Fishery Data Series No. 10-43

Salmon Age and Sex Composition and Mean Lengths for the Yukon River Area, 2008

by

Maureen H. Horne-Brine

and

Larry DuBois

June 2010

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Measures (fisheries)

fork length	FL
mideye to fork	MEF
mideye to tail fork	METF
standard length	SL
total length	TL

Mathematics, statistics

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

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June 2010

This investigation was partially financed by the United States Fish and Wildlife Service Agreement No. 701818G497 (ADF&G IHG-09-006), under the authority of the Fish and Wildlife Coordination Act, 16 USC 661 to 667 (d), and the Yukon River Salmon Act 16 USC 5724 and 5727.

ADF&G Fishery Data Series was established in 1987 for the publication of Division of Sport Fish technically oriented results for a single project or group of closely related projects, and in 2004 became a joint divisional series with the Division of Commercial Fisheries. Fishery Data Series reports are intended for fishery and other technical professionals and are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm This publication has undergone editorial and peer review.

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This document should be cited as:
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.

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ABSTRACT

Biological data were collected from Chinook *Oncorhynchus tshawytscha*, summer and fall chum *O. keta*, and coho salmon *O. kisutch* at 36 locations along the U.S. portion of the Yukon River drainage in 2008. Age, sex, and length (ASL) data were obtained from 7,141 Chinook, 5,711 summer chum, 4,912 fall chum, and 1,008 coho salmon from commercial and subsistence harvests, as well as test fisheries and escapement projects. Samples were collected using gillnets, fish wheels, beach seines, weir traps, and from carcass surveys. Where available, escapement estimates from sonar and weir projects were separated into temporal segments (strata) and commercial harvests were separated into fishery periods, and characterized by the ASL data collected during the corresponding stratum or period. At most test fishery projects data were stratified by quartiles based on sample sizes.

In 2008, age-1.3 and age-1.4 Chinook salmon predominated most of the commercial, subsistence, test fishery, and escapement samples. Age-1.3 Chinook salmon percentages were above average at most projects. Summer and fall chum salmon commercial, subsistence, test fishery, and escapement samples were primarily composed of age-0.3 and age-0.4 fish. Age-2.1 coho salmon predominated in the commercial and test fishery samples.

Key words: ASL, Yukon River, Chinook *Oncorhynchus tshawytscha*, summer chum, fall chum *O. keta,* and coho *O. kisutch* salmon, age, sex, length, escapement, weir, test fishery, subsistence, commercial

INTRODUCTION

The Yukon River drainage encompasses coastal waters from Canal Point light, near Cape Stephens, southward to the Naskonat Peninsula (Vania et al. 2002), and upstream to the headwaters near Whitehorse, Canada (Figure 1). The drainage supports major runs of Chinook *Oncorhynchus tshawytscha*, summer and fall chum *O. keta*, and coho salmon *O. kisutch*. These 3 salmon species are harvested in commercial, subsistence, personal use, test, and sport fisheries in Alaska. Harvests also occur in the Canadian portion of the drainage by commercial, subsistence, aboriginal, sport, and domestic fishermen (JTC 2006a). Pink *O. gorbuscha* and sockeye salmon *O. nerka* are also indigenous to the drainage; however, neither species are harvested by fishermen to any significant extent.

Adult Chinook and summer chum salmon runs typically enter the mouth of the Yukon River during late May to begin their upstream migration. These runs are followed by fall chum salmon, which enter the Yukon River from mid July through early September. Summer chum are genetically distinct from fall chum salmon (Crane et al. 2001). In addition, summer chum can be distinguished from their fall counterparts by their smaller size, lower oil content, and spawning locations. Summer chum spawn in the lower and middle portion of the drainage, whereas fall chum salmon spawn in the upper portion of the drainage (Vania et al. 2002). Coho salmon enter the Yukon River from late July through September.

For management purposes, the Alaskan portion of the drainage is divided into 7 districts and 10 subdistricts (Figure 2). The Lower Yukon Area consists of the Coastal District and Districts 1, 2, and 3. The Upper Yukon Area consists of Districts 4, 5, and 6.

Yukon River drainage salmon age, sex, and length (ASL) data have been collected since 1960. Data were historically recorded using handwritten forms, computerized mark–sense forms, and most recently, electronic data loggers. Annual ASL data summaries have been reported in various formats. From 1962 through 1968 these data were reported in Annual Management Reports or Arctic Anadromous Fishery Investigation Reports. From 1969 through 1981 data were reported in Salmon Age, Sex, and Size Composition, an ADF&G special report series. From 1982 through 1988 data were published in the Technical Fisheries Report series (e.g., Buklis 1987). For the years 1989, 1992, and 1994 data were published in the Regional Information Report series (e.g., Menard 1996). For the years 1990, 1991, 1993, and 1995

through 2003, Yukon ASL data were reported as an unpublished memorandum (e.g., DuBois[1]). In 2004, ADF&G Division of Commercial Fisheries (DCF) began using the Fishery Data Series to report annual Yukon ASL data (e.g., Bales 2008). Individual salmon ASL data collected in the Yukon River area have been incorporated into the AYK Salmon Database Management System and are available from the ADF&G website
http://sf.adfg.state.ak.us/CommFishR3/Website/AYKDBMSWebsite/DataTypes/ASL.aspx

The purpose of this report is to present the 2008 Yukon River drainage salmon ASL summary data collected from various commercial and subsistence harvests, test fisheries, and escapement projects (Table 1). ASL data and summaries provide the basis for a variety of analyses including preseason run outlooks, assessment of the proportion of females and older-aged fish in escapements, and development of spawner–recruit models and biological escapement goals.

OBJECTIVE

To summarize age, sex, and size data from Chinook, summer chum, fall chum, and coho salmon collected throughout the Alaska portion of the Yukon River drainage.

COMMERCIAL FISHERIES

Commercial fishing occurs throughout the mainstem Yukon River and in the lower 224 river miles (rm) of the Tanana River. The majority of commercially caught Chinook salmon are harvested from Districts 1 and 2, with smaller harvests occurring in Districts 3, 5, and 6. Summer chum salmon harvests are typically highest in Districts 1 and 2, with smaller harvests occurring in the Upper Yukon River districts. Fall chum and coho salmon are typically harvested in Districts 1, 2, 5, and 6 (JTC 2006a).

Set and drift gillnets are the only legal gear in the Lower Yukon Area (Figure 2; ADF&G 2004). During the summer season (ending July 15 in District 1) when Chinook salmon are usually targeted, commercial fishing in the Lower Yukon Area is typically restricted to 8-inch and larger mesh sizes or the mesh size is unrestricted. However, in 2008, all District 1 and 2 summer season commercial fishing periods were directed at harvesting summer chum salmon and the gillnet mesh size was restricted to 6-inch or less. Chinook salmon incidentally harvested during the Districts 1 and 2 summer chum-directed commercial fisheries were also legally sold. During the fall season (starting July 16 in District 1), all Lower Yukon Area commercial fishing periods allowed unrestricted mesh size gillnets; however, it is likely that commercial fishermen used gillnets with 6-inch or less mesh size to target fall chum and coho salmon.

Historically, set gillnets and fish wheels were the only legal gear in the Upper Yukon Area (Figure 2), except for Subdistrict 4-A where drift gillnets were allowed (ADF&G 2004). In 2005, regulations changed to allow drift gillnets to be used in Subdistricts 4-B and 4-C. In 2008, all summer season commercial fishing in the Upper Yukon Area targeted summer chum salmon. In Subdistrict Y4-A roe fishery, commercial fishermen used fish wheels to harvest female summer chum salmon; sex was visually estimated and males were live released or retained for subsistence use. Summer chum salmon harvested in District 6 were caught using fish wheels or gillnets. During the fall season, fall chum and coho salmon were harvested using fish wheels or set gillnets in Districts 5 and 6.

[1] DuBois, L. 2004 (*Unpublished*). Salmon age and sex composition and mean lengths for the Yukon River Area, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage.

SUBSISTENCE FISHERIES

Subsistence fishing occurs throughout the Yukon River drainage, with most effort concentrated in the mainstem. Alaska state law mandates that subsistence use of fish has priority over other uses (AS 16.05.258; ADF&G 2004). Chinook, summer chum, fall chum, and coho salmon are the principal species utilized by subsistence fishermen. The primary gear used to harvest subsistence salmon in Districts 1, 2, and 3 are set and drift gillnets; a mixture of gillnets and fish wheels are used in Districts 4, 5, and 6 (Busher and Hamazaki 2004). Many fishermen use 8-inch or larger mesh sizes, known as 'king nets', early in the season to target larger Chinook salmon; then change to 6-inch or smaller mesh sizes, known as 'chum nets', later in the season to target summer chum, fall chum, and coho salmon.

In accordance with the Yukon River king salmon management plan, the 2008 regulatory subsistence fishing window schedule began on May 26 in District 1, and was implemented geographically upriver by district, consistent with Chinook salmon migration timing (JTC 2009). When inseason assessment indicated the 2008 Chinook salmon return was below expected abundance and would likely not meet escapement objectives or fulfill all subsistence needs, additional salmon conservation restrictions were put in place beginning June 23. The secondary restrictions decreased subsistence fishing time in Districts 1 through 5; and, maximum allowable mesh size was reduced in Districts 1 and 2 (JTC 2009). Beginning July 3, the subsistence fishing window schedule was discontinued and subsistence fishing was open continuously, except for 18 hours before, during, and 12 hours after summer chum-directed commercial fishing periods (Hayes and Newland 2008), and this schedule continued into the fall season (Bue 2008; Bue and Busher 2008).

TEST FISHERIES

Test fishery projects provide assessments of run strength, timing, and ASL composition. All test fishery projects in 2008 operated in the Yukon River mainstem.

LOWER YUKON TEST FISHERY

The Big Eddy and Middle Mouth test fisheries, located in District 1 near river mile 24, are referred to as the Lower Yukon test fishery (LYTF). Since 1979, the LYTF has utilized set and drift gillnets to estimate run timing and relative abundance of Chinook, summer chum, fall chum, and coho salmon returning to the Yukon River. The Big Eddy test fishery is located on Kwikluak Pass (South Mouth) near the village of Emmonak (Figure 1). The Middle Mouth test fishery is located on Kwikpak Pass, upstream of Kawanak Pass (Middle Mouth) and Apoon Pass (North Mouth, Figure 1; Horne-Brine and Bue 2008).

Typically, each of the Big Eddy and Middle Mouth test fisheries have 2 fishing stations that target Chinook salmon using 8.5-inch set gillnets, 2 stations that target summer chum salmon using 5.5-inch drift gillnets, and 2 stations that target fall chum and coho salmon using 6.0-inch drift gillnets. During the summer season (June 1–July 15), the 8.5-inch set gillnets are fished 24 hours a day and checked every 12 hours. The 5.5-inch drift gillnets are fished for 20 minutes at each station twice a day (Newland and Hayes 2008). During the fall season (July 16–August 31), 6.0-inch drift gillnets are fished for 20 minutes at each station twice a day (Horne-Brine and Bue 2008).

LYTF is the longest-standing test fishery project in the Yukon River drainage. Biological samples have been collected at one or both of the LYTF locations from Chinook (most years since 1974, chum (since 1979), and coho salmon (most years since 1981).

COMPARATIVE MESH SIZE STUDY

The comparative mesh size study is a 3-year project that began in 2007 to gain information about the catch composition of Chinook and summer chum salmon harvested using 7.0-, 7.5- and 8.0-inch mesh drift gillnets. Specifically, the goals are: to determine the proportion of Chinook and summer chum salmon by mesh size; to determine the age, sex, length, weight, and girth of Chinook salmon by mesh size; and to evaluate marketability of the catch by mesh size (JTC 2008).

The comparative mesh size study operated from mid to late June at 2 stations along the north and south banks of Kwikluak Pass (South Mouth) near the Big Eddy test fishing site. Each station was fished twice a day for about 30 minutes per drift. One drift was conducted for each mesh size at each station, totaling up to 12 drifts per day. Unlike other test fisheries, the comparative mesh size study did not operate on a set daily schedule; rather, drift nets were deployed on days when larger catches were expected in order to attain the sample size goal.

MOUNTAIN VILLAGE TEST FISHERY

The Mountain Village drift gillnet test fishery has operated in District 2 since 1995. The objectives are to estimate relative abundance and migratory timing of fall chum and coho salmon in the Yukon River near Mountain Village (rm 87, Figure 1). The Mountain Village test fishery typically operates from mid July to mid September. Test fishermen conducts 1 drift at each of 3 stations using a 25 fathom 5 7/8-inch mesh gillnet. The stations are fished once a day for about 20 minutes per drift. Fall chum and coho salmon harvested from the Mountain Village test fishery have been sampled for biological data since 2001.

PILOT STATION SONAR

Located in District 2 (rm 123, Figure 1), Pilot Station sonar uses hydroacoustic equipment to generate daily Chinook, summer chum, fall chum, and coho salmon abundance estimates. Pilot Station sonar has been in operation since 1986, and multiple styles of equipment have been used. From 1986 to 1992, the project utilized dual-beam sonar equipment at a frequency of 420 kHz. In 1993, existing equipment was modified to operate at a frequency of 120 kHz to allow greater ensonification range and to minimize signal loss (JTC 2008). In 2001, equipment changed from dual-beam to a split-beam sonar system. In response to high water and erosion along the left bank bottom profile, in 2005 a Dual Frequency Identification Sonar (DIDSON) was added to the existing sampling routine to detect fish traveling within 20 meters of the left bank (Carroll and McIntosh 2008).

The Pilot Station project currently uses a combination of fixed-location split-beam sonar and DIDSON. To apportion the passage estimates by species, a series of gillnets with varying mesh sizes are drifted through the acoustic sampling area. Sonar equipment and fishing gear are operated at regular intervals within a 24-hour period. Typically, Chinook and summer chum salmon are sampled from early June to mid July; fall chum and coho salmon are sampled from mid July to the end of August or early September (Carroll and McIntosh 2008). Chinook salmon

biological data has been collected annually since 1998. Chum salmon biological data were collected for 4 years from 1986 to 1994, and coho salmon biological data were collected in 1994.

MARSHALL TEST FISHERY

Located in District 2 (rm 171, Figure 1), the Marshall drift gillnet test fishery has operated from 1999 to 2000 and 2005 to 2008. The objectives are to estimate relative abundance and migratory timing of Chinook salmon near the community of Marshall, and to compare catches and timing with other projects (Waltemyer 2007).

The Marshall test fishery typically operates from mid June to mid July. Test fishermen conduct four 20-minute drifts each day, 2 in the morning and 2 in the evening, using a 50 fathom 8.25-inch mesh gillnet. There are 2 fishing stations, one along the north bank and one along the south bank; both stations have been used since the inception of the project (Waltemyer 2007). Chinook salmon biological data have been collected each year the project operated.

KALTAG TEST FISHERY

The Kaltag drift gillnet test fishery has been in operation since 1999, and provides estimates of fall chum and coho salmon relative abundance and migration timing near the District 4 community of Kaltag (rm 450, Figure 1). The Kaltag test fishery typically operates from late July to mid September. Test fishermen conduct one drift at each of the stations using a 25 fathom, 5 7/8-inch mesh gillnet. Two of the drifts are conducted from a boat, and one drift is conducted by walking along the shore. The stations are fished once a day for about 20 minutes per drift. Chum salmon biological data has been collected for most years since 2001, and coho salmon biological data has been collected since 2003.

EAGLE SONAR

Located in District 5, the Eagle Sonar project (rm 1,206, Figure 1) estimates run timing and passage estimates for Chinook and fall chum salmon. The sonar site selection began in 2003 and in 2004 a 2-week study evaluated the performance of the sonar equipment. The project began operating full-time in 2005, using DIDSON on the right bank and split-beam sonar on the left bank (JTC 2007). Chinook salmon daily passage has been estimated since 2005 and in 2006 Eagle sonar began estimating fall chum salmon passage. To apportion the passage estimates by species, a test fishery is conducted where gillnets of varying mesh sizes are drifted through the sonar site. Chinook salmon are sampled from the test fishery catches from early July to mid August and fall chum are sampled from mid August to early October (Carroll et al. 2007). Chinook salmon biological data have been collected since 2005 and fall chum salmon data have been collected since 2006.

ESCAPEMENT MONITORING

Annual assessments of spawning escapements are monitored in Yukon River tributaries by means of weirs, counting towers, sonar projects, carcass and aerial surveys (Vania et al. 2002). The ground based weir, tower, and sonar projects typically include a sampling program, whereby salmon are captured with a trap built into a weir, fishing a beach seine, or carcass sampling.

East Fork Andreafsky River

The Andreafsky River joins the Yukon River near the village of Saint Mary's (rm 104, Figure 1). The mainstem Andreafsky River and the East Fork parallel each other for more than 124 rm and

then converge 4.5 rm upriver from the confluence with the Yukon River. Escapement monitoring using aerial surveys began on the East Fork Andreafsky River in 1954, sonar and tower projects operated from 1981 through 1988, and salmon enumeration using weirs began in 1994 (Maschmann 2008).

A modified resistance board weir, as described by Tobin (1994), is currently used to estimate salmon escapements in the East Fork Andreafsky River, 27 rm from the confluence of the Andreafsky and Yukon rivers. The weir typically operates from mid June to late July to estimate escapement and run timing of Chinook and summer chum salmon. From 1995 through 2005, the season was extended into September to monitor coho salmon escapement (Maschmann 2008).

East Fork Andreafsky River monitoring is 1 of 4 long-standing escapement projects in the drainage. Biological data have been collected from Chinook salmon since 1980, summer chum salmon since 1981, and coho salmon from 1995 to 2005. Collection methods have included hand-picked carcasses, beach seine, and a weir trap.

ANVIK RIVER

The Anvik River flows for 124 rm before joining the Yukon River near the community of Anvik (rm 318 Figure 1). Summer chum salmon escapements to the Anvik River were estimated using side-scanning sonar from 1979 to 2006. In 2007, the project began monitoring chum salmon using DIDSON (McEwen 2009). The sonar project typically operates 30 minutes of each hour, 24-hours a day, 7 days a week throughout the season, usually late June to late July. Summer chum salmon predominate during most years; therefore, a test fishery is usually not operated for species apportionment. However, during years of high pink salmon abundance, tower counts may also be conducted to assess species composition. Chinook salmon returning to the Anvik River are monitored by aerial surveys.

Anvik River monitoring is 1 of 4 long-standing escapement projects in the drainage. Biological data have been collected from Chinook salmon for most years since 1967 from hand-picked carcasses. Biological data have been collected from summer chum salmon from 1972 to 1982 from hand-picked carcasses and from 1984 to 2008 by beach seine.

GISASA RIVER

The Gisasa River flows into the Koyukuk River 56 rm upstream of the confluence of the Koyukuk and Yukon rivers (rm 508, Figure 1). A resistance board weir has operated on the Gisasa River since 1994 to estimate Chinook and summer chum salmon escapements and run timing. The weir typically operates from late June through late July and is located 2.5 rm upriver from the confluence with Koyukuk River (Melegari 2008b).

A limited number of Chinook and summer chum salmon were sampled from 1982 to 1988 from hand-picked carcasses. Since 1995, both species have been captured for sampling using a weir trap.

HENSHAW CREEK

Henshaw Creek is located in the upper Koyukuk River drainage 468 rm upriver from the confluence of the Koyukuk and Yukon rivers (Figure 1). A resistance board weir, located about 1 mile up from the confluence with the Koyukuk River, has operated on Henshaw Creek since 2000. The weir typically operates from late June to early August providing escapement and run

timing estimates for Chinook and summer chum salmon. Biological data have been collected since 2000 from both salmon species using a weir trap.

TOZITNA RIVER

The Tozitna River originates in the Ray Mountains and flows 129 rm to the confluence with the Yukon River (rm 681, Figure 1; Post et al. 2006). A resistance board weir was installed at rm 50 of the Tozitna River to monitor Chinook and summer chum salmon escapement and run timing. The project began in 2002 and typically operates from late June to early August. The weir is downriver of most salmon spawning activity. In some years aerial surveys were conducted to document any spawning activity below the weir (Post et al. 2006). Biological data have been collected from Chinook and summer chum salmon from hand-picked carcasses in 2001 and by weir trap since 2002.

