue and Hasbrouck² (Appendix E1). In the case of Nulato River, the goals for the 2 forks were combined into a single goal. The escapement goal review team later recommended revision of the Chinook salmon SEG for the East Fork Andreafsky River from an aerial survey-based goal to a weir-based goal in 2010 (Volk et al. 2009). The new SEG is 2,100–4,900 Chinook salmon and was derived using the percentile approach (Bue and Hasbrouck²). The 2010 team recommended elimination of the Gisasa River aerial survey goal for Chinook salmon because, based on comparisons with recent weir counts, aerial surveys do not appear to track true abundance (Volk et al. 2009). All other existing goals continued without revision.

² Bue, B. G. and J. J. Hasbrouck. (Unpublished). Escapement goal review of salmon stocks of Upper Cook Inlet, Report to the Alaska Board of Fisheries, 2001. Alaska Department of Fish and Game, Anchorage.

In 2009, the escapement goal review team evaluated the type, quality, and amount of data for each summer chum salmon stock to determine appropriate types of escapement goals as defined by the statewide salmon escapement goal policy (Volk et al. 2009). A lower bound SEG replaced the BEG range for the East Fork Andreafsky River stock, primarily because this would be difficult or undesirable to hold escapements below the upper bound of a range through inseason management actions (Fleischman and Evenson 2010; Appendix E1). Because of Andreafsky River's geographic location, it is unlikely sufficient fishing power could be generated in a timely manner to prevent escapement from exceeding an upper limit, and a lower-bound SEG is most appropriate for this stock. Information garnered from run reconstruction and spawner-recruit analyses suggested that the escapement goal could safely be changed to a lower bound SEG of 40,000. This goal, first implemented in 2010, will improve yield potential and reduce disruptions to the lower Yukon River summer chum salmon fishery.

A number of projects were established between 1993 and 1995 to monitor the escapement of fish into select rivers and tributaries. Escapement monitoring projects were operational on the Yukon River from approximately June to September (Appendix A24). These include: the East Fork and West Fork Andreafsky, Anvik, and Gisasa rivers (Appendices E4 and E5). Ground based escapement projects include: the East Fork Andreafsky and Gisasa River weirs operated by USFWS and Henshaw Creek weir operated by TCC and USFWS-OSM; the Anvik River sonar project operated by ADF&G; the Chena River tower operated by ADF&G; and the Salcha River and Goodpaster River towers operated by BSFA. Maps of these areas are shown in Appendices E11 to E15.

Chinook Salmon Escapement

The actual 2010 Chinook salmon run was much weaker than the preseason projection and early inseason assessment projects indicated. Consequently, most escapement results were disappointing. Chinook salmon escapement goals for the East Fork Andreafsky, West Fork Andreafsky, and Salcha rivers were achieved. The Anvik and Chena river escapement goals were not achieved. Escapement objectives into Canada, as dictated by the Yukon River treaty, were also not achieved.

Aerial surveys in the lower Yukon River drainage were conducted under fair or good conditions. Water conditions were generally turbid with high water levels. Five surveys were rated good, 7 surveys were rated fair, and 2 were rated poor. Salmon entering the Yukon River seemed to have a later than average run timing and surveys were adjusted accordingly. Peak spawning was likely missed on some of the systems, particularly those on the lower Koyukuk River. Surveys of the tributaries in the lower and middle Yukon River were conducted during a brief window of fair weather in a relatively rainy season.

A large number of pink salmon were encountered during the Andreafsky surveys, which inhibited accurate counting of Chinook and chum salmon. Surveys of the upper Kantishna including the Bearpaw River were hampered due to poor weather conditions and smoke from wild fires. Escapement on the Chena, Salcha, and Goodpaster rivers was monitored using tower counts. The Salcha River missed 3 full days early in the season and had 3 days of partial counts during peak passage dates. The Goodpaster River experienced a single day of partial counts due to water clarity issues, and the Chena River counting tower was able to count throughout the season.

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

A weir was operated on the East Fork Andreafsky River by USFWS, and the estimated passage of 2,413 Chinook salmon, which was the third lowest escapement for this system since 2000 (Appendix E4). Age, sex, and length data was collected from Chinook salmon caught in the weir trap. The estimated age composition was 0.3% age-3, 41.4% age-4, 46.8% age-5, 10.5% age-6, and 1.0% age-7 fish. The sex composition of fish sampled ($n=624$) was 48.6% female and 51.4% male (Schumann and Dubois 2011).

Age, sex, and length data was collected from the Anvik River using a ground-based carcass survey conducted by ADF&G. The estimated age composition was 33.0% age-4, 54.3% age-5, and 12.7% age-6 fish. The sex composition of fish sampled ($n=94$) was 19.1% female and 80.9% male (Schumann and Dubois 2011).

The Gisasa River weir was operated by USFWS, and the passage estimate was 1,516 Chinook salmon. Age, sex, and length data was collected from fish caught in the weir trap. The estimated age composition from scale samples was 0.3% age-3, 43.7% age-4, 46.8% age-5, 8.7% age-6, and 0.5% age-7 fish. The sex composition of fish sampled ($n=492$) was 29.0% female and 71.0% male (Schumann and Dubois 2011).

Escapement through the weir operated at Henshaw Creek by TCC and USFWS-OSM was estimated at 793 Chinook salmon. Age, sex, and length data was collected from fish caught in the weir trap. The estimated age composition from scale samples was 0.4% age-3, 21.0% age-4, 57.6% age-5, 19.3% age-6, and 0.5% age-7 fish. The sex composition of fish sampled ($n=208$) was 49.6% female and 50.4% male (Schumann and Dubois 2011).

BEGs have been established for the Chena and Salcha rivers located on the Tanana River, which are the 2 largest spawning tributaries for Chinook salmon in the Yukon River drainage. The escapement goal was met only for the Salcha River (Appendix E5). Without interpolation for missed counting periods, results from river tower counts indicate the Chinook salmon escapement into the Chena River was approximately 2,301 fish and 5,907 Chinook salmon into Salcha River (Appendix E5). This was the lowest escapement recorded on the Chena River, and third lowest escapement since 2000 on the Salcha River.

Age, sex, and length information was collected from the Chena and Salcha rivers using ground-based carcass surveys conducted by ADF&G. The estimated age composition of Chinook salmon in the Chena River was 22.3% age-4, 51.1% age-5, 24.4% age-6, and 2.2% age-7 fish. The sex composition of fish sampled ($n=90$) was 33.3% female and 66.7% male. The estimated age composition of the Chinook salmon in the Salcha River was 0.5% age-3, 31.7% age-4, 53.3% age-5, 13.4% age-6, and 1.2% age-7 fish. The sex composition of fish sampled ($n=419$) was 29.8% female and 70.2% male (Schumann and Dubois 2011).

The Eagle sonar project was used to determine the Canadian Upper Yukon River border passage estimate in 2010. The preliminary border passage estimate for 2010 is 34,465 Chinook salmon based on the Eagle sonar project estimate of 35,074 minus an estimated Alaska subsistence harvest upstream of the sonar project site of 609 fish (Appendix E6). After subtracting the Canadian Upper Yukon River Chinook salmon harvest of 2,455 aboriginal and 0 commercial, domestic, and recreational, a total of 32,010 Chinook salmon is estimated to have reached Canadian spawning areas (Appendix E6). The spawning escapement is approximately 25%

below the low end of the IMEG range of 42,500 to 55,000 adopted by the Yukon River Panel in 2010 (Appendix E6).

In addition to operating the sonar project, a drift gillnet project was conducted near Six-Mile Bend to monitor species composition and to collect biological information, including ASL and genetic samples from fish passing the sonar project site. The estimated age composition of Chinook salmon caught in the border fish wheels was 7.4% age-4, 46.2% age-5, 41.7% age-6, and 3.0% age-7 fish. The sex composition of fish sampled ($n=338$) from the border fish wheels was 40.5% female and 59.5% males (Schumann and Dubois 2011).

Aerial surveys of the Little Salmon, Big Salmon, Wolf, and Nisutlin rivers index areas were conducted by DFO in 2010 (Appendix E2). A single survey was flown for each river system. Peak annual historical counts are documented in Appendix E6.

The Little Salmon aerial survey was flown on August 17. Survey conditions were rated as being poor, due to high winds and some turbidity; surveyors counted 63 Chinook salmon, which was the second lowest count since 2000. This survey count was 7% of the 2000–2009 (10 year) average count of 867 fish (Appendix E2).

The Big Salmon, Nisutlin, and Wolf river index areas were surveyed on August 19 under good to excellent survey conditions. The Big Salmon count of 656 was 60% of the 10 year average 1,094 fish. The Nisutlin River count of 288 was 68% of the 10 year (excluding 2008 when survey was not completed) average count of 427 Chinook salmon. The Wolf River count of 94 was 69% of the 10 year average count of 137 fish (Appendix E2).

Single (or multiple) aerial surveys do not count the entire escapement within an aerial index area as runs are usually protracted with the early spawning fish disappearing before the late ones arrive. Weather and water conditions, the density of spawning fish, as well as observer experience and bias also affect survey accuracy. Index surveys are rated according to survey conditions. Potential ratings include excellent, good, fair, and poor. Survey ratings that rank higher than poor are considered useful for inter-annual comparisons.

J. Wilson and Associates conducted the Blind Creek weir project in 2010, and a total of 270 Chinook salmon were counted between July 19 and August 19 (Appendix E6). This is approximately 42% of the average total count of 646 and is the lowest count recorded in 10 years of operation. Age-sex-length samples were randomly collected from migrating Chinook salmon throughout the period of weir operation. A total of 185 Chinook salmon (68.5% of the run) was sampled, of which 77 (42%) were female and 108 (58%) were male. Jacks (males with a snout to fork length ≤ 630 mm) comprised 10% of the males sampled. The mean fork length of females and males sampled was 855 mm and 765 mm respectively. The DFO scale lab determined ages of 126 of the Chinook salmon sampled. Of these, age-5 and age-6 fish were the predominant age classes, comprising 54% and 32.5% of the sample, respectively. Age-3, age-4, and age-7 represented 0%, 8.7%, and 4.8 %, respectively (JTC 2011).

A total of 672 Chinook salmon ascended the Whitehorse Rapids Fishway between August 3 and September 6, 2010 (Appendix E6). This total was 57% of the 2000–2009 average count of 1,171 fish. The overall sex ratio was 21% female ($n=143$ fish). Hatchery-produced fish accounted for about 49% of the return (Appendix E6) and consisted of 269 males and 58 females. The non-hatchery count consisted of 345 fish, 260 wild males and 85 wild females. The run midpoint occurred on August 20 and the peak daily count occurred on August 18 when 139 fish were

counted. The midpoint of the 2010 run occurred 4 days later than the recent 10 year average (2000–2009) (JTC 2011).

In 2010, fish were not specifically removed from the fishway for coded wire tag sampling; however, several samples were obtained from the brood stock collected. No weirs, i.e. the Wolf or Michie creek weirs, were operated in the drainage upstream of the Whitehorse Rapids Fishway in 2010.

Summer Chum Salmon Escapement

Summer chum salmon escapements were variable, but most tributaries experienced good escapements. Summer chum salmon escapements in Gisasa and Henshaw rivers were above expected levels. Anvik and East Fork Andreafsky river escapements successfully met their respective BEGs. On Tanana River, summer chum salmon escapements were near expected counts for Chena River and below expected for Salcha River.

The Pilot Station passage estimate was 1,327,581 summer chum salmon (Appendix E3). Water levels observed near Pilot Station during 2010 exhibited unseasonable fluctuations, with record low water levels recorded during the summer. Therefore, both summer chum and Chinook salmon passage estimates are considered conservative.

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

The Anvik River sonar project based escapement count of 396,173 summer chum salmon was just below the low end of the BEG range of 400,000 to 800,000 fish (Appendix E7). Age, sex, and length samples were collected in 2010 by beach seine. The estimated age composition was 7.3% age-3, 84.5% age-4, and 8.2% age-5 fish. The sex composition of the fish sampled ($n=572$) was 52.98% female and 47.3% male (Schumann and Dubois 2011).

The East Fork Andreafsky River weir escapement estimate for chum salmon was 72,839 (Appendix E7). Age, sex, and length data was collected from fish caught in the weir trap. The estimated age composition was 6.2% age-3, 89.3% age-4, 4.2% age-5, and 0.3% age-6 fish. The sex composition of the fish sampled ($n=836$) was 51.9% female and 48.2% male (Schumann and Dubois 2011).

The escapement estimate of summer chum salmon through the Gisasa River weir was 47,669 fish (Appendix E7). Age, sex, and length data was collected from fish caught in the weir trap. The age composition of samples was 19.2% age-3, 64.7% age-4, 14.7% age-5, and 1.3% age-6 fish. The sex composition of the fish sampled ($n=952$) was 53.0% female and 47.0% male (Schumann and Dubois 2011).

The escapement estimate of summer chum salmon through the Henshaw Creek weir was 100,670 fish (Appendix E7). Age, sex, and length data was collected from the weir trap. The estimated age composition from scale samples was 8.5% age-3, 64.5% age-4, 27.0% age-5, and 0.1% age-6 fish. The sex composition of fish sampled ($n=562$) was 52.7% females and 47.3% males (Schumann and Dubois 2011).

The Kaltag Creek, Nulato River, and Tozitna River escapement projects did not operated in 2010.

Age, sex, and length information was collected from the Salcha River using ground-based carcass surveys conducted by ADF&G. The estimated age composition of the Chinook salmon in

the Salcha River was 5.0% age-3, 46.9% age-4, 39.4% age-5, 8.1% age-6, and 0.6% age-7 fish. The sex composition of fish sampled ($n=160$) was 61.3% female and 38.8% male (Schumann and Dubois 2011).

Fall Season Escapement 2010

Fall Chum Salmon Escapement

Historic fall chum salmon escapement information along with the most current 2010 escapement results are presented in Appendix E8 and E9. Major fall chum salmon spawning areas are located in the Tanana, Chandalar, and Porcupine river drainages and within the Canadian portion of the mainstem Yukon River drainage (Figure 12). Historic coho salmon escapement information along with the most current 2010 escapement results are presented in Appendix E11.

The 2010 preseason run projection for Yukon River fall chum salmon ranged from 552,000 to 828,000 fish (Hayes and Estensen 2011). The point projection was 690,000 and the forecast range was based on the upper and lower values of the 80% confidence bounds for the point projection. Confidence bounds were calculated using deviation of point estimates and observed returns from 1987 through 2009. Excessively large escapements typically do not produce well and the primary brood years for the 2010 return both exceeded 870,000 fall chum salmon therefore the run is expected to be closer to the low end of the range.

Initial inseason assessments of fall chum salmon for 2010 were influenced by the performance of summer chum salmon abundance. Determination of summer chum salmon abundance is based on the main river sonar project abundance estimate, Andreafsky River weir counts and estimates of harvest downstream and appeared to be average. The fall chum salmon projection was refined to 600,000 fish based on the 2010 summer chum salmon return and the historical relationship. Management of the fisheries continued with use of inseason monitoring projects located throughout the drainage. Assessment of the run occurred at each project location, and managers looked for alignment from various indicators.

Fall chum salmon pulses take approximately 20 days to reach the confluence of the Tanana River and another 10 days to reach the Canadian Border. In 2010, small pulses arrived at the LYTF project on August 6 and August 10 which indicated late run timing since the mid-point of migration at that location is August 8 (Appendix B13). The third and largest pulse arrived on August 16 but was not sufficient in abundance to improve projections enough to justify commercial fishing. The fourth and final pulse occurred on August 31. In concert, the lower river projects corresponded well for timing information but not as well for relative abundance; however, Lower Yukon River projects provided mixed fall chum salmon assessments of abundance. The LYTF project (based on 9 years of data), Mountain Village (15 years of data), and Pilot Station apportionment test fishery (14 years of data) indicated near average passage. The mainstem sonar project operated at Pilot Station is the main project that provides abundance estimates (14 years of data) and, initially, a considerable amount of weight is placed on this project until upriver monitoring projects can provide data. The assessment of total run reconstruction based on the Pilot Station sonar project and harvests downstream indicated that the run was below average and weaker than anticipated, with projections less than 400,000 fall chum salmon.

As the season progressed, upriver assessment projects provided the distribution of major contributing stocks, and fisheries management actions were adjusted accordingly. The upriver

assessment projects typically show a slightly different relationship because the sharp pulses observed down river spread out as the travel speed of the fish begins to dictate passage. Additionally in 2010, the fish traveled through some sustained high water on the mainstem Yukon River further delaying arrival for the bulk of the fish into escapement projects.

Information from Rapids test fish project (14 years of data) indicated the run in 2010 was half of average and up to 7 days later than normal. Escapement information from tributaries came in late because of run timing but it was determined inseason that most of the goals would be achieved with concerns primarily for the weak Porcupine River components (Sheenjek and Fishing Branch rivers).

The Chandalar River sonar project operated from August 8 through September 26, 2010. Flooding occurred during the first week of operations on this system however, they were able to keep at least one sonar operational throughout its detection range. The preliminary escapement estimate was 157,998 upstream fall chum salmon, 17.0% below the 1995-2009 average of 185,000 fish (Appendix E8). Chandalar River sonar project estimates of fall chum salmon range from a low of 65,894 fish in 2000 to 496,484 fish in 2005 (Appendix E8). The 2010 estimate was slightly above the upper end of the biological escapement goal range of 74,000 to 152,000 fall chum salmon.

The Sheenjek River sonar project operated from August 18 through September 24, 2010. The Sheenjek River escapement was monitored by a Dual-Frequency Identification Sonar (DIDSON); however, installation was delayed by high water and the left bank sonar was not deployed because of changes to the cut bank caused by flooding. Both bank operations had occurred from 2005 to 2009. Most of the historical Sheenjek River escapement estimates were only derived from right bank operations with old technology, with counts ranging from 14,000 in 1999 to 247,000 fall chum salmon in 1996, and a high of 562,000 fish observed on both banks combined in 2005. The right bank estimated escapement of approximately 22,000 fish in 2010 was 56% below the lower end of the BEG range of 50,000 to 104,000 fall chum salmon, based on the historical right bank data (Appendix E8).

An IMEG of 22,000 to 49,000 fish was established for the Fishing Branch River weir for the years 2008 through 2010 (JTC 2011). This goal uses percentiles based on weir data only, excluding all years with extrapolations based on other methods of measurement. The average escapement from 1985 to 2009 is 36,000 fall chum salmon ranging from 5,053 in 2000 to 121,413 in 2005. In 2010 the operations of the Fishing Branch River weir began later than normal but the run was late, thus not affecting the count appreciably. The project operated from September 5 to October 12 (typical operations last week of August to as late as October 25), however expansions were added to both ends of the operational periods to approximate the typical run. The 2010 estimated weir passage of approximately 15,773 fish is below the low end of the IMEG (Appendix E9).

The Yukon River mainstem sonar project at Eagle operated into the fall season from August 20 through October 6, and the daily passage of fish was extrapolated through October 18, 2010. The resulting estimate of passage was 132,930 fall chum salmon (JTC 2011). Adjusting for an estimated subsistence harvest of 11,350 between the sonar project site and the U.S./Canada border, the border passage was estimated to be 121,580 fall chum salmon (Appendix E9). Conservative harvests in Canada resulted in an escapement estimate of approximately 117,871 fall chum salmon (Appendix E9). In 2010, a one year IMEG of 70,000 to 104,000 fall chum

salmon was established (JTC 2011) and the upper end of the IMEG was exceeded. This level of escapement represents approximately 27% of the return based on escapements to the major spawning grounds.

Inseason monitoring of the Tanana River drainage consisted of monitoring fall chum salmon run timing at the various test fish wheel locations near the villages of Tanana and Nenana, as well as monitoring subsistence and commercial harvest in the fisheries. Based on the historical mark-recapture estimates of fall chum salmon (1995–2007) within the Tanana River, the drainage contributes approximately 30% to the overall run. Genetic mixed stock analysis is used in part to estimate overall abundance of the late running Tanana River stock and resulted in 121,000 chum salmon after July 19 without an adjustment for harvest. An estimated harvest of the Tanana River component of 21,000 fall chum salmon would be expected to result in an escapement of 100,000 fish. The estimated escapement was within the Tanana River BEG range of 61,000 to 136,000 fall chum salmon (Appendix E8).

The Delta River, a tributary and index area in the upper Tanana River drainage, has a BEG range of 6,000 to 13,000 fall chum salmon. Evaluation of the run to the Delta River in 2010 was based on 8 replicate foot surveys conducted between October 5 and December 3. The Delta River escapement was estimated to be 18,000 fall chum salmon based on the area under the curve method (Appendix E8). This level of escapement was 38% above the upper end of the BEG range.

Postseason run size is calculated using the individually monitored spawning escapements including terminal areas such as Chandalar, Sheenjek, and Fishing Branch rivers and passage estimates adjusted for harvest in the mainstem Yukon River at the U.S./Canada border and in the Tanana River.

In 2010, the estimate of 489,000 based on collective projects is approximately 20% higher than the estimate using Pilot Station sonar project. Both methods resulted in estimations below the lower end of the preseason projection based on normal production rates. The 2010 fall chum salmon run could be characterized overall as having a below average even-numbered year run size which started out weak through the first week of August, and the first substantial pulse provided nearly half of the entire run resulting in a below average passage (based on 14 years of data).

Coho Salmon Escapement

Assessment of coho salmon spawning escapement is limited in the Yukon River drainage because of funding limitations and marginal survey conditions during periods of peak spawning. The coho salmon passage estimate at Pilot Station sonar project does not represent the total return because the project terminates on September 7, before the end of the run. The preliminary passage estimate of 142,129 coho salmon (SE 7,600) at Pilot Station sonar project was slightly below the average passage of 146,617 fish (Appendix E11). Tributary escapement estimate information was limited to portions of the Tanana River drainage.

Presently, only one escapement goal has been established (in 2004) for coho salmon in the Yukon River drainage. The Delta Clearwater River, in the Tanana River drainage, has an SEG range of 5,200 to 17,000 fish. The Delta Clearwater River spawning count was 5,867 coho salmon and was conducted by boat survey on October 26, 2010. This escapement level is only slightly above the lower end of the escapement goal range and most likely does not represent peak spawning due to the late timing of freeze up and weather precluded conducting additional

surveys. Spawning ground surveys were conducted in other areas within the Tanana River drainage, primarily the Nenana (BSFA) and upper Tanana (ADF&G). Coho salmon escapements in the Nenana River were below average overall in 2010. Upper Tanana River aerial surveys were conducted November 10, 2010 and the Richardson Clearwater River had an above average escapement of coho salmon (Appendix E11).

ENFORCEMENT 2010

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

During 2010, 4 FWP officers conducted patrols in the Lower Yukon River, Upper Yukon River, and Kuskokwim River. A total of 339 contacts were made and 37 citations were issued, including violations for improper vessel identification, not possessing a crewmember license, unmarked gear, and fishing during a closed period.

OUTLOOK FOR 2011

Chinook Salmon

The total Yukon River Chinook salmon run can be estimated by applying historical average proportions of Canadian-origin fish in the total run to the outlook estimated for the Canadian component of the run. The average proportion of Canadian origin fish in the total run is approximately 50%. Using this method, the expected total Yukon River run size is 216,200³, using the unadjusted model estimate. However, there is a lot of uncertainty associated with this methodology and, due to reductions in productivity in recent years, environmental factors and other phenomena not incorporated into the models, this estimate is unlikely. The drainage-wide run outlook based on the adjusted Canadian-origin model estimate, which attempts to account for low productivity since 2007, is 130,000–178,000 Chinook salmon. Thus, the 2011 Yukon River Chinook salmon run will likely be poor to below average.

Summer Chum Salmon

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

Yukon River summer chum salmon generally exhibit strong run size correlations among adjacent years, and it is expected that the total run in the Yukon River will be similar to the 2010 run of approximately 1.6 million fish. In 2010 there was a good showing of age-3 fish from the 2007 brood year which may indicate an upward trend in run size if the age-4 fish returning in 2011 is above average. The high seas BASIS study indicated a decline in chum salmon in 2004 and 2005, but 2006 and 2007 results showed an increase. No BASIS survey was conducted in 2008. Chum salmon collected in the BASIS study in 2007 would correspond to the age-5 returns in

³ Based on the averaged value for both sibling and Ricker models. Values for each model separately are 205,500 and 224,000 for Ricker and sibling models respectively.

2011. A collaborative effort between ADF&G and NOAA is in progress to test the applicability of BASIS juvenile salmon indices for run size forecasting.

The 2011 summer chum salmon run will likely be average and is anticipated to provide for escapements, a normal subsistence harvest, and a surplus for commercial harvest. Summer chum salmon runs have provided for a harvestable surplus in each of the last 8 years (2003–2010). The commercially harvestable surplus could range from 300,000 to 600,000 summer chum salmon. The actual commercial harvest of summer chum salmon in 2011 will likely be affected by a potentially poor Chinook salmon run, as Chinook salmon are incidentally harvested in chum salmon directed fisheries.

Fall Chum Salmon

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

Yukon River fall chum salmon return primarily as age-4 and age-5 fish, although age-3 and age-6 fish also contribute to the run. The 2011 run will be comprised of parent years 2005 to 2008. Estimates of return per spawner (R/S) based on brood year return were used to estimate production for 2005 and 2006. An auto-regressive Ricker spawner-recruit model was used to predict returns from 2007 and 2008. The 2011 forecast uses the 1984 to the current complete brood year returns applied to the odd/even maturity schedule, because current production is reduced from the pre-1984 level. Contributing parent year escapements from 2005 through 2007 all exceeded the upper end of the drainagewide escapement goal range while 2008 was within the drainagewide escapement goal range of 300,000 to 600,000 fall chum salmon. The 2005 through 2007 parent year's all contributed less than one return per spawner. The estimated return per spawner of 0.23 for the 2005 brood year was the lowest on record. The 2006 return per spawner was nearly three times that of 2005 but still considered poor. Also, the major contributor to the 2011 fall chum salmon run is anticipated to be age-4 fish returning from 2007 parent year. In 2010 there was a good showing of age-3 fish from the 2007 brood year which may indicate an improved return per spawner and an upward trend in run sizes if the age-4 fish returning in 2011 are also above average.

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

Another approach to estimate the 2011 fall chum salmon run size examined a time lagged correlation from observed runs (2000–2010, excluding 2005), which resulted in a projection of only 536,000 fall chum salmon with a 95% confidence interval of 300,000 to 700,000 fish. This

method effectively reduces the projections by 30%, as the last 3 year's forecasts have overestimated the run size by approximately that amount. However, a concern with this approach is that it assumes that fall chum stocks are still in decline. With the amount of age-3 fish observed in 2010, the age-4 component would be expected to increase in 2011, and the run size would then be closer to the forecast of 700,000 fall chum salmon. Based on the preseason forecast, it is anticipated that the 2011 fall chum salmon run size will be sufficient for escapement and subsistence uses, and may support a commercial harvest ranging from 50,000 to 300,000 fish.

Coho Salmon

Although there is little comprehensive escapement information for Yukon River drainage coho salmon, it is known that coho salmon primarily return as age-4 fish. The major contributor to the 2011 coho salmon run will be the age-4 fish returning from the 2007 parent year. Based on run reconstruction using Pilot Station sonar estimates, the 2007 passage estimate of 173,000 coho salmon was above the historical average of 148,000 fish.

Escapements are mostly monitored in the Tanana River drainage. The Delta Clearwater River is a major producer of coho salmon in the upper Tanana River drainage. The parent year escapement of 15,000 fish in 2007 was near the upper end of the SEG range of 5,200 to 17,000 coho salmon, and coho salmon escapements in the Nenana River complex were nearly average. Assuming average survival, the 2011 coho salmon run is anticipated to be average based on escapements observed in 2007. Depending on whether coho salmon are harvested incidental to fall chum salmon or harvested as a directed fishery late in the season the commercial harvest is anticipated to be 10,000 to 70,000 fish.

CAPE ROMANZOF DISTRICT HERRING FISHERY 2010

INTRODUCTION

The Cape Romanzof Herring District consists of all state waters from Dall Point to 62 degrees north latitude (Appendix F1). Pacific herring *Clupea harengus pallasii* are present in coastal waters of the Yukon Area during May and June. Spawning populations occur primarily in the Cape Romanzof area in Kokechik Bay and Scammon Bay where spawning habitat consists of rocky beaches and rockweed *Fucus* sp. The arrival of herring on the spawning grounds is influenced by ocean water temperature and ice conditions. Typically, herring appear immediately after ice breakup. Spawning usually occurs between mid-May and mid-June.

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

A commercial herring sac-roë fishery has occurred in the Cape Romanzof District since 1980. Commercial harvests increased steadily after inception of the fishery, reaching a peak harvest of 1,865 tons in 1986 (Appendix F2). Harvests have greatly decreased since then because of declining markets resulting in lower prices paid and lower fishing effort. There has not been a commercial opening since 2006 because of the lack of market interest.

In 1982, the BOF reduced the area open to commercial fishing by closing the waters outside of Kokechik Bay. In 2004, the BOF opened the Cape Romanzof District for commercial herring fishing to the pre-1982 boundaries. Gillnets are the only legal commercial gear type. The use of mechanical shakers has been prohibited since 1988. Limited entry to the fishery began with a moratorium on new entrants in 1988. The fishery is now limited to 101 permits.

COMMERCIAL FISHERY

Since the fishery was initiated in 1980, commercial harvests have ranged from 25 st in 2005 to 1,865 st in 1986 (Appendix F2). The exvessel value of the fishery has ranged from \$1,000 in 2001–2004 to \$1.1 million in 1986. The number of permit holders participating has ranged from 8 in 2006 to 157 in 1987. The commercial fishery saw an increasing trend in effort, harvests, and value from the inception of the fishery in 1980 until its peak in 1986. Declining market value after 1986 through 1990s kept effort, harvest, and exvessel values below early 1980s numbers, eventually leading to record low harvests and effort in the 2000s. There have not been any commercial openings in the district since 2006. In recent years, fishermen in the district have been using larger mesh gillnets to selectively harvest larger (older) herring and a higher percentage of females. This change in the mesh size has increased the harvest quality, but also resulted in lower harvest rates. Harvest of a high percentage of males and partially spawned out herring have historically contributed to low roe recovery rates in the Cape Romanzof fishery.

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

SUBSISTENCE FISHERY

The subsistence harvest and effort figures represent only the harvest which was reported. Therefore, the reported harvest is a minimum estimate since not all fishing families were contacted and not all households who received questionnaires returned them.

Subsistence Fishery 2010

A total of 196 mail-out questionnaires were sent to households in the communities of Hooper Bay, Chevak, and Scammon Bay. A total of 32 (16%) households responded. The subsistence harvest and effort figures represent only the harvest which was reported. The reported harvest is a minimum estimate since not all fishing families were contacted and not all households who received questionnaires returned them. During 2010, an estimated subsistence harvest of 2.1 st of herring was taken by 14 fishing families from Hooper Bay, Chevak, and Scammon Bay.

(Appendix F3). In addition, 6 households harvested 91 pounds of herring spawn-on-kelp for subsistence purposes (Appendix F4).

STOCK STATUS

Because of turbid water in the Cape Romanzof area, it is typically not possible to estimate herring biomass using aerial survey techniques. Herring biomass has been estimated using a combination of information from aerial surveys, test and commercial catches, spawn deposition, and age composition. However, aerial surveys were not flown in 2010. 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 has continued to make periodic observations of spawn deposition near the field camp.

VARIABLE MESH GILLNET TEST FISHERY

Test fishing with variable mesh gillnets has been conducted since 1978 to determine distribution, timing and relative abundance of spawning herring, and to collect samples for age, sex, size, and relative maturity information. No test fishery has occurred at Cape Romanzof since 2006.

HERRING OUTLOOK FOR 2011

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

The 2011 projected biomass for the Cape Romanzof District is expected to be 5,538 tons and the minimum biomass threshold is 1,500 tons. Based on the *Bering Sea Herring Fishery Management Plan* (5 AAC 27.060), the exploitation rate shall not exceed 20% of the estimated biomass. Therefore, the allowable harvest is 1,108 tons.

Since water turbidity in the Cape Romanzof area generally prevents aerial observations of herring, spawn deposition and test and commercial catch rates will be used to determine the timing and duration of commercial fishing periods. Herring ages 6 to 9 are expected to comprise 83% of the returning biomass, 16%, 26%, 23%, and 18%, respectively. Herring age 10 and older, 13%, and ages 4-5 (4%) are expected to comprise the remaining biomass.

Normally it is not possible to determine herring abundance using aerial survey methods in the Cape Romanzof District due to turbid water conditions. Therefore, inseason assessment of stock abundance will be made using information collected from test fishing, commercial harvest rates if available, herring distribution, age composition, and if possible, aerial surveys.

Commercial fishing periods will be determined by the amount of fishing effort present and roe quality. However, no commercial buyers are anticipated to be available in 2011. If a commercial market develops, ADF&G will likely open the fishery on a continuous basis until the quota is landed or there is no longer market interest. Commercial fishing will be opened when it is determined that marketable percentage of sac roe herring and a commercial buyer is present.

Fishermen are encouraged to bring more than one mesh size of gillnet if they are available. The quality of roe is dependent on size and maturity of the herring, thus it would benefit fishermen to have some flexibility. It is important that fishermen, buyers, and ADF&G obtain the highest roe recovery possible.

It is likely that gear will initially be restricted to no more than 50 fathoms and one gillnet (one shackle of gear) per vessel. However, because of the lower fishing effort in recent years it is likely that 100 fathoms (2 shackles of gear) per vessel may be permitted in 2011, as was allowed in 2006. Two shackles of gear were allowed for several openings in 2003, 2004, and 2006, but few fishermen took advantage of the opportunity. Fishermen should be prepared and bring 2 nets to the fishing grounds if a market develops.

OTHER MARINE AND FRESHWATER FINFISH FISHERIES 2010

SUBSISTENCE FISHERY

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

During the annual ADF&G postseason subsistence salmon harvest surveys, non-salmon harvest information is documented; however, this information is gathered ancillary to salmon specific surveys and usually without species distinctions. Recent surveys have only just 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). Estimates of non-salmon harvest is poorly understood at a species level throughout the Yukon River drainage, thus a comprehensive assessment of non-salmon harvest and use by species has been identified as a research priority for the Yukon Area (Brown et al. 2011).

Historical estimated and reported subsistence catches of freshwater finfish from subsistence surveys throughout the drainage are presented in Appendix G1. Since 1988, subsistence salmon surveys have included the collection of freshwater finfish harvest data. Prior to 1988, non-salmon subsistence harvest was collected with less consistency during the postseason subsistence salmon surveys. Subsistence catches of freshwater finfish taken under authority of a permit in the Upper Yukon Area are presented in Appendix G2.

A variety of fishing methods are used in the main rivers and coastal marine waters to harvest non-salmon finfish. Beach seines are occasionally used near spawning grounds to capture salmon and other species of schooling fish. In the fall and winter months, various designs of traps and fish weirs are used to capture whitefish, blackfish, and burbot. In the winter and spring months,

hand lines are used through the ice to take sheefish, northern pike, char, and "tomcod" (saffron cod). A limited number of sheefish are also harvested during the upriver migration of Chinook salmon. In the spring and early summer, smelt are harvested in the Yukon River Delta area using dip nets. During the fall months, dip nets and "eel sticks" are used to harvest Arctic lamprey in the mainstem Yukon River downstream of Grayling. During the fall months, whitefish and sheefish are also harvested incidentally in fish wheels located in the Upper Yukon and Tanana rivers.

COMMERCIAL FISHERY

Regulations adopted by the BOF allow ADF&G to issue permits for the commercial harvest of non-salmon freshwater fish, including whitefish, sheefish, burbot, northern pike, blackfish, and Arctic lamprey, throughout the Yukon and Tanana River drainages. Most of these fisheries are issued as limited or experimental permits and operate in discrete time periods throughout the year. Following the decline in salmon runs a marked increase in non-salmon fisheries emerged on the Yukon River. Despite the strengthening chum salmon returns in recent years, the interest in freshwater fisheries has remained, particularly for Bering cisco and Arctic lamprey.

Yukon River Whitefish Fishery Summary

Beginning in 2005 there has been an experimental whitefish commercial fishery in the Lower Yukon River. A Commissioner's permit has been issued annually allowing for a combined harvest total of 10,000–15,000 pounds of all coregonid ('whitefish') species in Districts 1 and 2. Commissioner's permits are issued for the experimental commercial harvest of species not managed under existing State of Alaska commercial fishing regulations. In response to market preference, commercial permits were targeted to specifically harvest of Bering cisco, and to a lesser extent least cisco, in District 1 beginning in 2009. The catch was sold in the kosher market in New York City. The harvest cap was based on historical commercial harvest information from 1980 to 1990 of sheefish and other whitefish species in the Lower Yukon Area. The exact dates of the fishery have varied each year in response to the seasonal movements of whitefish and the river conditions; however, the commercial harvest has generally occurred in the months of September and October. Gear restrictions were implemented in 2007 to reduce the stretch-mesh size from 6 inches (allowed in 2005 and 2006) to 4 inches in effort to reduce fishing pressure on older-aged fish.

In 2010, two freshwater commercial fishery permits for Bering and least cisco were issued to Kwik'pak Fisheries in the Lower Yukon River. Commercial fishing was prohibited in 2010 in designated areas around the village of Kotlik. Fishing gear was restricted to one set or drift gillnet up to 150 feet in length with a maximum stretch-mesh size of 4 inches or one hand line/hook and line.

The first permit authorized up to 5,000 pound harvest of cisco in District and was valid April 19, 2010 through June 6, 2010. The winter commercial harvest occurred sporadically beneath the ice; however, conditions precluded the successful harvest of whitefish during this time. A second permit was issued for up to 10,000 pounds of cisco in District 1 and was valid from September 15, 2010 to December 31, 2010. The bulk of commercial harvest occurred from September 15 to September 19, 2010, and 11,116 pounds of Bering cisco and 405 pounds of least cisco were harvested. Due to the relatively high rates of fish catch, the total harvest inadvertently exceeded the harvest cap of 10,000 pounds. In October 2010, the permit was extended to allow for an additional harvest of 5,000 pounds, allocated between the south and north river mouths in

District 1. The impetus for this authorization was to augment commercial opportunity and collect genetic information for stock identification purposes. The permit was valid from October 14, 2010 through March 15, 2011 or until the 5,000 pound harvest limit was reached. The additional harvest occurred from October 14 to October 20 and 3,619 pounds of Bering and 34 pounds of least cisco were harvested, which was below the 5,000 pound harvest maximum.

A total of 22 fishermen made 68 deliveries to the commercial processor and 15,221 total pounds of whitefish were harvested (Appendix G3). The harvest was 62% above the 5 year (2005 to 2009) average for Bering cisco and 81% below the 5 year (2005 to 2009) average for least cisco. The price per pound was \$1.50 and the estimated harvest value to fishermen was \$22,836. The average harvest value for each fisherman was approximately \$1,200, which was nearly three times the 2009 value. The commercial fishing effort consisted of local residents from the Lower Yukon River communities of Nunam Iqua, Emmonak, Alakanuk, and Kotlik. During September and October, fishermen from Kotlik were responsible for 85% and 66% of the total whitefish harvest during the commercial fishery.

In the Upper Yukon Area, commercial freshwater fisheries targeting whitefish occurred primarily through the late 1970s. Since 1980 there has been sporadic and small quantity commercial harvest of whitefish in the upriver districts. In 2010 no permits were utilized likely due to high operational costs and limited market interest (Appendix G4). Permit authorization is not required for the sale of whitefish species taken incidentally during commercial salmon fishing. In District Y-6 whitefish have been taken incidentally to the salmon harvest since the early 1990s. In 2010, 72 pounds of whitefish were harvested incidentally, which is 59% below the 5 year average (Appendix G5).

Harvest Sampling

Fish were identified by species at the processing facility in Emmonak prior to shipment. Age-sex-length (ASL) data were collected by ADF&G staff at a processing facility in Anchorage. A total of 1,040 Bering and 33 least cisco commercially harvested in 2010 were sampled for sex and length. 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. Otoliths were collected from all fish sampled and will be later analyzed for age classification. Body and organ weights of Bering cisco females were used to index reproductive condition. Gonadosomatic index (GSI) was calculated as gonad weight/total body weight x 100. The weight of the gonads was subtracted from the body weight to minimize the effect of the reproductive cycle on these indices.

Bering cisco were larger than the least cisco sampled ($t_{1,071}=3.807$, $p=0.000$). Bering cisco females ($\chi=348.9\pm23.4$ mm, $n=510$) were longer than males ($\chi=331.2\pm19.2$ mm, $n=530$) sampled ($t_{1,038}=13.344$, $p=0.00$), and females harvested in October ($\chi=354.3\pm22.8$ mm, $n=192$) were longer than those harvested in September ($\chi=345.5\pm23.1$ mm, $n=318$; $t_{508}=-4.176$, $p=0.00$). The average female body weight for Bering cisco was 543.9 ± 147.1 g ($n=145$). GSI for females ranged from 0.3 to 4.4%, with an average index of $1.2\pm0.9\%$. Female GSI was greater in October ($\chi=1.5\pm1.0\%$, $n=89$) than September ($\chi=0.8\pm0.4\%$, $n=56$; $t_{143}=-5.142$, $p=0.00$). There was no significant difference in the length of female least cisco ($\chi=323.4\pm12.4$ mm, $n=14$) compared to males ($\chi=325.3\pm17.6$ mm, $n=17$), or between the length of females harvest in September ($\chi=332.5\pm12.9$ mm, $n=14$) compared to October ($\chi=330.0\pm7.1$ mm, $n=2$). Approximately 50% of the Bering and least cisco sampled in September and October were female.

Age composition information was not available at time of writing for these samples.

Genetic samples were also collected to determine the contribution of stock origin for these species. There is reason to believe that the commercial harvest of Bering cisco at the mouth of the Yukon River is a mix of rearing fish originating from Yukon and Kuskokwim rivers stocks. Results from this analysis will be made available in a later report.

In 2010, no test fishery project was operated in conjunction with the whitefish commercial fishery. Whitefish, however, caught incidentally in the salmon test fisheries located at Mountain Village and above the Pilot Station sonar project during June and July 2010 were sampled for ASL.

SHEEFISH

In the last few years there has been burgeoning interest in an improved understanding of non-salmon biology in the Yukon River for management purposes. Currently, the non-salmon fisheries in the Yukon River are largely data deficient, despite their importance as subsistence and, in certain places, a commercial resource. Biological information relating to spawning activity, seasonal migration, demographic composition, and other life history characteristics is generally poorly understood. The majority of the biological knowledge about non-salmon species on the Yukon River has been descriptive or gathered through studies documenting traditional ecological knowledge (TEK). In 1995, research began to focus on identifying migration patterns and spawning locations for certain non-salmon species in the Yukon River drainage, with the contingent goal of defining specific populations and their distributions. More complete information about whitefish population demography is an important cornerstone to effective management strategies. Given the number of species under consideration and their vast geographic extent in the Yukon Area, a working group was formed in 2008 to identify and address issues relating to whitefish. Two meetings were convened in the winter of 2008 to 2009 with the Whitefish Strategic Plan Working Group to discuss biological and social issues relating to whitefish fisheries, identify data gaps in existing information, and consider appropriate methods and data needs for assessment, research, and management. These priority issues guided the development of a strategic plan for research of whitefish species within the Yukon and Kuskokwim rivers.

From Brown et al. 2011 ...”More information is currently known about sheefish in the Yukon drainage than whitefish species.”: Several studies have documented spawning areas in the Koyukuk River drainage (Alt 1968, 1969b, 1970, 1974), the upper Yukon Flats, the Sulukna River, a tributary of the Nowitna River (Alt 1985; Gerken 2009), and the Chatanika River (Alt 1969a), a tributary of the Tanana River. Radiotelemetry data indicate that nearly all sheefish in the Yukon River originate in the 6 spawning reaches that have been identified. Additionally, sample evidence suggests that additional spawning populations may occur in the upper Porcupine River drainage (Bryan 1973; Brown et al. 2007) and in the Upper Yukon River drainage in Canada (Walker et al. 1974; Walker 1976).

Sheefish migrate to feeding and spawning areas each summer and fall along the Yukon River during the same time periods when Chinook and chum salmon fisheries take place; therefore, sheefish are vulnerable to the same gear that are set for salmon. Postseason subsistence surveys have estimated the annual harvest of these species for the Yukon River drainage. While multiple populations contribute to these harvests the proportional contributions are unknown.

Abundance data has only been available from the Sulukna and Chatanika river populations in the Yukon River drainage and were estimated to be approximately 3,000 and 100 fish respectively. Research suggests that the populations in the Koyukuk and Yukon rivers are larger than those formerly mentioned, but relative abundance information is not available.

YUKON RIVER ARCTIC LAMPREY FISHERY SUMMARY 2010

Beginning in 2003 an experimental commercial Arctic lamprey fishery emerged on the Yukon River. A Commissioner's permit has been issued annually allowing for a harvest total of 5,000 to 44,080 pounds of Arctic lamprey in District 2 and Subdistrict 4-A. Commissioner's permits are issued for the experimental commercial harvest of species not managed under existing State of Alaska commercial fishing regulations. The reported historical harvests for the Yukon Area are presented in Appendix G3 and G4. The catch was sold in markets in Asia, as well as pharmaceutical companies. The exact dates of the fishery have varied each year in response to the seasonal movements of lamprey; however, the commercial harvest has generally occurred in the mid- to late-November. Gear is restricted to one hand dip net per commercial permit holder.

In 2010, one freshwater commercial fishery permit for Arctic lamprey was issued to Kwik'pak Fisheries allowing a harvest of up to 40,000 pounds of Arctic lamprey. The permit was valid November 15, 2010 through December 15, 2010, or until the harvest limit was reached. A single buying station was located in Subdistrict 4-A at the village of Grayling.

The commercial harvest began on November 20, 2010 in Grayling and ended on November 22, 2010. A total of 22 fishermen delivered a harvest of 30,713 pounds to the commercial processor (Appendix G4), which is the second highest harvest on record since the experimental fishery began in 2003. The estimated number of lamprey harvested in the commercial fishery was approximately 109,000 fish. The buyer paid \$1.25 per pound for lamprey, and the estimated commercial value of lamprey was \$38,391. The average value per fisherman was \$1,745.

The Arctic lamprey fishery was monitored by an ADF&G representative via communications with the commercial processor in Anchorage and with processor representatives located in the Lower Yukon River. Community contacts were also established with local subsistence fishermen in the villages of Alakanuk, Anvik, Emmonak, Grayling, Holy Cross, Marshall, Mountain Village, and Russian Mission. Information was gathered during communications about the commercial and subsistence fishing effort, harvest, local weather conditions, and run timing.

A subsistence fisherman in Alakanuk indicated the first lamprey was caught in the Lower Yukon River in late October. The first run pulse was reported to have passed Mountain Village on approximately November 2, with subsistence fishermen harvesting a small quantity of Arctic lamprey. Few lamprey were caught between St. Mary's and Russian Mission between November 3 and 7, as fishing effort was limited by unsafe ice conditions. Subsistence fishermen began fishing on November 8 in Russian Mission, and lamprey were caught in Russian Mission between November 9 and 10. The run was considered strong with the average fisherman harvesting between 150 and 300 lamprey. A fisherman from Russian Mission estimated that the total harvest for the village was 6,000–8,000 pounds.

Based on estimated rates of travel, lamprey were expected to pass the village of Holy Cross (RM 279) around November 15. On November 16, no large numbers of Arctic lamprey were observed or harvested, perhaps due to poor ice conditions. On November 20, the first run of lamprey was

reported 6 miles south of Anvik and harvest occurred on November 21. One fisherman reported good fishing conditions and harvested 2,000 pounds approximately 9 miles above Anvik.

Fishermen in Grayling (RM 336) used chainsaws and/or manual ice breakers to cut large rectangular holes through nearshore ice at traditional fishing sites. The velocity of the water in the hole was then checked; if the water in the hole was slow moving they disregarded the site, cut a new hole, and continued on with the process until they identified a hole with fast moving water. The fast water is believed to be caused by a channel in the river bottom, which acts as a natural corral to funnel migrating lamprey and facilitate their catch. The fishing holes were monitored (rotating shifts, 24-hours a day) by shining a flashlight through the water to the substrate a few feet below. Fishermen also checked for lamprey by occasionally flicking a stick through the water in the fishing holes. Using these 2 methods fishermen avoided icing their dip nets, which were reserved for the Arctic lamprey migration that passed between November 20 and 22. Despite unseasonably warm temperatures which restricted fishing effort to alongside the river bank, the lamprey were harvested in abundant quantities.

Based on the November 2 report from subsistence fishermen in Mountain Village and the commercial fishery activity which occurred on November 21 in Grayling, the estimated mean lamprey travel speed was 13 miles per day. In coordination with ADF&G, commercial fishermen provided catch logs of their fishing time and catch for postseason evaluation. According to the catch logs fishermen fished an average of 87 minutes \pm 101 minutes (sd) with an effort averaging 36 \pm 70 net dips per 10 minutes. Fishermen caught an average of 70 \pm 60 lamprey per 10 net dips.

In November, ADF&G sent lamprey subsistence harvest surveys to 657 households in Yukon River communities of Anvik, Grayling, Holy Cross, Marshall, Mountain Village, Pilot Station, Pitkas Point, Russian Mission, and St. Mary's. Results from these surveys will be made available in an ADF&G annual subsistence harvest report.

Harvest Sampling

Samples were collected by the buyer and shipped to ADF&G in Anchorage in order to collect basic biological information. A total of 250 Arctic lamprey commercially harvested in Grayling were sampled for weight, length, and sex information. Reproductive organs were identified by making a small incision on the ventral side of each specimen. Total length was measured from the tip-of-snout to the tip-of-tail to the nearest millimeter, and weight was measured to the nearest gram. Age composition information was not produced from these samples. At this time, ADF&G has no method for aging adult Arctic lamprey.

The mean length was 430 mm for male and female combined. The mean length was 440 mm for females and 424 mm for males. The average weight was 128 g for male and female combined. The average weight for females was 140 g and for males 122 g. The sample was comprised of 34% female proportion.

Assessment

The life history of Arctic lamprey in the Yukon River is sparsely documented. Traditional ecological knowledge provides valuable information regarding harvest sites and run timing in the Lower Yukon River and is readily shared between user groups and local communities. Information on population distribution and exact or relative abundance is generally lacking. In coordination with ADF&G, commercial fishermen provided logs of their fishing time and catch

in effort to generate baseline data regarding run timing, harvest, and relative abundance. This methodology has been in the developmental stage since 2003, therefore, provides a limited and unreliable harvest rate index.

While the timing of the lamprey run has been closely monitored by subsistence fishermen, the harvest and use quantities by the subsistence community have been more difficult to estimate; thus there is limited assessment of lamprey harvest abundance from which to gauge exploitation rates. Despite the lacking baseline information, the disposition of ADF&G is that historic levels of harvest have been conservative and are sustainable based on the following factors:

- i. Duration of the run compared to the duration of the fishery.
- ii. Timing of the harvest relative to run. Commercial harvest generally occurs during the heaviest pulse of the run. This is the preferred timing for harvest in order to reduce potential impact to population structure and distribution. While exact characteristics of the lamprey run are unknown, evidence does suggest that the run follows a normal distribution curve with the run building slowly, peaking, and then slowly diminishing.
- iii. Relative inefficiency of the fishing gear and comparison to catch rates. Commercial fishermen use a single manually operated dip net with a variable mesh size. Based on catch rates, such gear is inherently inefficient. Typically a fisherman begins dip netting with no initial success. Catch rate success then increases to 1 to 2 fish per dip, and slowly builds over the course of a couple of hours to 20–30 fish per dip. The total volume of water fished per dip relative to the harvest yield suggests that only small percentage of fish passing through the area is caught.

Recent increases in market interest, along with drastic decreases in commercial salmon harvests on the Yukon River, have prompted buyers to request an augmentation of the allowable commercial lamprey harvest. Such requests have not been met by ADF&G as basic biological and demographic information important to sustainable management are lacking. In response, recent research projects have been geared towards quantifying lamprey abundance in the river. In 2004, ADF&G operated a DIDSON sonar through the ice near Grayling to determine if sonar could be used to observe lamprey migrating under the ice. The results indicated that sonar could be utilized to estimate passage of lamprey, at least during periods of lower passage, which occurred in 2004. However, sonar biologists are unsure how well this technology will work at distinguishing individual fish at high densities or during a high density run (Bruce McIntosh, Commercial Fisheries, Biologist, ADF&G, Fairbanks; personal communication). Additionally, a study was conducted in 2009 to assess the feasibility of tagging lamprey as a pre-requisite to a mark–recapture population estimation (G. Sandone, private consultant, G. Sandone Consulting, LLC, personal communication). While an appropriate lamprey tagging method was identified in this study, low marked sample size hindered the occurrence a recapture study.

NORTHERN AREA

DESCRIPTION OF AREA

The Northern Area includes all waters of Alaska north of the latitude of the western most tip of Point Hope and west of 141 degrees West longitude, including those waters draining into the Arctic Ocean and the Chukchi Sea (Figure 13).

SUBSISTENCE FISHERIES

Many subsistence fishermen operate gillnets in the rivers and coastal marine waters of the Northern Area to harvest marine and freshwater finfish. Small numbers of chum, pink, and Chinook salmon have been reported by subsistence fishermen along the Arctic coast. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, blackfish, and burbot. Northern pike, char, and "tomcod" are frequently taken through the ice by hand lines. The extent of the harvest of non-salmon finfish in the Northern Area is inadequately documented. Some fishery harvest studies were undertaken for 2 small Inupiat communities in the Northern Area by ADF&G's Subsistence Division. It was found that annual community fish catches for Kaktovik consisted of Dolly Varden (*Salvelinus malma*), Arctic cisco (*Coregonus autumnalis*), Arctic grayling, Lake trout, salmon, and Arctic cod (Pedersen and Linn 2005). Similarly, community fishermen in Anaktuvuk Pass produced annual catches of "char" (a mix of Arctic char and Dolly Varden), lake trout, Arctic grayling, Arctic cisco, and few burbot (Pedersen and Hugo 2005).

In 2008, a cooperative project was initiated and is ongoing (ADF&G, Divisions of Commercial Fisheries, Habitat and Subsistence and North Slope Borough Department of Wildlife Management and Planning) to assess Pacific salmon resources in the Northern Area. Components of the project include documenting: 1) subsistence salmon fishing patterns such as species targeted, fishing gear and methods, harvest timing, local salmon abundance and run timing, historical knowledge, and observations of spawning locations; 2) conducting aerial surveys to document adult salmon distribution in river systems and determining which rivers could be used as index areas for future monitoring; and 3) acquiring age, sex, length, and genetic samples for salmon.

COMMERCIAL FISHERIES

Regulations adopted by BOF allow ADF&G to issue permits for the commercial harvest of freshwater species of fish such as whitefish, sheefish, char, northern pike, blackfish, and Arctic lamprey. However, there are no commercial fisheries for salmon species in the Northern Area. A commercial fishery for freshwater finfish has existed in the Colville River delta (located approximately 60 miles west of Prudhoe Bay) since 1964 (Appendix H1). Historically, commercial fishing generally took place during late June and July for broad and humpback whitefish and October through early December for Arctic and least cisco. However, since 1990 commercial fishing effort has predominately occurred in October and November for Arctic and least cisco. Set gillnets are used as capture gear, and fishing during fall months occurs under the ice. All fish are harvested with the intent to sell commercially and are reported daily on a catch

form. However, not all fish reported on permits for this area are sold. Those fish not commercially sold are retained and used for subsistence purposes (Appendix H1).

ACKNOWLEDGEMENTS

Employees of the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, Bering Sea Fishermen Association, Tanana Chiefs Conference, Association of Village Council Presidents, Yukon River Drainage Fisheries Association, Yukon Delta Fisheries Development 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, Dan Bergstrom, for his guidance and support and review of this report.

REFERENCES CITED

- ADF&G (Alaska Department of Fish and Game). 1969. Annual management report, 1968, Arctic-Yukon-Kuskokwim region. Alaska Department of Fish and Game, Division of Commercial Fisheries, Annual Management Report, Anchorage.
- ADF&G (Alaska Department of Fish and Game). 1979. Annual management report, 1978, Yukon area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Annual Management Report, Anchorage.
- ADF&G (Alaska Department of Fish and Game). 1983. Annual management report, 1983, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.
- ADF&G (Alaska Department of Fish and Game). 1985. Annual management report, 1985, Yukon Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, 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.
- 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.
- Alt, K. T. 1968. Sheefish and pike studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 9, Juneau.
- Alt, K. T. 1969a. Taxonomy and ecology of the Inconnu, *Stenodus Leucichthys Nelma*, in Alaska. Biological Papers of the University of Alaska, Fairbanks, No. 12.
- Alt, K. T. 1969b. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 10, Juneau.
- Alt, K. T. 1970. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 11, Juneau.
- Alt, K. T. 1974. Sheefish and whitefish life history studies in Alaska. Alaska Department of Fish and Game, Federal Aid in Fish Restoration, Volume 15, Juneau.
- Alt, K. T. 1985. Inventory and cataloging of sport fish and sport fish waters of western Alaska. Alaska Department of Fish and Game. Federal Aid in Fish Restoration. Annual Performance Report, 1984-1985, Project F-9-17(26)G-I-P-B, Juneau.
- 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 to the U.S. Fish and Wildlife Service for Fisheries Resource Monitoring Project 08-250, 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. Division of Subsistence, Alaska Department of Fish and Game, Technical Paper No. 282, Anchorage.
- Bergstrom, D. J., D. F. Evenson, and E. J. Newland. 2009. Yukon River summer chum salmon stock status 2009; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 09-22, Anchorage.
- Bergstrom D. J., K. C. Schultz, B. M. Borba, G. J. Sandone, L. H. Bartoa, D. J. Schneiderhan, J. S. Hayes. 1997. Annual management report Yukon area, 1995. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A97-14, Anchorage.
- Berkbigler, B.L., and K. Elkin. 2007. Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska, 2006.
- Borba, B. M. 2007. Test fish wheel project using video monitoring techniques, Tanana River, 2003. Alaska Department of Fish and Game, Fishery Data Series No. 07-55, Anchorage.

REFERENCES CITED (Continued)

- Borba, B. M., D. J. Bergstrom, and F. J. Bue. 2009. Yukon River fall chum salmon stock status and fall season salmon fisheries 2009; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 09-24, Anchorage.
- 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.
- Brase, A. L. J., and M. Doxey. 2006. Salmon studies in the Chena, Chatanika, Delta Clearwater, and Salcha rivers, 2004 and 2005. Alaska Department of Fish and Game, Fishery Data Series No. 06-61, 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., N. Bickford, and K. Severin. 2007. Otolith trace element chemistry as an indicator of anadromy in Yukon River drainage coreonine fishes. *Transactions of the American Fisheries Society* 128(3):678-690.
- 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> (Accessed June 2011).
- Bryan, J. E. 1973. The influence of pipeline development on freshwater fishery resources of northern Yukon Territory: aspects of research conducted in 1971 and 1972. Environmental-Social Committee Northern Pipelines, Task Force on Northern Oil Development Report No. 73-6.
- 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.
- Carroll, H. C., and B. C. McIntosh. 2008. Sonar estimation of salmon passage in the Yukon River near Pilot Station, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 08-65, Anchorage.
- 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.
- 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.
- Crane, A. B., and R. D. Dunbar. 2009. Sonar estimation of Chinook and fall chum salmon passage in the Yukon River near Eagle, Alaska, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-30, Anchorage.
- Daum, D. W., and B. G. Flannery. 2009. Canadian-origin Chinook salmon rearing in non-natal U.S. tributary streams of the Yukon River, Alaska, 2006-2007. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Technical Report Number 102, Fairbanks, Alaska.
- Department of Interior. Fish and Wildlife Service. 2009. 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, 2005-06.

REFERENCES CITED (Continued)

- Dunbar, R. D. 2010. Sonar estimation of fall chum salmon abundance in the Sheenjek River, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-79, 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.
- Flannery, B. F., R. R. Holder, G. F. Maschmann, E. J. Kretschmer, and J. K. Wenburg. 2010. Application of mixed-stock analysis for Yukon River fall chum salmon, 2008. U.S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report for Study 06-205, 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.
- Gaudet, D. M., and G. Schaefer. 1982. Migrations of salmon in Norton Sound, Alaska, determined by tagging in 1978-1979. Alaska Department of Fish and Game, Division of Commercial Fisheries, Informational Leaflet No. 198, Anchorage.
- Gerken, J.D. 2008. Yukon River Inseason Salmon Harvest Interviews, 2007. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Data Series Number 2008-17, Fairbanks, Alaska.
- Gerken, J. D. 2009. Identification and characterization of Inconnu spawning habitat in the Sulukna River, Alaska. Thesis (M.S.), University of Alaska, Fairbanks.
- Hayes, S. J., and J. L. Estensen. 2011. 2011 Yukon Area subsistence, personal use, and commercial salmon fisheries outlook and management strategies. Alaska Department of Fish and Game, Regional Information Report 3A11-04 Anchorage.
- Healey, M.C. 1991. Life history of Chinook salmon (*Oncorhynchus tshawytscha*). Page 311-394 [In]: Groot, C., and L. Margolis, editors. Pacific Salmon Life Histories. UBC Press, Vancouver, B.C., Canada.
- Hildebrand, H. L., and F. J. Bue. 2009. Fall season cooperative salmon drift gillnet test fishing in the Lower Yukon River, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-22, Anchorage.
- Horne-Brine, M. H., and L. DuBois. 2010. Salmon age and sex composition and mean lengths for the Yukon River Area, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 10-43, Anchorage.
- Howard, K. G., and D. F. Evenson. 2010. Yukon River Chinook salmon comparative mesh size study. Alaska Department of Fish and Game, Fishery Data Series No. 10-92, Anchorage.
- Howard, K. G., S. J. Hayes, and D. F. Evenson. 2009. Yukon River Chinook salmon stock status and action plan 2010; a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Special Publication No. 09-29, Anchorage.
- Jallen, D. M., and T. Hamazaki. 2011. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2009. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fisheries Data Series No. 11-07, Anchorage.
- JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2011. Yukon River salmon 2010 season summary and 2011 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A11-01, Anchorage.
- Kahler, E., T. Burton, T. Hamazaki, B. M. Borba, J. R. Jasper, and L.-A. Dehn. 2007. Assessment of Ichthyophonous in Chinook salmon within the Yukon River Drainage, 2004. Alaska Department of Fish and Game, Fishery Data Series No. 07-64, Anchorage.

REFERENCES CITED (Continued)

- Maschmann G. F. 2010. Abundance and run timing of adult pacific salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 2009. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Data Series Number 2010-5, Fairbanks, Alaska.
- McEwen, M. S. 2010. Anvik River sonar chum salmon escapement study, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-78, Anchorage.
- Melegari, J. L. 2009. Abundance and run timing of adult fall chum salmon in the Chandalar River, Yukon Flats National Wildlife Refuge, Alaska, 2008. U. S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Alaska Fisheries Data Series Number 2009-8, Fairbanks.
- Melegari, J. L. 2010. Abundance and Run Timing of Adult Salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 2009. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Data Series Number 2010-4, Fairbanks, Alaska.
- Moore, P., and D. Daum. 2011. Annual catch-per-unit-effort data collected by the Yukon River Subdistrict Y5-A Test Fish Wheel Project, 2010. Final report to the Yukon River Panel, RM-06-10.
- Menard, J. 2010. 2010 Norton Sound salmon fisheries management plan. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A10-03, Anchorage.
- Murphy, J. M., W. D. Templin, E. V. Farley, Jr., and J. E. Seeb. 2009. Stock-structured distribution of western Alaska and Yukon juvenile Chinook salmon (*Onchorhynchus tshawytscha*) from United States BASIS surveys, 2002-2007. N. Pac. Anadr. Fish Comm. Bull. 5: 51-59.
- NMFS (National Marine Fisheries Service). 2009a. Bering Sea salmon bycatch management Volume I final environmental impact statement. National Marine Fisheries Service Alaska Regional Office. Juneau, AK. December 2009. Available at: http://www.fakr.noaa.gov/Sustainablefisheries/bycatch/salmon/chinook/feis/eis_1209.pdf
- NMFS (National Marine Fisheries Service). 2009b. Bering Sea salmon bycatch management Volume II final regulatory impact review. National Marine Fisheries Service Alaska Regional Office. Juneau, AK. December 2009. Available at: <http://www.fakr.noaa.gov/Sustainablefisheries/bycatch/salmon/chinook/rir/rir1209.pdf>
- NMFS (National Marine Fisheries Service). 2010. National Marine Fisheries Service fisheries management catch reports for groundfish, CDQ, and IFQ fisheries. Available at: <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.
- Pedersen, S. and A. Linn Jr. 2005. North Slope (Kaktovik) subsistence fish harvest assessment. Anchorage, Alaska., USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. FIS 01-101.
- Pedersen, S. and S. C. Hugo. 2005. North Slope (Anaktuvuk Pass) subsistence fish harvest assessment. Anchorage, Alaska., USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. FIS 02-050-3.
- Salo, E. O. 1991. Life history of chum salmon, *Onchorhynchus keta*. In Groot, C. and L. Margolis (Eds), Pacific Salmon Life Histories. UBC Press, Vancouver, B.C., Canada, pp. 231-309.
- Sandone, G. J. 1991. An improved procedure to estimate summer chum salmon harvest in District 4 of the Yukon River, Alaska, as applied to the 1989 fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Fishery Research Bulletin No. 91-02, Anchorage.
- Schumann, K., and L. DuBois. 2011. Salmon age and sex composition and mean lengths for the Yukon River Area, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-48, Anchorage.
- Sigurdsson, D., and B. Powers. 2009. Participation, effort, and harvest in the sport fish business/guide licensing and logbook reporting programs, 2006-2008. Alaska Department of Fish and Game, Special Publication No. 09-11, Anchorage.
- Tobin, J. H., and K. C. Harper. 1995. Abundance and run timing of adult salmon in the East Fork Andreafsky River, Yukon Delta National Wildlife Refuge, Alaska, 1994. U. S. Fish and Wildlife Service, Alaska Fisheries Progress Report No. 95-5, Kenai.

REFERENCES CITED (Continued)

- 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.
- Walker, C. E., R. F. Brown, and D. A. Kato. 1974. Catalogue of fish and stream resources of Carmacks Area. Technical Report Series. Department of the Environment, Fisheries and Marine Services, Pacific Region PAC T/74-8, Vancouver, British Columbia.
- Walker, C. E. 1976. Studies on the freshwater and anadromous fishes of the Yukon River within Canada. Department of the Environment, Fisheries and Marine Services, PAC T/76-7, Vancouver, British Columbia.
- 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.
- Wespestad, V. G. 1982. Cohort analysis of catch data on Pacific herring in the eastern Bering Sea. U. S. Dep. Commer., NOAA Tech. Memo. NMFS F/NWC-24, 18 p.
- Wiswar, D. W. 1999. Abundance and run timing of adult salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 1998. United States Fish and Wildlife Service, Fairbanks Fishery Resources Office, Alaska Fisheries Data Series 99-1, Fairbanks.
- Zuray, S. 2010. Rampart Rapids full season video monitoring, 2010 using a fish wheel on the Yukon River, Alaska. Annual report to the Yukon River Panel, Anchorage, Alaska.

TABLES AND FIGURES

Table 1.—Guideline harvest ranges and midpoints for commercial harvest of Chinook, summer chum, and fall chum salmon, Yukon Area, Alaska, 2010.

Chinook Salmon						
District or Subdistrict	Guideline Harvest Range ^a					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 60,000	89.1	90,000	91.6	120,000	92.9
3	0 to 1,800	2.7	2,000	2.0	2,200	1.7
4	0 to 2,250	3.3	2,550	2.6	2,850	2.2
5B, C	0 to 2,400	3.6	2,600	2.6	2,800	2.2
5D	0 to 300	0.4	400	0.4	500	0.4
6	0 to 600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0
Summer Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^b					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	0 to 251,000	62.8	503,000	62.9	755,000	62.9
3	0 to 6,000	1.5	12,500	1.6	19,000	1.6
4A ^a	0 to 113,000	28.3	225,500	28.2	338,000	28.2
4B, C	0 to 16,000	4.0	31,500	3.9	47,000	3.9
5B, C, D	0 to 1,000	0.3	2,000	0.3	3,000	0.3
6	0 to 13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0
Anvik River Management Area roe cap of 100,000 pounds. ^c						
Fall Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^d					
	Lower		Midpoint		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4	5,000	6.9	22,500	11.4	40,000	12.5
5B, C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0
Subdistrict 5-A range of 0 to 4,000 pounds of roe. ^e						

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

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

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

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

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

Table 2.—Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 2010.

District	Residence	Gillnet Permits (S04Y)
1, 2, and 3	Alakanuk	87
	Anchorage	46
	Aniak	1
	Bethel	16
	Chevak	2
	Copper Center	4
	Dillingham	1
	Eagle River	2
	Elim	1
	Emmonak	111
	Fairbanks	12
	Fortuna Ledge	2
	Girdwood	2
	Glennallen	1
	Holy Cross	8
	Homer	3
	Hooper Bay	3
	Kalskag	1
	Kenai	1
	Kotlik	77
	Kotzebue	1
	Kwethluk	2
	Manley Hot Springs	1
	Marshall	46
	McGrath	1
	Mountain Village	91
	Newhalen	1
	Newtok	1
	Nome	1
	Nunam Iqua	12
	Palmer	1
	Pilot Station	61
	Russian Mission	15
	Saint Mary's	87
	Saint Michael	5
	Sand Point	2
	Scammon Bay	38
	Shageluk	1
	Shaktoolik	2
	Sheldon Point	4
	Sitka	2
	Stebbins	10
	Tuluksak	1
	Unalakleet	1
	Wasilla	10
	Willow	1
	Ocean View, HI	1
	Fort Campbell, KY	1
	Rock Hill, SC	1
	Lakewood, WA	1
	Snohomish, WA	2
	Wasilla, WA	1
	De Pere, WI	1
Total Lower Yukon Area		787

-continued-

Table 2.–Page 2 of 2.

District	Residence	Gillnet Permits (S04P)	Fish Wheel Permits (S08P)	Total
4, 5, and 6	Anchorage	4	6	10
	Aniak	1	0	1
	Anvik	3	7	10
	Barrow	0	1	1
	Circle City	0	1	1
	Delta Junction	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Fairbanks	30	32	62
	Fort Wainwright	0	1	1
	Fort Yukon	0	1	1
	Galena	5	20	25
	Girdwood	0	1	1
	Grayling	4	7	11
	Holy Cross	2	0	2
	Huslia	0	1	1
	Kaltag	2	12	14
	Kenai	0	1	1
	Manley Hot Springs	3	6	9
	McGrath	1	2	3
	Nenana	7	18	25
	North Pole	2	3	5
	Nulato	0	14	14
	Palmer	1	1	2
	Rampart	1	0	1
	Ruby	1	6	7
	Salcha	1	0	1
	Stevens			
	Village	1	3	4
	Tanana	2	15	17
	Valdez	0	2	2
	Wasilla	1	2	3
	Richmond, CA	0	1	1
	Valley Village, CA	1	0	1
	St. Augustine, FL	1	0	1
	Bemidji, MN	1	0	1
	Portland, OR	0	1	1
	Anacortes, WA	0	1	1
	Comstock, WI	0	1	1
	Lusk, WY	1	1	2
Total Upper Yukon Area		76	171	247
Grand Total Yukon Area		863	171	1,034 ^a

Note: Counts are for initial issues only and do not include transfers. Includes interim entry permits but not interim use or test fish permits.

^a Total applies to number of permits.

Table 3.–Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 2010.

Commercial operation (Processing location/ buying station)	Product	District
Kwik'pak Fisheries 1016 West Sixth Avenue Suite 301 Anchorage, AK 99501	Fresh Salmon, Frozen Salmon -Chinook -Chum, Coho Salmon Roe	1 and 2
BB's Kings HC 60 Box 227 I Copper Center, AK 99573 (St. Mary's)	Fresh Salmon	2
Boreal Fisheries P.O. Box 89 Graham, WA 98338 (St. Mary's)	Fresh Salmon -Chinook -Chum, Coho Salmon Roe	1 and 2
David Herbert P.O. Box 287 St. Mary's, AK 99658	Fresh Salmon	2
Michael D. Irving P.O. Box 1091 Girdwood, AK 99587 (St. Mary's)	Fresh Salmon	2
Eric Weingarth P.O. Box 74 St. Mary's, AK 99658	Fresh Salmon	2
Francis C. Beans P.O. Box 325 St. Mary's, AK 99658	Fresh Salmon	2
Yukon River Gold LLC. PO BOX 4347 Bellingham, WA 98227 (Kaltag)	Fresh Salmon Frozen Salmon Salmon Roe	4
Interior Alaska Fish Processors 2400 Davis Rd. Fairbanks, AK 99709	Fresh Salmon Frozen Salmon Salmon Roe Salted/Brined Salmon Smoked Salmon	5 and 6

Table 4.–Total utilization in numbers of salmon by district and country, Yukon River drainage, 2010.

District	Fishery	Chinook ^a	Summer Chum ^a	Fall Chum ^a	Coho ^a
1	Subsistence ^b	5,856	25,172	3,202	1,122
	Commercial	5,744	102,267	545	1,027
	Test Fish Sales	0	0	0	0
	Total	11,600	127,439	3,747	2,149
2	Subsistence ^b	8,676	23,738	1,419	557
	Commercial	4,153	80,948	270	1,023
	Test Fish Sales	0	0	0	0
	Total	12,829	104,686	1,689	1,580
3	Subsistence ^b	4,299	1,341	1,325	353
	Commercial	-	-	-	-
	Commercial Related ^c	0	0	0	0
	Total	4,299	1,341	1,325	353
Total Lower Yukon Area	Subsistence ^b	18,831	50,251	5,946	2,032
	Commercial	9,897	183,215	815	2,050
	Commercial Related ^c	0	0	0	0
	Test Fish Sales	0	0	0	0
	Total	28,728	233,466	6,761	4,082
4	Subsistence ^b	12,888	11,720	6,788	1,730
	Commercial	-	44,207	-	-
	Commercial Related ^c	-	0	-	0
	Total	12,888	55,927	6,788	1,730
5	Subsistence ^b	10,397	3,555	44,334	3,604
	Commercial	-	-	-	-
	Commercial Related ^c	-	-	-	-
	Total	10,397	3,555	44,334	3,604
6	Subsistence ^b	1,143	422	11,391	5,555
	Commercial	-	5,466	1,735	1,700
	Commercial Related ^c	-	0	0	0
	Personal use	162	319	3,209	1,062
	Total	1,305	6,207	16,335	8,317
Total Upper Yukon Area	Subsistence ^b	24,428	15,697	62,513	10,889
	Commercial	0	49,673	1,735	1,700
	Commercial Related ^c	0	0	0	0
	Personal use	162	319	3,209	1,062
	Total	24,590	65,689	67,457	13,651
Total Yukon Area (Alaska)	Subsistence ^b	43,259	65,948	68,459	12,921
	Commercial	9,897	232,888	2,550	3,750
	Commercial Related ^c	0	0	0	0
	Personal use	162	319	3,209	1,062
	Test Fish sales	0	0	0	0
	Sport Fish ^d	691	362	0	706
	Total	54,009	299,517	74,218	18,439
Total Canada	Domestic	0	0	0	0
	Aboriginal (mainstem)	2,455 ^e	0	1,523 ^e	0
	Sport Fish	1 ^f	0	0	0
	Test Fish harvest ^g	-	0	0	0
	Commercial	-	0	2,186	0
	Subtotal	2,456	0	3,709	0
	Porcupine Aboriginal	191	0	2,078	12
	Total	2,647	0	5,787	12
Grand Total		56,656	299,517	80,005	18,451

-continued-

Table 4.–Page 2 of 2.

- ^a Commercial harvest includes only fish sold in the round. Does not include subsistence harvest from coastal communities of Hooper Bay and Scammon Bay.
- ^b Data are preliminary.
- ^c Commercial related is the estimated harvest of females to produce roe sales.
- ^d Preliminary sport fish harvest for the Alaska portion of the Yukon River drainage. Assume majority of chum salmon caught during summer season.
- ^e Number adjusted to account for under reporting.
- ^f Sport fishing closed; accidental harvest.
- ^g The Canadian test fishery is for management purposes. Chinook salmon that are retained are given to Aboriginal and Domestic users, but are not reported under those categories. Chum salmon caught in the test fishery are all intended to be released, but any that are retained are reported under the Porcupine Aboriginal harvest.

Table 5.–Subsistence and personal use salmon harvest estimates, including commercially related and test fish harvests provided for subsistence use and related information, Yukon Area, 2010.

Community	Survey Date, Permit Area ^b	Number of Fishing Households ^c	Number of Dogs ^d	Estimated Harvest				Primary Gear Used ^a		
				Chinook	Chum	Chum	Coho	Set Gillnet	Drift Gillnet	Fish Wheels
Hooper Bay ^e	9/15-18	120	325	584	17,020	116	45	106	14	0
Scammon Bay	9/14-16	53	85	716	5,405	70	79	53	0	0
Coastal District Total		173	410	1,300	22,425	186	124	159	14	0
Nunam Iqua ^f	9/13-14	22	28	404	2,267	143	73	21	1	0
Alakanuk ^e	9/11-12	86	221	944	7,722	860	449	48	38	0
Emmonak ^e	9/8-10	91	204	2,194	10,918	1,718	362	18	73	0
Kotlik ^e	9/11-13	48	142	2,314	4,265	481	238	24	24	0
District 1 Subtotal		247	595	5,856	25,172	3,202	1,122	111	136	0
Mountain Village ^e	9/20-21	101	165	1,601	7,071	133	127	8	93	0
Pitkas Point	9/21	15	44	580	633	10	116	0	15	0
St. Mary's ^e	9/22-23	88	66	2,800	7,443	387	92	15	73	0
Pilot Station ^e	9/24-26	50	74	1,585	6,196	833	189	8	42	0
Marshall	9/27-29	59	145	2,110	2,395	56	33	1	57	0
District 2 Subtotal		313	494	8,676	23,738	1,419	557	32	280	0
Russian Mission	9/29-30	38	130	924	528	104	300	19	19	0
Holy Cross	9/27-28	34	57	3,098	463	21	0	6	28	0
Shageluk	9/25-9/26	11	48	277	350	1,200	53	6	5	0
District 3 Subtotal		83	235	4,299	1,341	1,325	353	31	52	0
Lower Yukon River Total		643	1,324	18,831	50,251	5,946	2,032	174	468	0
Anvik	9/26-27	17	53	1,069	451	169	28	5	12	0
Grayling	9/24-25	39	95	2,122	1,612	202	132	4	35	0
Kaltag	10/10-11	54	101	3,191	102	658	0	0	54	0
Nulato	10/8-9	57	96	2,989	416	1,049	242	9	48	0
Koyukuk	10/7-8	21	81	867	352	792	254	1	19	0
Galena	10/5-7	60	130	1,357	1,702	1,968	549	26	29	5
Ruby	10/16-17	27	69	1,102	1,971	1,026	148	19	0	8
District 4 Yukon River Subtotal		275	625	12,697	6,606	5,864	1,353	64	197	13
Huslia	10/8	16	186	65	1,349	403	289	16	0	0
Hughes	10/9	5	52	63	878	0	0	5	0	0
Allakaket	10/30-31	22	106	63	2,864	521	88	22	0	0
Alatna	11/1	1	9	0	23	0	0	1	0	0
Bettles	10/28-29	0	12	0	0	0	0	0	0	0
Koyukuk River Subtotal		44	365	191	5,114	924	377	44	0	0
District 4 Subtotal		319	990	12,888	11,720	6,788	1,730	108	197	13

-continued-

Table 5.–Page 2 of 3.

Community	Survey Date, Permit Area ^a	Number of Fishing Households ^b	Number of Dogs ^c	Estimated Harvest				Primary Gear Used ^d		
				Summer Chinook	Summer Chum	Fall Chum	Fall Coho	Set Gillnet	Drift Gillnet	Fish Wheels
Tanana	10/14-16	32	229	3,215	1,856	14,984	2,314	25	0	6
Rampart	permits	4	5	262	161	735	24	3	0	1
Fairbanks NSB ^g	permits	52	278	1,670	427	822	2	50	0	2
Stevens Village ^h	10/12, permits	11	87	469	28	2,706	428	9	0	2
Birch Creek	phone	6	9	73	0	0	0	6	0	0
Beaver	10/13	14	42	198	22	37	1	12	0	1
Fort Yukon	10/25-27	61	328	1,683	722	6,006	244	39	0	22
Circle	permits	16	183	324	37	927	164	3	0	13
Central	permits	5	16	90	0	0	0	4	0	1
Eagle ^e	permits	27	228	867	25	15,008	1	19	0	7
Other District 5 ⁱ	permits	17	28	779	144	120	0	17	0	0
District 5 Yukon River Subtotal		245	1,433	9,630	3,422	41,345	3,178	187	0	55
Venetie	10/14-15	17	198	767	0	2,989	159	17	0	0
Chalkyitsik	10/27-28	1	17	0	133	0	267	0	0	1
Chandalar and Black Rivers Subtotal		18	215	767	133	2,989	426	17	0	1
District 5 Subtotal		263	1,648	10,397	3,555	44,334	3,604	204	0	56
Manley	permits	9	117	337	102	2,696	1,832	7	0	2
Minto	permits	6	84	43	8	70	0	1	0	2
Nenana ^j	permits	18	274	666	85	6,802	2,313	10	0	8
Healy	permits	4	22	2	30	1,068	1,198	3	0	0
Fairbanks NSB ^k	permits	49	122	245	500	3,887	1,274	41	0	8
Other District 6 ^l	permits	20	67	12	16	77	0	16	0	0
District 6 Tanana River Subtotal ^{l,k}		106	686	1,305	741	14,600	6,617	78	0	20
Upper Yukon River Total		688	3,324	24,590	16,016	65,722	11,951	390	197	89
Survey Village Subtotal		1,277	3,634	36,469	82,206	37,404	6,741	549	679	45
Subsistence Permit Subtotal ^m		186	1,423	4,942	1,216	28,425	5,606	138	0	40
Subsistence Test Fish Subtotal ⁿ		-	-	2,959	4,951	2,238	558	-	-	-
District 6 Commercial Related ^o		-	-	189	0	578	140	-	-	-
Subsistence Harvests Subtotal		1,463	5,057	44,559	88,373	68,645	13,045	687	679	85
Personal Use Permit Subtotals		41	-	162	319	3,209	1,062	36	0	4
Alaska, Yukon River Total ^{p,q}		1,331	4,648	43,421	66,267	71,668	13,983	564	665	89
Alaska, Yukon Area Total		1,504	5,058	44,721	88,692	71,854	14,107	723	679	89
AK, Yukon Area Percentages of the Total		-	-	20%	40%	33%	6%	64%	60%	8%

-continued-

Table 5.–Page 3 of 3.

-
- ^a Primary fishing gear used is based on survey information or from subsistence permits issued. Totals for gear and household may not be equal due to a small number of fishermen using unknown or 'Other' gear types. Primary gear information for surveyed communities was expanded in 2010 for households that were not surveyed. Primary gear is determined by the larger number of salmon harvested by gear types in the household.
 - ^b Data collected by Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries. Survey data are expanded for number of fishing households, number of dogs, and harvest. Permit data are unexpanded, and are from all permits received as of May 29, 2011.
 - ^c Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas. Does not include 42 Tolovana River pike permits issued in 2010, except for one pike permit reporting a harvest of one summer chum salmon.
 - ^d The number of dogs is based on survey information or from permits issued.
 - ^e Includes salmon given to communities from test fisheries.
 - ^f Formerly known as Sheldon or Sheldon's Point.
 - ^g Fairbanks North Star Borough (FNSB) households that obtained a permit and indicated they fished in the Yukon River permit required area.
 - ^h Permit harvest information from Stevens Village residents was used to complement the information obtained by the survey.
 - ⁱ "Other District 5" includes residents of Anchorage, Manley, Minto, Nenana, and Wiseman, and the Upper Tanana River drainage community of Tok who obtained a household permit and fished in a Yukon River permit required area.
 - ^j Includes harvest from the personal use permit area and salmon retained from commercial fishing from households that fished in the Tanana River.
 - ^k Includes harvest from the personal use permit area in the Tanana River.
 - ^l "Other District 6" includes residents of the Upper Tanana River drainage communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok, and the communities of Anderson and Eagle River who obtained a permit and fished in the Tanana River.
 - ^m Subsistence permit subtotal does not include Stevens Village permit information or commercially retained salmon from District 6.
 - ⁿ Test fish given away for subsistence use. Residents of Eagle received four Chinook salmon from the Eagle sonar project test fishery.
 - ^o District 6 "Commercial Related" included fish caught during commercial fishing and "not sold" but retained for subsistence use. These salmon are included in the Nenana community harvest.
 - ^p Does not include Coastal District.
 - ^q Based on survey estimates, 23 Chinook, 355 summer chum, 16 fall chum, and 6 coho salmon were retained from commercial harvests in Districts 1 and 2. Commercially retained salmon are included in subsistence harvests from surveyed communities.

Table 6.—Reported subsistence and personal use salmon harvested under the authority of a permit, listed by permit area, Yukon Area, 2010.

Permit Fishing Area	Permit ^a		Percent Returned	Number of Permits Returned that Fished	Reported Harvest				
	Type ^b	Issued			Returned	Chinook	Summer Chum	Fall Chum	Coho
Subsistence Use									
Koyukuk Middle and South Fork Rivers	SF	1	1	100%	1	0	0	0	0
Yukon River Rampart Area	SR	28	27	96%	22	1,344	304	1,235	24
Yukon River near Haul Road Bridge	SY	85	81	95%	43	1,300	448	422	2
Yukon River near Circle and Eagle (below sonar)	SE	67	63	94%	36	811	45	4,540	164
Yukon River Upper Yukon River (above sonar)	SEU	26	26	100%	20	604	17	11,415	1
Tanana River Subdistrict 6A	SA	22	22	100%	11	360	106	3,094	1,963
Tanana River Subdistrict 6B	SB	93	85	91%	32	583	316	7,625	3,429
Tanana River Upstream of Subdistrict 6C	SU	41	34	83%	19	10	0	12	0
Kantishna River Subdistrict 6A	SK	4	4	100%	3	1	0	82	23
Tolovana River Pike Subdistrict 6B	ST	96	90	94%	42	0	0	0	0
Subsistence Permit Subtotals		463	433	10	229	5,013	1,236	28,425	5,606
Personal Use									
Tanana River Salmon Subdistrict 6C	PC	67	67	100%	38	162	319	3,208	1,062
Tanana River Whitefish/Sucker Subdistrict 6C	PW	8	6	75%	3	0	0	1	0
Personal Use Permit Subtotals		75	73	2	41	162	319	3,209	1,062
Permit Totals		538	506	11	270 ^c	5,175	1,555	31,634	6,668

Note: Information current as of June 8, 2011.

^a Includes 46 households that were issued permits for more than one area.

^b Permit area designation.

^c Includes 9 households that fished in two different permit areas.

Table 7.—Chinook and summer chum salmon commercial harvest by district or subdistrict and by period, set and drift gillnets combined for Districts 1, 2, and 3 and set gillnets and fish wheels combined for Districts 4, 5, and 6, Yukon Area, 2010.

Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon			Summer Chum Salmon		
								Numbers	Pounds	Average Weight	Numbers	Pounds	Average Weight
1	6:00 PM	6/28	12:00 AM	6/28	R	6	211	2,122	25,220	11.9	30,282	197,233	6.5
2	8:00 PM	7/1	2:00 AM	7/2	R	6	216	863	11,135	12.9	9,394	60,747	6.5
3	6:00 PM	7/3	12:00 AM	7/3	R	6	210	865	12,038	13.9	9,560	61,635	6.4
4	12:00 PM	7/6	6:00 PM	7/6	R	6	186	688	8,877	12.9	18,408	120,313	6.5
5	6:00 PM	7/8	3:00 AM	7/9	R	9	216	476	7,029	14.8	10,275	67,339	6.6
6	12:00 PM	7/11	9:00 PM	7/11	R	9	171	434	5,776	13.3	13,530	88,843	6.6
7	3:00 PM	7/13	12:00 AM	7/13	R	9	159	228	3,496	15.3	8,688	57,414	6.6
8	3:00 PM	7/15	12:00 AM	7/15	R	9	107	68	985	14.5	2,130	14,008	6.6
No Chinook salmon sold in the fall season.													
District 1 Subtotal:						60	264	5,744	74,556	13.7	67,644	667,532	6.5
District 2													
Period Number	Starting Time	Start Date	Ending Time	End Date	Mesh Size	Hours Fished	Number of Fishermen	Chinook Salmon			Summer Chum Salmon		
								Numbers	Pounds	Average Weight	Numbers	Pounds	Average Weight
1	10:00 AM	7/1	2:00 PM	7/1	R	4	145	1,215	14,183	11.7	18,631	119,658	6.4
2	12:00 PM	7/4	6:00 PM	7/4	R	6	132	794	9,710	12.2	10,002	62,480	6.2
3	12:00 PM	7/7	6:00 PM	7/7	R	6	136	823	10,346	12.6	14,708	93,322	6.3
4	6:00 PM	7/10	12:00 AM	7/10	R	6	144	524	7,062	13.5	13,324	81,328	6.1
5	6:00 PM	7/12	12:00 AM	7/12	R	6	128	299	4,361	14.6	6,653	41,238	6.2
6	6:00 PM	7/14	12:00 AM	7/14	R	6	129	275	4,163	15.1	10,792	69,368	6.4
7	6:00 PM	7/16	3:00 AM	7/17	R	9	105	223	3,465	15.5	6,838	42,170	6.2
No Chinook salmon sold in the fall season.													
District 2 Subtotal:						43	181	4,153	53,290	14	80,948	509,564	6.3
Lower Yukon Area, Summer Season, Districts 1,2 and 3 Subtotal:						103	440	9,897	127,846	12.9	148,592	1,177,096	6.4

-continued-

Table 7.–Page 2 of 2.

District 4													
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Chinook Salmon			Summer Chum Salmon			
							Number	Pounds	Average Weight	Number	Pounds	Average Weight	
1	6:00 PM	7/7	6:00 AM	7/8	12	2	-	-	-	1,390	7,784	5.6	
2	6:00 PM	7/8	6:00 AM	7/9	12	3	-	-	-	2,305	12,908	5.6	
3	6:00 PM	7/9	6:00 AM	7/10	12	2	-	-	-	1,733	9,705	5.6	
4	6:00 PM	7/10	6:00 AM	7/11	12	2	-	-	-	1,290	7,224	5.6	
5	6:00 PM	7/11	6:00 PM	7/16	120	4	-	-	-	9,998	53,003	5.3	
6	6:00 PM	7/16	6:00 PM	7/21	120	4	-	-	-	16,706	86,821	5.2	
7	6:00 PM	7/21	6:00 PM	7/26	120	5	-	-	-	6,958	36,181	5.2	
8	6:00 PM	7/26	6:00 PM	7/31	120	4	-	-	-	3,827	19,901	5.2	
District 4 Subtotals:					536	5	-	-	-	44,207	233,527	5.3	
Subdistricts 6-A, 6-B, and 6-C													
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished		Number of Fishermen	Chinook Salmon			Summer Chum Salmon		
					6-A	6-BC		Number	Pounds	Average Weight	Number	Pounds	Average Weight
1	6:00 PM	7/19	12:00 PM	7/21	42	42	3	-	-	-	625	3,750	6.0
2	6:00 PM	7/23	12:00 PM	7/25	42	42	5	-	-	-	1,695	9,324	5.5
3	6:00 PM	7/26	12:00 PM	7/28	42	42	4	-	-	-	894	4,918	5.5
4	6:00 PM	7/30	12:00 PM	8/1	42	42	5	-	-	-	1,200	6,604	5.5
5	6:00 PM	8/2	12:00 PM	8/4	42	42	4	-	-	-	1,052	5,260	5.0
6	6:00 PM	8/6	12:00 PM	8/8	42	42	0	-	-	-	0	0	-
7	6:00 PM	8/9	12:00 PM	8/11	42	42	0	-	-	-	0	0	-
District 6 Subtotals:					294		5	-	-	-	5,466	29,856	5.5
Upper Yukon Area, Summer Season,													
Districts 5 and 6 Subtotals:					822		10	-	-	-	49,673	263,383	5.3
Yukon Area, Summer Season,													
All Districts Total:					925		450	9,897	127,846	12.9	198,265	1,440,479	7.3

Note: No commercial fishing took place in Districts 3 and 5 in 2010. Unless otherwise noted dashes indicate periods of no commercial fishing. R = maximum mesh size of 6 inches.

Table 8.—Commercial salmon and salmon roe sales by statistical area, Yukon Area, 2010.

Statistical Area	Chinook ^a			Summer Chum ^a			Fall Chum ^a			Coho ^a			Total Salmon		
	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b
334-11	252	0	252	3,881	0	3,881	0	0	0	0	0	0	4,133	0	4,133
12	824	0	824	19,138	0	19,138	211	0	211	204	0	204	20,377	0	20,377
13	213	0	213	5,707	0	5,707	0	0	0	5	0	5	5,925	0	5,925
14	358	0	358	12,405	0	12,405	13	0	13	6	0	6	12,782	0	12,782
15	1,266	0	1,266	12,116	0	12,116	83	0	83	142	0	142	13,607	0	13,607
16	985	0	985	9,484	0	9,484	10	0	10	102	0	102	10,581	0	10,581
17	1,570	0	1,570	32,994	0	32,994	167	0	167	445	0	445	35,176	0	35,176
18	276	0	276	6,542	0	6,542	61	0	61	123	0	123	7,002	0	7,002
Subtotal															
District 1	5,744	0	5,744	102,267	0	102,267	545	0	545	1,027	0	1,027	109,583	0	109,583
334-21	389	0	389	9,575	0	9,575	3	0	3	7	0	7	9,974	0	9,974
22	1,690	0	1,690	23,029	0	23,029	27	0	27	106	0	106	24,852	0	24,852
23	890	0	890	14,474	0	14,474	165	0	165	607	0	607	16,136	0	16,136
24	1,184	0	1,184	33,870	0	33,870	0	0	0	0	0	0	35,054	0	35,054
25	0	0	0	0	0	0	75	0	75	305	0	305	380	0	380
Subtotal															
District 2	4,153	0	4,153	80,948	0	80,948	270	0	270	1,025	0	1,025	86,396	0	86,396
334-31	-	-	-	-	-	-							-	-	-
32	-	-	-	-	-	-	NO COMMERCIAL FISHING							-	-
Subtotal															
District 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Lower															
Yukon	9,897	0	9,897	183,215	0	183,215	815	0	815	2,052	0	2,052	195,979	0	195,979

-continued-

Table 8.–Page 2 of 2.

Statistical Area	Chinook ^a			Summer Chum ^a			Fall Chum ^a			Coho ^a			Total Salmon		
	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b	Number	Roe	Estimated Harvest ^b
334-42	-	-	-	0	0	0							0	0	0
43	-	-	-	0	0	0							0	0	0
44	-	-	-	0	0	0							0	0	0
45	-	-	-	0	0	0							0	0	0
46	-	-	-	44,207	0	44,207							44,207	0	44,207
47	-	-	-	0	0	0							0	0	0
Subtotal															
District 4	-	-	-	44,207	0	44,207	-	-	-	-	-	-	44,207	0	44,207
334-51	-	-	-	-	-	-							-	-	-
52	-	-	-	-	-	-							-	-	-
53	-	-	-	-	-	-							-	-	-
54	-	-	-	-	-	-							-	-	-
55	-	-	-	-	-	-							-	-	-
Subtotal															
District 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700	8,901	0	8,901
63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal															
District 6	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700	8,901	0	8,901
Total Upper															
Yukon	0	0	0	49,673	0	49,673	1,735	0	1,735	1,700	0	1,700	53,108	0	53,108
Grand Total															
Yukon Area	9,897	0	9,897	232,888	0	232,888	2,550	0	2,550	3,752	0	3,752	249,087	0	249,087

Note: Unless otherwise indicated blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

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

^b Estimated harvest includes the estimated number of females to produce the roe sold.

Table 9.—Commercial salmon sales and estimated harvest by district and country, Yukon River drainage, 2010.

District/ Subdistrict	Number of Fishermen ^a	Chinook			Summer Chum			Fall Chum			Coho		
		Sold in Round ^b	Pounds of Roe	Estimated Harvest ^c	Sold in Round ^b	Pounds of Roe	Estimated Harvest ^c	Sold in Round ^b	Pounds of Roe	Estimated Harvest ^c	Sold in Round ^b	Pounds of Roe	Estimated Harvest ^c
1	274	5,744	0	5,744	102,267	0	102,267	545	0	545	1,027	0	1,027
2	183	4,153	0	4,153	80,948	0	80,948	270	0	270	1,025	0	1,025
Subtotal	444	9,897	0	9,897	183,215	0	183,215	815	0	815	2,052	0	2,052
3	0	-	-	-	-	-	-	-	-	-	-	-	-
Total Lower Yukon	444	9,897	0	9,897	183,215	0	183,215	815	0	815	2,052	0	2,052
Anvik River	-	-	-	-	-	-	-	-	-	-	-	-	-
4-A	5	-	-	-	44,207	0	44,207	-	-	-	-	-	-
4-BC	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal													
District 4	5	-	-	-	44,207	0	44,207	-	-	-	-	-	-
5-ABC	-	-	-	-	-	-	-	-	-	-	-	-	-
5-D	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal													
District 5	-	-	-	-	-	-	-	-	-	-	-	-	-
6	6	-	-	-	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700
Total Upper Yukon	11	-	-	-	49,673	0	49,673	1,735	0	1,735	1,700	0	1,700
Total Alaska	455	9,897	0	9,897	232,888	0	232,888	2,550	0	2,550	3,752	0	3,752
Total Canada	12	0	0	0	0	0	0	2,186	0	2,186	0	0	0
Grand Total	467	9,897	0	9,897	232,888	0	232,888	4,736	0	4,736	3,752	0	3,752

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

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

^b Does not include ADF&G test fishery sales.

^c Estimated harvest is the number of fish sold, which includes the number of females harvested to produce roe sold.

Table 10.—Number of salmon sold from ADF&G test fishing programs, Yukon area, 2010.

Year	Districts	Gear Types	Chinook	Summer Chum	Fall Chum	Coho
2010		No fish were sold from the test fishing programs.				

Table 11.–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, 2010.

District 1															
Period	Starting Time	Start Date	Ending Time	End Date	Hours		Number of Fishermen	Fall Chum Salmon			Coho Salmon			Percent Coho	
					Fished	Drift		Set	Number	Pounds	Average Weight	Number	Pounds		Average Weight
1	10:00 AM	9/8	7:00 PM	9/8	9	9	53	331	2,227	6.7	549	3,722	6.8	62.4%	
2	10:00 AM	9/10	7:00 PM	9/10	9	9	50	214	1,434	6.7	478	3,150	6.6	69.1%	
District 1 Subtotal:					18	18	72	545	3,661	6.7	1,027	6,872	6.7	65.3%	
Districts 2 and 3															
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Mesh	Number of Fishermen	Fall Chum Salmon			Coho Salmon			Percent Coho	
								Number	Pounds	Average Weight	Number	Pounds	Average Weight		
2	10:00 AM	9/10	7:00 PM	9/10	9	U	18	270	1,767	6.5	1,023	6,818	6.7	79.1%	
Districts 2 & 3 Subtotal:					9		18	270	1,767	6.5	1,023	6,818	6.7	79.1%	
Lower Yukon Area, Fall Season, Districts 1, 2, and 3 Subtotal:					27	18	90	815	5,428	6.7	2,050	13,690	6.7	71.6%	
District 4															
Period	Starting Time	Start Date	Ending Time	End Date	Hours		Number of Fishermen	Fall Chum Salmon			Coho Salmon			Percent Coho	
					Fished	4-A		4-BC	Number	Pounds	Estimated Harvest ^a	Number	Pounds		Estimated Harvest ^a
NO COMMERCIAL FISHING															

-continued-

Table 11.–Page 2 of 2.

District 5													
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon			Coho Salmon			Percent Coho
							Number	Pounds of Roe	Estimated Harvest ^a	Number	Pounds	Estimated Harvest ^a	
NO COMMERCIAL FISHING													
Subdistricts 6-A, 6-B, and 6-C													
Period	Starting Time	Start Date	Ending Time	End Date	Hours Fished	Number of Fishermen	Fall Chum Salmon			Coho Salmon			Percent Coho
							Number	Pounds	Estimated Harvest ^a	Number	of Roe	Estimated Harvest ^a	
1	6:00 PM	9/20	12:00 PM	9/22	42	3	745	5,215	7	843	5,142	6	53.1%
2	6:00 PM	9/24	12:00 PM	9/26	42	4	599	4,053	7	618	3,708	6	50.8%
3	6:00 PM	9/27	12:00 PM	9/29	42	3	391	2,737	7	239	1,404	6	37.9%
District 6 Subtotal:					126	4	1,735	12,005	7	1,700	10,254	6	46.4%
Upper Yukon Area, Fall Season,													
Districts 4, 5, and 6 Subtotals:					126	4	1,735	12,005	7	1,700	10,254	6	46.4%
Yukon Area, Fall Season,													
Districts 1 Through 6 Total:					144	94	2,550	17,433	7	3,750	23,944	6	59.5%

Note: U= unrestricted mesh size.

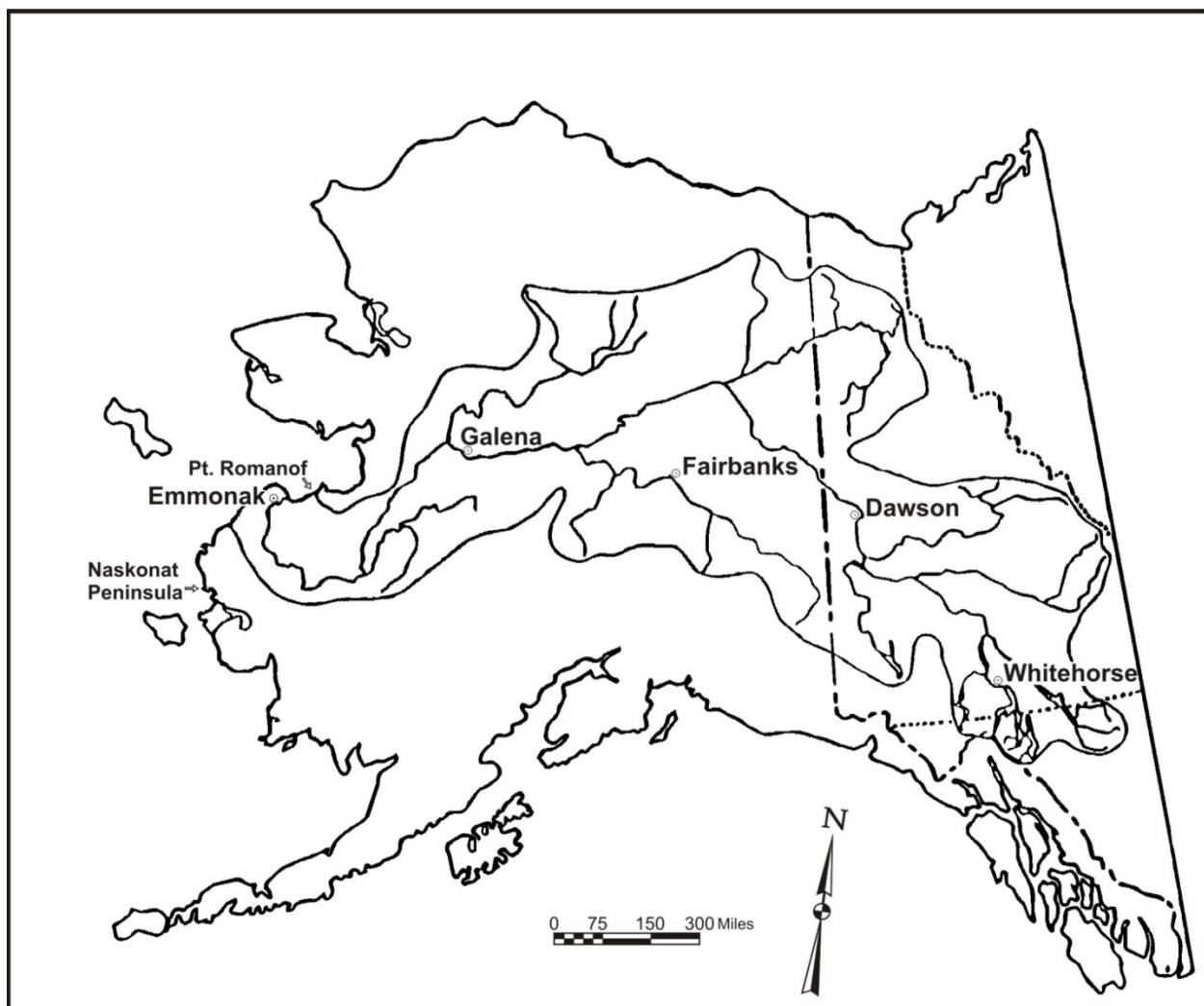


Figure 1.—Map of the Yukon River drainage.

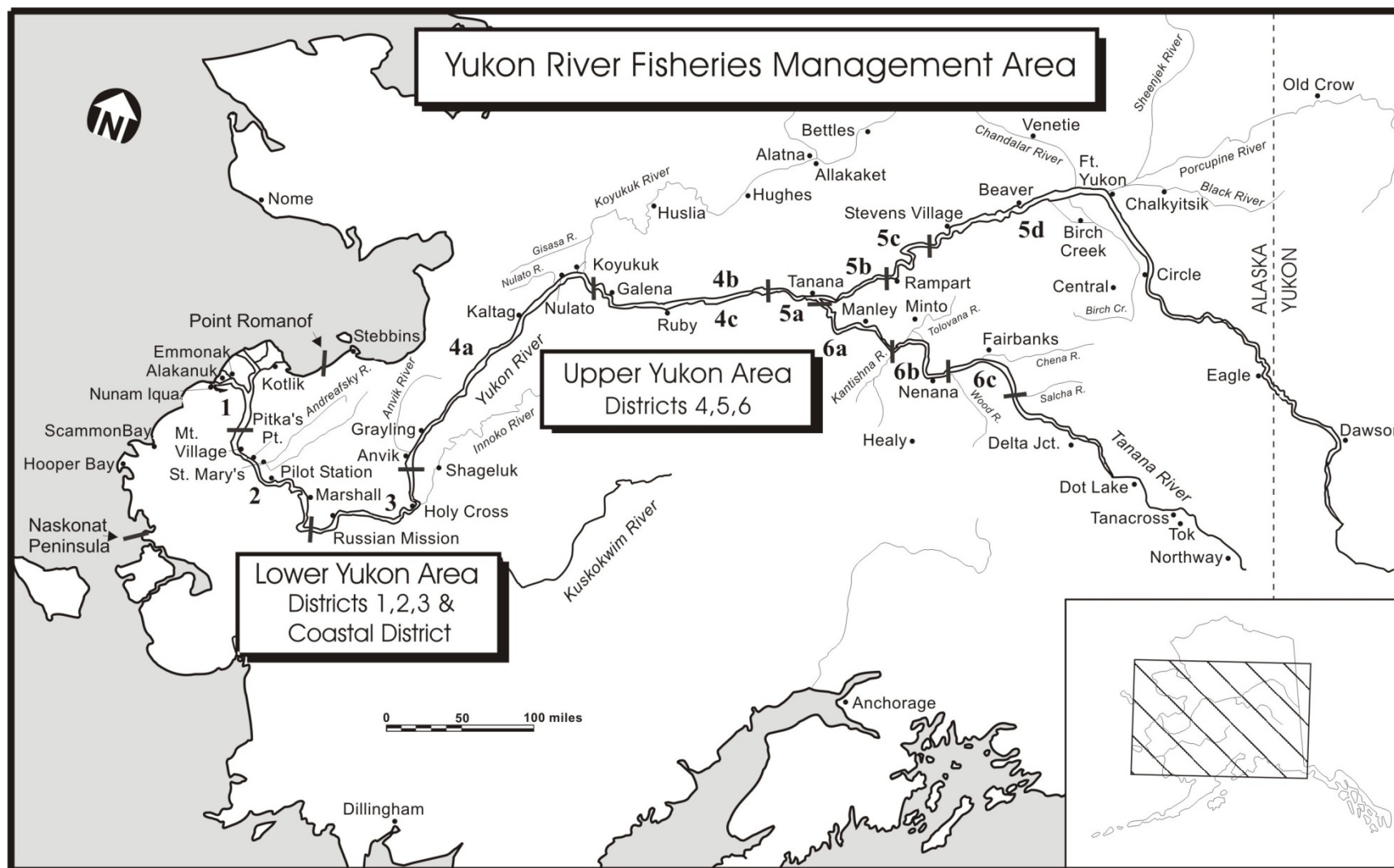


Figure 2.—Map of the Alaska portion of the Yukon River drainage showing communities and fishing districts.

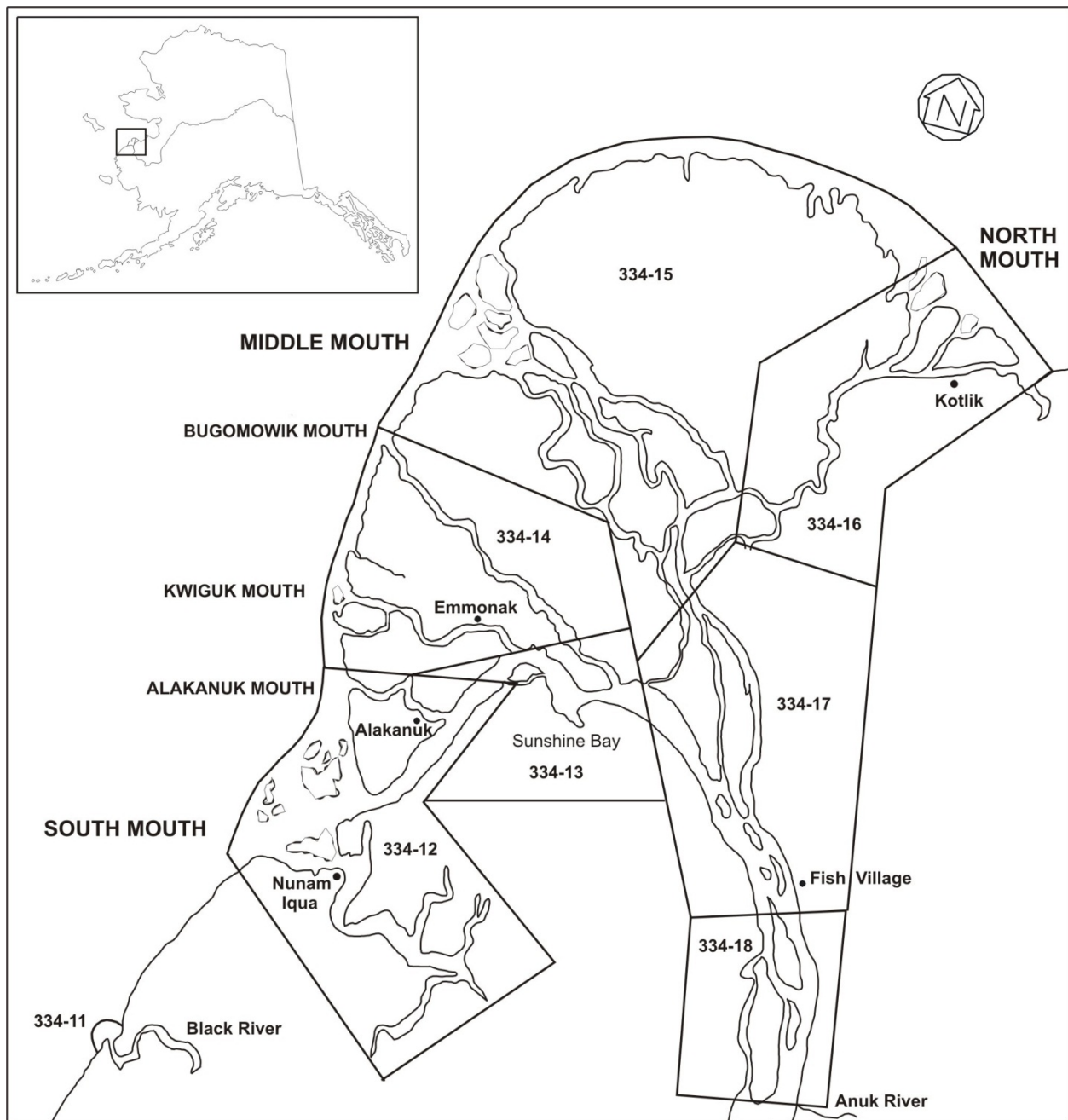
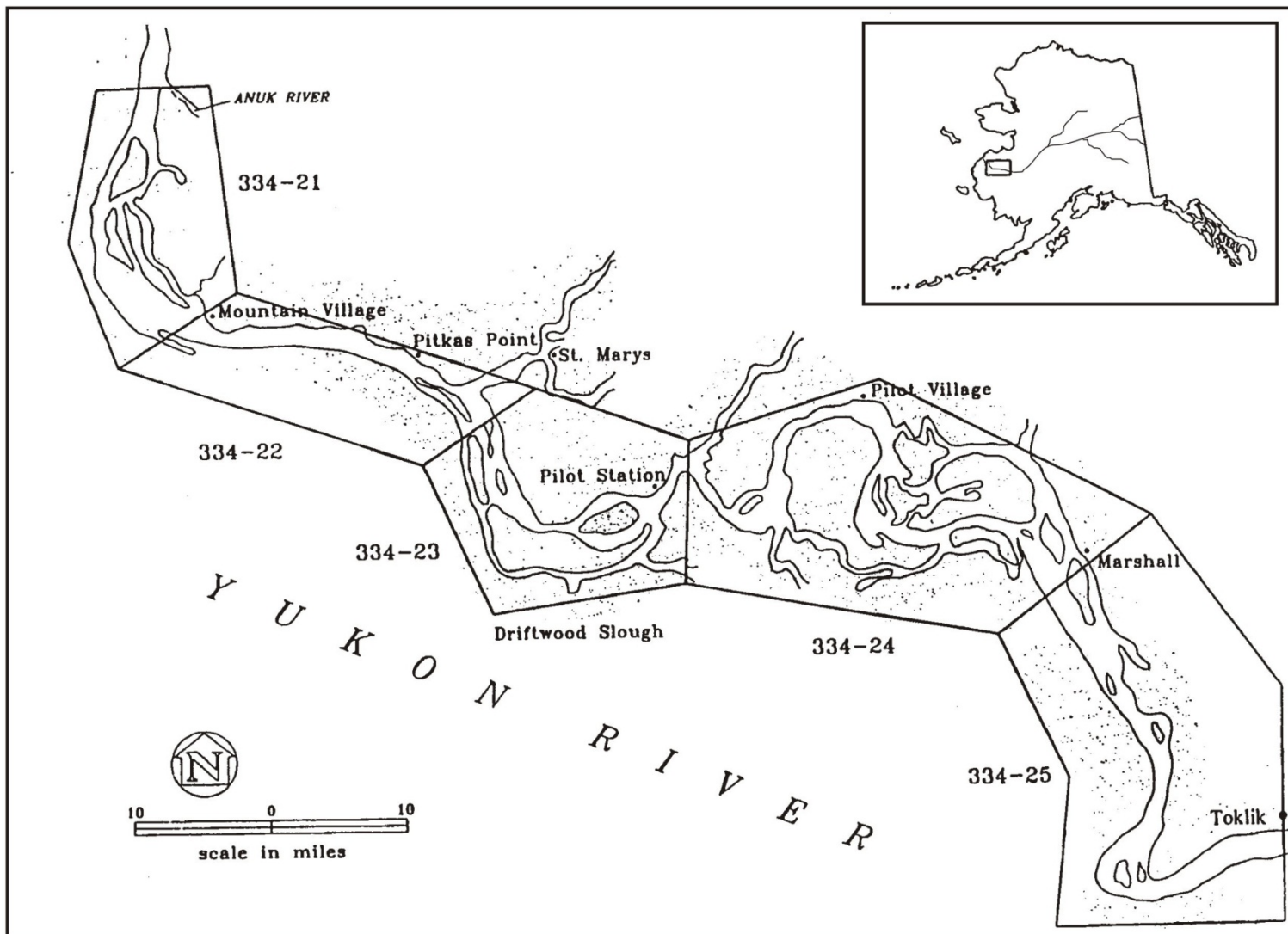


Figure 3.—District 1 showing statistical areas, Yukon Area.



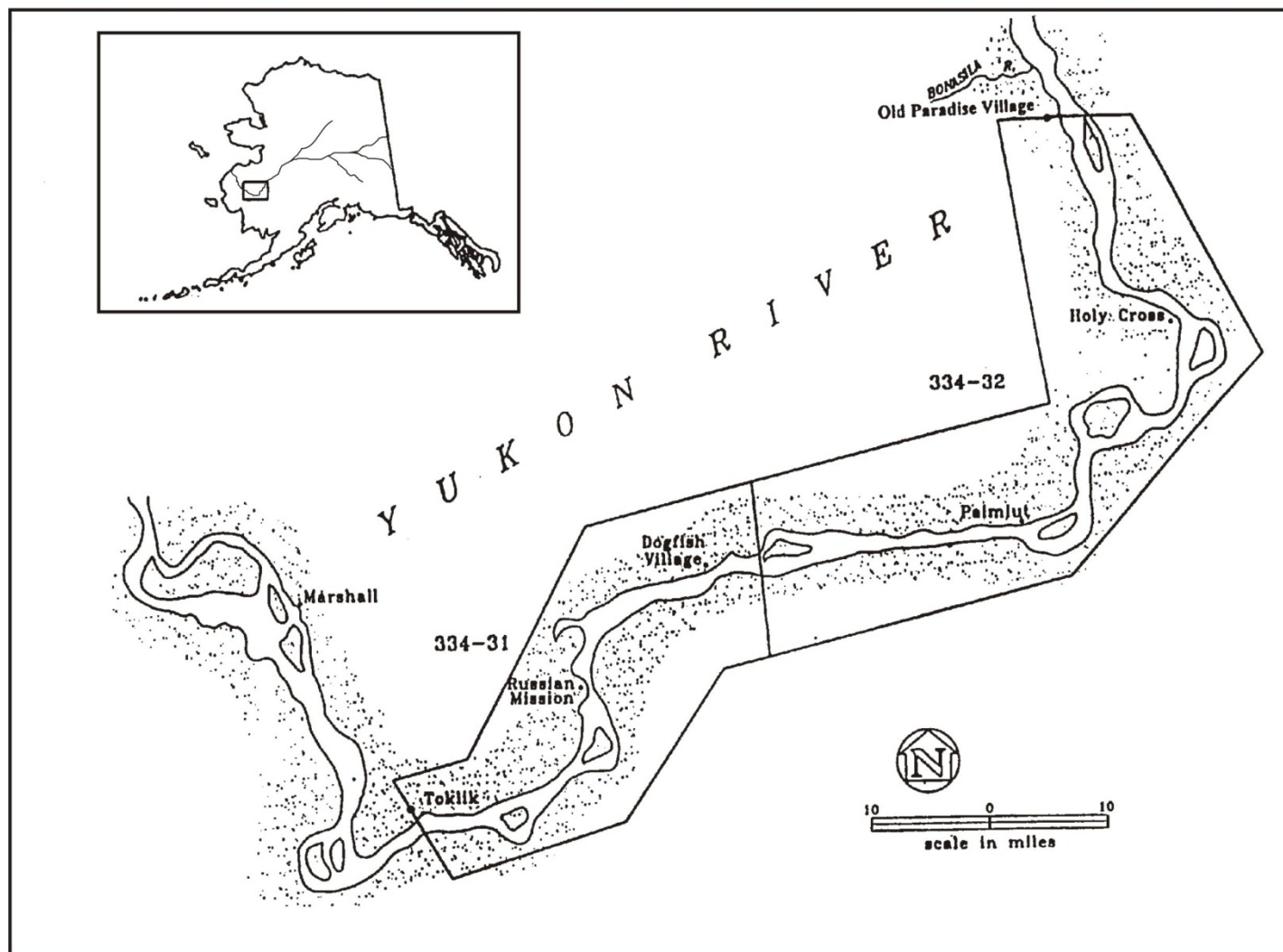


Figure 5.—District 3 showing statistical areas, Yukon Area.

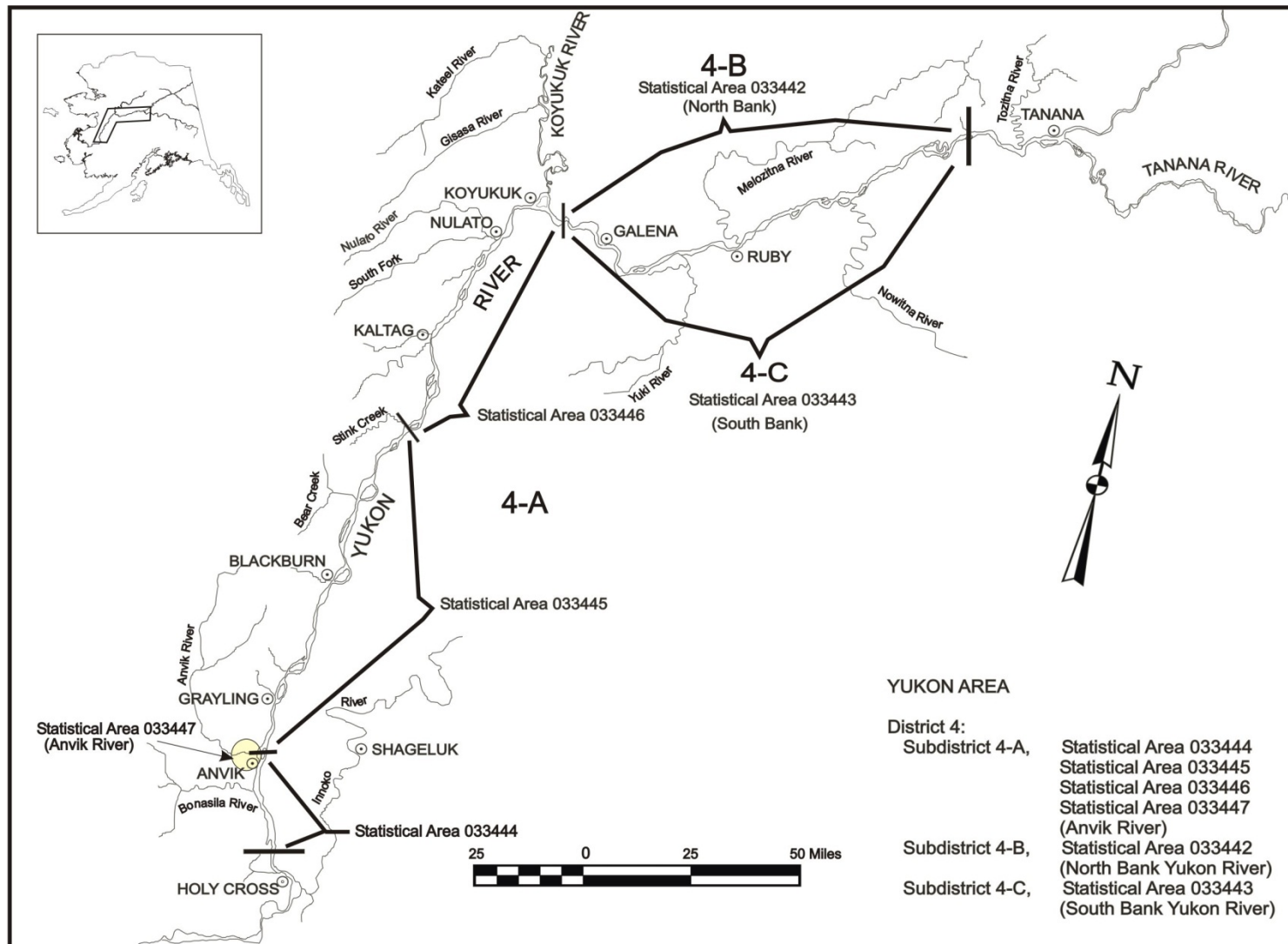


Figure 6.—District 4 showing statistical areas, Yukon Area.

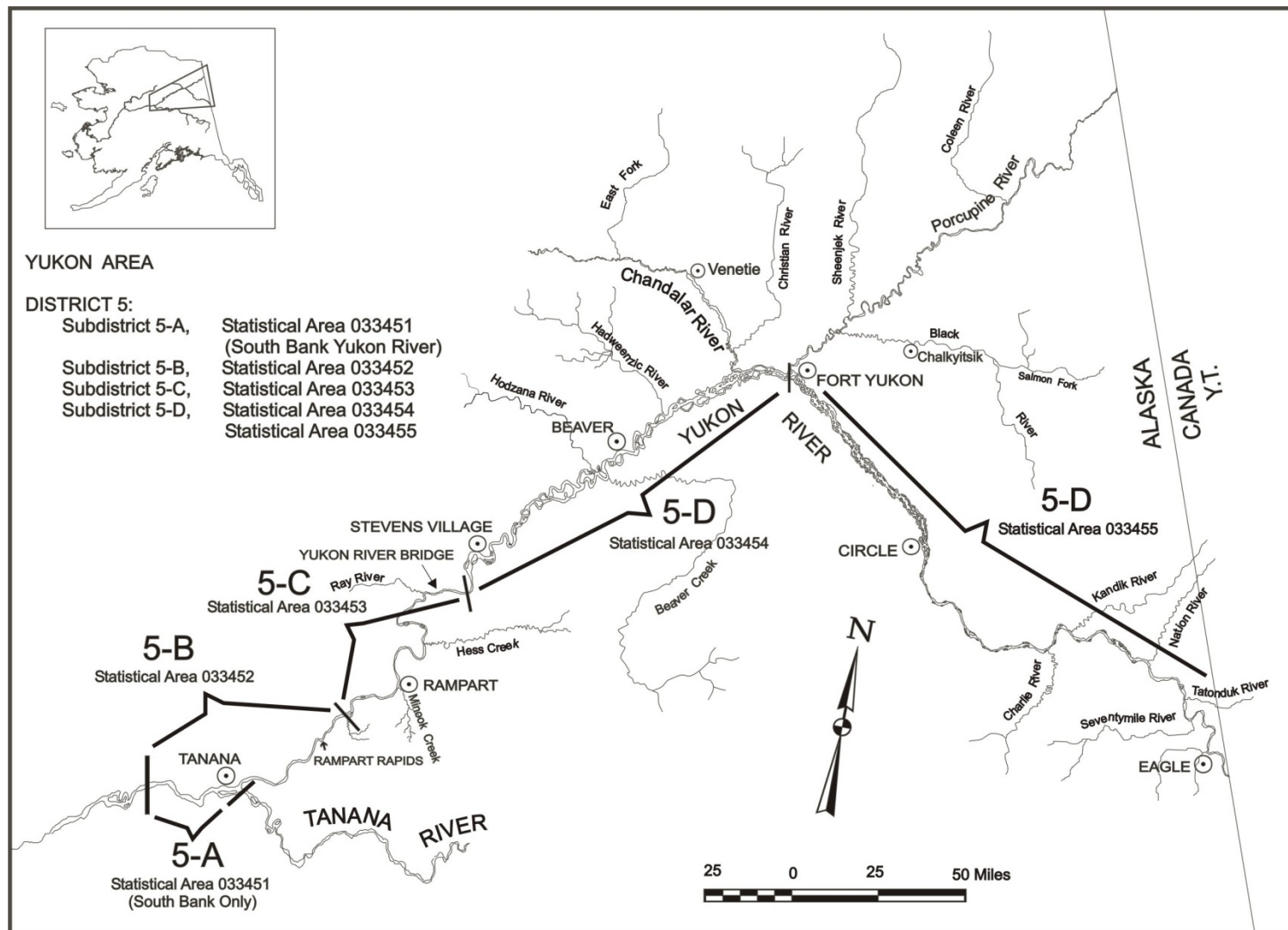


Figure 7.—District 5 showing statistical areas, Yukon Area.

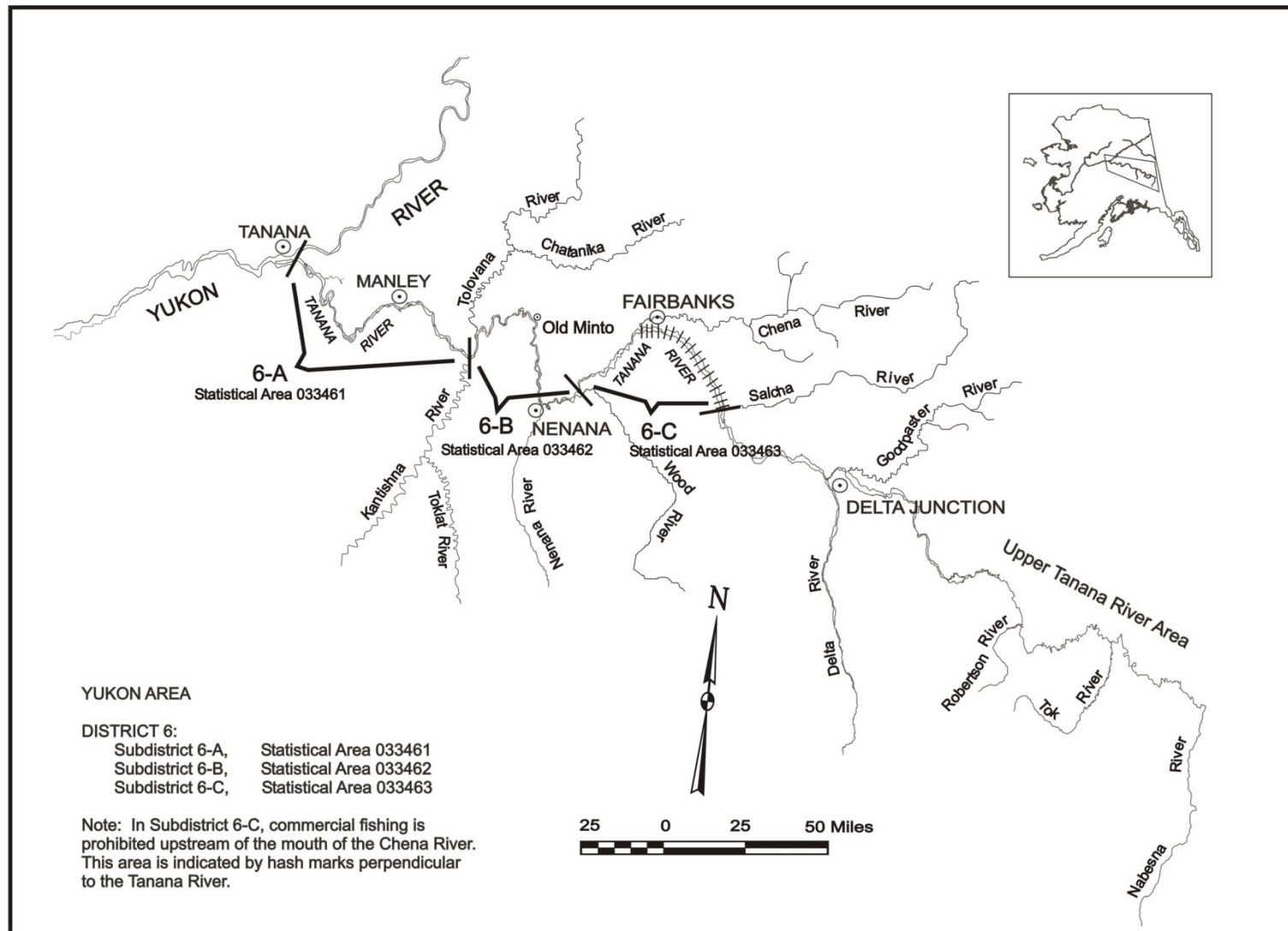


Figure 8.—District 6 showing statistical areas, Yukon Area.

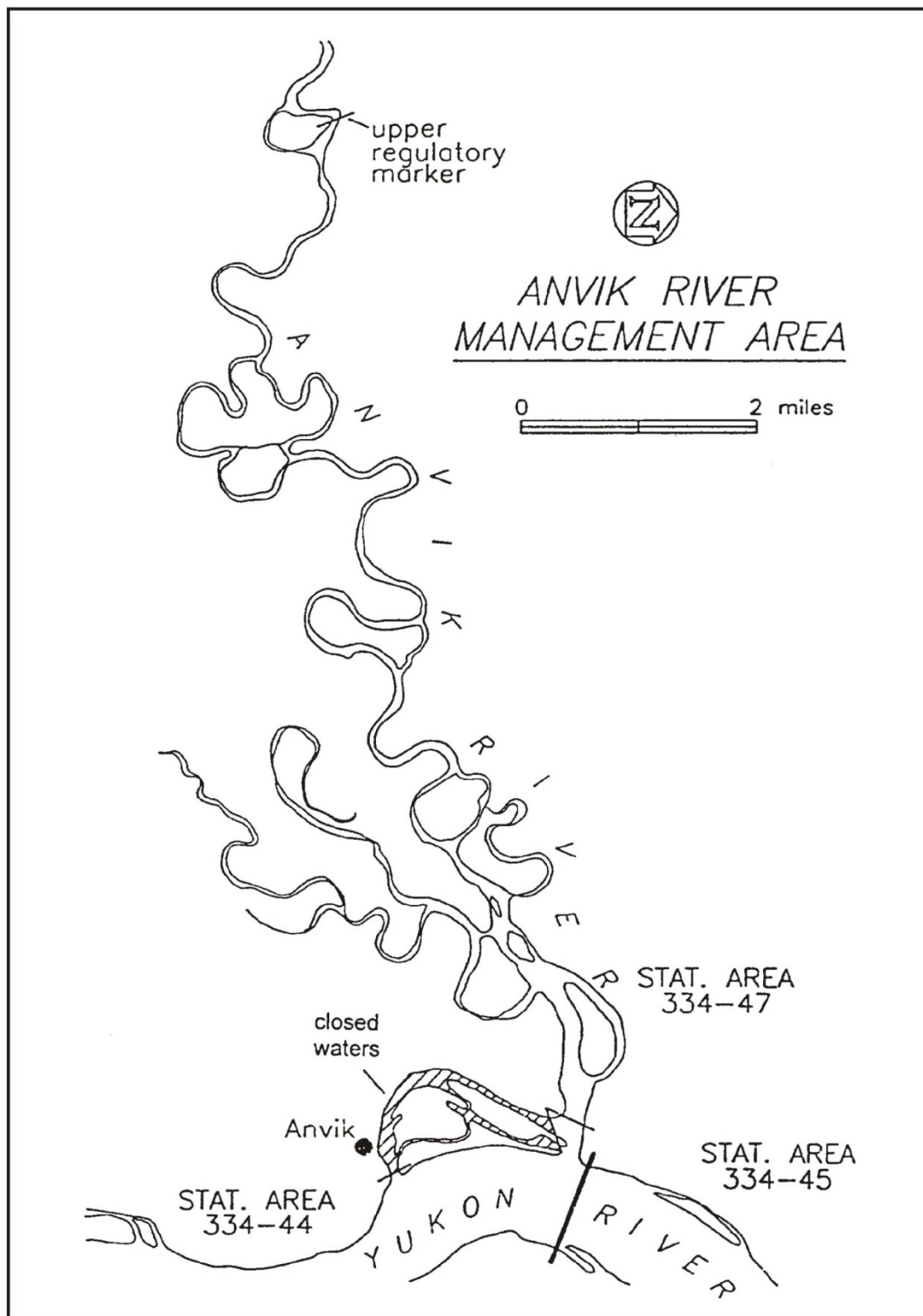


Figure 9.—Anvik River management area, Yukon Area.

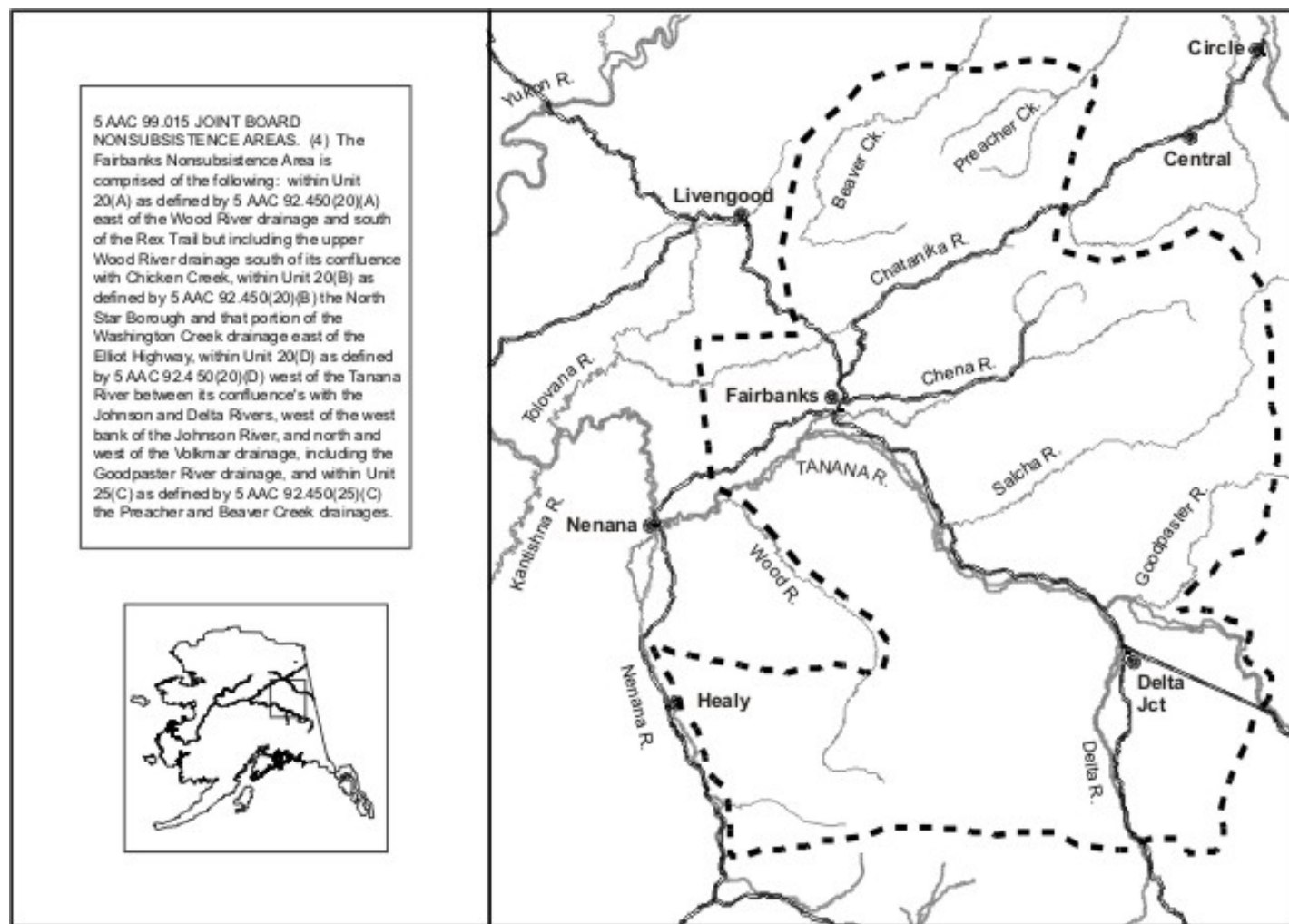


Figure 10.—Fairbanks nonsubsistence area.

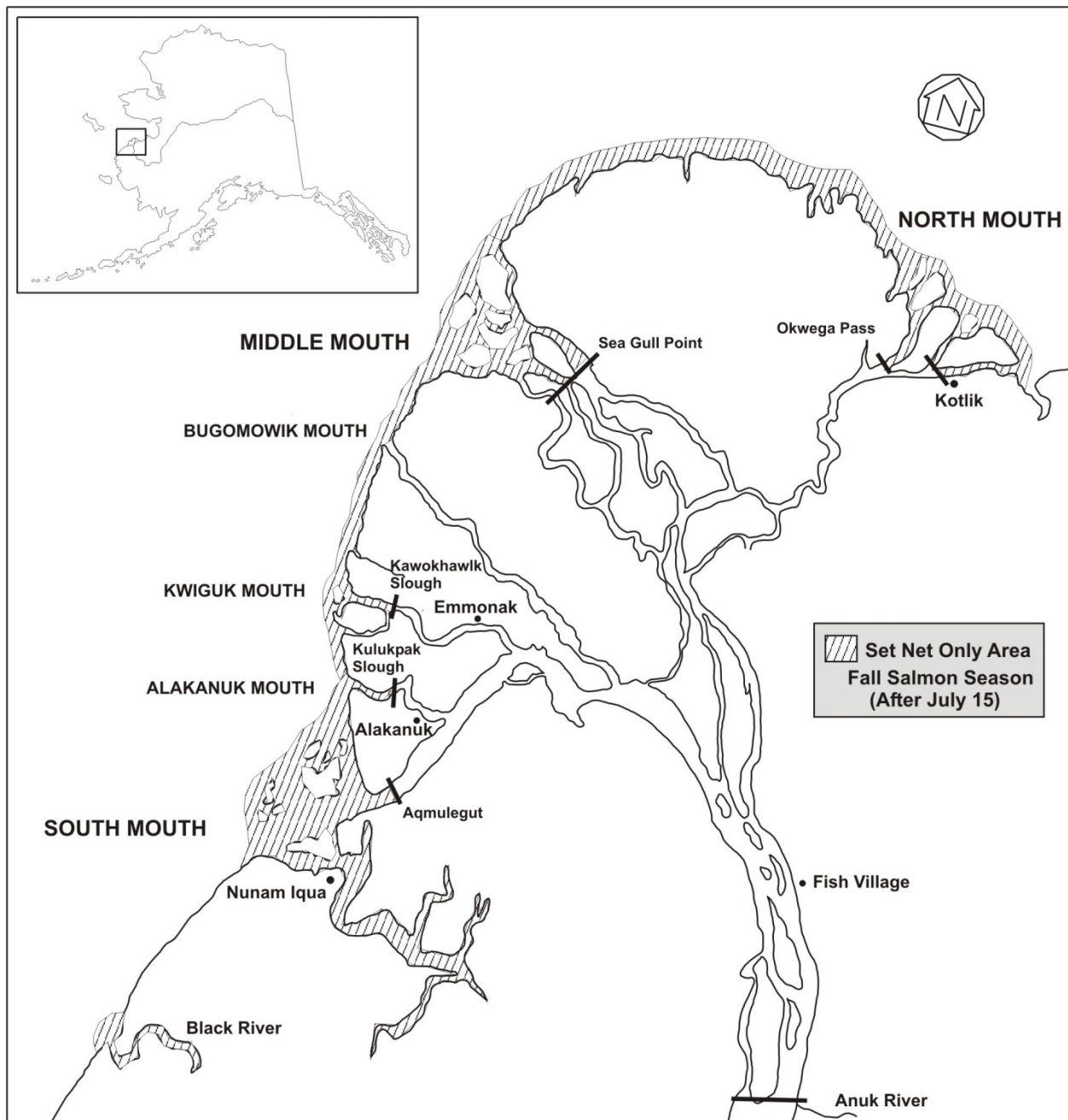


Figure 11.—Set Gillnet Only Area of District 1, Lower Yukon Area.

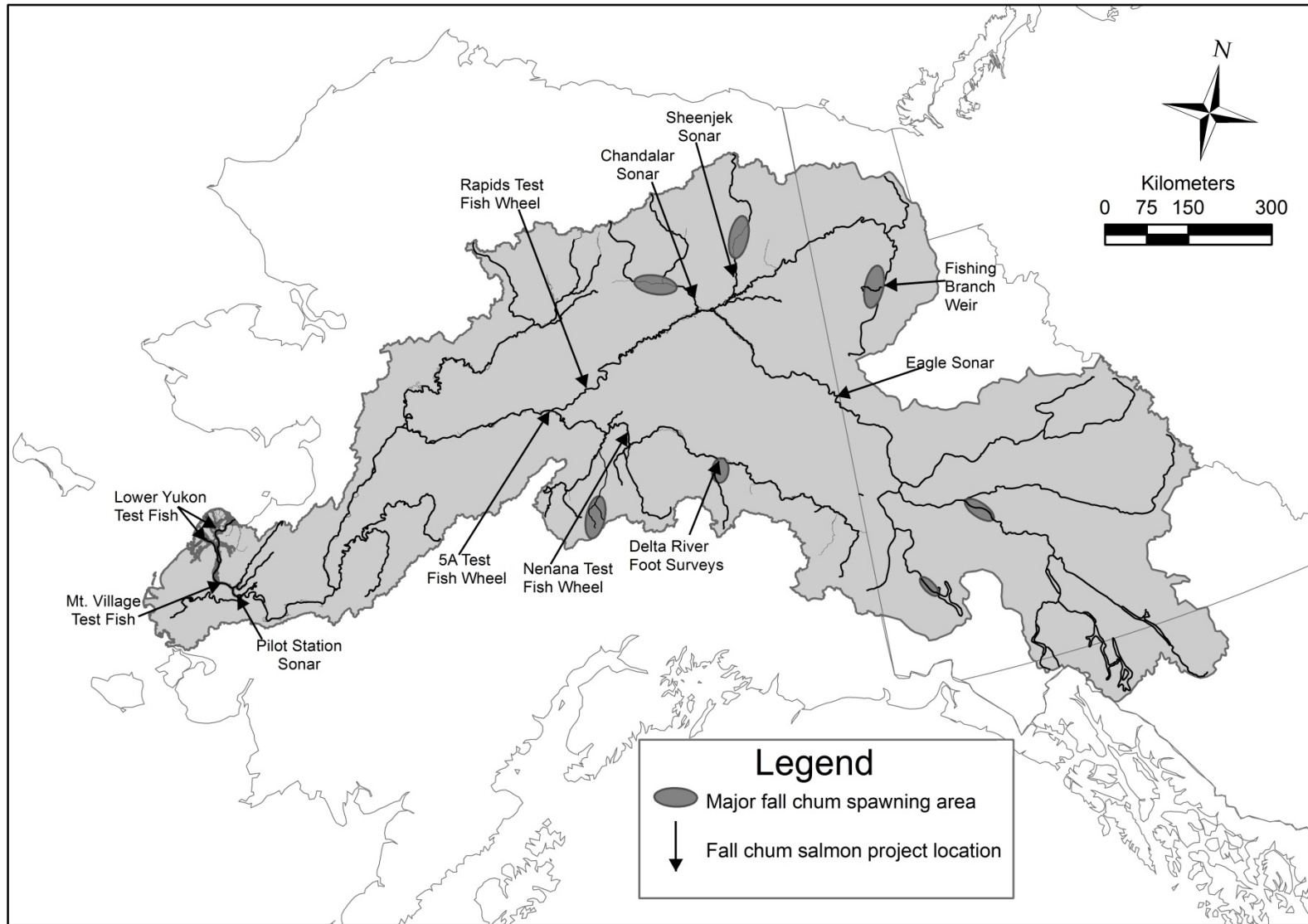


Figure 12.—Select fall chum salmon monitoring projects, Yukon River drainage.

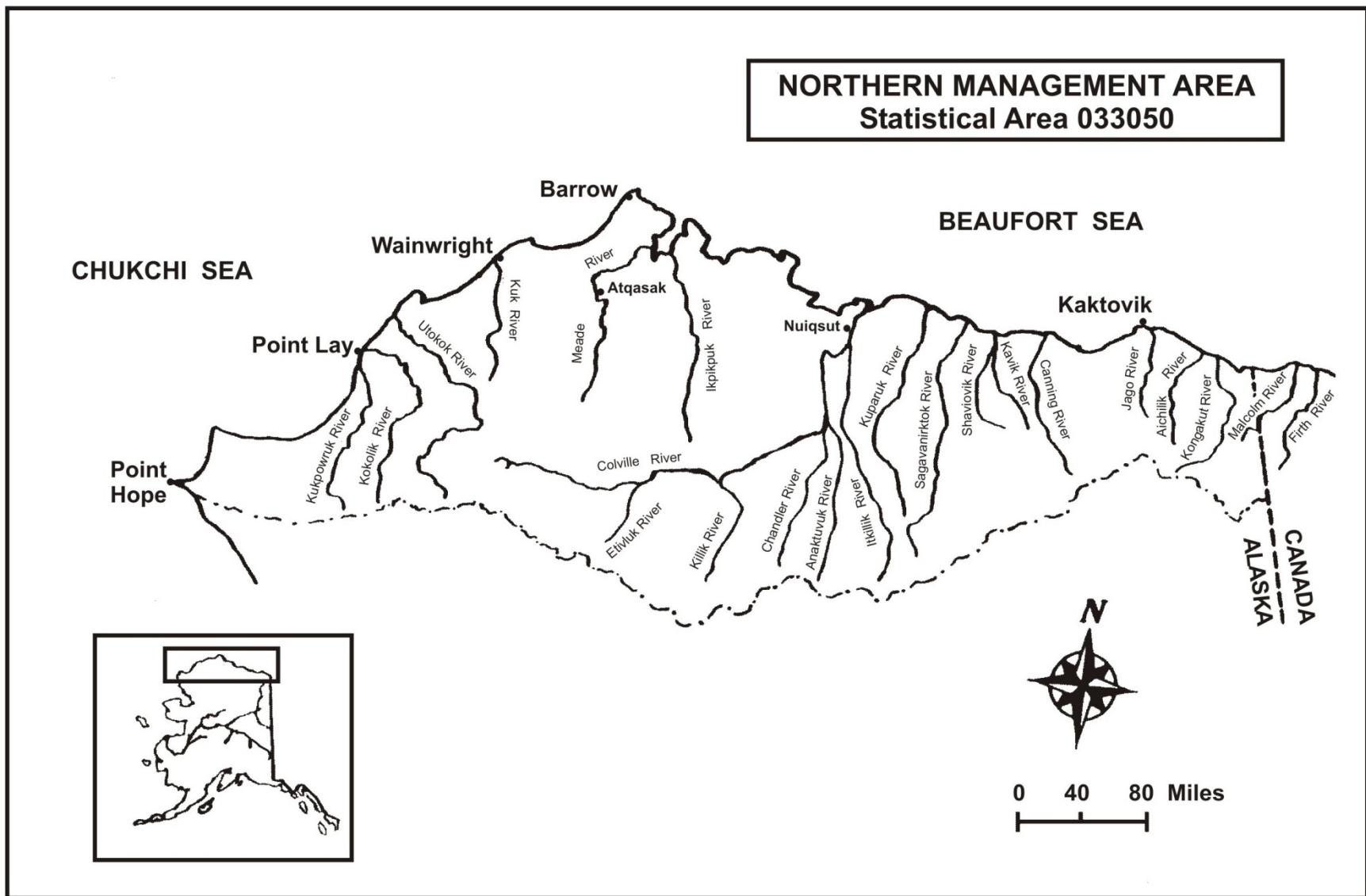


Figure 13.—The Northern management area.

APPENDIX A

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

Species Code ^a	Scientific Name	Common Name
601	<i>Lampetra japonica</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 harengus pallas</i>	Pacific Herring
516	<i>Mallotus villosus</i>	Capelin
NA	<i>Megalocottus platycephalus</i>	Sculpin

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

^a The species code is a three-digit number that identifies the type of fish caught on harvest fish tickets.

Appendix A2.–Yukon River drainage.

Mileage Location	from Mouth	Location	Mileage from Mouth
NORTH MOUTH (APOON PASS)		(District 3/4 Boundary)	
		Mouth, Bonasila River	306
Kotlik	6	Anvik	317
Hamilton	26	Mouth, Anvik River	318
		Grayling	336
MIDDLE MOUTH (KWIKPAK, KAWANAK PASS)		Mouth, Thompson Creek	349
		Blackburn	370
Choolunawick	16	Eagle Slide	402
Akers Camp	26	Mouth, Rodo River	447
New Hamilton	34	Kaltag	450
		Mouth, Nulato River	483
SOUTH MOUTH (KWIKLUAK PASS)		Nulato	484
		Koyukuk	502
Mouth, Black River	-18	Mouth, Koyukuk River	508
Flat Island	0	Mouth, Gisasa River	564
Sheldon Point	5	Huslia	711
Tin Can Point	8	Mouth, Dakli River	755
Alakanuk	17	Mouth, Hogatza River	780
Emmonak-Kwiguk (Kwiguk Pass)	24	Hughes	881
Sunshine Bay	24	Mouth, Kanuti River	935
Aproka Pass (upstream mouth)	35	Alatna (Mouth, Alatna R.)	956
Kwipak Pass (upstream mouth)	44	Allakaket	956
Head of Passes	48	Mouth, South Fork	986
Fish Village	52	Mouth, John River	1,117
Mouth, Anuk River	63	Bettles	1,121
		Middle Fork	1,141
(District 1/2 Boundary)		Cold Foot	1,174
Patsys Cabin	71	Wiseman	1,186
Mountain Village	87	Bishop Rock	514
Old Andreafsky	97	Prospect Point	519
Pitkas Point	103	Galena	530
Mouth, Andreafsky River	104	Whiskey Creek	555
St. Marys	107	Mouth, Yuki River	562
Pilot Station	122	Ruby	581
Mouth, Atcheulinguk		Mouth, Melozitna River	583
(Chulinak) River	126	Horner Hot Springs	605
Pilot Village	138	Kokrines	608
Marshall (Fortuna Ledge)	161	Mouth, Nowitna River	612
Upstream Mouth Owl Slough	163	Birches	647
Ingrihak	170	Kallands-Mouth of Illinois Creek	664
Ohogamuit	185		
Toklik	191	(District 4/5 Boundary)	
(District 2/3 Boundary)		Mouth, Tozitna River	681
Kakamut	193	Tanana Village	695
Russian Mission	213	Mouth, Tanana River	695
Dogfish Village	227		
Paimuit	251	(District 5/6 Boundary)	
Mouth, Innoko River	274	Manley Hot Springs	765
(South Slough)		Mouth, Kantishna River	793
Shageluk	328	Mouth, Toklat River	838
Holikachuk	383	Mouth, Sushana R.	850
Holy Cross	279	Mouth, Bearpaw River	887
Mouth, Koserefski River	286	Outlet, L. Minchumina	959
Old Paradise Village	301	Minto	835

<u>Mileage</u> <u>Location</u>	<u>from Mouth</u>	<u>Location</u>	<u>Mileage</u> <u>from Mouth</u>
Nenana	860		
Mouth, Nenana River	860	Mouth, Hodzana River	897
Mouth, Wood River	894	Beaver	932
Rosie Creek Bluffs	912	Mouth Hadweenzic River	952
Mouth, Chena R.(Fairbanks)	920	Mouth, Chandalar River	
		(Venetie Landing)	982
Mouth, Salcha River	965	Venetie	1,025
Benchmark #735 Slough	991	Fort Yukon	1,002
Mouth, Little Delta R.	1,000	Mouth, Porcupine River	1,002
Mouth, Delta Creek	1,014	Mouth, Black River	1,026
Mouth, Clear Creek	1,015	Chalkyitsik	1,084
(Richardson-Clearwater)		Mouth, Salmon Fork R.	1,142
Mouth, Shaw Creek	1,021	Mouth, Sheenjek River	1,054
Mouth, Delta River	1,031	Mouth, Coleen River	1,157
(Big Delta)		Mouth, Salmon Trout R.	1,193
Delta Junction	1,041	U.S. - Canadian Border	1,219
Mouth, Goodpaster River	1,049	Old Crow	1,259
Bluff Cabin Slough	1,050	Fishing Branch R.	1,600
Outlet, Clearwater Lake	1,052	spawning area	
Outlet, Clearwater Crk	1,053	Circle	1,061
(Delta Clearwater)		Woodchopper	1,110
Mouth, Gerstle River	1,059	Mouth, Charley River	1,124
Outlet, Healy Lake	1,071	Mouth, Kandik River	1,135
Outlet, Lake George	1,086	Mouth, Nation River	1,166
Tanacross	1,128	Mouth, Tatonduk River	1,186
Outlet, Tetlin Lake	1,188	Mouth, Seventymile River	1,194
Mouth, Nabesna River	1,210	Eagle	1,213
Northway Junction	1,214		
Mouth, Chisana River	1,215		
Mouth, Sheep Creek	1,297	<u>U.S.-Canadian border</u>	<u>1,224</u>
Rampart Rapids	731	Mouth, Fortymile River	1,269
Rampart	763	Dawson	1,319
Mouth, Hess Creek	789	Mouth, Klondike River	1,320
Mouth, Ray River	817	Mouth, Sixty Mile River	1,369
Highway Bridge -	820	Mouth, Stewart River	1,375
Pipeline Crossing		McQuesten	1,455
Mouth, Dall River	841		
Stevens Village	847		

Appendix A3.—Alaska and Canadian total utilization of Yukon River Chinook, chum, and coho salmon, 1961–2010.