CHANDALAR RIVER

The Chandalar River drains the southern slopes of the Brooks Range (Figure 1). The upper portion of the Chandalar River has 3 major branches which merge into a braided, multi-channel system until rm 14. The river then follows a single channel until rm 12, where it begins to meander into a slough system before joining the Yukon River at rm 982 (Melegari 2008a).

Chandalar River sonar (rm 13.5) monitors one of the largest fall chum salmon escapements in the drainage. The sonar project typically operates 24 hours a day, from early August through late September. From 1995 through 2006, split-beam sonar was used. From 2004 through 2006 DIDSON was used concurrently with split-beam sonar, and in 2007 the project migrated to using DIDSON exclusively (Melegari 2008a). A carcass survey is conducted to collect biological data from fall chum salmon.

SHEENJEK RIVER

The Sheenjek River sonar project is located 6 rm upriver from the confluence with the Porcupine River (Figure 1). The Porcupine River flows another 52 rm before its confluence with the mainstem Yukon River (rm 1,002). Fall chum salmon escapement in the Sheenjek River has been monitored using sonar technology since 1981. Single-beam side-scanning sonar was used from 1981 to 1999. Split-beam sonar was incorporated along with the single-beam sonar during 2000 and 2002, and in 2003 the split-beam sonar was used exclusively (JTC 2008). DIDSON was operated in conjunction with the split-beam sonar during 2004 and 2005. The Sheenjek River sonar project has operated with DIDSON exclusively since 2006 to estimate fall chum salmon escapement (Dunbar 2009; JTC 2008). Project operation dates have varied, but since 1991 were generally early August to late September (Dunbar 2009). Sheenjek River fall chum salmon biological data were collected from hand-picked carcasses from 1975 to 1978. From 1981 to 2008 collection methods have been drift gillnet, beach seine, or hand-picked carcasses.

CHENA RIVER

The Chena River is a tributary of the Tanana River, located 225 rm upriver from the confluence of the Tanana and Yukon rivers (rm 695, Figure 1). A counting tower has operated to estimate Chinook and summer chum salmon escapements in the Chena River since 1993. Daily escapements are visually estimated as fish pass through the Moose Creek Dam and swim over white fabric panels placed across the river bottom. Suspended lights illuminate the panels to

allow enumeration 24-hours a day, from late June through the end of July (Brase and Doxey 2006). Aerial surveys may also be conducted.

Chena River monitoring is 1 of 4 long-standing escapement projects in the drainage. Biological data from Chinook salmon has been collected since 1980 from hand-picked carcasses or by electrofishing, which was used for a mark–recapture population estimate. A limited number of summer chum salmon were sampled from 8 years during 1974–2008, primarily from hand-picked carcasses.

SALCHA RIVER

The Salcha River is a tributary of the Tanana River, located 270 rm upriver from the confluence of the Tanana and Yukon rivers (rm 695, Figure 1). Salcha River Chinook and summer chum salmon escapements have been monitored by a counting tower located near the Richardson Highway Bridge since 1993 (Brase and Doxey 2006). The counting tower methods are similar to those used on the Chena River, where salmon are counted 24-hours a day as they migrate upriver over illuminated white fabric panels. Counting is conducted from about late June to early September. Aerial surveys may also be conducted.

Salcha River monitoring is 1 of 4 long-standing escapement projects in the drainage. Biological data from Chinook salmon has been collected for most years since 1966 from hand-picked carcasses and, during 6 years, by electrofishing. A limited number of summer chum salmon were sampled from 10 years during 1972–2008, primarily from hand-picked carcasses.

DELTA RIVER

The Delta River is a tributary of the Tanana drainage, located 336 rm upriver from the confluence of the Tanana and Yukon rivers (rm 695, Figure 1).

Carcass surveys have been used to monitor Delta River fall chum salmon escapements since 1972 (JTC 2009). These surveys are typically conducted from late October to late November, contingent on run timing. Scales collected from carcasses were used for age determination from 1973 to 1985, and this age structure was subsequently replaced by vertebrae.

METHODS

Chinook, summer chum, fall chum, and coho salmon were sampled for ASL data from commercial and subsistence harvests, as well as test fishery and escapement projects throughout the Yukon River drainage. Various state, federal, and tribal agencies collected these data. Division of Commercial Fisheries staff based in Anchorage process, analyze, and report ASL summary information. Methods described are those procedures recommended by ADF&G; other organizations may have collected and recorded data using slightly different procedures.

SAMPLE DESIGN

A stratified random sampling design was used to obtain samples for estimating age, sex, and length compositions from most projects. Strata were assigned as individual fishing periods for commercial harvest samples, time strata of variable length for escapement estimates (weir and sonar projects), weekly strata for subsistence samples, run strength indices (such as quartiles for test fishery projects), and number of fish sampled for carcass samples. Strata were adjusted depending on the number and distribution of samples collected and an attempt was made to include sufficient sample sizes within each stratum to estimate the proportion of each major age

class with α=0.05 and d=0.1 (Bromaghin 1993). The escapement/harvest for each stratum was provided by project leaders and ADF&G fish ticket harvest reports.

Proportion of *j-th* age-sex class at *s-th* strata ($\hat{P}_{sj}$) was estimated as:

$$\hat{P}_{sj} = \left(\frac{n_{sj}}{n_s} \right)$$

Where:

n_{sj} = number of samples for age-sex class *j* in stratum *s*,

n_s = number of samples in stratum *s*,

The number of *j-th* age-sex class at *s*-th strata ($\hat{N}_{sj}$) was estimated as:

$$\hat{N}_{sj} = N_s \cdot \hat{P}_{sj}$$

Where:

N_s = escapement/harvest of age-sex class *j* in stratum *s,*

When data for all strata were available, season-wide proportion and number of *j*-th age-sex class was estimated as:

$$\hat{P}_j = \frac{1}{N} \sum^{s} N_s \hat{P}_{sj}$$

$$\hat{N}_j = \sum^{s} N_s \hat{P}_{sj}$$

Where:

N = total season escapement/harvest.

As observed from a given location, the ASL composition of a returning salmon population often changes over the course of the season (Molyneaux et al. 2006); therefore, sample proportions were applied to harvest or escapement estimates only when adequate sample size, strata distribution, and numbers of fish by stratum were available. Commercial harvest samples and tributary escapement monitoring projects utilizing weir or sonar typically met the criteria for stratification. Subsistence, test fishery, and carcass sampling projects frequently failed to meet one or more of these criteria and were summarized by number of samples. Samples were stratified by mesh size from the Comparative Mesh Size study, Pilot Station sonar test fishery,

and Eagle sonar test fishery. Age, sex and length percentages for commercial samples were weighted by the respective harvest for all species in District 1, Chinook and summer chum in District 2, and fall chum salmon in District 5 and District 6. If the sample size by strata within a data set was inadequate or nonexistent, age and sex data were not applied to the commercial harvest for that stratum. Age, sex, and length percentages for escapement samples were weighted by the respective escapement for Chinook and summer chum salmon at the East Fork Andreafsky, Gisasa, and Tozitna rivers; Henshaw Creek, and for summer chum salmon at the Anvik River. These estimates are preliminary and individual project reports by the participating agencies should be referenced for final escapement, age, and sex estimates.

GENERAL SAMPLING PROCEDURES

Scales were removed from the preferred area of the fish and mounted on gum cards for future age determination by ADF&G (INPFC 1963). The preferred area is located on the left side of the fish, 2 rows above the lateral line along a line from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. One scale was removed from each chum salmon and 3 scales were removed from each Chinook and coho salmon. Scale regeneration, or scale loss and rapid replacement, contributes to aging uncertainties primarily in the freshwater growth area. Chinook and coho salmon usually rear in freshwater for 1 year or longer, hence 3 scales were removed from these fish to increase the chance of selecting a scale that could be aged. In some tributaries, vertebrae were used to age summer chum and fall chum salmon when scale re-absorption makes aging scales difficult. Vertebrae were removed from fish collected during selected carcass sampling and beach seining projects.

Sex was determined by examining internal reproductive organs or external characteristics such as kype development and presence of reproductive organs at the vent. The LYTF projects, the Comparative Mesh Size study, Sheenjek sonar, and carcass sampling were the only projects where internal organs were examined; hence, these projects have accurate sex composition. Other test fishery projects conducted by non-ADF&G staff were instructed to examine internal organs; however, this protocol may not have been adhered to in all projects. Internal organs were not examined from commercial and subsistence harvests and some non-ADF&G staffed test fisheries, because cutting fish would decrease fish value to commercial buyers and subsistence fishermen prefer to cut their fish immediately before processing.

Lengths from fish sampled were determined by measuring each fish from mideye to fork of tail and were recorded to the nearest 5 mm increment. Field data were recorded in Rite-in-the-Rain books and transferred to mark–sense forms (ADF&G Adult Salmon Age-Length Form, Version 2.1) or entered into MS Excel©[2] files. During the lower river commercial harvest sampling, sex and length data were entered directly into Juniper data loggers and loaded into an inseason database.

Weight (lb) and girth (mm) measurements were collected from Chinook salmon sampled at the LYTF projects, the Comparative Mesh Size study, and from subsistence harvests at Kaltag and Eagle. Girth measurements were collected from Chinook salmon sampled from Holy Cross and Bishop Rock subsistence harvests. Weight was taken using a hanging warehouse scale suspended from a tripod. Girth was measured while the fish was hanging from the scale, with a "QM2000

[2] Product names used in this report are included for scientific completeness, but do not constitute a product endorsement.

Measure Mate – Girth and Linear Measure Tape," perpendicular to the longitudinal axis of the fish at the anterior insertion of the dorsal fin and recorded to the nearest 5 mm increment.

SAMPLE COLLECTION

Commercial Harvest Sampling

The DCF crews conducted commercial harvest sampling for Chinook, summer and fall chum, and coho salmon in Districts 1, 2, 5, 6, and Subdistrict 4-A. Sample goals were up to 400 Chinook, 160 summer and fall chum, and 120 coho salmon by period and district. District 1 samples were collected from fish processors in Emmonak, and District 2 samples were collected from fish processors in Mountain Village (Figure 1). Off-loading crews placed each salmon in a species–specific tote or bin. When excess fish were not available, DCF crews sampled all available fish until the sample goal was attained. When excess fish were available, sampling crews selected a tote of fish and sampled every fish in the tote. Sampling crews worked quickly to attain sampling goals in the short time between fish delivery and processing.

Commercial harvests of summer and fall chum salmon in Districts 5 and 6 were sampled at a processing plant in North Pole near Fairbanks. Similar to lower river sampling, DCF crews arrived before fish deliveries and worked quickly to achieve sample goals before processing began. In Districts 5 and 6, processors often presorted the commercial catch by sex or size; as a result, samples from these commercial harvests are not random.

Subsistence Harvest Sampling

Collecting subsistence harvest samples is opportunistic and depends on timing, availability, logistics, and willingness of fishermen participation. Crews typically sample every fish available because finding fish to sample, specifically when boat travel among fishing camps is required, is time consumptive. Subsistence harvest sampling design is therefore what Geiger et al. (1990) termed a "grab or haphazard sample", where the population is assumed to be nearly in random order and all available fish are sampled. Assuming consistent effort by samplers, more fish are sampled when more fish are available which tends to self-weigh the samples by gear, area, and time period.

Subsistence harvests of Chinook, summer chum, and fall chum salmon were sampled during subsistence fishing openings or shortly after the closure. Sex, length, gear type, and mesh size were typically collected. Weight and girth data were also collected from some subsistence sampling sites. If fish were processed before the sampling crew arrived, only scales may have been collected.

Numerous agencies employed technicians to sample salmon from local subsistence harvests: the Tanana Chiefs Conference (TCC) in Holy Cross and Bishop Rock, the Ruby Tribal Council, the City of Kaltag, and the Yukon River Drainage Fisheries Association (YRDFA) in Nulato and Galena. DCF crews collected subsistence harvest samples in District Y-1 (Emmonak vicinity), Eagle, and Nenana.

Test Fishery Sampling

The DCF test fishery crew sampled all of the Chinook caught during the Comparative Mesh Size study from 7.0-, 7.5- and 8.0-inch drift gillnets. For all other test fishery projects, sampling goals were up to 30 Chinook, summer chum, and fall chum salmon daily; and up to 20 coho salmon daily. The DCF crew sampled Chinook salmon at Big Eddy and Middle Mouth from 8.5-inch mesh

set gillnets, summer chum salmon from 5.5-inch drift gillnets, and fall chum and coho salmon from 6.0-inch mesh drift gillnets; fish sampled from the LYTF projects were cut for accurate sex determination. At Marshall, the Association of Village Council Presidents (AVCP) test fishery crew sampled Chinook salmon caught in 8.25-inch drift gillnets. Test fishery crews in Mountain Village (Asacarsarmiut Traditional Council) and Kaltag (City of Kaltag) sampled fall chum and coho salmon from 5 ⅞-inch drift gillnets. The Pilot Station sonar crew (DCF) sampled Chinook salmon caught in drift gillnets of varying mesh sizes (2.75-, 4.0-, 5.25-, 5.75-, 6.5-, 7.5-, and 8.5-inch). The Eagle sonar crew (DCF) also used drift gillnets of varying mesh sizes to sample Chinook (5.25-, 6.5-, 7.5-, and 8.5-inch) and fall chum salmon (5.25- and 7.5-inch). Test fishery crews sampled every fish harvested until their daily sample goal was reached.

Escapement Sampling

Several organizations operating weirs, sonar projects, counting towers, and other ground-based surveys conducted escapement sampling. Sampling goals varied among projects, but generally were 160 Chinook, 160 summer or fall chum, and 120 coho salmon per event. An event may be weekly sampling goals, quartile-based goals, or a single goal for the season. Depending on the strength of the run, sample goals may only be achieved during periods of peak run passage at weir projects. Suggested sample goals, specific project objectives, fish abundance, historical fish passage, run timing, water levels, personnel, and budget are some of the issues considered by project leaders when assessing sample goals.

Chinook and summer chum salmon were live-sampled using a trap built into the weir at the East Fork Andreafsky, Gisasa, and Tozitna rivers and at Henshaw Creek. Sundlov et al. (2004) provides an example of weir sampling and operation methods. Summer chum salmon were live-sampled using a beach seine in the Anvik River. Ground-based surveys were used to sample Chinook and summer chum salmon carcasses at the Salcha River and Chinook carcasses at the Anvik and Chena Rivers. Doxey et al. (2005) describes carcass sampling methods used in the Chena and Salcha rivers.

Three fall chum salmon escapement projects, operating on the Chandalar, Delta, and Sheenjek rivers used vertebrae to determine ages. The fish sampled in these projects were either hand-picked carcasses, or captured with a beach seine or fish wheel at or near the spawning grounds. Because fish near the spawning grounds have started to reabsorb their scales, vertebrae are a more accurate aging structure than fish scales.

Sample age and sex percentages were applied to escapement estimates from the East Fork Andreafsky River weir, Anvik River sonar, Gisasa River weir, Henshaw Creek weir, and Tozitna River weir. Escapement estimates may be preliminary and reports by the participating agencies should be referenced for final estimates.

The United States Fish and Wildlife Service (USFWS) collected samples at the East Fork Andreafsky, Gisasa, and Chandalar rivers. Samples from the Tozitna River were collected by the United States Bureau of Land Management (BLM). Samples collected from the Anvik, Chena, Delta, and Sheenjek rivers were collected by the DCF. Bering Sea Fishermen's Association (BSFA) collected samples from the Salcha River. Henshaw Creek samples were collected by TCC.

AGE DETERMINATION

Scales or vertebrae were used to determine age. The scales, which are mounted on gum cards, were impressed in cellulose acetate using methods described by Clutter and Whitesel (1956). Scale impressions were magnified and examined using a Microfiche reader. Age was determined by counting the number of freshwater and marine annuli, the regions of the scale where the circuli, or rings, are tightly spaced representing slower growth rates associated with winter conditions (Mosher 1969). Vertebrae samples were frozen, cleaned, and dried; ages were also determined by visually counting annuli. Ages were entered into MS Access, onto mark–sense forms, or into a MS Excel file depending upon which format sex and length data were originally recorded in. Ages were recorded using European notation, the number of freshwater annuli separated by a decimal from the number of marine annuli. Total age from the brood year is the sum of freshwater and marine annuli plus one to account for time spent in the gravel before hatching.

RESULTS

CHINOOK SALMON

In 2008, a total of 7,141 Chinook salmon were sampled for ASL data from the U.S. portion of the Yukon River drainage (Table 2). Chinook salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement projects are presented in Tables 2–7 and Appendices A1–A28.

CHINOOK SALMON COMMERCIAL HARVEST AGE AND SEX COMPOSITION

Samples were collected from 629 commercially harvested Chinook salmon; of these, 524 samples were from the District 1 commercial harvest (Tables 2–4, Appendices A1 and A2). The age composition of the District 1 commercial harvest was primarily made up of age-1.3 (57.8%) and age-1.4 (27.1%) Chinook salmon and females represented 38.0% of the total (Table 2).

CHINOOK SALMON SUBSISTENCE HARVEST AGE AND SEX COMPOSITION

Samples were collected from 1,475 subsistence harvested Chinook salmon. Of these, 842 fish were sampled for age, sex and length; 187 fish were sampled for age, sex, length, and girth; and 446 were sampled for age, sex, length, weight, and girth (Table 2 and Appendices A3–A13). The age composition of the subsistence samples was similar to the commercial harvest, with age-1.3 fish most prevalent at 8 of the 11 sampling locations. The percent of females in the subsistence samples ranged from 6.9% of the Rampart Rapids fish wheel samples to 55.6% of the Kaltag 8.5-inch mesh gillnet samples (Appendices A11 and A6).

CHINOOK SALMON TEST FISHERY AGE AND SEX COMPOSITION

Samples were collected from a total of 2,955 Chinook salmon across 5 gillnet test fishery projects (Table 2 and Appendices A14–A21). The age composition of the test fishery samples was similar to the District 1 commercial harvest, with age-1.3 and age-1.4 fish most prevalent. The Big Eddy and Middle Mouth test fisheries had the highest percentages of age-1.4 Chinook salmon (50.3% and 51.3%, respectively); while age-1.3 fish predominated at the other 4 test fish projects (Table 2). In the test fishery samples, females ranged from 28.7% at Pilot Station sonar to 47.2% at the Middle Mouth project (Table 2, Appendices A20 and A15).

There was a significant difference in sex composition for age-1.3 and age-1.4 Chinook salmon from the LYTF projects (χ^2=224.68, df=1, p<0.0001). A higher percentage of younger age-1.3 fish were males and a higher percentage of older age-1.4 fish were females (Appendices A14–A16).

Comparing the 2008 LYTF age percentages with the historical average (1994, 1998–2007; Table 5), the percentage of 5-year-old fish (44.4%) was greater than average (26.6%), 6-year-old fish (51.0%) was less than average (65.7%), and 7-year-old fish (3.5%) was less than average (5.7%). Females made up 46.3% of the 2008 samples, which was below the historical average of 52.9% (Table 5).

CHINOOK SALMON ESCAPEMENT AGE AND SEX COMPOSITION

Samples were collected from a total of 2,082 Chinook salmon across 7 escapement projects (Table 2 and Appendices A22–A28). Age-1.3 Chinook salmon predominated at all escapement projects, ranging from 51.8% in the Salcha River carcass samples to 74.5% in the East Fork Andreafsky River weir estimates (Table 2, Appendices 27 and 22). Females ranged from 11.1% at the Tozitna River weir to 44.4% in the Chena River carcass samples (Table 2, Appendices 28 and 24).

Comparing the 2008 percentages with the historical averages (1985–2007), 5-year-old fish were above average and 6-year-old fish were below average in the East Fork Andreafsky weir estimates (+31.8 and -12.7 percentage points, respectively), in the Anvik River carcass samples (+26.5 and -18.2, respectively), in the Chena River carcass samples (+27.1 and -34.0, respectively), and in the Salcha River carcass samples (+19.8 and -12.0, respectively; Table 6).