Year	Alaska ^{a,b}			Canada ^c			Total		
	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1961	141,152	461,597	602,749	13,246	9,076	22,322	154,398	470,673	625,071
1962	105,844	434,663	540,507	13,937	9,436	23,373	119,781	444,099	563,880
1963	141,910	429,396	571,306	10,077	27,696	37,773	151,987	457,092	609,079
1964	109,818	504,420	614,238	7,408	12,187	19,595	117,226	516,607	633,833
1965	134,706	484,587	619,293	5,380	11,789	17,169	140,086	496,376	636,462
1966	104,887	309,502	414,389	4,452	13,192	17,644	109,339	322,694	432,033
1967	146,104	352,397	498,501	5,150	16,961	22,111	151,254	369,358	520,612
1968	118,632	270,818	389,450	5,042	11,633	16,675	123,674	282,451	406,125
1969	105,027	424,399	529,426	2,624	7,776	10,400	107,651	432,175	539,826
1970	93,019	585,760	678,779	4,663	3,711	8,374	97,682	589,471	687,153
1971	136,191	547,448	683,639	6,447	16,911	23,358	142,638	564,359	706,997
1972	113,098	461,617	574,715	5,729	7,532	13,261	118,827	469,149	587,976
1973	99,670	779,158	878,828	4,522	10,135	14,657	104,192	789,293	893,485
1974	118,053	1,229,678	1,347,731	5,631	11,646	17,277	123,684	1,241,324	1,365,008
1975	76,705	1,307,037	1,383,742	6,000	20,600	26,600	82,705	1,327,637	1,410,342
1976	105,582	1,026,908	1,132,490	5,025	5,200	10,225	110,607	1,032,108	1,142,715
1977	114,494	1,090,771	1,205,265	7,527	12,479	20,006	122,021	1,103,250	1,225,271
1978	129,988	1,615,312	1,745,300	5,881	9,566	15,447	135,869	1,624,878	1,760,747
1979	159,232	1,596,133	1,755,365	10,375	22,084	32,459	169,607	1,618,217	1,787,824
1980	197,665	1,730,960	1,928,625	22,846	23,718 ^d	46,564	220,511	1,754,678	1,975,189
1981	188,477	2,097,871	2,286,348	18,109	22,781 ^d	40,890	206,586	2,120,652	2,327,238
1982	152,808	1,265,457	1,418,265	17,208	16,091 ^d	33,299	170,016	1,281,548	1,451,564
1983	198,436	1,678,597	1,877,033	18,952	29,490 ^d	48,442	217,388	1,708,087	1,925,475
1984	162,683	1,548,101	1,710,784	16,795	29,767 ^d	46,562	179,478	1,577,868	1,757,346
1985	187,327	1,657,984	1,845,311	19,301	41,515 ^d	60,816	206,628	1,699,499	1,906,127
1986	146,004	1,758,825	1,904,829	20,364	14,843 ^d	35,207	166,368	1,773,668	1,940,036
1987	188,386	1,246,012	1,434,398	17,614	44,786 ^d	62,400	206,000	1,290,798	1,496,798
1988	148,421	2,328,707	2,477,128	21,427	33,915 ^d	55,342	169,848	2,362,622	2,532,470
1989	157,606	2,289,642	2,447,248	17,944	23,490 ^d	41,434	175,550	2,313,132	2,488,682
1990	149,433	1,055,515	1,204,948	19,227	34,302 ^d	53,529	167,114	1,059,943	1,258,477
1991	154,651	1,335,111	1,489,762	20,607	35,653 ^d	56,260	175,258	1,370,764	1,546,022
1992	168,191	863,575	1,031,766	17,903	21,310 ^d	39,213	186,094	884,885	1,070,979
1993	160,289	341,593	501,882	16,611	14,150 ^d	30,761	176,900	355,743	532,643
1994	170,829	551,743	722,572	21,198	38,342	59,540	192,027	590,085	782,112
1995	177,663	1,437,837	1,615,500	20,884	46,109	66,993	198,547	1,483,946	1,682,493
1996	138,562	1,121,181	1,259,743	19,612	24,395	44,007	158,174	1,145,576	1,303,750
1997	174,625	544,879	719,504	16,528	15,880	32,408	191,153	560,759	751,912
1998	99,369	199,735	299,104	5,937 ^e	8,165	14,102	105,306	207,900	313,206
1999	124,316	236,464	360,780	12,468	19,736	32,204	136,784	256,200	392,984
2000	45,307	106,936	152,243	4,879 ^f	9,273	14,152	50,186	116,209	166,395
2001	53,738	116,477	170,261	10,144	9,822	19,966	63,882	126,299	190,181
2002	67,888	122,360	190,248	9,257	8,493	17,750	77,145	130,853	207,998
2003	99,150	199,917	299,067	9,616	11,885	21,501	108,766	211,802	320,568
2004	112,332	206,099	318,431	11,238	9,930	21,168	123,570	216,029	339,599
2005	85,521	478,749	564,270	11,371	18,348	29,719	96,892	497,097	593,989
2006 ^g	95,184	520,258	623,790	9,072	11,907	20,979	104,256	532,165	636,421
2007 ^g	89,537	532,068	621,605	5,094	14,309	19,403	94,631	546,377	641,008
2008	48,870	481,548	530,277	3,426	9,409	12,835	52,296	490,957	543,253
2009	34,206	355,504	389,002	4,758	2,011	6,769	38,964	357,515	396,479
2010 ^g	53,952	390,496	441,254	2,647	5,787	8,434	56,599	396,283	452,882

-continued-

Appendix A3.–Page 2 of 2.

- ^a Includes estimated number of salmon harvested for the commercial production of roe.
- ^b Commercial, subsistence, personal use, test fish retained for subsistence, and sport catches combined. Does not include the Coastal District communities of Hooper Bay and Scammon Bay.
- ^c Aboriginal, Domestic, Commercial, test fishery, and sport catches combined.
- ^d Includes the Old Crow Aboriginal fishery harvest of coho salmon.
- ^e Catch includes 761 Chinook salmon taken in the mark–recapture test fishery.
- ^f Catch includes 737 Chinook salmon taken in the test fishery.
- ^g Data are preliminary.

Appendix A4.–Commercial Chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2010.

Year	Lower Yukon Area ^b				Upper Yukon Area ^a		
	District 1	District 2	District 3	Subtotal	District 4		Estimated Harvest ^c
					Number	Roe	
1961	84,466	29,026	4,368	117,860			
1962	67,099	22,224	4,687	94,010			
1963	85,004	24,221	7,020	116,245			
1964	67,555	20,246	4,705	92,506			
1965	89,268	23,763	3,204	116,235			
1966	70,788	16,927	3,612	91,327			
1967	104,350	20,239	3,618	128,207			
1968	79,465	21,392	4,543	105,400			
1969	71,688	14,756	3,595	90,039			
1970	56,648	17,141	3,705	77,494			
1971	86,042	19,226	3,490	108,758			
1972	70,052	17,855	3,841	91,748			
1973	56,981	13,859	3,204	74,044			
1974 ^d	71,840	17,948	3,480	93,268	685	0	685
1975	44,585	11,315	4,177	60,077	389	0	389
1976	62,410	16,556	4,148	83,114	409	0	409
1977	69,915	16,722	3,965	90,602	985	0	985
1978	59,006	32,924	2,916	94,846	608	0	608
1979	75,007	41,498	5,018	121,523	1,989	0	1,989
1980	90,382	50,004	5,240	145,626	1,521	0	1,521
1981	99,506	45,781	4,023	149,310	1,347	0	1,347
1982	74,450	39,132	2,609	116,191	1,087	0	1,087
1983	95,457	43,229	4,106	142,792	601	0	601
1984	74,671	36,697	3,039	114,407	961	0	961
1985	90,011	48,365	2,588	140,964	664	0	664
1986	53,035	41,849	901	95,785	502	0	502
1987 ^e	76,643	47,458	2,039	126,140	1,524	0	1,524
1988	56,120	35,120	1,767	93,007	3,159	0	3,159
1989	61,570 ^f	33,166	1,645	96,381	2,790	0	2,790
1990	51,199 ^g	33,061	2,341	86,601	3,536	8	3,538
1991 ^h	56,332	39,260	2,344	97,936	2,446	2,222	3,582
1992 ⁱ	74,212	38,139	1,819	114,170	1,651	2,273	2,394
1993	49,286	37,293	1,501	88,080	1,349	701	1,577
1994	62,241	41,692	1,114	105,047	2,216	564	2,443
1995	76,106	41,458	-	117,564	262	626	499
1996	56,642	30,209	0	86,851	45	202	137
1997	66,384	39,363	-	105,747	1,450	14	1,457
1998	25,413	16,806	0	42,219	-	-	-
1999	37,161	27,133	538	64,832	1,437	0	1,437
2000	4,735	3,783	-	8,518	-	-	-
2001	-	-	-	-	-	-	-
2002	11,081 ^j	11,434	-	22,515	- ^k	- ^k	-
2003	22,709	14,220	-	36,929	562	0	562
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	-	-	-
2000-2009							
Average	12,861	10,248	51	23,159	56	0	56
2005-2009							
Average	12,336	9,780	101	22,216	-	-	-

-continued-

Appendix A4.–Page 2 of 3.

Upper Yukon Area ^a												
Year	District 5			District 6			Subtotal			Total	Canada	Grand
	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Estimated Harvest ^c	Total	Total
1961							1,804	0	1,804	119,664	3,446	123,110
1962							724	0	724	94,734	4,037	98,771
1963							803	0	803	117,048	2,283	119,331
1964							1,081	0	1,081	93,587	3,208	96,795
1965							1,863	0	1,863	118,098	2,265	120,363
1966							1,988	0	1,988	93,315	1,942	95,257
1967							1,449	0	1,449	129,656	2,187	131,843
1968							1,126	0	1,126	106,526	2,212	108,738
1969							988	0	988	91,027	1,640	92,667
1970							1,651	0	1,651	79,145	2,611	81,756
1971							1,749	0	1,749	110,507	3,178	113,685
1972							1,092	0	1,092	92,840	1,769	94,609
1973							1,309	0	1,309	75,353	2,199	77,552
1974 ^d	2,663	0	2,663	1,473	0	1,473	4,821	0	4,821	98,089	1,808	99,897
1975	2,872	0	2,872	500	0	500	3,761	0	3,761	63,838	3,000	66,838
1976	3,151	0	3,151	1,102	0	1,102	4,662	0	4,662	87,776	3,500	91,276
1977	4,162	0	4,162	1,008	0	1,008	6,155	0	6,155	96,757	4,720	101,477
1978	3,079	0	3,079	635	0	635	4,322	0	4,322	99,168	2,975	102,143
1979	3,389	0	3,389	772	0	772	6,150	0	6,150	127,673	6,175	133,848
1980	4,891	0	4,891	1,947	0	1,947	8,359	0	8,359	153,985	9,500	163,485
1981	6,374	0	6,374	987	0	987	8,708	0	8,708	158,018	8,593	166,611
1982	5,385	0	5,385	981	0	981	7,453	0	7,453	123,644	8,640	132,284
1983	3,606	0	3,606	911	0	911	5,118	0	5,118	147,910	13,027	160,937
1984	3,669	0	3,669	867	0	867	5,497	0	5,497	119,904	8,885	129,789
1985	3,418	0	3,418	1,142	0	1,142	5,224	0	5,224	146,188	12,573	158,761
1986	2,733	0	2,733	950	0	950	4,185	0	4,185	99,970	10,797	110,767
1987 ^f	3,758	0	3,758	3,338	0	3,338	8,620	0	8,620	134,760	10,864	145,624
1988	3,436	0	3,436	762	0	762	7,357	0	7,357	100,364	13,217	113,581
1989	3,286	0	3,286	1,741	0	1,741	7,817	0	7,817	104,198	9,789	113,987
1990	3,353	47	3,365	1,757	1,676	2,156	8,646	1,731	9,059	95,660	11,324	106,984
1991 ^j	3,810	62	3,826	686	1,545	1,072	6,942	3,829	8,480	106,416	10,906	117,322
1992 ^k	3,852	7	3,855	572	884	753	6,075	3,164	7,002	121,172	10,877	132,049
1993	3,008	0	3,008	1,113	1,313	1,445	5,470	2,014	6,030	94,110	10,350	104,460
1994	3,739	10	3,744	2,135	1,820	2,606	8,090	2,394	8,793	113,840	12,028	125,868
1995	3,242	0	3,242	1,660	4,731	2,747	5,164	5,357	6,488	124,052	11,146	135,198
1996	2,497	518	2,757	278	750	447	2,820	1,470	3,341	90,192	10,164	100,356
1997	3,678	0	3,678	1,966	3,211	2,728	7,094	3,225	7,863	113,610	5,311	118,921
1998	517	0	517	882	260	963	1,399	260	1,480	43,699	390	44,089
1999	2,604	0	2,604	402	1,096	689	4,443	1,096	4,730	69,562	3,160	72,722
2000	-	-	-	-	-	-	-	-	-	8,518	-	8,518
2001	-	-	-	-	-	-	-	-	-	-	1,351	1,351
2002	771	0	771	836	896	1,066	1,607	896	1,837	24,352	708	25,060
2003	1,134	0	1,134	1,813	0	1,813	3,509	0	3,509	40,438	2,672	43,110
2004	1,546	0	1,546	2,057	0	2,057	3,603	0	3,603	56,151	3,785	59,936
2005	1,469	0	1,469	453	0	453	1,922	0	1,922	32,029	4,066	36,095
2006	1,839	0	1,839	84	0	84	1,923	0	1,923	45,829	2,332	48,161
2007	1,241	0	1,241	281	0	281	1,522	0	1,522	33,634	-	33,634
2008	-	-	-	-	-	-	-	-	-	4,641	1	4,642
2009	-	-	-	-	-	-	-	-	-	316	364	680
2010	-	-	-	-	-	-	-	-	-	9,897	0	9,897
2000-2009												
Average	800	-	800	552	90	575	1,409	90	1,432	24,591	1,528	26,119
2005-2009												
Average	910	-	910	164	0	164	1,073	0	1,073	23,290	1,353	24,642

-continued-

Appendix A4.–Page 3 of 3.

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

- ^a Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate Chinook salmon roe from summer chum salmon roe. Does not include ADF&G test fish sales.
- ^b All fish sold in the round. Includes ADF&G test fish sales prior to 1988.
- ^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.
- ^d In 1974, District 4 was subdivided to include Districts 5 and 6.
- ^f Includes the illegal sales of 653 Chinook salmon in District 5 and 2,136 Chinook salmon in District 6.
- ^g Includes the illegal sales of 3,211 Chinook salmon.
- ^h Includes the illegal sales of 1,101 Chinook salmon.
- ^j Includes the illegal sales of 2,711 Chinook salmon in District 1 and 284 Chinook salmon in District 2.
- ^k Includes the illegal sales of 1,218 Chinook salmon in District 1 and 207 Chinook salmon in District 2.

Appendix A5.—Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1967–2010.

Lower Yukon Area				
Year	District 1 ^a	District 2 ^a	District 3	Subtotal
1967	9,453	1,425	57	10,935
1968	12,995	1,407	68	14,470
1969	56,886	5,080	-	61,966
1970	117,357	19,649	-	137,006
1971	93,928	6,112	50	100,090
1972	114,234	20,907	527	135,668
1973	221,644	63,402	463	285,509
1974	^b 466,004	74,152	1,721	541,877
1975	418,323	99,139	-	517,462
1976	273,204	99,190	9,802	382,196
1977	250,652	105,679	3,412	359,743
1978	393,785	227,548	27,003	648,336
1979	369,934	172,838	40,015	582,787
1980	391,252	308,704	44,782	744,738
1981	507,158	351,878	54,471	913,507
1982	249,516	182,344	4,086	435,946
1983	451,164	248,092	14,600	713,856
1984	292,676	236,931	1,087	530,694
1985	247,486	188,099	1,792	437,377
1986	381,127	288,427	442	669,996
1987	222,898	174,876	3,501	401,275
1988	645,322	424,461	13,965	1,083,748
1989	544,373 ^c	343,032	7,578	894,983
1990	146,725	131,755	643	279,123
1991	140,470 ^d	175,149	8,912	324,531
1992	^e 177,329	147,129	65	324,523
1993	73,659	19,332	463	93,454
1994	42,332	12,869	35	55,236
1995	142,266	83,817	-	226,083
1996	92,506	30,727	1,534 ^f	123,233
1997	59,915	18,242	-	78,157
1998	21,270	6,848	-	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
2000-2009				
Average	35,398	29,300	59	64,711
2005-2009				
Average	58,273	49,600	59	107,896

-continued-

Appendix A5.–Page 2 of 4.

Upper Yukon Area ^g						
Year	District 4			District 5		
	Number	Roe	Estimated Harvest ^h	Number	Roe	Estimated Harvest ^h
1967	-	-	-	-	-	-
1968	-	-	-	-	-	-
1969	-	-	-	-	-	-
1970	-	-	-	-	-	-
1971	-	-	-	-	-	-
1972	-	-	-	-	-	-
1973	-	-	-	-	-	-
1974	^b 27,866	0	27,866	6,831	0	6,831
1975	165,054	0	165,054	12,997	0	12,997
1976	211,307	0	211,307	774	0	774
1977	169,541	0	169,541	1,274	0	1,274
1978	364,184	16,920	381,104	4,892	605	5,497
1979	169,430	35,317	204,747	8,608	1,009	9,617
1980	147,560	135,824	283,384	456	0	456
1981	59,718	187,032	330,445	1,236	49	1,285
1982	3,647	151,281	257,719	213	21	234
1983	6,672	148,125	255,388	42	1,856	1,898
1984	1,009	166,842	278,070	645	47	692
1985	12,007	247,085	427,483	700	0	700
1986	300	269,545	465,535	690	0	690
1987	29,991	121,474	209,800	362	44	406
1988	24,051	254,526	490,074	722	363	1,085
1989	18,554	283,305	510,244	154	373	527
1990	12,364	105,723	222,550	11	594	671
1991	6,381	137,232	309,644	4	28	35
1992	2,659	110,809	211,396	102	295	430
1993	27	22,447	42,957	0	0	0
1994	3,611	89,717	171,607	229	212	464
1995	8,873	281,074	554,587	107	188	316
1996	0	295,190	510,240	0	302	336
1997	2,062	74,231	124,671	137	0	137
1998	-	-	-	96	13	110
1999	1,267	0	1,267	115	0	115
2000	-	-	-	-	-	-
2001	-	-	-	-	-	-
2002	-	-	-	6	0	6
2003	62	0	62	0	0	0
2004	-	-	-	25	0	25
2005	-	-	-	0	0	0
2006	-	-	-	20	0	20
2007	7,304	0	7,304	0	0	0
2008	23,746	0	23,746	-	-	-
2009	4,589	0	4,589	-	-	-
2010	44,207	0	44,207	-	-	-
2000-2009						
Average	8,925	0	8,925	9	0	9
2005-2009						
Average	11,880	0	11,880	7	0	7

-continued-

Appendix A5.–Page 3 of 4.

Year	Upper Yukon Area ^g			Subtotal			Total		
	District 6								
	Number	Roe	Estimated Harvest ^h	Number	Roe	Estimated Harvest ^h	Number	Roe	Estimated Harvest ^h
1967	-	-	-	-	-	-	10,935	-	10,935
1968	-	-	-	-	-	-	14,470	-	14,470
1969	-	-	-	-	-	-	61,966	-	61,966
1970	-	-	-	-	-	-	137,006	-	137,006
1971	-	-	-	-	-	-	100,090	-	100,090
1972	-	-	-	-	-	-	135,668	-	135,668
1973	-	-	-	-	-	-	285,509	-	285,509
1974	^b 13,318	0	13,318 ^d	48,015	0	48,015	589,892	0	589,892
1975	14,782	0	14,782	192,833	0	192,833	710,295	0	710,295
1976	6,617	0	6,617	218,698	0	218,698	600,894	0	600,894
1977	4,317	0	4,317	175,132	0	175,132	534,875	0	534,875
1978	34,814	8,236	43,050	403,890	25,761	429,651	1,052,226	25,761	1,077,987
1979	18,491	3,891	22,382	196,529	40,217	236,746	779,316	40,217	819,533
1980	35,855	3,282	39,137	183,871	139,106	322,977	928,609	139,106	1,067,715
1981	32,477	1,987	34,464	93,431	189,068	366,194	1,006,938	189,068	1,279,701
1982	21,597	1,517	23,114	25,457	152,819	281,067	461,403	152,819	717,013
1983	24,309	18	24,327	31,023	149,999	281,613	744,879	149,999	995,469
1984	56,249	335	56,584	57,903	167,224	335,346	588,597	167,224	866,040
1985	66,913	1,540	68,453	79,620	248,625	496,636	516,997	248,625	934,013
1986	50,483	2,146	52,629	51,473	271,691	518,854	721,469	271,691	1,188,850
1987	10,610	450	11,060	40,963	121,968	221,266	442,238	121,968	622,541
1988	40,129	1,646	41,775	64,902	256,535	532,934	1,148,650	256,535	1,616,682
1989	42,115	4,871	46,986	60,823	288,549	557,757	955,806	288,549	1,452,740
1990	11,127 ^k	3,059	14,833	23,502	109,376	238,054	302,625	109,376	517,177
1991	18,197	4,716	23,892	24,582	141,976	333,571	349,113	141,976	658,102
1992	5,029	1,892	7,228	7,790	112,996	219,054	332,313	112,996	543,577
1993	3,041	515	3,705	3,068	22,962	46,662	96,522	22,962	140,116
1994	21,208	7,828	31,434	25,048	97,757	203,505	80,284	97,757	258,741
1995	24,711	9,475	37,428	33,691	290,737	592,331	259,774	290,737	818,414
1996	22,360	18,332	46,890	22,360	313,824	557,466	145,593	313,824	680,699
1997	14,886	9,036	25,287	17,085	83,267	150,095	95,242	83,267	228,252
1998	397	140	570	493	153	680	28,611	153	28,798
1999	124	24	148	1,506	24	1,530	29,389	24	29,413
2000	-	-	-	-	-	-	6,624	-	6,624
2001	-	-	-	-	-	-	-	-	-
2002	3,198	16	3,218	3,204	16	3,224	13,558	16	13,578
2003	4,461	0	4,461	4,523	0	4,523	10,685	0	10,685
2004	6,610	0	6,610	6,635	0	6,635	26,410	0	26,410
2005	8,986	0	8,986	8,986	0	8,986	41,264	0	41,264
2006	44,621	0	44,621	44,641	0	44,641	92,116	0	92,116
2007	14,674	0	14,674	21,978	0	21,978	198,201	0	198,201
2008	1,842	0	1,842	25,588	0	25,588	151,186	0	151,186
2009	7,777	0	7,777	12,366	0	12,366	170,272	0	170,272
2010	5,466	0	5,466	49,673	0	49,673	232,888	0	232,888
2000-2009									
Average	11,521	2	11,524	15,990	98,222	189,169	78,924	2	78,926
2005-2009									
Average	15,580	0	15,580	22,712	13	3,092	130,608	0	130,608

-continued-

Appendix A5.–Page 4 of 4.

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

- ^a All sales are fish in the round in District 1 and 2. Includes ADF&G test fish sales prior to 1988.
- ^b In 1974, District 4 was subdivided to include Districts 5 and 6.
- ^c Includes the illegal sales of 150 summer chum salmon in District 1.
- ^d Includes the illegal sales of 1,023 summer chum salmon.
- ^e Includes the illegal sales of 31 summer chum salmon in District 1 and 91 summer chum salmon in District 2.
- ^f Number of males and females harvested to produce 935 pounds of roe.
- ^g Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and Chinook salmon roe. Does not include ADF&G test fish sales.
- ^h From 1967 to 2006, the estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold. In addition, the estimated harvest for Districts 3 and 4 includes the estimated number of unsold males.
- ⁱ The number of female fish from which roe were extracted is the number harvested. Males were not purchased and accounted for as caught but not sold are included in personal use totals. Roe information is included in Zephyr as both numbers of fish and pounds of roe were recorded on fish tickets.
- ^j Both males and females were purchased and are included in the number harvested.
- ^k Does not include 1,233 female summer chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

Appendix A6.–Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961–2010.

Year	Lower Yukon Area			Subtotal
	District 1 ^a	District 2 ^a	District 3 ^a	
1961	42,461	-	-	42,461
1962	53,116	-	-	53,116
1963	0	-	-	0
1964	8,347	-	-	8,347
1965	22,936	-	-	22,936
1966	69,836	-	1,209	71,045
1967	36,451	-	1,823	38,274
1968	49,857	-	3,068	52,925
1969	128,866	-	1,722	130,588
1970	200,306	4,858	3,285	208,449
1971	188,533	-	-	188,533
1972	136,711	12,898	1,313	150,922
1973	173,783	45,304	-	219,087
1974	176,036 ^b	53,540	552	230,128
1975	158,183	51,666	5,590	215,439
1976	105,851	21,212	4,250	131,313
1977	131,758	51,994	15,851	199,603
1978	127,947	51,646	11,527	191,120
1979	109,406	94,042	25,955	229,403
1980	106,829	83,881	13,519	204,229
1981	167,834	154,883	19,043	341,760
1982	97,484	96,581	5,815	199,880
1983	124,371	85,645	10,018	220,034
1984	78,751	70,803	6,429	155,983
1985	129,948	40,490	5,164	175,602
1986	59,352	51,307	2,793	113,452
1987	-	-	-	-
1988	45,317	31,861	2,090	79,268
1989	77,876	97,906	15,332	191,114
1990	27,337	37,173	3,715	68,225
1991	59,724	102,628	9,213	171,565
1992	-	-	-	-
1993	-	-	-	-
1994	-	-	-	-
1995	79,345	90,831	-	170,176
1996	33,629	29,651	-	63,280
1997	27,483	24,326	-	51,809
1998	-	-	-	-
1999	9,987	9,703	-	19,690
2000	-	-	-	-
2001	-	-	-	-
2002	-	-	-	-
2003	5,586	-	-	5,586
2004	660	-	-	660
2005	130,525	-	-	130,525
2006	101,254	39,905	-	141,159
2007	38,852	35,826	-	74,678
2008	67,704	41,270	-	108,974
2009	11,911	12,072	-	23,983
2010	545	270	-	815
2000-2009				
Average	35,649	12,907	0	48,557
2005-2009				
Average	70,049	25,815	0	95,864

-continued-

Appendix A6.–Page 2 of 4.

Year	Upper Yukon Area								
	District 4			District 5			District 6		
	Numbers ^a	Roe ^c	Estimated Harvest ^d	Numbers ^a	Roe ^c	Estimated Harvest ^d	Numbers ^a	Roe ^c	Estimated Harvest ^d
1961	-	-	-						
1962	-	-	-						
1963	-	-	-						
1964	-	-	-						
1965	381 ^e	0	381 ^e						
1966	-	-	-						
1967	-	-	-						
1968	-	-	-						
1969	722 ^e	0	722 ^e						
1970	1,146 ^e	0	1,146 ^e						
1971	1,061 ^e	0	1,061 ^e						
1972	1,254 ^e	0	1,254 ^e						
1973	13,003 ^e	0	13,003 ^e						
1974	^b 9,213	0	9,213	23,551	0	23,551	26,884	0	26,884
1975	13,666	0	13,666	27,212	0	27,212	18,692	0	18,692
1976	1,742	0	1,742	5,387	0	5,387	17,948	0	17,948
1977	13,980	0	13,980	25,730	0	25,730	18,673	0	18,673
1978	10,988	1,721	12,709	21,016	5,220	26,236	13,259	3,687	16,946
1979	48,899	3,199	52,098	47,459	8,097	55,556	34,185	7,170	41,355
1980	27,978	4,347	32,325	41,771	605	42,376	19,452	68	19,520
1981	12,082	1,311	13,393	86,620	6,955	93,575	25,989	3,019	29,008
1982	3,894	167	4,061	13,593	42	13,635	6,820	596	7,416
1983	4,482	1,963	6,445	43,993	0	43,993	34,089	3,101	37,190
1984	7,625	2,215	9,840	24,060	57	24,117	20,564	56	20,620
1985	24,452	2,525	26,977	25,338	0	25,338	42,352	0	42,352
1986	2,045	0	2,045	22,053	395	22,448	1,892	182	2,074
1987	-	-	-	-	-	-	-	-	-
1988	15,662	1,421	17,083	16,989	0	16,989	21,844	1,806	23,650
1989	11,776	3,407	15,183	18,215	3,989	22,204	49,090	7,353	56,443
1990	4,989	2,351	8,166	7,778	1,058	8,836	43,182	7,535	50,975
1991	3,737	1,616	6,091	27,355	3,625	30,980	28,195	14,154	44,448
1992	-	-	-	-	-	-	15,721	2,806	19,022
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	3,630	0	3,630	1	4,368	4,369
1995	2,924	4,126	8,731	9,778	18,816	30,033	67,855	9,560	74,117
1996	2,918	0	2,918	11,878	8,498	20,376	10,266	6,173	17,574
1997	2,458	0	2,458	2,446	1,194	3,640	-	-	-
1998	-	-	-	-	-	-	-	-	-
1999	681	0	681	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	1,315	0	1,315	-	-	-	4,095	0	4,095
2004	-	-	-	-	-	-	3,450	0	3,450
2005	-	-	-	-	-	-	49,637	0	49,637
2006	-	-	-	1,667	0	1,667	23,353	0	23,353
2007	-	-	-	427	0	427	15,572	0	15,572
2008	-	-	-	4,556	0	4,556	5,967	0	5,967
2009	-	-	-	-	-	-	1,893	0	1,893
2010	-	-	-	-	-	-	1,735	0	1,735
2000-2009									
Average	132	0	132	665	0	665	10,397	0	10,397
2005-2009									
Average	0	0	0	1,330	0	1,330	19,284	0	19,284

-continued-

Appendix A6.–Page 3 of 4.

Upper Yukon Area						
Year	Subtotal			Total Estimated Harvest	Canada Total	Grand Total
	Numbers ^a	Roe ^c	Estimated Harvest ^d			
1961	0	0	0	42,461	3,276	45,737
1962	0	0	0	53,116	936	54,052
1963	0	0	0	0	2,196	2,196
1964	0	0	0	8,347	1,929	10,276
1965	381	0	381	23,317	2,071	25,388
1966	0	0	0	71,045	3,157	74,202
1967	0	0	0	38,274	3,343	41,617
1968	0	0	0	52,925	453	53,378
1969	722	0	722	131,310	2,279	133,589
1970	1,146	0	1,146	209,595	2,479	212,074
1971	1,061	0	1,061	189,594	1,761	191,355
1972	1,254	0	1,254	152,176	2,532	154,708
1973	13,003	0	13,003	232,090	2,806	234,896
1974	59,648	0	59,648	289,776	2,544	292,320
1975	59,570	0	59,570	275,009	2,500	277,509
1976	25,077	0	25,077	156,390	1,000	157,390
1977	58,383	0	58,383	257,986	3,990	261,976
1978	45,263	10,628	55,891	247,011	3,356	250,367
1979	130,543	18,466	149,009	378,412	9,084	387,496
1980	89,201	5,020	94,221	298,450	9,000	307,450
1981	124,691	11,285	135,976	477,736	15,260	492,996
1982	24,307	805	25,112	224,992	11,312	236,304
1983	82,564	5,064	87,628	307,662	25,990	333,652
1984	52,249	2,328	54,577	210,560	22,932	233,492
1985	92,142	2,525	94,667	270,269	35,746	306,015
1986	25,990	577	26,567	140,019	11,464	151,483
1987	0	0	0	0	40,591	40,591
1988	54,495	3,227	57,722	136,990	30,263	167,253
1989	79,081	14,749	93,830	284,944	17,549	302,493
1990	55,949	10,944	67,977	136,202	27,537	163,739
1991	59,287	19,395	81,519	253,084	31,404	284,488
1992	15,721	2,806	19,022	19,022	18,576	37,598
1993	-	-	-	-	7,762	7,762
1994	3,631	4,368	7,999	7,999	30,035	38,034
1995	80,557	32,502	112,881	283,057	39,012	322,069
1996	25,062	14,671	40,868	104,148	20,069	124,217
1997	4,904	1,194	6,098	57,907	8,068	65,975
1998	-	-	-	-	-	-
1999	681	0	681	20,371	10,402	30,773
2000	-	-	-	-	1,319	1,319
2001	-	-	-	-	2,198	2,198
2002	-	-	-	-	3,065	3,065
2003	5,410	0	5,410	10,996	9,030	20,026
2004	3,450	0	3,450	4,110	7,365	11,475
2005	49,637	0	49,637	180,162	11,931	192,093
2006	25,020	0	25,020	166,179	4,096	170,275
2007	15,999	0	15,999	90,677	7,109	97,786
2008	10,523	0	10,523	119,497	4,062	123,559
2009	1,893	0	1,893	25,876	293	26,169
2010	1,735	0	1,735	2,550	2,186	4,736
2000-2009						
Average	11,193	0	11,193	59,750	5,047	64,797
2005-2009						
Average	20,614	0	20,614	116,478	5,498	121,976

-continued-

Appendix A6.–Page 4 of 4.

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred. Numbers based on reports generated from the state TIX and Zephyr programs. These numbers supersede any numbers reported in previous Yukon Area annual management reports. Canadian harvest numbers are from Joint Technical Committee of the Yukon River US/Canada Panel. Includes test fish sales prior to 1988.

^a Harvest reports in numbers of fish sold in the round.

^b In 1974, District 4 was subdivided to include Districts 5 and 6.

^c 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 roe from fall chum roe.

^d The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the ratio of pounds of roe to females to produce roe was assumed to be 1.0 pounds of roe per female. In 1990 an "estimated harvest" column was added to the district-specific tables.

^e These numbers were added from original Yukon Area annual management reports January 13, 2006, they are not in the fish ticket programs.

Appendix A7.–Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961–2010.

Year	Lower Yukon Area			
	District 1 ^a	District 2 ^a	District 3 ^a	Subtotal
1961	2,855	-	-	2,855
1962	22,926	-	-	22,926
1963	5,572	-	-	5,572
1964	2,446	-	-	2,446
1965	350	-	-	350
1966	19,254	-	-	19,254
1967	9,925	-	1,122	11,047
1968	13,153	-	150	13,303
1969	13,989	-	1,009	14,998
1970	12,632	-	-	12,632
1971	12,165	-	-	12,165
1972	21,705	506	-	22,211
1973	34,860	1,781	-	36,641
1974	13,713	176	-	13,889
1975	2,288	200	-	2,488
1976	4,064	17	-	4,081
1977	31,720	5,319	538	37,577
1978	16,460	5,835	758	23,053
1979	11,369	2,850	-	14,219
1980	4,829	2,660	-	7,489
1981	13,129	7,848	419	21,396
1982	15,115	14,179	87	29,381
1983	4,595	2,557	-	7,152
1984	29,472	43,064	621	73,157
1985	27,675	17,125	171	44,971
1986	24,824	21,197	793	46,814
1987	-	-	-	-
1988	36,435	34,776	1,419	72,630
1989	24,672	38,522	3,988	67,182
1990	13,354	16,435	918	30,707
1991	54,095	40,898	1,905	96,898
1992	-	-	-	-
1993	-	-	-	-
1994	-	-	-	-
1995	21,625	18,488	-	40,113
1996	27,705	20,974	-	48,679
1997	21,450	13,056	-	34,506
1998	-	-	-	-
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	19,248	-	33,194
2009	5,992	1,577	-	7,569
2010	1,027	1,023	-	2,050
2000-2009				
Average	18,408	14,199	-	26,521
2005-2009				
Average	23,503	14,199	-	34,862

-continued-

Appendix A7.–Page 2 of 4.

Year	Upper Yukon Area								
	District 4			District 5			District 6		
	Numbers ^a	Roe ^c	Estimated Harvest ^d	Numbers ^a	Roe ^c	Estimated Harvest ^d	Numbers ^a	Roe ^c	Estimated Harvest ^d
1961	-	-	-						
1962	-	-	-						
1963	-	-	-						
1964	-	-	-						
1965	0	0	0						
1966	-	-	-						
1967	-	-	-						
1968	-	-	-						
1969	95	0	95						
1970	556	0	556						
1971	38	0	38						
1972	22	0	22						
1973	-	-	-						
1974	^b -	-	-	1,409	0	1,409	1,479	0	1,479
1975	-	-	-	5	0	5	53	0	53
1976	-	-	-	-	-	-	1,103	0	1,103
1977	-	-	-	2	0	2	1,284	0	1,284
1978	32	0	32	1	0	1	3,066	0	3,066
1979	155	0	155	-	-	-	2,791	0	2,791
1980	30	0	30	-	-	-	1,226	0	1,226
1981	-	-	-	-	-	-	2,284	0	2,284
1982	15	0	15	-	-	-	7,780	0	7,780
1983	-	-	-	-	-	-	6,168	0	6,168
1984	1,095	0	1,095	-	-	-	7,688	0	7,688
1985	938	0	938	-	-	-	11,762	0	11,762
1986	0	0	0	-	-	-	441	0	441
1987	-	-	-	-	-	-	-	-	-
1988	2	0	2	8	0	8	13,972	0	13,972
1989	3	0	3	84	0	84	16,084	0	16,084
1990	0	0	0	-	-	-	11,549	4,042	14,804
1991	14	0	14	-	-	-	6,268	4,299	9,774
1992	-	-	-	-	-	-	6,556	1,680	7,979
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	120	5,588	4,451
1995	-	-	-	-	-	-	5,826	2,229	6,900
1996	161	0	161	-	-	-	3,803	4,829	7,142
1997	814	0	814	-	-	-	-	-	-
1998	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	367	0	367	-	-	-	15,119	0	15,119
2004	-	-	-	0	0	0	18,649	0	18,649
2005	-	-	-	-	-	-	21,778	0	21,778
2006	-	-	-	-	-	-	11,137	0	11,137
2007	-	-	-	-	-	-	1,368	0	1,368
2008	-	-	-	91	0	91	2,408	0	2,408
2009	-	-	-	-	-	-	742	0	742
2010	-	-	-	-	-	-	1,700	0	1,700
2000-2009									
Average	367	0	367	46	0	46	9,113	0	10,172
2005-2009									
Average	-	-	-	91	0	91	7,487	0	7,487

-continued-

Appendix A7.–Page 3 of 4.

Year	Subtotal			Alaska Total Harvest
	Numbers ^a	Roe ^c	Estimated Harvest ^d	
1961	-	-	-	2,855
1962	-	-	-	22,926
1963	-	-	-	5,572
1964	-	-	-	2,446
1965	-	-	-	350
1966	-	-	-	19,254
1967	-	-	-	11,047
1968	-	-	-	13,303
1969	95	-	95	15,093
1970	556	-	556	13,188
1971	38	-	38	12,203
1972	22	-	22	22,233
1973	-	-	-	36,641
1974	^b 2,888	-	2,888	16,777
1975	58	-	58	2,546
1976	1,103	-	1,103	5,184
1977	1,286	-	1,286	38,863
1978	3,099	-	3,099	26,152
1979	2,946	-	2,946	17,165
1980	1,256	-	1,256	8,745
1981	2,284	-	2,284	23,680
1982	7,795	-	7,795	37,176
1983	6,168	-	6,168	13,320
1984	8,783	-	8,783	81,940
1985	12,700	-	12,700	57,671
1986	441	-	441	47,255
1987	0	-	0	0
1988	13,982	-	13,982	86,612
1989	16,171	-	16,171	83,353
1990	11,549	4,042	14,804	45,511
1991	6,282	4,299	9,788	106,686
1992	6,556	1,680	7,979	7,979
1993	0	0	0	0
1994	120	5,588	4,451	4,451
1995	5,826	2,229	6,900	47,013
1996	3,964	4,829	7,303	55,982
1997	814	0	814	35,320
1998	-	-	-	0
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	35,693
2009	742	0	742	8,311
2010	1,700	0	1,700	3,750
2000-2009				
Average	10,237	0	10,237	25,731
2005-2009				
Average	7,505	0	7,505	42,366

-continued-

Appendix A7.–Page 4 of 4.

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred. Numbers based on reports generated from the state TIX and Zephyr programs. These numbers supersede any numbers reported in previous Yukon Area annual management reports. Canadian harvest numbers are from Joint Technical Committee of the Yukon River US/Canada Panel. Does not include test fish sales.

^a Harvest reports in numbers of fish sold in the round.

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

^c Estimated harvest is the number of fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the ratio of pounds of roe to females to produce roe was calculated at 1:1. In 1990 an "estimated harvest" column was added to the district-specific tables.

^d In 1974, District 4 was subdivided into Districts 5 and 6.

Appendix A8.—Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1976–2010.

Year	Lower Yukon Area		Upper Yukon Area		Upper Yukon Area		Total	
	Set or Drift Gillnet		Set Gillnet		Fish wheel			
	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished
1976	678		118		169			
1977	700	609	69	44	160	130	929	783
1978	699	650	71	47	158	137	928	834
1979	708	661	70	50	165	129	943	840
1980	709	654	71	52	163	128	943	834
1981	711	666	80	45	163	125	954	836
1982	710	664	76	45	166	111	952	820
1983	708	655	73	40	164	115	945	810
1984	708	674	73	39	159	99	940	812
1985	708	664	71	40	159	113	938	817
1986	707	670	71	30	162	101	940	801
1987	706	656	71	33	161	108	938	797
1988	707	677	71	43	160	124	938	844
1989	707	682	70	42	160	127	937	851
1990	708	675	71	35	157	116	936	826
1991	708	680	72	36	155	110	935	826
1992	707	678	71	32	179	111	957	821
1993	708	682	72	35	166	88	946	805
1994	707	659	72	30	165	73	944	762
1995	707	663	73	36	166	106	946	805
1996	707	627	72	28	165	107	944	762
1997	705	640	72	22	163	63	940	725
1998	704	643	72	6	162	22	938	671
1999	704	632	72	13	162	25	938	670
2000	704	561	72	0	162	0	938	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	690	581	67	6	135	15	892	602
2006	863	574	77	10	175	26	1,115	610
2007	846	566	76	6	175	24	1,097	596
2008	829	474	79	2	176	20	1,084	496
2009	807	391	77	2	166	10	1,050	403
2010	787	444	76	0	171	11	1,034	455
2005-2009								
Average	807	517	75	5	165	19	1,048	541

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

Appendix A9.—Number of commercial salmon fishing permit holders making at least one delivery by district and season, Yukon Area, 1971–2010.

Chinook and Summer Chum Salmon Season									
	Lower Yukon Area				Upper Yukon Area				Yukon Area Total
Year	District 1	District 2	District 3	Subtotal ^a	District 4	District 5	District 6	Subtotal	
1971	405	154	33	592	-	-	-	-	592
1972	426	153	35	614	-	-	-	-	614
1973	438	167	38	643	-	-	-	-	643
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	455	225	20	700	77	34	25	136	836
1984	444	217	20	681	54	31	27	112	725
1985	425	223	18	666	74	32	27	133	799
1986	441	239	7	687	75	21	27	123	795
1987	440	239	13	692	87	30	24	141	800
1988	456	250	22	728	95	28	33	156	834
1989	445	243	16	687	98	32	29	159	846
1990	453	242	15	710	92	27	23	142	821
1991	489	253	27	769	85	32	22	139	817
1992	438	263	19	720	90	28	19	137	816
1993	448	238	6	692	75	30	18	123	805
1994	414	250	7	671	55	28	20	103	762
1995	439	233	0	672	87	28	21	136	797
1996	448	189	9	646	87	23	15	125	752
1997	457	188	0	645	39	29	15	83	722
1998	434	231	0	665	0	18	10	28	671
1999	412	217	5	634	5	26	6	37	668
2000	350	214	0	564	0	0	0	0	562
2001	-	-	-	-	-	-	-	-	-
2002	322	223	0	545	0	18	6	24	564
2003	351	217	0	568	3	16	7	26	582
2004	396	212	0	608	0	14	6	20	569
2005	370	228	0	598	0	12	5	17	595
2006	379	214	6	600	0	15	10	25	594
2007	359	220	3	582	5	12	10	27	591
2008	266	181	0	447	8	0	5	13	457
2009	213	166	0	379	6	0	5	11	387
2010	264	181	0	445	5	0	5	10	450
2000-2009									
Average	334	208	1	526	2	10	6	18	545

-continued-

Appendix A9.–Page 2 of 3.

Fall Chum and Coho Salmon Season									
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal ^a	District 4	District 5	District 6	Subtotal	Total
1971	352	-	-	352	-	-	-	-	352
1972	353	75	3	431	-	-	-	-	431
1973	445	183		628	-	-	-	-	628
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	97	758
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	312	224	18	554	13	29	23	65	619
1984	327	216	12	536	18	39	26	83	619
1985	345	222	13	559	22	39	25	86	645
1986	282	231	14	510	1	21	16	38	548
1987	0	0	0	0	0	0	0	0	0
1988	328	233	13	563	20	20	32	72	635
1989	332	229	22	550	20	24	28	72	622
1990	301	227	19	529	11	11	27	49	578
1991	319	238	19	540	8	21	25	54	594
1992	0	0	0	0	0	0	22	22	22
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	1	11	12	12
1995	189	172	0	357	4	12	20	36	393
1996	158	109	0	263	1	17	17	35	298
1997	176	130	0	304	3	8	0	11	315
1998	0	0	0	0	0	0	0	0	0
1999	146	110	0	254	4	0	0	4	258
2000	0	0	0	0	0	0	0	0	0
2001	-	-	-	-	-	-	-	-	-
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
2000-2009									
Average	122	56	0	176	0	1	5	6	182

-continued-

Appendix A9.–Page 3 of 3.

Combined Season ^b									
	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal ^a	District 4	District 5	District 6	Subtotal	Total
1971	473	154	33	660	-	-	-	27	687
1972	476	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	609	96	53	39	188	797
1978	472	221	29	650	82	53	38	173	823
1979	461	230	33	661	90	49	40	179	840
1980	432	247	27	654	88	51	38	177	831
1981	507	257	26	666	94	56	31	181	847
1982	455	244	22	664	76	53	27	156	820
1983	458	235	26	655	79	47	31	157	812
1984	453	236	26	676	58	45	33	136	812
1985	434	247	24	666	76	48	33	157	823
1986	444	259	18	672	75	30	27	132	804
1987	440	239	13	659	87	30	24	141	800
1988	460	260	24	683	97	35	38	170	853
1989	452	257	23	687	99	38	32	169	856
1990	459	258	22	679	92	31	30	153	832
1991	497	272	29	680	85	33	28	146	826
1992	438	263	19	679	90	28	25	143	822
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	446	254	0	664	87	31	24	142	806
1996	455	217	9	628	87	29	19	135	763
1997	463	221	0	640	39	31	15	85	725
1998	434	231	0	643	0	18	10	28	671
1999	422	238	5	632	6	26	6	38	670
2000	349	214	0	561	0	0	0	0	561
2001	-	-	-	-	-	-	-	-	-
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
2000-2009									
Average	345	215	1	533	2	11	9	22	554

^a Combined seasons numbers will differ as the data represent the total number of unique permits fished during the entire season.

^b Since 1984 the subtotal for the Lower Yukon Area was the unique number of permits fished. Prior to 1984, the subtotals are additive for Districts 1, 2, and 3. Some individual fishermen in the Lower Yukon Area may have operated in more than one district during the year.

Appendix A10.—Commercial salmon pack by species and type of processing, Yukon Area, 1960–2010.

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured Chinook		Cured Chum		Salmon Roe (lbs.)
	Chinook	Coho	Chum	Chinook	Coho	Chum	Tierces	Half Tierces	Tierces	Half Tierces	
1960	13,000	0	0	- ^a	- ^a	- ^a	250	180	0	0	0
1961	19,474	0	0	- ^a	- ^a	- ^a	504	146	0	0	0
1962	15,959	512	1,760	- ^a	- ^a	- ^a	464	280	0	0	0
1963	16,400	1,190	0	- ^a	- ^a	- ^a	- ^a	- ^a	0	0	0
1964	12,041	0	0	- ^a	17,000	66,770	537	499	0	0	0
1965	18,149	0	0	275,000	2,500	160,500	670	67	0	0	0
1966	14,026	836	2,812	414,000	61,355	301,240	398	60	0	0	0
1967	21,503	0	126	475,900	66,400	366,496	627	96	0	0	1,755
1968	19,499	0	816	561,690	93,154	454,409	351	170	0	0	21,000
1969	9,560	1,104	4,499	423,597	26,973 ^a	829,586 ^a	647	95	15	0	29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51	0	26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139	0	55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147	0	0	85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133	0	72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57	0	208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26	0	210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91	0	2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18	0	37	579,927
1981	1,107	378	11,573	3,686,238	130,097	11,398,680	25	13	9	28	507,550
1982	0	7	751	2,790,456	246,500	4,992,877	0	19	0	1	584,053
1983	0	198	1,181	3,000,843	72,447	10,637,613	5	39	0	7	426,220
1984	0	5	1,768	2,426,205	590,526	5,516,532	0	36	0	16	468,244
1985	0	0	0	2,953,199	409,725	5,462,462	0	9	0	20 ^b	476,024
1986	0	0	0	2,012,324	299,054	5,960,857	0	15	0	28 ^c	502,952
1987	0	0	0	2,830,312	0	3,013,889	0	36	0	0	286,099
1988 ^d	0	0	0	1,970,879	624,734	9,111,943	0	10	0	22 ^e	577,748
1989 ^d	0	0	0	2,005,949	585,216	8,864,714	0	6	0	16	303,298
1990 ^d	0	0	0	1,846,081	283,504	3,166,199	0	3	0	1,368 ^f	261,016
1991 ^g	0	0	0	2,047,188	708,902	3,978,482	0	0	0	2,547 ^f	350,174
1992	0	0	0	2,537,833	40,685	2,398,093	0	0	0	0	260,590
1993	0	0	0	1,905,414	0	634,931	0	0	0	0	97,630
1994	0	0	0	2,260,301	744	528,666	0	0	0	0	183,873
1995	0	0	0	2,635,972	317,357	3,524,754	0	0	0	0	498,925
1996	0	0	0	1,836,242	400,960	1,733,129	0	0	0	0	443,939
1997	0	0	0	2,324,306	255,228	1,089,678	0	0	0	0	190,359
1998	0	0	0	779,936	9	191,692	0	0	0	0	28,919
1999	0	0	0	1,368,658	10,342	352,970	0	0	0	0	50,696
2000	0	0	0	158,636	0	50,782	0	0	0	0	6,286
2001	-	-	-	-	-	-	-	-	-	-	-
2002	0	0	0	472,625	-	93,416	0	0	0	0	931
2003	0	0	0	841,748	165,757	144,942	0	0	0	0	0
2004	0	0	0	1,142,053	117,295	165,587	0	0	0	0	0
2005	0	0	0	597,192	410,398	1,637,483	0	0	0	0	273
2006	0	0	0	857,552	390,502	1,844,981	0	0	0	0	0
2007	0	0	0	594,003	331,412	1,890,820	0	0	0	0	5,939
2008	0	0	0	65,558	243,030	1,877,346	0	0	0	0	29,094
2009	0	0	0	4,194	55,722	1,261,342	0	0	0	0	4,709
2010	0	0	0	127,846	23,986	1,457,912	0	0	0	0	0

-continued-

Appendix A10.–Page 2 of 2.

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred. Pack represents type of processing when fish were shipped out of districts; roe includes unprocessed roe sold by fishermen and estimated production of roe from in the round purchases.

- ^a Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.
- ^b Additionally 13 half tierces of coho salmon were packed.
- ^c Additionally 2 half tierces of coho salmon were packed.
- ^d Does not include District 6 test fish sales.
- ^e Additionally 1 half tierce of coho salmon was packed.
- ^f Chum salmon are represented in pounds of salted fillets.
- ^g Beginning in 1991, no ADF&G test fish sales are included.

Appendix A11.—Estimated average prices per pound paid to fishermen, Yukon Area, 1964–2010.

Year	Lower Yukon Area				Upper Yukon Area							
	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Chinook Roe	Summer Chum	Summer Chum Roe	Fall Chum	Fall Chum Roe	Coho	Coho Roe
1964	0.17		0.03									
1965	0.20											
1966	0.20											
1967	0.19	0.05	0.05	0.07								
1968	0.18	0.06	0.06									
1969	0.19	0.08	0.08	0.08								
1970	0.22	0.09	0.09	0.12								
1971	0.24	0.10	0.10	0.12								
1972	0.24	0.11	0.11	0.13								
1973	0.30	0.16	0.16	0.18								
1974	0.38	0.21	0.21	0.25	0.50		0.15		0.13		0.15	
1975	0.42	0.20	0.20	0.21	0.92		0.17		0.14		0.17	
1976	0.51	0.24	0.24	0.27	0.74		0.19		0.16		0.19	
1977	0.85	0.40	0.45	0.50	1.37		0.27	2.66	0.22		0.27	
1978	0.90	0.45	0.47	0.60	0.87		0.24		0.25		0.24	
1979	1.09	0.52	0.68	0.80	1.00		0.25	3.00	0.29		0.25	
1980	1.04	0.20	0.28	0.36	0.85		0.23	2.50	0.27		0.29	
1981	1.20	0.40	0.55	0.60	1.00		0.20	3.00	0.35		0.35	
1982	1.41	0.40	0.55	0.69	1.02		0.18	2.75	0.28		0.37	
1983	1.40	0.34	0.34	0.35	1.08		0.16	1.66	0.19		0.31	
1984	1.50	0.26	0.32	0.50	0.95		0.23	1.78	0.26		0.24	
1985	1.50	0.35	0.47	0.53	0.86		0.23	1.94	0.25		0.33	
1986	1.63	0.38	0.49	0.71	0.89		0.22	2.08	0.14		0.21	
1987	1.98	0.49	-	-	0.79		0.19	2.22	-		-	
1988	2.97	0.66	1.01	1.38	1.04		0.23	4.33	0.32		0.37	
1989	2.77	0.34	0.50	0.66	0.84		0.24	4.41	0.28		0.35	
1990	2.84	0.24	0.45	0.66	0.72		0.11	4.41	0.29		0.34	
1991	3.70	0.36	0.34	0.44	0.70	2.92	0.18	4.21	0.23	3.56	0.30	2.50
1992	4.12	0.27	-	-	0.91	2.82	0.30	4.53	0.39	4.50	0.39	2.18
1993	2.70	0.38	-	-	1.06	5.52	0.35	8.53	-	-	-	-
1994	2.07	0.21	-	-	0.92	3.11	0.20	3.77	0.16	1.50	0.48	1.50
1995	2.09	0.16	0.15	0.29	0.77	2.64	0.13	3.57	0.13	2.96	0.14	2.51
1996	1.95	0.09	0.10	0.26	0.95	2.57	0.07	3.05	0.13	1.71	0.09	2.16
1997	2.46	0.10	0.22	0.32	0.97	1.62	0.07	1.08	0.17	1.75	0.20	-
1998	2.51	0.14	-	-	0.91	2.00	0.18	1.90	-	-	-	-
1999	3.80	0.10	0.25	0.35	1.10	2.11	0.18	2.25	0.20	-	-	-
2000	4.57	0.17	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	3.77	0.06	-	-	0.75	1.75	0.32	2.25	-	-	-	-
2003	2.37	0.05	0.15	0.10	0.80	-	0.27	-	0.10	-	0.05	-
2004	2.80	0.05	0.25	0.05	0.77	-	0.27	-	0.05	-	0.06	-
2005	3.43	0.05	0.32	0.32	0.87	-	0.25	-	0.14	-	0.12	-
2006	3.94	0.05	0.20	0.20	1.30	-	0.16	-	0.14	-	0.19	-
2007	3.73	0.19	0.27	0.39	1.33	-	0.25	2.36	0.20	-	0.20	-
2008	4.64	0.40	0.55	0.97	-	-	0.25	3.00	0.27	-	0.20	-
2009	5.00	0.50	0.70	1.00	-	-	0.26	3.00	0.19	-	0.15	-
2010	5.00	0.70	1.00	1.50	-	-	0.23	-	0.23	-	0.26	-
2005-2009												
Average ^a	4.15	0.24	0.41	0.58	0.70	0.00	0.23	1.67	0.19	0.00	0.17	0.00

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Average does not include years with no data.

Appendix A12.–Value of commercial salmon fishery to Yukon Area fishermen, 1977–2010.

Year	Summer Season						Total Season
	Chinook			Summer Chum			
	Lower Yukon	Upper Yukon	Subtotal	Lower Yukon	Upper Yukon	Subtotal	
	Value	Value		Value	Value		
1977	1,841,033	148,766	1,989,799	1,007,280	306,481	1,313,761	3,303,560
1978	2,048,674	66,472	2,115,146	2,071,434	655,738	2,727,172	4,842,318
1979	2,763,433	124,230	2,887,663	2,242,564	444,924	2,687,488	5,575,151
1980	3,409,105	113,662	3,522,767	1,027,738	627,249	1,654,987	5,177,754
1981	4,420,669	206,380	4,627,049	2,741,178	699,876	3,441,054	8,068,103
1982	3,768,107	162,699	3,930,806	1,237,735	452,837	1,690,572	5,621,378
1983	4,093,562	105,584	4,199,146	1,734,270	281,883	2,016,153	6,215,299
1984	3,510,923	102,354	3,613,277	926,922	382,776	1,309,698	4,922,975
1985	4,294,432	82,644	4,377,076	1,032,700	593,801	1,626,501	6,003,577
1986	3,165,078	73,363	3,238,441	1,746,455	634,091	2,380,546	5,618,987
1987	5,428,933	136,196	5,565,129	1,313,618	323,611	1,637,229	7,202,358
1988	5,463,800	142,284	5,606,084	5,001,100	1,213,991	6,215,091	11,821,175
1989	5,181,700	108,178	5,289,878	2,217,700	1,377,117	3,594,817	8,884,695
1990	4,820,859	105,295	4,926,154	497,571	506,611	1,004,182	5,930,336
1991	7,128,300	97,140	7,225,440	782,300	627,177	1,409,477	8,634,917
1992	9,957,002	168,999	10,126,001	606,976	525,204	1,132,180	11,258,181
1993	4,884,044	113,217	4,997,261	226,772	203,762	430,534	5,427,795
1994	4,169,270	124,270	4,293,540	79,206	396,685	475,891	4,769,431
1995	5,317,508	87,059	5,404,567	241,598	1,060,322	1,301,920	6,706,487
1996	3,491,582	47,282	3,538,864	89,020	966,277	1,055,297	4,594,161
1997	5,450,433	110,713	5,561,146	56,535	96,806	153,341	5,714,487
1998	1,911,370	17,285	1,928,655	26,415	821	27,236	1,955,891
1999	4,950,522	74,475	5,024,997	19,687	1,720	21,407	5,046,404
2000	725,606	-	725,606	8,633	-	8,633	734,239
2001	-	-	-	-	-	-	-
2002	1,691,105	20,744	1,711,849	4,342	6,176	10,518	1,722,367
2003	1,871,202	40,957	1,912,159	1,585	6,879	8,464	1,920,623
2004	3,063,667	38,290	3,101,957	8,884	9,645	18,529	3,120,486
2005	1,952,109	24,415	1,976,524	11,004	13,479	24,483	2,001,007
2006	3,290,367	32,631	3,322,998	23,862	42,988	66,850	3,389,848
2007	1,939,114	27,190	1,966,304	220,715	34,421	255,136	2,221,440
2008	325,470	-	325,470	326,930	65,840	392,770	718,240
2009	20,970	-	20,970	514,856	20,430	535,286	556,256
2010	639,230	-	639,230	823,967	61,534	885,501	1,524,731
2005-2009							
Average	1,505,606	28,079	1,522,453	219,473	35,432	254,905	1,777,358

-continued-

Appendix A12.–Page 2 of 2.

Year	Fall Season							
	Fall Chum			Coho			Total Season	Total Value
	Lower Yukon	Upper Yukon	Subtotal	Lower Yukon	Upper Yukon	Subtotal		
	Value	Value		Value	Value			
1977	718,571	102,170	820,741	140,914	2,251	143,165	963,906	4,267,466
1978	691,854	103,091	794,945	96,823	6,105	102,928	897,873	5,740,191
1979	1,158,485	347,814	1,506,299	83,466	6,599	90,065	1,596,364	7,171,515
1980	394,162	198,088	592,250	17,374	2,374	19,748	611,998	5,789,752
1981	1,503,744	356,805	1,860,549	87,385	4,568	91,953	1,952,502	10,020,605
1982	846,492	53,258	899,750	135,828	18,786	154,614	1,054,364	6,675,742
1983	591,011	128,950	719,961	17,497	11,472	28,969	748,930	6,964,229
1984	374,359	103,417	477,776	256,050	12,823	268,873	746,649	5,669,624
1985	634,616	178,125	812,741	176,254	26,797	203,051	1,015,792	7,019,369
1986	399,321	30,309	429,630	211,942	556	212,498	642,128	6,261,115
1987	-	-	-	-	-	-	-	7,202,358
1988	638,700	151,300	790,000	734,400	34,116	768,516	1,558,516	13,379,691
1989	713,400	223,996	937,396	323,300	33,959	357,259	1,294,655	10,179,350
1990	238,165	174,965	413,130	137,302	37,026	174,328	587,458	6,517,794
1991	438,310	157,831	596,141	300,182	21,556	321,738	917,879	9,552,796
1992	0	54,161	54,161	0	19,529	19,529	73,690	11,331,871
1993	0	0	0	0	0	0	0	5,427,795
1994	0	8,517	8,517	0	8,739	8,739	17,256	4,786,687
1995	185,036	167,571	352,607	80,019	11,292	91,311	443,918	7,150,405
1996	48,579	45,438	94,017	96,795	13,020	109,815	203,832	4,797,993
1997	86,526	7,252	93,778	79,973	1,062	81,035	174,813	5,889,300
1998	-	-	-	-	-	-	-	1,955,891
1999	35,639	876	36,515	3,620	0	3,620	40,135	5,086,539
2000	-	-	-	-	-	-	-	734,239
2001	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	1,722,367
2003	5,993	3,398	9,391	18,168	5,095	23,263	32,654	1,953,277
2004	1,126	848	1,974	2,774	6,372	9,146	11,120	3,131,606
2005	316,698	48,159	364,857	83,793	19,182	102,975	467,832	2,468,839
2006	202,637	33,806	236,443	50,299	11,137	61,436	297,879	3,687,727
2007	144,256	16,907	161,163	127,869	1,368	129,237	290,400	2,511,840
2008	428,969	22,089	451,058	216,777	3,717	220,494	671,552	1,389,792
2009	108,778	1,286	110,064	52,176	457	52,633	162,697	718,953
2010	5,428	2,761	8,189	20,535	442	20,977	29,166	1,553,897
2005-2009								
Average	240,268	24,449	264,717	106,183	7,172	113,355	378,072	2,155,430

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

Appendix A13.–Average weight of salmon harvests in the commercial fishery, Yukon Area, 1964–2010.

Year	Lower Yukon Area ^a				Upper Yukon Area ^a			
	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1964	22.6							
1965	23.0							
1966	23.0							
1967	24.0			7.3				
1968	26.5							
1969	23.9			6.7				
1970	22.3			7.1				
1971	22.6			6.9				
1972	24.6	6.6	7.6	7.1				
1973	24.5	6.8	7.9	7.1				
1974	23.7	6.5	7.5	7.0	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	19.6	6.4	7.3	6.1
1985	20.3	6.7	7.7	7.4	18.4	6.1	7.5	6.4
1986	20.2	6.9	7.2	6.3	19.7	6.1	8.0	6.0
1987	21.7	6.8	-	-	20.0	6.8	-	-
1988	19.6	7.0	7.9	7.3	18.6	6.9	7.9	6.6
1989	19.9	7.2	7.5	7.3	17.9	6.8	7.4	6.0
1990	19.6	7.3	7.7	6.8	16.8	6.9	7.0	6.2
1991	20.4	6.7	7.4	7.0	17.6	6.5	6.8	5.7
1992	21.5	6.9	-	-	19.9	5.6	6.8	6.2
1993	20.5	6.6	-	-	17.8	7.2	-	-
1994	20.3	6.5	-	-	15.7	5.8	6.2	6.2
1995	21.6	6.7	7.5	6.9	17.8	5.4	7.0	7.0
1996	20.6	7.8	7.7	7.6	16.2	6.0	6.2	7.2
1997	20.9	7.2	7.6	7.3	15.4	5.9	6.4	6.5
1998	18.0	6.7	-	-	13.2	6.1	-	-
1999	20.1	7.1	7.2	6.5	14.8	6.1	6.4	-
2000	18.0	7.7	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-
2002	19.9	7.2	-	-	15.9	6.0	-	-
2003	21.4	7.3	7.2	7.4	14.6	6.1	6.1	6.0
2004	20.8	6.9	6.8	7.0	13.8	5.7	4.9	5.7
2005	18.9	6.8	7.8	7.1	14.6	6.0	7.1	6.9
2006	19.0	6.8	7.2	6.2	13.1	6.1	7.0	5.1
2007	17.9	6.5	7.1	7.5	13.5	5.8	5.4	5.0
2008	14.1	6.6	7.2	6.8	-	7.3	7.8	7.6
2009	13.3	6.5	6.6	6.9	-	5.4	3.8	4.5
2010	12.9	6.4	6.7	6.7	-	5.3	6.9	6.0
2000-2009								
Average ^b	16.3	6.2	5.0	4.9	8.5	4.8	4.2	4.1

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Information not available for some years. Data obtained from weight samples or from fish ticket information.

^b Average does not include years with no data.

Appendix A14.–Commercial Chinook salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974–2010.

Year	Districts 1 and 2	District 3	District 4	Subdistricts 5-ABC	Subdistricts 5-D	District 6
	GHR	Quota/GHR	Quota/GHR	Quota/GHR	Quota/GHR	Quota/GHR
1974		3,000	1,000	3,000	^a	1,000
1975		3,000	1,000	3,000	^a	1,000
1976		3,000	1,000	3,000	^a	1,000
1977		3,000	1,000	3,000	^a	1,000
1978		2,000	1,000	3,000	^a	1,000
1979 ^b		1,800-2,200	900-1,100	2,700-3,300		900-1,100
1980		1,800-2,200	900-1,100	2,700-3,300		900-1,100
1981	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1982	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1983	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1984	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1985	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1986	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1987	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1988	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1989	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1990	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1991	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1992	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1993	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1994	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1995	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1996	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1997	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1998	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1999	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2000	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2001	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2002	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2003	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2004	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2005	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2006	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2007	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2008	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2009	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800
2010	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800 ^c	300-500	600-800

^a Quota or guideline harvest range for all of District 5.

^b Beginning in 1979, quotas were replaced by guideline harvest ranges.

^c 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.

Appendix A15.–Commercial summer chum salmon guideline harvest ranges (GHR), Yukon Area, 1990–2010.

Year	Districts 1 and 2	District 3	Subdistrict 4-A		Anvik River	Subdistrict 4-BC	District 5	District 6
	GHR	GHR	GHR ^a		Roe Cap	GHR	GHR	GHR
			Pounds of Roe	Numbers of Fish				
1990	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1991	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1992	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1993	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1994	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	^b	16,000-47,000	1,000-3,000	13,000-38,000
1995	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	50,000	16,000-47,000	1,000-3,000	13,000-38,000
1996	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1997	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1998	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1999	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000 ^c	13,000-38,000
2000	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000 ^c	13,000-38,000
2001	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2002	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2003	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2004	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2005	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2006	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2007	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2008	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2009	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
2010	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000

^a Summer chum salmon roe cap of 183,000 pounds.

^b No summer chum salmon roe cap established for Anvik River management area in 1994.

^c 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.

Appendix A16.—Commercial fall chum salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974–2010.

Year	Districts 1, 2, and 3	District 4	Subdistricts 4-BC	District 5	Subdistricts 5-ABC	Subdistrict 5-D	District 6
	Quota/GHR	Quota/GHR	GHR	Quota/GHR	GHR	GHR	Quota/GHR
1974	200,000	10,000		25,000			15,000
1975	200,000	10,000		25,000			15,000
1976	200,000	10,000		25,000			15,000
1977	200,000	10,000		25,000			15,000
1978	200,000	10,000		25,000			15,000
1979	^a 120,000-220,000		10,000-40,000	10,000-40,000			7,500-22,500
1980	120,000-220,000		10,000-40,000	10,000-40,000			7,500-22,500
1981	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1982	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1983	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1984	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1985	120,000-220,000		10,000-40,000		8,000-36,000	2,000-4,000	5,500-20,500
1986	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1987	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1988	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1989	0-110,000		0-20,000		0-18,000	0-2,000	0-10,250
1990	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1991	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1992	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1993	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1994	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1995	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1996	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1997	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1998	60,000-220,000		5,000-40,000		4,000-36,000	1,000-4,000	2,750-20,500
1999	60,000-220,000		5,000-40,000		4,000-36,000	^b 1,000-4,000	2,750-20,500
2000	60,000-220,000		5,000-40,000		4,000-36,000	^b 1,000-4,000	2,750-20,500
2001	60,000-220,000	5,000-40,000	^c		4,000-36,000	^b 1,000-4,000	2,750-20,500
2002	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2003	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2004	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2005	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2006	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2007	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2008	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2009	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500
2010	60,000-220,000	5,000-40,000			4,000-36,000	^b 1,000-4,000	2,750-20,500

-continued-

Appendix A16.–Page 2 of 2.

Note: Fall chum and coho salmon combined quota or guideline harvest range for Upper Yukon Area (1974–1992). Beginning in 1993, regulations were changed to exclude coho salmon.

^a In 1979, quotas were replaced by guideline harvest ranges.

^b The GHR 4,000 to 36,000 fall chum salmon applies only to Subdistricts 5-B and 5-C. 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.

^c In 2001, the GHR for Subdistrict 4-B and 4-C was changed to include Subdistrict 4-A.

Appendix A17.—Chinook salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.

Year	District 1				District 2			
	Subsistence ^{a,b}	Commercial ^c	Personal Use ^d	Test Fish Sales	Subsistence	Commercial ^c	Test Fish Sales	Total
1961		84,466				29,026		29,026
1962		67,099				22,224		22,224
1963		85,004				24,221		24,221
1964		67,555				20,246		20,246
1965		89,268				23,763		23,763
1966		70,788				16,927		16,927
1967		104,350				20,239		20,239
1968		79,465				21,392		21,392
1969		71,688				14,756		14,756
1970		56,648				17,141		17,141
1971		86,042				19,226		19,226
1972		70,052				17,855		17,855
1973		56,981				13,859		13,859
1974		71,840				17,948		17,948
1975		44,585				11,315		11,315
1976		62,410				16,556		16,556
1977		69,915				16,722		16,722
1978	5,246	59,006			3,964	32,924		36,888
1979	2,879	75,007			4,268	41,498		45,766
1980	3,669	90,382			3,674	50,004		53,678
1981	2,282	99,506			3,580	45,781		49,361
1982	2,311	74,450			2,109	39,132		41,241
1983	6,263	95,457			9,065	43,229		52,294
1984	4,624	74,671			7,172	36,697		43,869
1985	3,071	90,011			3,468	48,365		51,833
1986	5,275	53,035			6,483	41,849		48,332
1987	7,278	76,643	0		9,866	47,458		57,324
1988	3,938	56,120	67	989	3,823	35,120	68	39,011
1989	4,565	61,570	286	794	7,147	33,166	59	40,372
1990	6,619	51,199	450	1,063	9,546	33,061	152	42,759
1991	5,925	56,332		485	7,617	39,260	113	46,990
1992	5,141	74,212		930	7,074	38,139	0	45,213
1993	10,408	49,286		1,408	11,513	37,293	164	48,970
1994	6,540	62,241		1,561	8,956	41,692	70	50,718
1995	5,960	76,106		2,078	9,037	41,458	74	50,569
1996	3,646	56,642		1,698	7,780	30,209	0	37,989
1997	7,550	66,384		2,791	9,350	39,363	20	48,733
1998	7,242	25,413		878	9,455	16,806	48	26,309
1999	6,848	37,161		1,049	10,439	27,133	156	37,728
2000	5,891	4,735		275	9,935	3,783	322	14,040
2001	7,089	0		0	13,442	0	0	13,442
2002	5,603	11,087		494	8,954	11,434	34	20,422
2003	6,332	22,709		619	9,668	14,220	61	23,949
2004	5,880	28,403		722	9,724	24,145	70	33,939
2005	5,058	16,694		310	9,156	13,413	0	22,569
2006	5,122 ^c	23,748		817	8,039 ^c	19,843	0	27,882
2007	6,059 ^c	18,616		792	10,553 ^c	13,306	57	23,916
2008	6,163	2,530		0	8,826	2,111	0	10,937
2009	4,125	90		0	6,135	226	0	6,361
2010	5,856 ^c	5,744		0	8,676 ^c	4,153	0	12,829
2005-2009 Avg	5,305	12,336		384	8,542	9,780	11	18,333
2000-2009 Avg	5,732	12,861		403	9,443	10,248	54	19,746

-continued-

Appendix A17.–Page 2 of 8.

Year	District 3			Lower Yukon Area Subtotals				
	Subsistence	Commercial	Total	Subsistence	Commercial	Personal Use ^d	Test Fish Sales	Total
1961		4,368	4,368		117,860			117,860
1962		4,687	4,687		94,010			94,010
1963		7,020	7,020		116,245			116,245
1964		4,705	4,705		92,506			92,506
1965		3,204	3,204		116,235			116,235
1966		3,612	3,612		91,327			91,327
1967		3,618	3,618		128,207			128,207
1968		4,543	4,543		105,400			105,400
1969		3,595	3,595		90,039			90,039
1970		3,705	3,705		77,494			77,494
1971		3,490	3,490		108,758			108,758
1972		3,841	3,841		91,748			91,748
1973		3,204	3,204		74,044			74,044
1974		3,480	3,480		93,268			93,268
1975		4,177	4,177		60,077			60,077
1976		4,148	4,148		83,114			83,114
1977		3,965	3,965		90,602			90,602
1978	3,902	2,916	6,818	13,112	94,846			107,958
1979	3,325	5,018	8,343	10,472	121,523			131,995
1980	4,818	5,240	10,058	12,161	145,626			157,787
1981	4,011	4,023	8,034	9,873	149,310			159,183
1982	3,359	2,609	5,968	7,779	116,191			123,970
1983	4,910	4,106	9,016	20,238	142,792			163,030
1984	4,394	3,039	7,433	16,190	114,407			130,597
1985	3,342	2,588	5,930	9,881	140,964			150,845
1986	4,305	901	5,206	16,063	95,785			111,848
1987	4,708	2,039	6,747	21,852	126,140	0		147,992
1988	4,547	1,767	6,314	12,308	93,007	67	1,057	106,439
1989	4,778	1,645	6,423	16,490	96,381	286	853	114,010
1990	4,093	2,341	6,434	20,258	86,601	450	1,215	108,524
1991	3,187	2,344	5,531	16,729	97,936		598	115,263
1992	4,991	1,819	6,810	17,206	114,170		930	132,306
1993	6,592	1,501	8,093	28,513	88,080		1,572	118,165
1994	6,124	1,114	7,238	21,620	105,047		1,631	128,298
1995	5,419	-	5,419	20,416	117,564		2,152	140,132
1996	6,783	0	6,783	18,209	86,851		1,698	106,758
1997	6,311	-	6,311	23,211	105,747		2,811	131,769
1998	4,514	0	4,514	21,211	42,219		926	64,356
1999	7,715	538	8,253	25,002	64,832		1,205	91,039
2000	3,914	-	3,914	19,740	8,518		597	28,855
2001	6,361	-	6,361	26,892	0		0	26,892
2002	4,139	-	4,139	18,696	22,521		528	41,745
2003	5,002	-	5,002	21,002	36,929		680	58,611
2004	4,748	-	4,748	20,352	52,548		792	73,692
2005	5,131	-	5,131	19,345	30,107		310	49,762
2006	5,374 ^e	315	5,689	18,535	43,906		817	63,258
2007	4,651 ^e	190	4,841	21,263	32,112		849	54,224
2008	5,855	-	5,855	20,844	4,641		0	25,485
2009	2,924	-	2,924	13,184	316		0	13,500
2010	4,299 ^e	-	4,299	18,831	9,897		0	28,728
2005-2009								
Average	4,787	253	4,888	18,634	22,216		395	41,246
2000-2009								
Average	4,810	253	4,860	19,985	23,160		457	43,602

-continued-

Appendix A17.–Page 3 of 8.

Year	District 4				District 5				
	Subsistence	Commercial	Commercial Related ^f	Total	Subsistence	Commercial ^c	Commercial Related ^f	Personal Use ^d	Total
1961									
1962									
1963									
1964									
1965									
1966									
1967									
1968									
1969									
1970									
1971									
1972									
1973									
1974		685	0	685		2,663	0		2,663
1975		389	0	389		2,872	0		2,872
1976		409	0	409		3,151	0		3,151
1977		985	0	985		4,162	0		4,162
1978	5,549	608	0	6,157	10,405	3,079	0		13,484
1979	7,203	1,989	0	9,192	11,997	3,389	0		15,386
1980	11,053	1,521	0	12,574	17,684	4,891	0		22,575
1981	4,432	1,347	0	5,779	13,300	6,374	0		19,674
1982	5,077	1,087	0	6,164	12,859	5,385	0		18,244
1983	9,754	601	0	10,355	16,780	3,606	0		20,386
1984	7,650	961	0	8,611	14,989	3,669	0		18,658
1985	7,425	664	0	8,089	15,090	3,418	0		18,508
1986	9,530	502	0	10,032	15,944	2,733	0		18,677
1987	7,914	1,524	0	9,438	17,556	3,758	0	1,706	23,020
1988	9,515	3,159	0	12,674	17,200	3,436	0	1,435	22,071
1989	9,074	2,790	0	11,864	20,336	3,286	0	1,877	25,499
1990	11,122	3,536	2	14,660	14,589	3,353	12	1,693	19,647
1991	11,100	2,446	1,136	14,682	16,429	3,810	16		20,255
1992	8,291	1,651	743	10,685	17,691	3,852	3		21,546
1993	10,936	1,349	228	12,513	21,365	3,008	0		24,373
1994	10,327	2,216	227	12,770	18,760	3,739	5		22,504
1995	9,474	262	237	9,973	16,866	3,242	0		20,108
1996	8,193	45	92	8,330	15,727	2,497	260		18,484
1997	12,006	1,450	7	13,463	18,049	3,678	0		21,727
1998	15,801	-	-	15,801	14,802	517	0		15,319
1999	11,238	1,437	0	12,675	14,330	2,604	0		16,934
2000	6,264	-	-	6,264	8,854	-	-		8,854
2001	10,152	-	-	10,152	13,566	-	-		13,566
2002	9,456	-	-	9,456	13,401	771	0		14,172
2003	12,771	562	0	13,333	19,191	1,134	0		20,325
2004	16,269	0	-	16,269	15,666	1,546	0		17,212
2005	13,964	0	-	13,964	17,424	1,469	0		18,893
2006	12,022 ^c	-	-	12,022	15,924 ^c	1,839	0		17,763
2007	11,831 ^c	-	-	11,831	19,147 ^c	1,241	0		20,388
2008	10,619	-	-	10,619	11,626	-	-		11,626
2009	9,514	-	-	9,514	8,917	-	-		8,917
2010	12,888 ^c	-	-	12,888	10,397 ^c	-	-		10,397
2005-2009									
Average	11,590	0	-	11,590	14,608	1,516	0		15,517
2000-2009									
Average	11,286	187	0	11,342	14,372	1,333	0		15,172

-continued-

Appendix A17.–Page 4 of 8.