CHINOOK SALMON MEAN LENGTH

The average male length by age for all projects combined was: 423 mm for age-1.1, 555 mm for age-1.2, 714 mm for age-1.3, 542 mm for age-2.2, 833 mm for age-1.4, 672 mm for age-2.3, 934 mm for age-1.5, and 832 mm for age-2.4 fish. The average female length by age for all projects combined was: 535 mm for age-1.2, 760 mm for age-1.3, 847 mm for age-1.4, 800 mm for age-2.3, 883 mm for age-1.5, and 820 mm for age-2.4 fish (Table 7).

There was a significant difference in the mean lengths between male and female Chinook salmon at the LYTF projects (one-tailed t-tests; p<0.0001, df=1192). Males had a mean length of 781 mm and were smaller on average than females, which had a mean length of 845 mm (Appendix A16).

CHINOOK SALMON MEAN WEIGHT AND MEAN GIRTH

At the LYTF projects, the mean weight of males ranged from 6.3 lbs for age-2.2 to 31.3 lbs for age-2.4 fish. The mean weight of females ranged from 19.1 lbs for age-1.3 to 25.5 lbs for age-1.5 fish. The mean girth of males ranged from 333 mm for age-1.2 to 590 mm for age-2.4 fish. The mean girth of females ranged from 493 mm for age-1.3 to 544 mm for age-1.5 fish (Appendices A14–A16).

At the Comparative Mesh Size study, for all mesh sizes combined, the mean weight of males ranged from 7.5 lbs for age-1.2 to 20.9 lbs for age-1.5 fish. The mean weight of females ranged from 17.5 lbs for age-1.3 to 21.1 lbs for age-1.4 fish. The mean girth of males ranged from 378

mm for age-1.2 to 497 mm for age-1.5 fish, and the mean girth of females ranged from 500 mm for age-1.3 to 518 mm for age-1.4 fish (Appendix A18).

In the Kaltag subsistence samples, the mean weight of males ranged from 5.2 lbs for age-1.2 to 23.5 lbs for age-1.5 fish. The mean weight of females ranged from 15.0 lbs for age-1.3 to 24.8 lbs for age-1.5 fish. The mean girth of males ranged from 312 mm for age-1.2 to 553 mm for age-1.5. The mean girth of females ranged from 456 mm for age-1.3 to 541 mm for age-1.5 fish (Appendix A6).

In the Eagle subsistence samples, the mean weight of males ranged from 4.4 lbs for age-1.2 to 16.7 lbs for age-1.4 fish. The mean weight of females ranged from 11.0 lbs for age-2.3 to 17.7 lbs for age-1.5 fish. The mean girth of males ranged from 274 mm for age-1.2 to 431 mm for age-1.5 fish. The mean girth of females ranged from 379 mm for age-2.3 to 445 mm for age-1.4 fish (Appendix A12).

In the Holy Cross subsistence samples, the mean girth of males ranged from 310 mm for age-1.2 to 590 mm for age-1.5 fish. The mean girth of females ranged from 503 mm for age-1.3 to 568 mm for age-1.5 fish (Appendix A5).

In the Bishop Rock subsistence samples, the mean girth of males ranged from 410 mm for age-1.2 to 580 mm for age-1.5 fish. The mean girth of females ranged from 475 mm for age-1.3 to 548 mm for age-1.5 fish (Appendix A9).

SUMMER CHUM SALMON

A total of 5,711 summer chum salmon were sampled for ASL data from the Alaska portion of Yukon River drainage in 2008 (Table 8). Summer chum salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement projects are presented in Tables 8–13 and Appendices B1–B15.

SUMMER CHUM SALMON COMMERCIAL HARVEST AGE AND SEX COMPOSITION

Samples were collected from 1,227 commercially harvested summer chum salmon; most of these (n=950) were from District 1 (Tables 8 and 9, and Appendices B1–B4). Age-0.4 summer chum salmon predominated in the District 1 and 2 samples, and age-0.3 fish predominated in the Subdistrict 4-A and District 6 samples (Tables 8 and 9). Females represented 52.2% of the District l commercial harvest (Table 8).

SUMMER CHUM SALMON SUBSISTENCE HARVEST AGE AND SEX COMPOSITION

Samples were collected from 332 summer chum salmon in the District 1 subsistence harvest (Table 8, Appendices B5 and B6). Age-0.4 fish made up 64.1% of the samples from the 5.5-inch mesh gillnets and 60.8% from the 8.5-inch mesh gillnets. Females represented 34.5% and 29.4% of the samples from the 5.5-inch and 8.5-inch mesh gillnets, respectively.

SUMMER CHUM SALMON TEST FISHERY AGE AND SEX COMPOSITION

Samples from 784 summer chum salmon were collected at the LYTF projects (Table 8, Appendix B7–B9). Age-0.4 fish made up 53.7%, age-0.3 fish were 41.2%, and age-0.5 fish were 5.1% of the samples; 55.4% were female.

Compared with the LYTF historical average (1987–1988, 1990–2006), the 2008 LYTF summer chum salmon age composition had a 4.8 percentage point decrease in age-0.3 fish, a 3.0 increase in age-0.4 fish, and a 2.2 increase in age-0.5 fish (Table 10).

SUMMER CHUM SALMON ESCAPEMENT AGE AND SEX COMPOSITION

Samples from 3,368 summer chum salmon were collected at 6 escapement project sites in tributaries of the Yukon River (Table 8 and Appendices B10–B15). Overall, age-0.3 (43.9%) and age-0.4 fish (48.9%) were the most common age classes at the escapement projects (Table 8). Age-0.3 fish predominated at the Henshaw Creek weir (73.8%), the Salcha River carcass project (51.3%), and the Tozitna River weir (51.0%; Table 8, Appendices B13–B15). Age-0.4 fish predominated at the East Fork Andreafsky River weir (82.1%), the Anvik River sonar project (50.6%), and the Gisasa River weir (64.3%; Table 8 and Appendices B10–B12). The average percentage of females from the escapement projects was 50.5% (Table 8).

SUMMER CHUM SALMON MEAN LENGTH

The average mean length for males by age was: 558 mm for age-0.2, 570 mm for age-0.3, 590 mm for age-0.4, 595 mm for age-0.5, and 565 mm for age-0.6 fish. The average mean length for females by age was: 510 mm for age-0.2, 551 mm for age-0.3, 566 mm for age-0.4, and 566 mm for age-0.5, and 590 mm for age-0.6 fish (Table 11).

FALL CHUM SALMON

A total of 4,912 fall chum salmon were sampled for ASL data from the Alaskan portion of the Yukon River drainage in 2008 (Table 8). Fall chum salmon ASL summary tables for commercial and subsistence harvests, test fisheries, and escapement projects are presented in Tables 8, 9, 11; and Appendices C1–C14.

FALL CHUM SALMON COMMERCIAL HARVEST AGE AND SEX COMPOSITION

Samples were collected from 2,374 commercially harvested fall chum salmon (Tables 8 and 9; Appendices C1–C3). The age composition for the fall chum salmon combined commercial harvest in 2008 was 54.6% age-0.4 and 42.1% age-0.3 fish. Females represented 52.0% of the total harvest (Table 9).

FALL CHUM SALMON SUBSISTENCE HARVEST AGE AND SEX COMPOSITION

Samples were collected from 245 fall chum salmon in the subsistence harvest (Table 8; Appendices C4 and C5). In Subdistrict 5-B at Tanana, age-0.3 fish made up 52.9% and age-0.4 fish made up 44.9% of the harvest samples (Appendix C4). In Subdistrict 5-B at Rampart Rapids, age-0.3 fish made up 45.0% and age-0.4 fish made up 55.0% of the harvest samples (Appendix C5). Females made up 43.4% and 70.6% of the harvest samples from Tanana and Rampart Rapids, respectively (Appendices C4 and C5).

FALL CHUM SALMON TEST FISHERY AGE AND SEX COMPOSITION

Five test fishery projects collected samples from a total of 1,820 fall chum salmon (Table 8 and Appendices C6–C11). Overall, the test fishery samples were predominated by 50.8% age-0.4 fish and 46.1% age-0.3 fish. Females made up 52.3% of the test fishery samples (Table 8).

FALL CHUM SALMON ESCAPEMENT AGE AND SEX COMPOSITION

Vertebrae samples from 473 fall chum salmon were collected at 3 escapement sites in Yukon River tributaries (Table 8 and Appendices C12–C14). Overall, the samples were predominated by age-0.4 (50.5%) and age-0.3 fish (39.8%), which was similar to the age composition at other fall chum salmon projects. Overall, the fish sampled from the escapement projects were composed of 48.2% females (Table 8).

FALL CHUM SALMON MEAN LENGTH

The average mean length for males by age was: 561 mm for age-0.2, 593 mm for age-0.3, 617 mm for age-0.4, 613 mm for age-0.5, and 630 for age-0.6 fish. The average mean length for females by age was: 559 mm for age-0.2, 578 mm for age-0.3, 598 mm for age-0.4, 603 mm for age-0.5 and 593 mm for age-0.6 fish (Table 11).

There was a significant difference in mean lengths between age-0.4 male female fall chum salmon at the LYTF projects (one-tailed t-tests; $p<0.013$, $df=325$). Males had a mean length of 605 mm and were larger than females, which had a mean length of 598 mm (Appendix C8).

COHO SALMON

A total of 1,008 coho salmon were sampled for ASL data from the Yukon River drainage in 2008 (Table 12). Coho salmon ASL summary tables for commercial and test fishery projects are presented in Tables 12 and 13 and Appendices D1–D6.

COHO SALMON COMMERCIAL HARVEST AGE AND SEX COMPOSITION

Samples were collected from 621 commercially harvested coho salmon (Table 12 and Appendix D1). Age-2.1 fish made up 74.7% of the sample; 49.8% of all coho sampled in the commercial harvest were female.

COHO SALMON TEST FISHERY AGE AND SEX COMPOSITION

Samples were collected from 387 coho salmon at 4 test fishery projects (Table 12 and Appendices D2–D6). Overall, the test fishery samples were predominated by age-2.1 fish (82.7%); 45.1% of all coho sampled in the test fishery were female (Table 12).

COHO SALMON MEAN LENGTH

The average mean length for males by age was: 554 mm for age-1.1, 571 mm for age-2.1, and 573 mm for age-3.1 fish. The average mean length for females by age was: 566 mm for age-1.1, 565 mm for age-2.1, and 574 mm for age-3.1 fish (Table 13).

DISCUSSION

Age, sex, and length data have been collected from Yukon River salmon species since the 1960s. This information aids in fishery management decisions and allows researchers to evaluate annual and historical changes in the ASL composition of salmon throughout the Yukon River drainage. Yukon River ASL sampling projects were designed to account for temporal and spatial variability that exists within a salmon population, but there is potential for some biases caused by small sample sizes, scale absorption, and collection methods. Age, sex, and length data users are cautioned to be aware of these inherent biases when interpreting data.

Biases from a small sample size, stratum, or commercial fishing period are sometimes unavoidable. In Districts 1 and 2, ASL samples were collected from Chinook salmon incidentally harvested in the summer chum commercial fishery; however, Chinook salmon sample size goals were not met during any of the periods and not all periods were sampled (Appendices A1 and A2). During the summer chum salmon commercial fishery, 1 of 5 periods were sampled in District 2, 2 of 7 periods were sampled in Subdistrict 4-A, and 1 of 6 periods were sampled in District 6 (Appendices B2–B4). Likewise, during the fall chum salmon commercial fishery, 3 of 9 periods were sampled in District 5, and 4 of 9 periods were sampled in District 6 (Appendices C2 and C3). Often, a lack of harvest, prohibitive travel costs, or a lack of personnel late in the season precluded sampling events. Subsistence projects with small sample sizes include: District 1 Chinook salmon (n=75) from 'chum gear' (reported as 5.5-inch gillnets) and summer chum salmon (n=51) from 'king gear' (reported as 8.5-inch gillnets); Subdistricts 4-B and 4-C Chinook salmon (n=92) from gillnets at Bishop Rock; Subdistrict 5-B Chinook salmon (n=58) from fish wheels at Rampart Rapids; and Subdistrict 6-B Chinook salmon (n=16) from fish wheels at Nenana (Tables 2 and 8). The sample sizes were satisfactory at all of the test fishery sites, and at most of the escapement projects, with the exception of the Chena River Chinook salmon (n=36) carcass survey project (Table 2). Bias may also occur when commercial fishing periods are directed at harvesting roe, or if the harvest has been sorted by the commercial fishermen or processor. Insufficient samples sizes also exist for individual stratum for some of the projects. When sample sizes are below the targeted number, care should be used when interpreting the data.

Another possible bias, due to scale absorption, exists in samples collected from carcasses as well as those taken on or near the spawning grounds. This potential bias is caused by the margin of the scale being absorbed as an energy reserve in the last few weeks of a salmon's life (Clutter and Whitesel 1956). Scale absorption normally becomes more pronounced the farther upriver the samples are collected and can lead to under aging when little evidence of the outermost annulus remains. For these reasons, vertebrae were collected for aging Salcha River summer chum carcasses, and all fall chum salmon carcasses.

A bias often results from inherent size selectivity in sample collection methods. This bias is most apparent with Chinook salmon, because of the large size range, where males and younger aged fish predominate in the smaller size fish. Gillnets are size selective based on mesh size; fish wheels tend to be biased towards smaller sized fish that migrate near shore in lower water velocities (Meehan 1961). In spawning ground carcass recoveries, Kissner and Hubartt (1986) indicated Chinook salmon males tend to drift downstream while females tend to remain near their redds; and during periods of increased water velocities, smaller fish have a greater potential to be carried downstream and out of the study area. Zhou (2002) indicated that fish size and stream flow affect carcass recovery rates. This nonrandom dispersal of carcasses could bias ASL data towards females and larger older-aged fish, although proper sampling designs have been shown to reduce this (Evenson 1991; Skaugstad 1990). Many scientists believe a bias may exist in weir sampling towards smaller fish when larger fish are more reluctant, or "trap shy", to enter a confined weir trap structure and be available for live sampling. Though trap shyness has yet to be scientifically evaluated, users of these data should be aware that this potential bias exists. Sampling biases are described in greater detail by Molyneaux et al. (2006).

CHINOOK SALMON

Chinook Salmon Age Composition

In 2008, 5-year-old Chinook salmon predominated most of the commercial, subsistence, and test fishery harvests as well as in the escapement projects (Table 2). This trend occurred in projects using various capture gear, such as small and large mesh gillnets, fish wheels, weir traps, and carcass recoveries. At most projects 6-year-old fish also composed a large percentage of the samples; however, overall the 5-year-old percentage was above average and the 6-year-old percentage was below average from projects with historical data (Tables 5 and 6).

At the LYTF projects, age distribution was different by sex, where more of the younger fish (4- and 5-year-old) were male and more of the older fish (6- and 7-year-old) were female. This difference in Chinook salmon age composition is typical and has been reported from the Yukon and Kuskokwim rivers in recent reports (Horne-Brine et al. 2009; Bales 2008; Karpovich and DuBois 2007; Molyneaux et al. 2006).

Chinook Salmon Sex Composition

Historically, LYTF Chinook salmon have been close to 50% female (Table 5). Samples collected from individual projects and locations can vary in sex composition, which is often related to the gear used to capture the fish and the relative percentage of smaller age-1.2 fish which are usually male (Tables 2 and 6). A relatively low percentage of females can be attributable to the selectivity of small mesh gillnets or fish wheels, where smaller and typically male fish are caught (Meehan 1961; Molyneaux et al. 2005). For example, Chinook salmon harvested during the 2008 District 1 commercial fishery that used 6-inch or smaller mesh gillnets were over 60% male, which is higher than the historical average (1987–2007) of 48.5% male from the 8-inch or larger mesh commercial fishery (Tables 2 and 4). Other projects that used small mesh gillnets or fish wheels also had high percentages of males: the District 1 5.5-inch mesh subsistence samples were 82.7% male; the Rampart Rapids subsistence fish wheel samples were 93.1% male; and the Eagle subsistence fish wheel and mixed-size mesh gillnet samples were 85.7% male. Additionally, younger fish comprised a large portion of the catch at these projects (Table 2, Appendices A3, A11, and A12). Some of the escapement projects with high percentages of returning age-1.2 and age-1.3 Chinook salmon also had relatively low percentages of females (e.g., Gisasa and Tozitna Rivers; Appendices A25 and A28).

Chinook Salmon Length Composition

The size of Chinook salmon returning to the Yukon River has been a growing concern. Many fishermen and researchers suggest fewer "large" fish are returning than in the past. The Salmon Size Subcommittee of the US/Canada Yukon River Joint Technical Committee was formed in 2006 in response to these concerns. The Subcommittee was tasked with reviewing the existing information and literature and advising the Committee, with respect to changes in Chinook salmon age, sex, and size composition (JTC 2006b). As summarized by the Subcommittee, existing analyses document a decrease in the weight of commercial harvests (Bigler et al. 1996), a reduction in the prevalence of the largest fish (Hyer and Schleusner 2005), and the apparent near disappearance of age-8 fish (JTC 2 006b). To address concerns about size, DCF collected weight and/or girth data at the LYTF projects and at select subsistence sampling sites, initiated the Comparative Mesh Size study, and conducted an age consistency study (DuBois and Liller *In prep*; JTC 2008).

At the LYTF projects, Chinook salmon males were smaller on average than females, which is consistent with recent analyses. Karpovich and DuBois (2007) found that males were smaller than females with the exception of the age-1.5 fish. Molyneaux et al. (2006) also reported male Chinook salmon having a smaller mean length than females on the Kuskokwim River.

SUMMER CHUM SALMON

Summer Chum Salmon Age Composition

Age-0.4 and age-0.3 were the predominant age classes for summer chum salmon returning to the Yukon drainage in 2008 (Table 8). Age-0.4 and age-0.3 fish typically compose the majority the summer chum salmon annual return, and frequently, the age class that predominates alternates annually (JTC 2009).

Summer Chum Salmon Sex Composition

Samples from most summer chum salmon projects had female percentages near 50% (Table 8). The exceptions were the Subdistrict 4-A summer chum roe commercial fishery, which was directed at harvesting females (Appendix B3); the District 6 summer chum commercial samples, which were likely biased due to presorting of the catch by the commercial processor (Appendix B4); and the District 1 5.5-inch mesh subsistence samples (Appendix B5).

Summer Chum Salmon Length Composition

Length comparisons between males and females for summer chum salmon showed a trend opposite that of Chinook salmon. At the LYTF projects, males were found to be larger on average than females (Table 11), which is consistent with findings by Karpovich and DuBois (2007). Molyneaux et al. (2006) also reported the mean lengths of females were generally less than males by age for summer chum salmon on the Kuskokwim River.

FALL CHUM SALMON

Fall Chum Salmon Age Composition

Age-0.4 and age-0.3 were the most abundant age classes at the fall chum salmon sampling projects (Table 8), which is consistent with fall chum salmon annual age class composition trends (JTC 2009).

Fall Chum Salmon Sex Composition

Samples from most fall chum salmon projects had female percentages near 50% (Table 8). The District 5 fall chum commercial harvest was presorted by the commercial processor, likely influencing the percent female in the sample (Appendix C3). The Eagle sonar variable mesh drift gillnet test fishery samples also exhibited a higher proportion of males in the catch (Appendix C11).

Fall Chum Salmon Length Composition

Length comparisons between males and females for fall chum salmon showed that, on average, males tended to be larger than females (Table 11), which is consistent with findings by Karpovich and DuBois (2007).

COHO SALMON

Coho Age Composition

Coho salmon age-2.1 predominated in 2008 (Table 12). Age-2.1 fish are typically the most common age of coho salmon that return to the Yukon River drainage (Bue and Hayes 2006).

Coho Sex Composition

The percentage of females in the coho salmon samples was variable by project (Table 12). However, at all of the test fisheries, females comprised a lower percentage of the predominant age class (age-2.1) then males (Table 12).

Coho Length Composition

On average, age-2.1 males tended to be larger than age-2.1 female coho salmon (Table 13). However, the opposite trend occurred for age-1.1 and age-3.1 fish; in these age classes, females tended to be slightly larger than males.