Year	District 6						Upper Yukon Area Subtotals					
	Subsistence	Commercial ^c	Related ^f	Use	Sales	Total	Subsistence	Commercial	Related ^f	Use	Sales	Total
1961								1,804	0			1,804
1962								724	0			724
1963								803	0			803
1964								1,081	0			1,081
1965								1,863	0			1,863
1966								1,988	0			1,988
1967								1,449	0			1,449
1968								1,126	0			1,126
1969								988	0			988
1970								1,651	0			1,651
1971								1,749	0			1,749
1972								1,092	0			1,092
1973								1,309	0			1,309
1974		1,473	0					4,821	0			4,821
1975		500	0					3,761	0			3,761
1976		1,102	0					4,662	0			4,662
1977		1,008	0					6,155	0			6,155
1978	1,231	635	0			1,866	17,185	4,322	0			21,507
1979	1,333	772	0			2,105	20,533	6,150	0			26,683
1980	1,826	1,947	0			3,773	30,563	8,359	0			38,922
1981	2,085	987	0			3,072	19,817	8,708	0			28,525
1982	2,443	981	0			3,424	20,379	7,453	0			27,832
1983	2,706	911	0			3,617	29,240	5,118	0			34,358
1984	3,599	867	0			4,466	26,238	5,497	0			31,735
1985	7,375	1,142	0			8,517	29,890	5,224	0			35,114
1986	3,701	950	0			4,651	29,175	4,185	0	0		33,360
1987	4,096	3,338	0			7,434	29,566	8,620	0	1,706		39,892
1988	4,884	762	0	623	24	6,293	31,599	7,357	0	2,058	24	41,038
1989	2,546	1,741	0	453	440	5,180	31,956	7,817	0	2,330	440	42,543
1990	2,618	1,757	399	451	833	6,058	28,329	8,646	413	2,144	833	40,365
1991	2,515	686	386	0	91	3,678	30,044	6,942	1,538	0	91	38,615
1992	2,438	572	181	0	32	3,223	28,420	6,075	927	0	32	35,454
1993	1,672	1,113	332	426	0	3,543	33,973	5,470	560	426	0	40,429
1994	2,370	2,135	471	0	0	4,976	31,457	8,090	703	0	0	40,250
1995	1,779	1,660	1,087	399	0	4,925	28,119	5,164	1,324	399	0	35,006
1996	1,177	278	169	215	0	1,839	25,097	2,820	521	215	0	28,653
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	0	126	0	2,029	23,924	1,607	0	126	0	25,657
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 ^c	84	0	89	0	1,402	29,175	1,923	0	89	0	31,187
2007	1,717 ^c	281	0	136	0	2,134	32,695	1,522	0	136	0	34,353
2008	605	-	-	126	-	731	22,850	0	0	126	0	22,976
2009	1,285	-	-	127	-	1,412	19,716	0	0	127	0	19,843
2010	1,143 ^c	-	-	162	-	1,305	24,428	0	0	162	0	24,590
2005-2009												
Average	1,333	273	0	123	0	1,620	27,530	1,073	0	123	0	28,727
2000-2009												
Average	1,457	921	0	134	0	2,144	27,115	1,409	0	134	0	28,658

-continued-

Appendix A17.–Page 5 of 8.

Alaska Yukon River Totals							
Year	Subsistence	Commercial	Commercial Related ^f	Personal Use	Test Fish Sales	Sport Fish ^g	Total
1961	21,488	119,664	0				141,152
1962	11,110	94,734	0				105,844
1963	24,862	117,048	0				141,910
1964	16,231	93,587	0				109,818
1965	16,608	118,098	0				134,706
1966	11,572	93,315	0				104,887
1967	16,448	129,656	0				146,104
1968	12,106	106,526	0				118,632
1969	14,000	91,027	0				105,027
1970	13,874	79,145	0				93,019
1971	25,684	110,507	0				136,191
1972	20,258	92,840	0				113,098
1973	24,317	75,353	0				99,670
1974	19,964	98,089	0				118,053
1975	12,867	63,838	0				76,705
1976	17,806	87,776	0				105,582
1977	17,581	96,757	0			156	114,494
1978	30,297	99,168	0			523	129,988
1979	31,005	127,673	0			554	159,232
1980	42,724	153,985	0			956	197,665
1981	29,690	158,018	0			769	188,477
1982	28,158	123,644	0			1,006	152,808
1983	49,478	147,910	0			1,048	198,436
1984	42,428	119,904	0			351	162,683
1985	39,771	146,188	0			1,368	187,327
1986	45,238	99,970	0			796	146,004
1987	51,418	134,760	0	1,706		502	188,386
1988	43,907	100,364	0	2,125	1,081	944	148,421
1989	48,446	104,198	0	2,616	1,293	1,063	157,616
1990	48,587	95,247	413	2,594	2,048	544	149,433
1991	46,773	104,878	1,538	0	689	773	154,651
1992	45,626	120,245	927	0	962	431	168,191
1993	62,486	93,550	560	426	1,572	1,695	160,289
1994	53,077	113,137	703	0	1,631	2,281	170,829
1995	48,535	122,728	1,324	399	2,152	2,525	177,663
1996	43,306	89,671	521	215	1,698	3,873	139,284
1997	55,978	112,841	769	313	2,811	2,174	174,886
1998	53,733	43,618	81	357	926	654	99,369
1999	52,194	69,275	288	331	1,205	1,023	124,316
2000	35,841	8,518	0	75	597	276	45,307
2001	52,937	0	0	122	0	679	53,738
2002	42,620	24,128	0	126	528	486	67,888
2003	55,109	40,438	0	204	680	2,719	99,150
2004	53,675	56,151	0	201	792	1,513	112,332
2005	52,561	32,029	0	138	310	483	85,521
2006	47,710	45,829	0	89	817	739	95,184
2007	53,958	33,634	0	136	849	960	89,537
2008	43,694	4,641	0	126	0	409	48,870
2009	32,900	316	0	127	0	863	34,206
2010	43,259	9,897	0	162	0	474	53,792
2005-2009							
Average	46,165	23,290	0	123	395	691	70,664
2000-2009							
Average	47,101	24,568	0	134	457	913	73,173

-continued-

Appendix A17.–Page 6 of 8.

Canada: Yukon Territories Totals								
Mainstem Yukon							Porcupine Aboriginal	Total Canadian
Year	Non-Commercial			Test fish ⁱ	Commercial	Subtotal		
	Domestic	Aboriginal	Sport ^h					
1961		9,300			3,446	12,746	500	13,246
1962		9,300			4,037	13,337	600	13,937
1963		7,750			2,283	10,033	44	10,077
1964		4,124			3,208	7,332	76	7,408
1965		3,021			2,265	5,286	94	5,380
1966		2,445			1,942	4,387	65	4,452
1967		2,920			2,187	5,107	43	5,150
1968		2,800			2,212	5,012	30	5,042
1969		957			1,640	2,597	27	2,624
1970		2,044			2,611	4,655	8	4,663
1971		3,260			3,178	6,438	9	6,447
1972		3,960			1,769	5,729		5,729
1973		2,319			2,199	4,518	4	4,522
1974	406	3,342			1,808	5,556	75	5,631
1975	400	2,500			3,000	5,900	100	6,000
1976	500	1,000			3,500	5,000	25	5,025
1977	531	2,247			4,720	7,498	29	7,527
1978	421	2,485			2,975	5,881		5,881
1979	1,200	3,000			6,175	10,375		10,375
1980	3,500	7,546	300		9,500	20,846	2,000	22,846
1981	237	8,879	300		8,593	18,009	100	18,109
1982	435	7,433	300		8,640	16,808	400	17,208
1983	400	5,025	300		13,027	18,752	200	18,952
1984	260	5,850	300		9,885	16,295	500	16,795
1985	478	5,800	300		12,573	19,151	150	19,301
1986	342	8,625	300		10,797	20,064	300	20,364
1987	330	6,069	300		10,864	17,563	51	17,614
1988	282	7,178	650		13,217	21,327	100	21,427
1989	400	6,930	300		9,789	17,419	525	17,944
1990	247	7,109	300		11,324	18,980	247	19,227
1991	227	9,011	300		10,906	20,444	163	20,607
1992	277	6,349	300		10,877	17,803	100	17,903
1993	243	5,576	300		10,350	16,469	142	16,611
1994	373	8,069	300		12,028	20,770	428	21,198
1995	300	7,942	700		11,146	20,088	796	20,884
1996	141	8,451	790		10,164	19,546	66	19,612
1997	288	8,888	1,230		5,311	15,717	811	16,528
1998	24	4,687	-	737	390	5,838	99	5,937
1999	213	8,804	177	-	3,160	12,354	114	12,468
2000	-	4,068	-	761	-	4,829	50	4,879
2001	89	7,421	146	767	1,351	9,774	370	10,144
2002	59	7,138	128	1,036	708	9,069	188	9,257
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	-	513	1	3,399	27	3,426
2009	17	3,791	125	-	364	4,297	461	4,758
2010	-	2,455	1	-	-	2,456	191	2,647
2005-2009								
Average	60	4,597	292	565	1,691	6,445	299	6,744
2000-2009								
Average	76	5,422	268	589	1,910	7,629	257	7,886

-continued-

Appendix A17.–Page 7 of 8.

Year	Yukon River Drainage (Alaska/Canada) Totals ^a							Total Alaska Yukon Area		
	Subsistence ^j	Commercial	Commercial Related ^f	Personal Use	Alaska Test Fish	Sport Fish	Total	Coastal District	Alaska Total	Yukon Area Total
1961	31,288	123,110					154,398		141,152	154,398
1962	21,010	98,771					119,781		105,844	119,781
1963	32,656	119,331					151,987		141,910	151,987
1964	20,431	96,795					117,226		109,818	117,226
1965	19,723	120,363					140,086		134,706	140,086
1966	14,082	95,257					109,339		104,887	109,339
1967	19,411	131,843					151,254		146,104	151,254
1968	14,936	108,738					123,674		118,632	123,674
1969	14,984	92,667					107,651		105,027	107,651
1970	15,926	81,756					97,682		93,019	97,682
1971	28,953	113,685					142,638		136,191	142,638
1972	24,218	94,609					118,827		113,098	118,827
1973	26,640	77,552					104,192		99,670	104,192
1974	23,787	99,897					123,684		118,053	123,684
1975	15,867	66,838					82,705		76,705	82,705
1976	19,331	91,276					110,607		105,582	110,607
1977	20,388	101,477				156	122,021		114,494	122,021
1978	33,203	102,143				523	135,869	488	129,988	136,357
1979	35,205	133,848				554	169,607		159,232	169,607
1980	55,770	163,485				1,256	220,511		197,665	220,511
1981	38,906	166,611				1,069	206,586		188,477	206,586
1982	36,426	132,284				1,306	170,016		152,808	170,016
1983	55,103	160,937				1,348	217,388		198,436	217,388
1984	49,038	129,789				651	179,478		162,683	179,478
1985	46,199	158,761				1,668	206,628		187,327	206,628
1986	54,505	110,767				1,096	166,368		146,004	166,368
1987	57,868	145,624		1,706		802	206,000	3,621	188,386	209,621
1988	51,467	113,581		2,125	1,081	1,594	169,848	1,588	148,421	171,436
1989	56,301	113,987		2,616	1,293	1,363	175,560	16	157,616	175,576
1990	56,190	106,571	413	2,594	2,048	844	168,660		149,433	168,660
1991	56,174	115,784	1,538	0	689	1,073	175,258		154,651	175,258
1992	52,352	131,122	927	0	962	731	186,094	1,451	168,191	187,545
1993	68,447	103,900	560	426	1,572	1,995	176,900	1,429	160,289	178,329
1994	61,947	125,165	703	0	1,631	2,581	192,027	825	170,829	192,852
1995	57,573	133,874	1,324	399	2,152	3,225	198,547	2,085	177,663	200,632
1996	51,964	99,835	521	215	1,698	4,663	158,896	2,365	139,284	161,261
1997	65,965	118,152	769	313	2,811	3,404	191,414	1,139	174,886	192,553
1998	59,280	44,008	81	357	926	654	105,306	391	99,369	105,697
1999	61,325	72,435	288	331	1,205	1,200	136,784	1,111	124,316	137,895
2000	40,720	8,518	0	75	597	276	50,186	563	45,307	50,749
2001	61,584	1,351	0	122	0	825	63,882	2,882	53,738	66,764
2002	51,041	24,836	0	126	528	614	77,145	1,122	67,888	78,267
2003	61,781	43,110	0	204	680	2,994	108,769	1,850	99,150	110,619
2004	60,705	59,936	0	201	792	1,936	123,570	2,038	112,332	125,608
2005	59,430	36,095	0	138	310	919	96,892	848	85,521	97,740
2006	53,844	48,161	0	89	817	1,345	104,256	883 ^e	95,184	105,139
2007	59,050	33,634	0	136	849	962	94,631	1,198 ^e	89,537	95,829
2008	47,119	4,642	0	126	0	409	52,296	1,492	48,870	53,788
2009	37,169	680	0	127	0	988	38,964	905	34,206	39,869
2010	45,905	9,897	0	162	0	475	56,439	1,300 ^e	53,792	57,739
2005-2009 Avg	51,322	24,642	0	123	395	925	77,408	1,065	70,664	78,473
2000-2009 Avg	53,244	26,096	0	134	457	1,127	81,059	1,378	73,173	82,437

-continued-

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

- ^a Subsistence harvest estimates not available by district until 1978.
- ^b Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
- ^c Includes ADF&G test fish sales prior to 1988 and estimates of illegal sales.
- ^d Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.
- ^e Preliminary.
- ^f Commercial related refers to the estimated harvest of female Chinook salmon to produce roe sold.
- ^g Estimated sport fish harvest for Alaska portion of the Yukon River drainage. The majority of sport fish harvest occurs in the Tanana River drainage (District 6).
- ^h Canadian sport fish harvest unknown prior to 1980.
- ⁱ Canadian Chinook test fishery is conducted for management purposes, the fish harvested are retained and given to Aboriginal or domestic users, but are not reported under those categories.
- ^j Includes Alaska subsistence harvest and Canadian domestic, test fish and Aboriginal harvests.

Appendix A18.–Summer chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.

Year	District 1					District 2			
	Subsistence ^{a,b}	Commercial ^c	Personal Use ^d	Test Fish Sales	Total	Subsistence	Commercial ^c	Test Fish Sales	Total
1961		0					0		
1962		0					0		
1963		0					0		
1964		0					0		
1965		0					0		
1966		0					0		
1967		9,453			9,453		1,425		1,425
1968		12,995			12,995		1,407		1,407
1969		56,886			56,886		5,080		5,080
1970		117,357			117,357		19,649		19,649
1971		93,928			93,928		6,112		6,112
1972		114,234			114,234		20,907		20,907
1973		221,644			221,644		63,402		63,402
1974		466,004			466,004		74,152		74,152
1975		418,323			418,323		99,139		99,139
1976		273,204			273,204		99,190		99,190
1977		250,652			250,652		105,679		105,679
1978	30,897	393,785			424,682	21,684	227,548		249,232
1979	16,144	369,934			386,078	23,276	172,838		196,114
1980	15,972	391,252			407,224	13,681	308,704		322,385
1981	11,310	507,158			518,468	14,218	351,878		366,096
1982	18,452	249,516			267,968	18,442	182,344		200,786
1983	24,679	451,164			475,843	27,396	248,092		275,488
1984	28,459	292,676			321,135	26,996	236,931		263,927
1985	24,349	247,486			271,835	19,795	188,099		207,894
1986	38,854	381,127			419,981	41,496	288,427		329,923
1987	30,760	222,898	0		253,658	33,134	174,876		208,010
1988	28,934	645,322	416	2,876	677,548	28,787	424,461	711	453,959
1989	52,844	544,373	381	3,408	601,006	39,703	343,032	930	383,665
1990	36,999	146,725	256	2,186	186,166	28,453	131,755	752	160,960
1991	27,790	140,470		1,373	169,633	20,703	175,149	703	196,555
1992	33,239	177,329		1,918	212,486	24,731	147,129	0	171,860
1993	33,986	73,659		1,379	109,024	25,297	19,332	490	45,119
1994	32,145	42,332		2,769	77,246	22,907	12,869	443	36,219
1995	34,990	142,266		5,672	182,928	27,190	83,817	401	111,408
1996	27,289	92,506		7,309	127,104	28,426	30,727	0	59,153
1997	27,248	59,915		2,557	89,720	26,971	18,242	33	45,246
1998	26,888	21,270		2,935	51,093	26,280	6,848	84	33,212
1999	20,169	16,181		799	37,149	24,137	11,702	37	35,876
2000	24,079	3,315		561	27,955	25,331	3,309	87	28,727
2001	22,771	-		0	22,771	26,303	-	0	26,303
2002	24,107	6,327		164	30,598	23,554	4,027	54	27,635
2003	19,701	3,579		37	23,317	16,773	2,583	82	19,438
2004	20,620	13,993		217	34,830	25,931	5,782	0	31,713
2005	27,695	23,965		134	51,794	24,277	8,313	0	32,590
2006	27,881 ^c	21,816		456	50,153	31,655 ^c	25,543	0	57,198
2007	24,209 ^c	106,790		10	131,009	23,507 ^c	69,432	0	92,939
2008	22,767	67,459		80	90,306	24,291	58,139	0	82,430
2009	23,998	71,335		0	95,333	21,089	86,571	0	107,660
2010	25,172 ^c	102,267		0	127,439	23,738 ^c	80,948	0	104,686
2005-2009									
Average	25,310	58,273		136	83,719	24,964	49,600	0	74,563
2000-2009									
Average	23,783	35,398		166	55,807	24,271	29,300	22	50,663

-continued-

Appendix A18.–Page 2 of 6.

Year	District 3			Lower Yukon Area Subtotals				
	Subsistence	Commercial	Total	Subsistence	Commercial ^c	Personal Use ^d	Test Fish Sales	Total
1961		0			0			
1962		0			0			
1963		0			0			
1964		0			0			
1965		0			0			
1966		0			0			
1967		57	57		10,935			10,935
1968		68	68		14,470			14,470
1969		0	0		61,966			61,966
1970		0	0		137,006			137,006
1971		50	50		100,090			100,090
1972		527	527		135,668			135,668
1973		463	463		285,509			285,509
1974		1,721	1,721		541,877			541,877
1975		0	0		517,462			517,462
1976		9,802	9,802		382,196			382,196
1977		3,412	3,412		359,743			359,743
1978	1,706	27,003	28,709	54,287	648,336			702,623
1979	9,531	40,015	49,546	48,951	582,787			631,738
1980	5,727	44,782	50,509	35,380	744,738			780,118
1981	7,430	54,471	61,901	32,958	913,507			946,465
1982	5,840	4,086	9,926	42,734	435,946			478,680
1983	4,609	14,600	19,209	56,684	713,856			770,540
1984	7,351	1,087	8,438	62,806	530,694			593,500
1985	3,687	1,792	5,479	47,831	437,377			485,208
1986	12,238	442	12,680	92,588	669,996			762,584
1987	12,176	3,501	15,677	76,070	401,275	0		477,345
1988	14,609	13,965	28,574	72,330	1,083,748	416	3,587	1,160,081
1989	12,824	7,578	20,402	105,371	894,983	381	4,338	1,005,073
1990	9,521	643	10,164	74,973	279,123	256	2,938	357,290
1991	5,545	8,912	14,457	54,038	324,531		2,076	380,645
1992	9,599	65	9,664	67,569	324,523		1,918	394,010
1993	7,538	463	8,001	66,821	93,454		1,869	162,144
1994	8,492	35	8,527	63,544	55,236		3,212	121,992
1995	12,143	0	12,143	74,323	226,083		6,073	306,479
1996	11,368	1,534	12,902	67,083	124,767		7,309	199,159
1997	10,316	0	10,316	64,535	78,157		2,590	145,282
1998	6,472	0	6,472	59,640	28,118		3,019	90,777
1999	5,748	0	5,748	50,054	27,883		836	78,773
2000	3,687	0	3,687	53,097	6,624		648	60,369
2001	1,309	-	1,309	50,383	-		0	50,383
2002	2,506	0	2,506	50,167	10,354		218	60,739
2003	5,858	0	5,858	42,332	6,162		119	48,613
2004	2,958	0	2,958	49,509	19,775		217	69,501
2005	5,766	0	5,766	57,738	32,278		134	90,150
2006	3,534 ^c	116	3,650	63,070	47,475		456	111,001
2007	2,056 ^c	1	2,057	49,772	176,223		10	226,005
2008	2,971	-	2,971	50,029	125,598		80	175,707
2009	1,146	-	1,146	46,233	157,906		0	204,139
2010	1,341 ^c	-	1,341	50,251	183,215		0	233,466
2005-2009								
Average	3,095	39	3,118	53,368	107,896		136	161,400
2000-2009								
Average	3,179	17	3,191	51,233	64,711		188	109,661

-continued-

Appendix A18.–Page 3 of 6.

Year	District 4					District 5				
	Subsistence ^f	Commercial	Commercial Related ^g	Anvik River ^h	Total	Subsistence ^f	Commercial	Commercial Related ^g	Personal Use ^d	Total
1961		0	0				0	0		
1962		0	0				0	0		
1963		0	0				0	0		
1964		0	0				0	0		
1965		0	0				0	0		
1966		0	0				0	0		
1967		0	0				0	0		
1968		0	0				0	0		
1969		0	0				0	0		
1970		0	0				0	0		
1971		0	0				0	0		
1972		0	0				0	0		
1973		0	0				0	0		
1974		27,866	0		27,866		6,831	0		6,831
1975		165,054	0		165,054		12,997	0		12,997
1976		211,307	0		211,307		774	0		774
1977		169,541	0		169,541		1,274	0		1,274
1978	93,139	364,184	16,920		474,243	20,423	4,892	605		25,920
1979	81,838	169,430	35,317		286,585	22,869	8,608	1,009		32,486
1980	117,305	147,560	135,824		400,689	8,594	456	0		9,050
1981	48,452	59,718	270,727		378,897	27,259	1,236	49		28,544
1982	57,967	3,647	254,072		315,686	9,770	213	21		10,004
1983	46,713	6,672	248,716		302,101	22,087	42	1,856		23,985
1984	49,230	1,009	277,061		327,300	31,488	645	47		32,180
1985	59,839	12,007	415,476		487,322	26,996	700	0		27,696
1986	53,020	300	465,235		518,555	21,833	690	0	0	22,523
1987	48,911	29,991	179,809		258,711	20,544	362	44	4,262	25,212
1988	86,623	24,051	466,023		576,697	28,960	722	363	567	30,612
1989	40,935	18,554	491,690		551,179	12,981	154	373	295	13,803
1990	26,534	12,364	210,186		249,084	9,817	11	660	641	11,129
1991	35,269	6,381	303,263		344,913	24,164	4	31		24,199
1992	35,812	2,659	208,737		247,208	12,612	102	328		13,042
1993	20,076	27	42,930		63,033	11,086	0	0		11,086
1994	27,504	3,611	145,423	22,573	199,111	11,830	229	235		12,294
1995	25,084	8,873	490,970	54,744	579,671	7,655	107	209		7,971
1996	16,425	0	425,607	84,633	526,665	11,509	0	336		11,845
1997	24,230	2,062	109,061	13,548	148,901	4,520	137	0		4,657
1998	18,046	0	0	0	18,046	2,314	96	14		2,424
1999	15,339	1,267	0	0	16,606	2,276	115	0		2,391
2000	7,046	0	0	0	7,046	3,641	0	0		3,641
2001	4,588	-	0	0	4,588	2,856	-	0		2,856
2002	15,971	0	0	0	15,971	5,610	6	0		5,616
2003	17,513	62	0	0	17,575	5,545	0	0		5,545
2004	14,959	0	0	0	14,959	3,411	25	0		3,436
2005	12,350	0	0	0	12,350	6,800	0	0		6,800
2006	14,997 ^e	-	-	-	-	11,845 ^e	20	0		11,865
2007	16,256 ^e	7,304	0	0	23,560	8,846 ^e	0	0		8,846
2008	13,517	23,746	0	0	37,263	3,537	-	-		3,537
2009	14,958	4,589	0	0	19,547	5,298	-	-		5,298
2010	11,720 ^e	44,207	0	0	55,927	3,555 ^e	-	-		3,555
2005-2009										
Average	14,416	8,910	0	0	23,180	7,265	7	0		7,269
2000-2009										
Average	13,216	4,463	0	0	16,984	5,739	7	0		5,744

-continued-

Appendix A18.–Page 4 of 6.

Year	District 6						Upper Yukon Area Subtotals					
	Subsistence ^f	Commercial	Related ^g	Use	Sales	Total	Subsistence	Commercial	Related	Use ^d	Sales	Total
1961		0	0					0	0			
1962		0	0					0	0			
1963		0	0					0	0			
1964		0	0					0	0			
1965		0	0					0	0			
1966		0	0					0	0			
1967		0	0					0	0			
1968		0	0					0	0			
1969		0	0					0	0			
1970		0	0					0	0			
1971		0	0					0	0			
1972		0	0					0	0			0
1973		0	0					0	0			0
1974		13,318	0			13,318		48,015	0			48,015
1975		14,782	0			14,782		192,833	0			192,833
1976		6,617	0			6,617		218,698	0			218,698
1977		4,317	0			4,317		175,132	0			175,132
1978	3,534	34,814	8,236			46,584	117,096	403,890	25,761			546,747
1979	2,312	18,491	3,891			24,694	107,019	196,529	40,217			343,765
1980	6,426	35,855	3,282			45,563	132,325	183,871	139,106			455,302
1981	8,960	32,477	1,987			43,424	84,671	93,431	272,763			450,865
1982	6,942	21,597	1,517			30,056	74,679	25,457	255,610			355,746
1983	23,696	24,309	18			48,023	92,496	31,023	250,590			374,109
1984	23,106	56,249	335			79,690	103,824	57,903	277,443			439,170
1985	23,078	66,913	1,540			91,531	109,913	79,620	417,016			606,549
1986	14,896	50,483	2,146			67,525	89,749	51,473	467,381			608,603
1987	25,153	10,610	450			36,213	94,608	40,963	180,303	4,262		320,136
1988	8,686	40,129	1,646	1,242	0	51,703	124,269	64,902	468,032	1,809		659,012
1989	7,868	42,115	4,871	1,215	6,267	62,336	61,784	60,823	496,934	1,510	6,267	627,318
1990	4,285	11,127	3,706	930	5,325	25,373	40,636	23,502	214,552	1,571	5,325	285,586
1991	5,069	18,197	5,695	-	1,858	30,819	64,502	24,582	308,989	0	1,858	399,931
1992	9,504	5,029	2,199	-	49	16,781	57,928	7,790	211,264	0	49	277,031
1993	6,793	3,041	664	674	0	11,172	37,955	3,068	43,594	674	0	85,291
1994	7,026	21,208	10,226	-	0	38,460	46,360	25,048	178,457	0	0	249,865
1995	11,661	24,711	12,717	780	0	49,869	44,400	33,691	558,640	780	0	637,511
1996	7,486	22,360	24,530	905	0	55,281	35,420	22,360	535,106	905	0	593,791
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	0	0	30	0	1,141	11,798	0	0	30	0	11,828
2001	412	-	0	146	0	558	7,856	-	0	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 ^e	44,621	0	262	0	45,893	27,852	44,641	0	262	0	57,758
2007	1,896 ^e	14,674	0	184	0	16,754	26,998	21,978	0	184	0	49,160
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 ^e	5,466	0	319	0	6,207	15,697	49,673	0	319	0	65,689
2005-2009												
Average	1,497	15,580	0	209	0	17,286	23,178	22,712	0	209	0	43,099
2000-2009												
Average	1,423	10,241	2	177	0	10,819	20,377	14,213	2	177	0	31,849

-continued-

Appendix A18.–Page 5 of 6.

Year	Alaska Yukon River Totals							Total Alaska Yukon Area	
	Subsistence	Commercial	Commercial Related	Personal Use	Alaska Test Fish	Sport Fish ⁱ	Total	Coastal District	Yukon Area Total
1961	305,317	0	0				305,317		305,317
1962	261,856	0	0				261,856		261,856
1963	297,094	0	0				297,094		297,094
1964	361,080	0	0				361,080		361,080
1965	336,848	0	0				336,848		336,848
1966	154,508	0	0				154,508		154,508
1967	206,233	10,935	0				217,168		217,168
1968	133,880	14,470	0				148,350		148,350
1969	156,191	61,966	0				218,157		218,157
1970	166,504	137,006	0				303,510		303,510
1971	171,487	100,090	0				271,577		271,577
1972	108,006	135,668	0				243,674		243,674
1973	161,012	285,509	0				446,521		446,521
1974	227,811	589,892	0				817,703		817,703
1975	211,888	710,295	0				922,183		922,183
1976	186,872	600,894	0				787,766		787,766
1977	159,502	534,875	0			316	694,693		694,693
1978	171,383	1,052,226	25,761			451	1,249,821	16,809	1,266,630
1979	155,970	779,316	40,217			328	975,831		975,831
1980	167,705	928,609	139,106			483	1,235,903		1,235,903
1981	117,629	1,006,938	272,763			612	1,397,942		1,397,942
1982	117,413	461,403	255,610			780	835,206		835,206
1983	149,180	744,879	250,590			998	1,145,647		1,145,647
1984	166,630	588,597	277,443			585	1,033,255		1,033,255
1985	157,744	516,997	417,016			1,267	1,093,024		1,093,024
1986	182,337	721,469	467,381	0		895	1,372,082		1,372,082
1987	170,678	442,238	180,303	4,262		846	798,327	29,668	827,995
1988	196,599	1,148,650	468,032	2,225	3,587	1,037	1,820,130	31,230	1,851,360
1989	167,155	955,806	496,934	1,891	10,605	2,132	1,634,523	2,341	1,636,864
1990	115,609	302,625	214,552	1,827	8,263	472	643,348		643,348
1991	118,540	349,113	308,989	0	3,934	1,037	781,613		781,613
1992	125,497	332,313	211,264	0	1,967	1,308	672,349	16,695	689,044
1993	104,776	96,522	43,594	674	1,869	564	247,999	20,798	268,797
1994	109,904	80,284	178,457	0	3,212	350	372,207	14,903	387,110
1995	118,723	259,774	558,640	780	6,073	1,174	945,164	17,360	962,524
1996	102,503	147,127	535,106	905	7,309	1,946	794,896	22,235	817,131
1997	97,109	95,242	133,010	391	2,590	662	329,004	15,711	344,715
1998	86,004	28,611	187	84	3,019	421	118,326	1,362	119,688
1999	70,323	29,389	24	382	836	555	101,509	13,461	114,970
2000	64,895	6,624	0	30	648	161	72,358	13,177	85,535
2001	58,239	-	0	146	0	82	58,467	13,916	72,383
2002	72,260	13,558	19	175	218	384	86,614	14,796	101,410
2003	68,304	10,685	0	148	119	1,638	80,894	13,968	94,862
2004	69,672	26,410	0	231	217	203	96,733	8,262	104,995
2005	78,902	41,264	0	152	134	435	120,887	14,357	135,244
2006	90,922 °	92,116	0	262	456	583	184,339	24,171 °	208,510
2007	76,770 °	198,201	0	184	10	245	275,410	16,121 °	291,531
2008	68,394	151,186	0	138	80	371	220,169	18,120	238,289
2009	67,742	170,272	0	308	0	174	238,496	12,797	251,293
2010	65,948 °	232,888	0	355	0	1,183	300,374	22,425 °	322,799
2005-2009									
Average	76,546	130,608	0	209	136	362	207,860	17,113	224,973
2000-2009									
Average	71,610	78,924	2	177	188	428	143,437	14,969	158,405

-continued-

Appendix A18.–Page 6 of 6.

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

- ^a Subsistence harvest estimates not available by district until 1978. Harvests prior to 1977 were estimated because catches of salmon other than Chinook salmon were not differentiated by species.
- ^b Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
- ^c Includes ADF&G test fish sales prior to 1988 and estimates of illegal sales.
- ^d Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.
- ^e Preliminary
- ^f In 1978 and 1979, the commercial related harvest was subtracted from the subsistence harvest because it was assumed this harvest was included in the reported subsistence harvest. From 1980 through 1987, the District 4 subsistence harvest was also reduced to account for commercial related harvests being reported in the subsistence harvest. It was calculated that 80.2% of the reported subsistence harvest (excluding Innoko and Koyukuk River catches) was commercial related. Beginning in 1989, subsistence surveys attempted to document subsistence only fishing catches and commercial related use separately.
- ^g In District 4, excluding the Anvik River, commercial related refers to the estimated number of females and incidental males harvested to produce roe sold. Beginning in 2006, the numbers of females harvested are included in the total commercial harvest.
- ^h 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.
- ⁱ Estimated sport fish harvest for all chum salmon (assumes majority of chum salmon caught during summer season) in Alaska portion of the drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

Appendix A19.–Fall chum salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.

Year	District 1					District 2			
	Subsistence ^{a,b}	Commercial ^c	Personal Use ^d	Test Fish Sales ^e	Total	Subsistence ^a	Commercial ^c	Test Fish Sales ^e	Total
1961		42,461			42,461				
1962		53,116			53,116				
1963									
1964		8,347			8,347				
1965		22,936			22,936				
1966		69,836			69,836				
1967		36,451			36,451				
1968		49,857			49,857				
1969		128,866			128,866				
1970		200,306			200,306		4,858		4,858
1971		188,533			188,533				
1972		136,711			136,711		12,898		12,898
1973		173,783			173,783		45,304		45,304
1974		176,036			176,036		53,540		53,540
1975		158,183			158,183		51,666		51,666
1976		105,851			105,851		21,212		21,212
1977		131,758			131,758		51,994		51,994
1978	390	127,947			128,337	1,297	51,646		52,943
1979	15,788	109,406			125,194	14,662	94,042		108,704
1980	7,433	106,829			114,262	12,435	83,881		96,316
1981	15,540	167,834			183,374	11,770	154,883		166,653
1982	10,016	97,484			107,500	9,511	96,581		106,092
1983	8,238	124,371			132,609	10,341	85,645		95,986
1984	8,885	78,751			87,636	11,394	70,803		82,197
1985	13,275	129,948			143,223	11,544	40,490		52,034
1986	9,000	59,352			68,352	13,483	51,307		64,790
1987	18,467	-	0	-	18,467	13,454	-	-	13,454
1988	5,475	45,317	5	639	51,436	8,600	31,861	16	40,477
1989	4,914	77,876	18	3,641	86,449	10,015	97,906	348	108,269
1990	5,335	27,337	60	2,068	34,800	6,187	37,173	96	43,456
1991	3,935	59,724		2,455	66,114	5,628	102,628	96	108,352
1992	5,216	-		-	5,216	7,382	-	-	7,382
1993	7,770	-		-	7,770	3,094	-	-	3,094
1994	4,887	-		-	4,887	4,151	-	-	4,151
1995	4,698	79,345		1,121	85,164	3,317	90,831	0	94,148
1996	4,147	33,629		1,717	39,493	5,287	29,651	0	34,938
1997	3,132	27,483		867	31,482	4,680	24,326	0	29,006
1998	3,163	-		-	3,163	4,482	-	-	4,482
1999	6,502	9,987		1,149	17,638	4,594	9,703	22	14,319
2000	5,294	-		-	5,294	1,425	-	-	1,425
2001	3,437	-		-	3,437	3,256	-	-	3,256
2002	1,881	-		-	1,881	1,618	-	-	1,618
2003	2,139	5,586		0	7,725	2,901	-	-	2,901
2004	2,067	660		0	2,727	2,421	-	-	2,421
2005	2,889	130,525		87	133,501	3,257	-	-	3,257
2006	3,902 ^f	101,254		0	105,156	4,015 ^f	39,905	0	43,920
2007	4,390 ^f	38,852		0	43,242	3,472 ^f	35,826	0	39,298
2008	2,823	67,704		0	70,527	3,522	41,270	0	44,792
2009	1,917	11,911		0	13,828	1,563	12,072	0	13,635
2010	3,202 ^f	545		0	3,747	1,419 ^f	270	0	1,689
2005-2009									
Average	3,184	70,049		17	73,251	3,166	32,268	0	28,980
2000-2009									
Average	3,074	50,927		12	38,732	2,745	32,268	0	15,652

-continued-

Appendix A19.–Page 2 of 7.

Year	District 3			Lower Yukon Area Subtotals				
	Subsistence ^a	Commercial	Total	Subsistence ^a	Commercial ^c	Personal Use ^d	Test Fish Sales ^e	Total
1961					42,461			42,461
1962					53,116			53,116
1963								
1964					8,347			8,347
1965					22,936			22,936
1966		1,209	1,209		71,045			71,045
1967		1,823	1,823		38,274			38,274
1968		3,068	3,068		52,925			52,925
1969		1,722	1,722		130,588			130,588
1970		3,285	3,285		208,449			208,449
1971					188,533			188,533
1972		1,313	1,313		150,922			150,922
1973					219,087			219,087
1974		552	552		230,128			230,128
1975		5,590	5,590		215,439			215,439
1976		4,250	4,250		131,313			131,313
1977		15,851	15,851		199,603			199,603
1978	266	11,527	11,793	1,953	191,120			193,073
1979	2,443	25,955	28,398	32,893	229,403			262,296
1980	2,320	13,519	15,839	22,188	204,229			226,417
1981	3,043	19,043	22,086	30,353	341,760			372,113
1982	1,659	5,815	7,474	21,186	199,880			221,066
1983	2,863	10,018	12,881	21,442	220,034			241,476
1984	2,233	6,429	8,662	22,512	155,983			178,495
1985	2,290	5,164	7,454	27,109	175,602			202,711
1986	2,155	2,793	4,948	24,638	113,452			138,090
1987	3,287	0	3,287	35,208	-	0	-	35,208
1988	1,747	2,090	3,837	15,822	79,268	5	655	95,750
1989	1,023	15,332	16,355	15,952	191,114	18	3,989	211,073
1990	2,056	3,715	5,771	13,578	68,225	60	2,164	84,027
1991	615	9,213	9,828	10,178	171,565		2,551	184,294
1992	2,358	-	2,358	14,956	-		-	14,956
1993	1,449	-	1,449	12,313	-		-	12,313
1994	862	-	862	9,900	-		-	9,900
1995	1,672	-	1,672	9,687	170,176		1,121	180,984
1996	2,706	-	2,706	12,140	63,280		1,717	77,137
1997	787	-	787	8,599	51,809		867	61,275
1998	1,561	-	1,561	9,206	-		-	9,206
1999	415	-	415	11,511	19,690		1,171	32,372
2000	598	-	598	7,317	-		-	7,317
2001	700	-	700	7,393	-		-	7,393
2002	164	-	164	3,663	-		-	3,663
2003	738	-	738	5,778	5,586		0	11,364
2004	298	-	298	4,786	660		0	5,446
2005	1,304	-	1,304	7,450	130,525		87	138,062
2006	480 ^f	-	480	8,397 ^f	141,159		0	149,556
2007	925 ^f	-	925	8,787 ^f	74,678		0	83,465
2008	1,821	-	1,821	8,166	108,974		0	117,140
2009	937	-	937	4,417	23,983		0	28,400
2010	1,325 ^f	-	1,325	5,946 ^f	815		0	6,761
2005-2009								
Average	1,093	-	1,093	7,443	95,864		17	103,325
2000-2009								
Average	797	-	797	6,615	69,366		12	55,181

-continued-

Appendix A19.–Page 3 of 7.

Year	District 4					District 5					
	Subsistence	^{a,g}	Commercial	Commercial Related ^h	Total	Subsistence	^{a,g}	Commercial	Commercial Related ^h	Personal Use ^d	Total
1961			0	ⁱ	0						
1962			0	ⁱ	0						
1963			0	ⁱ	0						
1964			0	ⁱ	0						
1965			381	ⁱ	381						
1966			0	ⁱ	0						
1967			0	ⁱ	0						
1968			0	ⁱ	0						
1969			722	ⁱ	722						
1970			1,146	ⁱ	1,146						
1971			1,061	ⁱ	1,061						
1972			1,254	ⁱ	1,254						
1973			13,003	ⁱ	13,003						
1974			9,213		0	9,213		23,551	0		23,551
1975			13,666		0	13,666		27,212	0		27,212
1976			1,742		0	1,742		5,387	0		5,387
1977			13,980		0	13,980		25,730	0		25,730
1978	8,931		10,988		1,721	21,640	46,485	21,016	5,220		72,721
1979	34,697		48,899		3,199	86,795	102,695	47,459	8,097		158,251
1980	18,923		27,978		4,752	51,653	75,861	41,771	605		118,237
1981	17,120		12,082		2,853	32,055	104,612	87,856	5,719		198,187
1982	20,152		3,894		167	24,213	71,786	13,593	42		85,421
1983	32,246		4,482		1,963	38,691	105,103	43,993	0		149,096
1984	28,937		7,625		2,215	38,777	98,376	24,060	57		122,493
1985	22,750		24,452		2,525	49,727	117,125	25,338	0		142,463
1986	26,126		2,045		0	28,171	87,729	22,053	395		110,177
1987	41,467		-		-	41,467	141,335 ^j	-	-	15,750	157,085
1988	16,958		15,662		1,421	34,041	84,209	16,989	0	1,762	102,960
1989	24,540		11,776		3,407	39,723	112,001	18,215	3,989	3,294	137,499
1990	19,241		4,989		3,177	27,407	90,513	7,778	1,198	3,723	103,212
1991	20,875		3,737		2,354	26,966	74,002	27,355	4,759		106,116
1992	21,232		-		-	21,232	45,701	-	-		45,701
1993	10,832		-		-	10,832	43,764	-	-		43,764
1994	13,325		-		-	13,325	66,396	3,630	0		70,026
1995	14,057		2,924		5,807	22,788	57,594	9,778	20,255		87,627
1996	16,786		2,918		0	19,704	63,473	11,878	9,980		85,331
1997	11,734		2,458		0	14,192	55,258	2,446	1,474		59,178
1998	7,898		-		-	7,898	31,393	-	-		31,393
1999	9,174		681		0	9,855	53,580	-	-		53,580
2000	1,759		-		-	1,759	9,920	-	-		9,920
2001	3,352		-		-	3,352	20,873	-	-		20,873
2002	1,549		-		-	1,549	10,976	-	-		10,976
2003	9,750		1,315		0	11,065	28,270	-	-		28,270
2004	7,797		-		-	7,797	40,670	-	-		40,670
2005	9,405		-		-	9,405	51,663	-	-		51,663
2006	6,335 ^f		-		-	6,335	52,158 ^f	1,667	0		53,825
2007	8,576 ^f		-		-	8,576	53,731 ^f	427	0		54,158
2008	7,412		-		-	7,412	57,258	4,556	0		61,814
2009	7,382		-		-	7,382	38,083	-	-		38,083
2010	6,788 ^f		-		-	6,788	44,334 ^f	-	-		44,334
2005-2009											
Average	7,822		-		-	7,822	50,579	2,217	0		51,909
2000-2009											
Average	6,332		1,315		0	6,463	36,360	2,217	0		37,025

-continued-

Appendix A19.–Page 4 of 7.

Year	District 6						Upper Yukon Area Subtotals					
	Subsistence ^{a,d}	Commercial	Personal Related ^h	Use ^d	Test Fish Sales ^e	Total	Subsistence ^{a,d,g}	Commercial	Personal Related ^h	Use ^d	Test Fish Sales ^e	Total
1961								0	0			0
1962								0	0			0
1963								0	0			0
1964								0	0			0
1965								381	0			381
1966								0	0			0
1967								0	0			0
1968								0	0			0
1969								722	0			722
1970								1,146	0			1,146
1971								1,061	0			1,061
1972								1,254	0			1,254
1973								13,003	0			13,003
1974		26,884	0			26,884		59,648	0			59,648
1975		18,692	0			18,692		59,570	0			59,570
1976		17,948	0			17,948		25,077	0			25,077
1977		18,673	0			18,673		58,383	0			58,383
1978	26,870	13,259	3,687		43,816	82,286	45,263	10,628				138,177
1979	44,596	34,185	7,170		85,951	181,988	130,543	18,466				330,997
1980	50,261	19,452	67		69,780	145,045	89,201	5,424				239,670
1981	23,013	25,989	3,619		52,621	144,745	125,927	12,191				282,863
1982	19,014	6,820	550		26,384	110,952	24,307	759				136,018
1983	31,069	34,089	1,105		66,263	168,418	82,564	3,068				254,050
1984	22,670	20,564	56		43,290	149,983	52,249	2,328				204,560
1985	36,963	42,352	0		79,315	176,838	92,142	2,525				271,505
1986	24,973	1,892	182		27,047	138,828	25,990	577				165,395
1987	124,587 ^k	-	-	3,316		127,903	307,389	-	-	19,066		326,455
1988	34,597	21,844	1,806	2,114	27,008	87,369	135,764	54,495	3,227	3,876	27,008	224,370
1989	58,654	49,090	7,353	1,770	16,984	133,851	195,195	79,081	14,749	5,064	16,984	311,073
1990	44,568	43,182	7,793	1,393	7,060	103,996	154,322	55,949	12,168	5,116	7,060	234,615
1991	40,469	28,195	16,253	0	1,385	86,302	135,346	59,287	23,366	0	1,385	219,384
1992	25,713	15,721	3,301	0	1,407	46,142	92,646	15,721	3,301	0	1,407	113,075
1993	9,853	-	-	163		10,016	64,449	-	-	163		64,612
1994	33,597	1	4,368	0		37,966	113,318	3,631	4,368	0		121,317
1995	49,168	67,855	6,262	863		124,148	120,819	80,557	32,324	863		234,563
1996	36,467	10,266	7,308	356		54,397	116,726	25,062	17,288	356		159,432
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	-	-	261		15,732	78,225	681	0	261		79,167
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 ^f	23,353	0	333 ^f		40,611	75,418 ^f	25,020	0	333 ^f		100,771
2007	29,893 ^f	15,572	0	173 ^f		45,638	92,200 ^f	15,999	0	173 ^f		108,372
2008	16,135	5,967	0	181		22,283	80,805	10,523	0	181		91,509
2009	15,099	1,893	0	78		17,070	60,564	1,893	0	78		62,535
2010	11,391 ^f	1,735	0	3,209 ^f		16,335	62,513 ^f	1,735	0	3,209 ^f		67,457
2005-2009												
Average	20,200	19,284	0	180		39,664	78,600	20,614	0	180		99,394
2000-2009												
Average	12,998	14,852	0	154		23,548	55,689	15,990	0	154		67,036

-continued-

Appendix A19.–Page 5 of 7.

2	Alaska Yukon River Totals							Canada: Yukon Area Totals					
	Year	Subsistence ^{a,d,g,l}	Commercial ^c	Personal ^h	Test Fish ^d	Sales ^e	Total	Mainstem Yukon River					Porcupine
								Domestic	Aboriginal	Commercial	Subtotal	Aboriginal	Total
1961	101,772	42,461	0				144,233		3,800	3,276	7,076	2,000	9,076
1962	87,285	53,116	0				140,401		6,500	936	7,436	2,000	9,436
1963	99,031	0	0				99,031		5,500	2,196	7,696	20,000	27,696
1964	120,360	8,347	0				128,707		4,200	1,929	6,129	6,058	12,187
1965	112,283	23,317	0				135,600		2,183	2,071	4,254	7,535	11,789
1966	51,503	71,045	0				122,548		1,430	3,157	4,587	8,605	13,192
1967	68,744	38,274	0				107,018		1,850	3,343	5,193	11,768	16,961
1968	44,627	52,925	0				97,552		1,180	453	1,633	10,000	11,633
1969	52,063	131,310	0				183,373		2,120	2,279	4,399	3,377	7,776
1970	55,501	209,595	0				265,096		612	2,479	3,091	620	3,711
1971	57,162	189,594	0				246,756		150	1,761	1,911	15,000	16,911
1972	36,002	152,176	0				188,178		0	2,532	2,532	5,000	7,532
1973	53,670	232,090	0				285,760		1,129	2,806	3,935	6,200	10,135
1974	93,776	289,776	0				383,552	466	1,636	2,544	4,646	7,000	11,646
1975	86,591	275,009	0				361,600	4,600	2,500	2,500	9,600	11,000	20,600
1976	72,327	156,390	0				228,717	1,000	100	1,000	2,100	3,100	5,200
1977	82,771	257,986	0				340,757	1,499	1,430	3,990	6,919	5,560	12,479
1978	84,239	236,383	10,628				331,250	728	482	3,356	4,566	5,000	9,566
1979	214,881	359,946	18,466				593,293	2,000	11,000	9,084	22,084		22,084
1980	167,233	293,430	5,424				466,087	4,000	3,218	9,000	16,218	6,000	22,218
1981	175,098	467,687	12,191				654,976	1,611	2,410	15,260	19,281	3,000	22,281
1982	132,138	224,187	759				357,084	683	3,096	11,312	15,091	1,000	16,091
1983	189,860	302,598	3,068				495,526	300	1,200	25,990	27,490	2,000	29,490
1984	172,495	208,232	2,328				383,055	535	1,800	22,932	25,267	4,000	29,267
1985	203,947	267,744	2,525				474,216	279	1,740	35,746	37,765	3,500	41,265
1986	163,466	139,442	577				303,485	222	2,200	11,464	13,886	657	14,543
1987	342,597	-	-	19,066			361,663	132	3,622	40,591	44,345	135	44,480
1988	151,586	133,763	3,227	3,881		27,663	320,120	349	1,882	30,263	32,494	1,071	33,565
1989	211,147	270,195	14,749	5,082		20,973	522,146	100	2,462	17,549	20,111	2,909	23,020
1990	167,900	124,174	12,168	5,176		9,224	318,642	0	3,675	27,537	31,212	2,410	33,622
1991	145,524	230,852	23,366	0		3,936	403,678	0	2,438	31,404	33,842	1,576	35,418
1992	107,602	15,721	3,301	0		1,407	128,031	0	304	18,576	18,880	1,935	20,815
1993	76,762	-	-	163		-	76,925	0	4,660	7,762	12,422	1,668	14,090
1994	123,218	3,631	4,368	0		0	131,217	0	5,319	30,035	35,354	2,654	38,008
1995	130,506	250,733	32,324	863		1,121	415,547	0	1,099	39,012	40,111	5,489	45,600
1996	128,866	88,342	17,288	356		1,717	236,569	0	1,260	20,069	21,329	3,025	24,354
1997	95,141	56,713	1,474	284		867	154,479	0	1,218	8,068	9,286	6,294	15,580
1998	62,867	-	-	2		-	62,869	0	1,745	0	1,745	6,159	7,904
1999	89,736	20,371	0	261		1,171	111,539	0	3,234	10,402	13,636	6,000	19,636
2000	19,306	-	-	1		-	19,307	0	2,927	1,319	4,246	5,000	9,246
2001	35,144	-	-	10		-	35,154	3	3,077	2,198	5,278	4,594	9,872
2002	19,390	-	-	3		-	19,393	0	3,109	3,065	6,174	1,860	8,034
2003	56,784	10,996	0	394		0	68,174	0	1,943	9,030	10,973	382	11,355
2004	62,206	4,110	0	230		0	66,546	0	2,180	7,365	9,545	205	9,750
2005	91,464	180,162	0	133		87	271,846	13	2,035	11,931	13,979	4,593	18,572
2006	83,815 ^f	166,179	0	333 ^f		0	250,327	0	2,521	4,096	6,617	5,179	11,796
2007	100,987 ^f	90,677	0	173 ^f		0	191,837	0	2,221	7,109	9,330	4,500	13,830
2008	88,971	119,497	0	181		0	208,649	0	2,068	4,062	6,130	3,436	9,566
2009	64,981	25,876	0	78		0	90,935	0	820	293	1,113	898	2,011
2010	68,459 ^f	2,550	0	3,209 ^f		0	74,218	0	1,523	2,186	3,709	2,078	5,787
2005-2009													
Average	86,044	116,478	0	180		17	202,719	3	1,933	5,498	7,434	3,721	11,155
2000-2009													
Average	62,305	85,357	0	154		12	122,217	2	2,290	5,047	7,339	3,065	10,403

-continued-

Appendix A19.–Page 6 of 7.

Year	Yukon River Drainage (Alaska/Canada) Totals						Total Alaska Yukon Area		
	Subsistence ^m	Commercial	Commercial Related ^h	Personal Use ^d	Alaska Test Fish	Total	Coastal District	Alaska Total	Yukon Area Total
1961	107,572	45,737	0			153,309	0	144,233	144,233
1962	95,785	54,052	0			149,837	0	140,401	140,401
1963	124,531	2,196	0			126,727	0	99,031	99,031
1964	130,618	10,276	0			140,894	0	128,707	128,707
1965	122,001	25,388	0			147,389	0	135,600	135,600
1966	61,538	74,202	0			135,740	0	122,548	122,548
1967	82,362	41,617	0			123,979	0	107,018	107,018
1968	55,807	53,378	0			109,185	0	97,552	97,552
1969	57,560	133,589	0			191,149	0	183,373	183,373
1970	56,733	212,074	0			268,807	0	265,096	265,096
1971	72,312	191,355	0			263,667	0	246,756	246,756
1972	41,002	154,708	0			195,710	0	188,178	188,178
1973	60,999	234,896	0			295,895	0	285,760	285,760
1974	102,878	292,320	0			395,198	0	383,552	383,552
1975	104,691	277,509	0			382,200	0	361,600	361,600
1976	76,527	157,390	0			233,917	0	228,717	228,717
1977	91,260	261,976	0			353,236	0	340,757	340,757
1978	90,449	239,739	10,628			340,816	665	331,250	331,915
1979	227,881	369,030	18,466			615,377	0	593,293	593,293
1980	180,451	302,430	5,424			488,305	0	466,087	466,087
1981	182,119	482,947	12,191			677,257	0	654,976	654,976
1982	136,917	235,499	759			373,175	0	357,084	357,084
1983	193,360	328,588	3,068			525,016	0	495,526	495,526
1984	178,830	231,164	2,328			412,322	0	383,055	383,055
1985	209,466	303,490	2,525			515,481	0	474,216	474,216
1986	166,545	150,906	577			318,028	0	303,485	303,485
1987	346,486	40,591	0	19,066		406,143	0	361,663	361,663
1988	154,888	164,026	3,227	3,881	27,663	353,685	5,489	320,120	325,609
1989	216,618	287,744	14,749	5,082	20,973	545,166	156	522,146	522,302
1990	173,985	151,711	12,168	5,176	9,224	352,264	0	318,642	318,642
1991	149,538	262,256	23,366	0	3,936	439,096	0	403,678	403,678
1992	109,841	34,297	3,301	0	1,407	148,846	206	128,031	128,237
1993	83,090	7,762	0	163	-	91,015	120	76,925	77,045
1994	131,191	33,666	4,368	0	0	169,225	347	131,217	131,564
1995	137,094	289,745	32,324	863	1,121	461,147	354	415,547	415,901
1996	133,151	108,411	17,288	356	1,717	260,923	392	236,569	236,961
1997	102,653	64,781	1,474	284	867	170,059	0	154,479	154,479
1998	70,771	0	0	2	-	70,773	34	62,869	62,903
1999	98,970	30,773	0	261	1,171	131,175	204	111,539	111,743
2000	27,233	1,319	0	1	-	28,553	89	19,307	19,396
2001	42,818	2,198	0	10	-	45,026	559	35,154	35,713
2002	24,359	3,065	0	3	-	27,427	284	19,393	19,677
2003	59,109	20,026	0	394	0	79,529	146	68,174	68,320
2004	64,591	11,475	0	230	0	76,296	320	66,546	66,866
2005	98,105	192,093	0	133	87	290,418	70	271,846	271,916
2006	91,515	170,275	0	333	0	262,123	187 ^f	250,327	250,514
2007	107,708	97,786	0	173	0	205,667	234 ^f	191,837	192,071
2008	94,475	123,559	0	181	0	218,215	386	208,649	209,035
2009	66,699	26,169	0	78	0	92,946	158	90,935	91,093
2010	72,060	4,736	0	3,209	0	80,005	186 ^f	74,218	74,404
2005-2009									
Average	91,700	121,976	0	180	17	213,874	207	202,719	202,926
2000-2009									
Average	67,661	64,797	0	154	12	132,620	243	122,217	122,460

-continued-

Appendix A19.–Page 7 of 7.

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred, includes commercial related or test fish sales.

- ^a Subsistence harvest estimates not available by district until 1978.
- ^b Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
- ^c Includes ADF&G test fish sales prior to 1988.
- ^d Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.
- ^e The number of salmon sold by ADF&G test fisheries.
- ^f Preliminary.
- ^g From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 4, 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period. Beginning in 1989, subsistence surveys attempted to document subsistence only fishing catches and commercial related use separately.
- ^h Estimated number of females harvested to produce roe sold.
- ⁱ These numbers were added from original Yukon Area annual management reports January 13, 2006; however, they are not in the fish ticket programs.
- ^j Includes an estimated 95,768 fall chum salmon illegally sold in District 5.
- ^k Includes an estimated 119,168 fall chum salmon illegally sold in District 6.
- ^l Minimum estimates from 1961 to 1978 because subsistence surveys were conducted prior to the end of the fishing season and catches of fish other than Chinook salmon were not differentiated by species.
- ^m Includes Alaska Yukon River subsistence and Canadian domestic and Aboriginal harvests.

Appendix A20.–Coho salmon total utilization in numbers of fish by district, area, and country, Yukon River drainage, 1961–2010.

Year	District 1					District 2			
	Subsistence ^{a,b}	Commercial ^c	Personal Use ^d	Test Fish Sales ^e	Total	Subsistence ^a	Commercial ^c	Test Fish Sales ^e	Total
1961		2,855			2,855		0		0
1962		22,926			22,926		0		0
1963		5,572			5,572		0		0
1964		2,446			2,446		0		0
1965		350			350		0		0
1966		19,254			19,254		0		0
1967		9,925			9,925		0		0
1968		13,153			13,153		0		0
1969		13,989			13,989		0		0
1970		12,632			12,632		0		0
1971		12,165			12,165		0		0
1972		21,705			21,705		506		506
1973		34,860			34,860		1,781		1,781
1974		13,713			13,713		176		176
1975		2,288			2,288		200		200
1976		4,064			4,064		17		17
1977		31,720			31,720		5,319		5,319
1978	1,142	16,460			17,602	598	5,835		6,433
1979	3,184	11,369			14,553	1,132	2,850		3,982
1980	1,808	4,829			6,637	4,801	2,660		7,461
1981	3,769	13,129			16,898	3,736	7,848		11,584
1982	11,192	15,115			26,307	10,229	14,179		24,408
1983	3,590	4,595			8,185	6,072	2,557		8,629
1984	6,095	29,472			35,567	7,066	43,064		50,130
1985	3,246	27,676			30,922	4,834	17,125		21,959
1986	2,725	24,824			27,549	9,140	21,197		30,337
1987	6,396	-	0	-	6,396	6,894	-	-	6,894
1988	4,389	36,028	0	407	40,824	7,104	34,758	18	41,880
1989	5,077	22,987	59	1,685	29,808	5,039	38,402	120	43,561
1990	3,301	12,160	8	1,194	16,663	6,344	16,405	30	22,779
1991	1,808	54,095		2,094	57,997	3,297	40,898	86	44,281
1992	5,426	-		-	5,426	6,587	-	-	6,587
1993	2,343	-		-	2,343	1,695	-	-	1,695
1994	3,272	-		-	3,272	3,881	-	-	3,881
1995	2,251	21,625		193	24,069	2,142	18,488	0	20,630
1996	2,445	27,705		1,728	31,878	3,475	20,974	0	24,449
1997	1,823	21,450		498	23,771	2,424	13,056	0	15,480
1998	2,171	-		-	2,171	2,297	1	0	2,298
1999	1,730	855		236	2,821	2,793	746	0	3,539
2000	1,067	-		-	1,067	2,351	-	-	2,351
2001	1,274	-		-	1,274	1,440	-	-	1,440
2002	1,295	-		-	1,295	1,233	-	-	1,233
2003	1,260	9,757		0	11,017	1,586	-	-	1,586
2004	1,175	1,583		0	2,758	1,500	-	-	1,500
2005	976	36,533		0	37,509	1,110	-	-	1,110
2006	1,177 ^f	39,323		0	40,500	2,459 ^f	14,482	0	16,941
2007	2,265 ^f	21,720		0	23,985	2,347 ^f	21,487	0	23,834
2008	1,211	13,946		0	15,157	1,997	19,246	0	21,243
2009	847	5,992		0	6,839	1,057	1,577	0	2,634
2010	1,122 ^f	1,027		0	2,149	557 ^f	1,023	0	1,580
2005-2009									
Average	1,295	23,503		0	24,798	1,794	14,198	0	13,152
2000-2009									
Average	1,255	18,408		0	14,140	1,708	14,198	0	7,387

-continued-

Appendix A20.–Page 2 of 7.

Year	District 3			Lower Yukon Area Subtotals				
	Subsistence ^a	Commercial	Total	Subsistence ^{a,b}	Commercial ^c	Personal Use ^d	Test Fish Sales ^e	Total
1961		0	0		2,855			2,855
1962		0	0		22,926			22,926
1963		0	0		5,572			5,572
1964		0	0		2,446			2,446
1965		0	0		350			350
1966		0	0		19,254			19,254
1967		1,122	1,122		11,047			11,047
1968		150	150		13,303			13,303
1969		1,009	1,009		14,998			14,998
1970		0	0		12,632			12,632
1971		0	0		12,165			12,165
1972		0	0		22,211			22,211
1973		0	0		36,641			36,641
1974		0	0		13,889			13,889
1975		0	0		2,488			2,488
1976		0	0		4,081			4,081
1977		538	538		37,577			37,577
1978	223	758	981	1,963	23,053			25,016
1979	74	0	74	4,390	14,219			18,609
1980	91	0	91	6,700	7,489			14,189
1981	510	419	929	8,015	21,396			29,411
1982	675	87	762	22,096	29,381			51,477
1983	917	0	917	10,579	7,152			17,731
1984	740	621	1,361	13,901	73,157			87,058
1985	376	171	547	8,456	44,972			53,428
1986	954	793	1,747	12,819	46,814			59,633
1987	754	-	754	14,044	-	0	-	14,044
1988	1,667	1,419	3,086	13,160	72,205	0	425	85,790
1989	537	3,988	4,525	10,653	65,377	59	1,805	77,894
1990	1,026	918	1,944	10,671	29,483	8	1,224	41,386
1991	1,340	1,905	3,245	6,445	96,898	0	2,180	105,523
1992	1,549	-	1,549	13,562	-		-	13,562
1993	279	-	279	4,317	-		-	4,317
1994	363	-	363	7,516	-		-	7,516
1995	891	-	891	5,284	40,113		193	45,590
1996	444	-	444	6,364	48,679		1,728	56,771
1997	766	-	766	5,013	34,506		498	40,017
1998	400	-	400	4,868	1		0	4,869
1999	610	-	610	5,133	1,601		236	6,970
2000	94	-	94	3,512	-		-	3,512
2001	0	-	0	2,714	-		-	2,714
2002	115	-	115	2,643	-		-	2,643
2003	711	-	711	3,557	9,757		0	13,314
2004	284	-	284	2,959	1,583		0	4,542
2005	217	-	217	2,303	36,533		0	38,836
2006	83 ^f	-	83	3,719 ^f	53,805		0	57,524
2007	739 ^f	-	739	5,351 ^f	43,207		0	48,558
2008	410	-	410	3,618	33,192		0	36,810
2009	321	-	321	2,225	7,569		0	9,794
2010	353 ^f	-	353	2,032 ^f	2,050		0	4,082
2005-2009								
Average	354	-	354	3,443	34,861		0	38,304
2000-2009								
Average	297	-	297	3,260	26,521		0	21,825

-continued-

Appendix A20.–Page 3 of 7.

Year	District 4				District 5				
	Subsistence ^a	Commercial	Commercial Related ^g	Total	Subsistence ^a	Commercial	Commercial Related ^g	Personal Use ^d	Total
1961									
1962									
1963									
1964									
1965									
1966									
1967									
1968									
1969									
1970									
1971									
1972									
1973									
1974						1,409	0		1,409
1975						5	0		5
1976						-	-		0
1977						2	0		2
1978	145	32	0	177	970	1	0		971
1979	197	155	0	352	595	-	-		595
1980	7,734	30	0	7,764	561	-	-		561
1981	2,239	-	-	2,239	1,713	-	-		1,713
1982	2,952	15	0	2,967	3,428	-	-		3,428
1983	3,946	-	-	3,946	2,448	-	-		2,448
1984	2,867	1,095	0	3,962	17,467	-	-		17,467
1985	3,949	938	0	4,887	8,098	-	-		8,098
1986	2,458	-	-	2,458	5,870	-	-		5,870
1987	3,479	-	-	3,479	11,842 ^h	-	-	58	11,900
1988	4,714	2	0	4,716	19,755	8	0	103	19,866
1989	4,030	3	0	4,033	7,187	84	0	82	7,353
1990	3,614	-	-	3,614	11,562	-	-	18	11,580
1991	4,451	14	0	4,465	4,931	-	-		4,931
1992	8,429	-	-	8,429	12,376	-	-		12,376
1993	1,167	-	-	1,167	5,984	-	-		5,984
1994	3,515	-	-	3,515	4,174	-	-		4,174
1995	1,934	-	-	1,934	2,205	-	-		2,205
1996	2,467	161	0	2,628	6,588	-	-		6,588
1997	3,754	814	0	4,568	3,583	-	-		3,583
1998	2,593	-	-	2,593	2,839	-	-		2,839
1999	2,049	-	-	2,049	4,241	-	-		4,241
2000	1,068	-	-	1,068	4,987	-	-		4,987
2001	2,266	-	-	2,266	7,674	-	-		7,674
2002	1,023	-	-	1,023	2,076	-	-		2,076
2003	5,773	367	0	6,140	3,887	-	-		3,887
2004	4,766	-	-	4,766	1,423	-	-		1,423
2005	2,971	-	-	2,971	2,159	-	-		2,159
2006	1,302 ^f	-	-	1,302	3,779 ^f	-	-		3,779
2007	2,952 ^f	-	-	2,952	3,366 ^f	-	-		3,366
2008	1,490	-	-	1,490	3,203	-	-		3,203
2009	3,986	-	-	3,986	2,498	-	-		2,498
2010	1,730 ^f	-	-	1,730	3,604 ^f	-	-		3,604
2005-2009									
Average	2,540	-	-	2,540	3,001	-	-		3,001
2000-2009									
Average	2,760	367	0	2,796	3,505	-	-		3,505

-continued-

Appendix A20.–Page 4 of 7.

Year	District 6					Upper Yukon Area Subtotals						
	Subsistence ^a	Commercial	Related ^g	Use ^d	Sales ^e	Total	Subsistence ^a	Commercial	Related ^g	Use ^d	Sales ^e	Total
1961												
1962												
1963												
1964												
1965												
1966												
1967												
1968												
1969								95	0			95
1970								556	0			556
1971								38	0			38
1972								22	0			22
1973								0	0			0
1974		1,479	0			1,479		2,888	0			2,888
1975		53	0			53		58	0			58
1976		1,103	0			1,103		1,103	0			1,103
1977		1,284	0			1,284		1,286	0			1,286
1978	4,709	3,066	0			7,775	5,824	3,099	0			8,923
1979	4,612	2,791	0			7,403	5,404	2,946	0			8,350
1980	5,163	1,226	0			6,389	13,458	1,256	0			14,714
1981	9,261	2,284	0			11,545	13,213	2,284	0			15,497
1982	7,418	7,780	0			15,198	13,798	7,795	0			21,593
1983	6,932	6,168	0			13,100	13,326	6,168	0			19,494
1984	14,785	7,688	0			22,473	35,119	8,783	0			43,902
1985	11,761	11,762	0			23,523	23,808	12,700	0			36,508
1986	13,321	441	0			13,762	21,649	441	0			22,090
1987	53,006 ⁱ	-	-	2,465		55,471	68,327	-	-	2,523		70,850
1988	30,201	13,972	0	1,147	13,295	58,615	54,670	13,982	0	1,250	13,295	83,197
1989	18,841	16,084	0	731	2,140	37,796	30,058	16,171	0	813	2,140	49,182
1990	17,613	11,549	3,255	1,155	1,426	34,998	32,789	11,549	3,255	1,173	1,426	50,192
1991	21,561	6,268	3,506	-	791	32,126	30,943	6,282	3,506	-	791	41,522
1992	17,554	6,556	1,423	-	1,629	27,162	38,359	6,556	1,423	-	1,629	47,967
1993	4,304	-	-	0		4,304	11,455	-	-	0		11,455
1994	26,489	120	4,331	-		30,940	34,178	120	4,331	-		38,629
1995	18,802	5,826	1,074	417		26,119	22,941	5,826	1,074	417		30,258
1996	14,893	3,803	3,339	198		22,233	23,948	3,964	3,339	198		31,449
1997	11,595	-	-	350		11,945	18,932	814	0	350		20,096
1998	7,472	-	-	9		7,481	12,904	-	-	9		12,913
1999	9,394	-	-	147		9,541	15,684	-	-	147		15,831
2000	5,150	-	-	0		5,150	11,205	-	-	0		11,205
2001	8,966	-	-	34		9,000	18,906	-	-	34		18,940
2002	9,499	-	-	20		9,519	12,598	-	-	20		12,618
2003	10,363	15,119	0	549		26,031	20,023	15,486	0	549		36,058
2004	11,584	18,649	0	233		30,466	17,773	18,649	0	233		36,655
2005	19,538	21,778	0	107		41,423	24,668	21,778	0	107		46,553
2006	10,571 ^f	11,137	0	279 ^f		21,987	15,652 ^f	11,137	0	279 ^f		27,068
2007	7,845 ^f	1,368	0	135 ^f		9,348	14,163 ^f	1,368	0	135 ^f		15,666
2008	8,428	2,408	0	50		10,886	13,121	2,408	0	50		15,579
2009	7,051	742	0	70		7,863	13,535	742	0	70		14,347
2010	5,555 ^f	1,700	0	1,062 ^f		8,317	10,889 ^f	1,700	0	1,062 ^f		13,651
2005-2009												
Average	10,687	7,487	0	128		18,301	16,228	7,487	0	128		23,843
2000-2009												
Average	9,900	10,172	0	148		17,167	16,164	10,224	0	148		23,469

-continued-

Appendix A20.–Page 5 of 7.

Year	Alaska Yukon River Totals							Canada: Yukon Territories Totals		
	Subsistence ^{a,b,j}	Commercial ^{a,c}	Commercial Related ^g	Personal Use ^d	Test Fish Sales ^e	Sport Fish ^k	Total	Mainstem Yukon River ^l	Porcupine Aboriginal	Total
1961	9,192	2,855	0				12,047			
1962	9,480	22,926	0				32,406			
1963	27,699	5,572	0				33,271			
1964	12,187	2,446	0				14,633			
1965	11,789	350	0				12,139			
1966	13,192	19,254	0				32,446			
1967	17,164	11,047	0				28,211			
1968	11,613	13,303	0				24,916			
1969	7,776	15,093	0				22,869			
1970	3,966	13,188	0				17,154			
1971	16,912	12,203	0				29,115			
1972	7,532	22,233	0				29,765			
1973	10,236	36,641	0				46,877			
1974	11,646	16,777	0				28,423			
1975	20,708	2,546	0				23,254			
1976	5,241	5,184	0				10,425			
1977	16,333	38,863	0			125	55,321			
1978	7,787	26,152	0			302	34,241			
1979	9,794	17,165	0			50	27,009			
1980	20,158	8,745	0			67	28,970	0	1,500	1,500
1981	21,228	23,680	0			45	44,953	0	500	500
1982	35,894	37,176	0			191	73,261	0		0
1983	23,905	13,320	0			199	37,424	0		0
1984	49,020	81,940	0			831	131,791	0	500	500
1985	32,264	57,672	0			808	90,744	0	250	250
1986	34,468	47,255	0			1,535	83,258	0	300	300
1987	82,371	0	0	2,523		1,292	86,186	0	306	306
1988	67,830	86,187	0	1,250	13,720	2,420	171,407	0	350	350
1989	40,711	81,548	0	872	3,945	1,811	128,887	0	470	470
1990	43,460	41,032	3,255	1,181	2,650	1,947	93,525	0	680	680
1991	37,388	103,180	3,506	0	2,971	2,775	149,820	0	235	235
1992	51,921	6,556	1,423	0	1,629	1,666	63,195	0	495	495
1993	15,772	-	-	0	-	897	16,669	0	60	60
1994	41,694	120	4,331	0	0	2,174	48,319	2	332	334
1995	28,225	45,939	1,074	417	193	1,278	77,126	0	509	509
1996	30,312	52,643	3,339	198	1,728	1,588	89,808	0	41	41
1997	23,945	35,320	0	350	498	1,470	61,583	2	298	300
1998	17,772	1	0	9	0	758	18,540	0	214	214
1999	20,817	1,601	0	147	236	609	23,410	0	100	100
2000	14,717	-	-	0	-	554	15,271	0	37	37
2001	21,620	-	-	34	-	1,202	22,856	0	0	0
2002	15,241	-	-	20	-	1,092	16,353	26	449	475
2003	23,580	25,243	0	549	0	1,477	50,849	7	523	530
2004	20,732	20,232	0	233	0	1,623	42,820	5	175	180
2005	26,971	58,311	0	107	0	627	86,016	0	11	11
2006	19,371 ^f	64,942	0	279 ^f	0	1,000	85,592	1	111	112
2007	19,514 ^f	44,575	0	135 ^f	0	597	64,821	2	500	502
2008	16,739	35,600	0	50	0	341	52,730	0	200	200
2009	15,760	8,311	0	70	0	964	25,105	0	0	0
2010	12,921 ^f	3,750	0	1,062 ^f	0	944	18,677	0	12	12
2005-2009										
Average	19,671	42,348	0	128	0	706	62,853	1	164	165
2000-2009										
Average	19,425	36,745	0	148	0	948	46,241	4	201	205

-continued-

Appendix A20.–Page 6 of 7.

Year	Yukon River Drainage (Alaska/Canada) Totals							Total Alaska Yukon Area		
	Subsistence ^{a,b,j,m}	Commercial	Commercial Related ^g	Personal Use ^d	Alaska Test Fish ^e	Sport Fish	Total	Coastal District	Alaska Total	Yukon Area Total
1961	9,192	2,855	0				12,047	0	12,047	12,047
1962	9,480	22,926	0				32,406	0	32,406	32,406
1963	27,699	5,572	0				33,271	0	33,271	33,271
1964	12,187	2,446	0				14,633	0	14,633	14,633
1965	11,789	350	0				12,139	0	12,139	12,139
1966	13,192	19,254	0				32,446	0	32,446	32,446
1967	17,164	11,047	0				28,211	0	28,211	28,211
1968	11,613	13,303	0				24,916	0	24,916	24,916
1969	7,776	15,093	0				22,869	0	22,869	22,869
1970	3,966	13,188	0				17,154	0	17,154	17,154
1971	16,912	12,203	0				29,115	0	29,115	29,115
1972	7,532	22,233	0				29,765	0	29,765	29,765
1973	10,236	36,641	0				46,877	0	46,877	46,877
1974	11,646	16,777	0				28,423	0	28,423	28,423
1975	20,708	2,546	0				23,254	0	23,254	23,254
1976	5,241	5,184	0				10,425	0	10,425	10,425
1977	16,333	38,863	0			125	55,321	0	55,321	55,321
1978	7,787	26,152	0			302	34,241	89	34,241	34,330
1979	9,794	17,165	0			50	27,009	0	27,009	27,009
1980	21,658	8,745	0			67	30,470	0	28,970	28,970
1981	21,728	23,680	0			45	45,453	0	44,953	44,953
1982	35,894	37,176	0			191	73,261	0	73,261	73,261
1983	23,905	13,320	0			199	37,424	0	37,424	37,424
1984	49,520	81,940	0			831	132,291	0	131,791	131,791
1985	32,514	57,672	0			808	90,994	0	90,744	90,744
1986	34,768	47,255	0			1,535	83,558	0	83,258	83,258
1987	82,677	0	0	2,523		1,292	86,492	191	86,186	86,377
1988	68,180	86,187	0	1,250	13,720	2,420	171,757	15,672	171,407	187,079
1989	41,181	81,548	0	872	3,945	1,811	129,357	4,299	128,887	133,186
1990	44,140	41,032	3,255	1,181	2,650	1,947	94,205	0	93,525	93,525
1991	37,623	103,180	3,506	0	2,971	2,775	150,055	0	149,820	149,820
1992	52,416	6,556	1,423	0	1,629	1,666	63,690	59	63,195	63,254
1993	15,832	0	0	0	0	897	16,729	40	16,669	16,709
1994	42,026	122	4,331	0	0	2,174	48,653	81	48,319	48,400
1995	28,734	45,939	1,074	417	193	1,278	77,635	152	77,126	77,278
1996	30,353	52,643	3,339	198	1,728	1,588	89,849	92	89,808	89,900
1997	24,243	35,322	0	350	498	1,470	61,883	0	61,583	61,583
1998	17,986	1	0	9	0	758	18,754	349	18,540	18,889
1999	20,917	1,601	0	147	236	609	23,510	74	23,410	23,484
2000	14,754	0	0	0	0	554	15,308	222	15,271	15,493
2001	21,620	0	0	34	0	1,202	22,856	548	22,856	23,404
2002	15,690	17	0	20	0	1,101	16,828	248	16,353	16,601
2003	24,103	25,243	0	549	0	1,484	51,379	292	50,849	51,141
2004	20,907	20,236	0	233	0	1,624	43,000	63	42,820	42,883
2005	26,982	58,311	0	107	0	627	86,027	279	86,016	86,295
2006	19,482 ^f	64,942	0	279 ^f	0	1,001	85,704	335 ^f	85,592	85,927
2007	20,014 ^f	44,575	0	135 ^f	0	599	65,323	110 ^f	64,821	64,931
2008	16,939	35,600	0	50	0	341	52,930	116	52,730	52,846
2009	15,760	8,311	0	70	0	964	25,105	246	25,105	25,351
2010	12,933 ^f	3,750	0	1,062 ^f	0	944 ^f	18,689	124 ^f	18,677	18,801
2005-2009										
Average	19,835	42,348	0	128	0	706	63,018	217	62,853	63,070
2000-2009										
Average	19,625	25,724	0	148	0	950	46,446	246	46,241	46,487

-continued-

Appendix A20.–Page 7 of 7.

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred, includes commercial related and test fish sales.

- ^a Subsistence harvest estimates not available by district until 1978.
- ^b Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.
- ^c Includes ADF&G test fish sales prior to 1988.
- ^d Prior to 1987 and in 1991, 1992, and 1994, personal use was considered part of subsistence. Between 1987 and 1990, personal use fishing was defined by the fisherman's location of residence versus fishing location. In 1992, the Fairbanks nonsubsistence area was created as the only personal use area in the Yukon River drainage.
- ^e The number of fish sold by ADF&G test fisheries.
- ^f Preliminary.
- ^g Estimated number of females harvested to produce roe sold.
- ^h Includes an estimated 5,015 coho salmon illegally sold in District 5.
- ⁱ Includes an estimated 31,276 coho salmon illegally sold in District 6.
- ^j Minimum estimates from 1961-1978 because subsistence surveys were conducted prior to the end of the fishing season and catches of fish other than Chinook salmon were not differentiated by species.
- ^k Estimated sport fish harvest for Alaska portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage, District 6.
- ^l Includes domestic, commercial, test, sport, and Aboriginal harvest from the mainstem Yukon River.
- ^m Includes Alaska Yukon River subsistence harvest and Canadian Aboriginal harvest.

Appendix A21.–Yukon Area pink salmon total utilization in numbers of fish, by district and area, 1980–2010.

Year	Coastal District			District 1			District 2		
	Subsist ^a	Comm	Total	Subsist ^a	Comm	Total	Subsist ^a	Comm	Total
1980					0	0		0	0
1981					0	0		0	0
1982					0	0		0	0
1983					0	0		0	0
1984					0	0		0	0
1985					0	0		0	0
1986					0	0		0	0
1987					0	0		0	0
1988					1,001	1,001		56	56
1989					17	17		0	0
1990					418	418		324	324
1991					0	0		0	0
1992				19 ^b	0	19		0	0
1993					0	0		0	0
1994	2,053	0	2,053	4,233	0	4,233	2,731	0	2,731
1995	385	0	385	132	0	132	15	0	15
1996	3,517	0	3,517	443	0	443	933	0	933
1997	265	0	265	69	0	69	115	0	115
1998	3,732	0	3,732	1,590	0	1,590	1,550	0	1,550
1999	626	0	626	32	0	32	21	0	21
2000	998	0	998	301	0	301	235	0	235
2001	394	0	394	9	0	9	0	0	0
2002	5,892	0	5,892	1,028	0	1,028	1,282	0	1,282
2003	1,470	0	1,470	207	0	207	117	0	117
2004	7,926	0	7,926	615	0	615	1,138	0	1,138
2005	2,505	0	2,505	390	0	390	230	0	230
2006	2,814	0	2,814	1,114	0	1,114	900	0	900
2007	1,548	0	1,548	382	0	382	185	0	185
2008	3,779	0	3,779	3,053	5	3,058	942	2	944
2009	2,143	0	2,143	132	0	132	14	0	14
2010	2,464 ^c	0	2,464	787 ^c	0	787	946 ^c	0	946
2005-2009									
Average	2,558	0	2,558	1,014	1	1,015	454	0	455
2000-2009									
Average	2,947	0	2,947	723	1	724	504	0	505

-continued-

Appendix A21.–Page 2 of 6.

Year	District 3				Lower Yukon Area Subtotals			
	Subsist ^a	Comm	Comm-Related ^d	Total	Subsist	Comm	Comm-Related ^d	Total
1980		0	0	0	0	0	0	0
1981		0	0	0	0	0	0	0
1982		0	0	0	0	0	0	0
1983		0	0	0	0	0	0	0
1984		0	0	0	0	0	0	0
1985		0	0	0	0	0	0	0
1986		0	0	0	0	0	0	0
1987		0	0	0	0	0	0	0
1988		0	0	0	0	1,057	0	1,057
1989		0	0	0	0	17	0	17
1990		1	0	1	0	743	0	743
1991		0	0	0	0	0	0	0
1992	19 ^b	0	0	19	38	0	0	38
1993		0	0	0		0	0	
1994	289	0	0	289	7,253	0	0	7,253
1995	0	0	0	0	147	0	0	147
1996	180	0	100	280	1,556	0	100	1,656
1997	0	0	0	0	184	0	0	184
1998	1,617	0	0	1,617	4,757	0	0	4,757
1999	0	0	0	0	53	0	0	53
2000	28	0	0	28	564	0	0	564
2001	0	0	0	0	9	0	0	9
2002	0	0	0	0	8,202	0	0	8,202
2003	130	0	0	130	1,924	0	0	1,924
2004	6	0	0	6	9,685	0	0	9,685
2005	0	0	0	0	3,125	0	0	3,125
2006	25	0	0	25	4,853	0	0	4,853
2007	3	0	0	3	2,118	0	0	2,118
2008	456	0	0	456	8,230	7	0	8,237
2009	9	0	0	9	2,298	0	0	2,298
2010	2 ^c	0	0	2	4,199	0	0	4,199
2005-2009								
Average	99	0	0	99	4,125	1	0	4,126
2000-2009								
Average	66	0	0	66	4,101	1	0	4,102

-continued-

Appendix A21.–Page 3 of 6.

Year	District 4				District 5			
	Subsist ^a	Comm	Comm-Related ^d	Total	Subsist ^a	Comm	Comm-Related ^d	Total
1980		0	0	0		0	0	0
1981		0	0	0		0	0	0
1982		0	0	0		0	0	0
1983		0	0	0		0	0	0
1984	500	0	0	500		0	0	0
1985		0	0	0		0	0	0
1986		0	0	0		0	0	0
1987		0	0	0		0	0	0
1988		0	0	0		0	0	0
1989		0	0	0		0	0	0
1990		0	0	0		0	0	0
1991		0	0	0		0	0	0
1992	5 ^b	0	0	5		0	0	0
1993		0	0	0		0	0	0
1994	995	0	66	1,061	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	59	0	0	59	0	0	0	0
1997	34	0	0	34	0	0	0	0
1998	700	0	0	700	0	0	0	0
1999	2	0	0	2	0	0	0	0
2000	31	0	0	31	0	0	0	0
2001	0	0	0	0	0	0	0	0
2002	221	0	0	221	0	0	0	0
2003	243	0	0	243	0	0	0	0
2004	12	0	0	12	0	0	0	0
2005	7	0	0	7	0	0	0	0
2006	1	0	0	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	0	0
2010	0 ^c	0	0	0	0 ^c	0	0	0
2005-2009								
Average	207	0	0	207	55	0	0	0
2000-2009								
Average	154	0	0	154	28	0	0	0

-continued-

Appendix A21.–Page 4 of 6.

Year	District 6				Upper Yukon Area Subtotals			
	Subsist	Comm	Comm-Related ^d	Total	Subsist	Comm	Comm-Related ^d	Total
1980		0	0	0	0	0	0	0
1981		0	0	0	0	0	0	0
1982		0	0	0	0	0	0	0
1983		0	0	0	0	0	0	0
1984		0	0	0	500	0	0	500
1985		0	0	0	0	0	0	0
1986		0	0	0	0	0	0	0
1987		0	0	0	0	0	0	0
1988		0	0	0	0	0	0	0
1989		0	0	0	0	0	0	0
1990		0	0	0	0	0	0	0
1991		0	0	0	0	0	0	0
1992		0	0	0	5	0	0	5
1993		0	0	0	0	0	0	0
1994	0	0	0	0	995	0	66	1,061
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	59	0	0	59
1997	0	0	0	0	34	0	0	34
1998	0	0	0	0	700	0	0	700
1999	0	0	0	0	2	0	0	2
2000	0	0	0	0	31	0	0	31
2001	0	0	0	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
<hr/>								
2005-2009								
Average	0	0	0	0	262	0	0	262
<hr/>								
2000-2009								
Average	0	0	0	0	182	0	0	182

-continued-

Appendix A21.–Page 6 of 6.

Alaska Yukon Area Totals					
Year	Subsist	Comm	Comm- Sport		Total
			Related ^d	Fish ^e	
1980	0	0	0		0
1981	0	0	0		0
1982	0	0	0		0
1983	0	0	0		0
1984	500	0	0		500
1985	0	0	0		0
1986	0	0	0		0
1987	0	0	0		0
1988	0	1,057	0		1,057
1989	0	17	0		17
1990	0	743	0		743
1991	0	0	0		0
1992	43	0	0		43
1993	0	0	0		0
1994	8,248	0	66		8,314
1995	147	0	0		147
1996	1,615	0	100		1,715
1997	218	0	0		218
1998	5,457	0	0		5,457
1999	55	0	0		55
2000	595	0	0		595
2001	9	0	0		9
2002	8,423	0	0		8,423
2003	2,167	0	0		2,167
2004	9,697	0	0		9,697
2005	3,132	0	0		3,132
2006	4,854	0	0		4,854
2007	2,118	0	0		2,118
2008	9,529	7	0		9,536
2009	2,300	0	0		2,300
2010	4,199	0	0		4,199
2005-2009					
Average	4,387	1	0		4,388
2000-2009					
Average	4,282	1	0		4,283

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

^b Reported as caught but not sold on fish tickets.

^c Preliminary.

^d In Districts 3–6, commercial related refers to the estimated number of females and males harvested to produce roe sold.

^e Estimated sport fish harvest for Alaska portion of the Yukon River drainage.

Appendix A22.—Percent age composition of combined commercial and subsistence salmon harvest by species, Yukon River drainage, 1982–2009.

Species / Run	Year	Sample Size	Age In Years (Percent)						Total ^a
			3	4	5	6	7	8	
Chinook	1982	3,795	0.2	6.8	18.5	58.3	15.9	0.3	100.0
Salmon	1983	3,801	0.0	6.6	21.0	62.9	9.4	0.0	100.0
	1984	3,700	0.0	3.7	27.0	56.0	13.1	0.1	100.0
	1985	4,567	0.1	5.7	13.2	69.4	11.3	0.3	100.0
	1986	5,785	0.3	3.9	27.2	42.8	25.1	0.6	100.0
	1987	5,300	0.0	4.2	8.4	72.5	14.5	0.3	100.0
	1988	5,108	0.1	14.8	22.8	31.5	29.4	1.4	100.0
	1989	3,901	0.5	7.2	30.3	51.1	10.2	0.6	99.9
	1990	3,416	0.0	17.2	26.9	49.4	6.3	0.2	100.0
	1991	3,879	0.0	5.8	45.1	42.6	6.4	0.1	100.0
	1992	3,772	0.1	8.1	20.1	68.6	3.1	0.0	100.0
	1993	4,034	0.2	15.8	25.4	50.5	8.0	0.0	99.9
	1994	3,692	0.3	4.1	47.2	44.5	3.8	0.0	99.9
	1995	5,559	0.0	7.8	13.7	74.7	3.6	0.2	100.0
	1996	5,861	0.0	2.4	44.0	35.6	17.9	0.2	100.1
	1997	5,134	0.0	7.5	17.8	70.5	4.2	0.1	100.1
	1998	3,122	0.7	5.2	55.1	31.4	7.6	0.0	100.0
	1999	4,285	0.1	3.8	17.7	76.7	1.7	0.0	100.0
	2000	1,201	0.0	1.0	29.9	60.5	8.6	0.0	100.0
	2001 ^b	1,182	0.1	9.0	27.2	57.6	6.1	0.0	100.0
	2002	3,580	0.0	8.2	27.0	53.9	10.9	0.0	100.0
	2003	3,850	0.1	3.4	32.3	56.5	7.7	0.0	100.0
	2004	6,556	0.0	9.9	23.3	63.1	3.6	0.0	100.0
	2005	4,515	0.0	5.8	43.0	48.5	2.6	0.0	100.0
	2006	4,470	0.0	4.2	53.6	40.7	1.5	0.0	100.0
	2007	7,095	0.0	11.0	26.8	60.0	2.1	0.0	100.0
	2008	4,431	0.1	5.6	60.9	30.9	2.5	0.0	100.0
	2009	5,232	0.1	14.8	20.2	63.8	1.1	0.0	100.0
2005-2009									
Average		5,149	0.1	8.3	40.9	48.8	2.0	0.0	100.0

-continued-

Appendix A22.–Page 2 of 4.

Species / Run	Year	Sample Size	Age In Years (Percent)					Total ^a
			3	4	5	6	7	
Chum	1982	3,419	5.3	0.0	88.6	6.1	0.0	100.0
Salmon/	1983	4,110	1.0	53.8	44.4	0.8	0.0	100.0
Summer	1984	2,722	2.0	73.7	23.9	0.5	0.0	100.0
	1985	2,472	1.4	68.6	29.2	0.8	0.0	100.0
	1986	3,473	0.1	29.1	69.8	1.0	0.0	100.0
	1987	2,184	0.4	60.8	31.8	6.9	0.0	100.0
	1988	5,112	0.0	70.1	29.1	0.8	0.0	100.0
	1989	3,778	0.4	38.7	60.5	0.4	0.0	100.0
	1990	3,155	0.4	38.3	58.9	2.4	0.0	100.0
	1991	5,015	1.3	48.0	49.8	0.9	0.0	100.0
	1992	4,303	0.2	31.0	65.0	3.8	0.0	100.0
	1993	2,011	0.4	47.5	47.7	4.5	0.0	100.1
	1994	3,820	0.1	51.3	46.6	2.0	0.0	100.0
	1995	4,740	0.6	51.9	45.3	2.1	0.0	99.9
	1996	3,863	0.4	46.2	48.8	4.5	0.1	100.0
	1997	3,195	0.2	29.0	67.2	3.6	0.0	100.0
	1998	1,147	0.3	62.8	34.2	2.7	0.0	100.0
	1999	1,627	0.2	40.7	58.2	0.9	0.0	100.0
	2000	442	0.0	44.2	53.4	2.4	0.0	100.0
	2001 ^b	586	0.0	15.4	81.9	2.7	0.0	100.0
	2002	1,103	0.1	52.9	44.4	2.6	0.0	100.0
	2003	1,144	0.3	55.4	39.2	5.1	0.0	100.0
	2004	2,742	1.3	37.2	60.4	1.0	0.1	100.0
	2005	2,381	0.2	83.2	15.2	1.5	0.0	100.0
	2006	2,799	0.1	18.6	81.1	0.2	0.0	100.0
	2007	4,356	0.0	34.5	50.5	14.9	0.1	100.0
	2008	2,292	0.1	35.0	58.6	6.1	0.2	100.0
	2009	4,087	1.3	49.0	47.5	2.1	0.2	100.0
2005-2009								
	Average	3,183	0.3	44.1	50.6	5.0	0.1	100.0

-continued-

Appendix A22.–Page 3 of 4.

Species / Run	Year	Sample Size	Age in Years (Percent)				Total ^a
			3	4	5	6	
Chum	1982	2,918	6.5	58.6	34.5	0.3	100.0
Salmon/	1983	1,735	0.7	91.4	8.0	0.0	100.0
Fall	1984	1,902	6.6	55.6	37.5	0.4	100.0
	1985	2,801	5.2	83.4	11.0	0.4	100.0
	1986	1,715	7.4	89.6	2.5	0.5	100.0
	1987	1,513	5.0	77.1	17.5	0.4	100.0
	1988	4,030	4.1	45.7	46.6	3.5	99.9
	1989	4,939	1.0	87.0	11.8	0.2	100.0
	1990	2,351	2.8	74.9	21.7	0.6	100.0
	1991	5,314	2.7	75.4	21.7	0.2	100.0
	1992	3,069	1.2	45.9	51.8	1.1	100.0
	1993	1,616	0.1	62.8	35.2	1.8	99.9
	1994	1,295	2.4	66.4	31.1	0.1	100.0
	1995	1,731	0.8	59.2	37.4	2.6	100.0
	1996	1,391	0.3	52.3	43.9	3.5	100.0
	1997	1,245	0.3	57.2	41.6	0.9	100.0
	1998 ^c	0	-	-	-	-	-
	1999	371	0.0	79.2	20.5	0.3	100.0
	2000 ^c	0	-	-	-	-	-
	2001 ^b	295	0.0	54.2	45.4	0.3	99.9
	2002 ^b	0	-	-	-	-	-
	2003	1,596	0.1	79.6	19.4	0.9	100.0
	2004	1,449	19.6	54.7	25.7	0.0	100.0
	2005	4,754	0.0	97.6	2.1	0.3	100.0
	2006	2,340	1.4	43.1	55.4	0.1	100.0
	2007	3,064	0.7	75.4	22.2	1.8	100.0
	2008	1,557	0.6	45.5	51.9	2.1	100.0
	2009	1,901	2.5	71.6	23.5	2.3	100.0
2005-2009							
	Average	2,723	1.0	66.6	31.0	1.3	100.0

-continued-

Appendix A22.–Page 4 of 4.

Species / Run	Year	Sample Size	Age in Years (Percent)			Total ^a
			3	4	5	
Coho	1982	320	4.1	87.3	8.6	100.0
Salmon	1983	121	4.1	91.7	4.1	100.0
	1984	619	12.9	73.7	13.4	100.0
	1985	462	14.1	76.3	9.6	100.0
	1986	491	2.2	88.6	9.2	100.0
	1987	0	-	-	-	-
	1988	1,091	12.2	85.5	2.3	100.0
	1989	749	20.0	74.5	5.5	100.0
	1990	428	28.9	67.1	3.9	99.9
	1991	615	8.3	91.6	0.1	100.0
	1992	920	24.1	74.4	1.6	100.1
	1993	522	15.5	83.5	1.0	100.0
	1994	752	22.9	76.2	0.9	100.0
	1995	664	41.7	58.0	0.3	100.0
	1996	944	10.4	87.2	2.4	100.0
	1997	516	6.1	92.0	2.0	100.1
	1998 ^c	0	-	-	-	-
	1999	40	7.5	85.0	7.5	100.0
	2000 ^c	0	-	-	-	-
	2001 ^b	18	22.2	77.8	0.0	100.0
	2002 ^c	0	-	-	-	-
	2003	753	25.1	69.8	5.1	100.0
	2004	590	22.3	75.0	2.7	100.0
	2005	1,921	8.3	84.8	6.8	100.0
	2006	1,231	14.7	80.7	4.6	100.0
	2007	1,234	11.6	85.6	2.8	100.0
	2008	978	14.4	75.3	10.3	100.0
	2009	430	9.3	81.9	8.8	100.0
2005-2009						
	Average	1,159	11.7	81.7	6.7	100.0

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

^a Total may not equal 100% due to rounding.

^b No commercial fishing, samples were from subsistence harvests.

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

Appendix A23.—Yukon River Chinook salmon historical harvest percentage by stock group for the United States and Canada, 1981–2010.

Year	Lower	Middle	Upper		Total
			U.S.	Canada	
1981	5.4	54.5	31.3	8.8	40.1
1982	13.9	24.7	51.3	10.1	61.4
1983	12.9	33.7	44.6	8.7	53.3
1984	25.3	40.2	25.1	9.4	34.5
1985	27.6	22.3	40.9	9.2	50.1
1986	19.5	9.6	58.7	12.2	70.9
1987	15.9	19.6	56.0	8.6	64.5
1988	21.8	15.8	49.8	12.6	62.5
1989	24.4	15.9	49.4	10.2	59.7
1990	20.2	25.2	43.3	11.4	54.7
1991	28.0	25.3	34.9	11.8	46.7
1992	16.3	21.8	52.3	9.6	61.9
1993	21.5	25.4	43.9	9.2	53.1
1994	18.2	21.4	49.4	11.0	60.4
1995	17.9	22.4	49.2	10.5	59.7
1996	21.0	10.4	56.2	12.4	68.6
1997	26.4	16.8	48.2	8.6	56.9
1998	32.7	17.4	44.2	5.6	49.8
1999	40.1	6.3	44.5	9.1	53.6
2000	33.9	12.3	44.1	9.7	53.8
2001	31.6	16.0	36.5	15.9	52.4
2002	19.4	29.2	39.3	12.1	51.4
2003	6.8	28.9	55.4	8.9	64.3
2004	15.3	28.8	46.8	9.1	55.9
2005	20.7	21.4	46.4	11.5	57.9
2006	17.6	27.6	46.1	8.7	54.9
2007	13.0	30.6	51.1	5.4	56.4
2008	17.0	28.0	48.4	6.6	55.0
2009	11.1	31.4	45.3	12.2	57.5
2010 ^a					
1981-2009					
Average	20.5	23.5	46.0	10.0	55.9
2000-2009					
Average	18.6	25.4	45.9	10.0	56.0
2005-2009					
Average	15.9	27.8	47.5	8.9	56.3

^a Data not available.

Appendix A24.–Salmon fishery projects conducted in the Alaska portion of the Yukon River drainage in 2010.

Project Name	Location	Primary Objective(s)/Last Published Project Report (citation)	Duration	Agency	Responsibility
Commercial Catch and Effort Assessment	Alaska portion of the Yukon River drainage	-Document and estimate the catch and associated effort of the Alaska Yukon River and -Commercial salmon fishery via receipts (fish tickets) of commercial sales of salmon.	June - Oct.	ADF&G	All aspects
Commercial Catch Sampling and Monitoring	Alaska portion of the Yukon River drainage	-Determine age, sex, and size of Chinook, chum and coho salmon harvested in Alaska Yukon River commercial fisheries and -Monitor Alaska commercial fishery openings and closures. (Horne-Brine and DuBois 2010)	June - Oct.	ADF&G ADPS	All aspects enforcement
Subsistence and Personal Use Catch and Effort Assessment	Alaska portion of the Yukon River drainage	-Document and estimate the catch and associated effort of the Alaska Yukon River subsistence salmon fishery via interviews, catch calendars, mail-out questionnaires, telephone interviews, and subsistence fishing permits, and of the personal use fishery based on fishery permits.	Ongoing	ADF&G	All aspects
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
YRDFA Weekly Teleconference	Yukon River drainage	-Acts as a forum for fishers along the Yukon River to interact with state and federal managers for the collection and dissemination of fisheries information.	May - Sept.	YRDFA	All aspects R&M funding
Lower Yukon River Set Gillnet Test Fishing	South, Middle, and North mouths of the Yukon River Delta, RM 20	-Index Chinook salmon run timing and abundance using set gillnets and -Sample captured salmon for age, sex, size composition information. (Horne-Brine and DuBois 2010)	June - Aug.	ADF&G	All aspects
Hooper Bay Dall Point Offshore Test Fishing	Coastal Bering Sea south of Yukon River outlets	-Assess run abundance, species composition, and run timing information of salmon bound for the Yukon River in offshore waters to assist with timely management decisions.	June - July	ADF&G	All aspects
Lower Yukon River Drift Test Fishing	South, Middle, and North mouths of the Yukon River delta, RM 20	-Index Chinook, summer and fall chum, and coho salmon run timing and abundance using drift gillnets and -Sample captured salmon for age, sex, size composition information. Fall Season Drift (Hildebrand and Bue 2009) Salmon ASL from all projects (Horne-Brine and DuBois 2010)	June - Aug.	ADF&G	All aspects
Mountain Village Drift Gillnet Test Fishing	Mainstem Yukon River, RM 87	-Index fall chum and coho salmon run timing and relative abundance using drift gillnets and -Sample captured salmon for age, sex, and size composition information. (Horne-Brine and DuBois 2010)	July - Sept.	Asa'carsarmiut Trad. Council BSFA	All aspects R&M funding

-continued-

Appendix A24.–Page 2 of 4.

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
East Fork Weir, Andreafsky River	Mile 20 East Fork 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. (Maschmann 2010)	June - Aug.	USFWS	All aspects OSM funding
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. (Carroll and McIntosh 2008)	June - Aug.	ADF&G	All aspects YDFDA and R&M funded- extended operations
Anvik River Sonar	Mile 40 Anvik River, RM 358	-Estimate daily escapement of summer chum salmon to the Anvik River and -Estimate age, sex, and size composition of the summer chum salmon escapement. (McEwen 2010) and (Horne-Brine and DuBois 2010)	June - July	ADF&G	All aspects
Chandalar River Sonar	RM 14 Chandalar River, RM 43 Chandalar River RM 996 Yukon River	-Estimate fall chum salmon passage using DIDSON sonar in the Chandalar River, -Estimate sex and size composition of fall chum salmon escapement, and -Collect ASL data including vertebrae. (Melegari 2009)	Aug. - Sept.	USFWS	All aspects TI Funding R&M funding-ASL
Gisasa River Weir	Mile 3 Gisasa River, Koyukuk River drainage, RM 567	-Estimate daily escapement of Chinook and summer chum salmon into the Gisasa River and -Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements. (Melegari 2010) and (Horne-Brine and DuBois 2010)	June - Aug.	USFWS	All aspects OSM funding
Henshaw Creek Weir	Mile 1 Henshaw Creek, RM 976	-Estimate daily escapement of Chinook and summer chum salmon into Henshaw Creek and -Estimate age, sex, and size composition of the Chinook and summer chum salmon escapements. (Berkbigler and Elkin 2007; Horne-Brine and DuBois 2010)	June - Aug.	TCC USFWS-OSM	All aspects oversight & funding report write-up
Y5A Test Fish Wheel	Mainstem Yukon River RM 695	-Index the timing of fall chum and coho salmon on the south bank of the Yukon River bound for the Tanana River drainage, using test fish wheel equipped with video monitoring system. (Moore and Daum 2011)	Aug. - Oct.	ADF&G USFWS	R&M funded contract R&E funded tech support
Sheenjek River Sonar	Mile 6 Sheenjek River Porcupine River drainage, RM 1,060	-Estimate daily escapement of fall chum salmon into the Sheenjek River using DIDSON sonar and counted both left and right banks and -Estimate age, sex, and size composition of the fall chum salmon escapement. (Dunbar 2010; Horne-Brine and DuBois 2010)	Aug. - Sept.	ADF&G	All aspects
Eagle Sonar	Mainstem Yukon River Eagle, RM 1,213	-Estimate daily passage of Chinook and chum salmon in the mainstem Yukon River using both split-beam and DIDSON and -Estimate age, sex, and size composition of salmon captured in the test nets. (Crane and Dunbar 2009; Horne-Brine and DuBois 2010)	July - Oct.	ADF&G DFO	All aspects, technical support, TI Funding, R&E Funding

-continued-

Appendix A24.–Page 3 of 4.

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
Middle Yukon River Chinook Sampling Project	Mainstem Yukon River Kaltag, RM 451	-Estimate age, sex, and size composition of Chinook salmon harvested in middle Yukon River subsistence fisheries. (Horne-Brine and DuBois 2010)	June – July	City of Kaltag USFWS-OSM	All aspects
Nenana River Escapement Surveys	Nenana River drainage, above RM 860	-Aerial and ground surveys for numbers and distribution of coho and chum salmon in 10 tributaries of the Nenana below Healy Creek.	Sept. - Oct.	BSFA ADF&G	Field aspects Database
Rapids Test Fish Wheel	Mainstem Yukon River RM 730	-Index run timing of Chinook and fall chum salmon runs as well as non-salmon species using video monitoring techniques and -Characterize the sex, weight, and girth composition of Chinook salmon. (Zuray 2010)	June - Sept.	Zuray USFWS	All aspects R&E funding
Nenana Test Fish Wheel	mainstem Tanana River Nenana, RM 860	-index the timing of Chinook, summer chum, fall chum, and coho salmon runs using a test fish wheel outfitted with video monitoring equipment. (Borba 2007; Cleary and Hamazaki 2008)	June - Sept.	ADF&G USFWS	All aspects R&E funded tech support
Toklat River Escapement Sampling	Toklat River, between RM 848 and 860.	-Evaluate fall chum and coho salmon spawning distribution in Toklat River and -Sample fall chum salmon carcasses for age, sex, and size composition information.	Oct.	TCC ADF&G	Survey Aging
Biological Sampling of Yukon River Salmon	Middle Yukon (RM279-581) and Fort Yukon	Collect age, sex, and length information from subsistence caught Chinook salmon. (New project reporting to AYKSSI)	July - Aug.	TCC	All aspects R&E funded
Delta River Ground Surveys	Tanana River drainage, RM 1,031	-Estimate fall chum salmon spawning escapement in Delta River and -Sample fall chum salmon carcasses for age, sex, and size composition information. (Horne-Brine and DuBois 2010)	Oct. - Dec.	ADF&G	All aspects
Chena River Tower	Chena River, Tanana River drainage, RM 921	-Estimate daily escapement of Chinook and summer chum salmon into the Chena River. (Brase and Doxey 2006)	July - Aug.	ADF&G	All aspects AKSSF funding
Salcha River Tower	Salcha River, Tanana River drainage, RM 967	-Estimate daily escapement of Chinook and summer chum salmon into the Salcha River. (Brase and Doxey 2006)	July - Aug.	BSFA	All aspects R&M funding
Goodpaster River Tower	Goodpaster River, Tanana River drainage, RM 1,049	-Estimate daily escapement of Chinook and summer chum salmon into the Goodpaster River.	July	TCC	All aspects Pogo Mine funding
<i>Ichthyophonous</i> Sampling	Emmonak, RM 20, Eagle RM 1,213	-Determine prevalence of <i>Ichthyophonous</i> in Chinook salmon in the lower Yukon at Emmonak and in the upper Yukon at Eagle. (Kahler et al. 2007)	May - July	UAF ADF&G TCC	All aspects, TI funding, R&E funding
Yukon River Inseason Salmon Harvest Interviews	Emmonak, Holy Cross, Nulato, Huslia, Galena, and Beaver Primary	-Collect qualitative inseason subsistence salmon harvest information through weekly interviews. (Gerken 2008)	June - Sept	USFWS YR DFA	All aspects OSM funding

-continued-

Appendix A24.–Page 4 of 4.

Project Name	Location	Primary Objective(s)	Duration	Agency	Responsibility
Juvenile Chinook Rearing in non-natal streams	Yukon River down stream of the Canadian border	-Capture juvenile Chinook salmon in non-natal Yukon River tributary streams, -Determine whether Canadian-origin juvenile Chinook salmon rear in Yukon River tributary streams of the United States using genetic techniques, and -Describe non-natal stream rearing habitat characteristics for habitat characteristics for Yukon River Chinook salmon. (Daum and Flannery 2009)	July - Aug.	USFWS	All aspects AKSSF Funding

Agency Acronyms:

ADF&G	= Alaska Department of Fish and Game
ADPS	= Alaska Department of Public Safety
AVCP	= Association of Village Council Presidents, Inc.
BSFA	= Bering Sea Fishermen's Association
DFO	= Department of Fisheries and Oceans (Canada)
NPS	= National Park Service
TCC	= Tanana Chiefs Conference, Inc.
UAF	= University of Alaska Fairbanks
USFWS	= United States Fish and Wildlife Service
USFWS-OSM	= United States Fish and Wildlife Service, Office of Subsistence Management
YRDFA	= Yukon River Drainage Fisheries Association

Appendix A25.—Selected environmental and salmon catch information, Yukon River drainage, 1961–2010.

Year	Average Nome April Air Temp (°F)	Tanana R. Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Yukon Delta Area ^a	First Summer Chum Caught Yukon Delta Area ^a	First District 1 Commercial Period
1961	18	5/05	- ^b	6/5	- ^b	6/5
1962	18	5/12	6/10	6/7 ^c	- ^b	6/11
1963	18	5/05	5/29	- ^b	- ^b	6/3
1964	13	5/20	>6/12	- ^b	- ^b	6/15
1965	20	5/07	6/01	6/6	- ^b	6/7
1966	15	5/08	6/06	6/9	- ^b	6/10
1967	23	5/04	- ^b	5/20	5/30	6/2
1968	14	5/08	- ^b	- ^b	6/5	6/3
1969	22	4/28	5/25	5/26	6/2	6/2
1970	15	5/04	late May	6/6	6/5	6/6
1971	13	5/08	6/05	6/11	6/15	6/11
1972	12	5/10	6/03	6/9	6/11	6/9
1973	18	5/04	6/01	5/30 ^d	6/5	6/5
1974	21	5/06	late May	5/27	6/1	6/3
1975	13	5/10	6/01	6/1	6/13	6/9
1976	10	5/02	6/01	6/12	6/13	6/14
1977	9	5/06	6/01	6/9	6/11	6/11
1978	25	4/30	5/20	5/26	5/26	6/8
1979	26	4/30	5/20	5/24	5/28	6/4
1980	24	4/29	5/19	5/27 ^e	5/31	6/9
1981	24	4/30	5/18	5/25	5/28	6/5
1982	12	5/10	6/02	6/6	6/6	6/14
1983	25	4/29	5/21	5/25	5/30	6/9
1984	12	5/09	6/01	6/2 ^f	6/8	6/18
1985	1	5/11	6/05	6/14	6/16	6/24
1986	12	5/08	6/01	6/6	6/7	6/14
1987	19	5/05	5/31	5/31	6/4	6/15
1988	23	4/27	5/20	5/27	5/27	6/9
1989	25	5/01	5/31	5/29 ^h	6/3	6/13
1990	26	4/24	5/28	5/29	5/31	6/14
1991	25	5/01	5/24	5/29	5/29	6/13
1992	22 ⁱ	5/14	5/30 ^j	6/13	6/13	6/20
1993	28	4/23	5/19	5/26	5/28	6/14
1994	20	4/29	5/22	5/24	5/28	6/13
1995	26	4/26	5/18	5/24	5/26	6/12
1996	21	5/05	5/19	5/24	5/24	6/10
1997	27 ^k	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 ^l	5/29	6/6	6/13	6/22
2000	21	5/01	5/29	6/3	6/5	6/24
2001	22	5/08	6/05	6/7	6/9	N/A
2002	20	5/07	5/24	5/31	5/30	6/20
2003	26	4/29	5/17	5/22	5/30	6/16
2004	29	4/24	5/08	5/18	5/27	6/17
2005	15	4/28	5/17	5/25	6/1	6/24
2006	12 ^m	5/2	5/29	6/6	6/7	6/19
2007	27 ^m	4/27	5/18	6/3	6/12	6/18
2008	15 ^m	5/5	5/24	6/3	6/16	7/2
2009	17 ^m	5/1	5/26	6/5	6/10	6/20
2010	20 ^m	4/29	5/22 ⁿ	6/9	6/10	6/28

-continued-

- ^a Subsistence or test fishery.
- ^b Information not available.
- ^c Caught June 9 Mt. Village, back calculated arrival date to mouth.
- ^d Caught June 3 Pilot Station, back calculated arrival date to mouth.
- ^e Caught May 23 Marshall, back calculated arrival date to mouth.
- ^f Caught June 5 Pitkas Point, back calculated arrival date to mouth.
- ^g Special 6-inch maximum mesh size fishing period.
- ^h Average May air temperature was 8.2°F below normal.
- ⁱ Caught June 1 St. Marys, back calculated arrival date to mouth.
- ^j The mainstem Yukon River was ice free, but ice remained along the coast until June 10.
- ^k Average April air temperature was 9°F above normal.
- ^l The Nenana Ice Classic tripod moved on April 29, but the ice did not move out for several more days.
- ^m Source: http://climate.gi.alaska.edu/AKCityClimo/AK_Climate_Sum.html
- ⁿ Though breakup on the Lower River occurred May 22, shore-fast sea ice persisted until later than usual in the season.

Appendix A26.—Total catch and estimated catch of Western Alaska (including Canadian Yukon River) Chinook salmon (in thousands of fish) taken in Japanese high seas salmon gillnet fisheries and total catch of Chinook salmon taken in foreign, joint-venture, and U.S. domestic trawl fisheries, 1964-2010.

Year	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl				Gulf of Alaska Trawl		
	Western Alaska Origin	Total	Western Alaska Origin	Total	Western Alaska Origin	Total	Foreign	Joint Venture Groundfish ^a	U.S. Domestic	Total	Foreign	Joint Venture/U.S. Groundfish ^b	Total
1964	179	410	40	208	219	618							
1965	106	185	20	102	126	287							
1966	108	208	22	118	130	326							
1967	71	128	22	115	93	243							
1968	244	362	18	97	262	459							
1969	367	554	17	88	384	642							
1970	312	437	28	148	340	585							
1971	132	206	27	139	159	345							
1972	189	261	20	107	209	368							
1973	56	119	31	165	87	284							
1974	208	361	36	188	244	549							
1975	108	162	20	137	128	299							
1976	117	285	42	201	159	486							
1977	55	93	31	146	86	239					4.8		4.8
1978	36	105	63	210	99	315	39.1			39.1	^c		
1979	69	126	45	162	114	286	100.4			100.4	16.9	1.0	17.9
1980	416	704	22	160	438	864	113.1	1.9		115.0	31.6	0.2	31.8
1981	30	88	55	190	85	278	35.9	0.3		36.2	28.6	0.0	28.6
1982	45	107	41	165	86	272	13.9	1.7		15.6	4.7	1.2	5.9
1983	31	87	44	178	75	265	9.8	0.5		10.3	5.9	3.6	9.5
1984	36	82	21	92	57	174	9.5	1.7		11.2	11.1	63.2	74.3
1985	25	66	22	100	47	167	7.1	2.5	1.5	11.1	0.3	13.6	13.9
1986	24	60	20	76	44	137	1.0	4.8	3.4	9.2	0.0	20.8	20.8
1987	20	39	^d	74	^d	116	1.0	8.4	12.8	22.2		0.8	0.8
1988	23	26	^d	47	^d	73		5.6	24.7	30.3		0.1	0.1
1989	^d	16	^d	51	^d	67		8.6	31.8	40.4		6.7	6.7
1990	-	-	-	-	^d	23 ^c			14.0	14.0		16.9	16.9
1991	-	-	-	-	^d	45 ^c			48.9	48.9		38.9	38.9
1992 ^f									42.0	42.0		16.8	16.8
1993									46.0	46.0		24.5	24.5
1994									43.8	43.8		13.6	13.6
1995									23.4	23.4		14.6	14.6
1996									63.2	63.2		15.8	15.8
1997									50.5	50.5		15.1	15.1

-continued-

Appendix A26.–Page 2 of 2.

Year	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl				Gulf of Alaska Trawl			
	Western Alaska Origin	Total	Western Alaska Origin	Total	Western Alaska Origin	Total	Foreign	Joint Venture		U.S. Domestic	Total	Foreign	Joint Venture/U.S.	
								Groundfish ^a	Total				Groundfish ^b	Total
1998										55.4	55.4		17.0	16.9
1999										14.6	14.6		30.6	30.6
2000										8.2	8.2		26.7	26.7
2001										40.5	40.5		15.1	15.1
2002										39.7	39.7		12.9	12.9
2003										54.8	54.8		15.9	15.6
2004										63.1	63.1		18.1	17.8
2005										75.0	75.0		31.6	31.6
2006										87.8	87.8		19.2	19.2
2007										129.5	129.5		39.8	39.8
2008										18.8	18.8		13.3	13.3
2009										14.0	14.0		7.9	7.9
2010										12.5	12.5		54.2	54.2

^a Joint-venture harvest reported through 1989 (fishery ended in 1990).

^b Joint-venture harvest reported through 1988 when fishery ended. U.S. ground fish fishery harvest reported beginning in 1989.

^c Species composition unknown.

^d Information not available.

^e Japanese mothership fishery converted to "nontraditional land-based salmon fishery".

^f U.S. fishery entirely replaced directed foreign and joint-venture groundfish harvests.

Appendix A27.–List of emergency orders pertaining to the Districts 1-6 Chinook and summer chum salmon fishery, Yukon Area, 2010.

EO Number: **3-S-LY-01-10** Effective Date: June 7, 2010

Implements the subsistence salmon fishing schedule in District 1.

EO Number: **3-S-LY-02-10** Effective Date: June 9, 2010

Implements the subsistence salmon fishing schedule in District 2.

EO Number: **3-S-LY-03-10** Effective Date: June 13, 2010

Implements the subsistence salmon fishing schedule in District 3.

EO Number: **3-S-LY-04-10** Effective Date: June 26, 2010

Opens the commercial salmon fishing season in District 1.

EO Number: **3-S-LY-04-10** Effective Date: June 7, 2010

Specifies gillnet mesh size and length during salmon closures for non-salmon species to a maximum of 4 inch mesh and 60 feet in length.

EO Number: **3-S-LY-05-10** Effective Date: June 26, 2010

Establishes a 4-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-06-10** Effective Date: June 26, 2010

Cancels the commercial fishing period announced for 6:00 p.m. Saturday, June 26, 2010, until 10:00 p.m. Saturday, June 26, 2010, in District 1.

EO Number: **3-S-LY-07-10** Effective Date: June 28, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-08-10** Effective Date: July 1, 2010

Opens the commercial salmon fishing season in District 2.

EO Number: **3-S-LY-09-10** Effective Date: July 1, 2010

Establishes a 4-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

-continued-

EO Number: **3-S-LY-10-10**

Effective Date: June 30, 2010

Reduces the amount of time subsistence fishing is closed associated with the commercial fishing period in District 2 announced in emergency order 3-S-LY-09-10 to 18 hours before, during, and 6 hours after the commercial fishing period.

EO Number: **3-S-LY-11-10**

Effective Date: July 1, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-12-10**

Effective Date: July 3, 2010

Established a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-13-10**

Effective Date: July 4, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-LY-14-10**

Effective Date: July 6, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-15-10**

Effective Date: July 7, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-LY-16-10**

Effective Date: July 8, 2010

Establishes a 9-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-17-10**

Effective Date: July 10, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-LY-18-10**

Effective Date: July 11, 2010

Establishes a 9-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in

EO Number: **3-S-LY-19-10**

Effective Date: July 10, 2010

Reduces the amount of time subsistence fishing is closed in District 1 associated with the commercial fishing period announced in emergency order 3-S-LY-18-10 to 12 hours before, during, and 12 hours after the commercial fishing period.

-continued-

EO Number: **3-S-LY-20-10**

Effective Date: July 12, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-LY-21-10**

Effective Date: July 13, 2010

Establishes a 9-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-22-10**

Effective Date: July 14, 2010

Establishes a 6-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-LY-23-10**

Effective Date: July 15, 2010

Establishes a 9-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 1.

EO Number: **3-S-LY-24-10**

Effective Date: July 16, 2010

Establishes a 9-hour commercial fishing period with gillnets restricted to 6-inch maximum mesh size in District 2.

EO Number: **3-S-UY-01-10**

Effective Date: June 16, 2010

Implements subsistence fishing schedule in Subdistrict Y4-A of two 48-hour periods per week.

EO Number: **3-S-UY-02-10**

Effective Date: June 23, 2010

Implements subsistence fishing schedule in Subdistrict Y4-B and Y4-C of two 48-hour periods per week.

EO Number: **3-S-UY-03-10**

Effective Date: June 29, 2010

Implements subsistence fishing schedule in Subdistricts Y5-A, Y5-B and Y5-C of two 48-hour periods per week.

EO Number: **3-S-UY-04-10**

Effective Date: July 7, 2010

Opens commercial fishing in Subdistricts Y4-A, Y4-B, and Y4-C. Schedules 5 12-hour periods in Subdistrict Y4-A from July 7-12.

EO Number: **3-S-UY-05-10**

Effective Date: July 11, 2010

Extends commercial period in Y4-A from 12 hours July 11-12 to 48 hours July 11-13.

EO Number: **3-S-UY-06-10**

Effective Date: July 13, 2010

Extends commercial period in Y4-A from 48 hours July 11-13 to 120 hours July 11-16.

-continued-

Appendix A27.–Page 4 of 4.

EO Number: **3-S-UY-07-10** Effective Date: July 16, 2010

Establishes one 120-hour commercial salmon fishing period in Subdistrict 4-A.

EO Number: **3-S-UY-08-10** Effective Date: July 19, 2010

Establishes a 42-hour commercial fishing period in District 6 from 6:00 p.m. July 19 to 12:00 noon July 21.

EO Number: **3-S-UY-09-10** Effective Date: July 21, 2010

Establishes a 120 hour commercial fishing period in Subdistrict 4-A from 6:00 p.m. July 21 to 6:00 p.m. July 26.

EO Number: **3-S-UY-10-10** Effective Date: July 23, 2010

Establishes a 42 hour commercial fishing period in District 6 from 6:00 p.m. July 23 to 12:00 noon July 25.

EO Number: **3-S-UY-11-10** Effective Date: July 30, 2010

Closes personal use salmon fishing in the Tanana River within ½ mile of the mouth of the Chena River.

EO Number: **3-S-UY-12-10** Effective Date: July 25, 2010

Establishes 5 days per week subsistence fishing schedule for Subdistricts 4-A, 4-B, and 4-C.

EO Number: **3-S-UY-13-10** Effective Date: July 26, 2010

Establishes one 120-hour commercial fishing period in Subdistrict 4-A from 6:00 p.m. July 26 to 6:00 p.m. July 31.

EO Number: **3-S-UY-14-10** Effective Date: July 26, 2010

Establishes one 42-hour commercial fishing period in District 6 from 6:00 p.m. July 26 to 12:00 noon July 28.

EO Number: **3-S-UY-15-10** Effective Date: July 30, 2010

Establishes one 42-hour commercial fishing period in District 6 from 6:00 p.m. July 30 to 12:00 noon August 1.

EO Number: **3-S-UY-16-10** Effective Date: Aug. 2, 2010

Establishes one 42-hour commercial fishing period in District 6 from 6:00 p.m. August 2 to 12:00 noon August 4.

EO Number: **3-S-UY-17-10** Effective Date: Aug. 6, 2010

Establishes one 42-hour commercial fishing period in District 6 from 6:00 p.m. August 6 to 12:00 noon August 8.

EO Number: **3-S-UY-18-10** Effective Date: Aug. 9, 2010

Establishes one 42-hour commercial fishing period in District 6 from 6:00 p.m. August 9 to 12:00 noon August 11.

Appendix A28.–List of emergency orders pertaining to the Districts 1-6 fall chum and coho salmon fishery, Yukon Area, 2010.

EO Number: **3-S-FY-01-10** Effective Date: August 3, 2010

Opens District 4 subsistence fishing to 7 days per week.

EO Number: **3-S-FY-02-10** Effective Date: August 3, 2010

Opens Subdistricts 5-A, 5-B, and 5-C subsistence fishing to 7 days per week.

EO Number: **3-S-FY-03-10** Effective Date: August 18, 2010

Closes subsistence fishing in District 1 8am August 18 and reopens 8pm August 19 on schedule of two 36-hour periods per week.

EO Number: **3-S-FY-04-10** Effective date: August 20, 2010

Closes subsistence fishing in Districts 2 and 3 8am August 20 and reopens 8pm August 22 on schedule of two 36-hour periods per week.

EO Number: **3-S-FY-05-10** Effective Date: August 20, 2010

Closes subsistence fishing in District 4 8pm August 20 and reopens 6pm August 22 on schedule of two 48-hour periods per week.

EO Number: **3-S-FY-06-10** Effective Date: August 22, 2010

Closes subsistence fishing in Subdistricts 5-A, 5-B, and 5-C 6pm August 22 and reopens 6pm August 24 on schedule of two 48-hour periods per week.

EO Number: **3-S-FY-07-10** Effective Date: August 23, 2010

Cancels subsistence period in District 1 scheduled 8pm August 23 until 8am August 25.

EO Number: **3-S-FY-08-10** Effective Date: August 25, 2010

Cancels subsistence period in Districts 2 and 3 scheduled 8pm August 25 until 8am August 27.

EO Number: **3-S-FY-09-10** Effective Date: August 29, 2010

Cancels subsistence period in District 4 scheduled 6pm August 29 until 6pm August 31.

EO Number: **3-S-FY-10-10** Effective Date: September 5, 2010

Cancels subsistence period in Subdistricts 5-B and 5-C scheduled 6pm September 3 until 6pm September 5.

-continued-

EO Number: **3-S-FY-11-10**

Effective Date: September 5, 2010

Opens subsistence schedule to 7 days per week in District 4 6pm September 5, Districts 2 and 3 8pm September 5, and District 1 8pm September 6.

EO Number: **3-S-FY-12-10**

Effective Date: September 8, 2010

Opens one 9-hour commercial salmon fishing period in District 1 including the Coastal Set Net Only Area from 10am until 7pm September 8.

EO Number: **3-S-FY-13-10**

Effective Date: September 10, 2010

Opens one 9-hour commercial salmon fishing period in District 1 including the Coastal Set Net Only Area and District 2 from 10am until 7pm September 10.

EO Number: **3-S-FY-14-10**

Effective Date: September 20, 2010

Opens commercial fishing season in District 6.

EO Number: **3-S-FY-15-10**

Effective Date: September 20, 2010

Opens two commercial salmon fishing periods in District 6 from 6pm September 20 until 12 noon September 22 and 6pm September 24 until 12 noon September 26.

EO Number: **3-S-FY-16-10**

Effective Date: September 21, 2010

Opens subsistence fishing to 5 days per week in Subdistricts 5-A, 5-B, and 5-C on September 21 from 6pm Tuesdays until 6pm Sundays.

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

Effective Date: September 27, 2010

Opens one commercial salmon fishing period in District 6 from 6pm September 27 until 12 noon September 29.

APPENDIX B

Appendix B1.—Commercial catches of Chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1961–2010.

Year	d	Unrestricted Mesh Size ^{a,b}			6 inch Maximum Mesh Size ^{a,c}		
		Chinook		Summer Chum	Chinook	Summer Chum	
		District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1961		84,466	29,026	113,492	-	-	-
1962		67,099	22,224	89,323	-	-	-
1963		85,004	24,221	109,225	-	-	-
1964		67,555	20,246	87,801	-	-	-
1965		89,268	23,763	113,031	-	-	-
1966		70,788	16,927	87,715	-	-	-
1967		104,350	20,239	124,589	10,919	-	-
1968		79,465	21,392	100,857	14,402	-	-
1969		70,588	14,756	85,344	41,418	97	15,437
1970		56,469	17,141	73,610	104,705	57	16,623
1971		84,397	19,226	103,623	42,189	1,176	57,851
1972		68,059	17,317	85,376	78,698	1,991	37,881
1973	e	52,790	12,479	65,269	89,841	5,168	196,540
1974		69,457	17,464	86,921	349,758	1,631	227,507
1975		41,550	9,064	50,614	148,919	4,162	345,472
1976		56,392	15,296	71,688	267,075	7,631	128,431
1977		65,745	15,328	81,073	157,909	4,720	205,634
1978		53,198	28,872	82,070	275,512	7,737	354,603
1979		61,790	33,347	95,137	136,973	22,136	434,188
1980		78,157	42,755	120,912	95,876	19,474	605,679
1981		88,038	37,660	125,698	163,979	18,648	758,767
1982		70,743	35,656	106,399	225,106	6,887	217,563
1983		76,280	30,798	107,078	121,927	31,002	590,329
1984		65,101	29,355	94,456	242,076	16,394	287,531
1985	f	76,106	38,194	114,300	170,345	22,445	265,240
1986		42,922	36,603	79,525	231,372	15,307	438,182
1987		62,147	40,127	102,274	128,017	21,827	269,757
1988		32,792	20,009	52,801	225,049	39,469	848,321
1989	g	32,180	21,494	53,674	126,360	38,548	765,233
1990	g	42,092	24,000	66,092	99,588	18,147	281,418
1991	g	52,074	36,290	88,364	108,986	4,145	205,610
1992	g	54,569	28,679	83,248	81,458	27,678	242,878
1993		47,084	37,293	84,377	47,488	2,202	45,503
1994	h	61,633	41,692	103,325	39,832	608	15,369
1995		74,827	39,607	114,434	113,860	3,098	112,223
1996		56,642	30,209	86,851	123,233	0	0
1997		63,062	39,052	102,114	49,953	3,611	28,204
1998		24,202	16,806	41,008	20,314	1,211	7,804
1999		37,145	27,119	64,264	27,883	0	0

-continued-

Appendix B1.–Page 2 of 2.

Year	^d	Unrestricted Mesh Size ^{a,b}			6 inch Maximum Mesh Size ^{a,c}		
		Chinook		Summer Chum	Chinook	Summer Chum	
		District 1	District 2	Total	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
2000		4,735	3,783	8,518	6,624	0	0
2001		-	-	-	-	-	-
2002		11,087	11,434	22,521	10,354	0	0
2003		22,708	14,220	36,928	6,162	0	0
2004		28,401	24,145	52,546	19,775	0	0
2005		16,619	13,413	30,032	32,278	0	0
2006		23,728	19,356	43,084	35,574	478	11,785
2007		13,558	9,238	22,796	11,311	9,121	164,911
2008		0	0	0	0	4,401	125,598
2009		0	0	0	0	188	157,906
2010		0	0	0	0	9,897	183,215
2005-2009							
Average		10,781	8,401	19,182	15,833	2,838	92,040
2000-2009							
Average		13,426	10,621	24,047	13,564	1,576	51,133

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

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

^b Primarily 8 to 8-1/2 inch mesh size used during early June to early July.

^c Catch through July 15–20, relatively few Chinook and summer chum salmon taken after these dates.

^d ADF&G test fishery sales included, 1961–1990. ADF&G test fishery sales not included, 1991–2005.

^e Six inch maximum mesh size regulation beginning late June to early July became effective in 1973.

^f Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.

^g Only includes information from fish ticket database; does not include salmon purchased illegally.

^h Eight inch or greater mesh size restriction was in effect until June 27 and fishermen were requested to take chum salmon home for subsistence use until June 22 in order to reduce the harvest of chum salmon.

Appendix B2.—Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 1, Lower Yukon Area, 1974–2010.

Date	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
06/01													
06/02													
06/03													
06/04													
06/05	3.5 (3.5)					6.1 (6.1)							
06/06													
06/07								11.1 (11.1)					
06/08	7.5 (11.0)					4.9 (11.0)							
06/09					2.5 (2.5)			15.6 (26.7)					
06/10							6.8 (6.8)			22.3 (22.3)			
06/11		0.2 (0.2)											
06/12	14.7 (25.7)					19.5 (30.5)		14.5 (41.2)					
06/13					5.8 (8.3)								
06/14		0.4 (0.6)		0.04 (0.04)			26.1 (32.9)			12.7 (35.0)			
06/15	11.1 (36.8)								5.6 (5.6)				
06/16			0.1 (0.1)			9.3 (39.8)		18.3 (59.5)					
06/17					17.6 (25.9)		14.6 (47.5)			28.6 (63.6)			
06/18		1.1 (1.7)		2.6 (2.6)					12.4 (18.0)				
06/19	18.8 (55.6)		3.2 (3.3)			16.7 (56.5)		28.5 (88.0)			13.7 (13.7)		
06/20					7.5 (33.4)								21.7 (21.7)
06/21		5.7 (7.4)		10.4 (13.0)			26.2 (73.7)			12.7 (76.3)			
06/22	2.9 (58.5)					5.3 (61.8)			20.0 (38.0)		18.8 (32.5)		
06/23			9.6 (12.9)				4.5 (78.2)						
06/24					14.4 (47.8)								10.2 (31.9)
06/25		17.1 (24.5)		26.3 (39.3)					7.1 (45.1)			23.6 (23.6)	
06/26	7.2 (65.7)		15.4 (28.3)								16.1 (48.6)		
06/27		9.8 (34.3)			5.4 (53.2)								
06/28				17.7 (57.0)								33.7 (57.3)	
06/29	3.8 (69.5)								18.1 (63.2)		16.5 (65.1)		
06/30			13.8 (42.1)										5.6 (37.5)
07/01		7.3 (41.6)		8.7 (65.7)									
07/02			14.3 (56.4)						7.5 (70.7)			18.8 (76.1)	
07/03													
07/04													5.4 (42.9)
07/05													
07/06													
07/07													
07/08													

-continued-

Appendix B2.–Page 2 of 4.

203

Date	1987	1988	1989 ^a	1990 ^b	1991 ^c	1992 ^d	1993	1994	1995	1996	1997	1998	1999
06/01													
06/02													
06/03													
06/04													
06/05													
06/06													
06/07													
06/08													
06/09													
06/10										14.0 (14.0)			
06/11											11.4 (11.4)		
06/12									18.4 (18.4)				
06/13								13.5 (13.5)		6.8 (20.8)			
06/14		5.9 (5.9)			17.1 (17.1)								
06/15				19.0 (19.0)			9.1 (9.1)		17.5 (35.9)			1.8 (1.8)	
06/16	13.0 (13.0)		18.9 (18.9)					23.0 (36.5)			11.2 (22.5)		
06/17		16.0 (21.9)								6.7 (27.5)			
06/18					15.1 (32.2)		23.0 (32.1)						
06/19	22.5 (35.5)								6.5 (42.4)		20.1 (42.7)		
06/20			10.8 (29.7)			11.5 (11.5)				11.3 (38.8)			
06/21		10.9 (32.8)			4.7 (36.9)		10.4 (42.5)						
06/22			2.5 (32.2)	15.0 (34.0)		22.1 (33.6)		13.8 (50.3)	21.0 (64.0)				11.2 (11.2)
06/23	15.0 (50.5)										7.4 (50.1)	11.8 (13.6)	
06/24										10.9 (49.7)			
06/25					9.3 (46.2)								
06/26	11.6 (62.1)					10.0 (43.6)			11.0 (75.0)		13.0 (63.1)		9.8 (21.0)
06/27								11.2 (61.5)		6.9 (56.6)		7.2 (20.8)	
06/28							2.9 (45.4)						
06/29				6.5 (40.4)									
06/30													7.5 (28.5)
07/01							1.6 (47.0)						
07/02					5.9 (52.1)	11.0 (54.6)							
07/03				1.7 (42.1)									6.3 (34.8)
07/04													
07/05													
07/06													
07/07												3.4 (24.2)	
07/08													2.3 (37.1)

-continued-

Appendix B2.–Page 3 of 4

204

Date	2000	2001 ^e	2002	2003	2004	2005	2006	2007	2008 ^f	2009 ^f	2010 ^f
06/01											
06/02											
06/03											
06/04											
06/05											
06/06											
06/07											
06/08											
06/09											
06/10											
06/11											
06/12											
06/13											
06/14											
06/15											
06/16				10.7	(10.7)						
06/17					3.1	(3.1)					
06/18											
06/19							4.7	(4.7)	4.3	(4.3)	
06/20			4.9	(4.9)							
06/21				7.3	(18.0)	8.0	(11.1)			5.9	(10.2)
06/22											
06/23											
06/24			4.6	(9.5)		10.2	(21.2)	5.0	(5.0)		
06/25	2.6	(2.6)								3.4	(13.6)
06/26				2.6	(20.6)			7.2	(11.9)		
06/27			1.6	(11.1)			7.6	(12.7)			
06/28					2.7	(23.9)					
06/29								7.6	(19.6)		
06/30	2.2	(4.7)			1.6	(25.6)	2.9	(15.6)			
07/01											
07/02				1.6	(22.3)	1.5	(27.1)				
07/03								3.1	(22.7)		
07/04											
07/05					1.0	(28.1)	1.0	(16.6)			
07/06								1.0	(23.7)		
07/07				0.4	(22.7)						
07/08											
07/09					0.3	(28.4)					

-continued-

Note: Cumulative catch during unrestricted mesh size fishing periods, in thousands of fish, are located in the brackets ().

- ^a Does not include 3,211 Chinook salmon sold illegally.
- ^b Does not include 1,101 Chinook salmon sold illegally.
- ^c Does not include 2,711 Chinook salmon sold illegally.
- ^d Does not include 1,218 Chinook salmon sold illegally.
- ^e No commercial fishing periods.
- ^f No unrestricted mesh size fishing periods.

Appendix B3.—Numbers of commercially caught Chinook salmon (in thousands of fish) by unrestricted mesh size periods, District 2, Lower Yukon Area, 1978–2010.

Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
06/01											
06/02											
06/03											
06/04		1.6 (1.6)									
06/05											
06/06											
06/07		1.4 (3.0)									
06/08				7.6 (7.6)							
06/09	4.8 (4.8)		3.9 (3.9)								
06/10											
06/11		5.1 (8.1)		11.4 (19.0)							
06/12	3.2 (8.0)		7.8 (11.7)								
06/13						6.0 (6.0)					
06/14											
06/15		14.2 (22.3)		10.5 (29.5)							
06/16	4.3 (12.3)		10.9 (22.6)			7.3 (13.3)					2.7 (2.7)
06/17					4.0 (4.0)						
06/18		3.9 (26.2)		8.2 (37.7)						9.5 (9.5)	
06/19	7.8 (20.1)										
06/20			8.1 (30.7)			10.6 (23.9)					9.0 (11.7)
06/21		7.2 (33.4)			7.8 (11.8)		5.6 (5.6)				
06/22										12.2 (21.7)	
06/23	4.1 (24.2)		12.0 (42.7)			6.9 (30.8)			14.5 (14.5)		8.3 (20.0)
06/24					11.9 (23.7)						
06/25							14.4 (20.0)			10.9 (32.5)	
06/26	4.7 (28.9)										
06/27								7.0 (7.0)	12.3 (26.8)		
06/28					3.4 (27.1)		9.4 (29.4)				
06/29										7.6 (40.1)	
06/30											
07/01					8.6 (35.7)			18.3 (25.3)			
07/02									7.4 (34.2)		
07/03											
07/04								12.9 (38.2)			
07/05											
07/06											
07/07									2.4 (36.6)		
07/08											

-continued-

Appendix B3.–Page 2 of 3.

207

Date	1989	1990	1991 ^a	1992 ^b	1993	1994	1995	1996	1997	1998	1999
06/01											
06/02											
06/03											
06/04											
06/05											
06/06											
06/07											
06/08											
06/09								7.5 (7.5)			
06/10											
06/11							1.2 (1.2)				
06/12								10.0 (17.5)			
06/13											
06/14							9.2 (10.4)				
06/15						8.2 (8.2)			7.3 (7.3)		
06/16								4.9 (22.4)			
06/17			11.5 (11.5)		10.6 (10.6)						
06/18		10.3 (10.3)					9.8 (20.2)		9.6 (16.8)		
06/19	11.0 (11.0)							3.3 (25.7)			
06/20			9.6 (21.1)			18.2 (26.4)					
06/21					14.1 (24.7)		8.4 (28.6)				
06/22	7.5 (18.5)			5.5 (5.5)					15.2 (32.1)		
06/23								3.3 (29.0)			
06/24		7.7 (18.0)	6.7 (27.8)	13.0 (18.5)							
06/25	3.0 (21.5)				6.8 (31.5)	11.2 (37.6)			7.0 (39.1)		8.1 (8.1)
06/26			4.1 (31.9)							6.6 (6.6)	
06/27					3.2 (33.7)						
06/28				7.4 (25.9)							
06/29											7.8 (15.8)
06/30					2.6 (36.0)						
07/01								1.2 (30.2)			
07/02		4.5 (22.4)								7.4 (14.0)	7.0 (22.9)
07/03						4.1 (41.7)					
07/04			4.4 (36.3)								
07/05		1.6 (24.0)									4.3 (27.1)
07/06											
07/07											
07/08				2.8 (28.7)						2.8 (16.8)	

-continued-

Appendix B3.–Page 3 of 3.

208

Date	2000	2001 ^c	2002	2003	2004	2005	2006	2007	2008 ^d	2009 ^d	2010 ^d
06/01											
06/02											
06/03											
06/04											
06/05											
06/06											
06/07											
06/08											
06/09											
06/10											
06/11											
06/12											
06/13											
06/14											
06/15					8.9 (8.9)			2.1 (2.1)			
06/16							0.9 (0.9)				
06/17											
06/18				7.5 (7.5)							
06/19			5.2 (5.2)								
06/20					4.0 (13.0)			3.9 (6.0)			
06/21											
06/22											
06/23					7.3 (20.2)	6.4 (6.4)					
06/24							5.9 (6.8)	3.2 (9.2)			
06/25				5.2 (12.7)							
06/26			4.1 (9.4)			4.9 (11.3)					
06/27	3.8 (3.8)				3.9 (24.1)		7.1 (13.9)				
06/28											
06/29											
06/30			2.1 (11.4)								
07/01											
07/02				0.7 (13.4)		2.1 (13.4)	3.9 (17.8)				
07/03											
07/04											
07/05											
07/06							1.5 (19.3)				
07/07				0.8 (14.2)							

Note: Cumulative catch during unrestricted mesh size fishing periods, in thousands of fish, are located in the brackets ().

^a Does not include 284 Chinook salmon sold illegally.

^b Does not include 207 Chinook salmon sold illegally.

^c No commercial fishing periods.

^d No unrestricted mesh size fishing periods.

Appendix B4.—Commercial Chinook salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1974–2010.

Year	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671
1985	4,233	22,696	12,160	2,492	12,806	3,955	25,144	6,525	90,011
1986	4,187	7,954	3,494	5,430	10,258	1,422	15,948	4,342	53,035
1987	14,656	12,056	8,703	3,533	6,780	3,250	18,573	9,092	76,643
1988	6,780	11,154	6,023	4,274	14,123	618	8,703	5,434	57,109
1989	^a 2,213	5,703	4,794	3,999	12,682	7,303	18,037	4,422	59,153
1990	^b 1,473	7,315	4,478	4,257	12,486	2,794	14,619	3,739	51,161
1991	^c 1,689	4,244	1,624	3,451	12,664	6,251	18,243	5,455	53,621
1992	^d 11,302	12,601	9,001	6,313	5,880	2,285	18,233	7,379	72,994
1993	3,642	7,368	4,342	3,324	11,407	2,346	9,380	7,477	49,286
1994	4,176	6,723	5,037	3,888	14,580	1,686	17,575	8,576	62,241
1995	3,719	6,939	6,181	5,430	22,357	3,790	18,980	8,710	76,106
1996	6,079	6,858	3,791	3,297	8,850	4,478	16,789	6,500	56,642
1997	4,570	5,865	2,844	6,648	12,460	4,703	21,443	7,851	66,384
1998	226	1,741	654	1,591	7,264	1,934	7,822	4,181	25,413
1999	1,454	2,604	3,112	3,798	4,057	935	13,130	8,071	37,161
2000	78	1,057	144	389	640	85	1,259	1,083	4,735
2001	-	-	-	-	-	-	-	-	-
2002	1,001	1,271	449	742	2,993	69	2,338	2,224	11,087
2003	1,601	4,714	1,089	1,514	4,756	437	3,518	5,080	22,709
2004	975	2,505	1,965	1,502	4,285	1,783	9,270	6,118	28,403
2005	2,137	1,531	944	592	2,580	1,650	3,926	3,334	16,694
2006	2,252	2,106	1,558	928	3,507	2,476	6,201	4,720	23,748
2007	1,116	1,419	1,555	855	4,890	1,168	5,828	1,785	18,616
2008	50	440	209	263	372	226	628	342	2,530
2009	1	16	4	3	36	17	10	3	90
2010	252	824	213	358	1,266	985	1,570	276	5,744
2005-2009									
Average	1,111	1,102	854	528	2,277	1,107	3,319	2,037	12,336

-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
1974	6,344	5,611	2,624	3,369	-	17,948	1,423	2,057	3,480
1975	3,282	3,045	2,785	2,203	-	11,315	2,791	1,386	4,177
1976	5,083	4,490	3,031	3,952	-	16,556	1,827	2,321	4,148
1977	6,577	4,584	2,110	3,451	-	16,722	1,617	2,348	3,965
1978	9,004	7,953	5,248	8,499	2,220	32,924	746	2,170	2,916
1979	10,698	11,214	6,733	7,573	5,280	41,498	2,195	2,823	5,018
1980	11,544	12,903	8,259	9,591	7,707	50,004	2,039	3,201	5,240
1981	12,341	13,275	7,024	5,950	7,191	45,781	1,241	2,782	4,023
1982	10,567	9,236	5,262	8,932	5,135	39,132	896	1,713	2,609
1983	12,433	10,424	7,779	6,260	6,333	43,229	1,335	2,771	4,106
1984	9,179	11,573	4,668	5,752	5,525	36,697	900	2,139	3,039
1985	11,843	18,584	4,877	4,613	8,448	48,365	854	1,734	2,588
1986	11,138	15,326	3,450	4,336	7,599	41,849	606	295	901
1987	14,195	9,672	5,663	6,376	11,552	47,458	1,698	341	2,039
1988	6,191	11,605	4,721	6,784	5,887	35,188	1,387	380	1,767
1989	5,257	12,380	4,647	4,411	6,530	33,225	1,623	22	1,645
1990	5,592	10,675	3,741	8,514	4,691	33,213	2,128	213	2,341
1991 ^e	9,330	10,423	5,332	6,552	7,339	38,976	1,214	1,130	2,344
1992 ^f	9,014	11,647	4,135	11,311	1,825	37,932	1,160	659	1,819
1993	8,641	9,223	6,118	6,085	7,226	37,293	1,478	23	1,501
1994	9,223	14,350	4,514	8,734	4,871	41,692	1,114	0	1,114
1995	7,832	14,041	4,841	5,887	8,857	41,458	0	0	0
1996	8,265	9,134	2,749	3,626	6,435	30,209	0	0	0
1997	13,939	13,344	2,280	6,104	3,696	39,363	0	0	0
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	1,434	966	415	457	511	3,783	0	0	0
2001	-	-	-	-	-	-	-	-	-
2002	2,140	3,044	1,992	2,712	1,546	11,434	-	-	-
2003	2,965	5,454	993	2,104	2,704	14,220	-	-	-
2004	5,879	8,326	3,459	3,819	2,662	24,145	-	-	-
2005	3,292	5,905	1,397	347	2,472	13,413	-	-	-
2006	3,750	8,457	2,700	3,425	1,511	19,843	315	0	0
2007	2,818	5,509	2,458	1,375	1,146	13,306	190	0	0
2008	420	654	670	252	115	2,111	-	-	-
2009	39	106	56	2	23	226	-	-	-
2010	389	1,690	890	1,184	0	4,153	-	-	-
2005-2009									
Average	2,064	4,126	1,456	1,080	1,053	9,780	253	0	0

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred. Includes fish caught in fall commercial fishing season; sales from test fishery and fish sold as roe not included.

^a Does not include 3,211 Chinook salmon sold illegally.

^b Does not include 1,101 Chinook salmon sold illegally.

^c Does not include 2,711 Chinook salmon sold illegally.

^d Does not include 1,218 Chinook salmon sold illegally.

^e Does not include 284 Chinook salmon sold illegally.

^f Does not include 207 Chinook salmon sold illegally.

Appendix B5.—Commercial summer chum salmon directed harvest (in numbers of fish) and effort data, Districts 1 and 2, Lower Yukon Area, 1967–2010.

Year	District 1			District 2		
	Duration	Days Fished	Catch	Duration	Days Fished	Catch
1967	6/08-6/27	11.0	9,494	-	-	-
1968	6/06-7/03	14.0	12,995	6/13-7/02	10.5	1,407
1969	6/02-6/28	12.5	8,840	6/15-7/01	8.0	5,024
1970	6/11-7/03	10.5	87,169	6/14-7/03	9.0	17,536
1971	6/14-7/03	10.5	36,077	6/20-7/05	8.5	6,112
1972	6/08-7/01	12.5	69,658	6/15-7/01	8.5	9,040
1973	^a 6/07-7/11	14.5	191,840	6/10-7/14	14.5	56,481
1974	6/03-7/13	16.5	461,025	6/05-7/16	15.5	72,281
1975	6/09-7/16	15.0	394,447	6/11-7/18	10.5	99,139
1976	6/14-7/14	12.0	272,493	6/20-7/16	11.0	99,190
1977	6/13-7/12	12.0	232,427	6/19-7/15	10.0	102,759
1978	6/08-7/15	13.5	393,785	6/08-7/14	13.5	218,196
1979	6/04-7/14	13.5	369,934	6/03-7/13	13.5	172,838
1980	6/09-7/15	12.8	391,252	6/08-7/17	12.5	308,704
1981	6/06-7/14	12.0	507,158	6/07-7/16	12.0	351,458
1982	6/14-7/13	9.5	248,950	6/16-7/16	10.0	180,321
1983	6/09-7/15	11.0	451,164	6/12-7/18	11.0	248,092
1984	6/18-7/13	8.0	292,676	6/20-7/16	8.0	234,677
1985	^b 6/24-7/15	6.3	247,486	6/26-7/18	7.3	188,099
1986	6/14-7/15	8.5	381,127	6/15-7/14	7.5	288,427
1987	6/15-7/10	6.0	222,898	6/17-7/09	5.0	174,876
1988	6/09-7/15	6.8	648,198	6/12-7/14	6.8	425,172
1989	6/13-7/14	5.3	547,781	^c 6/15-7/13	4.5	343,962
1990	6/14-7/03	2.3	148,911	6/18-7/05	2.4	132,507
1991	6/13-7/05	3.0	140,470	^d 6/16-7/07	3.0	175,149
1992	6/20-7/09	2.9	177,329	^e 6/22-7/08	2.3	147,129
1993	6/14-7/01	2.0	73,659	6/16-6/30	1.8	19,332
1994	6/13-7/05	1.6	42,332	6/15-7/03	1.3	12,869
1995	6/12-7/07	2.6	142,266	6/11-6/22	1.6	83,817
1996	6/10-6/28	2.5	92,506	6/09-7/01	2.4	30,727
1997	6/11-6/30	2.7	59,915	6/15-6/26	1.9	18,242
1998	6/15-7/08	1.5	21,270	6/26-7/09	1.0	6,848
1999	6/22-7/09	1.5	16,181	6/25-7/05	1.1	11,702
2000	6/25-6/30	0.5	3,315	6/27-6/27	0.3	3,309
2001	No Openings	0.0	-	No Openings	0.0	-
2002	6/20-6/28	0.9	6,327	6/19-7/01	0.8	4,027
2003	6/16-7/8	1.3	3,579	6/18-7/08	1.0	2,583
2004	6/18-7/11	2.6	13,993	6/15-6/28	1.0	5,782
2005	6/24-7/06	1.3	23,965	6/23-7/03	0.0	8,313
2006	6/19-7/07	1.5	21,816	6/15-7/07	1.2	25,543
2007	6/18-7/15	3.0	106,790	6/15-7/08	1.9	69,432
2008	7/2-7/14	1.7	67,459	7/04-7/16	1.3	58,139
2009	6/29-7/15	2.2	71,335	6/29-7/16	1.6	86,571
2010	6/28-7/15	2.5	102,267	7/01-7/17	1.8	80,948

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred. Summer chum salmon caught after the specified dates are not included. Includes ADF&G test fish sales through 1990.

^a Six inch maximum mesh size regulation during late June to early July became effective in 1973.

^b Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.

^c Includes 150 summer chum salmon sold illegally.

^d Includes 1,023 summer chum salmon sold illegally.

^e Includes 31 summer chum salmon sold illegally.

^f Includes 91 summer chum salmon sold illegally.

Appendix B6.–Commercial summer chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.

Year	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1983	42,165	112,074	37,976	64,556	29,841	22,918	96,512	45,122	451,164
1984	42,264	81,295	14,888	38,285	22,485	5,838	64,320	23,301	292,676
1985	13,696	53,540	26,127	10,047	33,133	10,381	73,948	26,614	247,486
1986	39,468	102,887	35,315	52,980	26,732	6,807	85,798	31,140	381,127
1987	34,852	51,350	22,794	15,109	21,646	7,786	45,911	23,450	222,898
1988	72,408	148,578	79,248	60,956	61,752	13,239	129,938	82,070	648,189
1989	a 29,129	89,794	40,036	71,576	118,908	20,468	136,669	41,051	547,631
1990	b 23,453	35,542	15,326	12,369	10,931	1,513	39,575	10,202	148,911
1991	c 13,767	32,621	5,223	11,133	11,560	23,213	34,775	7,155	139,447
1992	d 24,094	39,225	22,293	16,717	12,000	2,500	40,353	20,116	177,298
1993	13,123	17,869	9,745	8,672	2,920	661	9,196	11,473	73,659
1994	11,208	6,340	5,165	2,389	3,602	290	8,693	4,645	42,332
1995	32,084	23,420	15,834	19,154	15,919	3,150	24,349	8,356	142,266
1996	19,432	17,769	6,837	5,611	13,111	2,831	17,864	9,051	92,506
1997	10,764	9,519	6,190	10,374	5,429	1,650	10,719	5,270	59,915
1998	54	2,583	441	2,275	5,115	730	6,601	3,471	21,270
1999	1,128	1,667	1,653	2,979	816	141	3,845	3,952	16,181
2000	146	537	207	650	631	60	546	538	3,315
2001	-	-	-	-	-	-	-	-	-
2002	193	1,303	374	1,519	858	4	1,277	799	6,327
2003	90	588	117	292	690	188	566	1,048	3,579
2004	667	885	1,446	904	2,694	870	4,171	2,356	13,993
2005	4,260	2,791	1,658	2,697	3,631	1,985	3,970	2,973	23,965
2006	4,310	3,181	1,915	899	2,315	1,441	4,382	3,373	21,816
2007	3,724	15,690	14,297	10,746	15,816	8,801	25,753	11,963	106,790
2008	1,200	9,216	5,521	9,224	6,219	5,937	17,423	12,719	67,459
2009	730	7,457	9,120	9,569	12,979	4,930	23,532	3,018	71,335
2010	3,881	19,138	5,707	12,405	12,116	9,484	32,994	6,542	102,267
2005-2009									
Average	2,845	7,667	6,502	6,627	8,192	4,619	15,012	6,809	58,273

-continued-

Appendix B6.–Page 2 of 2.

Year	District 2						District 3		
							334-31		Estimated Harvest ^e
	334-21	334-22	334-23	334-24	334-25	Total	Number	Roe	
1983	57,740	71,821	56,499	31,027	31,005	248,092	3,106		3,106
1984	46,261	91,790	43,116	36,076	19,688	236,931	447		447
1985	32,911	87,687	24,983	18,911	23,607	188,099	872		872
1986	44,393	129,569	36,304	47,179	30,982	288,427	442		442
1987	48,734	54,459	19,157	22,988	29,538	174,876	3,418		3,418
1988	74,252	140,291	56,302	88,393	65,934	425,172	11,463		11,463
1989	46,224	140,571	48,986	54,542	53,639	343,962	7,548		7,548
1990	^b 15,414	37,585	25,132	34,980	19,396	132,507	562		562
1991	^f 46,378	70,188	32,584	14,915	11,084	175,149	3,347		3,347
1992	31,399	59,401	22,107	31,085	3,046	147,038	63		63
1993	5,444	3,711	4,445	2,920	2,812	19,332	460		460
1994	4,100	5,314	1,435	1,395	625	12,869	35		35
1995	23,794	38,808	11,541	7,257	2,417	83,817	0		0
1996	9,177	13,056	4,965	2,479	1,050	30,727	0	162	465
1997	7,126	7,938	673	1,667	838	18,242	-	-	-
1998	710	2,350	1,079	2,351	358	6,848	0	0	0
1999	1,758	3,269	1,457	3,415	1,803	11,702	0	0	0
2000	1,552	961	327	220	249	3,309	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	1,105	997	862	794	269	4,027	-	-	-
2003	1,153	855	218	181	176	2,583	-	-	-
2004	1,724	1,439	1,350	1,061	208	5,782	-	-	-
2005	2,852	3,978	850	105	528	8,313	-	-	-
2006	6,325	10,523	2,080	5805	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	-	-	-
2005-2009									
Average	11,888	21,934	9,748	4,170	1,860	49,600	59	0	59

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Does not include 150 summer chum salmon sold illegally.

^b Includes ADF&G test fish sales through 1990.

^c Does not include 1,023 summer chum salmon sold illegally.

^d Does not include 31 summer chum salmon sold illegally.

^e Estimated harvest includes reported harvest of both males and females harvested to produce roe sold.

^f Does not include 91 summer chum salmon sold illegally.

Appendix B7.—Numbers of commercially caught fall chum salmon harvest (in thousands of fish) by period, District 1, Yukon Area, 1978–2010.