ACKNOWLEDGEMENTS

This investigation was funded by the United States Fish and Wildlife Service and the Alaska Department of Fish and Game. The authors thank all agencies that collected the salmon stock assessment data included in this report: the Alaska Department of Fish and Game, Commercial and Sport Fish Divisions; Asacarsarmiut Traditional Council, Association of Village Council Presidents, Bering Sea Fishermen's Association, Canadian Department of Fisheries and Oceans, City of Kaltag, Tanana Chiefs Conference, United States Fish and Wildlife Service, United States Department of the Interior Bureau of Land Management, Yukon Delta Fisheries Development Association, and the Yukon River Drainage Fisheries Association.

REFERENCES CITED

ADF&G (Alaska Department of Fish and Game). 2004. 2004–2007 Arctic-Yukon-Kuskokwim commercial finfish-subsistence-personal use finfish and shellfish fishing regulations. Alaska Department of Fish and Game, Juneau.

Bales, J. 2008. Salmon age and sex composition and mean lengths for the Yukon River Area, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 08-14, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds08-14.pdf

Bigler, B. S., D. W. Welch, and J. H. Helle. 1996. A review of size trends among North Pacific salmon (*Oncorhynchus* spp.). Canadian Journal of Fisheries and Aquatic Sciences 53:455-456.

Bromaghin, J. F. 1993. Sample size determination for interval estimation of multinomial probabilities. The American Statistician, August 1993, 47(3):203-206.

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. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds06-61.pdf

Busher, W. H. and T. Hamazaki. 2004. Subsistence and personal use salmon harvests in the Alaska Portion of the Yukon River drainage, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-33, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2004.33.pdf

Bue, F. J., and S. J. Hayes. 2006. 2006 Yukon Area subsistence, personal use, and commercial salmon fisheries outlook and management strategies. Alaska Department of Fish and Game, Fishery Management Report No. 06-32, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fmr06-32.pdf

Bue, F. J. 2008. 2007 Yukon River Fall Season Summary. Alaska Department of Fish and Game, Division of Commercial Fisheries, 2008 Yukon River Fall Salmon Fishery News Release #1, Anchorage. http://csfish.adfg.state.ak.us/newsrelease/view.php?year=2008&dist=YUF&species=400&num=1 (Accessed June 2010).

Bue, F. J., W. H. Busher. 2008. Update # 1, Beginning of Fall Season in Lower Yukon River Districts. Alaska Department of Fish and Game, Division of Commercial Fisheries, 2008 Yukon River Fall Salmon Fishery News Release #1, Anchorage. http://csfish.adfg.state.ak.us/newsrelease/view.php?year=2008&dist=YUF&species=400&num=2 (Accessed June 2010).

Buklis, L. S. 1987. Age, sex, and size of Yukon River salmon catch and escapement, 1986. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report No. 221, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/tdr.221.pdf

Carroll, H. C., R. D. Dunbar, and C. T. Pfisterer. 2007. Sonar estimation of Chinook salmon in the Yukon River near Eagle, Alaska, 2005. Alaska Department of Fish and Game, Fishery Data Series No. 07-84, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds07-84.pdf

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. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds08-65.pdf

Clutter, R., and L. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin of the International North Pacific Fisheries Commission 9.

Crane, P. A., W. J. Spearaman, and L. W. Seeb. 2001. Yukon River chum salmon: Report for genetic stock identification studies, 1992–1997. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 5J01-08. http://www.cf.adfg.state.ak.us/geninfo/pubs/rir/5j01-08.pdf

Doxey, M., A. L. J. Brase, and D. J. Reed. 2005. Salmon studies in the Chena, Chatanika, Delta Clearwater, and Salcha rivers, 2002 and 2003. Alaska Department of Fish and Game, Fishery Data Series No. 05-65, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds05-65.pdf

DuBois, L. and Z. W. Liller. *In prep*. Yukon River Chinook salmon aging consistency. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

REFERENCES CITED (Continued)

Dunbar, R. D. 2009. Sonar estimation of fall chum salmon abundance in the Sheenjek River, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 09-10, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds09-10.pdf

Evenson, M. J. 1991. Abundance, egg production, and age-sex-size composition of Chinook salmon escapement in the Chena River, 1990. Alaska Department of Fish and Game, Fishery Data Series No. 91-06, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds91-06.pdf

Geiger, H. J., J. E. Clark, B. Cross, and S. McPherson. 1990. Report from the work group on sampling. Pages 3-12 [*In*]: Proceedings of the 1990 Alaska stock separation workshop. Alaska Department of Fish and Game, Division of Commercial Fisheries, Special Publication No. 2, Juneau.

Hayes, S. J., E. J. Newland. 2008. Announcement # 14, District Y-2 Commercial Fishing Period #1. Alaska Department of Fish and Game, Division of Commercial Fisheries, 2008 Yukon River Summer Salmon Fishery News Release #20, Anchorage. http://csfish.adfg.state.ak.us/newsrelease/view.php?year=2008&dist=YUS&species=400&num=20 (Accessed April 2009).

Horne-Brine, M. H., and F. J. Bue. 2008. Fall season cooperative salmon drift gillnet test fishing in the Lower Yukon River, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 08-16, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds08-16.pdf

Horne-Brine, M. H., J. Bales, and L. DuBois. 2009. Salmon age and sex composition and mean lengths for the Yukon River Area, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 09-26, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/FDS09-26.pdf

Hyer, K. E., and C. J. Schleusner. 2005. Chinook salmon age, sex, and length analysis from selected escapement projects on the Yukon River. U. S. Fish and Wildlife Service, Office of Subsistence Management, Alaska Fisheries Technical Report No. 87, Anchorage, Alaska.

INPFC (International North Pacific Fisheries Commission). 1963. Annual report, 1961. Vancouver, British Columbia.

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2006a. Yukon River salmon 2005 season review and 2006 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A06-03, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2006.03.pdf

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2006b. Potential causes of size trends in Yukon River Chinook salmon populations. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A06-07, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2006.07.pdf

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2008. Yukon River salmon 2007 season summary and 2008 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A08-01, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2008.01.pdf

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2009. Yukon River salmon 2008 season summary and 2009 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A09-01, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2009.01.pdf

Karpovich, S., and L. DuBois. 2007. Salmon age and sex composition and mean lengths for the Yukon River Area, 2004. Alaska Department of Fish and Game, Fishery Data Series No. 07-05, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds07-05.pdf

Kissner, P. D., Jr. and D. J. Hubartt. 1986. A study of Chinook salmon in Southeast Alaska. Alaska Department of Fish and Game, Sport Fish Division, Annual Report 1985-1966. Project F-10-1, 27 (ASW-41).

Maschmann, G. F. 2008. Abundance and run timing of adult pacific salmon in the East Fork Andreafsky River, Yukon Delta Wildlife Refuge, Alaska, 2007. U. S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Alaska Fisheries Data Series Number 2008-6, Fairbanks, Alaska.

REFERENCES CITED (Continued)

McEwen, M. S. 2009. Anvik River sonar chum salmon escapement study, 2007. Alaska Department of Fish and Game, Fishery Data Series No. 09-04, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds09-04.pdf

Meehan, W. R. 1961. Use of a fish wheel in salmon research and management. Transactions of the American Fisheries Society 90(4):490-494.

Melegari, J. L. 2008a. Abundance and run timing of adult fall chum salmon in the Chandalar River, Yukon Flats National Wildlife Refuge, Alaska, 2007. U. S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Alaska Fisheries Data Series Number 2008-11, Fairbanks, Alaska.

Melegari, J. L. 2008b. Abundance and run timing of adult salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 2007. U. S. Fish and Wildlife Service, Fairbanks Fishery Resource Office, Alaska Fisheries Data Series Number 2008-13, Fairbanks, Alaska.

Menard, J. 1996. Age, sex, and length of Yukon River salmon catches and escapements, 1994. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A96-16, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/RIR.3A.1996.16.pdf

Mosher, K. H. 1969. Identification of Pacific salmon and steelhead trout by scale characteristics. United States Department of the Interior, United States Fish and Wildlife Service, Bureau of Commercial Fisheries, Circular 317, Washington, D.C.

Molyneaux, D. B., D. L. Folletti, L. K. Brannian, and G. Roczicka. 2005. Age, sex, and length composition of Chinook salmon from the 2004 Kuskokwim River subsistence fishery. Alaska Department of Fish and Game, Fishery Data Series No. 05-45, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/Fds05-45.pdf

Molyneaux, D. B., D. L. Folletti, and C. A. Shelden. 2006. Salmon age, sex, and length catalog for the Kuskokwim area, 2005. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A06-01, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/RIR.3A.2006.01.pdf

Newland, E. J., and S. J. Hayes. 2008. Summer season cooperative salmon drift gillnet test fishing in the Lower Yukon River, 2006. Alaska Department of Fish and Game, Fishery Data Series No. 08-39, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds08-39.pdf

Post, J. W., C. F. Kretsinger, and B. R. Karlen. 2006. Abundance and run timing of adult salmon in the Tozitna River, Alaska, 2006. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. 04-206, Anchorage, Alaska.

Skaugstad, C. 1990. Abundance, egg production, and age-sex-size composition of Chinook salmon escapement in the Salcha River, 1989. Alaska Department of Fish and Game, Division of Sport Fish, Fishery Data Series No. 90-23, Anchorage. http://www.sf.adfg.state.ak.us/FedAidPDFs/fds90-23.pdf

Sundlov, T. J., C. F. Kresinger and B. Karlen. 2004. Abundance and run timing of adult salmon in the Tozitna River, Alaska, 2003. USFWS Office of Subsistence Management, Fisheries Resource Monitoring Program, Annual Report No. 13-203, Anchorage, Alaska.

Tobin, J. H. 1994. Construction and performance of a portable resistance board weir for counting migrating adult salmon in rivers. U. S. Fish and Wildlife Service, Kenai Fishery Resource Office, Alaska Fisheries Technical Report Number 22, Kenai, Alaska.

Vania, T. D., V. Golembeski, B. M. Borba, T. L. Lingnau, J. S. Hayes, K. R. Boeck, and W. H. Busher. 2002. Annual management report Yukon and northern areas, 2000. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A02-29, Anchorage. http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2002.29.pdf

Waltemyer, D. L. 2007. Marshall cooperative Chinook salmon drift test fishery project, 2006. Association of Village Council Presidents, Realty and Natural Resources Division, Fisheries and Forestry Resources Department, URE-05N-06, Bethel, Alaska.

Zhou, S. 2002. Size-dependent recovery of Chinook salmon in carcass surveys. Transactions of the American Fisheries Society 131:1194-1202.

TABLES AND FIGURES

Table 1.–Yukon River project type, location, and salmon species where age, sex, and length data were collected in 2008.

		Salmon Species (ASL Summaries Present = X)			
Project Type	Location	Chinook	Summer Chum	Fall Chum	Coho
Commercial					
	District 1	X	X	X	X
	District 2	X	X		
	Subdistrict 4-A		X		
	District 5			X	
	District 6		X	X	
Subsistence					
	District 1	X	X		
	District 3, Holy Cross [a]	X			
	Subdistrict 4-A, Kaltag [b]	X			
	Subdistrict 4-A, Nulato [c]	X			
	Subdistricts 4-B, 4-C Galena [c]	X			
	Subdistricts 4-B, 4-C Bishop Rock [a]	X			
	Subdistricts 4-B, 4-C Ruby [d]	X			
	Subdistrict 5-B, Tanana			X	
	Subdistrict 5-B, Rampart Rapids	X		X	
	Subdistrict 5-D, Eagle	X			
	Subdistrict 6-B, Nenana	X			
Test Fishery					
	Big Eddy	X	X	X	X
	Middle Mouth	X	X	X	X
	Comparative Mesh Study	X			
	Mountain Village [e]			X	X
	Pilot Station Sonar	X			
	Marshall [c]	X			
	Kaltag [b]			X	X
	Eagle Sonar	X		X	
Escapement					
	Andreafsky River, East Fork [f]	X	X		
	Anvik River	X	X		
	Chandalar River [f]			X	
	Chena River [g]	X			
	Delta River			X	
	Gisasa River [f]	X	X		
	Henshaw Creek [a]	X	X		
	Salcha River [h]	X	X		
	Sheenjek River			X	
	Tozitna River [i]	X	X		

[a] Project was operated by the Tanana Chiefs Conference.

[b] Project was operated by the City of Kaltag.

[c] Project was operated by the Yukon River Drainage Fisheries Association.

[d] Project was operated by the Ruby Tribal Council.

[e] Project was operated by the Asacarsarmiut Traditional Council.

[f] Project was operated by the United Stated Fish and Wildlife Service.

[g] Project was operated by the Alaska Department of Fish and Game, Division of Sport Fish.

[h] Project was operated by the Bering Sea Fisheries Association.

[i] Project was operated by the United Stated Bureau of Land Management.

Table 2.–Yukon River Chinook salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2008.

Project Type Location and (gear)	Sample Size	Percent (%) Brood Year (Age) 2005 (1.1)	2004 (1.2)	2003 (1.3)	2002 (2.2)	2001 (1.4)	2000 (2.3)	(1.5)	(2.4)	(1.6)	(2.5)	Female
Commercial												
District 1 (≤ 6" gillnet)	524	0.4	11.9	57.8	0.3	27.1	0.3	1.8	0.4	0.0	0.0	38.0
District 2 (≤ 6" gillnet) [a]	105	0.0	11.4	58.1	0.0	28.6	1.0	1.0	0.0	0.0	0.0	39.0
Subsistence												
District 1 (5.5" mesh gillnet)	75	0.0	13.3	72.0	0.0	14.7	0.0	0.0	0.0	0.0	0.0	17.3
District 1 (8.5" mesh gillnet)	320	0.0	1.6	56.6	0.0	38.8	0.0	2.8	0.3	0.0	0.0	31.6
District 3, Holy Cross (gillnet)	120	0.0	0.8	50.8	0.0	45.0	0.0	3.3	0.0	0.0	0.0	49.2
Subdistrict 4-A, Kaltag (8.5" mesh gillnet)	216	0.0	2.3	55.1	0.0	38.0	0.9	3.7	0.0	0.0	0.0	55.6
Subdistrict 4-A, Nulato (gillnet)	111	0.0	2.7	46.8	0.0	48.6	0.0	1.8	0.0	0.0	0.0	45.0
Subdistricts 4-B, 4-C Galena (gillnet and fish wheel)	130	0.0	4.6	71.5	0.0	23.8	0.0	0.0	0.0	0.0	0.0	21.5
Subdistricts 4-B, 4-C Bishop Rock (gillnet)	92	0.0	2.2	41.3	0.0	52.2	0.0	4.3	0.0	0.0	0.0	50.0
Subdistricts 4-B, 4-C Ruby (gillnet and fish wheel)	107	0.0	6.5	69.2	0.0	18.7	0.0	5.6	0.0	0.0	0.0	29.9
Subdistrict 5-B, Rampart Rapids (fish wheel)	58	0.0	15.5	79.3	0.0	5.2	0.0	0.0	0.0	0.0	0.0	6.9
Subdistrict 5-D, Eagle (gillnet and fish wheel)	230	0.0	7.4	74.8	0.0	16.5	0.4	0.9	0.0	0.0	0.0	14.3
Subdistrict 6-B, Nenana (fish wheel)	16	6.3	50.0	18.8	0.0	25.0	0.0	0.0	0.0	0.0	0.0	18.8
Test Fishery												
Big Eddy (8.5" mesh set gillnet)	561	0.0	1.4	44.4	0.0	50.3	0.2	3.7	0.0	0.0	0.0	45.1
Middle Mouth (8.5" mesh set gillnet)	710	0.0	1.0	44.2	0.1	51.3	0.1	3.0	0.3	0.0	0.0	47.2
Comparative Mesh Study (7.0 to 8.0" mesh gillnet)	173	0.0	1.2	63.0	0.0	35.3	0.0	0.6	0.0	0.0	0.0	30.1
Marshall (8.25" mesh drift gillnet)	515	0.0	2.7	48.7	0.0	44.3	0.2	3.7	0.4	0.0	0.0	41.6
Pilot Station Sonar (2.75 to 8.5" mesh drift gillnet)	623	0.8	5.0	62.4	0.0	27.9	0.0	3.2	0.6	0.0	0.0	28.7
Eagle Sonar (5.25 to 8.5" mesh drift gillnet)	373	0.0	2.4	56.6	0.0	36.5	0.0	3.2	1.3	0.0	0.0	37.0
Escapement												
Andreafsky River, East Fork (weir trap)	466	0.0	3.8	74.5	0.0	19.9	0.2	1.4	0.1	0.0	0.0	34.8
Anvik River (carcass)	223	0.0	7.6	69.5	0.0	22.0	0.0	0.9	0.0	0.0	0.0	18.8
Chena River (carcass)	36	0.0	8.3	61.1	0.0	25.0	0.0	5.6	0.0	0.0	0.0	44.4
Gisasa River (weir trap)	466	0.3	19.1	63.9	0.0	13.4	0.2	3.1	0.0	0.0	0.0	16.2
Henshaw Creek (weir trap)	349	0.7	16.9	67.1	0.2	12.1	0.6	1.6	0.4	0.0	0.4	27.7
Salcha River (carcass, hand-picked)	303	0.7	9.9	51.8	0.0	36.0	0.0	1.7	0.0	0.0	0.0	39.3
Tozitna River (weir trap)	239	1.5	20.4	70.0	0.0	6.9	0.7	0.5	0.0	0.0	0.0	11.1
Total Chinook	7,141											

[a] Age and percent female were estimated from period 1.

Table 3.–Yukon River Districts 1, 2, 5, and 6 Chinook salmon commercial harvest age and sex composition, 2008.

			Brood Year (Age)																					
			2005		2004		2003				2002				2001				2000					
	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
District	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	524	Male	8	0.4	283	11.9	963	40.4	7	0.3	184	7.7	7	0.3	14	0.6	9	0.4	0	0.0	0	0.0	1,477	62.0
		Female	0	0.0	0	0.0	414	17.4	0	0.0	461	19.4	0	0.0	30	1.2	0	0.0	0	0.0	0	0.0	904	38.0
		Subtotal	8	0.4	283	11.9	1,377	57.8	7	0.3	645	27.1	7	0.3	44	1.8	9	0.4	0	0.0	0	0.0	2,381	100.0
2 [a]	105	Male	0	0.0	59	11.4	213	41.0	0	0.0	35	6.7	5	1.0	5	1.0	0	0.0	0	0.0	0	0.0	316	61.0
		Female	0	0.0	0	0.0	89	17.1	0	0.0	114	21.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	203	39.0
		Subtotal	0	0.0	59	11.4	302	58.1	0	0.0	148	28.6	5	1.0	5	1.0	0	0.0	0	0.0	0	0.0	519	100.0
All Districts	629	Male																						
		Female																						
		Total																					4,348	100.0

Note: All commercial fishing periods were restricted to 6.0" or smaller mesh gillnets.

[a] Age and percent female were estimated using samples collected from period 1. The total District 2 commercial harvest for periods 1–5 was 1,967 Chinook salmon.

Table 4.–Yukon River District 1 Chinook salmon age and female percentages from commercial harvests using 8.0-inch or larger mesh gillnets, 1985–2008.

		Percent (%)							
		Age							
Year	Sample Size	3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female	Total Harvest
1985	576	0.0	1.4	6.6	80.3	11.4	0.4	57.8	75,944
1986	1,279	0.0	1.1	26.5	45.8	26.4	0.2	47.9	43,644
1987	1,436	0.0	1.2	5.6	79.9	12.9	0.6	55.3	62,148
1988	1,022	0.0	3.2	18.6	41.5	35.2	1.5	46.2	32,782
1989	982	0.0	0.8	27.0	59.0	11.8	1.3	48.6	32,180
1990	1,537	0.0	7.2	21.5	62.7	8.4	0.1	50.3	42,092
1991	1,532	0.0	1.3	39.4	50.0	9.0	0.2	47.0	52,074
1992	1,354	0.0	2.3	12.0	81.5	4.3	0.0	55.5	54,569
1993	1,673	0.0	4.5	21.2	64.9	9.5	0.0	49.2	47,084
1994	1,392	0.0	1.8	44.3	49.2	4.8	0.0	52.4	61,633
1995	1,884	0.0	3.0	11.3	81.4	4.3	0.1	50.1	74,827
1996	2,093	0.1	1.1	36.3	38.1	24.1	0.2	52.2	56,638
1997	1,881	0.0	4.0	10.9	83.3	1.8	0.0	47.2	63,062
1998	1,311	0.0	3.6	53.9	34.9	7.6	0.0	41.8	24,135
1999	1,857	0.0	2.1	14.8	81.4	1.7	0.0	43.6	37,145
2000	721	0.0	1.2	27.9	63.7	7.3	0.0	57.6	4,735
2001 [a]	-	-	-	-	-	-	-	-	-
2002	1,133	0.0	3.8	20.2	63.1	13.0	0.0	54.9	11,081
2003	1,405	0.0	0.5	26.1	65.4	7.9	0.1	53.3	22,710
2004	2,427	0.0	6.2	18.7	71.1	3.9	0.0	54.1	29,038
2005	1,410	0.0	1.7	42.4	51.8	4.2	0.0	59.7	16,927
2006	1,788	0.0	1.8	46.8	49.8	1.6	0.0	54.9	24,545
2007	1,183	0.0	2.2	13.6	82.0	2.3	0.0	53.7	13,558
2008 [b]	-	-	-	-	-	-	-	-	-
Average [c] (1985–2007)	1,449	0.0	2.5	24.8	62.8	9.7	0.2	51.5	40,116
10-yr avg. [c] (1998–2007)	1,471	0.0	2.5	29.4	62.6	5.5	0.0	52.6	20,430
5-yr avg.[c] (2003–2007)	1,643	0.0	2.5	29.5	64.0	4.0	0.0	55.1	21,356

Note: Includes commercial fishing periods with unrestricted mesh size gillnets, and periods with gillnet mesh size restricted to 8.0-inch or larger.

[a] No commercial fishing occurred in 2001.

[b] All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

[c] Averages were not weighted by number of fish sampled each year.

Table 5.–Yukon River Chinook salmon age and female percentages from the combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet test fishery catches, 1985–2008.

			Percent (%)						
			Age						
Year	Sample Size	Number of Days	3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female
1985	309	18	0.0	3.9	8.4	79.3	8.1	0.3	53.7
1986	533	25	0.3	0.9	22.7	52.9	23.1	0.2	46.3
1987	465	20	0.3	0.9	3.0	78.5	17.0	0.4	62.8
1988	262	30	0.0	2.3	15.3	43.9	37.8	0.8	56.1
1989	381	29	0.0	0.8	17.8	67.2	13.9	0.5	53.0
1990	227	23	0.0	3.5	11.0	76.7	8.8	0.0	56.4
1991	356	27	0.0	1.4	42.1	48.9	7.0	0.6	49.2
1992	359	19	0.0	1.1	10.6	82.7	5.0	0.6	56.5
1993	472	25	0.0	0.8	25.8	63.8	9.3	0.2	50.8
1994	653	41	0.2	1.4	41.3	51.8	5.5	0.0	47.3
1995	445	19	0.0	0.9	11.2	81.6	6.3	0.0	50.8
1996	355	13	0.0	1.1	61.4	21.4	16.3	0.0	53.0
1997	302	12	0.0	1.7	9.6	86.4	2.6	0.0	51.3
1998	928	39	0.0	1.3	43.4	45.3	9.9	0.1	50.2
1999	942	35	0.0	0.7	9.1	87.0	3.1	0.0	61.4
2000	950	42	0.2	0.7	19.2	71.1	9.1	0.0	53.4
2001	1,020	37	0.0	0.5	11.0	80.6	8.0	0.0	56.9
2002	1,050	43	0.0	2.5	20.5	64.9	12.1	0.0	52.2
2003	1,400	50	0.0	0.6	24.1	68.0	7.3	0.1	52.5
2004	865	48	0.1	4.3	18.5	74.5	2.7	0.0	58.2
2005	994	43	0.0	1.5	40.9	55.0	2.5	0.0	48.9
2006	987	38	0.0	2.2	50.6	45.0	2.2	0.0	48.5
2007	1,030	42	0.0	4.7	14.4	80.2	0.8	0.0	52.5
2008	1,271	43	0.0	1.2	44.4	51.0	3.5	0.0	46.3
Average [a] (1994, 1998–2007)	984	42	0.0	1.8	26.6	65.7	5.7	0.0	52.9
5-yr average [a] (2003–2007)	1,055	44	0.0	2.7	29.7	64.5	3.1	0.0	52.1

Note: The Big Eddy and Middle Mouth 8.5-inch' set gillnet test fisheries were conducted from the end of May through July 15. Before 1998, these test fisheries were often discontinuous or were not conducted throughout the season. The "Number of Days" refers only to those days that scale samples were collected from Chinook salmon and aged.

[a] The averages only include years when samples were collected throughout the season and a 35-day season minimum. Averages were not weighted by number of fish sampled each year.

Table 6.–Yukon River Chinook salmon age and female percentages from selected escapement projects, 1985–2008.

		Percent (%)						
		Age						
Project	Year	3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female
Andreafsky River, East Fork	1985 [a]	0.0	39.6	12.8	43.6	4.0	0.0	33.2
	1986 [b]	0.0	2.2	69.8	21.8	6.2	0.0	23.3
	1987 [b]	0.3	4.7	8.9	83.7	2.4	0.0	56.1
	1988 [b]	0.2	27.8	29.5	26.8	15.6	0.0	38.7
	1989	0.0	5.3	71.8	21.2	1.7	0.0	13.6
	1990	0.6	31.8	28.7	37.9	0.9	0.0	41.6
	1991	0.0	10.3	56.9	30.5	2.3	0.0	33.9
	1992	0.0	23.1	48.1	25.0	3.8	0.0	21.2
	1993	0.4	16.9	38.7	41.8	2.3	0.0	29.9
	1994 [c]	0.0	8.0	53.0	34.5	4.3	0.2	35.5
	1995 [c]	0.0	35.0	15.7	47.5	1.7	0.0	43.7
	1996 [c]	1.2	6.6	74.1	13.9	4.2	0.0	41.9
	1997 [c]	0.0	52.7	15.6	31.7	0.0	0.0	36.8
	1998 [c]	0.0	16.8	71.4	11.1	0.8	0.0	29.0
	1999 [c]	0.3	34.5	32.2	32.5	0.6	0.0	28.6
	2000 [c]	0.0	12.6	49.1	38.3	0.0	0.0	54.3
	2001 [c]	0.0	14.5	18.5	64.5	2.4	0.0	63.7
	2002 [c]	0.0	30.5	48.2	20.0	1.4	0.0	21.1
	2003 [c]	0.5	16.0	51.9	30.7	0.8	0.0	46.2
	2004 [c]	0.0	39.9	42.6	17.1	0.4	0.0	37.3
	2005 [c]	0.0	15.0	64.3	20.2	0.5	0.0	50.2
	2006 [c]	0.0	17.0	54.9	28.1	0.0	0.0	42.6
	2007 [c, d]	0.0	41.7	25.7	32.0	0.6	0.0	-
	2008 [c]	0.0	3.8	74.5	20.1	1.5	0.0	34.8
Average [e]	(1985–2007)	0.2	21.8	42.7	32.8	2.5	0.0	37.4
5-yr Average [e]	(2003–2007)	0.1	25.9	47.9	25.6	0.5	0.0	44.1

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Table 6.–Page 2 of 4.

Project	Year	Percent (%) Age 3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female
Anvik River	1985 [a]	0.0	30.3	39.4	30.3	0.0	0.0	24.2
	1986 [a]	0.0	0.7	50.0	38.0	11.3	0.0	67.2
	1987 [a]	0.0	9.5	13.1	73.9	3.7	0.0	58.7
	1988 [a]	0.0	30.5	38.2	27.2	4.1	0.0	29.7
	1989 [a]	0.3	4.2	49.1	43.5	2.9	0.0	40.7
	1990 [a]	0.3	26.3	26.0	43.8	3.8	0.0	37.0
	1991 [a]	0.0	10.3	55.0	31.7	2.9	0.0	41.0
	1992 [a]	0.0	9.5	38.1	50.8	1.6	0.0	41.3
	1993 [a]	0.0	13.8	38.5	45.6	2.1	0.0	42.1
	1994 [a]	0.0	3.0	51.9	39.8	5.4	0.0	42.0
	1995 [a]	0.0	9.5	38.1	50.8	1.6	0.0	41.3
	1996 [a]	0.0	9.9	55.4	24.4	9.9	0.4	35.1
	1997 [a]	0.0	25.0	30.6	44.1	0.3	0.0	36.8
	1998 [a]	0.3	14.7	59.9	23.9	1.2	0.0	32.7
	1999 [a]	0.0	9.3	42.5	48.1	0.0	0.0	37.9
	2000 [a]	0.0	4.9	41.9	52.7	0.5	0.0	40.9
	2001 [a]	0.0	11.1	30.1	53.0	5.7	0.0	38.3
	2002 [a]	0.0	19.5	43.1	34.2	3.2	0.0	28.8
	2003 [a]	0.2	8.9	54.7	33.2	3.0	0.0	37.6
	2004 [a]	0.6	32.2	40.7	25.6	0.9	0.0	27.6
	2005 [a]	0.0	8.8	61.2	27.7	2.2	0.0	51.1
	2006 [a]	0.0	10.7	47.9	41.4	0.0	0.0	43.2
	2007 [f]	-	-	-	-	-	-	-
	2008 [a]	0.0	7.6	69.5	22.0	0.9	0.0	18.8
	Average [e] (1985–2006)	0.1	13.8	43.0	40.2	3.0	0.0	40.4
	5-yr avg. [e] (2002–2006)	0.2	16.0	49.5	32.4	1.9	0.0	40.2

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Project	Year	Percent (%) Age 3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female
Chena River	1985 [g]	0.0	12.1	21.7	59.2	7.0	0.0	52.5
	1986 [g]	0.1	9.3	51.2	29.9	9.3	0.1	25.4
	1987 [g]	0.0	2.9	13.1	75.6	8.4	0.0	58.0
	1988 [g]	0.6	10.5	17.5	46.4	24.6	0.4	60.9
	1989 [g]	0.3	4.2	30.2	54.9	10.4	0.0	64.9
	1990 [g]	0.0	23.8	25.7	46.7	3.8	0.0	46.2
	1991 [g]	0.0	8.3	55.8	28.5	7.4	0.0	31.5
	1992 [g]	1.9	40.7	16.4	40.5	0.4	0.0	37.7
	1993 [b]	0.5	29.4	41.2	27.8	1.1	0.0	16.6
	1994 [b]	0.0	2.9	43.6	51.2	2.3	0.0	45.1
	1995 [b]	0.0	4.4	20.9	70.9	3.8	0.0	66.0
	1996 [b]	2.1	6.2	44.2	23.5	23.9	0.0	44.0
	1997 [b]	0.3	37.2	13.4	48.0	1.1	0.0	39.6
	1998 [b]	0.0	4.4	72.4	18.4	4.8	0.0	41.2
	1999 [b]	0.9	7.9	25.2	65.4	0.6	0.0	58.8
	2000 [b]	0.0	20.1	35.6	35.6	8.7	0.0	34.9
	2001 [b]	0.6	9.6	33.6	51.2	5.0	0.0	44.0
	2002 [b]	0.1	29.0	29.8	38.5	2.7	0.0	31.7
	2003 [b]	0.0	5.1	46.5	41.6	6.8	0.0	44.9
	2004 [b]	0.0	8.9	17.7	71.5	1.9	0.0	66.5
	2005 [b]	0.0	6.5	49.9	39.5	4.1	0.0	42.4
	2006 [b]	0.0	12.7	45.6	40.6	1.1	0.0	45.9
	2007 [b, h]	13.2	22.6	32.1	32.1	0.0	0.0	43.4
	2008 [b]	0.0	27.8	61.1	11.1	0.0	0.0	44.4
Average [e]	(1985–2007)	0.9	13.9	34.0	45.1	6.1	0.0	44.3
5-yr Average [e]	(2002–2006)	2.6	11.2	38.4	45.1	2.8	0.0	44.1

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Table 6.–Page 4 of 4.

Project	Year	Percent (%) Age 3 yrs. (1.1)	4 yrs. (1.2)	5 yrs. (1.3, 2.2)	6 yrs. (1.4, 2.3)	7 yrs. (1.5, 2.4)	8 yrs. (1.6, 2.5)	Female
Salcha River	1985 [g]	0.0	12.3	17.6	64.8	5.3	0.0	48.5
	1986 [g]	0.2	11.8	43.7	29.5	14.8	0.0	35.8
	1987 [g]	0.2	6.0	12.6	73.5	7.8	0.0	62.8
	1988 [g]	0.4	20.3	22.5	42.1	14.7	0.0	39.6
	1989 [g]	0.5	4.1	28.9	57.8	8.8	0.0	62.2
	1990 [g]	0.2	17.6	24.9	48.9	8.3	0.0	48.9
	1991 [g]	0.2	8.2	44.3	41.4	5.8	0.2	47.2
	1992 [g]	1.2	30.8	28.6	38.2	1.1	0.0	34.4
	1993 [b]	0.9	28.0	39.1	31.1	0.9	0.0	27.6
	1994 [b]	0.6	2.7	39.1	52.9	4.8	0.0	44.5
	1995 [b]	0.0	13.6	20.6	62.8	3.1	0.0	56.0
	1996 [b]	2.7	6.2	38.4	28.6	24.1	0.0	50.8
	1997 [b]	0.0	14.4	14.4	69.4	1.7	0.0	50.0
	1998 [b]	2.4	4.9	72.4	17.9	2.4	0.0	30.0
	1999 [b]	0.0	9.1	24.1	66.4	0.3	0.0	54.7
	2000 [b]	0.0	22.0	48.8	24.4	4.9	0.0	43.9
	2001 [b]	0.5	10.4	33.9	52.1	3.1	0.0	37.5
	2002 [b]	0.0	36.2	13.8	38.7	11.3	0.0	34.8
	2003 [b]	0.7	7.3	42.4	42.4	7.3	0.0	42.4
	2004 [b]	0.0	9.2	8.3	81.7	0.9	0.0	62.9
	2005 [b]	0.0	9.3	41.5	46.2	3.0	0.0	54.3
	2006 [b]	0.0	5.7	49.3	43.0	2.0	0.0	43.4
	2007 [b]	0.0	22.4	26.9	50.3	0.3	0.0	35.7
	2008 [b]	0.7	9.9	51.8	36.0	1.7	0.0	39.3
Average [e]	(1985–2007)	0.5	13.6	32.0	48.0	5.9	0.0	45.6
5-yr Average [e]	(2003–2007)	0.1	10.8	33.7	52.7	2.7	0.0	47.7

[a] Project was operated as sonar.
[b] Project was operated as a counting tower.
[c] Project was operated as a weir.
[d] Percent female data not available.
[e] Averages were not weighted by number of fish sampled each year.
[f] Project did not operate.
[g] Estimates were from mark–recapture project.
[h] Ages were determined by project staff. Data suggests there may be errors in aging or in the matching of ages with lengths.

Table 7.–Yukon River Chinook salmon mean lengths (mm) by project, gear, sex, and age, 2008.

			Brood Year (Age)									
	Project	Project Type	2005	2004	2003		2002		2001		2000	
Sex	Location	and (Gear)	(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)
Male	District 1	Com (GN)	465	562	697	590	805	660	960	810	-	-
	District 2	Com (GN)	-	568	696	-	774	720	1,010	-	-	-
	District 1	Sub (8.5" GN)	-	602	748	-	849	-	903	-	-	-
	District 1	Sub (5.5" GN)	-	596	703	-	816	-	-	-	-	-
	District 3, Holy Cross	Sub (GN)	-	510	726	-	837	-	905	-	-	-
	Subdistrict 4-A, Kaltag	Sub (8.5" GN)	-	518	715	-	833	615	930	-	-	-
	Subdistrict 4-A, Nulato	Sub (GN)	-	535	730	-	834	-	990	-	-	-
	Subdistricts 4-B, 4-C Galena	Sub (FW, GN)	-	561	710	-	818	-	-	-	-	-
	Subdistricts 4-B, 4-C Bishop Rock	Sub (GN)	-	578	771	-	901	-	990	-	-	-
	Subdistricts 4-C, Ruby	Sub (FW, GN)	-	560	711	-	875	-	920	-	-	-
	Subdistrict 5-B, Rampart Rapids	Sub (FW)	-	536	702	-	1,030	-	-	-	-	-
	Subdistrict 5-D, Eagle	Sub (FW, GN)	-	514	692	-	825	-	-	-	-	-
	Subdistrict 6-B, Nenana	Sub (FW)	390	520	683	-	865	-	-	-	-	-
	Big Eddy	TF (8.5" SGN)	-	571	749	-	841	710	877	-	-	-
	Middle Mouth	TF (8.5" SGN)	-	566	756	540	854	630	933	935	-	-
	Comparative Mesh Size Study	TF (7.0"- 8.0" DGN)	-	585	715	-	782	-	865	-	-	-
	Marshall	TF (8.25" DGN)	-	555	737	-	833	-	937	770	-	-
	Pilot Station	TF (DGN)	483	577	707	-	805	-	880	819	-	-
	Eagle Sonar	TF (DGN)	-	580	723	-	870	-	1,000	-	-	-
	Andreafsky, E.F.	Esc (WR)	-	539	691	-	785	-	915	825	-	-
	Anvik	Esc (CR)	-	546	695	-	796	-	-	-	-	-
	Chena	Esc (CR)	-	593	719	-	873	-	-	-	-	-
	Gisasa	Esc (WR)	390	539	692	-	760	710	-	-	-	-
	Henshaw	Esc (WR)	438	538	684	495	754	660				
	Salcha	Esc (CR)	395	543	718	-	853	-	-	-	-	-
	Tozitna	Esc (WR)	398	533	682	-	777	669	-	-	-	-
		Male Average [a]	423	555	714	542	833	672	934	832	-	-

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Table 7.–Page 2 of 2.

Sex	Project Location	Project Type and (Gear)	Brood Year (Age) 2005 (1.1)	2004 (1.2)	2003 (1.3)	(2.2)	2002 (1.4)	(2.3)	2001 (1.5)	(2.4)	2000 (1.6)	(2.5)
Female	District 1	Com (GN)	-	-	746	-	825	-	875	-	-	-
	District 2	Com (GN)	-	-	739	-	828	-	-	-	-	-
	District 1	Sub (8.5" GN)	-	-	760	-	863	-	864	805	-	-
	District 1	Sub (5.5" GN)	-	605	729	-	849	-	-	-	-	-
	District 3, Holy Cross	Sub (GN)	-	-	791	-	862	-	883	-	-	-
	Subdistrict 4-A, Kaltag	Sub (8.5" GN)	-	-	756	-	857	850	909	-	-	-
	Subdistrict 4-A, Nulato	Sub (GN)	-	485	763	-	849	-	935	-	-	-
	Subdistricts 4-B, 4-C Galena	Sub (FW, GN)	-	-	768	-	841	-	-	-	-	-
	Subdistricts 4-B, 4-C Bishop Rock	Sub (GN)	-	-	794	-	886	-	937	-	-	-
	Subdistricts 4-C, Ruby	Sub (FW, GN)	-	440	705	-	845	-	910	-	-	-
	Subdistrict 5-B, Rampart Rapids	Sub (FW)	-	-	683	-	890	-	-	-	-	-
	Subdistrict 5-D, Eagle	Sub (FW, GN)	-	-	761	-	838	755	853	-	-	-
	Subdistrict 6-B, Nenana	Sub (FW)	-	-	-	-	858	-	-	-	-	-
	Big Eddy	TF (8.5" SGN)	-	-	793	-	852	-	898	-	-	-
	Middle Mouth	TF (8.5" SGN)	-	-	809	-	855	-	909	865	-	-
	Comparative Mesh Size Study	TF (7.0"- 8.0" DGN)	-	-	777	-	836	-	-	-	-	-
	Marshall	TF (8.25" DGN)	-	-	812	-	867	850	884	-	-	-
	Pilot Station	TF (DGN)	-	677	741	-	831	-	895	770	-	-
	Eagle Sonar	TF (DGN)	-	-	757	-	856	-	879	840	-	-
	Andreafsky, E.F.	Esc (WR)	-	563	707	-	818	745	845	-	-	-
	Anvik	Esc (CR)	-	-	775	-	820	-	808	-	-	-
	Chena	Esc (CR)	-	-	814	-	866	-	920	-	-	-
	Gisasa	Esc (WR)	-	510	756	-	827	-	871	-	-	-
	Henshaw	Esc (WR)	-	536	705	-	821	800	886	820	-	825
	Salcha	Esc (CR)	-	-	779	-	851	-	878	-	-	-
	Tozitna	Esc (WR)	-	465	771	-	838	-	830	-	-	-
		Female Average [a]	-	535	760	-	847	800	883	820	-	-

Note: Com is commercial, Sub is subsistence, TF is test fishery, Esc is escapement, GN is gillnet preceded by mesh size, SGN is set gillnet, DGN is drift gillnet, FW is fish wheel, WR is weir, SN is seine net, and CR is carcass.