Period and (Cumulative) harvest (in thousands of fish)																						
Date	1978		1979		1980		1981		1982		1983		1984		1985		1986		1987 ^a		1988	
7/17																						
7/18	6.3	(6.3)			4.2	(4.2)										6.3	(6.3)					
7/19												16.1	(16.1)									
7/20			6.0	(6.0)						4.3	(4.3)											
7/21	5.1	(11.4)					6.0	(6.0)														
7/22					6.6	(10.8)																
7/23									27.8	(32.1)												
7/24			7.2	(13.2)			1.3	(7.3)														
7/25	52.8	(64.2)			10.4	(21.2)																
7/26																						
7/27			14.8	(28.0)					4.0	(36.1)												
7/28	2.8	(67.0)					57.3	(64.6)														
7/29					15.3	(36.5)					3.0	(19.1)										
7/30									11.7	(47.8)												
7/31			9.7	(37.7)	1.4	(37.9)	23.2	(87.8)					18.3	(18.3)								
8/1	14.4	(81.4)																				
8/2											18.5	(37.6)			2.2	(8.5)						
8/3			17.5	(55.2)									17.1	(35.4)								
8/4	0.4	(81.8)							7.9	(55.7)												
8/5					6.2	(44.1)					23.7	(61.3)					11.4	(11.4)				
8/6									1.2	(56.9)					15.2	(23.7)						
8/7			37.8	(93.0)	13.5	(57.6)							1.8	(37.2)								
8/8	1.4	(83.2)															7.5	(18.9)				
8/9											44.0	(105.3)			35.8	(59.5)				32.5	(32.5)	
8/10			1.3	(94.3)					13.7	(70.6)												
8/11	1.6	(84.8)			5.2	(62.8)																
8/12									20.7	(91.3)	19.1	(124.4)					10.5	(29.4)				
8/13							43.8	(131.6)														
8/14			7.1	(101.4)	1.8	(64.6)							11.8	(49.0)								
8/15	1.4	(86.2)															16.2	(45.6)				
8/16																						
8/17													10.1	(59.1)								
8/18	10.2	(96.4)					3.9	(135.5)														
8/19					42.2	(106.8)											5.8	(51.4)		0.5	(33.0)	
8/20																						
8/21																						
8/22	21.9	(118.3)															8.0	(59.4)				
8/23																				6.9	(39.9)	
8/24																						
8/25	4.4	(122.7)																				
8/26																				4.1	(44.0)	
8/27																						
8/28																						
8/29	5.2	(127.9)																				
8/30																				1.5	(45.5)	

-continued-

Appendix B7.-Page 2 of 4.

215

Period and (Cumulative) harvest (in thousands of fish)																						
Date	1989		1990		1991		1992 ^a		1993 ^a		1994 ^a		1995		1996		1997		1998 ^a		1999	
7/17																						
7/18																						
7/19																						
7/20																						
7/21																						
7/22																						
7/23																						
7/24			1.0	(1.0)																		
7/25																						
7/26																						
7/27			1.8	(2.8)																		
7/28	4.4	(4.4)																				
7/29																						
7/30					15.3	(15.3)																
7/31			1.7	(4.5)					0.7	(0.7)												
8/1	0.2	(4.5)																		5.6	(5.6)	
8/2					3.0	(18.3)			0.4	(1.1)												
8/3			11.2	(15.7)																		
8/4	48.8	(53.3)																				
8/5									12.7	(13.8)										0.7	(6.3)	
8/6					7.4	(25.7)								1.8	(1.8)	2.0	(2.0)					
8/7			7.5	(23.2)					10.4	(24.2)												
8/8	3.8	(57.2)																				
8/9					9.2	(34.9)			8.1	(32.3)	4.3	(6.1)								0.2	(6.5)	
8/10																						
8/11	2.5	(59.7)							4.5	(36.8)						3.9	(5.9)					
8/12											6.2	(12.3)								3.5	(10.0)	
8/13					1.4	(36.3)			10.4	(47.2)						6.7	(12.6)					
8/14																						
8/15	14.9	(74.7)							14.8	(62.0)	15.1	(27.4)										
8/16					4.1	(40.4)										9.4	(22.0)					
8/17																						
8/18									16.7	(78.7)						5.5	(27.5)					
8/19											1.3	(28.8)										
8/20			4.1	(27.3)	2.8	(43.2)																
8/21									0.7	(79.4)												
8/22	2.9	(77.6)									1.3	(30.1)										
8/23					14.7	(57.9)																
8/24																						
8/25	0.3	(77.9)																				
8/26											3.5	(33.6)										
8/27					1.8	(59.7)																
8/28																						
8/29																						
8/30																						

-continued-

Appendix B7.–Page 3 of 4.

216

Period and (Cumulative) harvest (in thousands of fish)											
Date	2000 ^a	2001 ^a	2002 ^a	2003	2004	2005	2006	2007	2008	2009	2010
7/17									2.1	(2.1)	
7/18										4.0	(4.0)
7/19											
7/20											
7/21											
7/22									6.0	(8.2)	2.8
7/23											(6.8)
7/24											
7/25									4.9	(13.1)	
7/26											
7/27						0.4	(.4)				
7/28											
7/29						8.2	(8.6)		19.3	(32.4)	1.6
7/30								16.6			(8.4)
7/31						24.3	(32.9)				
8/1								6.3			
8/2									18.3	(50.7)	
8/3						0.7	(33.6)	1.2			
8/4											
8/5						32.6	(66.2)			2.6	(11.0)
8/6											
8/7								7.5			
8/8											
8/9						4.2	(70.4)	2.9			
8/10								1.5			
8/11						3.5	(73.9)				
8/12											
8/13								21.9			
8/14						3.2	(77.1)				
8/15								6.5			
8/16						0.6	(77.7)				
8/17								5.9			
8/18						5.6	(83.4)				
8/19											
8/20								10.5			
8/21						9.7	(93.1)				
8/22						4.5	(97.7)	2.0			
8/23											
8/24						8.4	(106.1)	4.6			
8/25				2.5	(2.5)	4.2	(110.3)				
8/26						5.9	(116.3)				
8/27				0.4	(2.9)			7.4			
									5.9	(33.1)	9.8
										(60.5)	

-continued-

Appendix B7.–Page 4 of 4.

Period and (Cumulative) harvest (in thousands of fish)													
Date	2000 ^a	2001 ^a	2002 ^a	2003	2004	2005	2006	2007	2008	2009	2010		
8/28													
8/29			0.1	(3.0)		4.4	(120.7)	0.8	(95.6)				
8/30						2.9	(123.6)						
8/31				0.0	(.0)	2.7	(126.3)	5.4	(100.9)	4.0	(37.2)	0.9	(61.4)
9/1			0.7	(3.7)		1.4	(127.7)						
9/2				0.4	(.4)	0.6	(128.3)					1.6	(63.0)
9/3			1.0	(4.8)		0.5	(128.8)	0.2	(101.2)	0.7	(37.9)		
9/4				0.1	(.5)	0.4	(129.2)						
9/5			0.5	(5.3)		0.3	(129.4)	0.1	(101.3)			2.1	(65.1)
9/6				0.1	(.6)	0.3	(129.7)		0.3	(38.2)		0.1	(11.1)
9/7						0.8	(130.5)						
9/8				0.0	(.6)								
9/9			0.1	(5.4)					0.6	(38.9)		2.0	(67.1)
9/10				0.0	(.7)							0.7	(11.8)
9/11			0.2	(5.6)								0.2	(11.9)
												0.2	(.5)

^a No commercial fishing periods.

Appendix B8.—Commercial fall chum salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.

Year ^a	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1983	135	10,300	2,224	10,460	35,824	19,985	24,816	20,627	124,371
1984	315	24,914	2,488	16,234	13,536	6,873	9,390	5,001	78,751
1985	594	34,332	6,035	36,885	43,022	1,485	5,898	1,697	129,948
1986	376	9,891	3,032	2,683	21,058	4,091	12,004	6,217	59,352
1987	-	-	-	-	-	-	-	-	-
1988	10,217	6,953	2,625	206	6,692	3,905	9,526	5,405	45,317
1989	0	2,929	1,420	5,577	26,611	17,477	15,526	8,336	77,876
1990	255	3,690	501	1,167	7,927	5,618	4,695	3,484	27,337
1991	75	11,976	3,036	5,586	9,968	8,040	11,880	9,163	59,724
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	1,674	6,766	6,892	11,909	16,450	1,696	23,722	10,236	79,345
1996	0	2,686	2,333	1,243	4,561	9,976	8,504	4,326	33,629
1997	0	2,870	3,452	3,768	3,943	1,596	6,747	5,107	27,483
1998	-	-	-	-	-	-	-	-	-
1999	4	1,931	474	1,182	1,934	1,439	1,103	1,920	9,987
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	0	2,784	177	310	958	0	381	976	5,586
2004	0	509	25	67	0	0	19	40	660
2005	117	16,840	8,735	25,330	8,253	31,864	29,546	9,840	130,525
2006	163	16,212	9,929	9,973	7,538	9,568	32,200	15,671	101,254
2007	0	6,395	8,550	4,951	1,423	2,130	12,562	2,841	38,852
2008	22	16,471	6,018	9,138	5,152	7,090	16,072	7,741	67,704
2009	66	1,355	457	301	4,576	2,118	2,415	623	11,911
2010	0	211	0	13	83	10	167	61	545
2000-2009									
Average	53	8,652	4,842	7,153	3,986	7,539	13,314	5,390	50,927

-continued-

Appendix B8.–Page 2 of 2.

Year ^a	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	17,245	4,673	24,132	22,072	17,523	85,645	4,607	5,411	10,018
1984	10,951	22,942	7,622	19,183	10,105	70,803	6,429	0	6,429
1985	9,131	10,607	3,530	5,859	11,363	40,490	4,173	991	5,164
1986	6,472	16,377	5,212	11,352	11,894	51,307	2,793	0	2,793
1987	-	-	-	-	-	-	-	-	-
1988	5,077	13,215	5,385	4,283	3,901	31,861	1,748	342	2,090
1989	12,005	34,268	15,001	19,029	17,603	97,906	15,153	179	15,332
1990	6,311	8,298	5,403	10,147	7,014	37,173	1,863	1,852	3,715
1991	10,584	23,195	14,291	28,306	26,252	102,628	7,209	2,004	9,213
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	147	54,231	20,018	16,435	0	90,831	-	-	-
1996	1,960	14,349	4,184	7,634	1,524	29,651	-	-	-
1997	5,040	9,827	2,316	5,972	1,171	24,326	-	-	-
1998	-	-	-	-	-	-	-	-	-
1999	1,536	2,836	3,254	1,910	167	9,703	-	-	-
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-
2006	3,362	21,069	11,060	4,414	0	39,905	-	-	-
2007	8,619	17,068	8,245	1,894	0	35,826	-	-	-
2008	10,027	11,630	11,507	7,424	682	41,270	-	-	-
2009	1,107	7,988	1,593	235	1,149	12,072	-	-	-
2010	3	27	165	0	75	270	-	-	-
2000-2009									
Average	5,779	14,439	8,101	3,492	458	32,268	-	-	-

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Includes ADF&G test fish sales in Districts 1 and 2 through 1990.

Appendix B9.—Commercial coho salmon harvest (in numbers of fish) by statistical area, Lower Yukon Area, 1983–2010.

Year ^a	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1983	16	567	86	463	1,123	56	1,532	752	4,595
1984	151	6,743	1,233	3,101	5,925	4,151	4,389	3,779	29,472
1985	585	6,187	1,673	8,320	5,304	936	2,153	2,517	27,675
1986	83	1,974	805	383	7,056	6,525	5,722	2,276	24,824
1987	-	-	-	-	-	-	-	-	-
1988	1,652	5,831	1,866	392	9,166	9,848	4,831	2,849	36,435
1989	0	1,822	306	1,115	5,830	4,696	7,680	3,223	24,672
1990	4	736	301	1,684	2,108	2,530	2,429	3,562	13,354
1991	30	4,302	1,072	4,432	8,130	19,630	7,980	8,519	54,095
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	883	2,472	1,833	2,439	2,454	1,006	8,953	1,585	21,625
1996	0	1,555	1,564	854	3,995	9,634	8,068	2,035	27,705
1997	0	1,355	2,322	2,414	2,742	4,153	5,180	3,284	21,450
1998	-	-	-	-	-	-	-	-	-
1999	3	261	36	45	184	176	88	62	855
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	0	4,890	305	656	1,939	0	576	1,391	9,757
2004	128	772	201	290	0	0	50	142	1,583
2005	98	4,249	1,069	4,020	1,560	17,728	6,615	1,194	36,533
2006	7	3,034	2,467	2,315	3,508	15,280	10,196	2,516	39,323
2007	0	1,320	2,361	1,983	993	6,331	7,091	1,641	21,720
2008	35	3,122	1,024	1,274	838	2,456	3,712	1,485	13,946
2009	0	225	124	11	1,566	2,486	1,493	87	5,992
2010	0	204	5	6	142	102	445	123	1,027
2000-2009									
Average	64	2,831	253	473	970	0	313	767	5,670

-continued-

Appendix B9.–Page 2 of 2.

Year ^a	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	1,549	140	715	114	39	2,557	0	0	0
1984	4,736	26,506	5,514	4,556	1,752	43,064	621	0	621
1985	3,369	5,052	4,394	1,077	3,233	17,125	171	0	171
1986	3,074	9,317	2,250	4,117	2,439	21,197	793	0	793
1987	-	-	-	-	-	-	-	-	-
1988	3,844	12,503	4,891	7,141	6,397	34,776	1,291	128	1,419
1989	6,199	18,427	3,668	4,262	5,966	38,522	3,978	10	3,988
1990	1,226	11,364	962	2,032	851	16,435	752	166	918
1991	8,746	17,939	3,587	6,094	4,532	40,898	1,427	478	1,905
1992	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-
1995	115	12,154	2,951	3,268	0	18,488	-	-	-
1996	761	12,155	2,755	4,409	894	20,974	-	-	-
1997	2,197	6,449	1,238	3,025	147	13,056	-	-	-
1998	-	-	-	-	-	-	-	-	-
1999	147	238	248	65	48	746	-	-	-
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-
2006	2,138	7,250	3,745	1,349	0	14,482	-	-	-
2007	4,195	12,354	3,253	1,685	0	21,487	-	-	-
2008	3,275	6,076	4,594	4,680	621	19,246	-	-	-
2009	368	1,085	97	8	19	1,577	-	-	-
2010	7	105	606	0	305	1,023	-	-	-
2000-2009									
Average	2,494	6,691	2,922	1,931	160	14,198	-	-	-

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Includes ADF&G test fish sales in Districts 1 and 2 through 1990.

Appendix B10.–Daily and cumulative CPUE for Chinook salmon in the set gillnet test fishery, Lower Yukon River, 2010.

Chinook Salmon in 8.5" Set Gillnets ^a								
Date	2010				Late Year 1989-2008 ^b		Average 1989-2008	
	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished	Proportion	Cumulative CPUE	Proportion	Cumulative CPUE
5/26					0.00	0.00	0.00	0.00
5/27					0.00	0.00	0.00	0.03
5/28					0.00	0.00	0.00	0.04
5/29					0.00	0.00	0.00	0.07
5/30					0.00	0.00	0.00	0.12
5/31	0	0.00	0.00		0.00	0.00	0.01	0.18
6/1	0	0.00	0.00		0.00	0.00	0.01	0.24
6/2	0	0.00	0.00		0.00	0.00	0.01	0.35
6/3	0	0.00	0.00		0.00	0.00	0.02	0.50
6/4	0	0.00	0.00		0.00	0.00	0.03	0.69
6/5	0	0.00	0.00		0.00	0.00	0.03	0.87
6/6	0	0.00	0.00		0.00	0.04	0.04	1.14
6/7	0	0.00	0.00		0.00	0.06	0.06	1.45
6/8	0	0.00	0.00		0.01	0.09	0.07	1.83
6/9	1	0.01	0.01		0.02	0.26	0.09	2.44
6/10	15	0.16	0.17		0.02	0.36	0.12	2.96
6/11	2	0.02	0.19		0.03	0.50	0.14	3.52
6/12	15	0.16	0.35		0.04	0.70	0.17	4.21
6/13	29	0.30	0.65		0.06	1.10	0.20	5.00
6/14	71	0.74	1.39		0.09	1.50	0.24	5.74
6/15	45	0.47	1.86		0.12	1.89	0.27	6.50
6/16	72	0.75	2.61		0.14	2.49	0.31	7.43
6/17	87	0.91	3.52		0.17	2.73	0.35	8.31
6/18	76	0.79	4.31		0.21	3.37	0.39	9.20
6/19	73	0.76	5.07		0.23	4.04	0.42	10.07
6/20	69	0.72	5.79		0.24	4.86	0.46	10.82
6/21	89	0.93	6.72		0.27	5.42	0.50	11.75
6/22	61	0.64	7.36		0.32	6.54	0.54	12.74
6/23	62	0.65	8.01		0.39	7.58	0.58	13.68
6/24	91	0.95	8.96		0.44	8.58	0.63	14.76
6/25	93	0.97	9.93		0.52	9.59	0.67	15.66
6/26	69	0.72	10.65		0.59	10.33	0.71	16.56
6/27	100	1.04	11.69		0.65	11.10	0.75	17.32
6/28	120	1.25	12.94	6	0.72	12.39	0.78	18.04
6/29	32	0.33	13.27		0.76	13.36	0.81	18.74
6/30	38	0.40	13.67		0.78	13.88	0.84	19.25

-continued-

Appendix B10.–Page 2 of 2.

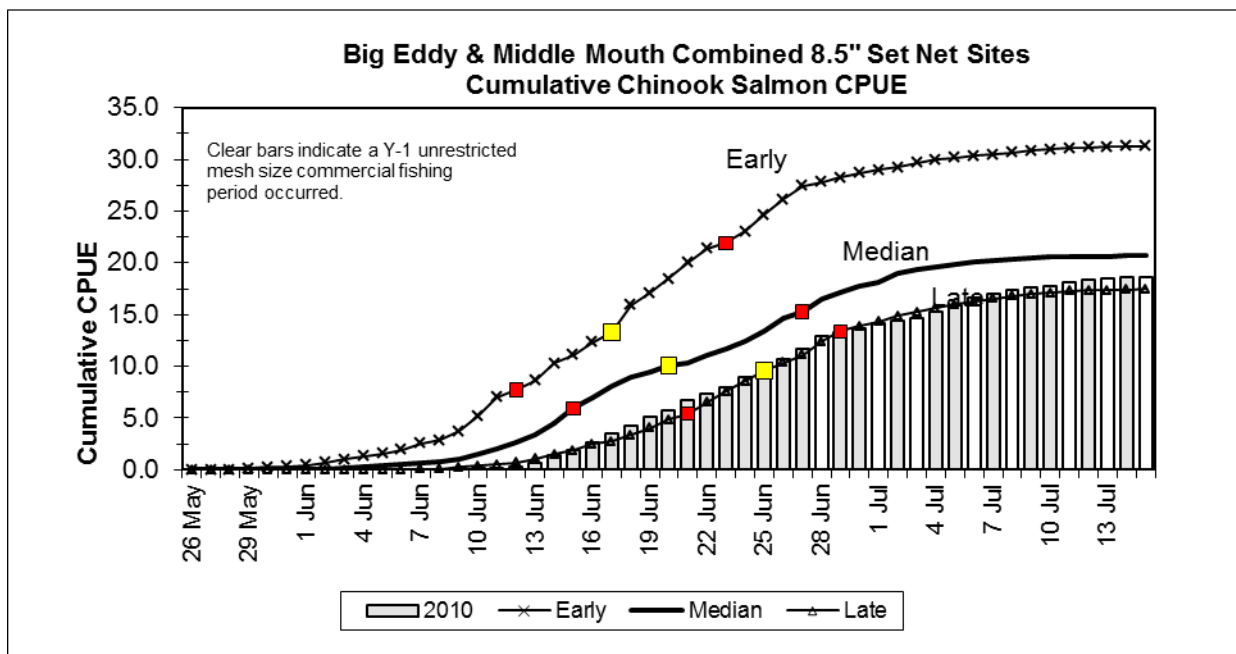
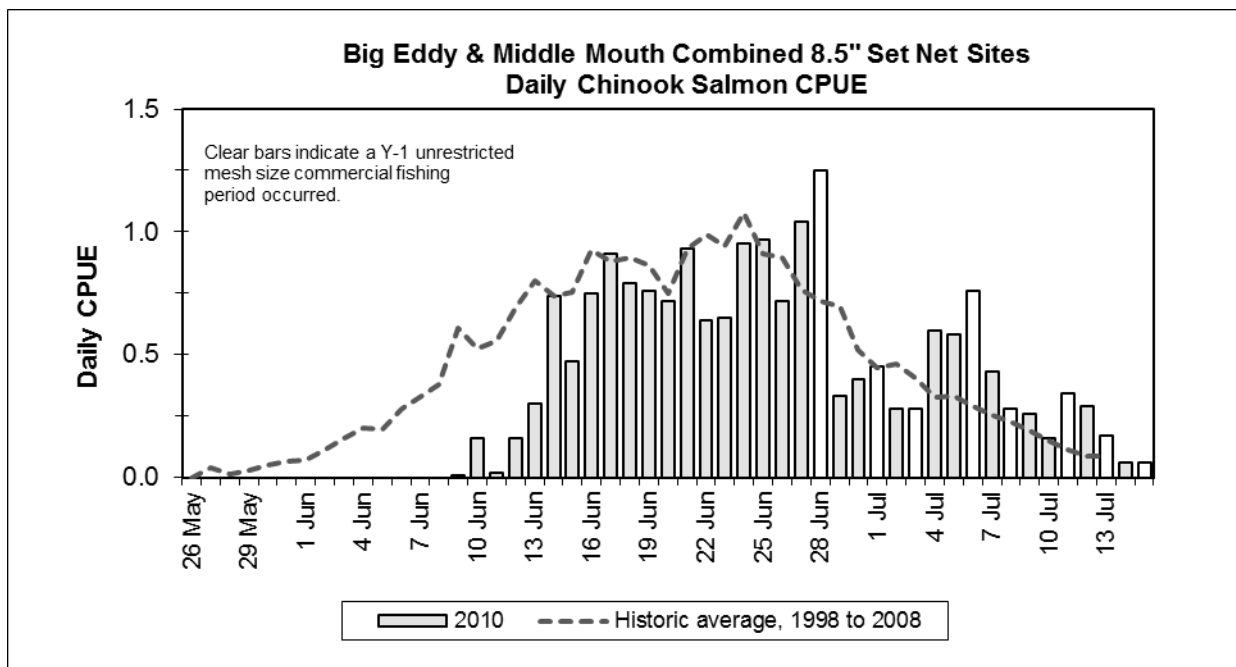
Chinook Salmon in 8.5" Set Gillnets ^a								
Date	2010				Late Year 1989-2008 ^b		Average 1989-2008	
	Daily Catch	Daily CPUE	Cumulative CPUE	Comm/period Hrs Fished	Proportion	Cumulative CPUE	Proportion	Cumulative CPUE
7/1	43	0.45	14.12	6	0.80	14.30	0.86	19.70
7/2	27	0.28	14.40		0.82	14.84	0.88	20.16
7/3	27	0.28	14.68	6	0.84	15.26	0.90	20.56
7/4	58	0.60	15.28		0.87	15.62	0.91	20.89
7/5	56	0.58	15.86		0.90	15.97	0.93	21.22
7/6	73	0.76	16.62	6	0.92	16.23	0.94	21.51
7/7	41	0.43	17.05		0.94	16.55	0.95	21.76
7/8	27	0.28	17.33	9	0.95	16.79	0.96	21.99
7/9	25	0.26	17.59		0.95	17.00	0.97	22.18
7/10	15	0.16	17.75		0.97	17.12	0.98	22.33
7/11	33	0.34	18.09	9	0.97	17.27	0.99	22.44
7/12	28	0.29	18.38		0.98	17.35	0.99	22.53
7/13	16	0.17	18.55	9	0.99	17.38	0.99	22.62
7/14	6	0.06	18.61		0.99	17.41	1.00	22.68
7/15	6	0.06	18.67	9	1.00	17.48	1.00	22.76
Total	1,791		18.67	60		17.48		22.76

Note: Boxes indicate the first to the third quartile and median date of the cumulative catch per unit effort (CPUE).

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

^b Fifteenth percentile from years 1989 to 2008.

Appendix B11.—Daily and cumulative CPUE for Chinook salmon set gillnet test fishery sites in 2010, compared to historic and late year average run timing, 1989 to 2008.



Note: The symbols along the cumulative index lines represent the first to third quartile of the cumulative index. The median date of the cumulative index is represented by the center symbol.

Appendix B12.–Big Eddy and Middle Mouth summer chum salmon daily and cumulative index, cooperative 5.5" mesh drift gillnet test fishery, Lower Yukon River, 2010.

Date	Summer Chum Salmon in 5.5" Drift Gillnet											
	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined			
	Daily Catch	Daily Index	Proportion	Cumulative Index	Daily Catch	Daily Index	Proportion	Cumulative Index	Daily Catch	Daily Index	Proportion	Cumulative Index
5/26												
5/27												
5/28												
5/29												
5/30												
5/31												
6/1												
6/2												
6/3												
6/4												
6/5												
6/6	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
6/7	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
6/8	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
6/9	0	0.00	0.00	0.00	0	0.00	0.00	0.00	0	0.00	0.00	0.00
6/10	3	4.29	0.00	4.29	0	0.00	0.00	0.00	3	4.29	0.00	4.29
6/11	0	2.86	0.00	7.15	0	0.00	0.00	0.00	0	2.86	0.00	7.15
6/12	6	9.12	0.00	16.26	0 ^b	0.00	0.00	0.00	6	9.12	0.00	16.26
6/13	6	9.23	0.01	25.49	0	0.00	0.00	0.00	6	9.23	0.01	25.49
6/14	27	41.50	0.02	66.99	0	0.00	0.00	0.00	27	41.50	0.01	66.99
6/15	73	100.60	0.05	167.59	8	14.81	0.01	14.81	81	115.40	0.04	182.40
6/16	106	129.76	0.09	297.35	13	19.47	0.02	34.28	119	149.23	0.07	331.62
6/17	191	326.36	0.18	623.71	17	47.84	0.05	82.12	208	374.20	0.15	705.82
6/18	80	300.01	0.27	923.72	26	96.00	0.12	178.12	106	396.01	0.23	1,101.84
6/19	63	198.17	0.33	1,121.89	27	72.52	0.17	250.64	90	270.69	0.28	1,372.53
6/20	82	292.33	0.41	1,414.22	9	23.72	0.18	274.35	91	316.05	0.35	1,688.57
6/21	87	243.26	0.48	1,657.48	4	11.19	0.19	285.54	91	254.45	0.40	1,943.02
6/22	42	73.56	0.50	1,731.04	21	28.56	0.21	314.10	42	73.56	0.41	2,016.58
6/23	22	55.24	0.52	1,786.28	20	28.86	0.23	342.96	42	84.10	0.43	2,100.68
6/24	45	153.99	0.57	1,940.27	13	20.73	0.24	363.69	58	174.72	0.47	2,275.40
6/25	13	21.85	0.57	1,962.12	16	23.02	0.26	386.71	29	44.87	0.48	2,320.27

-continued-

Appendix B12.–Page 2 of 2.

Summer Chum Salmon in 5.5" Drift Gillnet												
Date	Big Eddy Drift				Middle Mouth Drift				Big Eddy and Middle Mouth Combined			
	Daily Catch	Daily Index	Proportion	Cumulative Index	Daily Catch	Daily Index	Proportion	Cumulative Index	Daily Catch	Daily Index	Proportion	Cumulative Index
6/26	102	187.52	0.63	2,149.63	63	110.64	0.33	497.36	165	298.16	0.54	2,618.43
6/27	34	118.50	0.66	2,268.14	80	248.05	0.49	745.40	114	366.55	0.61	2,984.97
6/28	25	52.37 ^a	0.68	2,320.51	57 ^a	184.47	0.62	929.87	82	236.84	0.66	3,221.82
6/29	18	33.28	0.69	2,353.78	69	87.32	0.68	1,017.20	87	120.60	0.69	3,342.42
6/30	14	24.23	0.69	2,378.01	13	19.66	0.69	1,036.85	14	43.89	0.70	3,386.30
7/1	8	12.31 ^b	0.70	2,390.32	11 ^b	22.46	0.70	1,059.31	19	34.77	0.70	3,421.07
7/2	43	66.15	0.72	2,456.47	16	25.14	0.72	1,084.45	59	91.29	0.72	3,512.37
7/3	18	39.03	0.73	2,495.50	28	37.92	0.75	1,122.37	46	76.95	0.74	3,589.31
7/4	11	42.88 ^a	0.74	2,538.38	35 ^a	103.65	0.81	1,226.02	46	103.65	0.76	3,692.96
7/5	92	157.95	0.79	2,696.33	42	67.20	0.86	1,293.22	134	225.15	0.81	3,918.11
7/6	106	332.21	0.88	3,028.53	44	78.46	0.91	1,371.68	106	410.67	0.89	4,328.78
7/7	43	87.81	0.91	3,116.34	26	37.81	0.94	1,409.49	69	125.62	0.92	4,454.40
7/8	43	95.81	0.94	3,212.15	29	39.33	0.96	1,448.82	72	135.14	0.94	4,589.54
7/9	27	60.04	0.95	3,272.20	13	17.67	0.97	1,466.49	40	77.71	0.96	4,667.25
7/10	6	15.89	0.96	3,288.09	17	22.16	0.99	1,488.65	23	38.05	0.97	4,705.30
7/11	5	15.38 ^a	0.96	3,303.47	6 ^{a,c}	17.58	1.00	1,506.23	11	32.97	0.97	4,738.27
7/12	46	112.59	1.00	3,416.06					46	112.59	1.00	4,850.86
7/13	3	9.23	1.00	3,425.29					3	9.23	1.00	4,860.09
7/14	2	3.89 ^c	1.00	3,429.18					2	3.89	1.00	4,863.98
7/15	-	-	-	-					-	-	-	-
Total	1,492			3,429.18	723			1,506.23	2,137			4,863.98

Note: The box within the column indicates the first to the third quartile and median date of the cumulative index.

^a Drift schedule was altered, only two drifts were conducted.

^b Drift schedule was altered, only three drifts were conducted.

^c Last day of project operation.

Appendix B13.–Fall chum and coho salmon, daily and cumulative catch per unit effort (CPUE), index, cooperative drift gillnet (6") test fishery, Big Eddy and Middle Mouth sites combined, Lower Yukon River, 2001 to 2009 compared to 2010.

Date	Historical	Fall Chum Salmon								Historical	Coho Salmon							
	Median	2001 to 2009 Average				2010				Median	2001 to 2009 Average				2010			
	Cumulative Percent ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Cumulative Percent ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Daily Catch	Daily Index	%	Cumulative Index ^a
7/16	0.01	23	15.71	0.01	15.71	18	15.82	0.01	15.82	0.00	1	0.00	0.00	0.00	0	0.00	0.00	0.00
7/17	0.04	33	25.11	0.03	40.82	40	28.41	0.04	44.23	0.00	1	0.07	0.00	0.07	0	0.00	0.00	0.00
7/18	0.06	43	42.72	0.06	83.54	108	84.79	0.10	129.02	0.00	0	0.00	0.00	0.07	0	0.00	0.00	0.00
7/19	0.09	22	20.31	0.07	103.85	58	47.19	0.14	176.21	0.00	0	0.00	0.00	0.07	0	0.00	0.00	0.00
7/20	0.11	6	4.99	0.08	108.83	16	11.76	0.15	187.98	0.00	0	0.00	0.00	0.07	0	0.00	0.00	0.00
7/21	0.13	11	8.33	0.09	117.16	5	3.66	0.15	191.64	0.00	0	0.00	0.00	0.07	0	0.00	0.00	0.00
7/22	0.15	10	7.11	0.09	124.27	2	1.52	0.16	193.16	0.00	0	0.09	0.00	0.16	0	0.00	0.00	0.00
7/23	0.17	8	8.86	0.10	133.13	44	31.87	0.18	225.03	0.00	1	0.26	0.00	0.42	2	1.50	0.00	1.50
7/24	0.19	13	10.10	0.11	143.23	22	16.51	0.19	241.53	0.00	0	0.10	0.00	0.52	0	0.00	0.00	1.50
7/25	0.23	15	11.96	0.12	155.20	16	11.67	0.20	253.20	0.00	0	0.00	0.00	0.52	0	0.00	0.00	1.50
7/26	0.25	5	3.67	0.13	158.86	3	2.27	0.21	255.47	0.00	0	0.25	0.00	0.77	0	0.00	0.00	1.50
7/27	0.30	29	25.32	0.15	184.18	6	4.69	0.21	260.16	0.00	2	1.71	0.01	2.48	0	0.00	0.00	1.50
7/28	0.32	20	22.35	0.17	206.53	37	23.05	0.23	283.21	0.00	1	0.92	0.01	3.40	2	1.02	0.01	2.52
7/29	0.34	34	28.92	0.19	235.45	38	28.04	0.25	311.25	0.00	2	1.75	0.02	5.15	2	1.48	0.01	4.00
7/30	0.35	23	22.04	0.22	257.49	7	5.58	0.26	316.83	0.01	5	2.25	0.02	7.41	0	0.00	0.01	4.00
7/31	0.37	65	77.76	0.27	335.25	7	4.86	0.26	321.69	0.01	5	2.12	0.03	9.53	3	2.20	0.02	6.19
8/1	0.38	50	36.38	0.30	371.63	3	2.36	0.26	324.04	0.01	3	1.69	0.04	11.22	1	0.73	0.02	6.93
8/2	0.39	40	29.05	0.33	400.68	1	0.71	0.26	324.76	0.01	5	3.24	0.05	14.46	0	0.00	0.02	6.93
8/3	0.41	56	41.02	0.37	441.70	29	20.65	0.28	345.41	0.02	15	9.83	0.07	24.29	5	3.55	0.03	10.48
8/4	0.45	36	25.01	0.39	466.70	1	0.71	0.28	346.12	0.02	12	9.05	0.08	33.34	0	0.00	0.03	10.48
8/5	0.49	18	19.14	0.40	485.85	1	0.73	0.28	346.85	0.04	5	4.07	0.09	37.41	2	1.59	0.03	12.07
8/6	0.53	42	56.36	0.44	542.21	163	130.12	0.38	476.97	0.04	7	7.82	0.12	45.23	5	3.40	0.04	15.46
8/7	0.55	70	49.18	0.48	591.39	26	18.71	0.40	495.69	0.06	25	15.45	0.16	60.68	6	4.82	0.05	20.28
8/8	0.58	39	29.00	0.52	620.39	0	0.00	0.40	495.69	0.08	14	10.61	0.19	71.29	1	0.75	0.05	21.03
8/9	0.62	40	28.24	0.56	648.63	94	62.82	0.45	558.51	0.11	20	10.81	0.23	82.10	7	4.70	0.06	25.73
8/10	0.66	24	16.69	0.58	665.32	151	136.27	0.56	694.78	0.13	16	12.70	0.26	94.80	42	36.38	0.15	62.12
8/11	0.69	8	6.84	0.58	672.16	20	14.41	0.57	709.20	0.15	10	8.77	0.29	103.57	38	26.31	0.21	88.42
8/12	0.70	50	46.00	0.63	718.16	6	4.20	0.58	713.39	0.20	22	16.86	0.33	120.43	21	15.17	0.25	103.59
8/13	0.72	57	49.51	0.68	767.67	7	5.11	0.58	718.50	0.23	27	22.25	0.39	142.68	10	7.47	0.27	111.06
8/14	0.74	26	23.14	0.70	790.80	1	0.75	0.58	719.25	0.34	23	19.04	0.44	161.72	2	1.49	0.27	112.55
8/15	0.77	29	41.42	0.74	832.22	0 ^b	0.00	0.58	719.25	0.39	28	39.24	0.52	200.96	0 ^b	0.00	0.27	112.55
8/16	0.82	43	42.83	0.79	875.05	176	200.98	0.74	920.23	0.45	20	20.82	0.57	221.78	53	72.56	0.45	185.11
8/17	0.83	15	12.64	0.80	887.69	101	94.76	0.82	1,014.99	0.51	16	13.40	0.61	235.19	47	42.67	0.55	227.77
8/18	0.85	15	13.45	0.81	901.14	78	54.59	0.86	1,069.58	0.58	13	10.79	0.64	245.98	31	23.05	0.61	250.82
8/19	0.87	32	26.37	0.84	927.51	68	46.55	0.90	1,116.13	0.62	25	15.97	0.70	261.95	49	32.38	0.69	283.20

-continued-

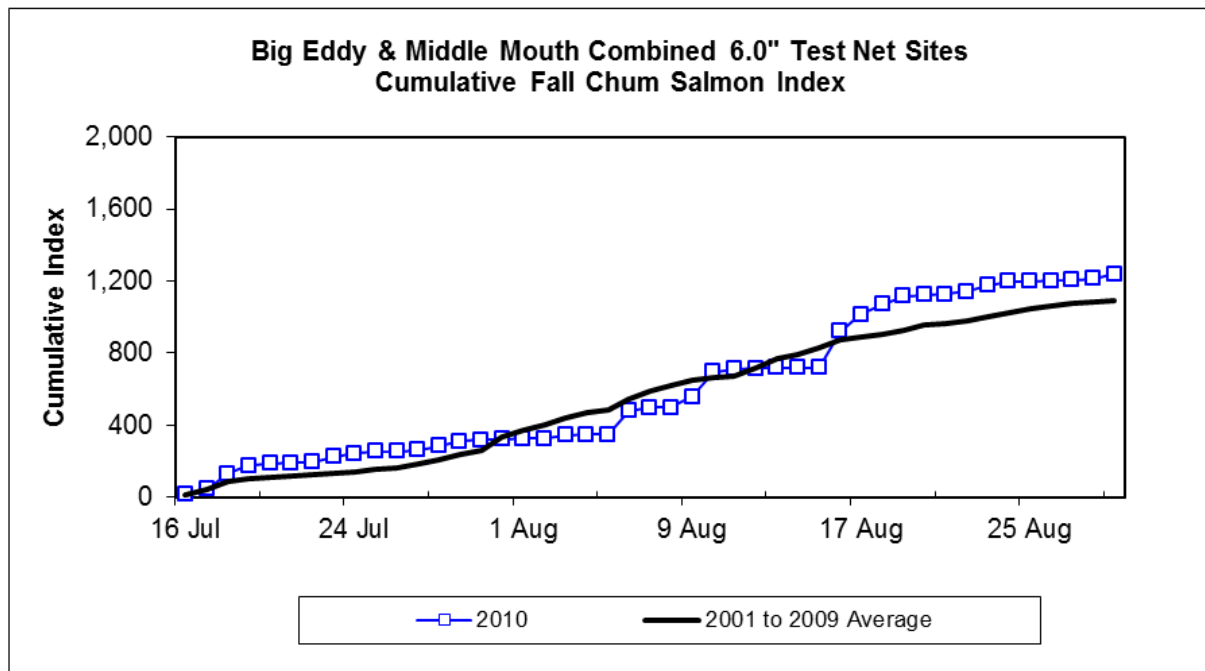
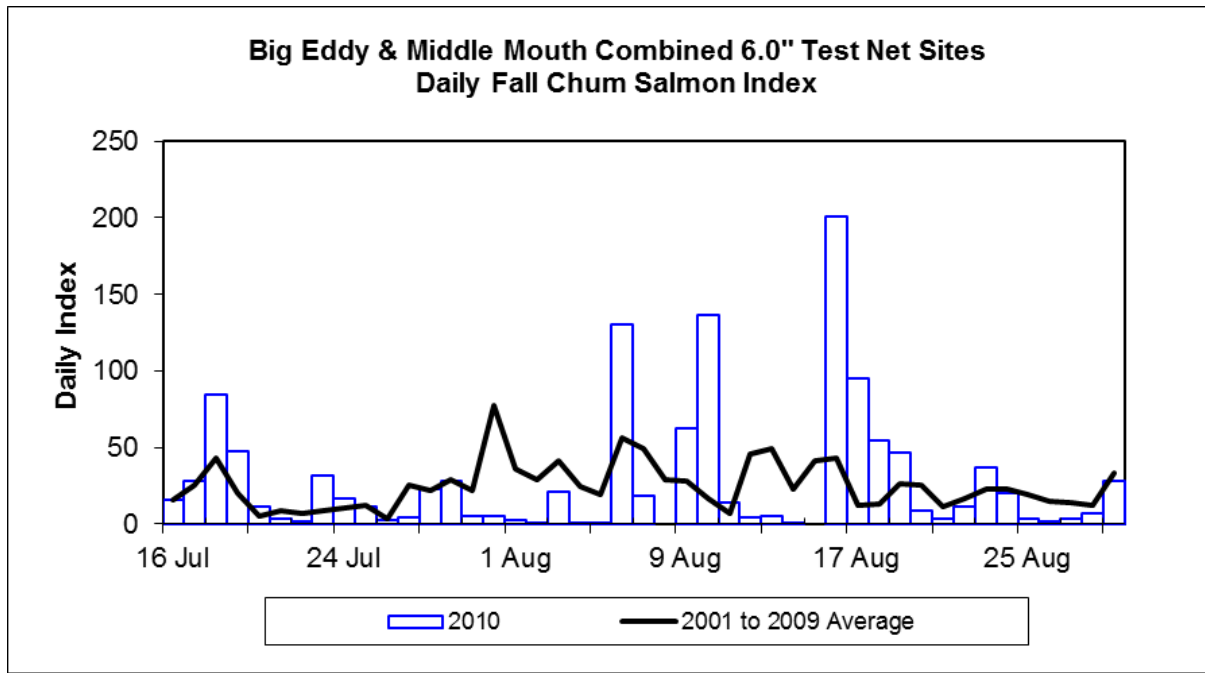
Appendix B13.–Page 2 of 2.

Date	Historical	Fall Chum Salmon								Historical	Coho Salmon							
	Median	2001 to 2009 Average				2010				Median	2001 to 2009 Average				2010			
	Cumulative Percent ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Cumulative Percent ^a	Daily Catch	Daily Index	%	Cumulative Index ^a	Daily Catch	Daily Index	%	Cumulative Index ^a
8/20	0.89	29	25.63	0.87	953.14	11	8.28	0.91	1,124.41	0.68	13	12.66	0.75	274.60	17	13.46	0.72	296.66
8/21	0.91	14	11.54	0.88	964.68	5	3.77	0.91	1,128.18	0.70	11	13.43	0.79	288.03	11	8.26	0.74	304.91
8/22	0.93	21	16.54	0.90	981.22	17	11.62	0.92	1,139.80	0.75	19	14.00	0.83	302.03	32	21.76	0.79	326.68
8/23	0.94	17	23.14	0.91	1,004.36	53	36.64	0.95	1,176.44	0.80	8	7.80	0.85	309.83	37	26.17	0.86	352.84
8/24	0.96	26	22.68	0.93	1,027.04	27	19.87	0.96	1,196.31	0.87	8	8.00	0.88	317.83	15	11.09	0.88	363.93
8/25	0.97	17	18.95	0.95	1,045.99	4	3.06	0.97	1,199.36	0.89	8	9.11	0.91	326.94	7	5.20	0.90	369.13
8/26	0.98	16	14.85	0.97	1,060.83	2	1.58	0.97	1,200.94	0.91	10	8.40	0.94	335.34	2	1.60	0.90	370.73
8/27	0.99	19	14.44	0.99	1,075.27	5	3.75	0.97	1,204.69	0.97	15	10.90	0.98	346.24	4	3.02	0.91	373.74
8/28	1.00	17	11.83	1.00	1,085.79	9	7.00	0.98	1,211.69	1.00	8	6.17	0.99	351.72	4	3.02	0.92	376.76
8/29	1.00	30	33.59	1.00	1,089.52	37	28.46	1.00	1,240.15	1.00	15	17.87	1.00	353.71	45	34.62	1.00	411.38
Total		1,261				1,523					439				503			

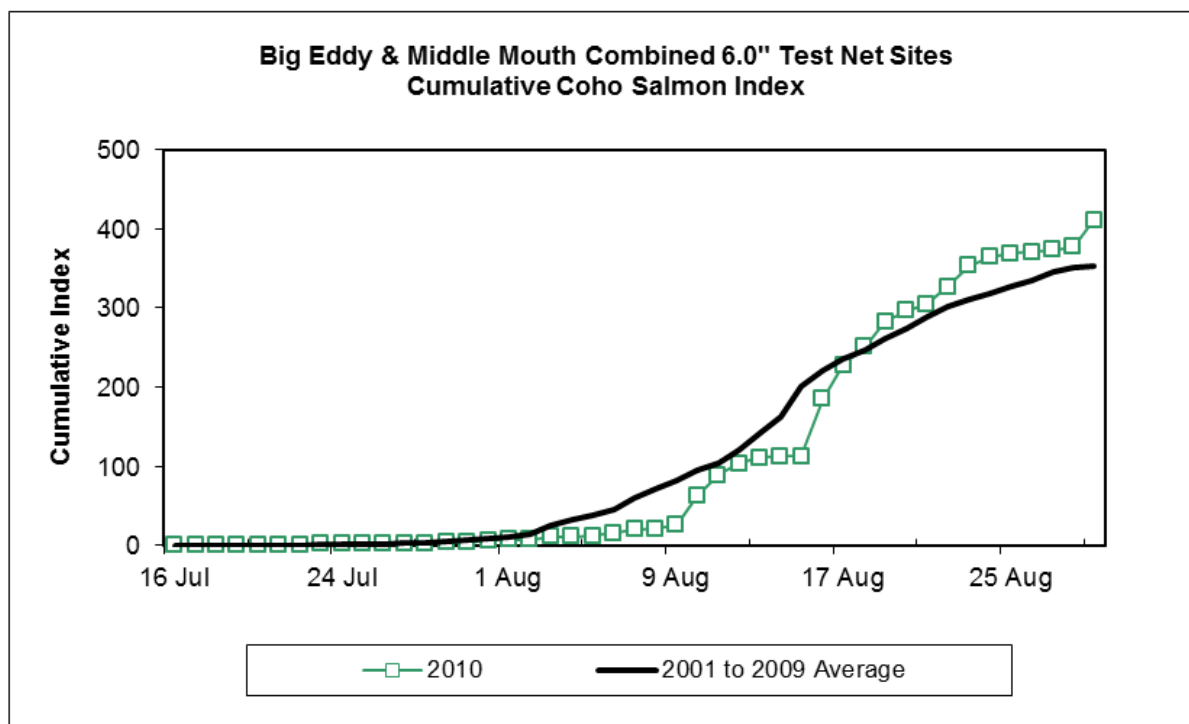
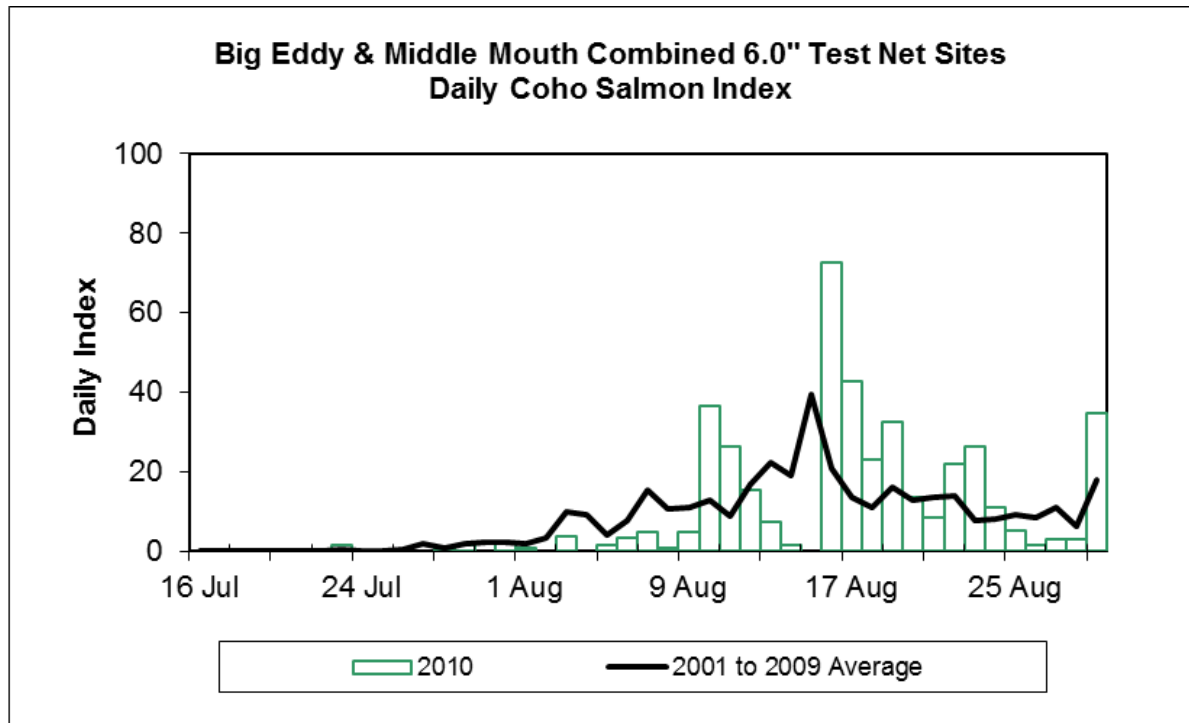
^a Historical percent passage is based on the median from the set net test fishery 1980 to 1993 and 1995 to 2000. The box indicates the first to the third quartile and median date of the cumulative catch per unit effort (CPUE).

^b Project did not operate due to inclement weather.

Appendix B14.–Fall chum salmon daily and cumulative catch per unit effort (CPUE) index, Big Eddy and Middle Mouth sites combined, cooperative drift net test fishery, Lower Yukon River, 2001 to 2009 compared to 2010.



Appendix B15.—Coho salmon daily and cumulative catch per unit effort (CPUE) index, Big Eddy and Middle Mouth sites combined, cooperative drift net test fishery, Lower Yukon River, 2001 to 2009 compared to 2010.



APPENDIX C

Appendix C1.—Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 2010.

Beach Seine, Purse Seine, Set Gillnet and Fish Wheel Combined ^a													
Statistical Area	Number of Fishermen ^b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0				0	0	0	0	0	0	0	0	0
334-43	0				0	0	0	0	0	0	0	0	0
334-44	0	NO COMMERCIAL FISHING			0	0	0	0	0	0	0	0	0
334-45	0				0	0	0	0	0	0	0	0	0
334-46	5				44,207	0	44,207	0	0	0	0	0	0
334-47	0				0	0	0	0	0	0	0	0	0
Subtotal													
District 4	5	0	0	0	44,207	0	44,207	0	0	0	0	0	0
334-51													
334-52													
334-53		NO COMMERCIAL FISHING											
334-54													
334-55													
Subtotal													
District 5	0	0	0	0	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	9	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal													
District 6	9	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700
Total Upper Yukon Area	14	0	0	0	49,673	0	49,673	1,735	0	1,735	1,700	0	1,700

^a The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

^b The number of fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C2.—Commercial set gillnet salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2010.

Set Gillnet ^a													
Statistical Area	Number of Fishermen ^b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
				Harvest			Harvest			Harvest			Harvest
334-42	0				0	0	0	0	0	0	0	0	0
334-43	0				0	0	0	0	0	0	0	0	0
334-44	0	NO COMMERCIAL FISHING			0	0	0	0	0	0	0	0	0
334-45	0				0	0	0	0	0	0	0	0	0
334-46	0				0	0	0	0	0	0	0	0	0
334-47	0				0	0	0	0	0	0	0	0	0
Subtotal													
District 4	0	0	0	0	0	0	0	0	0	0	0	0	0
334-51													
334-52													
334-53		NO COMMERCIAL FISHING											
334-54													
334-55													
Subtotal													
District 5	0	0	0	0	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	0	0	0	0	0	0	0	0	0	0	0	0	0
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal													
District 6	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Upper Yukon Area	0	0	0	0	0	0	0	0	0	0	0	0	0

^a The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

^b The number of fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C3.—Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 2010.

Fish Wheel ^a													
Statistical Area	Number of Fishermen ^b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest	Number	Roe	Estimated Harvest
334-42	0	NO COMMERCIAL FISHING			0	0	0	0	0	0	0	0	0
334-43	0				0	0	0	0	0	0	0	0	0
334-44	0				0	0	0	0	0	0	0	0	0
334-45	0				0	0	0	0	0	0	0	0	0
334-46	5				44,207	0	44,207	0	0	0	0	0	0
334-47	0				0	0	0	0	0	0	0	0	0
Subtotal													
District 4	5	0	0	0	44,207	0	44,207	0	0	0	0	0	0
334-51													
334-52													
334-53		NO COMMERCIAL FISHING											
334-54													
334-55													
Subtotal													
District 5	0	0	0	0	0	0	0	0	0	0	0	0	0
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	9	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal													
District 6	9	0	0	0	5,466	0	5,466	1,735	0	1,735	1,700	0	1,700
Total Upper													
Yukon Area	14	0	0	0	49,673	0	49,673	1,735	0	1,735	1,700	0	1,700

^a The estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

^b The number of fishermen is the unique number of permits fished i.e., some fishermen may fish multiple areas, therefore the subtotals will not necessarily add up by district.

Appendix C4.—Commercial Chinook sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Cook Inlet, 1974–2010.

Year	334-41			334-44			334-45			334-46			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1975	15	-	15	-	-	-	-	-	-	-	-	-	15	-	15
1976	44	-	44	-	-	-	-	-	-	-	-	-	44	-	44
1977	317	-	317	-	-	-	-	-	-	-	-	-	317	-	317
1978	183	-	183	-	-	-	-	-	-	-	-	-	183	-	183
1979	785	-	785	-	-	-	-	-	-	-	-	-	785	-	785
1980	352	-	352	-	-	-	-	-	-	-	-	-	352	-	352
1981	106	-	106	-	-	-	-	-	-	-	-	-	106	-	106
1982	78	-	78	-	-	-	-	-	-	-	-	-	78	-	78
1983	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1984	2	-	2	-	-	-	-	-	-	-	-	-	2	-	2
1985	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1986	11	-	11	-	-	-	-	-	-	-	-	-	11	-	11
1987	91	-	91	-	-	-	-	-	-	-	-	-	91	-	91
1988	19	-	19	-	-	-	-	-	-	-	-	-	19	-	19
1989	59	-	59	-	-	-	-	-	-	-	-	-	59	-	59
1990 ^d				0	8	2	0	0	0	52	0	52	52	8	54
1991				0	67	35	0	7	4	69	88	114	69	162	153
1992				0	0	0	0	15	9	0	71	41	0	86	50
1993				0	0	0	0	0	0	0	0	0	0	0	0
1994				0	0	0	0	0	0	0	14	7	0	14	7
1995				0	0	0	0	0	0	0	0	0	0	0	0
1996				0	0	0	0	0	0	0	0	0	0	0	0
1997				-	-	-	-	-	-	-	-	-	-	-	-
1998				-	-	-	-	-	-	-	-	-	-	-	-
1999				-	-	-	-	-	-	-	-	-	-	-	-
2000				-	-	-	-	-	-	-	-	-	-	-	-

-continued-

Appendix C4.–Page 2 of 2.

Year	334-41			334-44			334-45			334-46			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
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
2005-2009															
Average				0	0	0	0	0	0	0	0	0	0	0	0

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

^d In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

Appendix C5.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2010.

Year	334-42			334-43			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	685	-	685	-	-	-	685	-	685
1975	374	-	374	-	-	-	374	-	374
1976	365	-	365	-	-	-	365	-	365
1977	668	-	668	-	-	-	668	-	668
1978	425	-	425	-	-	-	425	-	425
1979 ^d	370	-	370	834	-	834	1,204	-	1,204
1980	549	-	549	620	-	620	1,169	-	1,169
1981	867	-	867	374	-	374	1,241	-	1,241
1982	497	-	497	512	-	512	1,009	-	1,009
1983	382	-	382	219	-	219	601	-	601
1984	272	-	272	687	-	687	959	-	959
1985	318	-	318	346	-	346	664	-	664
1986	100	-	100	391	-	391	491	-	491
1987	999	-	999	434	-	434	1,433	-	1,433
1988	1,599	-	1,599	1,541	-	1,541	3,140	-	3,140
1989	696	-	696	2,035	-	2,035	2,731	-	2,731
1990	784	0	784	2,700	0	2,700	3,484	0	3,484
1991	916	386	1,113	1,461	1,674	2,316	2,377	2,060	3,429
1992	623	482	818	1,028	1,705	1,526	1,651	2,187	2,344
1993	190	279	269	1,159	422	1,308	1,349	701	1,577
1994	389	374	539	1,827	176	1,897	2,216	550	2,436
1995	262	30	262	0	596	237	262	626	499
1996	11	202	103	34	0	34	45	202	137
1997	326	14	333	1,124	0	1,124	1,450	14	1,457
1998	0	0	0	0	0	0	0	0	0
1999	233	0	233	1,204	0	1,204	1,437	0	1,437
2000	0	0	0	0	0	0	0	0	0
2001	-	-	-	-	-	-	-	-	-
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	562	0	562	562	0	562
2004	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-
2005-2009									
Average	-	-	-	-	-	-	-	-	-

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

^d In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C6.–Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974–2010.

Year	334-51			334-52			334-53			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	2,284	-	2,284	379	-	379	-	-	-	2,663	-	2,663
1975	2,602	-	2,602	270	-	270	-	-	-	2,872	-	2,872
1976	2,843	-	2,843	308	-	308	-	-	-	3,151	-	3,151
1977	4,013	-	4,013	149	-	149	-	-	-	4,162	-	4,162
1978	2,838	-	2,838	241	-	241	-	-	-	3,079	-	3,079
1979	3,389	-	3,389	0	-	0	-	-	-	3,389	-	3,389
1980	4,554	-	4,554	337	-	337	-	-	-	4,891	-	4,891
1981	97	-	97	3,051	-	3,051	2,477	-	2,477	5,625	-	5,625
1982	61	-	61	2,352	-	2,352	2,277	-	2,277	4,690	-	4,690
1983	0	-	0	632	-	632	2,738	-	2,738	3,370	-	3,370
1984	128	-	128	1,589	-	1,589	1,568	-	1,568	3,285	-	3,285
1985	0	-	0	1,142	-	1,142	1,842	-	1,842	2,984	-	2,984
1986	0	-	0	1,552	-	1,552	875	-	875	2,427	-	2,427
1987	0	-	0	1,183	-	1,183	1,356	-	1,356	2,539	-	2,539
1988	0	-	0	1,498	-	1,498	1,477	-	1,477	2,975	-	2,975
1989	31	-	31	1,411	-	1,411	1,459	-	1,459	2,901	-	2,901
1990	0	0	0	1,630	47	1,642	1,180	0	1,180	2,810	47	2,822
1991	56	0	56	1,724	62	1,740	1,476	0	1,476	3,256	62	3,272
1992	0	0	0	1,276	7	1,279	2,119	0	2,119	3,395	7	3,398
1993	0	0	0	1,124	0	1,124	1,484	0	1,484	2,608	0	2,608
1994	0	0	0	1,648	10	1,653	1,641	0	1,641	3,289	10	3,294
1995	0	0	0	1,519	0	1,519	1,234	0	1,234	2,753	0	2,753
1996	0	0	0	898	455	1,216	1,151	63	1,183	2,049	518	2,399
1997	0	0	0	1,314	0	1,314	1,757	0	1,757	3,071	0	3,071
1998	0	0	0	279	0	279	196	0	196	475	0	475
1999	0	0	0	1,468	0	1,468	721	0	721	2,189	0	2,189
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	0	0	0	307	0	307	257	0	257	564	0	564
2003	0	0	0	711	0	711	197	0	197	908	0	908
2004	0	0	0	1,317	0	1,317	229	0	229	1,546	0	1,546
2005	0	0	0	1,297	0	1,297	172	0	172	1,469	0	1,469
2006	0	0	0	1,358	0	1,358	481	0	481	1,839	0	1,839
2007	0	0	0	1,064	0	1,064	177	0	177	1,241	0	1,241
2008	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-
2005-2009												
Average	0	0	0	1,240	0	1,240	277	0	277	1,516	0	1,516

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 653 Chinook salmon.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

Appendix C7.—Commercial Chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974–2010.

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 ^d	749	-	749	-	-	-	749	-	749
1982	695	-	695	-	-	-	695	-	695
1983	236	-	236	-	-	-	236	-	236
1984	384	-	384	-	-	-	384	-	384
1985	434	-	434	-	-	-	434	-	434
1986	306	-	306	-	-	-	306	-	306
1987	566	-	566	-	-	-	566	-	566
1988	461	-	461	-	-	-	461	-	461
1989	385	-	385	-	-	-	385	-	385
1990 ^e	194	0	194	349	0	349	543	0	543
1991	192	0	192	362	0	362	554	0	554
1992	0	0	0	457	0	457	457	0	457
1993	0	0	0	400	0	400	400	0	400
1994	0	0	0	450	0	450	450	0	450
1995	0	0	0	489	0	489	489	0	489
1996	58	0	58	390	0	390	448	0	448
1997	262	0	262	345	0	345	607	0	607
1998	11	0	11	31	0	31	42	0	42
1999	81	0	81	334	0	334	415	0	415
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	0	0	0	207	0	207	207	0	207
2003	0	0	0	226	0	226	226	0	226
2004	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-
2005-2009									
Average	-	-	-	-	-	-	-	-	-

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

^e In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C8.—Commercial Chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	111	-	111	1,102	-	1,102	260	-	260	1,473	-	1,473
1975	77	-	77	153	-	153	270	-	270	500	-	500
1976	490	-	490	320	-	320	292	-	292	1,102	-	1,102
1977	405	-	405	365	-	365	238	-	238	1,008	-	1,008
1978	34	-	34	58	-	58	543	-	543	635	-	635
1979	102	-	102	336	-	336	334	-	334	772	-	772
1980	92	-	92	1,588	-	1,588	267	-	267	1,947	-	1,947
1981	438	-	438	366	-	366	183	-	183	987	-	987
1982	414	-	414	309	-	309	258	-	258	981	-	981
1983	249	-	249	364	-	364	298	-	298	911	-	911
1984	0	-	0	375	-	375	492	-	492	867	-	867
1985	15	-	15	560	-	560	567	-	567	1,142	-	1,142
1986	0	-	0	597	-	597	353	-	353	950	-	950
1987	0	-	0	600	-	600	602	-	602	1,202	-	1,202
1988	305	-	305	253	-	253	204	-	204	762	-	762
1989	809	-	809	614	-	614	318	-	318	1,741	-	1,741
1990	326	0	326	1,243	1,354	1,565	188	322	265	1,757	1,676	2,156
1991	117	0	117	450	1,365	791	119	180	164	686	1,545	1,072
1992	39	0	39	371	679	510	162	205	204	572	884	753
1993	57	0	57	810	1,213	1,116	246	100	272	1,113	1,313	1,445
1994	0	0	0	1,941	1,513	2,333	194	307	273	2,135	1,820	2,606
1995	0	110	26	1,418	3,783	2,287	242	838	434	1,660	4,731	2,747
1996	0	0	0	110	645	255	168	105	192	278	750	447
1997	38	0	38	1,662	2,816	2,334	266	395	356	1,966	3,211	2,728
1998	217	0	217	431	208	496	234	52	250	882	260	963
1999	0	0	0	269	734	462	133	362	228	402	1,096	690
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	0	0	0	732	896	962	104	0	104	836	896	1,066
2003	0	0	0	1,445	0	1,445	368	0	368	1,813	0	1,813

-continued-

Appendix C8.–Page 2 of 2.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
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
2005-2009												
Average	0	0	0	99	0	99	64	0	64	164	0	164

Note: Unless otherwise indicate blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 2,136 Chinook salmon.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

Appendix C9.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974–2010.

Year	334-41					334-44				
	Roe Expansion				Estimated Harvest ^e	Roe Expansion				Estimated Harvest ^e
	Number ^a	Roe ^b	Males ^c	Females ^d		Number ^a	Roe ^b	Males ^c	Females ^d	
1974		0	0	0		-	-	-	-	-
1975		0	0	0		-	-	-	-	-
1976		0	0	0		-	-	-	-	-
1977		0	0	0		-	-	-	-	-
1978		16,920	0	16,920		-	-	-	-	-
1979		35,117	0	35,117		-	-	-	-	-
1980		119,957	0	119,957		-	-	-	-	-
1981		160,757	123,266 ^f	160,757		-	-	-	-	-
1982	1,032	137,611	95,788	137,611	234,431	-	-	-	-	-
1983	3,407	130,013	90,740	130,013	224,160	-	-	-	-	-
1984	51	148,519	98,962	148,519	247,532	-	-	-	-	-
1985	5,130	222,149	157,062	222,149	384,341	-	-	-	-	-
1986	0	236,856	172,222	236,856	409,078	-	-	-	-	-
1987	29,314	110,977	51,379	110,977	191,670	-	-	-	-	-
1988	19,070	230,276	167,594	256,718 ^g	443,382	-	-	-	-	-
1989	14,397	270,039	170,322	301,383 ^h	486,102	-	-	-	-	-
1990	i					0	27,628	24,484	31,409	55,893
1991						88	39,281	37,164	47,574	84,826
1992						0	20,444	13,192	22,383	35,575
1993						0	6,234	4,308	7,334	11,642
1994	j					0	18,095	12,937	22,606	35,543
1995						0	37,595	37,575	46,084	83,659
1996						0	31,186	26,210	34,592	60,802
1997						0	14,188	10,905	15,118	26,023
1998						-	-	-	-	-
1999						-	-	-	-	-
2000						-	-	-	-	-
2001						-	-	-	-	-
2002						-	-	-	-	-
2003						-	-	-	-	-
2004						-	-	-	-	-
2005						-	-	-	-	-
2006						-	-	-	-	-
2007	k					5,359	-	-	-	5,359
2008	k					-	-	-	-	-
2009	k					3,890	-	-	-	3,890
2010	l					-	-	-	-	-
2005-2009										
Average						4,625				4,625

-continued-

Appendix C9.–Page 2 of 4.

243

Year	334-45					334-46				
	Roe Expansion				Estimated Harvest ^e	Roe Expansion				Estimated Harvest ^e
	Number ^a	Roe ^b	Males ^c	Females ^d		Number ^a	Roe ^b	Males ^c	Females ^d	
1974	-	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-
1990	i 427	28,181	24,153	32,166	56,746	10,750	39,732	29,490	44,742	84,982
1991	79	43,087	42,445	53,401	95,925	5,122	45,863	47,563	56,819	109,504
1992	0	35,312	26,463	40,142	66,605	0	43,945	32,502	49,489	81,991
1993	0	6,081	4,246	7,230	11,476	0	8,170	5,579	9,499	15,078
1994	j 0	15,091	11,031	19,276	30,307	0	29,615	28,825	37,119	65,944
1995	0	49,577	49,149	56,667	105,816	0	102,080	105,663	124,550	230,213
1996	0	40,692	30,785	45,483	76,268	0	109,172	98,926	120,942	219,868
1997	0	526	342	570	912	0	41,587	29,207	44,247	73,454
1998	-	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-
2007	k -	-	-	-	-	1,945	-	-	-	1,945
2008	k -	-	-	-	-	23,746	-	-	-	23,746
2009	k 699	-	-	-	699	-	-	-	-	-
2010	l -	-	-	-	-	44,207	-	-	-	44,207
2005-2009										
Average	699				699	12,846	-	-	-	12,846

-continued-

Appendix C9.–Page 3 of 4.

Year	Subtotal 334-41, 44, 45 and 46					334-47 (Anvik River)					Total (Subdistrict 4-A and Anvik)				
	Roe Expansion					Roe Expansion					Roe Expansion				
	Number ^a	Roe ^b	Males ^c	Females ^d	Estimated Harvest ^e	Number ^a	Roe ^b	Females ^d	Estimated Harvest ^e		Number ^a	Roe ^b	Males ^c	Females ^d	Estimated Harvest ^e
1974	0	0	0	0	-	-	-	-	-		0	0	0	0	
1975	0	0	0	0	-	-	-	-	-		0	0	0	0	
1976	0	0	0	0	-	-	-	-	-		0	0	0	0	
1977	0	0	0	0	-	-	-	-	-		0	0	0	0	
1978	0	16,920	0	16,920	-	-	-	-	-		16,920	0	0	16,920	
1979	0	35,117	0	35,117	-	-	-	-	-		35,117	0	0	35,117	
1980	0	119,957	0	119,957	-	-	-	-	-		119,957	0	0	119,957	
1981	0	160,757	123,266	160,757	-	-	-	-	-		160,757	123,266 ^f	123,266	160,757	
1982	1,032	137,611	95,788	137,611	234,431	-	-	-	-		1,032	137,611	95,788	137,611	234,431
1983	3,407	130,013	90,740	130,013	224,160	-	-	-	-		3,407	130,013	90,740	130,013	224,160
1984	51	148,519	98,962	148,519	247,532	-	-	-	-		51	148,519	98,962	148,519	247,532
1985	5,130	222,149	157,062	222,149	384,341	-	-	-	-		5,130	222,149	157,062	222,149	384,341
1986	0	236,856	172,222	236,856	409,078	-	-	-	-		0	236,856	172,222	236,856	409,078
1987	29,314	110,977	51,379	110,977	191,670	-	-	-	-		29,314	110,977	51,379	110,977	191,670
1988	19,070	230,276	167,594	230,276	443,382	-	-	-	-		19,070	230,276	167,594	230,276	443,382
1989	14,397	270,039	170,322	270,039	486,102	-	-	-	-		14,397	270,039	170,322	270,039	486,102
1990	11,177	95,541	78,127	95,541	197,621	-	-	-	-		11,177	95,541	78,127	95,541	197,621
1991	5,289	128,231	127,172	128,231	290,255	-	-	-	-		5,289	128,231	127,172	128,231	290,255
1992	0	99,701	72,158	99,701	184,171	-	-	-	-		0	99,701	72,158	99,701	184,171
1993	0	20,485	14,133	20,485	38,196	-	-	-	-		0	20,485	14,133	20,485	38,196
1994	0	62,801	52,794	62,801	131,794	0	19,532	22,574	19,532		0	82,333	52,794	101,574	154,368
1995	0	189,252	192,387	189,252	419,688	0	48,477	54,744	48,477		0	237,729	192,387	282,045	474,432
1996	0	181,050	155,921	181,050	356,938	0	76,318	84,663	76,318		0	257,368	155,921	285,680	441,601
1997	0	56,301	40,454	56,301	100,389	0	13,067	13,548	13,067		0	69,368	40,454	73,483	113,937
1998	-	-	-	-	-	-	-	-	-		-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2004	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-		-	-	-	-	-
2007	7,304	-	-	-	7,304	-	-	-	-		7,304	-	-	-	7,304
2008	23,746	-	-	-	23,746	-	-	-	-		23,746	-	-	-	23,746
2009	4,589	-	-	-	4,589	-	-	-	-		4,589	-	-	-	4,589
2010	44,207	-	-	-	44,207	-	-	-	-		44,207	-	-	-	44,207
2005-2009															
Average	11,880	-	-	-	11,880	-	-	-	-		11,880	-	-	-	11,880

-continued-

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Prior to 1981, it was assumed that all males were sold in the round. Since 1981, all fish sold in the round are assumed to be the estimated percentage of males in the harvest was based on percentage of males observed in the department Stink Creek test fish wheel catches (1981 - 0.434; 1982 - 0.413; 1983-0.420; 1984- 0.400; and 1985 - 0.422). For the years 1986 through 1988, was based on the average percentage of males observed in the Stink Creek test fishery for the years 1981 through 1985 (average of 0.421). For the year 1989, the estimated percentage of males in the harvest was .38. Since 1990, the estimated number is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, by period and gear type.

^d The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumes 1.0 pound of roe per female. Since 1991, the estimated number of females that produce the roe sold is based on a District 4 sample roe weight per female by statistical area, by period and gear type.

^e From 1974 to 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.

^f Assumes no males were sold in the round.

^g Roe expansion assumes 0.897 pound of roe per female.

^h Roe expansion assumes 0.896 pound of roe per female.

ⁱ In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

^j In 1994, Statistical Area 334-47 was included in Subdistrict 4-A and it represents the Anvik River Management Area.

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

^l Both males and females were purchased and are included in the number harvested.

Appendix C10.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974–2010.

Year	334-42				334-43				Total				
	Roe Expansion			Harvest ^d	Roe Expansion			Harvest ^d	Roe Expansion			Males ^e	Harvest ^d
	Number ^a	Roe ^b	Females ^c		Number ^a	Roe ^b	Females ^c		Number ^a	Roe ^b	Females ^c		
1974		0	0		-	-	-	-		0	0	0	
1975		0	0		-	-	-	-		0	0	0	
1976		0	0		-	-	-	-		0	0	0	
1977		0	0		-	-	-	-		0	0	0	
1978		0	0		-	-	-	-		0	0	0	
1979 ^f		200	200			0	0	^g		200	200		
1980		14,385	14,385			1,482	1,482	^g		15,867	15,867		
1981		23,677	23,677			2,598	2,598	^g		26,275	26,275		
1982	1,059	12,550	12,550	13,609	1,556	1,120	1,120	2,676	2,615	13,670	13,670	7,003	23,288
1983	3,265	17,549	17,549	20,814	0	563	563	563	3,265	18,112	18,112	9,851	31,228
1984	659	15,184	15,184	15,843	299	3,139	3,139	3,438	958	18,323	18,323	11,257	30,538
1985	1,785	19,306	19,306	21,091	5,092	5,630	5,630	10,722	6,877	24,936	24,936	11,329	43,142
1986	241	29,169	29,169	29,410	59	3,520	3,520	3,579	300	32,689	32,689	23,468	56,457
1987	593	9,956	9,956	10,549	84	541	541	625	677	10,497	10,497	6,956	18,130
1988	4,592	21,766	24,265 ^g	26,358	389	2,484	2,769 ^g	3,158	4,981	24,250	27,034 ^g	14,677	46,692
1989	2,940	9,915	11,066 ^h	12,855	1,217	3,351	3,740 ^h	4,957	4,157	13,266	14,806 ^h	5,179	24,142
1990	1,091	6,600	7,799	8,890	96	3,582	4,434	4,530	1,187	10,182	12,233	11,509	24,929
1991	1,092	8,282	8,996	10,088	0	719	781	781	1,092	9,001	9,777	8,520	19,389
1992	1,363	9,010	9,616	10,979	1,296	2,098	2,902	4,198	2,659	11,108	12,518	12,048	27,225
1993	0	1,851	2,134	4,445	27	111	140	316	27	1,962	2,274	2,460	4,761
1994	2,844	6,455		14,803	767	929		2,436	3,611	7,384			17,239
1995	8,873	39,699		73,570	0	3,646		6,585	8,873	43,345			80,155

-continued-

Appendix C10.–Page 2 of 2.

Year	334-42				334-43				Total				
	Number ^a	Roe Expansion			Number ^a	Roe Expansion			Number ^a	Roe Expansion			Males ^e Harvest ^d
		Roe ^b	Females ^c	Harvest ^d		Roe ^b	Females ^c	Harvest ^d		Roe ^b	Females ^c		
1996	0	36,927	39,156	67,012	0	895	939	1,627	0	37,822	40,095	28,544	68,639
1997	1,942	4,786	5,199	10,484	120	77	81	250	2,062	4,863	5,280	5,454	12,796
1998	-	-	-	-	-	-	-	-	-	-	-	-	-
1999	153	0	0	153	1,114	0	0	1,114	1,267	0	0	0	1,267
2000	-	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	62	0	0	62	62	0	0	0	62
2004	-	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-
2005-2009													
Average	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon sold.

^c The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of female that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

^d The total estimated harvest is the fish sold in the round plus estimated number of females harvested to produce roe sold plus the estimated number of males caught but not sold.

^e Estimated number of males caught but not sold. Total males caught but not sold calculated the same as for District 4-A (using sex ratio and sales in the round assumed to be male chum salmon).

^f In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

^g Roe expansion assumes 0.897 pound of roe per female.

^h Roe expansion assumes 0.896 pound of roe per female.

Appendix C11.–Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1974–2010.

Year	334-51			334-52			334-53			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974		0			0		-	-	-	6,831	0	6,831
1975		0			0		-	-	-	12,997	0	12,997
1976		0			0		-	-	-	774	0	774
1977		0			0		-	-	-	1,274	0	1,274
1978		605			0		-	-	-	4,892	605	5,497
1979		1,009			0		-	-	-	8,608	1,009	9,617
1980		0			0		-	-	-	456	0	456
1981 ^d		0			49			0		1,236	49	1,285
1982		21			0			0		213	21	234
1983	0	242	242	37	269	306	5	1,345	1,350	42	1,856	1,898
1984	50	0	50	578	47	625	12	0	12	640	47	687
1985	0	0	0	700	0	700	0	0	0	700	0	700
1986	0	0	0	682	0	682	8	0	8	690	0	690
1987	0	0	0	362	44	406	0	0	0	362	44	406
1988	0	0	0	717	337	1,054	5	26	31	722	363	1,085
1989	0	0	0	112	204	316	1	169	170	113	373	486
1990	0	0	0	0	225	250	5	350	394	5	575	644
1991	0	0	0	0	28	31	4	0	4	4	28	35
1992	0	0	0	30	295	358	72	0	72	102	295	430
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	133	212	368	96	0	96	229	212	464
1995	0	0	0	0	188	209	107	0	107	107	188	316
1996	0	0	0	0	0	0	0	188	209	0	188	209
1997	0	0	0	0	0	0	125	0	125	125	0	125
1998	0	0	0	37	13	51	59	0	59	96	13	110
1999	0	0	0	74	0	74	40	0	40	114	0	114
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	0	0	0	6	0	6	6	0	6
2003	-	-	-	0	0	0	0	0	0	0	0	0
2004	-	-	-	3	0	3	22	0	22	25	0	25
2005	-	-	-	0	0	0	0	0	0	0	0	0
2006	-	-	-	20	0	0	0	0	0	20	0	0
2007	-	-	-	0	0	0	0	0	0	0	0	0
2008	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-
2005-2009												
Average	-	-	-	7	0	0	0	0	0	7	0	0

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook roe. Since 1990, efforts were made to separate Chinook roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produced the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54). In 1990, Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

Appendix C12.—Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974–2010.