[a] Averages were not weighted by sample size.

Table 8.–Yukon River chum salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2008.

Project Type Location and (gear)	Sample Size	Percent (%) Age 0.2	0.3	0.4	0.5	0.6	Female
Commercial - Summer Chum							
District 1 (≤ 6" gillnet)	950	0.1	37.5	55.8	6.5	0.1	52.2
District 2 (≤ 6" gillnet) [a]	160	0.0	30.0	63.8	5.6	0.6	49.4
Subdistrict 4-A, (fish wheel) [b]	72	0.0	63.9	31.9	4.2	0.0	100.0
District 6 (set gillnet)	45	0.0	60.0	37.8	2.2	0.0	33.3
Commercial - Fall Chum							
District 1 (gillnet)	1,388	0.6	41.6	55.1	2.7	0.0	52.7
District 5 (fish wheel) [c]	430	0.5	43.3	54.6	1.7	0.0	28.7
District 6 (fish wheel) [c]	556	2.1	49.0	46.9	1.9	0.0	51.1
Subsistence - Summer Chum							
District 1 (5.5" gillnet)	281	0.0	27.4	64.1	8.5	0.0	34.5
District 1 (8.5" gillnet)	51	0.0	31.4	60.8	7.8	0.0	29.4
Subsistence - Fall Chum							
Subdistrict 5-B, Tanana (fish wheel)	136	0.0	52.9	44.9	2.2	0.0	43.4
Subdistrict 5-B, Rampart Rapids (fish wheel)	109	0.0	45.0	55.0	0.0	0.0	70.6
Test Fishery - Summer Chum							
Big Eddy (5.5" drift gillnet)	647	0.0	42.3	52.9	4.8	0.0	53.6
Middle Mouth (5.5" drift gillnet)	137	0.0	35.8	57.7	6.6	0.0	55.4
Test Fishery - Fall Chum							
Big Eddy (6.0" drift gillnet)	423	0.2	39.7	57.7	2.4	0.0	63.6
Middle Mouth (6.0" drift gillnet)	169	0.6	48.5	49.1	1.8	0.0	60.4
Mountain Village (5 ⅞" drift gillnet)	364	0.0	40.9	54.1	4.7	0.3	52.7
Kaltag (5 ⅞" drift gillnet)	356	0.8	44.4	52.8	2.0	0.0	50.0
Eagle Sonar (5.25" and 7.5" mesh drift gillnet)	508	2.0	56.7	40.2	1.2	0.0	34.8
Test Fishery Fall Chum Average [d]		0.7	46.1	50.8	2.4	0.1	52.3
Escapement - Summer Chum							
Andreafsky River, East Fork (weir trap)	746	0.0	15.3	82.1	2.6	0.0	47.8
Anvik River (beach seine)	533	1.6	43.6	50.6	4.2	0.0	54.9
Gisasa River (weir trap)	659	0.3	28.7	64.3	6.7	0.0	49.3
Henshaw Creek (weir trap)	646	4.1	73.8	17.4	4.7	0.0	47.4
Salcha River (carcass) [e]	160	0.6	51.3	40.0	6.3	1.9	58.8
Tozitna River (weir trap)	624	5.3	51.0	38.9	4.9	0.0	44.6
Escapement Summer Chum Average [d]		2.0	43.9	48.9	4.9	0.3	50.5
Escapement - Fall Chum							
Chandalar River (carcass, handpicked) [e]	178	3.4	41.0	46.6	7.3	1.7	56.2
Delta River (carcass, handpicked) [e]	179	1.7	35.2	53.1	9.5	0.6	45.3
Sheenjek River (beach seine) [e]	116	0.9	43.1	51.7	3.4	0.9	43.1
Escapement Fall Chum Average [d]		2.0	39.8	50.5	6.7	1.0	48.2
Total Summer Chum	5,711						
Total Fall Chum	4,912						

[a] Age and percent female were estimated from period 1.

[b] The Subdistrict 4-A fishery was a roe-directed fishery.

[c] Fish were pre-sorted by the commercial processors. Samples were not random.

[d] Averages were not weighted by sample sizes.

[e] Vertebrae were used for age determination.

Table 9.–Yukon River Districts 1, 2, 5, 6, and Subdistrict 4-A summer chum salmon, and Districts 1, 5 and 6 fall chum salmon commercial harvest age and sex composition, 2008.

Season / District	Sample Size		Brood Year (Age) 2004 (0.2) No.	%	2003 (0.3) No.	%	2002 (0.4) No.	%	2001 (0.5) No.	%	2000 (0.6) No.	%	Total No.	%
Summer Chum Salmon														
District 1 [a]	950	Male	78	0.1	12,011	17.8	17,440	25.9	2,709	4.0	0	0.0	32,238	47.8
		Female	0	0.0	13,299	19.7	20,202	29.9	1,669	2.5	51	0.1	35,221	52.2
		Total	78	0.1	25,310	37.5	37,643	55.8	4,378	6.5	51	0.1	67,459	100.0
District 2 [a, b]	160	Male	0	0.0	1,079	17.5	1,849	30.0	193	3.1	0	0.0	3,120	50.6
		Female	0	0.0	770	12.5	2,080	33.8	154	2.5	39	0.6	3,043	49.4
		Total	0	0.0	1,849	30.0	3,929	63.8	347	5.6	39	0.6	6,163	100.0
Subdistrict 4-A [c]	72	Male											0	
		Female	0	0.0	46	63.9	23	31.9	3	4.2	0	0.0	72	100.0
		Total	0	0.0	46	63.9	23	31.9	3	4.2	0	0.0	72	100.0
District 6 [d]	45	Male	0	0.0	20	44.4	9	20.0	1	2.2	0	0.0	30	66.7
		Female	0	0.0	7	15.6	8	17.8	0	0.0	0	0.0	15	33.3
		Total	0	0.0	27	60.0	17	37.8	1	2.2	0	0.0	45	100.0
Fall Chum Salmon														
District 1 [e]	1,388	Male	117	0.2	13,293	19.6	17,844	26.4	794	1.2	0	0.0	32,048	47.3
		Female	299	0.4	14,860	21.9	19,471	28.8	1,025	1.5	0	0.0	35,656	52.7
		Total	417	0.6	28,154	41.6	37,314	55.1	1,819	2.7	0	0.0	67,704	100.0
District 5 [f, g]	430	Male	9	0.5	579	30.6	743	39.3	18	0.9	0	0.0	1,349	71.3
		Female	0	0.0	241	12.7	289	15.3	13	0.7	0	0.0	542	28.7
		Total	9	0.5	819	43.3	1,032	54.6	31	1.7	0	0.0	1,891	100.0
District 6 [g, h]	556	Male	58	1.3	1,032	22.6	1,102	24.2	36	0.8	0	0.0	2,229	48.9
		Female	39	0.9	1,204	26.4	1,039	22.8	50	1.1	0	0.0	2,332	51.1
		Total	98	2.1	2,237	49.0	2,141	46.9	86	1.9	0	0.0	4,561	100.0
Districts 1, 5, 6 Combined	2,374	Male	184	0.2	14,904	20.1	19,689	26.6	848	1.1	0	0.0	35,626	48.0
		Female	339	0.5	16,305	22.0	20,798	28.0	1,089	1.5	0	0.0	38,530	52.0
		Total	523	0.7	31,209	42.1	40,487	54.6	1,937	2.6	0	0.0	74,156	100.0

-continued-

[a] All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

[b] Age and percent female were estimated using samples from period 1. The total District 2 commercial harvest for periods 1–5 was 58,139 summer chum salmon.

[c] The fishery in Subdistrict 4-A was a directed-roe fishery. Sample size was insufficient to apply age to the commercial harvest. The total Subdistrict 4-A commercial harvest for periods 1–7 was 24,346.

[d] Commercial fishing gear was fish wheels. Sample size was insufficient to apply age and percent female to the commercial harvest. The total District 6 summer chum commercial harvest for periods 1–6 was 1,842.

[e] Commercial fishing gear was unrestricted mesh size gillnets.

[f] Age and percent female were estimated using samples from periods 1, 2 and 3. The total District 5 commercial harvest for periods 1–9 was 4,556 fall chum salmon.

[g] Commercial fishing gear was fish wheels.

[h] Age and percent female were estimated using samples from periods 5, 6, 7 and 8. The total District 6 commercial harvest for periods 1–9 was 5,735 fall chum salmon.

Table 10.–Yukon River summer chum salmon age and female percentages from the combined Big Eddy and Middle Mouth 5.5-inch mesh gillnet test fishery catches, 1985–2008.

			Percent (%)					
	Sample	Number	Age					
Year	Size	of Days [a]	0.2	0.3	0.4	0.5	0.6	Female
1985	954	19	0.0	62.4	37.1	0.5	0.0	51.6
1986	1,125	27	0.1	26.2	73.2	0.4	0.0	55.1
1987	1,169	34	0.6	48.8	43.7	6.8	0.0	56.8
1988	804	30	0.1	50.5	48.4	1.0	0.0	59.5
1989	1,074	29	0.0	39.9	59.5	0.6	0.0	62.2
1990	1,328	42	0.8	46.1	50.1	3.1	0.0	66.0
1991	1,495	41	0.0	45.4	53.6	0.9	0.0	55.2
1992	1,089	32	0.0	22.0	71.8	6.2	0.0	61.4
1993	1,757	46	0.1	38.2	57.4	4.4	0.0	50.4
1994	2,385	49	0.0	35.6	61.9	2.6	0.0	62.5
1995	1,839	38	0.5	40.2	53.2	6.1	0.0	56.2
1996	1,936	47	0.1	42.3	52.4	5.2	0.0	63.7
1997	1,947	46	0.0	24.1	71.5	4.4	0.0	61.0
1998	1,649	47	0.0	62.5	33.5	4.0	0.0	52.5
1999	1,227	33	1.1	48.1	47.4	3.4	0.0	50.0
2000	950	38	0.2	52.5	45.8	1.5	0.0	63.8
2001	724	33	0.0	25.0	73.8	1.2	0.0	64.6
2002	792	45	0.5	57.3	40.4	1.8	0.0	63.3
2003	822	42	0.4	78.7	18.7	2.2	0.0	54.4
2004	521	45	3.1	40.1	56.8	0.0	0.0	66.0
2005	754	32	0.1	89.8	9.9	0.1	0.0	54.5
2006	860	30	0.3	27.3	72.2	0.1	0.0	59.0
2007 [b]	91	16	0.0	42.9	47.3	9.9	0.0	65.9
2008 [c]	784	24	0.0	41.2	53.7	5.1	0.0	55.4
Average [d] (1987–1988, 1990–2006)	1,266	39	0.4	46.0	50.7	2.9	0.0	59.0
5-yr average [d] (2002–2006)	750	39	0.9	58.7	39.6	0.8	0.0	59.4

[a] Big Eddy and Middle Mouth 5.5 inch gillnet test fishery projects were conducted from the end of May through July 15, prior to 1990 these projects were often discontinuous within the season or were not conducted throughout the season. The "Number of Days" refers only to those days that scale samples were collected from Chinook salmon and aged.

[b] One set gillnet was operated at Big Eddy.

[c] Two drift gillnets were operated at Big Eddy and one drift gillnet was operated at Middle Mouth.

[d] Years used for average only include years when samples were collected throughout the season and a 30-day season minimum. Average was not weighted by number of fish sampled each year.

Table 11.–Yukon River summer and fall chum salmon mean lengths (mm) by project, gear, sex and age, 2008.

Sex and Season	Project Location	Project Type and (Gear)	Brood Year (Age) 2005 (0.2)	2004 (0.3)	2003 (0.4)	2002 (0.5)	2001 (0.6)
Male Summer Chum							
	District 1	Com (GN)	553	570	586	588	-
	District 2	Com (GN)	-	569	587	587	-
	Subdistrict 4-A	Com (FW)	-	-	-	-	-
	District 6	Com (FW)	-	603	616	580	-
	District 1	Sub (5.5" GN)	-	583	605	617	-
	District 1	Sub (8.5" GN)	-	588	606	623	-
	Big Eddy	TF (5.5" SGN)	-	569	590	584	-
	Middle Mouth	TF (5.5" SGN)	-	579	587	602	-
	Andreafsky, E.F.	Esc (WR)	-	552	579	602	-
	Anvik	Esc (SN)	580	587	593	602	-
	Gisasa	Esc (WR)	575	554	580	595	-
	Henshaw	Esc (WR)	538	556	579	575	-
	Salcha [a]	Esc (CR)	560	545	585	598	565
	Tozitna	Esc (WR)	544	561	579	583	-
		Male Summer Chum Average [b]	558	570	590	595	565
Female Summer Chum							
	District 1	Com (GN)	-	564	578	591	605
	District 2	Com (GN)	-	559	570	564	645
	Subdistrict 4-A	Com (FW)	-	542	556	543	-
	District 6	Com (FW)	-	583	604	-	-
	District 1	Sub (5.5" GN)	-	576	587	586	-
	District 1	Sub (8.5" GN)	-	560	581	590	-
	Big Eddy	TF (5.5" SGN)	-	555	564	572	-
	Middle Mouth	TF (5.5" SGN)	-	559	570	578	-
	Andreafsky, E.F.	Esc (WR)	-	527	538	546	-
	Anvik	Esc (SN)	525	546	557	550	-
	Gisasa	Esc (WR)	470	535	552	560	-
	Henshaw	Esc (WR)	524	533	554	569	-
	Salcha [a]	Esc (CR)	-	531	548	544	520
	Tozitna	Esc (WR)	521	542	558	567	-
		Female Summer Chum Average [b]	510	551	566	566	590

-continued-

Table 11.–Page 2 of 2.

Sex and Season	Project Location	Project Type and (Gear)	Brood Year (Age) 2005 (0.2)	2004 (0.3)	2003 (0.4)	2002 (0.5)	2001 (0.6)
Male Fall Chum							
	District 1	Com (GN)	536	572	589	580	580
	District 5 [c]	Com (FW)	620	614	638	653	-
	District 6 [d]	Com (FW)	546	601	624	623	-
	Subdistrict 5-B (Tanana)	Sub (FW)	-	603	614	590	-
	Subdistrict 5-B (Rampart Rapids)	Sub (FW)	-	598	638	-	-
	Big Eddy	TF (6.0" DGN)	560	582	604	598	-
	Middle Mouth	TF (6.0" DGN)	-	581	608	-	-
	Mt. Village	TF (5 ⅞" DGN)	-	585	605	598	-
	Kaltag	TF (5 ⅞" DGN)	553	592	617	615	-
	Eagle Sonar	TF (DGN)	573	609	626	633	-
	Chandalar [a]	Esc (CR)	540	575	608	595	-
	Delta [a]	Esc (CR)	-	605	624	634	-
	Sheenjek [a]	Esc (SN)	-	589	621	623	680
		Male Fall Chum Average [b]	561	593	617	613	630
Female Fall Chum							
	District 1	Com (GN)	542	566	580	574	-
	District 5 [c]	Com (FW)	-	594	619	638	-
	District 6 [d]	Com (FW)	561	575	599	605	-
	Subdistrict 5-B (Tanana)	Sub (FW)	-	579	607	570	-
	Subdistrict 5-B (Rampart Rapids)	Sub (FW)	-	582	601	-	-
	Big Eddy	TF (6.0" DGN)	-	579	596	604	-
	Middle Mouth	TF (6.0" DGN)	550	587	605	622	-
	Mt. Village	TF (5 ⅞" DGN)	-	582	594	613	-
	Kaltag	TF (5 ⅞" DGN)	-	585	599	615	-
	Eagle Sonar	TF (DGN)	567	578	596	580	-
	Chandalar [a]	Esc (CR)	543	552	578	560	593
	Delta [a]	Esc (CR)	573	578	596	614	-
	Sheenjek [a]	Esc (SN)	580	579	607	640	-
		Female Fall Chum Average [b]	559	578	598	603	593

Note: Com is commercial, Sub is subsistence, TF is test fishery, Esc is escapement, GN is gillnet, DGN is drift gillnet, FW is fish wheel, WR is weir, SN is seine net, and CR is carcass.

[a] Ages were obtained from vertebrae.

[b] Averages were not weighted by number of fish sampled in each project.

[c] Mean lengths were estimated from 3 of 9 commercial fishing periods. Fish were presorted by the commercial processors and not random.

[d] Mean lengths were estimated from 4 of 9 commercial fishing periods. Fish were presorted by the commercial processors and not random.

Table 12.–Yukon River coho salmon age and female percentages from commercial, test fishery, and escapement projects, 2008.

Project Type Location (gear)	Sample Size	Percent (%) Age (1.1)	(2.1)	(3.1)	Female
Commercial					
District 1 (gillnet)	621	14.7	74.7	10.6	49.8
Test Fishery					
Big Eddy (6.0" drift gillnet)	148	6.1	81.8	12.2	42.6
Middle Mouth (6.0" drift gillnet)	56	3.6	89.3	7.1	39.3
Mountain Village (5 ⅞" drift gillnet)	153	12.4	79.7	7.8	48.4
Kaltag (5 ⅞" drift gillnet)	30	13.3	80.0	6.7	50.0
Test Fishery Average [a]		8.9	82.7	8.5	45.1
Total Samples	1,008				

[a] Age and sex composition were estimated from periods 3–11.

[b] Averages were not weighted by sample size.

Table 13.–Yukon River coho salmon mean lengths (mm) by project, sex, gear, and age, 2008.

Sex	Project Location	Project Type and (Gear)	Brood Year (Age) 2005 (1.1)	2004 (2.1)	2003 (3.1)
Male	District 1	Com (GN)	561	569	572
	Big Eddy	TF (6.0" DGN)	565	568	572
	Middle Mouth	TF (6.0" DGN)	-	562	575
	Mt. Village	TF (5 ⅞" DGN)	570	562	560
	Kaltag	TF (5 ⅞" DGN)	520	593	585
		Male Average [a]	554	571	573
Female	District 1	Com (GN)	568	565	568
	Big Eddy	TF (6.0" DGN)	573	570	577
	Middle Mouth	TF (6.0" DGN)	545	556	570
	Mt. Village	TF (5 ⅞" DGN)	579	568	564
	Kaltag	TF (5 ⅞" DGN)	563	565	590
		Female Average [a]	566	565	574

Note: Com is commercial, TF is test fishery, GN is gillnet, and DGN is drift gillnet.

[a] Averages were not weighted by sample size.

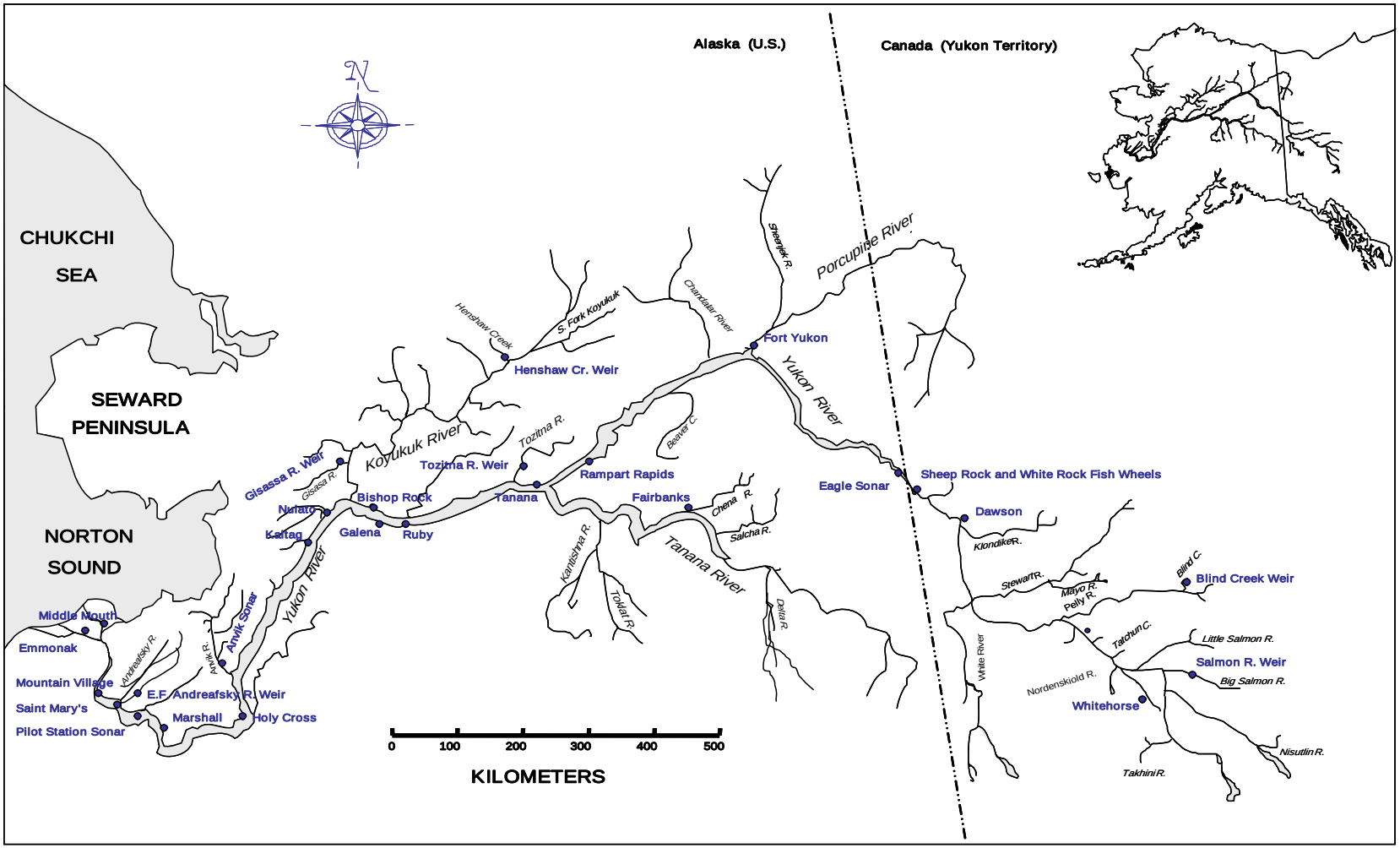

Figure 1.–Yukon River drainage in Alaska and Canada.

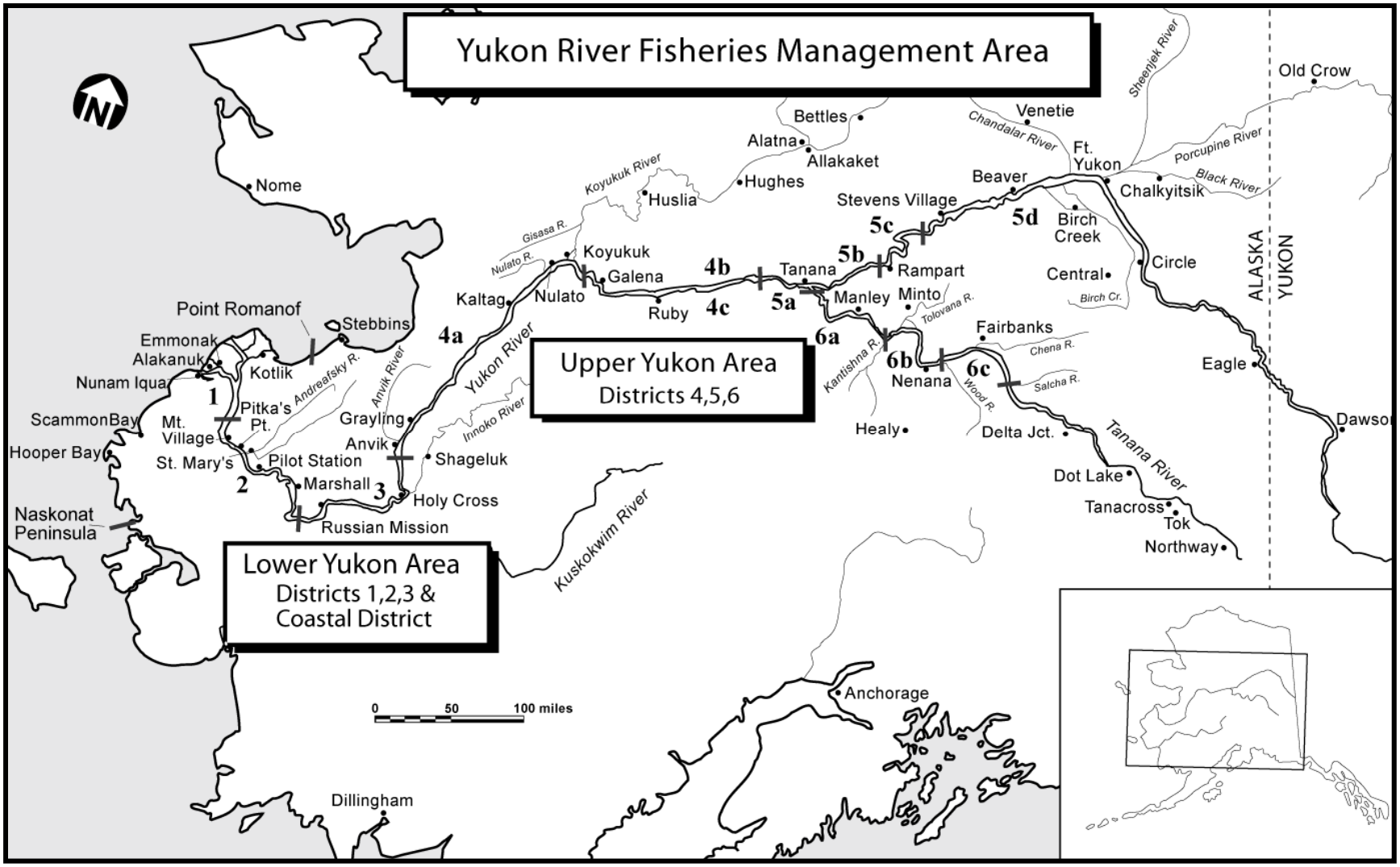

Figure 2.–Yukon River District and Subdistrict map.

APPENDIX A: CHINOOK SALMON TABLES

Appendix A1.–Yukon River, District 1, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)																			
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)			Total
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/2	171	Male	0	0.0	55	11.7	177	37.4	0	0.0	25	5.3	0	0.0	3	0.6	0	0.0	0	0.0	0	0.0	259	55.0
Period 1		Female	0	0.0	0	0.0	80	17.0	0	0.0	124	26.3	0	0.0	8	1.8	0	0.0	0	0.0	0	0.0	213	45.0
		Subtotal	0	0.0	55	11.7	257	54.4	0	0.0	149	31.6	0	0.0	11	2.3	0	0.0	0	0.0	0	0.0	472	100.0
7/5	195	Male	8	1.0	151	18.5	349	42.6	0	0.0	17	2.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	525	64.1
Period 2		Female	0	0.0	0	0.0	193	23.6	0	0.0	97	11.8	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	294	35.9
		Subtotal	8	1.0	151	18.5	542	66.2	0	0.0	113	13.8	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	819	100.0
7/8	65	Male	0	0.0	29	6.2	190	40.0	7	1.5	29	6.2	7	1.5	0	0.0	0	0.0	0	0.0	0	0.0	263	55.4
Period 3		Female	0	0.0	0	0.0	95	20.0	0	0.0	117	24.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	211	44.6
		Subtotal	0	0.0	29	6.2	284	60.0	7	1.5	146	30.8	7	1.5	0	0.0	0	0.0	0	0.0	0	0.0	474	100.0
7/10	70	Male	0	0.0	25	7.1	132	38.6	0	0.0	49	14.3	0	0.0	10	2.9	0	0.0	0	0.0	0	0.0	216	62.9
Period 4		Female	0	0.0	0	0.0	39	11.4	0	0.0	74	21.4	0	0.0	15	4.3	0	0.0	0	0.0	0	0.0	127	37.1
		Subtotal	0	0.0	25	7.1	172	50.0	0	0.0	123	35.7	0	0.0	25	7.1	0	0.0	0	0.0	0	0.0	343	100.0
7/12	23	Male	0	0.0	16	8.7	80	43.5	0	0.0	48	26.1	0	0.0	0	0.0	8	4.3	0	0.0	0	0.0	151	82.6
Period 5		Female	0	0.0	0	0.0	0	0.0	0	0.0	32	17.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	32	17.4
		Subtotal	0	0.0	16	8.7	80	43.5	0	0.0	80	43.5	0	0.0	0	0.0	8	4.3	0	0.0	0	0.0	183	100.0
7/14	0	Male	0	0.0	7	7.7	36	40.3	0	0.0	17	18.4	0	0.0	2	1.9	1	1.5	0	0.0	0	0.0	63	69.7
Period 6 [a]		Female	0	0.0	0	0.0	7	7.5	0	0.0	18	20.0	0	0.0	3	2.8	0	0.0	0	0.0	0	0.0	27	30.3
		Subtotal	0	0.0	7	7.7	43	47.7	0	0.0	35	38.4	0	0.0	4	4.7	1	1.5	0	0.0	0	0.0	90	100.0
	524	Male	8	0.4	283	11.9	963	40.4	7	0.3	184	7.7	7	0.3	14	0.6	9	0.4	0	0.0	0	0.0	1,477	62.0
All Periods		Female	0	0.0	0	0.0	414	17.4	0	0.0	461	19.4	0	0.0	30	1.2	0	0.0	0	0.0	0	0.0	904	38.0
		Total	8	0.4	283	11.9	1,377	57.8	7	0.3	645	27.1	7	0.3	44	1.8	9	0.4	0	0.0	0	0.0	2,381	100.0
		Male Mean Length	465		562		697		590		805		660		960		810		-		-			
		SE	25		5		4		-		11		-		46		-		-		-			
		Female Mean Length	-		-		746		-		825		-		875		-		-		-			
		SE	-		-		6		-		5		-		26		-		-		-			

Note: All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

[a] Age and sex composition were estimated from periods 4 and 5.

Appendix A2.–Yukon River, District 2, Chinook salmon commercial gillnet harvest age and sex composition and mean length (mm), 2008.

Sample Dates	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	2003 (2.2) No.	%	2002 (1.4) No.	%	2002 (2.3) No.	%	2001 (1.5) No.	%	2001 (2.4) No.	%	2000 (1.6) No.	%	2000 (2.5) No.	%	Total No.	%
7/4	105	Male	0	0.0	59	11.4	213	41.0	0	0.0	35	6.7	5	1.0	5	1.0	0	0.0	0	0.0	0	0.0	316	61.0
Period 1		Female	0	0.0	0	0.0	89	17.1	0	0.0	114	21.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	203	39.0
		Subtotal	0	0.0	59	11.4	302	58.1	0	0.0	148	28.6	5	1.0	5	1.0	0	0.0	0	0.0	0	0.0	519	100.0
7/6	0	Male	0	0.0	70	11.4	250	41.0	0	0.0	41	6.7	6	1.0	6	1.0	0	0.0	0	0.0	0	0.0	372	61.0
Period 2 [a]		Male	0	0.0	0	0.0	105	17.1	0	0.0	134	21.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	238	39.0
		Subtotal	0	0.0	70	11.4	354	58.1	0	0.0	174	28.6	6	1.0	6	1.0	0	0.0	0	0.0	0	0.0	610	100.0
	0	Male																						
Periods 3-5 [b]		Female																						
		Subtotal																					838	
	105	Male																						
All Periods		Female																						
		Total																					1,967	
		Male Mean Length [c]	-		568		696		-		774		720		1,010		-		-		-			
		SE	-		13		8		-		33		-		-		-		-		-			
		Female Mean Length [c]	-		-		739		-		828		-		-		-		-		-			
		SE	-		-		12		-		10		-		-		-		-		-			

Note: All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

[a] Age and sex composition were estimated from period 1.

[b] Periods 3–5 were not sampled for age or sex composition, and age and sex estimates were not applied to the total harvest number for these periods.

[c] Mean lengths were estimated from period 1.

Appendix A3.–Yukon River, District 1, Chinook salmon subsistence 5.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2008.

Sample Dates [a]	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	(2.2) No.	%	2002 (1.4) No.	%	(2.3) No.	%	2001 (1.5) No.	%	(2.4) No.	%	2000 (1.6) No.	%	(2.5) No.	%	Total No.	%
6/6-7	3	Male	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
		Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
6/10-11, 13-14	50	Male	0	0.0	3	6.0	35	70.0	0	0.0	4	8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	42	84.0
		Female	0	0.0	0	0.0	4	8.0	0	0.0	4	8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	16.0
		Subtotal	0	0.0	3	6.0	39	78.0	0	0.0	8	16.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	50	100.0
6/18	11	Male	0	0.0	2	18.2	6	54.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	72.7
		Female	0	0.0	1	9.1	1	9.1	0	0.0	1	9.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	27.3
		Subtotal	0	0.0	3	27.3	7	63.6	0	0.0	1	9.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	100.0
7/24	11	Male	0	0.0	4	36.4	3	27.3	0	0.0	2	18.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	81.8
		Female	0	0.0	0	0.0	2	18.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	18.2
		Subtotal	0	0.0	4	36.4	5	45.5	0	0.0	2	18.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	100.0
Season	75	Male	0	0.0	9	12.0	47	62.7	0	0.0	6	8.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	62	82.7
		Female	0	0.0	1	1.3	7	9.3	0	0.0	5	6.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13	17.3
		Total	0	0.0	10	13.3	54	72.0	0	0.0	11	14.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	75	100.0
		Male Mean Length	-		596		703		-		816		-		-		-		-		-			
		SE	-		23		7		-		18		-		-		-		-		-			
		Female Mean Length	-		605		729		-		849		-		-		-		-		-			
		SE	-		-		20		-		9		-		-		-		-		-			

[a] Sample dates were stratified by week.

Appendix A4.–Yukon River, District 1, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2008.

Sample Dates [a]	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	2003 (2.2) No.	%	2002 (1.4) No.	%	2002 (2.3) No.	%	2001 (1.5) No.	%	2001 (2.4) No.	%	2000 (1.6) No.	%	2000 (2.5) No.	%	Total No.	%
6/3-7	46	Male	0	0.0	0	0.0	24	52.2	0	0.0	7	15.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	31	67.4
		Female	0	0.0	0	0.0	6	13.0	0	0.0	9	19.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	15	32.6
		Subtotal	0	0.0	0	0.0	30	65.2	0	0.0	16	34.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	46	100.0
6/10-11, 13-14	157	Male	0	0.0	4	2.5	78	49.7	0	0.0	26	16.6	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	109	69.4
		Female	0	0.0	0	0.0	20	12.7	0	0.0	26	16.6	0	0.0	2	1.3	0	0.0	0	0.0	0	0.0	48	30.6
		Subtotal	0	0.0	4	2.5	98	62.4	0	0.0	52	33.1	0	0.0	3	1.9	0	0.0	0	0.0	0	0.0	157	100.0
6/17-18, 21	117	Male	0	0.0	1	0.9	44	37.6	0	0.0	30	25.6	0	0.0	4	3.4	0	0.0	0	0.0	0	0.0	79	67.5
		Female	0	0.0	0	0.0	9	7.7	0	0.0	26	22.2	0	0.0	2	1.7	1	0.9	0	0.0	0	0.0	38	32.5
		Subtotal	0	0.0	1	0.9	53	45.3	0	0.0	56	47.9	0	0.0	6	5.1	1	0.9	0	0.0	0	0.0	117	100.0
Season	320	Male	0	0.0	5	1.6	146	45.6	0	0.0	63	19.7	0	0.0	5	1.6	0	0.0	0	0.0	0	0.0	219	68.4
		Female	0	0.0	0	0.0	35	10.9	0	0.0	61	19.1	0	0.0	4	1.3	1	0.3	0	0.0	0	0.0	101	31.6
		Total	0	0.0	5	1.6	181	56.6	0	0.0	124	38.8	0	0.0	9	2.8	1	0.3	0	0.0	0	0.0	320	100.0
		Male Mean Length	-		602		748		-		849		-		903		-		-		-			
		SE	-		13		4		-		6		-		23		-		-		-			
		Female Mean Length	-		-		760		-		863		-		864		805		-		-			
		SE	-		-		8		-		6		-		19		-		-		-			

[a] Sample dates were stratified by week.

Appendix A5.–Yukon River, District 3, Holy Cross, Chinook salmon subsistence gillnet harvest age and sex composition and mean length (mm), 2008.

Sample Dates [a]	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	(2.2) No.	%	2002 (1.4) No.	%	(2.3) No.	%	2001 (1.5) No.	%	(2.4) No.	%	2000 (1.6) No.	%	(2.5) No.	%	Total No.	%
6/17-18, 20-21	46	Male	0	0.0	1	2.2	16	34.8	0	0.0	7	15.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	24	52.2
		Female	0	0.0	0	0.0	9	19.6	0	0.0	11	23.9	0	0.0	2	4.3	0	0.0	0	0.0	0	0.0	22	47.8
		Subtotal	0	0.0	1	2.2	25	54.3	0	0.0	18	39.1	0	0.0	2	4.3	0	0.0	0	0.0	0	0.0	46	100.0
6/24-25	18	Male	0	0.0	0	0.0	13	72.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	13	72.2
		Female	0	0.0	0	0.0	0	0.0	0	0.0	5	27.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	27.8
		Subtotal	0	0.0	0	0.0	13	72.2	0	0.0	5	27.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	18	100.0
7/7-12	51	Male	0	0.0	0	0.0	10	19.6	0	0.0	11	21.6	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	22	43.1
		Female	0	0.0	0	0.0	10	19.6	0	0.0	18	35.3	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	29	56.9
		Subtotal	0	0.0	0	0.0	20	39.2	0	0.0	29	56.9	0	0.0	2	3.9	0	0.0	0	0.0	0	0.0	51	100.0
7/14	5	Male	0	0.0	0	0.0	1	20.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	40.0
		Female	0	0.0	0	0.0	2	40.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	60.0
		Subtotal	0	0.0	0	0.0	3	60.0	0	0.0	2	40.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	100.0
Season	120	Male	0	0.0	1	0.8	40	33.3	0	0.0	19	15.8	0	0.0	1	0.8	0	0.0	0	0.0	0	0.0	61	50.8
		Female	0	0.0	0	0.0	21	17.5	0	0.0	35	29.2	0	0.0	3	2.5	0	0.0	0	0.0	0	0.0	59	49.2
		Total	0	0.0	1	0.8	61	50.8	0	0.0	54	45.0	0	0.0	4	3.3	0	0.0	0	0.0	0	0.0	120	100.0
		Male Mean Length	-		510		726		-		837		-		905		-		-		-			
		SE	-		-		10		-		20		-		-		-		-		-			
		Female Mean Length	-		-		791		-		862		-		883		-		-		-			
		SE	-		-		14		-		12		-		31		-		-		-			
		Male Mean Girth [b]	-		310		447		-		519		-		590		-		-		-			
		SE	-		-		9		-		16		-		-		-		-		-			
		Female Mean Girth [b]	-		-		503		-		526		-		568		-		-		-			
		SE	-		-		8		-		10		-		38		-		-		-			

Note: Samples were collected by the Tanana Chiefs Conference (TCC).

[a] Sample dates were stratified by week.