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981		0		-	-	-		0	
1982 ^d		0		-	-	-		0	
1983	0	0	0	-	-	-	0	0	0
1984	5	0	5	-	-	-	5	0	5
1985	0	0	0	-	-	-	0	0	0
1986	0	0	0	-	-	-	0	0	0
1987	0	0	0	-	-	-	0	0	0
1988	0	0	0	-	-	-	0	0	0
1989	41	0	41	-	-	-	41	0	41
1990 ^d	6	19	27	0	0	0	6	19	27
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	114	127	0	0	0	0	114	127
1997	12	0	12	0	0	0	12	0	12
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	1	0	1	1	0	1
2000	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-
2002	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0
2004	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-
2005-2009									
Average	-	-	-	-	-	-	-	-	-

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

^e In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C13.—Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974		0			0			0		13,318	0	13,318
1975		0			0			0		14,782	0	14,782
1976		0			0			0		6,617	0	6,617
1977		0			0			0		4,317	0	4,317
1978		1,468			6,116			652		34,814	8,236	43,050
1979										18,491	3,891	22,382
1980		0			2,272			1,010		35,855	3,282	39,137
1981		0			925			1,062		32,477	1,987	34,464
1982		0			1,027			490		21,597	1,517	23,114
1983	1,923	0	1,923	21,646	18	21,664	740	0	740	24,309	18	24,327
1984	3,769	0	3,769	42,231	152	42,383	10,249	183	10,432	56,249	335	56,584
1985	809	0	809	51,132	142	51,274	14,972	1,398	16,370	66,913	1,540	68,453
1986	4,697	0	4,697	31,647	1,711	33,358	14,139	435	14,574	50,483	2,146	52,629
1987	2,167	0	2,167	6,882	349	7,231	1,561	101	1,662	10,610	450	11,060
1988	7,978	71	8,049	24,911	1,165	26,076	7,240	410	7,650	40,129	1,646	41,775
1989	16,483	61	16,544	18,960	4,277	23,237	6,672	533	7,205	42,115	4,871	46,986
1990	2,862	12	2,877	6,028	1,637	8,011	2,237 ^d	1,410	3,945	11,127 ^d	3,059	14,833
1991	4,742	0	4,742	10,100	2,653	13,304	3,355	2,063	5,846	18,197	4,716	23,892
1992	1,327	0	1,327	3,446	1,684	5,409	256	208	492	5,029	1,892	7,228
1993	1,156	0	1,156	1,603	315	2,009	282	200	540	3,041	515	3,705
1994	5,114	0	5,114	13,805	5,643	21,182	2,289	2,185	5,138	21,208	7,828	31,434
1995	5,894	0	5,894	16,020	6,731	25,112	2,797	2,744	6,422	24,711	9,475	37,428
1996	3,194	0	3,194	12,632	13,139	30,206	6,534	5,193	13,490	22,360	18,332	46,890
1997	3,162	0	3,162	9,168	6,525	16,709	2,556	2,511	5,416	14,886	9,036	25,287
1998	56	0	56	202	109	337	139	31	177	397	140	570
1999	0	0	0	102	0	102	22	24	46	124	24	148
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	0	0	0	2,711	16	2,731	487	0	487	3,198	16	3,218
2003	0	0	0	3,953	0	3,953	508	0	508	4,461	0	4,461
2004	0	0	0	2,447	0	2,447	4,163	0	4,163	6,610	0	6,610
2005	0	0	0	5,404	0	5,404	3,582	0	3,582	8,986	0	8,986
2006	0	0	0	37,758	0	37,758	6,863	0	6,863	44,621	0	44,621
2007	0	0	0	10,627	0	10,627	4,047	0	4,047	14,674	0	14,674
2008	0	0	0	1,194	0	1,194	648	4	652	1,842	4	1,846
2009	590	0	590	4,979	0	4,979	2,208	0	2,208	7,777	0	7,777
2010	0	0	0	5,466	0	5,466	0	0	0	5,466	0	5,466
2005-2009												
Average	118	0	118	11,992	0	11,992	3,470	1	3,470	15,580	1	15,581

-continued-

Appendix C13.–Page 2 of 2.

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

- ^a Harvest reported in numbers of fish sold in the round.
- ^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of Chinook salmon roe. Since 1990, efforts were made to separate Chinook salmon roe from the summer chum salmon roe sold.
- ^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.
- ^d Does not include 1,233 female summer chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

Appendix C14.—Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2010.

Year	334-41 ^a			334-42			334-43			Total		
	Number ^b	Roe ^c	Harvest ^d	Number ^b	Roe ^c	Harvest ^d	Number ^b	Roe ^c	Harvest ^d	Number ^b	Roe ^c	Harvest ^d
1974	0	0	0	9,213	0	9,213				9,213	0	9,213
1975	^e									13,666	0	13,666
1976	462	0	462	1,280	0	1,280				1,742	0	1,742
1977	^e									13,980	0	13,980
1978					1,721					10,988	1,721	12,709
1979	^f				3,199			0		48,899	3,199	52,098
1980					1,789			2,558		27,978	4,347	32,325
1981					1,311			0		12,082	1,311	13,393
1982				958	20	978	2,936	147	3,083	3,894	167	4,061
1983				3,681	1,591	5,272	801	372	1,173	4,482	1,963	6,445
1984				2,961	1,222	4,183	4,664	993	5,657	7,625	2,215	9,840
1985				14,468	891	15,359	9,984	1,634	11,618	24,452	2,525	26,977
1986				2,045	0	2,045	0	0	0	2,045	0	2,045
1987				-	-	-	-	-	-	-	-	-
1988				10,157	703	10,860	5,505	718	6,223	15,662	1,421	17,083
1989				9,819	2,023	11,842	1,957	1,384	3,341	11,776	3,407	15,183
1990				3,406	1,680	5,676	1,583	671	2,490	4,989	2,351	8,166
1991				2,998	490	3,718	739	1,126	2,373	3,737	1,616	6,091
1992				-	-	-	-	-	-	-	-	-
1993				-	-	-	-	-	-	-	-	-
1994				-	-	-	-	-	-	-	-	-
1995				2,924	225	3,249	0	3,901	5,482	2,924	4,126	8,731
1996				2,918	0	2,918	0	0	0	2,918	0	2,918
1997				463	0	463	1,995	0	1,995	2,458	0	2,458
1998				-	-	-	-	-	-	-	-	-
1999				104	0	104	577	0	577	681	0	681
2000				-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	1,315	0	1,315	1,315	0	1,315
2004	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-
2006	^g	0	0	-	-	-	-	-	-	-	-	-
2007		-	-	-	-	-	-	-	-	-	-	-
2008		-	-	-	-	-	-	-	-	-	-	-
2009		-	-	-	-	-	-	-	-	-	-	-
2010		-	-	-	-	-	-	-	-	-	-	-
2000-2009												
Average	-	-	-	-	-	-	1,315	0	1,315	1,315	0	1,315

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a In Subdistrict 4-A (Statistical Area 334-41), from 1977 to 2001, commercial fishing, by regulation, was not allowed during fall season. Additionally, in 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46. Because this is the same area and because no harvest has occurred in Subdistrict 4-A, all data is recorded under 334-41.

^b Harvest reported in numbers of fish sold in the round.

^c Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^d The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period, by statistical area and gear type.

^e Harvest information not available by statistical area.

^f In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

^g Commercial periods were open in Subdistrict 4-A, however no harvest took place.

Appendix C15.—Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B, and 5-C, Upper Yukon Area, 1974–2010.

Year	334-51			334-52			334-53			Unapportioned		Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^{a,d}	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974	23,551	0	23,551	0	0	0					0	23,551	0	23,551
1975 ^e										27,212	27,212	27,212	0	27,212
1976 ^e	5,319	0	5,319	68	0	68					0	5,387	0	5,387
1977 ^e										25,730	25,730	25,730	0	25,730
1978 ^{f, g}		3,946			1,274					21,016	21,016	21,016	5,220	26,236
1979 ^{f, g}		8,097			0					47,459	47,459	47,459	8,097	55,556
1980 ^{f, g}		605			0					41,771	41,771	41,771	605	42,376
1981 ^{f, g}		178			6,760			17		86,620	86,620	86,620	6,955	93,575
1982 ^{f, g}		0			23			19		13,593	13,593	13,593	42	13,635
1983	3,143	0	3,143	19,771	0	19,771	17,987	0	17,987	0	0	40,901	0	40,901
1984	1,415	0	1,415	10,329	0	10,329	9,403	0	9,403	0	0	21,147	0	21,147
1985	565	0	565	9,263	0	9,263	13,332	0	13,332	0	0	23,160	0	23,160
1986	1,332	0	1,332	11,907	395	12,302	7,471	0	7,471	0	0	20,710	395	21,105
1987	-	-	-	-	-	-	-	-	-	-	0	0	-	-
1988	0	0	0	9,684	0	9,684	4,533	0	4,533	0	0	14,217	0	14,217
1989	372	60	432	9,937	3,327	13,264	4,987	209	5,196	0	0	15,296	3,596	18,892
1990	0	0	0	5,169	945	6,243	0	0	0	0	0	5,169	945	6,243
1991	0	0	0	14,968	3,625	19,727	9,173	0	9,173	0	0	24,141	3,625	28,900
1992	-	-	-	-	-	-	-	-	-	-	0	0	0	-
1993	-	-	-	-	-	-	-	-	-	-	0	0	0	-
1994	-	-	-	-	-	-	-	-	-	-	1	0	0	-
1995	0	2,513	3,159	1,785	13,091	18,397	4,014	389	4,498	0	0	5,799	15,993	26,054
1996	0	181	208	5,898	8,317	15,670	1,583	0	1,583	0	0	7,481	8,498	17,461
1997	0	0	0	1,595	1,194	3,069	0	0	0	0	0	1,595	1,194	3,069
1998	-	-	-	-	-	-	-	-	-	-	-	0	0	-
1999	-	-	-	-	-	-	-	-	-	-	-	0	0	-

-continued-

Appendix C15.—Page 2 of 2.

Year	334-51			334-52			334-53			Unapportioned		Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^{a,d}	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
2000	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2001	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2002	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2003	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2004	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2005	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2006	-	-	-	-	-	-	1,667	-	1,667	-	-	1,667	0	1,667
2007	-	-	-	385	-	385	42	-	42	-	-	427	0	427
2008	-	-	-	4,556	-	4,556	-	-	-	-	-	4,556	0	4,556
2009	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2010	-	-	-	-	-	-	-	-	-	-	-	0	0	-
2000-2009														
Average	-	-	-	2,471	-	2,471	855	-	855	-	-	665	-	2,217

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, expansion assumed 1.0 pound of roe the roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d Includes harvest in Subdistrict 5-D from 1978 through 1982.

^e Harvest information not available by statistical area.

^f Complete harvest information not available by statistical area.

^g In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D Statistical Area (Statistical Area 334-54) and Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

Appendix C16.—Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1974–2010.

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1981	^d								
1982									
1983		3,092	0				3,092	0	3,092
1984		2,913	57				2,913	57	2,970
1985		2,178	0				2,178	0	2,178
1986		1,343	0				1,343	0	1,343
1987		-	-				-	-	-
1988		2,772	0				2,772	0	2,772
1989		2,919	393				2,919	393	3,312
1990	^e	1,758	113	851	0	851	2,609	113	2,733
1991		1,846	0	1,368	0	1,368	3,214	0	3,214
1992		-	-	-	-	-	-	-	-
1993		-	-	-	-	-	-	-	-
1994		-	-	3,630	0	3,630	3,630	0	3,630
1995	^f	0	0	3,979	2,823	3,979	3,979	2,823	3,979
1996		890	0	3,507	0	3,507	4,397	0	4,397
1997		40	0	811	0	811	851	0	851
1998		-	-	-	-	-	-	-	-
1999		-	-	-	-	-	-	-	-
2000		-	-	-	-	-	-	-	-
2001		-	-	-	-	-	-	-	-
2002		-	-	-	-	-	-	-	-
2003		-	-	-	-	-	-	-	-
2004		-	-	-	-	-	-	-	-
2005		-	-	-	-	-	-	-	-
2006		-	-	-	-	-	-	-	-
2007		-	-	-	-	-	-	-	-
2008		-	-	-	-	-	-	-	-
2009		-	-	-	-	-	-	-	-
2010		-	-	-	-	-	-	-	-
2000-2009									
Average		-	-	-	-	-	-	-	-

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

^e In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

^f Estimated harvest equals fish sold in round. The roe came from fish sold in the round, therefore, not included in estimated harvest to avoid duplicate counting.

Appendix C17.—Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1974										26,884	0	26,884
1975										18,692	0	18,692
1976										17,948	0	17,948
1977										18,673	0	18,673
1978	4,704	1,826	6,530	8,036	1,680	9,716	519	181	700	13,259	3,687	16,946
1979										34,185	7,170	41,355
1980		0			53			15		19,452	68	19,520
1981		0			2,784			235		25,989	3,019	29,008
1982	706	0	706	4,586	596	5,182	1,528	0	1,528	6,820	596	7,416
1983	3,526	0	3,526	23,096	3,009	26,105	7,467	92	7,559	34,089	3,101	37,190
1984	5,617	0	5,617	11,809	0	11,809	3,138	56	3,194	20,564	56	20,620
1985	1,462	0	1,462	34,663	0	34,663	6,227	0	6,227	42,352	0	42,352
1986	176	0	176	1,345	182	1,527	371	0	371	1,892	182	2,074
1987	-	-	-	-	-	-	-	-	-	-	-	-
1988	4,500	0	4,500	13,617	1,035	14,652	3,727	771	4,498	21,844	1,806	23,650
1989	14,870	173	15,043	25,650	7,050	32,700	8,570	130	8,700	49,090	7,353	56,443
1990	9,254	0	9,254	28,932	6,617	35,776	4,996	918	5,945	43,182	7,535	50,975
1991	3,278	0	3,278	21,834	12,253	35,904	3,083	1,901	5,266	28,195	14,154	44,448
1992	-	-	-	13,713	1,816	15,852	2,008	990	3,170	15,721	2,806	19,022
1993	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	0	4,319	4,319	1	49	50	1	4,368	4,369

-continued-

Appendix C17.–Page 2 of 2.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c	Number ^a	Roe ^b	Harvest ^c
1995	6,170	0	6,170	60,466	8,164	65,061	1,219	1,396	2,896	67,855	9,560	74,127
1996	663	236	934	8,491	4,906	14,332	1,112	1,031	2,308	10,266	6,173	17,574
1997	-	-	-	-	-	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	3,778	0	3,778	317	0	317	4,095	0	4,095
2004	-	-	-	3,450	0	3,450	-	-	-	3,450	0	3,450
2005	-	-	-	49,637	0	49,637	-	-	-	49,637	0	49,637
2006	-	-	-	23,353	0	23,353	-	-	-	23,353	0	23,353
2007	-	-	-	15,572	0	15,572	-	-	-	15,572	0	15,572
2008	4,029	0	4,029	1,706	0	1,706	232	0	232	5,967	0	5,967
2009	-	-	-	1,893	0	1,893	-	-	-	1,893	0	1,893
2010	-	-	-	1,735	0	1,735	-	-	-	1,735	0	1,735
2000-2009												
Average	4,029	0	4,029	14,198	0	14,198	275	0	275	14,852	0	14,852

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the sold is based on a District 6 sampling program that estimated average roe weight per female by period.

^d Harvest information not available by statistical area.

^e Complete harvest information not available by statistical area.

Appendix C18.—Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974–2010.

Year	334-41			334-42			334-43			Total		
	Number ^a	Roe ^b	Harvest ^c	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
1974	d											
1975	d											
1976	d											
1977	d, e											
1978				32	0	32				32	-	32
1979	f			155	0	155	0	-	0	155	-	155
1980	g									30	-	30
1981				-	-	-	-	-	-	-	-	-
1982				0	-	0	15	0	15	15	0	15
1983				-	-	-	-	-	-	-	-	-
1984				412	0	412	683	0	683	1,095	0	1,095
1985				153	0	153	785	0	785	938	0	938
1986				-	-	-	-	-	-	-	-	-
1987				-	-	-	-	-	-	-	-	-
1988				2	0	2	0	-	0	2	0	2
1989				0	0	0	3	0	3	3	0	3
1990				-	-	-	-	-	-	-	-	-
1991				11	0	11	3	0	3	14	0	14
1992				-	-	-	-	-	-	-	-	-
1993				-	-	-	-	-	-	-	-	-
1994				-	-	-	-	-	-	-	-	-
1995				-	-	-	-	-	-	-	-	-
1996				161	0	161	0	0	0	161	0	161
1997				19	0	19	795	0	795	814	0	814
1998				-	-	-	-	-	-	-	-	-
1999				-	-	-	-	-	-	-	-	-
2000				-	-	-	-	-	-	-	-	-
2001		-	-	-	-	-	-	-	-	-	-	-
2002		-	-	-	-	-	-	-	-	-	-	-

-continued-

Appendix C18.–Page 2 of 2.

Year	334-41			334-42			334-43			Total		
	Number ^a	Roe ^b	Harvest ^c	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
2003	-	-	-	-	-	-	367	0	367	367	0	367
2004	-	-	-	-	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-	-	-	-	-
2006	^h 0	0	0	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-
2000-2009												
Average	-	-	-	-	-	-	367	0	367	367	0	367

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reports in numbers of fish sold in the round.

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

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce for sold is based on a District 4 sampling program that estimated average roe weight per female by period.

^d Coho salmon harvested as incidental catch, therefore harvest information may be incomplete.

^e 1977 was the last year Subdistrict 4-A (Statistical Area 334-41) by regulation was allowed a late season.

^f In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

^g Harvest information not available by statistical area.

^h Commercial periods were open, however no harvest took place.

Appendix C19.—Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974–2010.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
1974	d	-			-			-		1,479	0	1,479
1975	0	0	0	0	0	0	53	0	53	53	0	53
1976	d	-			-			-		1,103	0	1,103
1977	252	-	252	766	-	766	266	-	266	1,284	0	1,284
1978	521	-	521	2,450	-	2,450	95	-	95	3,066	0	3,066
1979	465	-	465	2,059	-	2,059	267	-	267	2,791	0	2,791
1980	423	-	423	632	-	632	171	-	171	1,226	0	1,226
1981	535	-	535	1,335	-	1,335	414	-	414	2,284	0	2,284
1982	1,004	-	1,004	6,449	-	6,449	327	-	327	7,780	0	7,780
1983	745	-	745	5,048	-	5,048	375	-	375	6,168	0	6,168
1984	1,608	-	1,608	5,360	-	5,360	720	-	720	7,688	0	7,688
1985	432	-	432	9,628	-	9,628	1,702	-	1,702	11,762	0	11,762
1986	30	-	30	370	-	370	41	-	41	441	0	441
1987	-	-	-	-	-	-	-	-	-	-	-	-
1988	1,240	-	1,240	10,372	-	10,372	2,360	-	2,360	13,972	0	13,972
1989	2,818	-	2,818	10,181	-	10,181	3,085	-	3,085	16,084	0	16,084
1990	3,173	0	3,173	7,096	3,559	9,951	1,280	483	1,680	11,549	4,042	14,804
1991	0	0	0	4,572	3,737	7,620	1,696	562	2,154	6,268	4,299	9,774
1992	-	-	-	5,731	1,267	6,800	825	413	1,179	6,556	1,680	7,979
1993	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	0	5,398	4,184	120	190	267	120	5,588	4,451
1995	1,475	0	1,475	4,209	2,072	5,156	142	157	269	5,826	2,229	6,900
1996	182	0	182	3,403	4,571	6,557	218	258	403	3,803	4,829	7,142
1997	-	-	-	-	-	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-

-continued-

Appendix C19.–Page 2 of 2.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Harvest ^c	Number	Roe	Harvest	Number	Roe	Harvest	Number	Roe	Harvest
2003	-	-	-	14,984	0	14,984	135	0	135	15,119	0	15,119
2004	-	-	-	18,649	0	18,649	0	0	0	18,649	0	18,649
2005	-	-	-	21,778	0	21,778	0	0	0	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	0	0	0	2,408	0	2,408
2009	-	-	-	742	0	742	-	-	-	742	0	742
2010	-	-	-	1,700	0	1,700	-	-	-	1,700	0	1,700
2000-2009												
Average	2,160	0	2,160	9,844	0	9,844	34	0	34	10,172	0	10,172

Note: Unless otherwise indicated, blank cells indicate years in which no information was collected or harvest numbers were insufficient to generate summary information. Dashes indicate no commercial fishing activity occurred.

^a Harvest reports in numbers of fish sold in the round.

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

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

^d Harvest information not available by statistical area.

Appendix C20.–Summary of test fish wheel projects conducted in the Upper Yukon Area, 2010.

Test Fish Wheel Projects	Contractor/ Operator	River Mile ^b	Year	Operational Dates	Total Days of Operation	Estimated Total Salmon Captured ^a				Historical Data / Comments	
						Summer Chinook	Summer Chum	Fall Chum	Coho		
Yukon River											
Tanana Village Test Fish Wheel											
Left Bank	Pat Moore	690	2010	7/1 to 9/30	91	3,494	4,289	9,167	1,433	Wheel uses 24 hour video counts.	
Yukon River (Rapids) Test Fish Wheel											
Left Bank ^c	Stan Zuray	731	2010	7/29 to 9/14	47	-	-	24,042	-	Wheel uses 24 hour video counts.	
Tanana River											
Nenana Test Fish Wheel											
Right Bank	ADF&G Paul Kleinschmidt	859	2010	7/1 to 8/5	35	1,601	1,074	-	-	Project started in 1988 for CPUE.	
				8/16 to 10/4	49	-	-	4,063	7,776	Video counts since 2003.	

^a Unless otherwise noted, fish wheel catch are adjusted to estimate total catch per day (i.e., less than or greater than 24 hour catches adjusted to reflect a 24 hour catch).

^b Estimated river miles from the mouth of the Yukon River.

^c Estimated summer chum salmon totals include all chum salmon caught through August 4.

APPENDIX D

Appendix D1.—Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and Yukon Area, 2000–2010.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004	2005-2009
												Average	Average
Hooper Bay	114	2,150	282	722	1,042	157	376	430	388	183	584	862	307
Scammon Bay	449	732	840	1,128	996	691	507	768	1,104	722	716	829	758
Coastal District Total	563	2,882	1,122	1,850	2,038	848	883	1,198	1,492	905	1,300	1,691	1,065
Nunam Iqua	684	550	393	925	647	338	371	907	163	200	404	640	396
Alakanuk	1,109	973	1,773	1,707	1,317	860	690	1,257	1,238	634	944	1,376	936
Emmonak	2,205	2,473	1,751	2,763	2,768	1,730	2,311	2,326	2,696	1,634	2,194	2,392	2,139
Kotlik	1,893	3,093	1,686	937	1,148	2,130	1,750	1,569	2,066	1,657	2,314	1,751	1,834
District 1 Subtotal	5,891	7,089	5,603	6,332	5,880	5,058	5,122	6,059	6,163	4,125	5,856	6,159	5,305
Mountain Village	1,715	1,864	1,523	2,174	2,362	2,383	1,659	2,077	1,645	1,482	1,601	1,928	1,849
Pitkas Point	753	651	566	633	609	618	274	320	544	265	580	642	404
St. Mary's	1,810	3,815	2,045	1,916	2,357	2,693	2,233	3,573	1,756	1,929	2,800	2,389	2,437
Pilot Station	2,378	2,614	2,530	2,886	2,406	1,658	1,976	2,028	1,597	1,258	1,585	2,563	1,703
Marshall	3,279	4,498	2,290	2,059	1,990	1,804	1,897	2,555	3,284	1,201	2,110	2,823	2,148
District 2 Subtotal	9,935	13,442	8,954	9,668	9,724	9,156	8,039	10,553	8,826	6,135	8,676	10,345	8,542
Russian Mission	1,860	3,428	1,887	2,057	2,337	1,894	1,851	1,301	2	978	924	2,314	1,205
Holy Cross	1,249	2,711	1,813	2,395	1,993	2,817	3,165	2,902	2,509	1,745	3,098	2,032	2,628
Shageluk	805	222	439	550	418	420	358	448	397	201	277	487	365
District 3 Subtotal	3,914	6,361	4,139	5,002	4,748	5,131	5,374	4,651	5,855	2,924	4,299	4,833	4,787
Lower Yukon River Total	19,740	26,892	18,696	21,002	20,352	19,345	18,535	21,263	20,844	13,184	18,831	21,336	18,634
Anvik	205	608	708	1,286	1,588	1,206	958	1,321	1,433	796	1,069	879	1,143
Grayling	839	1,077	2,249	1,613	1,869	1,878	1,702	1,500	1,761	1,133	2,122	1,529	1,595
Kaltag	1,074	1,506	1,435	1,838	1,656	3,367	2,833	1,456	2,403	1,970	3,191	1,502	2,406
Nulato	1,083	2,127	1,773	2,531	5,199	2,749	2,707	2,431	1,250	1,551	2,989	2,543	2,138
Koyukuk	175	449	323	860	400	396	835	811	513	982	867	441	707
Galena	788	1,755	1,522	3,112	3,296	2,864	2,380	2,511	2,232	1,370	1,357	2,095	2,271
Ruby/Kokrines	1,577	2,033	954	631	1,620	1,193	304	1,594	637	542	1,102	1,363	854
District 4 Subtotal	5,741	9,555	8,964	11,871	15,628	13,653	11,719	11,624	10,229	8,344	12,697	10,352	11,114
Huslia	424	377	222	469	285	207	258	146	255	969	65	355	367
Hughes	50	144	67	113	291	33	8	8	61	101	63	133	42
Allakaket	41	76	200	306	65	68	23	53	58	90	63	138	58
Alatna	8	0	3	12	0	0	14	0	16	10	0	5	8
Bettles	0	0	0	0	0	3	0	0	0	0	0	0	1
Koyukuk River Subtotal	523	597	492	900	641	311	303	207	390	1,170	191	631	476
District 4 Total (Incl. Koyukuk R.)	6,264	10,152	9,456	12,771	16,269	13,964	12,022	11,831	10,619	9,514	12,888	10,982	11,590

-continued-

Appendix D1.–Page 2 of 2.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004 Average	2005-2009 Average
Tanana	2,895	4,112	2,379	5,332	2,689	3,729	3,794	5,498	3,981	2,950	3,215	3,481	3,990
Rampart ^a	847	1,857	852	1,411	287	411	429	250	136	528	262	1,051	351
Fairbanks ^b	1,342	1,125	1,767	1,932	1,997	2,584	2,184	2,492	1,898	1,509	1,670	1,633	2,133
Stevens Village	466	1,111	1,334	1,121	2,394	1,570	1,245	610	753	405	469	1,285	917
Birch Creek	72	0	67	78	82	131	174	113	32	15	73	60	93
Beaver	196	1,368	702	1,156	858	957	830	1,244	546	516	198	856	819
Fort Yukon	988	2,361	2,348	4,004	4,430	3,591	3,144	4,076	1,991	846	1,683	2,826	2,730
Circle	627	447	1,533	895	565	1,283	694	1,057	519	372	324	813	785
Central	26	84	58	144	83	175	130	334	48	167	90	79	171
Eagle	1,087	1,033	1,910	2,081	1,512	2,566	2,303	1,999	1,068	446	867	1,525	1,676
Other ^c	205	40	348	862	357	315	330	472	362	541	779	362	404
District 5 Subtotal (Excluding Chandalar and Black Rivers)	8,751	13,538	13,298	19,016	15,254	17,312	15,257	18,145	11,334	8,295	9,630	13,971	14,069
Venetie	103	28	77	125	352	59	667	1,002	292	622	767	137	528
Chalkyitsik	0	0	26	50	60	53	0	0	0	0	0	27	11
Chandalar/Black River	103	28	103	175	412	112	667	1,002	292	622	767	164	539
Subtotal													
District 5 Total	8,854	13,566	13,401	19,191	15,666	17,424	15,924	19,147	11,626	8,917	10,397	14,136	14,608
Manley	58	534	336	213	239	289	361	333	106	345	337	276	287
Minto	0	197	19	317	35	35	31	82	12	0	43	114	32
Nenana	541	1,405	509	1,193	633	533	712	893	322	458	658	856	584
Fairbanks ^d	360	191	159	392	449	971	125	409	108	396	91	310	402
Other ^e	24	0	44	30	32	0	0	0	57	86	14	26	29
District 6 Tanana R. Total	983	2,327	1,067	2,145	1,388	1,828	1,229	1,717	605	1,285	1,143	1,582	1,333
Upper Yukon River Total	16,101	26,045	23,924	34,107	33,323	33,216	29,175	32,695	22,850	19,716	24,428	26,700	27,530
Alaska, Yukon River Total ^f	35,841	52,937	42,620	55,109	53,675	52,561	47,710	53,958	43,694	32,900	43,259	48,036	46,165
Alaska, Yukon Area Total	36,404	55,819	43,742	56,959	55,713	53,409	48,593	55,156	45,186	33,805	44,559	49,727	47,230

Note: Estimates from 2006 and 2007 are preliminary. Does not include harvest from personal use permits.

^a Rampart area harvest as reported from subsistence fishing permits established by the Alaska Board of Fisheries (BOF) in 2004.

^b Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

^c Other permit holders who fished in District 5 but did not reside in the communities listed.

^d Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

^e Other permit holders who fished in District 6 but did not reside in the communities listed.

^f Does not include the Coastal District.

Appendix D2.—Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area 2000–2010.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004	2005-2009
												Average	Average
Hooper Bay	9,301	12,593	9,780	10,658	3,242	9,771	19,468	12,234	12,007	9,195	17,020	9,115	12,535
Scammon Bay	3,876	1,323	5,016	3,310	5,020	4,586	4,703	3,887	6,113	3,602	5,405	3,709	4,578
Coastal District Total	13,177	13,916	14,796	13,968	8,262	14,357	24,171	16,121	18,120	12,797	22,425	12,824	17,113
Nunam Iqua	3,309	1,942	1,897	2,561	2,698	2,794	2,903	2,325	1,949	2,280	2,267	2,481	2,450
Alakanuk	6,259	5,992	7,637	5,287	6,555	5,687	7,790	7,611	6,881	5,152	7,722	6,346	6,624
Emmonak	8,338	8,242	8,458	7,644	8,618	12,594	11,899	9,256	9,646	9,038	10,918	8,260	10,487
Kotlik	6,173	6,595	6,115	4,209	2,749	6,620	5,289	5,017	4,291	7,528	4,265	5,168	5,749
District 1 Subtotal	24,079	22,771	24,107	19,701	20,620	27,695	27,881	24,209	22,767	23,998	25,172	22,256	25,310
Mountain Village	7,074	8,484	6,657	6,497	10,676	8,861	13,119	8,104	7,559	7,204	7,071	7,878	8,969
Pitkas Point	1,728	862	639	800	717	1,023	680	515	1,246	994	633	949	892
St. Mary's	8,094	10,026	7,284	4,521	6,994	6,877	7,394	8,107	6,451	5,831	7,443	7,384	6,932
Pilot Station	5,223	5,329	6,490	4,163	5,779	4,333	6,070	3,711	6,012	4,888	6,196	5,397	5,003
Marshall	3,212	1,602	2,484	792	1,765	3,183	4,392	3,070	3,023	2,172	2,395	1,971	3,168
District 2 Subtotal	25,331	26,303	23,554	16,773	25,931	24,277	31,655	23,507	24,291	21,089	23,738	23,578	24,964
Russian Mission	1,318	165	395	171	884	925	1,328	759	2,400	849	528	587	1,252
Holy Cross	569	460	155	214	276	760	825	320	441	194	463	335	508
Shageluk	1,800	684	1,956	5,473	1,798	4,081	1,381	977	130	103	350	2,342	1,334
District 3 Subtotal	3,687	1,309	2,506	5,858	2,958	5,766	3,534	2,056	2,971	1,146	1,341	3,264	3,095
Lower Yukon River Total	53,097	50,383	50,167	42,332	49,509	57,738	63,070	49,772	50,029	46,233	50,251	49,098	53,368
Anvik	425	94	1,089	844	248	529	387	5,250	340	277	451	540	1,357
Grayling	474	92	1,311	1,072	1,129	783	644	641	660	1,429	1,612	816	831
Kaltag	169	10	234	1,028	213	680	159	109	916	50	102	331	383
Nulato	377	208	269	180	198	634	838	356	468	133	416	246	486
Koyukuk	204	118	426	1,339	329	537	394	995	1,104	1,378	352	483	882
Galena	820	53	712	289	782	1,013	1,205	571	758	1,718	1,702	531	1,053
Ruby/Kokrines	1,233	1,025	1,406	876	2,010	967	1,714	416	655	603	1,971	1,310	871
District 4 Subtotal	3,702	1,600	5,447	5,628	4,909	5,143	5,341	8,338	4,901	5,588	6,606	4,257	5,862
Huslia	745	833	3,178	6,187	3,844	2,433	1,122	3,243	4,377	2,554	1,349	2,957	2,746
Hughes	1,079	551	1,089	1,265	3,823	2,230	3,254	1,213	944	1,723	878	1,561	1,873
Allakaket	1,520	1,604	6,242	4,383	2,367	2,535	5,170	3,451	3,229	4,924	2,864	3,223	3,862
Alatna	0	0	15	50	16	5	110	11	66	163	23	16	71
Bettles	0	0	0	0	0	4	0	0	0	6	0	0	2
Koyukuk River Subtotal	3,344	2,988	10,524	11,885	10,050	7,207	9,656	7,918	8,616	9,370	5,114	7,758	8,553
District 4 Total(Incl. Koyukuk R)	7,046	4,588	15,971	17,513	14,959	12,350	14,997	16,256	13,517	14,958	11,720	12,015	14,416

-continued-

Appendix D2.–Page 2 of 2.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004 Average	2005-2009 Average
Tanana	2,848	1,407	3,321	3,075	1,490	4,832	5,474	5,229	2,877	4,665	1,856	2,428	4,615
Rampart ^a	47	0	14	9	103	315	135	25	27	112	161	35	123
Fairbanks ^b	275	165	295	89	280	780	1,341	529	119	44	427	221	563
Stevens Village	50	0	12	0	108	442	972	254	163	6	28	34	367
Beaver	7	328	77	7	2	68	117	41	27	22	22	84	55
Fort Yukon	0	289	1,832	2,176	1,187	67	2,165	2,365	230	275	722	1,097	1,020
Circle	109	6	5	85	52	3	58	200	5	0	37	51	53
Central	1	0	0	0	0	5	2	0	0	2	0	0	2
Eagle	121	555	24	104	171	235	974	15	14	0	25	195	248
Other ^c	51	0	17	0	3	53	117	81	25	29	144	14	61
District 5 Subtotal (Excluding Chandalar and Black Rivers)	3,509	2,750	5,597	5,545	3,396	6,800	11,355	8,739	3,487	5,155	3,422	4,159	7,107
Venetie	0	106	13	0	15	0	475	107	50	143	0	27	155
Chalkyitsik	132	0	0	0	0	0	0	0	0	0	133	26	0
Chandalar/Black River Subtotal	132	106	13	0	15	0	475	107	50	143	133	53	155
District 5 Total	3,641	2,856	5,610	5,545	3,411	6,800	11,845	8,846	3,537	5,298	3,555	4,213	7,265
Manley	240	338	93	65	296	163	89	140	144	367	102	206	181
Minto	3	19	10	625	7	21	460	82	9	1	8	133	115
Nenana	775	19	360	2,193	1,171	1,771	388	1,419	753	506	83	904	967
Fairbanks ^d	90	36	47	31	308	45	73	255	94	372	183	102	168
Other ^e	3	0	2	0	11	14	0	0	311	7	46	3	66
District 6 Tanana R. Total	1,111	412	512	2,914	1,793	2,014	1,010	1,896	1,311	1,253	422	1,348	1,497
Upper Yukon River Total	11,798	7,856	22,093	25,972	20,163	21,164	27,837	26,998	18,365	21,509	15,697	17,576	23,175
Alaska, Yukon River Total ^f	64,895	58,239	72,260	68,304	69,672	78,902	90,907	76,770	68,394	67,742	65,948	66,674	76,543
Alaska, Yukon Area Total	78,072	72,155	87,056	82,272	77,934	93,259	115,078	92,891	86,514	80,539	88,373	79,498	93,656

Note: Estimates from 2006 and 2007 are preliminary. Does not include harvest from personal use permits.

^a Rampart area harvest as reported from subsistence fishing permits established by the Alaska Board of Fisheries (BOF) in 2004.

^b Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

^c Other permit holders who fished in District 5 but did not reside in the communities listed.

^d Fairbanks North Star Borough residents who subsistence fished in the Tanana River.

^e Other permit holders who fished in District 6 but did not reside in the communities listed.

^f Does not include the Coastal District.

Appendix D3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area 2000–2010.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004	2005-2009
												Average	Average
Hooper Bay	78	364	44	40	264	1	146	64	329	41	116	158	116
Scammon Bay	11	195	240	106	56	69	41	170	57	117	70	122	91
Coastal District Total	89	559	284	146	320	70	187	234	386	158	186	280	207
Nunam Iqua	105	176	284	127	49	310	735	152	59	41	143	148	259
Alakanuk	505	1,032	222	348	953	627	624	1,348	423	116	860	612	628
Emmonak	1,165	1,272	1,261	1,257	785	1,436	2,056	2,360	1,670	1,589	1,718	1,148	1,822
Kotlik	3,519	957	114	407	280	516	487	530	671	171	481	1,055	475
District 1 Subtotal	5,294	3,437	1,881	2,139	2,067	2,889	3,902	4,390	2,823	1,917	3,202	2,964	3,184
Mountain Village	313	470	478	873	918	1,290	2,398	1,073	926	926	133	610	1,323
Pitkas Point	5	34	16	49	0	6	5	44	101	76	10	21	46
St. Mary's	255	227	103	762	104	490	417	825	830	106	387	290	534
Pilot Station	852	1,522	680	823	1,108	838	785	741	917	265	833	997	709
Marshall	0	1,003	341	394	291	633	410	789	748	190	56	406	554
District 2 Subtotal	1,425	3,256	1,618	2,901	2,421	3,257	4,015	3,472	3,522	1,563	1,419	2,324	3,166
Russian Mission	37	76	164	615	172	667	251	530	578	205	104	213	446
Holy Cross	523	624	0	9	76	582	224	248	920	627	21	246	520
Shageluk	38	0	0	114	50	55	5	147	323	105	1,200	40	127
District 3 Subtotal	598	700	164	738	298	1,304	480	925	1,821	937	1,325	500	1,093
Lower Yukon River Total	7,317	7,393	3,663	5,778	4,786	7,450	8,397	8,787	8,166	4,417	5,946	5,787	7,443
Anvik	175	29	401	179	398	497	118	429	317	176	169	236	307
Grayling	284	314	52	441	267	1,009	691	317	1,012	490	202	272	704
Kaltag	190	607	314	725	687	1,089	823	910	620	200	658	505	728
Nulato	0	151	0	1,341	1,246	421	751	1,345	729	552	1,049	548	760
Koyukuk	239	517	255	835	344	803	1,147	927	1,177	578	792	438	926
Galena	564	420	349	1,510	1,587	2,695	1,632	1,471	1,364	4,306	1,968	886	2,294
Ruby/Kokrines	64	581	78	2,331	1,064	559	227	1,959	657	134	1,026	824	707
District 4 Subtotal	1,516	2,619	1,449	7,362	5,593	7,073	5,389	7,358	5,876	6,436	5,864	3,708	6,426
Huslia	35	683	0	1,786	1,139	1,614	313	272	64	86	403	729	470
Hughes	157	0	0	497	97	111	240	0	127	288	0	150	153
Allakaket	36	50	100	105	968	557	393	939	1,345	572	521	252	761
Alatna	15	0	0	0	0	0	0	7	0	0	0	3	1
Bettles	0	0	0	0	0	50	0	0	0	0	0	0	10
Koyukuk River Subtotal	243	733	100	2,388	2,204	2,332	946	1,218	1,536	946	924	1,134	1,396
District 4 Total (Incl. Koyukuk R.)	1,759	3,352	1,549	9,750	7,797	9,405	6,335	8,576	7,412	7,382	6,788	4,841	7,822

-continued-

Appendix D3.–Page 2 of 2.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004 Average	2005-2009 Average
Tanana	9,384	9,779	6,255	14,308	23,118	20,545	23,167	21,596	17,478	19,595	14,984	12,569	20,476
Rampart ^a	0	183	0	365	0	358	250	250	1,000	1,000	735	110	572
Fairbanks ^b	8	0	0	105	43	1,682	5,269	2,126	659	229	822	31	1,993
Stevens Village	10	20	0	857	1,080	246	50	199	643	770	2,706	393	382
Beaver	0	21	1	192	48	179	0	354	13	120	37	52	133
Ft. Yukon	355	2,209	3,523	7,963	7,302	8,088	5,178	8,264	14,252	2,829	6,006	4,270	7,722
Circle	0	2,588	74	499	1,022	918	664	1,286	3,198	110	927	837	1,235
Central	0	0	0	0	0	36	0	0	0	0	0	0	7
Eagle	32	2,714	339	2,871	5,482	17,356	16,801	18,676	15,269	10,941	15,008	2,288	15,809
Other ^c	1	0	100	0	13	117	44	46	3,183	71	120	23	692
District 5 Subtotal (Excluding Chandalar and Black Rivers)	9,790	17,514	10,292	27,160	38,108	49,525	51,423	52,797	55,695	35,665	41,345	20,573	49,021
Venetie	130	3,286	680	770	2,083	1,801	520	721	1,563	2,373	2,989	1,390	1,396
Chalkyitsik	0	73	4	340	479	337	215	213	0	45	0	179	162
Chandalar/Black River Subtotal	130	3,359	684	1,110	2,562	2,138	735	934	1,563	2,418	2,989	1,569	1,558
District 5 Total	9,920	20,873	10,976	28,270	40,670	51,663	52,158	53,731	57,258	38,083	44,334	22,142	50,579
Manley	0	1,230	947	1,303	1,504	2,985	3,374	3,419	2,490	4,126	2,696	997	3,279
Minto	2	251	100	675	0	600	242	155	28	0	70	206	205
Nenana	8	999	1,070	7,802	5,367	10,594	10,530	21,863	6,585	7,623	6,802	3,049	11,439
Fairbanks ^d	0	191	229	1,949	1,024	6,691	1,311	3,325	340	3,460	678	679	3,025
Other ^e	300	855	856	1,257	1,058	2,076	1,468	1,131	6,692	870	1,145	865	2,447
District 6 Tanana R. Total	310	3,526	3,202	12,986	8,953	22,946	16,925	29,893	16,135	16,079	11,391	5,795	20,396
Upper Yukon River Total	11,989	27,751	15,727	51,006	57,420	84,014	75,418	92,200	80,805	61,544	62,513	32,779	78,796
Alaska, Yukon River Total ^f	19,306	35,144	19,390	56,784	62,206	91,464	83,815	100,987	88,971	65,961	68,459	38,566	86,240
Alaska, Yukon Area Total	19,395	35,703	19,674	56,930	62,526	91,534	84,002	101,221	89,357	66,119	68,645	38,846	86,447

Note: Estimates from 2006 and 2007 are preliminary. Does not include harvest from personal use permits.

^a Rampart area harvest as reported from subsistence fishing permits established by the Board of Fisheries (BOF) in 2004.

^b Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

^c Other permit holders who fished in District 5 but did not reside in the communities listed.

^d Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

^e Other permits holders who fished in District 6 but did not reside in the communities listed.

^f Does not include the Coastal District.

Appendix D4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fish projects, Yukon Area, 2000–2010.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004	2005-2009
												Average	Average
Hooper Bay	218	439	125	244	9	0	175	26	66	24	45	207	58
Scammon Bay	4	63	123	48	54	279	160	84	50	222	79	58	159
Coastal District Total	222	502	248	292	63	279	335	110	116	246	124	265	217
Nunam Iqua	5	32	56	117	79	241	392	92	24	71	73	58	164
Alakanuk	84	414	183	193	207	322	101	857	157	194	449	216	326
Emmonak	191	342	514	547	296	191	450	1,032	717	401	362	378	558
Kotlik	787	486	542	403	593	222	234	284	313	181	238	562	247
District 1 Subtotal	1,067	1,274	1,295	1,260	1,175	976	1,177	2,265	1,211	847	1,122	1,214	1,295
Mountain Village	376	423	361	745	521	246	1,856	1,027	518	413	127	485	812
Pitkas Point	139	112	47	130	0	30	16	38	130	45	116	86	52
St. Mary's	117	610	209	276	258	252	171	97	591	151	92	294	252
Pilot Station	1,708	222	230	371	296	241	225	263	268	203	189	565	240
Marshall	11	73	386	64	425	341	191	922	490	245	33	192	438
District 2 Subtotal	2,351	1,440	1,233	1,586	1,500	1,110	2,459	2,347	1,997	1,057	557	1,622	1,794
Russian Mission	24	0	115	178	151	133	19	259	372	96	300	94	176
Holy Cross	70	0	0	498	27	84	16	213	38	120	0	119	94
Shageluk	0	0	0	35	106	0	48	267	0	105	53	28	84
District 3 Subtotal	94	0	115	711	284	217	83	739	410	321	353	241	354
Lower Yukon River Total	3,512	2,714	2,643	3,557	2,959	2,303	3,719	5,351	3,618	2,225	2,032	3,077	3,443
Anvik	0	13	0	12	288	406	0	807	40	137	28	63	278
Grayling	372	144	30	559	233	234	224	271	25	318	132	268	214
Kaltag	110	533	212	463	138	307	106	204	45	40	0	291	140
Nulato	60	258	78	928	203	60	214	130	195	171	242	305	154
Koyukuk	138	80	249	1,155	166	37	330	189	84	198	254	358	168
Galena	71	142	169	1,507	1,307	607	137	425	558	2,353	549	639	816
Ruby/Kokrines	173	871	69	648	1,540	361	11	168	291	314	148	660	229
District 4 Subtotal	924	2,041	807	5,272	3,875	2,012	1,022	2,194	1,238	3,531	1,353	2,584	1,999
Huslia	132	83	60	375	764	734	105	592	100	323	289	283	371
Hughes	12	117	100	20	110	20	150	100	0	89	0	72	72
Allakaket	0	25	56	99	17	205	25	66	152	43	88	39	98
Alatna	0	0	0	7	0	0	0	0	0	0	0	1	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River Subtotal	144	225	216	501	891	959	280	758	252	455	377	395	541
District 4 Total (Incl. Koyukuk R.)	1,068	2,266	1,023	5,773	4,766	2,971	1,302	2,952	1,490	3,986	1,730	2,979	2,540

-continued-

Appendix D4.–Page 2 of 2.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2004 Average	2005-2009 Average
Tanana	4,826	6,675	2,032	3,480	1,049	1,616	3,619	2,369	1,511	2,373	2,314	3,612	2,298
Rampart ^a	0	0	0	0	0	10	0	50	0	0	24	0	12
Fairbanks ^b	2	11	0	120	91	10	79	26	7	13	2	45	27
Stevens Village	0	2	0	0	100	0	0	0	0	90	428	20	18
Beaver	0	0	17	0	0	0	0	354	6	0	1	3	72
Fort Yukon ^c	129	972	14	0	19	394	35	567	1,618	2	244	227	523
Circle	0	0	0	244	100	100	22	0	0	13	164	69	27
Central	0	0	0	0	0	1	0	0	0	0	0	0	0
Eagle	0	0	1	0	14	15	0	0	0	0	1	3	3
Other ^c	30	0	0	25	0	13	0	0	61	7	0	11	16
District 5 Subtotal (Excluding Chandalar and Black Rivers)	4,987	7,660	2,064	3,869	1,373	2,159	3,755	3,366	3,203	2,498	3,178	3,991	2,996
Venetie	0	10	12	11	5	0	24	0	0	0	159	8	5
Chalkyitsik	0	4	0	7	45	0	0	0	0	0	267	11	0
Chandalar/Black River Subtotal	0	14	12	18	50	0	24	0	0	0	426	19	5
District 5 Total	4,987	7,674	2,076	3,887	1,423	2,159	3,779	3,366	3,203	2,498	3,604	4,009	3,001
Manley	2,180	2,637	1,617	886	1,384	2,510	1,671	1,126	1,901	2,308	1,832	1,741	1,903
Minto	3	0	250	423	5	0	14	155	0	0	0	136	34
Nenana	1,767	4,443	3,574	5,431	6,494	12,395	7,032	4,487	2,775	3,475	2,313	4,342	6,033
Fairbanks ^d	0	68	1,024	1,049	1,435	3,032	745	609	230	577	212	715	1,039
Other ^e	1,200	1,818	3,034	2,574	2,266	1,601	1,109	1,468	3,522	691	1,198	2,178	1,678
District 6 Tanana River Total	5,150	8,966	9,499	10,363	11,584	19,538	10,571	7,845	8,428	7,051	5,555	9,112	10,687
Upper Yukon Area Total	11,205	18,906	12,598	20,023	17,773	24,668	15,652	14,163	13,121	13,535	10,889	16,101	16,228
Alaska, Yukon River Total ^f	14,717	21,620	15,241	23,580	20,732	26,971	19,371	19,514	16,739	15,760	12,921	19,178	19,671
Alaska, Yukon Area Total	14,939	22,122	15,489	23,872	20,795	27,250	19,706	19,624	16,855	16,006	13,045	19,443	19,888

Note: Estimates from 2006 and 2007 are preliminary. Does not include harvest from personal use permits.

^a Rampart area harvest as reported from subsistence fishing permits established by the Board of Fisheries (BOF) in 2004.

^b Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

^c Other permit holders who fished in District 5 but did not reside in the communities listed.

^d Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

^e Other permits holders who fished in District 6 but did not reside in the communities listed.

^f Does not include the Coastal District.

Appendix D5.—Subsistence salmon harvests taken under authority of a permit in portions of District 5, Yukon Area, 1974–2010.

Yukon River “Bridge” Area Subsistence Salmon Fishery ^a							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum ^b	Fall Chum ^b	
1974	29	-	-	591	-	1,857	1,271
1975	19	-	-	727	-	778	70
1976	28	-	18	531	-	974	-
1977	38	-	-	467	-	2,567	-
1978	57	-	-	1,333	-	9,735	-
1979	55	-	41	2,194	-	12,374	-
1980	70	-	67	1,350	-	6,488	36
1981	57	-	24	1,095	-	12,034	-
1982	64	-	44	1,935	-	11,328	20
1983	68	-	46	2,672	-	15,059	-
1984	67	-	54	4,676	-	27,869	399
1985	55	-	42	2,618	-	21,832	33
1986	76	-	58	3,827	-	18,690	759
1987	16	-	14	1,818	2,091	7,631	6
1988	24	21	18	1,747	2,097	3,183	606
1989	26	20	13	2,483	574	1,157	309
1990	26	25	16	2,033	3,493	1,109	455
1991	52	46	34	2,529	1,295	3,953	20
1992	45	42	33	2,241	975	2,491	34
1993	49	47	36	3,767	492	2,915	16
1994	50	49	36	3,073	384	2,911	25
1995	59	59	39	3,253	954	2,244	59
1996	47	45	31	1,157	3,475	2,727	42
1997	44	42	28	1,588	683	491	26
1998	48	47	31	1,685	103	156	15
1999	66	64	47	1,653	356	701	2
2000	56	52	33	1,607	324	8	32
2001	65	62	38	1,819	176	0	13
2002	60	58	45	2,285	320	100	0
2003	86	80	62	2,670	89	104	145
2004	69	67	51	2,032	164	43	91
2005	76	72	57	1,847	643	17	9
2006	68	66	53	1,952	1,063	4,855	79
2007	85	79	50	1,689	142	626	26
2008	73	68	44	1,434	130	705	7
2009	68	66	38	1,248	28	996	106
2010	^c 85	81	43	1,300	448	422	2
2005-2009							
Average	74	70	48	1,634	401	1,440	45
2000-2009							
Average	71	67	47	1,858	308	745	51

-continued-

Appendix D5.–Page 2 of 2.

Yukon River "Rampart Village" Area Subsistence Salmon Fishery ^d							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
2004	14	11	9	832	249	0	0
2005	22	19	17	1,721	663	2,023	10
2006	19	19	16	1,083	647	318	0
2007	23	19	15	1,744	495	2,050	50
2008	18	18	15	1,049	43	1,000	0
2009	25	24	20	1,404	159	1,070	4
2010 ^c	28	27	22	1,344	304	1,235	24
2005-2009							
Average	21	20	17	1,400	401	1,292	13

Upper Yukon River "Circle-Eagle" Area Subsistence Salmon Fishery ^e							
1979	75	-	6	4,063	-	30,475	114
1980	48	-	39	3,649	-	18,477	6
1981	71	-	51	4,510	-	38,333	-
1982	60	-	61	3,833	-	15,432	-
1983	53	-	52	2,831	-	23,708	-
1984	58	-	54	2,543	-	21,675	17
1985	59	-	36	2,419	-	19,059	2
1986	40	-	52	4,148	-	20,701	43
1987	51	51	58 ^f	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,078	101
1989	59	56	42	1,186	68	7,515	1
1990	81	75	54	3,746	1,629	14,992	206
1991	70	69	48	3,219	658	14,898	5
1992	85	79	54	2,984	409	12,009	57
1993	79	79	49	1,910	118	2,419	95
1994	79	76	51	3,093	145	12,844	30
1995	87	87	53	3,628	129	19,047	1
1996	86	84	51	3,458	528	20,861	1
1997	98	93	60	3,148	393	18,616	212
1998	101	95	54	3,562	55	630	132
1999	119	116	71	3,404	364	14,079	0
2000	121	118	47	1,806	233	33	0
2001	98	93	33	1,688	561	5,322	0
2002	94	87	42	3,877	29	418	1
2003	95	85	58	3,406	189	3,374	0
2004	89	83	50	2,304	223	6,517	114
2005	89	81	55	4,004	241	18,427	130
2006	85	82	59	3,302	1,034	17,866	22
2007	78	71	50	3,548	218	19,985	0
2008	96	87	50	1,808	19	18,496	0
2009	73	70	54	1,092	2	11,051	13
2010 ^c	93	89	56	1,415	62	15,955	165
2005-2009							
Average	84	78	54	2,751	303	17,165	33
2000-2009							
Average	92	86	50	2,684	275	10,149	28

Note: Prior to 1988 the reported harvest was expanded for permits not returned. Beginning in 1988, reported harvest was not expanded.

^a That portion of the Yukon River drainage from Hess Creek to Dall River.

^b Summer chum and fall chum salmon undifferentiated from 1974 to 1986.

^c Preliminary.

^d That portion of the Yukon River drainage from Garnett Island to Hess Creek. 2004 is the first year of permit requirement in this Yukon River Area.

^e That portion of the Yukon River drainage from Twenty-Two Mile Slough, located downstream of the village of Circle, to the United States/Canadian border.

^f Some fishermen reporting harvests did not have permits.

Appendix D6.—Subsistence salmon harvests taken under authority of a permit, Tanana River drainage, 1973–2010.

Subdistrict 6-A Subsistence Salmon Fishery								
		Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
Year					Chinook	Summer Chum	Fall Chum	Coho
1988	a,b	28	24	18	845	1,389	9,165	3,455
1989	b, c	29	28	24	d 651	1,918	25,266	5,292
1990	c	42	36	26	1,369	2,250	27,957	8,408
1991		45	41	31	420	1,716	17,472	8,486
1992		38	35	26	508	450	5,999	5,028
1993	c	42	41	22	331	784	2,617	1,317
1994	e	37	37	30	576	3,793	18,076	12,449
1995		41	38	29	456	4,898	23,522	11,344
1996		31	29	23	209	1,338	18,931	5,959
1997		33	32	21	887	542	10,621	3,703
1998		31	31	19	512	519	4,726	1,526
1999		24	24	14	137	525	5,712	3,464
2000		24	24	12	80	240	0	2,441
2001		26	24	14	398	327	1,541	3,319
2002		24	23	20	542	101	1,341	2,246
2003		23	21	13	276	65	2,445	2,514
2004		23	23	12	339	308	2,148	2,004
2005		24	22	15	424	168	4,317	2,659
2006		24	24	18	503	114	3,694	2,283
2007		22	22	14	333	144	3,779	2,121
2008		38	35	19	115	241	2,583	2,002
2009		28	27	19	543	422	4,649	2,680
2010	f	26	26	14	361	106	3,176	1,986
2005-2009								
Average		27	26	17	384	218	3,804	2,349
2000-2009								
Average		26	25	16	355	213	2,650	2,427

-continued-

Appendix D6.–Page 2 of 3.

Subdistrict 6-B Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest ^g			
				Chinook	Summer Chum	Fall Chum	Coho
1988 ^a	75	66	52	3,721	3,167	18,902	18,906
1989 ^h	60	51	37 ^d	455	363	18,506	8,453
1990 ^h	70	58	38	1,234	1,966	16,332	9,155
1991 ^h	87	78	51	1,796	2,373	21,629	11,971
1992 ^h	98	89	57	1,587	7,820	18,782	11,409
1993	99	89	38	1,341	5,976	7,166	2,987
1994	102	94	49	1,337	2,035	13,726	12,480
1995	98	98	59	1,322	6,712	25,364	7,458
1996	105	96	59	968	6,138	17,439	8,934
1997	103	95	55	1,825	3,282	8,729	7,892
1998	94	84	46	1,407	5,485	9,573	5,937
1999	83	79	47	1,487	2,129	9,757	5,930
2000	81	79	33	903	869	210	2,709
2001	87	81	44	1,511	74	1,983	5,646
2002	62	60	25	525	711	2,193	8,032
2003	77	72	40	1,839	2,849	10,537	7,849
2004	60	56	30	1,049	1,485	6,805	9,580
2005	70	67	29	1,404	1,846	15,367	9,659
2006	78	76	42	423	885	13,047	7,897
2007	79	184	93	1,139	1,752	12,478	5,160
2008	73	71	35	486	854	7,815	4,009
2009	69	68	37	730	830	9,112	4,064
2010 ^f	93	85	32	583	316	7,625	3,429
2005-2009							
Average	74	93	47	836	1,233	11,564	6,158
2000-2009							
Average	74	81	41	1,001	1,216	7,955	6,461

-continued-

Appendix D6.–Page 3 of 3.

Upper Tanana River Drainage Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988 ^a	0	0	0	0	0	0	0
1989	2	2	2	5	0	39	0
1990	1	1	0	0	0	0	0
1991	8	7	6	0	0	288	14
1992	11	11	4	0	0	36	1
1993	10	10	8	0	0	5	0
1994	7	7	3	0	0	202	15
1995	50	46	12	0	0	88	0
1996	42	39	15	0	10	97	0
1997	61	58	26	0	0	200	0
1998	46	46	17	0	0	71	9
1999	29	29	13	0	0	2	0
2000	41	36	16	0	2	100	0
2001	57	50	22	0	0	2	1
2002	32	31	16	0	0	25	0
2003	38	32	17	30	0	4	0
2004	35	30	14	0	0	0	0
2005	29	24	13	0	0	15	0
2006	23	22	17	0	0	10	0
2007	34	33	17	0	0	41	5
2008	58	50	19	0	0	17	6
2009	42	40	17	0	0	84	0
2010 ^f	41	34	19	10	0	12	0
2005-2009							
Average	37	34	17	0	0	33	2
2000-2009							
Average	39	35	17	3	0	30	1

^a Prior to 1988, salmon harvests were expanded for permits not returned. Beginning in 1988, the reported harvests were not expanded. Dashes in the table indicate the information is not available.

^b Many Subdistrict 6-A fishermen did not obtain a permit in 1988 and 1989.

^c Includes salmon given away as part of the department's test fishing project in Manley.

^d Includes harvests reported by fishermen who did not have permits.

^e Beginning in 1994, a separate Kantishna River drainage permit was required. The Subdistrict 6-A harvest totals include those from the Kantishna River drainage.

^f Preliminary.

^g Includes small numbers of salmon harvested and reported on the Tolovana River drainage (Subdistrict 6-B) subsistence pike permit, established in 1993.

^h Includes salmon given away as part of the department's test fish project in Nenana.

Appendix D7.–Personal use salmon harvests taken under authority of a permit, Tanana River drainage, 1987–2010.

Subdistrict 6-C Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	132 ^a	-	60 ^b			3,316	2,465
1988	208	162	120	317	1,182	2,074	1,125
1989	175	160	112	397	991	1,770	731
1990	152	144	102	442	918	1,353	1,120
1991 ^c	-	-	-	-	-	-	-
1992 ^c	-	-	-	-	-	-	-
1993	133	131	79	426	674	163	0
1994 ^c	-	-	-	-	-	-	-
1995	139	138	91	399	780	863	417
1996	129	125	73	215	905	356	198
1997	112	109	61	313	391	284	350
1998	103	101	52	357	84	2	9
1999 ^d	103	103	67	331	382	261	147
2000	70	69	16	75	30	1	0
2001	54	51	24	122	146	10	34
2002	57	55	29	126	175	3	20
2003	67	67	32	204	148	394	549
2004	68	66	35	201	231	230	233
2005	63	59	27	138	152	133	107
2006	60	60	35	89	262	333	279
2007	65	63	32	136	184	173	135
2008	51	50	25	126	138	181	50
2009	57	57	22	127	308	71	65
2010 ^g	67	67	38	162	319	3,208	1,062
2005-2009							
Average	59	58	28	123	209	178	127
2000-2009							
Average	61	60	28	134	177	153	147

^a Includes 60 former subsistence fishermen who were reissued personal use permits to fish for fall chum salmon

^b Some fishing families used both subsistence and personal use permits.

^c From July 1, 1990 through 1992, and in 1994, the regulations did not provide for a personal use fishery in this area.

^d Does not include four whitefish and sucker fishery permit holders, two of which fished, that reported a total harvest of one fall chum and six coho salmon in 1999.

^e After 1997 the regulations did not provide for a personal use fishery in these areas.

^f After July 1, 1991 the regulations did not provide for a personal use salmon fishery in this area.

^g Data are preliminary. Includes 1 fall chum salmon caught in the PW fishery.

APPENDIX E

Appendix E1.–Yukon River drainage salmon spawning escapement goals for selected species and streams, 2007–2010.

	2007 and 2009 Goal	2010 Goal
Chinook Salmon Stock	Goal (Type) Year Established	Goal (Type) Year Established
E. Fork Andreafsky River	960–1700 (SEG) 2005	2,100–4,900 (SEG) ^a 2010
W. Fork Andreafsky River	640–1,600 (SEG) 2005	No Change
Anvik River	1,100–1,700 (SEG) 2005	No Change
Gisasa River	420–1,100 (SEG) 2005	Discontinued 2010
Nulato N. and S. combined	940–1,900 (SEG) 2005	No Change
North Fork Nulato River	Discontinued 2005	No Change
South Fork Nulato River	Discontinued 2005	No Change
Chena River	2,800–5,700 (BEG) 2001	No Change
Salcha River	3,300–6,500 (BEG) 2001	No Change
Mainstem Yukon River Canada	33,000–43,000 (2007); >45,000 (2008,2009) ^b	42,500 – 55,000 ^b
<hr/>		
Summer Chum Salmon Stock		
E. Fork Andreafsky River	65,000– 130,000 (BEG) 2001	> 40,000 (SEG) 2010
E. Fork Andreafsky River	Discontinued (aerial) ^c 2005	No Change
W. Fork Andreafsky River	Discontinued (aerial) ^c 2005	No Change
W. Fork Andreafsky River	Discontinued (aerial) ^c 2005	No Change
Anvik River	350,00 –700,000 (BEG) 2005	No Change
<hr/>		
Fall Chum Salmon Stock		
Yukon Drainage	300,000–600,000 (BEG) 2001	Change to SEG
Tanana River	61,000–136,000 (BEG) 2001	No Change
Delta River	6,000 –13,000 (BEG) 2001	No Change
Toklat River	15,000–33,000 (BEG) 2001	No Change
Upper Yukon tributaries	152,000–312,000 (BEG) 2001	No Change
Chandalar River	74,000–152,000 (BEG) 2001	No Change
Sheenjek River	50,000–104,000 (BEG) 2001	No Change
Fishing Branch River (YT, Canada)	50,000–120,000 (2001) ^d ; 22,000–49,000 (2009)	22,000–49,000
Mainstem Yukon River (YT, Canada)	>80,000 ^e	70,000–104,000
<hr/>		
Coho Salmon Stock		
Delta Clearwater	5,200 – 17,000 (SEG) 2004	No Change

^a Goal was originally aerial survey-based goal, but changed to weir-based goal in 2010

^b Escapement goals developed by JTC since 1985. Goals prior to 2008 were based on mark-recapture abundance estimates, goals since that time are based on Eagle sonar estimates of border passage. Interim Management Escapement Goal (IMEG) established in years 2008–2010.

^c Discontinued because of difficulty conducting aerial surveys of summer chum salmon.

^d Escapement goals developed by JTC in October 1987. Interim goals of 15,000 fall chum salmon for 2003 and 13,000 fall chum salmon for 2004 were established.

^e Escapement goals developed by JTC in November 1990. Interim goals of 60,000 fall chum salmon for 2002, and 65,000 fall chum salmon for 2003 and 2004 were established. Estimated total spawning escapement excluding the Porcupine River (estimated mainstem Yukon River border passage minus Canadian harvests).

Appendix E2.—Detailed preliminary salmon spawning escapement estimates for the Yukon River drainage, 2010.

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Andreafsky River							
East Fork (weir count)	6/20-7/31	--	2,413	72,893	--	10	USFWS
East Fork	8/2	Poor	(537)	(1,982)	--	--	ADF&G
West Fork	8/2	Fair	858	24,380	--	--	ADF&G
Andreafsky Subtotal			3,271	97,273	--	10	
Pilot Station (Sonar estimate)			(113,410)	(1,327,581)	(350,981)	(142,149)	ADF&G
Atchuelinguk (Chulinak)	8/3	Fair	76	1,240	--	--	ADF&G
Anvik River (Sonar estimate)	6/22-7/24	--	--	396,173	--	--	ADF&G
Goblet Creek to Yellow R.	8/3	Fair	150	(2,217)	--	--	ADF&G
Yellow R. to McDonald Cr. (Chinook index area) ^a	8/3	Fair	721	(1,654)	--	--	ADF&G
Swift River	8/3	Fair	34	(365)	--	--	ADF&G
Beaver Creek	8/3	Fair	101	(162)	--	--	ADF&G
Otter Creek	8/3	Fair	60	(670)	--	--	ADF&G
Anvik Subtotal			1,066	396,173	--	--	
Kaltag River (foot survey)	7/17	Fair	0	1,325	--	--	ADF&G
Nulato River							
North Fork ^b	7/30	Fair	356	1,891	--	--	ADF&G
South Fork	7/30	Fair	355	1,038	--	--	ADF&G
Total Lower Yukon River (downstream of Koyukuk River)			5,124	498,940	--	10	
Koyukuk River Drainage							
Gisasa River (weir project)	6/19-7/31	--	1,515	47,669	--	--	USFWS
Gisasa River (aerial)	7/30	Good	(264)	(1,096)	--	--	ADF&G
Huslia River							
Billy Hawk Creek	8/1	Poor	0	69	--	--	ADF&G
Dakli River							
Mainstem Dakli	8/1	Good	0	1,665	--	--	ADF&G
Wheeler Creek	8/1	Good	0	1,809	--	--	ADF&G
Hogatza River drainage							
Clear Creek	8/1	Fair	0	469	--	--	ADF&G
Caribou Creek	8/1	Fair	0	371	--	--	ADF&G
Alatna River							
Malamute Fork	7/31	Good	126	392	--	--	ADF&G
Iniakuk River	7/31	Good	19	374	--	--	ADF&G
Henshaw Creek (weir project)	6/23-8/8	--	793	100,670	--	--	TCC

-continued-

Appendix E2.—Page 2 of 4.

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
South Fork Koyukuk River							
Mainstem South Fork	7/31	Good	116	9	--	--	ADF&G
Jim River	7/31	Good	104	74	--	--	ADF&G
Wild River	8/1	Good	23	0	--	--	ADF&G
Total Koyukuk River			2,696	153,571	--	--	
Melozi Hot Springs Creek	7/31	Good	6	699	--	--	ADF&G
Black Sand Creek	7/31	Fair	3	335	--	--	ADF&G
Meloizitna Subtotal			9	1,034	--	--	
Total Yukon River (downstream of Tanana River)			7,829	653,545	--	10	
Tanana River Drainage							
Kantishna River Drainage							
Toklat Springs (helicopter survey)							
Main Channel and Sloughs	10/31	Good	--	--	3,042	6	ADF&G/TCC
Geiger Creek	10/31	Good	--	--	512	85	ADF&G/TCC
Toklat Subtotal			--	--	3,554	91	
Total Kantishna River			--	--	3,554	91	
Chatanika River	7/28	Good	58	26	--	--	ADF&G
Nenana River Drainage							
Teklanika River	10/21	Good	--	--	--	(280)	BSFA
Teklanika Springs (helicopter survey)	10/31	Good	--	--	0	341	ADF&G
Seventeen Mile Slough	10/21	Good	--	--	--	720	BSFA
Julius Creek	10/21	Good	--	--	--	0	BSFA
Wood Creek	10/21	Good	--	--	--	340	BSFA
Clear Creek	10/21	Good	--	--	--	130	BSFA
Glacier Creek	10/21	Good	--	--	--	0	BSFA
Lost Slough (western floodplain)	10/21	Good	--	--	--	1,110	BSFA
Lignite Springs (foot survey)	9/23	Good	--	--	--	234	BSFA
Nenana Subtotal			--	--	0	2,875	
Chena River (counting tower estimate) ^c	6/28-8/7	--	2,301	7,580	--	--	ADF&G
Salcha River (counting tower estimate) ^c	7/1-8/15	--	5,907	23,863	--	--	BSFA
Richardson Clearwater River	11/10	Fair	--	--	1,850	1,002	ADF&G

-continued-

Appendix E2.—Page 3 of 4.

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Mainstem Tanana sloughs (helicopter survey)							
Benchmark 735 slough	11/10	Good	--	--	598	507	ADF&G
Little Delta River mouth vicinity	11/10	Fair	--	--	325	30	ADF&G
Whitestone slough	11/10	Good	--	--	20	100	ADF&G
Rika's Roadhouse vicinity	11/10	Fair	--	--	1,265	0	ADF&G
Bluff Cabin Island slough	11/10	Good	--	--	455	2	ADF&G
Clearwater Lake Outlet slough	11/10	Good	--	--	1,465	51	ADF&G
Pearse slough and vicinity	11/10	Fair	--	--	1,090	0	ADF&G
Goodpastor River (counting tower estimate)	7/7-8/1	--	1,125	0	--	--	TCC/BSFA
Delta River							
Foot Survey (peak count)	11/9	Good	--	--	(17,013)	99	ADF&G
Population Estimate ^d			--	--	17,993	--	ADF&G
Blue Creek	11/10	Fair	--	--	560	80	ADF&G
Bluff Cabin Slough	11/10	Good	--	--	1,610	1	ADF&G
Bluff Cabin Creek	11/10	Good	--	--	355	110	ADF&G
Delta Clearwater River Index Area (boat survey)	10/26	Fair	--	--	--	5,867	ADF&G
Tok Overflow #1 (foot survey)	10/27	--	--	--	--	1	ADF&G
Total Tanana River			9,391	31,469	31,140	10,816	
Chandalar River (Sonar estimate) ^e	8/8-9/26	--	--	--	157,998	--	USFWS
Porcupine River Drainage							
Sheenjek River (Sonar estimate) ^{e,f}	8/18-9/24	--	--	--	22,053	--	ADF&G
Fishing Branch River (weir project) ^e	9/15-10/12	--	--	--	15,773	--	DFO
Total Porcupine River			--	--	37,826	--	
Eagle (Sonar estimate)	8/20-10/18		(35,074)	--	(132,930)	--	ADF&G/DFO
Total Alaska Portion of Drainage Observed Escapements ^g			17,220	685,014	211,191	10,826	

-continued-

Appendix E2.—Page 4 of 4.

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho	Agency
Yukon Territory Streams ^h							
Klondike River (sonar estimate)	7/5-8/17	--	777	--	--	--	DFO ⁱ
Blind Creek (weir)	7/19-8/19	--	270	--	--	--	DFO ⁱ
Little Salmon River (Index area)	8/17/10	Poor	63	--	--	--	DFO
Big Salmon River (index area)	8/19/10	Good	(656)	--	--	--	DFO
Big Salmon River (sonar estimate)	7/20-8/26	--	3,817	--	--	--	DFO ⁱ
Teslin River Drainage							
Nisutlin River	8/19/10	Good	288	--	--	--	DFO
Wolf River	8/19/10	Good	94	--	--	--	DFO
Teslin Subtotal			382	--	--	--	
Whitehorse Fishway	8/3-9/6	--	672	--	--	--	DFO ⁱ
Subtotal Individual Mainstem Sites			5,981	--	--	--	
Canadian Mainstem Yukon River							
Border Passage Estimate (Eagle sonar minus U.S. harvest)			(34,465)	--	(121,580)	--	ADF&G/DFO
Canadian Escapement Estimate (Border Passage minus Canada Harvest)			32,010	--	117,871	--	ADF&G/DFO
Total Yukon Territory ^j			32,010	--	133,644	--	DFO
Yukon River Drainage Total Observed Escapements			49,230	685,014	329,062	10,826	

Note: Data in parentheses are not included in subtotals or totals.

^a Anvik River chum salmon index area includes mainstem counts between Goblet Creek and McDonald Creek.

^b Nulato River mainstem aerial survey counts below the forks are included with the North Fork.

^c Considered to be a conservative estimate due to the project ending before the completion of the chum salmon run.

^d Population estimate based upon replicate foot surveys and salmon stream life data.

^e Counts interpolated during periods of high water.

^f Sonar counts are for left bank only in 2010.

^g Total for Alaska portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River.

^h Canadian "border passage" estimate for Yukon Territory streams (excluding the Fishing Branch River). Canadian harvest has not been removed.

ⁱ Yukon Territory counts provided by DFO but are operated by various contractors mostly funded by Restoration and Enhancement Funds.

^j Yukon Territory counts include Canadian mainstem Yukon River escapement estimate plus Fishing Branch River.

Appendix E3.—Pilot Station sonar project estimates, Yukon River drainage, 1995, and 1997–2010.

Species	Estimated Passage														
	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997 ^a	1995
Large Chinook Salmon ^b	95,913	92,648	106,708	90,184	145,553	142,007	110,236	245,037	92,584	85,511	39,233	127,809	71,177	118,121	130,271
Small Chinook Salmon	17,497	30,342	23,935	35,369	23,850	17,434	46,370	23,500	30,629	13,892	5,195	16,914	16,675	77,526	32,674
Total Chinook Salmon	113,410	122,990	130,643	125,553	169,403	159,441	156,606	268,537	123,213	99,403	44,428	144,723	87,852	195,647	162,945
Summer Chum Salmon	1,327,581	1,285,437	1,665,667	1,726,885	3,767,044	2,439,616	1,357,826	1,168,518	1,088,463	441,450	456,271	973,708	826,385	1,415,641	3,556,445
Fall Chum Salmon	350,981	240,449	615,127	684,011	790,563	1,813,589	594,060	889,778	326,858	376,182	247,935	379,493	372,927	506,621	1,053,245
Total Chum Salmon	1,678,562	1,525,886	2,280,794	2,410,896	4,557,607	4,253,205	1,951,886	2,058,296	1,415,321	817,632	704,206	1,353,201	1,199,312	1,922,262	4,609,690
Coho Salmon ^c	142,149	205,278	135,570	173,289	131,919	184,718	188,350	269,081	122,566	137,769	175,421	62,521	136,906	104,343	101,806
Other Species ^d	1,412,928	694,240	1,143,353	1,157,015	991,523	631,180	880,632	507,534	622,670	354,096	396,723	467,316	344,317	624,236	1,036,459
TOTAL	3,347,049	2,548,394	3,690,360	3,866,753	5,850,452	5,228,544	3,177,474	3,103,448	2,283,770	1,408,900	1,320,778	2,027,761	1,768,387	2,846,488	5,910,900

^a The Yukon River sonar project operated in training mode in 1996 and there are no passage estimates for that year.

^b Chinook Salmon >655 mm for 1999–2005, >700mm for 1995–1998.

^c This estimate may not include the entire run.

^d Includes pink salmon, cisco, whitefish, sheefish, burbot, suckers, Dolly Varden, sockeye salmon, and northern pike.

Appendix E4.—Chinook salmon aerial survey indices for selected spawning areas in the Alaska portion of the Yukon River drainage, 1961–2010.

Year	Andreafsky River		Anvik River		Nulato River			Gisasa River	
	East Fork	West Fork	Drainagewide Total	Index Area ^a	North Fork	South Fork	Both Forks		
1961	1,003		1,226		376 ^b	167	543	266	^b
1962	675	^b	762	^b					
1963									
1964	867	705							
1965		355	650	^b					
1966	361	303	638						
1967		276	336	^b					
1968	380	383	310	^b					
1969	231	^b	231	^b					
1970	665	574	368						
1971	1,904	1,682							
1972	798	582	1,198						
1973	825	788	613						
1974		285	471	^b	55 ^b	23 ^b	78 ^b	161	
1975	993	301	730		123	81	204	385	
1976	818	643	1,053		471	177	648	332	
1977	2,008	1,499	1,371		286	201	487	255	
1978	2,487	1,062	1,324		498	422	920	45	^b
1979	1,180	1,134	1,484		1,093	414	1,507	484	
1980	958	^b	1,500		1,192	954 ^b	369 ^b	1,323 ^b	951
1981	2,146	^b	231	^b	577 ^b		791	791	
1982	1,274	851							421
1983			653	^b	376 ^b	526	480	1,006	572
1984	1,573	^b	1,993	^b	574 ^b				
1985	1,617	2,248	1,051		720	1,600	1,180	2,780	735
1986	1,954	3,158	1,118		918	1,452	1,522	2,974	1,346
1987	1,608	3,281	1,174		879	1,145	493	1,638	731
1988	1,020	1,448	1,805		1,449	1,061	714	1,775	797
1989	1,399	1,089	442	^b	212 ^b				
1990	2,503	1,545	2,347		1,595	568 ^b	430 ^b	998 ^b	884 ^b
1991	1,938	2,544	875	^b	625 ^b	767	1,253	2,020	1,690
1992	1,030	^b	2,002	^b	1,536	931	348	231	579
1993	5,855	2,765	1,720		1,526	1,844	1,181	3,025	1,573
1994	300	^b	213	^b	913 ^b	843	952	1,795	2,775
1995	1,635	1,108	1,996		1,147	968	681	1,649	410
1996		624	839		709		100	100	
1997	1,140	1,510	3,979		2,690				144 ^b
1998	1,027	1,249	709	^b	648 ^b	507	546	1,053	889 ^b

-continued-

Appendix E4.–Page 2 of 2.

Year	Andreafsky River		Anvik River		Nulato River			Gisasa River	
	East Fork	West Fork	Drainagewide Total	Index Area	North Fork	South Fork	Both Forks		
1999		^b 870		^b 950		^b	^b		^b
2000	1,018	427	1,721	1,394		^b	^b		^b
2001	1,059	565	1,420	1,177	1,116	768	1,884	^c 1,298	^b
2002	1,447	917	1,713	1,329	687	897	1,584	506	
2003	1,116	^b 1,578	^b 1,100	^b 973	^b	^b	^b		
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	^b 824	1,876	1,776	^d 1,292	-	1,292	843	
2007	1,758	976	1,529	1,497	2,583	-	2,583	593	
2008	278	^b 262	^b 992	^b 827	^b 922	-	922	487	
2009	84	^b 1,678	832	590	2,260	-	2,260	515	
2010	537	858	974	721	356	355	711	264	
SEG	^e 960-1,900	640-1,600		1,100-1,700			940-1,900	420-1,100	
Average									
All Years	1,319	1,121	1,241	1,168	774	564	1,456	740	
2000-2009	1,195	1,004	1,728	1,570	-	-	1,549	741	
2005-2009	885	1,046	1,529	1,472	-	-	1,520	679	

Note: Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.

^a Anvik River Index Area includes mainstem counts between Yellow River and McDonald Creek.

^b Incomplete, poor timing and/or poor survey conditions resulting in minimal or inaccurate counts.

^c In 2001, the Nulato River escapement goal was established for both forks combined.

^d Index area includes counts from Beaver Creek to McDonald Creek.

^e Sustainable escapement goal.

Appendix E5.—Chinook salmon escapement counts for selected spawning areas in the Alaska portion of the Yukon River drainage, 1961–2010.

Year	Andreafsky River		Nulato River Tower	Henshaw Creek Weir		Gisasa River Weir		Chena River		Salcha River	
	No. Fish	% Fem.	No. Fish	No. Fish	% Fem.	No. Fish	% Fem.	No. Fish	% Fem. ^a	No. Fish	% Fem. ^a
1986	1,530	23.3						9,065	25.4		
1987	2,011	56.1						6,404	48.2	4,771	52.0
1988	1,339	38.7						3,346	33.9	4,562	45.3
1989		13.6						2,666	45.3	3,294	43.8
1990		41.6						5,603	36.3	10,728	36.2
1991		33.9						3,025	31.5	5,608	40.7
1992		21.2						5,230	21.6	7,862	36.0
1993		29.9						12,241	11.7	10,007	22.9
1994	7,801	35.5	1,795			2,888		11,877	32.4	18,399	40.4
1995	5,841	43.7	1,412			4,023	46.0	9,680	51.7	13,643	48.4
1996	2,955	41.9	756			1,991	19.5	7,153	26.8	7,570	26.2
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	244	29.7	2,089	34.4	4,694	21.7	4,595	34.3
2001				1,103	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	27.3	9,000	29.8
2003	4,336	45.3	1,716	763	38.4	1,901	38.1	11,100	31.8	15,500	36.6
2004	8,045	37.3		1,248	21.3	1,774	30.1	9,645	43.9	15,761	54.2
2005	2,239	50.2		1,059	41.4	3,111	34.0		30.6	5,988	47.5
2006	6,463	42.6				3,030	28.2	2,936	32.1	10,679	38.1
2007	4,504	44.7		740	24.9	1,425	39.0	3,806	27.3	6,425	31.0
2008	4,242	34.8		766	27.7	1,735	16.2	3,208	29.0	5,415	33.7
2009	3,004	46.0		1,637	49.0	1,955	29.3	5,253	40.0	12,774	33.9
2010	2,413	48.6		793	49.6	1,516	29.0	2,301	20.6	5,907	26.6
BEG								2,800-5,700		3,300-6,500	
Average											
All Years	3,928	37.4	1,946	912	34.9	2,489	30.1	6,879	32.4	9,506	37.6
2000-2009	4,285	41.8	1,773	912	34.9	2,210	31.9	6,367	31.4	9,947	37.0
2005-2009	4,090	43.7	-	1,051	35.8	2,251	29.3	3,801	31.8	8,256	36.5

-continued-

- ^a In years when only carcass surveys were conducted, proportions of males and females were adjusted based on the average of ratios of unbiased estimates from mark–recapture experiments to estimates from carcass samples over those years when mark–recapture studies were conducted. In years when mark–recapture experiments were conducted, proportions of males and females were estimated as the ratio of the abundance estimate of each gender to the abundance estimate of all fish.
- ^b Tower counts.
- ^c Mark–recapture population estimate.
- ^d Weir counts.
- ^e No estimate due to extreme high water conditions.
- ^f Estimate includes an expansion for missed counting days based on average run timing. Minimum documented abundances from successful counting days were 4,644 in 2002, 11,758 in 2003, and 5,415 in 2008.
- ^g Estimate includes an expansion for missed counting days based on average run timing. Minimum documented abundance during successful counting days was 8,739 (SE=653) fish.
- ^h Project did not operate.
- ⁱ Data are preliminary
- ^j Biological escapement goals (BEG) established by the Alaska Board of Fisheries, January 2001.

Appendix E6.—Chinook salmon escapements for selected spawning areas in the Canadian portion of the Yukon River drainage, 1961–2010.

Year	Tincup Creek ^a	Tatchun Creek ^b	Little Salmon River ^a	Big Salmon River ^{a,c}	Nisutlin River ^{a,d}	Ross River ^{a,e}	Wolf River ^{a,f}	Blind Creek	Chandindu River	Big Salmon Sonar	Klondike River Sonar	Whitehorse Fishway		Canadian Mainstem		
												Count	Percent Hatchery Contribution	Border Passage Estimate ^g	Harvest	Spawning Escapement Estimate ^h
1961												1,068	0			
1962												1,500	0			
1963												483	0			
1964												595	0			
1965												903	0			
1966		7 ⁱ										563	0			
1967												533	0			
1968			173 ⁱ	857 ^{i,c}	407 ⁱ	104 ⁱ						414	0			
1969			120	286	105							334	0			
1970		100		670 ^c	615		71 ⁱ					625	0			
1971		130	275	275 ^c	650		750 ^j					856	0			
1972		80	126	415	237		13 ^j					391	0			
1973		99	27 ⁱ	75 ⁱ	36 ⁱ							224	0			
1974		192		70 ⁱ	48 ⁱ							273	0			
1975		175		153 ⁱ	249		40 ⁱ					313	0			
1976		52		86 ⁱ	102							121	0			
1977		150	408	316 ⁱ	77							277	0			
1978		200	330	524	375							725	0			
1979		150	489 ⁱ	632	713		183 ⁱ					1,184	0			
1980		222	286 ⁱ	1,436	975		377					1,383	0			
1981		133	670	2,411	1,626	949	395					1,555	0			
1982		73	403	758	578	155	104					473	0	60,346	16,808	43,538
1983	100	264	101 ⁱ	540	701	43 ^{i,k}	95					905	0	63,227	18,752	44,475
1984	150	153	434	1,044	832	151 ⁱ	124					1,042	0	66,300	16,295	50,005
1985	210	190	255	801	409	23 ⁱ	110					508	0	59,586	19,151	40,435
1986	228	155	54 ⁱ	745	459 ⁱ	72	109					557	0	61,489	20,064	41,425

-continued-

Appendix E6.—Page 2 of 3.

Year	Tincup Creek ^a	Tatchun Creek ^b											Whitehorse Fishway		Canadian Mainstem		
			Little Salmon River ^a	Big Salmon River ^{a, c}	Nisutlin River ^{a, d}	Ross River ^{a, e}	Wolf River ^{a, f}	Blind Creek	Chandindu River	Big Salmon Sonar	Klondike River Sonar	Percent	Border	Spawning			
												Hatchery	Passage	Escapement			
														Count	Contribution	Estimate ^g	Harvest
1987	100	159	468	891	183	180 ^l	35					327	0	58,870	17,563	41,307	
1988	204	152	368	765	267	242 ^m	66					405	16	61,026	21,327	39,699	
1989	88	100	862	1,662	695	433 ^l	146					549	19	77,718	17,419	60,299	
1990	83	643	665	1,806	652	457 ^l	188					1,407	24	78,192	18,980	59,212	
1991			326	1,040		250	201 ⁿ					1,266 ^o	51 ^o	63,172	20,444	42,728	
1992	73	106	494	617	241	423	110 ⁿ					758 ^o	84 ^o	56,958	17,803	39,155	
1993		183	184	572	339	400	168 ⁿ					668 ^o	73 ^o	52,713	16,469	36,244	
1994	101 ^l	477	726	1,764	389	506 ^l	393 ⁿ					1,577 ^o	54 ^o	77,219	20,770	56,449	
1995	121	397	781	1,314	274	253 ^l	229 ⁿ					2,103	57	70,761	20,088	50,673	
1996	150	423	1,150	2,565	719	102 ^l	705 ⁿ					2,958	35	93,606	19,546	74,060	
1997	193	1,198	1,025	1,345	277		322 ⁿ	957				2,084	24	69,538	15,717	53,821	
1998	53	405	361	523	145		66	373	132			777	95	41,335	5,838	35,497	
1999		252	495	353	330		131	892	239			1,118	74	49,538	12,354	37,184	
2000	19 ^p	276 ^p	46	113	20		32		4 ^m			677	69	30,699	4,829	25,870	
2001	39 ^p		1,035	1,020	481		154		129 ^q			988	36	62,333	9,769	52,564	
2002			526	1,149	280		84		ⁿ			605	39	51,428	9,069	42,359 ^q	
2003			1,658	3,075	687		292	1,115	185 ^r			1,443	70	90,037	9,443	80,594	
2004			1,140	762	330		226	792				1,989	76	59,415	10,946	48,469	
2005			1,519	952	807	363	260	525		5,584		2,632	57	78,962	10,977	67,985	
2006			1,381	1,140	601		114	677		7,308		1,720	47	71,388	8,758	62,630	
2007			451	601	137		54	304		4,450		427	56	39,698	4,794	34,904	
2008			93	303			22	276		1,329		399	54	37,282	3,399	33,883	
2009			821	1,827	497		134	716		9,261	4,725	828	47	69,575	4,297	65,278	
2010 ^s			63 ⁱ	656	288		94	270		3,817	777			34,465	2,455	32,010	
IMEG ^t															42,500-55,000 ^t		

-continued-

Year	Tincup Creek ^a	Tatchun Creek ^b	Little Salmon River ^a	Big Salmon River ^{a, c}	Nisutlin River ^{a, d}	Ross River ^{a, e}	Wolf River ^{a, f}	Blind Creek	Chandindu River	Big Salmon Sonar	Klondike River Sonar	Whitehorse Fishway		Canadian Mainstem		
												Count	Percent Hatchery Contribution	Border Passage Estimate ^g	Spawning Escapement Estimate ^h	
Averages																
1961-2009	120	235	545	911	439	284	221	663	138			931	23	62,586	14,347	48,598
2000-2009	29	276	867	1,094	427	363	137	629	106			1,200	58	59,082	8,434	51,454
2005-2009			853	965	510	363	117	500		5,586	4,725	1,433	58	59,381	7,775	52,936

^a Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted.

^b All foot surveys prior to 1997 except 1978 (boat survey) and 1986 (aerial survey). The 1997 through 2000 data were from weir counts.

^c For 1968, 1970, and 1971 counts are from mainstem Big Salmon River. For all other years counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.

^d One Hundred Mile Creek to Sidney Creek.

^e Big Timber Creek to Lewis Lake.

^f Wolf Lake to Fish Lake outlet except where otherwise indicated.

^g Estimated total border passage excluding Porcupine River based on Eagle sonar for 2005 to 2010, on radio tagging proportion study for 2002 to 2004, on 3 area index (Little Salmon, Big Salmon and Nisutlin aerial survey) plus Canadian harvest for 1982 to 2001.

^h Estimated total spawning escapement excluding Porcupine River based on 3 area index for 1982 to 2001, and on border passage estimate minus Canadian harvest for 2002–2010.

ⁱ Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.

^j Counts are for Wolf Lake to Red River portion of survey area only. Corresponding counts for 1987 to 1982 are: 377, 395, 104, 95, 124, 110, 109, and 14, respectively. The corresponding count for this section in 1990 was 188.

^k Information on area surveyed is unavailable.

^l Counts for Big Timber Creek to Sheldon Lake.

^m High water delayed project installation, therefore, counts are incomplete.

ⁿ Resistance board weir tested for 3 weeks.

^o Counts and estimated percentages may be slightly exaggerated. In some or all of these years a number of adipose-clipped fish ascended the fishway, and were counted more than once. These fish would have been released into the fishway as fry between 1989 and 1994, inclusive.

^p Foot survey.

^q Conventional weir July 01 to September 08, but was breached from July 31 to August 7.

^r Combination resistance board weir and conduit weir tested and operational from July 10 to 30.

^s Data are preliminary.

^t Interim management escapement goal (IMEG) range of 42,500–55,000 was established in 2010. This replaced the IMEG of 45,000 used in 2008 and 2009. These goals are based on Eagle sonar project estimates.

Appendix E7.—Summer chum salmon escapements for selected spawning areas in the Alaska portion of the Yukon River drainage, 1973–2010.

Year	Andreafsky River			Anvik River		Rodo River	Kaltag Creek	Nulato River		
	East Fork		West Fork					South Fork	North Fork ^a	Mainstem
	Aerial ^b	Sonar, Tower, or Weir Counts	Aerial ^b	Tower & Aerial ^c	Sonar	Aerial ^b	Tower	Aerial ^b	Aerial ^b	Tower
1973	10,149 ^d		51,835	249,015						
1974	3,215 ^d		33,578	411,133		16,137		29,016	29,334	
1975	223,485		235,954	900,967		25,335		51,215	87,280	
1976	105,347		118,420	511,475		38,258		9,230 ^d	30,771	
1977	112,722		63,120	358,771		16,118		11,385	58,275	
1978	127,050		57,321	307,270		17,845		12,821	41,659	
1979	66,471		43,391	-	277,712	-		1,506	35,598	
1980	36,823 ^d		114,759	-	482,121	-		3,702 ^d	11,244 ^d	
1981	81,555	147,312 ^e	-	-	1,479,582	-		14,348	-	
1982	7,501 ^d	180,078 ^e	7,267 ^d	-	444,581	-		-	-	
1983	-	110,608 ^e	-	-	362,912	-		1,263 ^d	19,749	
1984	95,200 ^d	70,125 ^e	238,565	-	891,028	-		-	-	
1985	66,146	-	52,750	-	1,080,243	24,576		10,494	19,344	
1986	83,931	167,614 ^f	99,373	-	1,085,750	-		16,848	47,417	
1987	6,687 ^d	45,221 ^f	35,535	-	455,876	-		4,094	7,163	
1988	43,056	68,937 ^f	45,432	-	1,125,449	13,872		15,132	26,951	
1989	21,460 ^d	-	-	-	636,906	-		-	-	
1990	11,519 ^d	-	20,426 ^d	-	403,627	1,941 ^d		3,196 ^{d,g}	1,419 ^d	
1991	31,886	-	46,657	-	847,772	3,977		13,150	12,491	
1992	11,308 ^d	-	37,808 ^d	-	775,626	4,465		5,322	12,358	
1993	10,935 ^d	-	9,111 ^d	-	517,409	7,867		5,486	7,698	
1994	-	200,981 ^{h,i}	-	-	1,124,689	-	47,295	-	-	148,762 ⁱ
1995	-	172,148 ^h	-	-	1,339,418	12,849	77,193	10,875	29,949	236,890
1996	-	108,450 ^h	-	-	933,240	4,380	51,269	8,490 ^{d,h}	-	129,694
1997	-	51,139 ^h	-	-	605,752	2,775 ^d	48,018	-	-	157,975
1998	-	67,720 ^h	-	-	487,301	-	8,113	-	-	49,140
1999 ^j	-	32,587 ^h	-	-	437,356	-	5,339	-	-	30,076
2000	2,094 ^d	24,785 ^h	18,989 ^d	-	196,349	-	6,727	-	-	24,308
2001	-	2,134 ^{h,i}	-	-	224,058	-	- ^k	-	-	- ^l
2002	-	44,194 ^h	-	-	459,058	-	13,583	-	-	72,232
2003	-	22,461 ^h	-	-	256,920	-	3,056	-	-	19,590 ⁱ
2004	-	64,883 ^h	-	-	365,353	-	5,247	-	-	- ^k
2005	-	20,127	-	-	525,391	-	22,093	-	-	- ^k
2006	3,100 ^d	102,260	617	-	605,485	-	- ^k	7,772	11,658	- ^s
2007	-	69,642	-	-	460,121	-	- ^k	21,825	15,277	- ^s
2008	9,300	57,259	25,850	-	374,928	-	- ^k	12,070	10,715	- ^s
2009	736	8,770	3,877	-	193,099	621	- ^k	2,120	567	- ^s
2010	1,982	72,839	24,380	-	396,173 ^q	-	-	1,891	1,038	-
E. O.	>40 ^m		>116 ⁿ		350-700 ^m				>53 ^o	

-continued-

Appendix E7.–Page 2 of 3.

Year	Henshaw Creek	Gisasa River		Hogatza River		Tozitna River	Chena River		Salcha River	
	Weir	Aerial ^b	Weir	Clear & Caribou Cr. Aerial ^b	Clear Creek Tower	Weir and Aerial ^b	Aerial ^b	Tower	Aerial ^b	Tower
1973							79 ^d		290	
1974		22,022				1,823	4,349		3,510	
1975		56,904		22,355		3,512	1,670		7,573	
1976		21,342		20,744		725 ^d	685		6,484	
1977		2,204 ^d		10,734		761 ^d	610		677 ^d	
1978		9,280 ^d		5,102		2,262	1,609		5,405	
1979		10,962		14,221		-	1,025 ^d		3,060	
1980		10,388		19,786		580	338		4,140	
1981		-		-		-	3,500		8,500	
1982		334 ^d		4,984 ^d		874	1,509		3,756	
1983		2,356 ^d		28,141		1,604	1,097		716 ^d	
1984		-		184 ^d		-	1,861		9,810	
1985		13,232		22,566		1,030	1,005		3,178	
1986		12,114		-		1,778	1,509		8,028	
1987		2,123		5,669 ^d		-	333		3,657	
1988		9,284		6,890		2,983	432		2,889 ^d	
1989		-		-		-	714 ^d		1,574 ^d	
1990		450 ^d		2,177 ^d		36	245 ^d		450 ^d	
1991		7,003		9,947		93	115 ^d		154 ^d	
1992		9,300		2,986		794	848 ^d		3,222	
1993		1,581		-		970	168	5,400	212	5,809
1994		6,827	51,116 ⁱ	8,247 ^p		-	1,137	9,984	4,916	39,450
1995		6,458	136,886	-	116,735	4,985	185 ^d	3,519 ⁱ	934 ^d	30,784
1996		-	158,752	27,090 ^p	100,912	2,310	2,061	12,810 ⁱ	9,722	74,827
1997		686 ^d	31,800	1,821 ^d	76,454	428 ^d	594 ^d	9,439 ⁱ	3,968 ^d	35,741
1998		-	21,142	120 ^{d,q}	212 ^k	7 ^d	24 ^d	5,901	370 ^d	17,289
1999 ^j		-	10,155	-	11,283	-	520	9,165	150	23,221
2000	27,271	-	11,410	-	19,376	480	105	3,515	228	20,516
2001	35,031	-	17,946	-	3,674	12,527	2	4,773	-	14,900 ^k
2002	25,249	-	33,481	-	13,150	18,789	-	1,021 ⁱ	78	20,837 ^k
2003	22,556	-	25,999	-	6,159	8,487	-	573 ⁱ	-	-
2004	86,474	-	37,851	-	15,661	25,003	-	15,162 ⁱ	-	47,861
2005	237,481	-	172,259	-	26,420	39,700	219	2,928 ⁱ	4320	193,085
2006	-	1,000	261,305	-	29,166	22,629	469	35,109 ⁱ	152	111,869
2007	44,425	-	46,257	-	6,029 ^{q,s}	8,470	-	4,999	4 ^d	13,069
2008	97,281	20,470	36,938	-	- ^s	9,133	37	1,300 ⁱ	0 ^d	2,212 ⁱ
2009	156,201	1,060	25,904	3,981	- ^s	8,434	-	16,516	-	31,035 ^j
2010	100,670 ^j	1,096	47,669	840	-	-	-	7,560	-	22,185 ^j
E. O.				>17 ^r		>3.5 ⁿ				

-continued-

Note: Unless otherwise noted blank cells indicate years prior to the project being operational. Dashes indicate years in which no information was collected.

- ^a Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
- ^b Aerial survey counts are peak counts only, survey rating is fair or good unless otherwise noted.
- ^c From 1972 to 1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).
- ^d Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.
- ^e Sonar count.
- ^f Tower count.
- ^g Mainstem counts below the confluence of the North and South Forks of the Nulato River included in the South Fork counts.
- ^h Weir count.
- ⁱ Incomplete count due to late installation and/or early removal of project or high water events.
- ^j Data are preliminary.
- ^k Project did not operate.
- ^l No counts due to incomplete operations.
- ^m Biological escapement goals (in thousands of fish) established by the Alaska Board of Fisheries, January 2010.
- ⁿ Interim escapement objective (in thousands of fish).
- ^o Interim escapement objective (in thousands of fish) for North Fork Nulato River only.
- ^p BLM helicopter survey.
- ^q Consists of Clear Creek only.
- ^r Consists of Clear and Caribou Creeks interim escapement objectives (in thousands of fish) of 9,000 and 8,000, respectively.

Appendix E8.—Fall chum salmon abundance estimates or escapement estimates for selected spawning areas in Alaska portions of the Yukon River drainage, 1971–2010.

Year	Yukon River Mainstem Sonar Estimate	Alaska									
		Tanana River Drainage					Upper Yukon River Drainage				
		Toklat River ^a	Kantishna River Abundance Estimate ^b	Delta River ^c	Bluff Cabin Slough ^d	Upper Tanana River Abundance Estimate ^e	Tanana River Estimate ^f	Chandalar River ^g	Sheenjek River ^h		
1971											
1972				5,384							
1973				10,469							
1974		41,798		5,915					89,966	i	
1975		92,265		3,734	j				173,371	i	
1976		52,891		6,312	j				26,354	i	
1977		34,887		16,876	j				45,544	i	
1978		37,001		11,136					32,449	i	
1979		158,336		8,355					91,372	i	
1980		26,346	k	5,137	3,190	l			28,933	i	
1981		15,623		23,508	6,120	l			74,560	m	
1982		3,624		4,235	1,156				31,421	m	
1983		21,869		7,705	12,715				49,392	m	
1984		16,758		12,411	4,017				27,130	m	
1985		22,750		17,276	j	2,655	l		152,768	m, n	
1986		17,976		6,703	j	3,458		59,313	84,207	n, o	
1987		22,117		21,180	9,395			52,416	153,267	n, o	
1988		13,436		18,024	4,481	l		33,619	45,206	o	
1989		30,421		21,342	j	5,386	l	69,161	99,116	o	
1990		34,739		8,992	j	1,632		78,631	77,750	o	
1991		13,347		32,905	j	7,198			86,496	p	
1992		14,070		8,893	j	3,615	l		78,808		
1993		27,838		19,857		5,550	l		42,922		
1994		76,057		23,777	j	2,277	l		150,565		
1995	1,053,248	54,513	k	20,587	19,460	268,173	230,643	280,999	241,855		
1996		18,264		19,758	j	7,074	l	208,170	246,889		
1997	506,621	14,511		7,705	j	5,707	l	199,874	80,423	q	
1998	372,927	15,605		7,804	j	3,549	l	75,811	33,058		
1999	379,493	4,551	27,199	16,534	j	7,037	l	88,662	14,229		
2000	247,935	8,911	21,450	3,001	j	1,595	34,844	65,894	30,084	r	

-continued-

Year	Yukon River Mainstem Sonar Estimate	Alaska							
		Tanana River Drainage					Upper Yukon River Drainage		
		Toklat River ^a	Kantishna River Abundance Estimate ^b	Delta River ^c	Bluff Cabin Slough ^d	Upper Tanana River Abundance Estimate ^e	Tanana River Estimate ^f	Chandalar River ^g	Sheenjek River ^h
2001	376,182	6,007 ^s	22,992	8,103 ⁱ	1,808 ^l	96,556 ^t	116,012	110,971	53,932
2002	326,858	28,519	56,719	11,992 ⁱ	3,116	109,970	163,421	89,850	31,642
2003	889,778	21,492	87,359	22,582 ^j	10,600 ^l	193,418	263,302	214,416	44,047 ^u
2004	594,060	35,480	76,163	25,073 ^j	10,270 ^l	123,879	187,409	136,706	37,878
2005	1,813,589	17,779 ^k	107,719	28,132 ^j	11,964 ^l	337,755	372,758	496,484	561,863 ^{n, v, w}
2006	790,563		71,135	14,055 ^j		202,669	233,193	245,090	160,178 ^{n, v}
2007	684,011		81,843	18,610 ^j		320,811	357,016	228,056	65,435 ^{n, v}
2008	615,127			23,055 ^j	1,198 ^l		264,200	178,278 ^x	50,353 ^{n, v, x}
2009	240,449 ^y			13,492 ^j	2,900 ^l		159,828		54,126 ^{n, v, x}
2010	350,981			17,933 ^j	1,610 ^l		212,660	157,998	22,053
Escapement ^z	300,000	15,000 ^{aa}		6,000		46,000 ^{ab}	61,000	74,000	50,000
Objective	600,000	33,000		13,000		103,000	136,000	152,000	104,000
Average									
1971-2009	665,415 ^{y, ac}	31,243	61,398	14,227	5,683	158,040	187,807	153,284	92,989
2000-2009	704,234 ^{y, ac}	19,698	65,673	16,810	5,431	177,488	217,312	196,194	108,954
2005-2009	975,823 ^{y, ac}	17,779	86,899	19,469	5,354	287,078	277,399	286,977	178,391

^a Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987–1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse.

^b Fall chum salmon abundance estimate for the Kantishna and Toklat River drainages is based on a mark-recapture program. Tag deployment occurs at a fish wheel located near the mouth of the Kantishna River and recaptures are collected at four fish wheels; two located 8 miles upstream of the mouth of the Toklat River (1999–2005) and one fish wheel on the upper Kantishna River (2000–2002, 2006–2007) and two fish wheels in 2003–2005.

^c Estimates are a total spawner abundance, using migratory time density curves and stream life data, unless otherwise indicated.

^d Foot survey, unless otherwise indicated.

^e Fall chum salmon abundance estimate for the upper Tanana River drainage is based on a mark-recapture program. Tag deployment occurs from a fish wheel (two fish wheels in 1995) located just upstream of the Kantishna River and recaptures are collected from one fish wheel (two fish wheels in 1995) located downstream from the village of Nenana.

^f Tanana River abundance estimates prior to 1995 can be found in Eggers (2001) but are based on Upper Tanana plus Toklat River escapement. Estimates from 1995 to 1998 are based on the relationship of the Upper Tanana to the Kantishna river abundance estimates, and 2008–2011 are based on the relationship of the Tanana estimate (1995–2007) with the Delta River escapements. The harvests from the Tanana River fisheries are removed to estimate escapement.

^g Single-beam sonar estimate for 1986 to 1990, split-beam sonar estimate 1995 to 2006. DIDSON in since 2007, project was aborted in 2009.

^h Single-beam sonar estimate beginning in 1981, split-beam sonar estimate 2002 to 2004, DIDSON since 2005.

-continued-

- ⁱ Total escapement estimate using sonar to aerial survey expansion factor of 2.22.
- ^j Population estimate generated from replicate foot surveys and stream life data (area under the curve method).
- ^k Minimal estimate because of late timing of ground surveys with respect to peak of spawning.
- ^l Aerial survey count, unless otherwise indicated.
- ^m Project started late, estimated escapements expanded for portion missed using average run timing curves based on Chandalar (1986–1990) and Sheenjek (1991–1993) rivers.
- ⁿ Sonar counts include both banks in 1985–1987, 2005–2009.
- ^o Expanded estimates for period approximating second week August through fourth week September, using annual Chandalar River run timing data (1986–1990).
- ^p Total abundance estimates are for the period approximating second week August through fourth week of September (1991 to present). Comparative escapement estimates before 1986 are considered more conservative; approximating the period end of August through September.
- ^q Data interpolated due to high water from 29 August until 3 September 1997, during buildup to peak passage.
- ^r Project ended early (September 12) because of low water.
- ^s Minimal estimate because Sushana River was breached by the main channel and uncountable.
- ^t Low numbers of tags deployed and recovered resulted in an estimate with an extremely large confidence interval (95% CI +/- 41,072).
- ^u Project ended on peak daily passages due to late run timing, estimate was expanded based on run timing (87%) at Rampart.
- ^v In addition to the historical right bank count, the left bank was enumerated with DIDSON (right bank count for 2005–2009 was 266,963, 106,397, 39,548, 35,912, and 28,480, , not including expansions by bank).
- ^w Project ended while still counting >10,000 fish per day, estimate was expanded based on run timing (73%) at Rampart.
- ^x Run timing was late and counts were expanded to represent the remainder of the run after the project was terminated for the season.
- ^y Pilot Station sonar project encountered record low water levels during the fall season causing difficulties with species apportionment and catchability. Fall chum salmon estimate is suspected of being conservative and should not be used in averages or run reconstructions.
- ^z Escapement goal (EG) includes individual tributary BEGs and drainagewide SEG from 2010.
- ^{aa} EG discontinued in 2010.
- ^{ab} 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.
- ^{ac} 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, 1971–2010.

Year	Porcupine Drainage		Canadian Mainstem						
	Fishing	Mainstem	Koidern River	Kluane River	Teslin River	Border	Harvest	Spawning	
	Branch River	Yukon River Index				Passage Estimate		Escapement Estimate	
	^a	^b	^{b, c}	^{b, d}	^{b, e}			^f	
1971	312,800 ^g								
1972	35,230 ^h			198 ^{i, j}					
1973	15,991	383		2,500					
1974	31,841			400					
1975	353,282	7,671		362 ^j					
1976	36,584 ^f			20					
1977	88,400 ^f			3,555					
1978	40,800 ^f			0 ^j					
1979	119,898 ^f			4,640 ^j					
1980	55,268 ^f			3,150		39,130	16,218	22,912	
1981	57,386 ^k			25,806		66,347	19,281	47,066 ^l	
1982	15,901 ^f	1,020 ^m		5,378		47,049	15,091	31,958	
1983	27,200 ^f	7,560		8,578 ^j		118,365	27,490	90,875	
1984	15,150 ^f	2,800 ⁿ	1,300	7,200	200	81,900	25,267	56,633 ^l	
1985	56,223	10,760	1,195	7,538	356	99,775	37,765	62,010	
1986	31,810	825	14	16,686	213	101,826	13,886	87,940	
1987	49,038	6,115	50	12,000		125,121	44,345	80,776	
1988	23,645	1,550	0	6,950	140	69,280	32,494	36,786	
1989	44,041	5,320	40	3,050	210 ^a	55,861	20,111	35,750	
1990	35,000 ^o	3,651	1	4,683	739	82,947	31,212	51,735	
1991	37,870	2,426	53	11,675	468	112,303	33,842	78,461	
1992	22,539	4,438	4	3,339	450	67,962	18,880	49,082	
1993	28,707	2,620	0	4,610	555	42,165	12,422	29,743	
1994	65,247	1,429 ^a	20 ^a	10,734	209 ^a	133,712	35,354	98,358	
1995	51,971 ^p	4,701	0	16,456	633	198,203	40,111	158,092	
1996	77,302	4,977		14,431	315	143,758	21,329	122,429	

-continued-

Appendix E9.—Page 2 of 3.

300

Year	Porcupine Drainage		Canadian Mainstem					
	Fishing Branch River ^a	Mainstem Yukon River Index ^b	Koidern River ^{b, c}	Kluane River ^{b, d}	Teslin River ^{b, e}	Border Passage Estimate	Harvest	Spawning Escapement Estimate ^f
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 ^a	72,188 ^q	13,636	58,552
2000	5,057	933 ^a		1,442	204	57,978 ^q	4,246	53,732
2001	21,737	2,453		4,884	5	38,769 ^q	5,278	33,491
2002	13,600	973		7,147	64	104,853 ^q	6,174	98,679
2003	29,713	7,982		39,347	390	153,656 ^q	10,523	143,133
2004	20,417	3,440		18,982	167	163,625 ^q	9,545	154,080
2005	119,058	16,425		34,600	585	451,477	13,979	437,733
2006	30,954	6,553		18,208	620	218,611 ^{r, s}	6,617	211,994
2007	32,150	no survey				263,979 ^{r, s}	9,330	254,649
2008	19,086 ^p	no survey				180,379 ^{r, s}	6,130	174,267 ^t
2009	25,828 ^u	no survey				94,739 ^r	1,115	93,626 ^v
2010 ^w	15,773 ^u					121,580 ^s	3,709	117,871
EO ^x	50,000-120,000							>80,000
IMEG	22,000-49,000 ^y							70,000-104,000 ^z
Average								
1971-2009	53,856	4,480	223	8,982	317	117,752	17,628	99,540
2000-2009	31,760	5,537	---	17,801	291	172,807	7,294	165,538
2005-2009	27,005	6,553	---	18,208	620	189,427	5,798	183,634

^a Weir count, unless otherwise indicated.

^b Aerial survey count, unless otherwise indicated.

^c Index area includes Tatchun Creek to Fort Selkirk.

^d Index area includes Duke River to end of spawning sloughs below Swede Johnston Creek.

^e Index area includes Boswell Creek area (5 km below to 5 km above confluence).

^f Excludes Fishing Branch River escapement (estimated border passage minus Canadian mainstem harvest).

^g Total escapement estimated using weir to aerial survey expansion factor of 2.72, unless otherwise indicated.

-continued-

- ^h Weir installed September 22. Estimate consists of weir count of 17,190 after September 22, and tagging passage estimate of 17,935 before weir installation.
- ⁱ Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
- ^j Foot survey, unless otherwise indicated.
- ^k Initial aerial survey count doubled before applying the weir/aerial expansion factor of 2.72 since only half of the spawning area was surveyed.
- ^l Escapement estimate based on mark–recapture program unavailable. Estimate based on assumed average exploitation rate.
- ^m Boat survey.
- ⁿ Total index area not surveyed. Survey included the mainstem Yukon River between Yukon Crossing to 30 km below Fort Selkirk.
- ^o Weir not operated. Although only 7,541 chum salmon were counted on a single survey flown October 26, a population estimate of approximately 27,000 fish was made through date of survey, based upon historic average aerial-to-weir expansion of 28%. Actual population of spawners was reported by DFO as between 30,000–40,000 fish considering aerial survey timing.
- ^p Incomplete count caused by late installation and/or early removal of project or high water events.
- ^q 1999 to 2004 border passage estimates were revised using a stratified "SPAS" analysis.
- ^r 2006 to present border passage estimate is based on sonar minus harvest from Eagle residents upstream of deployment.
- ^s Mark–recapture border passage estimates include 217,810, 235,956, and 132,048 from 2006 to 2008 respectively, during transition to sonar.
- ^t The 2008 estimate based on a mark-recapture estimate.
- ^u Run timing was late and counts were expanded to represent the remainder of the run after the project was terminated for the season.
- ^v The 2009 estimate based on the Eagle sonar estimate.
- ^w Data are preliminary
- ^x Escapement objective (EO) based on US/Canada Treaty Obligations, some years stabilization or rebuilding goals are applied.
- ^y Interim management escapement goal (IMEG) established for 2008-2010 based on percentile method.
- ^z 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 1974–2010.

Year	(P) Estimated Annual Totals			Estimated Brood Year Return								(R) Total Brood Year Return ^a	(R/P) Return/ Spawner
				Number of Salmon ^a				Percent				Return ^a	Spawner
	Escapement ^b	Catch	Run	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6		
1974	436,485	478,875	915,360	91,751	497,755	68,693	0	0.139	0.756	0.104	0.000	658,199	1.51
1975	1,465,213	473,062	1,938,275	150,451	1,225,440	61,401	123	0.105	0.853	0.043	0.000	1,437,415	0.98
1976	268,841	339,043	607,884	102,062	587,479	137,039	4,316	0.123	0.707	0.165	0.005	830,895	3.09
1977	514,843	447,918	962,761	102,660	1,075,198	175,688	4,189	0.076	0.792	0.129	0.003	1,357,735	2.64
1978	320,487	434,030	754,517	22,222	332,230	90,580	0	0.050	0.747	0.204	0.000	445,032	1.39
1979	780,818	615,377	1,396,195	41,114	769,496	274,311	3,894	0.038	0.707	0.252	0.004	1,088,814	1.39
1980	263,167	488,373	751,540	8,377	362,199	208,962	3,125	0.014	0.622	0.359	0.005	582,663	2.21
1981	551,192	683,391	1,234,583	45,855	955,725	278,386	8,888	0.036	0.742	0.216	0.007	1,288,853	2.34
1982	179,828	373,519	553,347	11,327	400,323	166,754	679	0.020	0.691	0.288	0.001	579,083	3.22
1983	347,157	525,485	872,642	12,569	875,355	223,468	2,313	0.011	0.786	0.201	0.002	1,113,704	3.21
1984	270,042	412,323	682,365	7,089	408,040	174,207	8,516	0.012	0.683	0.291	0.014	597,852	2.21
1985	664,426	515,481	1,179,907	46,635	874,819	270,984	3,194	0.039	0.732	0.227	0.003	1,195,632	1.80
1986	376,374	318,028	694,402	0	429,749	368,513	4,353	0.000	0.535	0.459	0.005	802,614	2.13
1987	651,943	406,143	1,058,086	12,413	617,519	290,767	7,720	0.013	0.665	0.313	0.008	928,418	1.42
1988	325,137	353,685	678,822	41,003	175,236	152,368	10,894 ^c	0.108	0.462	0.401	0.029	379,501	1.17
1989	506,173	545,166	1,051,339	2,744	282,905	345,136 ^c	20,290	0.004	0.435	0.530	0.031	651,075	1.29
1990	369,654	352,007	721,661	710	579,452 ^c	418,448	30,449	0.001	0.563	0.407	0.030	1,029,059	2.78
1991	591,132	439,096	1,030,228	3,663 ^c	1,024,800	369,103	12,167	0.003	0.727	0.262	0.009	1,409,733	2.38
1992	324,253	148,846	473,099	6,763	653,648	197,073	3,907	0.008	0.759	0.229	0.005	861,392	2.66
1993	352,688	91,015	443,703	7,745	451,327	102,420	3,235	0.014	0.799	0.181	0.006	564,727	1.60
1994	769,920	169,225	939,145	4,322	225,243	149,527	1,603 ^c	0.011	0.592	0.393	0.004	380,695	0.49
1995	1,009,155	461,147	1,470,302	2,371	266,955	68,918 ^c	383	0.007	0.788	0.204	0.001	338,627	0.34
1996	800,022	260,923	1,060,945	420	165,691 ^c	136,906	8,295	0.001	0.532	0.440	0.027	311,312	0.39
1997	494,831	170,059	664,890	3,087 ^c	244,801	118,343	3,332	0.008	0.662	0.320	0.009	369,563	0.75
1998	263,121	70,820	333,941	651	269,653	57,962	6,694	0.002	0.805	0.173	0.020	334,960	1.27
1999	288,962	131,175	420,137	29,097	705,152	174,424	13,720	0.032	0.764	0.189	0.015	922,392	3.19
2000	210,756	28,543	239,299	8,446	297,012	115,478	0	0.020	0.706	0.274	0.000	420,937	2.00

-continued-

Appendix E10.–Page 2 of 2.

Year	(P)			Estimated Brood Year Return								(R)	(R/P)
	Estimated Annual Totals			Number of Salmon ^a				Percent				Total	Return/ Spawner
	Escapement ^b	Catch	Run	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6	Brood Year Return ^a	
2001	337,765	44,976	382,741	136,038	2,157,498	675,688	33,955	0.045	0.718	0.225	0.011	3,003,179	8.89
2002	397,977	27,411	425,388	0	444,507	239,154	13,067	0.000	0.638	0.343	0.019	696,728	1.75
2003	695,363	79,529	774,892	24,263	858,714	434,639	15,995	0.018	0.644	0.326	0.012	1,333,611	1.92
2004	537,873	76,296	614,169	0	332,454	145,066	1,743	0.000	0.694	0.303	0.004	479,263	0.89
2005	1,996,513	290,183	2,286,696	2,269	369,995	79,298	4,784	0.005	0.811	0.174		456,346 ^d	>0.23
2006	873,987	270,471	1,144,458	24,326	332,924	193,832						551,082 ^e	>0.63
2007	928,430	203,393	1,131,823	70,148									
2008	564,482	217,947	782,429										
2009	462,063	93,319	555,382										
2010	409,353	74,759	484,112										
Average-09	560,863	306,563	867,426										
	495,664	All Brood Years (1974-2004)		29,866	598,270	215,819	7,453	0.0309	0.6872	0.2726	0.0093	851,409	2.04
	382,121	Even Brood Years (1974-2004)		19,072	385,042	176,671	6,103	0.0318	0.6557	0.3020	0.0105	586,887	1.82
	616,777	Odd Brood Years (1974-2004)		41,380	825,714	257,578	8,893	0.0299	0.7209	0.2412	0.0080	1,133,565	2.28
	512,803	All Brood Years (1974-1983)		58,839	708,120	168,528	2,753	0.0611	0.7401	0.1960	0.0027	938,239	2.20
	293,762	Even Brood Years (1974-1983)		47,148	435,997	134,406	1,624	0.0692	0.7045	0.2239	0.0023	619,175	2.28
	731,845	Odd Brood Years (1974-1983)		70,530	980,243	202,651	3,881	0.0530	0.7757	0.1681	0.0031	1,257,304	2.11
	487,503	All Brood Years (1984-2004)		16,069	545,961	238,339	9,691	0.0165	0.6620	0.3091	0.0124	810,061	1.97
	422,284	Even Brood Years (1984-2004)		6,309	361,881	195,882	8,138	0.0148	0.6334	0.3376	0.0142	572,210	1.61
	559,244	Odd Brood Years (1984-2004)		26,805	748,449	285,042	11,399	0.0183	0.6935	0.2777	0.0105	1,071,696	2.36

^a The estimated number of salmon which returned are based upon annual age composition observed in lower Yukon test nets each year, weighted by test fish CPUE.

^b Contrast in escapement data is 11.10.

^c Based upon expanded test fish age composition estimates for years in which the test fishery terminated early both in 1994 and 2000.

^d Brood year return for 3, 4, and 5 year fish, indicate that production (R/P) from brood year 2005 was at least 0.23. Recruits estimated for incomplete brood year.

^e Brood year return for 3 and 4 year fish, indicate that production (R/P) from brood year 2006 was at least 0.63. Recruits estimated for incomplete brood year.

Appendix E11.—Coho salmon passage estimates or escapement estimates for selected spawning areas in the Alaska portion of the Yukon River drainage, 1972–2010.

Year	East Fork Andreafsky River ^a	Yukon River Mainstem Sonar Estimate ^b	Kantishna River Drainage Geiger Creek ^c	Nenana River Drainage				Upper Tanana River Drainage			
				Lost Slough	Nenana Mainstem ^d	Wood Creek	Seventeen Mile Slough	Delta Clearwater River ^e	Delta Clearwater River Tributaries ^f	Clearwater Lake and Outlet	Richardson Clearwater River ^g
1972								632		417	454 ^h
1973								3,322		551	375
1974				1,388			27	3,954 ^h		560	652
1975				943			956	5,100		1,575 ⁱ	4 ^h
1976			25 ^{g, h}	118			281	1,920		1,500 ⁱ	80 ^h
1977			60	524 ^g		310 ^c	1,167	4,793		730 ⁱ	327
1978				350		300 ^c	466	4,798		570 ⁱ	
1979				227			1,987	8,970		1,015 ⁱ	372
1980			3 ^{g, h}	499 ^g		1,603 ^c	592	3,946		1,545 ⁱ	611
1981	1,657 ^g			274		849 ^{a, j}	1,005	8,563 ^k		459 ^g	550
1982			81			1,436 ^{a, j}		8,365 ^k			
1983			42	766		1,042 ^a	103	8,019 ^k		253	88
1984			20 ^{g, h}	2,677		8,826 ^a		11,061		1,368	428
1985			42 ^{g, h}	1,584		4,470 ^a	2,081	6,842		750	
1986			5	794		1,664 ^a	218 ⁱ	10,857		1,800	146 ^h
1987			1,175	2,511		2,387 ^a	3,802	22,300		4,225 ⁱ	
1988	1,913 ^l		159	348		2,046 ^a		21,600		825 ⁱ	
1989			155			412 ^a	824 ^g	12,600		1,600 ⁱ	483
1990			211	688	1,308		15 ^g	8,325		2,375 ⁱ	
1991			427	564	447		52	23,900		3,150 ⁱ	
1992			77	372			490	3,963		229 ⁱ	500
1993			138	484	419	666 ^{a, m}	581	10,875		3,525 ⁱ	
1994			410	944	1,648	1,317 ^{a, n}	2,909	62,675	17,565	3,425 ⁱ	5,800
1995	10,901	100,664	142	4,169	2,218	500 ^a	2,972 ^g	20,100	6,283	3,625 ⁱ	
1996	8,037		233	2,040	2,171	201 ^{g, h}	3,666 ⁱ	14,075	3,300	1,125 ^h	
1997	9,472	105,956	274	1,524 ^o	1,446	^p	1,996	11,525	2,375	2,775 ⁱ	
1998	7,193	129,076	157	1,360 ^h	2,771 ^h	^p	1,413 ^q	11,100	2,775	2,775 ⁱ	
1999	2,963	60,886	29	1,002 ^h	745 ^h	370	662 ^h	10,975	2,805		
2000	8,451	169,392	142	55 ^{g, h}	68 ^{g, h}	^p	879 ^{g, h}	9,225	2,358	1,025 ⁱ	2,175
2001	15,896	132,283	578	242	859	699	3,753	46,875	11,982	4,425 ⁱ	1,531
2002	3,577	117,908	744	0	328	935	1,910	38,625	9,873	5,900	874
2003	8,231	265,119	973	85	658	3,055	4,535	105,850	27,057	8,800	6,232
2004	11,146	199,884	583	220	450	840	3,370	37,950	9,701	2,925	8,626
2005	5,303	184,071	625	430	325 ^h	1,030	3,890	34,293	8,766	2,100	2,024
2006		131,919		194	160 ^h	634	1,916	16,748	4,281	4,375	271

-continued-

Appendix E11.–Page 2 of 2.

Year	East Fork Andreafsky River ^a	Yukon River	Kantishna River	Upper Tanana River Drainage							
		Mainstem	Drainage	Nenana River Drainage				Delta Clearwater River	Delta Clearwater River	Clearwater Lake and	Richardson Clearwater
		Sonar Estimate ^b	Geiger Creek ^c	Lost Slough	Nenana Mainstem ^d	Wood Creek	Seventeen Mile Slough	Clearwater River ^e	River Tributaries ^f	Outlet	River
2007		173,289		63	520	605	1,733	14,650	3,961	2,075	553
2008		135,570	183	1,342	1,539	578	1,652	7,500	1,917	1,275	265
2009		205,278 ^s	137	410		470	680	16,850	4,307	5,450	155
2010 ^r		142,149		1,110	280	340	720	5,867		813	1,002
SEG ^t								5,200-17,000 ^t			
Average											
1972-2009	8,288	146,617	270	859	1,004	1,433	1,593	17,203	7,457	2,253	1,343

Note: Only peak counts presented. Survey rating is fair to good, unless otherwise noted.

^a Weir count, unless otherwise indicated.

^b Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run.

^c Foot survey, unless otherwise indicated.

^d Index area includes mainstem Nenana River between confluence's of Lost Slough and Teklanika River.

^e Boat survey counts of index area (lower 17.5 river miles), unless otherwise indicated.

^f Helicopter surveys counted tributaries of the Delta Clearwater River, outside of the normal mainstem index area, from 1994 to 1998, after which an expansion factor was used to estimate the escapement to the areas.

^g Aerial survey, fixed wing or helicopter.

^h Poor survey.

ⁱ Boat Survey.

^j Weir was operated at the mouth of Clear Creek (Shores Landing).

^k Expanded estimate based on partial survey counts and historic distribution of spawners from 1977 to 1980.

^l The West Fork Andreafsky was also surveyed and 830 chum salmon were observed.

^m Weir project terminated on October 4, 1993. Weir normally operated until mid to late October.

ⁿ Weir project terminated September 27, 1994. Weir normally operated until mid-October.

^o Survey of western floodplain only.

^p No survey of Wood Creek due to obstructions in creek.

^q Combination foot and boat survey.

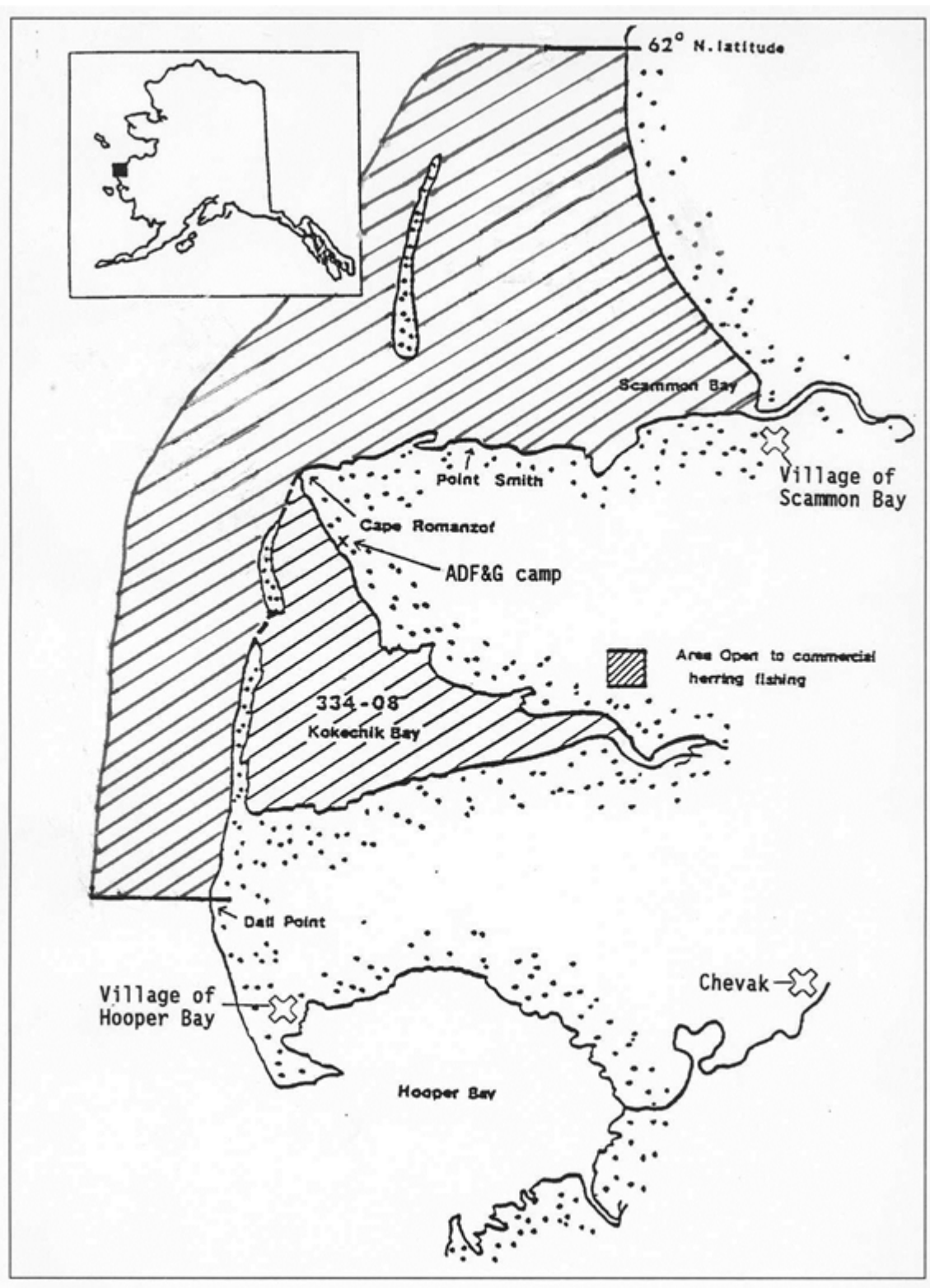
^r Data preliminary.

^s 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.

^t Sustainable escapement goal (SEG) established January 2004, (replaces BEG of greater than 9,000 fish established March, 1993) based on boat survey counts of coho salmon in the lower 17.5 river miles during the period October 21 through 27.

APPENDIX F

Appendix F1.—Waters open to commercial fishing in the Cape Romanzof District.



Appendix F2.–Commercial Pacific herring fishery data, Cape Romanzof District, 1980–2010.

	1980	1981	1982	1983 ^a	1984	1985	1986	1987 ^b	1988	1989	1990	1991	1992	1993	1994
Catch (short tons)	611	720	657	816	1,185	1,299	1,865	1,342	1,119	926	329	526	530	371	456
Hours Fished	326	120	180	144	90	60	42	8	11	13	3	5	6	12.5	7
Percent Roe Recovery	9.8	8	9.3	9	8.6	8.3	9.2	8.9	9.1	9.33	8.4	8.8	8	9.6	9.2
Average Weight of Fish (Grams) ^f	188	189	206	224	239	240	252	294	306	313	304	355	358	373	372
Estimated Value (\$ millions)	0.13	0.21	0.22	0.37	0.31	0.55	1.14	1	1.02	0.49	0.15	0.21	0.16	0.11	0.12
Number of Buyers	2	4	2	3	3	2	5	9	6	6	4	2	2	2	2
Number of Fishermen	69	111	75	63	66	73	97	157	113	115	95	80	73	41	55
Number of Boats	54	82	50	57	59	69	90	152	108	110	90	79	73	41	54
Number of Boats with Shakers ^c	12	11	10	2	1	2	12	22	-	-	-	-	-	-	-
% Effort by Local Fishermen ^d	70	81	85	92	99	91	84	53	63	87	76	96	97	95	95
% Harvest by Local Fishermen ^d	40	60	84	88	100	94	70	33	60	82	77	97	96	91	92
Biomass Estimate ^e	3,000	4,850	4,850	5,512	6,063	7,000	7,500	7,216	6,600	4,400	4,500	4,500	4,500	4,000	5,000
Exploitation Rate	20.4	14.8	13.5	14.8	19.5	18.6	24.9	18.6	17.0	21.0	7.3	11.7	11.8	9.3	9.1

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 ^h	2008 ^h	2009 ^h
Catch (short tons)	541	752	879	727	533	500	137	102	81	25	125	92	0.0	0.0	0.0
Hours Fished	15	34	29.5	35	13.5	13.0	13.5	41.5	64.0	148.0	158.0	89.0	0.0	0.0	0.0
Percent Roe Recovery	10.1	10.6	10.2	9.6	9.2	8.1	7.6	9.8	10.9	12.4	10.4	10.3	0.0	0.0	0.0
Average Weight of Fish (Grams) ^f	367	356	360	369	364	376	378	412	428	359	401	407	0.0	0.0	0.0
Estimated Value (\$ millions)	0.33	0.64	0.19	0.13	0.13	0.08	0.01	0.01	0.01	0.01	0.04	0.02	0.0	0.0	0.0
Number of Buyers	2	3	3	1	1	2	1	1	1	1	1	1	0.0	0.0	0.0
Number of Fishermen	49	63	65	41	57	46	23	21	11	10	10	8	0.0	0.0	0.0
Number of Boats	49	63	65	41	57	46	23	21	11	10	10	8	0.0	0.0	0.0
Number of Boats with Shakers ^c	-	-	-	-	-	-	-	-	-	-					
% Effort by Local Fishermen ^d	98	95	95	98	98	98	100	100	100	100	100	100	0.0	0.0	0.0
% Harvest by Local Fishermen ^d	99	96	95	98	99	98	100	100	100	100	100	100	0.0	0.0	0.0
Biomass Estimate ^e	5,000	6,000	5,000	4,500	3,800	3,500	2,700	3,600	3,685	3,500 ^g	3,388	4,813	4,500	5,000	4,800
Exploitation Rate	10.8	12.5	17.6	16.2	14.0	14.3	5.1	2.8	2.2	0.7	3.7	1.9	0.0	0.0	0.0

-continued-

Appendix F2.–Page 2 of 2.

		2005-2009	2000-2009	1980-2009
	2010 ^h	Average	Average	Average
Catch (short tons)	0.0	18	97	300
Hours Fished	0.0	18	48	44
Percent Roe Recovery	0.0	2	6	8
Average Weight of Fish (Grams) ^f	0.0	81	251	305
Estimated Value (\$ millions)	0.0	0	0	0.11
Number of Buyers	0.0	0	1	1
Number of Fishermen	0.0	2	12	27
Number of Boats	0.0	2	12	27
Number of Boats with Shakers ^c		-	-	-
% Effort by Local Fishermen ^d	0.0	20	63	79
% Harvest by Local Fishermen ^d	0.0	20	63	79
Biomass Estimate ^e	5,500	4,923	4090	4252
Exploitation Rate	0.0	0	3	7

^a Exclusive Use Regulation into effect.

^b Last year hydraulic shakers were allowed.

^c Numbers of boats using shakers were estimated.

^d Local fishermen described as residents of Chevak, Scammon Bay, and Hooper Bay.

^e Biomass estimate is a qualitative estimate of herring abundance, except for aerial survey biomass estimate in 1987.

^f Estimated by department from commercial harvest samples.

^g In 2004 the preseason biomass was estimated as a range of 3000–4000 .

^h No commercial fishing occurred.

Appendix F3.–Subsistence herring harvest (st) and effort data by community, Cape Romanzof, 1975–2010.

Year	Scammon Bay		Chevak		Hooper Bay		Totals	
	Harvest	Number of Fishermen	Harvest	Number of Fishermen	Harvest	Number of Fishermen	Harvest	Number of Fishermen
1975	-	-	-	-	2.8	34	2.8	34
1976	0.7	4	0.7	9	3.0	28	4.4	41
1977	-	-	0.2	2	2.4	28	2.5	30
1978	0.7	1	-	-	3.9	29	4.5	30
1979	6.0	21	2.3	21	3.1	42	11.4	84
1980	3.1	18	3.6	20	3.7	23	10.4	61
1981	7.7	16	1.8	9	4.0	20	13.5	45
1982	3.9	15	1.9	10	4.7	18	10.5	43
1983	2.5	14	1.5	5	5.2	18	9.2	37
1984	4.3	16	2.6	7	4.2	24	11.1	47
1985	2.4	11	2.2	13	3.4	20	8.0	44
1986	2.8	17	0.7	4	2.5	19	6.0	40
1987	1.4	8	0.5	5	1.1	10	3.0	23
1988	2.0	7	1.5	6	3.6	19	7.2	32
1989	1.1	7	0.1	1	1.8	16	3.0	24
1990	1.7	5	0.6	3	5.6	24	7.9	32
1991	1.7	7	0.4	3	1.1	8	3.2	18
1992	1.2	10	0.4	4	2.5	16	4.1	30
1993	2.7	17	0.1	1	2.4	24	5.1	42
1994	1.4	9	2.0	16	3.1	23	6.5	48
1995	1.1	11	1.2	9	3.8	22	6.1	42
1996	1.0	10	0.5	4	1.7	15	3.1	29
1997	0.9	10	0.2	3	2.2	21	3.2	34
1998	0.7	7	0.1	2	0.9	7	1.7	16
1999	6.0	24	2.3	12	4.2	31	12.5	67
2000	3.9	26	1.0	10	1.3	14	6.2	50
2001	1.5	8	1.0	10	0.1	5	3.1	24
2002	0.6	7	0.2	3	1.1	10	1.9	20
2003	3.0	13	1.0	8	2.0	13	6.0	34
2004	3.5	14	1.2	8	1.3	12	6.0	34
2005	6.2	9	0.1	2	0.6	2	6.9	13
2006	1.7	9	0.3	3	0.5	2	2.5	14
2007	1.5	8	1.2	6	0.4	4	3.1	18
2008	1.0	7	1.0	2	0.3	3	2.3	12
2009	0.7	6	0.3	3	0.2	3	1.2	12
2010	0.6	6	0.7	3	0.8	5	2.1	14
2005-2009								
Average	2.2	7.8	0.6	3.2	0.4	2.8	3.2	13.8

Note: Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fisherman could not be contacted. Data are updated annually as new information is obtained.

Appendix F4.–Subsistence harvest of herring roe on kelp by community, Cape Romanzof, 1993–2010.

Year	Scammon Bay		Chevak		Hooper Bay		Total	
	Number of Fishermen	Pounds Roe-on-Kelp	Number of Fishermen	Pounds Roe-on-Kelp	Number of Fishermen	Pounds Roe-on-Kelp	Number of Fishermen	Pounds Roe-on-Kelp
1993	9	300			10	213	19	513
1994	7	104	4	135	12	417	23	656
1995	12	298	1	25	13	383	26	706
1996	7	113	2	31	9	480	18	624
1997	6	130	1	25	13	400	20	555
1998	2	420	2	105	3	60	7	585
1999	15	416	5	160	22	549	42	1,125
2000	19	644	3	155	8	220	30	1,019
2001	2	25	3	113	2	50	7	188
2002	2	56	0	0	4	105	6	161
2003	8	185	2	130	7	185	17	500
2004	7	354	1	50	1	5	9	409
2005	5	1,125	0	0	0	0	5	1,125
2006	3	170	1	20	1	30	5	220
2007	2	50	1	10	0	0	3	60
2008	3	28	1	2	0	0	4	30
2009	0	0	1	5	0	0	1	5
2010	3	49	0	0	3	42	6	91
2005-2009								
Average	3	275	1	7	0	6	4	288

Note: Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fishermen cannot be contacted. Data are updated annually as new information is obtained.

APPENDIX G

Appendix G1.–Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2000–2010.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Estimated Total		
												Even Years Average	Odd Years Average	All Years Average
Hooper Bay	902	32	5,475	473	5,418	860	1,433	113	1,013	957	219	2,848	487	1,668
Scammon Bay	96	362	417	997	2,508	1,645	1,381	1,435	2,766	1,186	2,245	1,434	1,125	1,279
Coastal District	998	394	5,892	1,470	7,926	2,505	2,814	1,548	3,779	2,143	2,464	4,282	1,612	2,947
Nunam Iqua	0	0	10	5	32	132	555	170	757	61	306	271	74	172
Alakanuk	38	0	130	0	233	49	115	32	494	24	151	202	21	112
Emmonak	0	9	39	4	32	54	225	51	641	5	206	187	25	106
Kotlik	263	0	849	198	318	155	219	129	1,161	42	124	562	105	333
District 1	301	9	1,028	207	615	390	1,114	382	3,053	132	787	1,222	224	723
Mountain Village	61	0	745	117	891	78	616	87	500	6	217	563	58	310
Pitkas Point	114	0	35	0	0	2	44	66	15	0	143	42	14	28
St. Mary's	54	0	7	0	137	144	236	32	367	5	543	160	36	98
Pilot Station	6	0	22	0	5	0	1	0	34	3	22	14	1	7
Marshall	0	0	473	0	105	6	3	0	26	0	21	121	1	61
District 2	235	0	1,282	117	1,138	230	900	185	942	14	946	899	109	504
Russian Mission	8	0	0	0	6	0	8	3	436	0	2	92	1	46
Holy Cross	20	0	0	0	0	0	17	0	20	0	0	11	0	6
Shageluk	0	0	0	130	0	0	0	0	0	9	0	0	28	14
District 3	28	0	0	130	6	0	25	3	456	9	2	103	28	66
Anvik	30	0	0	240	0	0	0	0	23	2	0	11	48	30
Grayling	0	0	30	3	0	3	0	0	200	0	0	46	1	24
Kaltag	0	0	0	0	10	4	0	0	383	0	0	79	1	40
Nulato	0	0	50	0	0	0	1	0	35	0	0	17	0	9
Koyukuk	0	0	4	0	0	0	0	0	67	0	0	14	0	7
Galena	0	0	50	0	0	0	0	0	31	0	0	16	0	8
Ruby	1	0	87	0	2	0	0	0	184	0	0	55	0	27
Huslia	0	0	0	0	0	0	0	0	100	0	0	20	0	10
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	31	0	221	243	12	7	1	0	1,023	2	0	258	50	154

-continued-

Appendix G1.–Page 2 of 2.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Estimated Total		
												Even Years Average	Odd Years Average	All Years Average
Tanana	0	0	0	0	0	0	0	0	80	0	0	16	0	8
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	196	0	0	39	0	20
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	0	276	0	0	55	0	28
Survey Totals	1,593	403	8,423	2,167	9,697	3,132	4,854	2,118	9,529	2,300	4,199	6,819	2,024	4,422
CI (95%)	559	416	4,091	964	2,829	1,521	990	739	1,818	1,184	1,209	-	-	-

Note: Estimates from 2006 and 2007 are preliminary. CI (95%) is the annual confidence interval.

Appendix G2.—Reported subsistence and personal use fish harvested under authority of a permit, listed by permit area, Yukon area, 2010.

Permit Fishing Area	Number of Permits					Reported Harvest ^a									
	Permit		Percent Returned	that Fished ^c		Summer					Fall				
	Type	Issued ^b				Chinook	Chum	Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Longnose Sucker	Arctic Grayling
Subsistence Permit															
Yukon River near Haul Road Bridge	SY	85	81	95%	43	1,300	448	422	4	65	9	0	12	0	0
Yukon River near Circle and Eagle ^d	SE	66	62	94%	35	755	45	4,520	149	147	29	7	27	32	144
Yukon River Upper Yukon River (above sonar)	SEU	27	27	100%	21	610	8	11,350	1	104	25	10	2	8	12
Yukon River Rampart Area	SR	28	27	96%	22	1,344	299	1,235	24	158	0	5	20	0	1
Koyukuk River South Fork Koyukuk	SF	1	1	100%	1	0	0	0	0	8	0	0	0	0	0
Tanana River Subdistrict 6A	SA	22	22	100%	11	360	106	3,005	1,950	68	6	0	3	0	0
Tanana River Subdistrict 6B	SB	92	85	92%	31	580	683	7,434	3,168	496	7	6	18	34	1
Tanana River Upstream of Subdistrict 6C	SU	41	34	83%	19	10	0	12	0	1,542	0	11	13	21	38
Kantishna River Subdistrict 6A	SK	4	4	100%	3	1	0	81	23	3	0	3	28	0	0
Tolovana River Pike Subdistrict 6B	ST	96	90	94%	42	0	0	0	0	181	39	0	115	9	0
Subsistence Permit Subtotals		462	433	94%	228	4,960	1,589	28,059	5,319	2,772	115	42	238	104	196
Personal Use Permit															
Tanana River Subdistrict 6C	PC	67	67	100%	38	162	355	3,221	1,013	190	0	3	6	9	5
Tanana River Whitefish Upstream of Subdistrict 6C	PW	8	6	75%	3	0	0	1	0	14	1	0	1	57	0
Personal Use Permit Subtotals		75	73	97%	41	162	355	3,222	1,013	204	1	3	7	66	5
Permit Totals		537	506	94%	269	5,122	1,944	31,281	6,332	2,976	116	45	245	170	201

^a Information is preliminary and includes all permits returned as of March 29, 2011.

^b Includes 46 households that were "issued" permits for more than one area, one household that was issued a duplicate permit for the same area, and 5 permit holders issued an additional SE or SEU permit to record harvest above and below the Eagle sonar.

^c Includes 9 households that "fished" in two different permit areas.

^d Does not include fish distributed to community households from ADF&G Eagle Sonar test fish project (there were no test fish mortalities in 2010).

Appendix G3.–Commercial freshwater finfish harvest, Lower Yukon Area, 1978–2010.

Year	Sheefish		Bering Cisco		Other Whitefish ^a		Burbot		Pike	Lamprey		Blackfish
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Pounds	Number	Pounds	Pounds
1978	0	0			19	87	0	0	0	0	0	0
1979	5	39			23	55	0	0	0	0	0	0
1980	283	2,265			78	250	0	0	0	0	0	293
1981	299	2,812			779	2,875	0	0	9	0	0	0
1982	754	6,161			1,633	6,214	102	482	0	0	0	0
1983	395	2,692			163	648	0	0	0	0	0	0
1984	94	762			794	2,362	0	0	0	0	0	0
1985	358	3,081			1,514	4,586	0	0	0	0	0	0
1986	0	0			1,533	5,845	0	0	0		80	0
1987	0	0			2,144	7,564	0	0	0	0	0	0
1988	0	0			696	2,171	0	0	0	0	0	0
1989	0	0			0	0	0	0	0	0	0	0
1990	0	0			180	260	0	0	0	0	0	0
1991	0	0			0	0	0	0	0	0	0	0
1992	0	0			95	640	0	0	0	0	0	0
1993	-	-	-	-	-	-	-	-	-	-	-	-
1994	0	0			157	471	0	0	0	0	0	0
1995	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-
2003	0	0			0	0	0	0	0	84,665 ^b	23,960	0
2004	-	-	-	-	-	-	-	-	-	-	-	-
2005	266	1,688	241	362 ^c	2,669	4,265	0	0	0	0	0	0
2006	472	2,912	4,497	5,519	1,932	2,832	0	0	0	3,149 ^d	715	0
2007	445 ^e	3,363	2,451	2,951	1,748	3,145	0	0	0	0	0	0
2008	0	0	8,642	9,380	695	692	0	0	0	0	0	0
2009	0	0	9,066	9,743	750	763	0	0	0	1,520 ^f	465	0
2010	0	0	13,922	14,784 ^g	418	437	0	0	0	0	0	0
2005-2009												
Average	237	1,593	4,979	5,591	1,559	2,339	0	0	0	934	236	0
2000-2009												
Average	197	1,327	4,979	5,591	1,299	1,949	0	0	0	14,889	4,190	0

Note: Unless otherwise indicated a blank cell indicates information is not available. Dashes indicate years in which no commercial fishing occurred.

^a Based on Zephyr categorizations other whitefish species include: general whitefish, least cisco, broad whitefish, and humpback whitefish.

^b Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.283). Harvest took place in St. Mary's area.

^c In response to market conditions commercial whitefish fishing began to target Bering Cisco, therefore harvest of this species are separated from other whitefish species.

^d Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.227). A few deliveries were made in Mountain Village and St. Mary's.

^e Includes 416 sheefish harvested in the whitefish directed commercial fishery and 29 sheefish harvested in the salmon directed commercial fishery.

^f Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.306). A few deliveries were made in Marshall.

^g Includes 160 lb Bering Cisco harvested in January 2010 under permit authorized in fall 2009.

Appendix G4.–Commercial freshwater finfish harvest, Upper Yukon Area, 1971–2010.

Year	Healy Lake		Lake Minchumina		Tanana River				Yukon River							
	Whitefish ^a		Whitefish ^a		Burbot ^a		Whitefish ^a		Burbot ^a		Bering Cisco ^a		Other Whitefish ^b		Lamprey	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1971			3,277	9,831	0	0	0	0	0	0			0	0	0	0
1972	2,605	3,950	718	2,154	0	0	0	0	0	0			0	0	0	0
1973	2,187	3,915	1,697	5,037	0	0	0	0	0	0			0	0	0	0
1974	1,885	3,390	854	2,562	0	0	0	0	0	0			0	0	0	0
1975	1,357	2,375	0	0	0	0	0	0	0	0			0	0	0	0
1976	1,440	2,625	0	0	0	0	0	0	0	0			0	0	0	0
1977	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1979	1,336	2,306	0	0	0	0	0	0	0	0			0	0	0	0
1980	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	0	0	0	0	0	76	0	0	0	0			0	0	0	0
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	0	0	0	0	0	0	72	0	0	0			0	0	0	0
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	0	0	0	0	0	0	837	0	0	0			0	0	0	0
1989	0	0	0	0	0	0	0	0	1	0			0	2,070	0	0
1990	0	0	0	0	1	0	809	0	0	0			985	2,078	0	0
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1994	0	0	0	0	0	0	921	1,400	0	0			0	0	0	0
1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1997	0	0	0	0	0	0	908	1,160	0	0			0	0	0	0
1998	-	-	-	-	-	-	-	- ^c	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-continued-

Appendix G4.–Page 2 of 2.

Year	Healy Lake		Lake Minchumina		Tanana River				Yukon River							
	Whitefish ^a		Whitefish ^a		Burbot ^a		Whitefish ^a		Burbot ^a		Bering Cisco ^a		Other Whitefish ^b		Lamprey	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99,988 ^d	25,697
2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0
2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32,943 ^e	7,481
2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	163 ^f	42
2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	41,750 ^g	11,137
2009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48,117 ^h	14,745
2010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	108,838 ⁱ	30,713
2005-2009																
Average	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,595	6,681
2000-2009																
Average	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31,852	8,443

Note: Unless otherwise indicated a blank cell indicates information is not available. Dashes indicate years in which no commercial fishing occurred.

^a Numbers reflect fish harvested with the intent of commercial sale.

^b Based on Zephyr categorizations other whitefish species include: general whitefish, least cisco, broad whitefish, and humpback whitefish.

^c Requests for commercial whitefish fishing permits were denied because of the additional pressure placed on non-salmon species during poor salmon runs.

^d Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.257). Harvest took place in Grayling area.

^e Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.227). The majority of the harvest took place in the Grayling area.

^f Number of lamprey equals pounds of lamprey divided by an average lamprey weight (0.258). All of the harvest took place near Grayling and no samples were collected. An average weight was calculated from samples taken in Grayling in 2003, 2004, and 2006.

^g Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.267). Harvest took place in Grayling area.

^h Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.306). Harvest took place in Grayling area.

ⁱ Number of lamprey equals pounds of lamprey divided by the average lamprey weight (0.282). Harvest took place in Grayling area.

Appendix G5.–Freshwater finfish salmon during the commercial salmon fishing season by district, Upper Yukon Area, 1988–2010.

Year	District 4		District 5				District 6	
	Whitefish		Whitefish		Sheefish		Whitefish	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1988	170	977	1,432	1,497	94	689	1,055	1,078
1989	403	1,331	687	803	47	381	178	444
1990	0	0	266	266	25	170	2	15
1991	2,600	4,055	0	0	0	0	-	-
1992	2,635	2,455	1,864	1,379 ^a	0	0	199	499
1993	0	0	59	48	0	0	140	300
1994	1	4	108	215	0	0	209	433
1995	0	0	95	95	0	0	183	387
1996	0	0	22	66	0	0	103	292
1997	0	0	270	301	0	0	4	8
1998	0	0	116	88	0	0	0	0
1999	0	0	0	0	0	0	0	0
2000	-	-	-	-	-	-	-	-
2001	-	-	-	-	-	-	-	-
2002	0	0	0	0	0	0	60	120
2003	40	113	0	0	0	0	129	297
2004	-	-	4	15	0	0	53	112
2005	0	0	0	0	0	0	66	175
2006	-	-	0	0	0	0	99	397
2007	0	0	0	0	0	0	55	152
2008	0	0	276	289	38	338	165 ^b	507
2009	0	0	-	-	-	-	-	-
2010	0	0	-	-	-	-	18	72
2005-2009								
Average	0	0	69	72	10	85	96	308
2000-2009								
Average	7	19	40	43	5	48	90	251

Note: Unless otherwise indicated a blank cell indicates information is not available, Dashes indicate years in which no commercial fishing occurred.

^a The sale of fish sold did not include number of fish; therefore, number of fish were estimated using average weight (0.74 lbs) from previous deliveries in 1992.

^b The sale of fish sold did not include number of fish; therefore, number of fish were estimated using average weight (3.07 lbs) from 2007 and 2010 in District 6.

APPENDIX H

Appendix H1.–Commercial freshwater finfish harvest and sales, Colville River, Northern Areas, 1964–2010.

Year	Number of Fish Harvested Intended for Commercial Sale ^a					Estimated Commercial Sales Based on Fish Tickets ^b	
	Broad Whitefish	Humpback Whitefish	Least Cisco ("herring")	Arctic Cisco ("kaktok")	Total Harvest	Arctic Cisco	Whitefish Species ^c
1964	2,951 ^d	-	9,000	16,000	27,951	-	-
1965	3,000 ^d	-	-	50,000	53,000	-	-
1966	2,500 ^d	-	-	40,000	42,500	-	-
1967	-	-	-	-	0	-	-
1968	3,130	-	18,180	42,055	63,365	-	-
1969	-	-	-	-	0	-	-
1970	2,080 ^d	-	25,930	19,602	47,612	-	-
1971	3,815	132	22,713	38,016	64,676	-	-
1972	3,850	1,497	13,283	37,333	55,963	-	-
1973	2,161	-	25,188	71,569	98,918	-	-
1974	3,117	2,316	13,813	35,601	54,847	-	-
1975	2,201	1,946	20,778	28,291	53,216	-	-
1976	2,172	1,815	34,620	31,659	70,266	-	-
1977	443	1,431	14,961	31,796	48,631	-	-
1978 ^e	20	1,102	21,589	17,292	40,003	-	-
1979	0	1,831	24,984	8,684	35,499	-	-
1980	0	4,231	31,459	14,657	50,347	-	-
1981	1,035	469	16,584	38,206	56,294	-	-
1982	1,662	201	25,746	15,067	42,676	-	-
1983	0	408	35,322	18,162	53,892	-	-
1984	789	179	13,076	27,686	41,730	-	-
1985	401	191	17,595	23,679	41,866	-	-
1986	0	18	9,444	29,895	39,357	-	-
1987	5	1,989	10,922	24,769	37,685	-	-
1988	429	6,733	23,910	10,287	41,359	-	-
1989	71	6,575	23,303	17,877	47,826	-	-
1990	0	5,694	21,003	19,374	46,071	12,571 ^f	14,249 ^f
1991	0	1,240	5,697	13,805	20,742	1,970 ^g	3,307 ^g
1992	126	5,209	6,962	20,939	33,236	-	10,200 ^h
1993	20	5,339	6,037	31,310	42,706	11,291 ^g	6,170 ^g
1994	-	6,056 ^j	10,176	8,958	25,190	7,434 ^g	4,121 ^g
1995	-	33,794 ^k	-	-	33,794	13,921	6,000
1996	-	6,425 ^j	7,796	21,817	36,038	9,076	4,127
1997	-	1,721 ^j	10,754	9,403	21,878	9,403	4,760
1998	-	4,881 ^j	9,936	7,019	21,836	5,648	7,105
1999	-	6,875 ^j	7,430	8,832	23,137	7,095	6,170

-continued-

Appendix H1.–Page 2 of 2.

Year	Number of Fish Harvested Intended for Commercial Sale ^a					Estimated Commercial Sales Based on Fish Tickets ^b	
	Broad Whitefish	Humpback Whitefish	Least Cisco ("herring")	Arctic Cisco ("kaktok")	Total Harvest	Arctic Cisco	Whitefish Species ^c
2000	-	3,706 ^j	5,758	2,619	12,083	2,809	6,569
2001	-	6,078 ^j	2,839	1,740	10,657	1,779	7,306
2002	-	4,183 ^j	5,503	3,935	13,621	899	4,093
2003	-	6,463 ^j	4,777	5,627	16,867	0	1,292
2004	-	1,145 ^j	3,061	3,061	7,267	2,412 ^h	476
2005	-	490 ^j	2,870	9,343	12,703	2,975 ^h	2,170
2006	-	1,188 ^j	4,995	3,293	9,476	1,482 ^h	3,655
2007	-	462 ^j	2,265	390	3,117	- ⁱ	- ⁱ
2008	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-
2005-2009							
Average	-	428	2,026	2,605	5,059	891	1,165
2000-2009							
Average	-	2,372	3,207	3,001	8,579	1,236	2,556

^a Reported on daily catch form returned to ADF&G. Catch reports were returned to the department following the fishing season. All fish reported on the catch report were harvested with the intent to sell. Dashes indicate information is not available.

^b Fish tickets were often not generated at the time of sale. Since 1990, the commercial harvest is based on fish ticket information. Dashes indicate information is not available.

^c Whitefish species include mostly humpback whitefish and least cisco, with occasional broad whitefish.

^d Includes small numbers of Humpback whitefish.

^e Reported the harvest of 1 Chinook, 2 sockeye, 9 chum, and 118 pink salmon.

^f Commercial harvest estimate based on one fish ticket average weights of 0.89 pounds (900 Arctic cisco at 800 pounds) and 0.61 pounds (1400 whitefish species at 850 pounds).

^g Estimated commercial harvest sales based on 1995 to 2001 average weight of .92 pounds for Arctic cisco and .89 pounds for whitefish species (humpback and broad whitefish, and least cisco).

^h Mixed commercial harvest of mostly Arctic cisco along with humpback and broad whitefish, and least cisco. Estimated commercial harvest sales based on 1995 to 2001 combined average of \$1.07/lb. for whitefish species and Arctic cisco.

^j Humpback whitefish harvest includes undetermined amounts of broad whitefish.

^k Humpback whitefish harvest includes undetermined amounts of broad whitefish, least cisco, and Arctic cisco.

ⁱ No information is available from fish tickets indicating that harvested fish were sold commercially.