[b] Girth data were collected from 95 of 120 aged fish.

Appendix A6.–Yukon River, Subdistrict 4-A, Kaltag, Chinook salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)																	
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/25-29	78	Male	0	0.0	3	3.8	29	37.2	0	0.0	2	2.6	1	1.3	0	0.0	0	0.0	0	0.0	0	0.0	35	44.9
		Female	0	0.0	0	0.0	25	32.0	0	0.0	14	17.9	0	0.0	4	5.1	0	0.0	0	0.0	0	0.0	43	55.1
		Subtotal	0	0.0	3	3.8	54	69.2	0	0.0	16	20.5	1	1.3	4	5.1	0	0.0	0	0.0	0	0.0	78	100.0
6/30-7/3	74	Male	0	0.0	2	2.7	27	36.5	0	0.0	8	10.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	37	50.0
		Female	0	0.0	0	0.0	15	20.3	0	0.0	21	28.4	0	0.0	1	1.4	0	0.0	0	0.0	0	0.0	37	50.0
		Subtotal	0	0.0	2	2.7	42	56.8	0	0.0	29	39.2	0	0.0	1	1.4	0	0.0	0	0.0	0	0.0	74	100.0
7/6-9	64	Male	0	0.0	0	0.0	14	21.9	0	0.0	8	12.5	0	0.0	2	3.1	0	0.0	0	0.0	0	0.0	24	37.5
		Female	0	0.0	0	0.0	9	14.0	0	0.0	29	45.3	1	1.6	1	1.6	0	0.0	0	0.0	0	0.0	40	62.5
		Subtotal	0	0.0	0	0.0	23	35.9	0	0.0	37	57.8	1	1.6	3	4.7	0	0.0	0	0.0	0	0.0	64	100.0
Season	216	Male	0	0.0	5	2.3	70	32.4	0	0.0	18	8.4	1	0.5	2	0.9	0	0.0	0	0.0	0	0.0	96	44.4
		Female	0	0.0	0	0.0	49	22.7	0	0.0	64	29.6	1	0.4	6	2.8	0	0.0	0	0.0	0	0.0	120	55.6
		Total	0	0.0	5	2.3	119	55.1	0	0.0	82	38.0	2	0.9	8	3.7	0	0.0	0	0.0	0	0.0	216	100.0
		Male Mean Length	-		518		715		-		833		615		930		-		-		-			
		SE	-		23		7		-		16		-		10		-		-		-			
		Female Mean Length	-		-		756		-		857		850		909		-		-		-			
		SE	-		-		7		-		7		-		15		-		-		-			
		Male Mean Weight	-		5.2		12.4		-		19.7		8.0		23.5		-		-		-			
		SE	-		0.9		0.4		-		1.3		-		0.5		-		-		-			
		Female Mean Weight	-		-		15.0		-		21.6		20.0		24.8		-		-		-			
		SE	-		-		0.4		-		0.6		-		1.7		-		-		-			
		Male Mean Girth	-		312		423		-		485		370		553		-		-		-			
		SE	-		18		5		-		12		-		13		-		-		-			
		Female Mean Girth	-		-		456		-		510		520		541		-		-		-			
		SE	-		-		5		-		6		-		13		-		-		-			

Note: Samples were collected by the City of Kaltag.

[a] Sample dates were stratified by week.

Appendix A7.–Yukon River, Subdistrict 4-A, Nulato, Chinook salmon subsistence gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)															
			2005		2004		2003				2002				2001		2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(1.6)		(2.5)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/25-26,	31	Male	0	0.0	1	3.2	21	67.7	0	0.0	8	25.8	0	0.0	1	3.2	0	0.0	0	0.0	31	100.0
7/3-4		Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	1	3.2	21	67.7	0	0.0	8	25.8	0	0.0	1	3.2	0	0.0	0	0.0	31	100.0
7/7, 9-10;	80	Male	0	0.0	1	1.3	15	18.8	0	0.0	14	17.5	0	0.0	0	0.0	0	0.0	0	0.0	30	37.5
14-15		Female	0	0.0	1	1.3	16	20.0	0	0.0	32	40.0	0	0.0	1	1.3	0	0.0	0	0.0	50	62.5
		Subtotal	0	0.0	2	2.5	31	38.8	0	0.0	46	57.5	0	0.0	1	1.3	0	0.0	0	0.0	80	100.0
Season	111	Male	0	0.0	2	1.8	36	32.4	0	0.0	22	19.8	0	0.0	1	0.9	0	0.0	0	0.0	61	55.0
		Female	0	0.0	1	0.9	16	14.4	0	0.0	32	28.8	0	0.0	1	0.9	0	0.0	0	0.0	50	45.0
		Total	0	0.0	3	2.7	52	46.8	0	0.0	54	48.6	0	0.0	2	1.8	0	0.0	0	0.0	111	100.0
		Male Mean Length	-		535		730		-		834		-		990		-		-			
		SE	-		65		10		-		21		-		-		-		-			
		Female Mean Length	-		485		763		-		849		-		935		-		-			
		SE	-		-		17		-		11		-		-		-		-			

[a] Sample dates were stratified in 2-week periods.

Appendix A8.–Yukon River, Subdistricts 4-B and 4-C, Galena, Chinook salmon subsistence gillnet and fish wheel harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)															
			2005		2004		2003			2002			2001		2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No. %	No. %	No. %	No. %	No.	%
6/20	7	Male	0	0.0	0	0.0	7	100.0	0 0.0	0	0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	7	100.0
		Female	0	0.0	0	0.0	0	0.0	0 0.0	0	0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0	0.0
		Subtotal	0	0.0	0	0.0	7	100.0	0 0.0	0	0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	7	100.0
6/24, 26, 27	58	Male	0	0.0	1	1.7	40	69.0	0 0.0	4	6.9	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	45	77.6
		Female	0	0.0	0	0.0	6	10.3	0 0.0	7	12.1	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	13	22.4
		Subtotal	0	0.0	1	1.7	46	79.3	0 0.0	11	19.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	58	100.0
6/30; 7/1, 3	24	Male	0	0.0	0	0.0	19	79.2	0 0.0	1	4.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	20	83.3
		Female	0	0.0	0	0.0	0	0.0	0 0.0	4	16.7	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	4	16.7
		Subtotal	0	0.0	0	0.0	19	79.2	0 0.0	5	20.8	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	24	100.0
7/7, 10	32	Male	0	0.0	4	12.5	16	50.0	0 0.0	5	15.6	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	25	78.1
		Female	0	0.0	0	0.0	2	6.3	0 0.0	5	15.6	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	7	21.9
		Subtotal	0	0.0	4	12.5	18	56.3	0 0.0	10	31.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	32	100.0
7/14, 17	9	Male	0	0.0	1	11.1	2	22.2	0 0.0	2	22.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	5	55.6
		Female	0	0.0	0	0.0	1	11.1	0 0.0	3	33.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	4	44.4
		Subtotal	0	0.0	1	11.1	3	33.3	0 0.0	5	55.6	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	9	100.0
Season	130	Male	0	0.0	6	4.6	84	64.6	0 0.0	12	9.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	102	78.5
		Female	0	0.0	0	0.0	9	6.9	0 0.0	19	14.6	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	28	21.5
		Total	0	0.0	6	4.6	93	71.5	0 0.0	31	23.8	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	130	100.0
		Male Mean Length	-		561		710		-	818		-	-	-	-	-		
		SE	-		10		5		-	23		-	-	-	-	-		
		Female Mean Length	-		-		768		-	841		-	-	-	-	-		
		SE	-		-		20		-	11		-	-	-	-	-		

[a] Sample dates were stratified by week.

Appendix A9.–Yukon River, Subdistrict 4-B and 4-C, Bishop Rock, Chinook salmon subsistence gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)															
			2005		2004		2003			2002			2001			2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
7/7, 10, 13	71	Male	0	0.0	2	2.8	24	33.8	0 0.0	13	18.3	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	39	54.9
		Female	0	0.0	0	0.0	9	12.7	0 0.0	21	29.6	0 0.0	2	2.8	0 0.0	0	0.0	0 0.0	32	45.1
		Subtotal	0	0.0	2	2.8	33	46.5	0 0.0	34	47.9	0 0.0	2	2.8	0 0.0	0	0.0	0 0.0	71	100.0
7/21-22	21	Male	0	0.0	0	0.0	4	19.0	0 0.0	2	9.5	0 0.0	1	4.8	0 0.0	0	0.0	0 0.0	7	33.3
		Female	0	0.0	0	0.0	1	4.8	0 0.0	12	57.1	0 0.0	1	4.8	0 0.0	0	0.0	0 0.0	14	66.7
		Subtotal	0	0.0	0	0.0	5	23.8	0 0.0	14	66.7	0 0.0	2	9.5	0 0.0	0	0.0	0 0.0	21	100.0
Season	92	Male	0	0.0	2	2.2	28	30.4	0 0.0	15	16.3	0 0.0	1	1.1	0 0.0	0	0.0	0 0.0	46	50.0
		Female	0	0.0	0	0.0	10	10.9	0 0.0	33	35.9	0 0.0	3	3.3	0 0.0	0	0.0	0 0.0	46	50.0
		Total	0	0.0	2	2.2	38	41.3	0 0.0	48	52.2	0 0.0	4	4.3	0 0.0	0	0.0	0 0.0	92	100.0
		Male Mean Length	-		578		771		-	901		-	990		-	-		-		
		SE	-		53		11		-	15		-	-		-	-		-		
		Female Mean Length	-		-		794		-	886		-	937		-	-		-		
		SE	-		-		18		-	9		-	23		-	-		-		
		Male Mean Girth	-		410		456		-	535		-	580		-	-		-		
		SE	-		120		7		-	10		-	-		-	-		-		
		Female Mean Girth	-		-		475		-	499		-	548		-	-		-		
		SE	-		-		9		-	9		-	37		-	-		-		

Note: Samples collected by the Tanana Chiefs Conference (TCC).

[a] Sample dates were stratified by week.

Appendix A10.–Yukon River, Subdistrict 4-C, Ruby, Chinook salmon subsistence gillnet and fish wheel harvest age and sex composition and mean length (mm), 2008.

Sample Dates [a]	Sample Size		Brood Year (Age) 2005 (1.1) No. %	2004 (1.2) No. %	2003 (1.3) No. %	2003 (2.2) No. %	2002 (1.4) No. %	2002 (2.3) No. %	2001 (1.5) No. %	2001 (2.4) No. %	2000 (1.6) No. %	2000 (2.5) No. %	Total No. %
6/23, 25-27	46	Male	0 0.0	3 6.5	36 78.3	0 0.0	2 4.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	41 89.1
		Female	0 0.0	0 0.0	4 8.7	0 0.0	1 2.2	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	5 10.9
		Subtotal	0 0.0	3 6.5	40 87.0	0 0.0	3 6.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	46 100.0
6/30; 7/1, 3-4	21	Male	0 0.0	1 4.8	11 52.4	0 0.0	3 14.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	15 71.4
		Female	0 0.0	1 4.8	3 14.3	0 0.0	2 9.5	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	6 28.6
		Subtotal	0 0.0	2 9.5	14 66.7	0 0.0	5 23.8	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	21 100.0
7/7, 10	17	Male	0 0.0	0 0.0	2 11.8	0 0.0	3 17.6	0 0.0	1 5.9	0 0.0	0 0.0	0 0.0	6 35.3
		Female	0 0.0	0 0.0	5 29.4	0 0.0	3 17.6	0 0.0	3 17.6	0 0.0	0 0.0	0 0.0	11 64.7
		Subtotal	0 0.0	0 0.0	7 41.2	0 0.0	6 35.3	0 0.0	4 23.5	0 0.0	0 0.0	0 0.0	17 100.0
7/14, 17-18	23	Male	0 0.0	2 8.7	10 43.5	0 0.0	1 4.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	13 56.5
		Female	0 0.0	0 0.0	3 13.0	0 0.0	5 21.7	0 0.0	2 8.7	0 0.0	0 0.0	0 0.0	10 43.5
		Subtotal	0 0.0	2 8.7	13 56.5	0 0.0	6 26.1	0 0.0	2 8.7	0 0.0	0 0.0	0 0.0	23 100.0
Season	107	Male	0 0.0	6 5.6	59 55.1	0 0.0	9 8.4	0 0.0	1 0.9	0 0.0	0 0.0	0 0.0	75 70.1
		Female	0 0.0	1 0.9	15 14.0	0 0.0	11 10.3	0 0.0	5 4.7	0 0.0	0 0.0	0 0.0	32 29.9
		Total	0 0.0	7 6.5	74 69.2	0 0.0	20 18.7	0 0.0	6 5.6	0 0.0	0 0.0	0 0.0	107 100.0
		Male Mean Length	-	560	711	-	875	-	920	-	-	-	
		SE	-	13	7	-	18	-	-	-	-	-	
		Female Mean Length	-	440	705	-	845	-	910	-	-	-	
		SE	-	-	15	-	27	-	9	-	-	-	

[a] Sample dates were stratified by week.

Appendix A11.–Yukon River, Subdistrict 5-B, Rapids, Chinook salmon subsistence fish wheel harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)															
			2005		2004		2003			2002			2001			2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
6/25-26	40	Male	0	0.0	0	0.0	35	87.5	0 0.0	1	2.5	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	36	90.0
		Female	0	0.0	0	0.0	2	5.0	0 0.0	2	5.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	4	10.0
		Subtotal	0	0.0	0	0.0	37	92.5	0 0.0	3	7.5	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	40	100.0
7/6	18	Male	0	0.0	9	50.0	9	50.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	18	100.0
		Female	0	0.0	0	0.0	0	0.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	0	0.0
		Subtotal	0	0.0	9	50.0	9	50.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	18	100.0
Season	58	Male	0	0.0	9	15.5	44	75.9	0 0.0	1	1.7	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	54	93.1
		Female	0	0.0	0	0.0	2	3.4	0 0.0	2	3.4	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	4	6.9
		Total	0	0.0	9	15.5	46	79.3	0 0.0	3	5.2	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	58	100.0
		Male Mean Length	-		536		702		-	1,030		-	-		-	-		-		
		SE	-		13		8		-	-		-	-		-	-		-		
		Female Mean Length	-		-		683		-	890		-	-		-	-		-		
		SE	-		-		48		-	0		-	-		-	-		-		

[a] Sample dates were stratified by week.

Appendix A12.–Yukon River, Subdistrict 5-D, Eagle, Chinook salmon subsistence gillnet and fish wheel harvest age and sex composition and mean length (mm), weight (lbs), and girth (mm), 2008.

			Brood Year (Age)																	
			2005		2004		2003			2002			2001			2000				
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
7/9-13	78	Male	0	0.0	2	2.6	68	87.2	0 0.0	6	7.7	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	76	97.4
		Female	0	0.0	0	0.0	1	1.3	0 0.0	1	1.3	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	2	2.6
		Subtotal	0	0.0	2	2.6	69	88.5	0 0.0	7	9.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	78	100.0
7/14-15, 18-20	79	Male	0	0.0	11	13.9	60	75.9	0 0.0	1	1.3	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	72	91.1
		Female	0	0.0	0	0.0	4	5.1	0 0.0	3	3.8	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	7	8.9
		Subtotal	0	0.0	11	13.9	64	81.0	0 0.0	4	5.1	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	79	100.0
7/25-27	73	Male	0	0.0	4	5.5	34	46.6	0 0.0	11	15.1	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	49	67.1
		Female	0	0.0	0	0.0	5	6.8	0 0.0	16	21.9	1 1.4	2	2.7	0 0.0	0	0.0	0 0.0	24	32.9
		Subtotal	0	0.0	4	5.5	39	53.4	0 0.0	27	37.0	1 1.4	2	2.7	0 0.0	0	0.0	0 0.0	73	100.0
Season	230	Male	0	0.0	17	7.4	162	70.4	0 0.0	18	7.8	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	197	85.7
		Female	0	0.0	0	0.0	10	4.3	0 0.0	20	8.7	1 0.4	2	0.9	0 0.0	0	0.0	0 0.0	33	14.3
		Total	0	0.0	17	7.4	172	74.8	0 0.0	38	16.5	1 0.4	2	0.9	0 0.0	0	0.0	0 0.0	230	100.0
		Male Mean Length	-		514		692		-	825		-	-		-	-		-		
		SE	-		9		3		-	21		-	-		-	-		-		
		Female Mean Length	-		-		761		-	838		755	853		-	-		-		
		SE	-		-		9		-	14		-	33		-	-		-		
		Male Mean Weight	-		4.4		9.5		-	16.7		-	-		-	-		-		
		SE	-		0.3		0.2		-	1.5		-	-		-	-		-		
		Female Mean Weight	-		-		12.7		-	17.5		11.0	17.7		-	-		-		
		SE	-		-		0.8		-	1.0		-	1.8		-	-		-		
		Male Mean Girth	-		274		360		-	431		-	-		-	-		-		
		SE	-		-		2		-	14		-	-		-	-		-		
		Female Mean Girth	-		-		398		-	445		379	444		-	-		-		
		SE	-		-		10		-	12		-	17		-	-		-		

[a] Sample dates were stratified by week.

Appendix A13.–Yukon River, Subdistrict 6-B, Nenana, Chinook salmon subsistence fish wheel harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)															
			2005		2004		2003			2002			2001			2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
7/22	16	Male	1	6.3	8	50.0	3	18.8	0 0.0	1	6.3	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	13	81.3
		Female	0	0.0	0	0.0	0	0.0	0 0.0	3	18.8	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	3	18.8
		Total	1	6.3	8	50.0	3	18.8	0 0.0	4	25.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	16	100.0
		Male Mean Length	390		520		683		-	865		-	-		-	-		-		
		SE	-		42		7		-	-		-	-		-	-		-		
		Female Mean Length	-		-		-		-	858		-	-		-	-		-		
		SE	-		-		-		-	27		-	-		-	-		-		

[a] Sample dates were stratified by week.

Appendix A14.–Yukon River, Big Eddy, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lb), and mean girth (mm), 2008.

			Brood Year (Age)																	
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/4, 6-17	172	Male	0	0.0	2	1.2	75	43.6	0	0.0	29	16.9	1	0.6	1	0.6	0	0.0	0	0.0	0	0.0	108	62.8
Quartile 1		Female	0	0.0	0	0.0	18	10.5	0	0.0	41	23.8	0	0.0	5	2.9	0	0.0	0	0.0	0	0.0	64	37.2
		Subtotal	0	0.0	2	1.2	93	54.1	0	0.0	70	40.7	1	0.6	6	3.5	0	0.0	0	0.0	0	0.0	172	100.0
6/18-26	136	Male	0	0.0	4	2.9	46	33.8	0	0.0	25	18.4	0	0.0	1	0.7	0	0.0	0	0.0	0	0.0	76	55.9
Quartile 2		Female	0	0.0	0	0.0	17	12.5	0	0.0	42	30.9	0	0.0	1	0.7	0	0.0	0	0.0	0	0.0	60	44.1
		Subtotal	0	0.0	4	2.9	63	46.3	0	0.0	67	49.3	0	0.0	2	1.5	0	0.0	0	0.0	0	0.0	136	100.0
6/27-29	90	Male	0	0.0	1	1.1	25	27.8	0	0.0	16	17.8	0	0.0	1	1.1	0	0.0	0	0.0	0	0.0	43	47.8
Quartile 3		Female	0	0.0	0	0.0	7	7.8	0	0.0	36	40.0	0	0.0	4	4.4	0	0.0	0	0.0	0	0.0	47	52.2
		Subtotal	0	0.0	1	1.1	32	35.6	0	0.0	52	57.8	0	0.0	5	5.6	0	0.0	0	0.0	0	0.0	90	100.0
6/30; 7/1-10,	163	Male	0	0.0	1	0.6	52	31.9	0	0.0	28	17.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	81	49.7
12-14		Female	0	0.0	0	0.0	9	5.5	0	0.0	65	39.9	0	0.0	8	4.9	0	0.0	0	0.0	0	0.0	82	50.3
Quartile 4		Subtotal	0	0.0	1	0.6	61	37.4	0	0.0	93	57.1	0	0.0	8	4.9	0	0.0	0	0.0	0	0.0	163	100.0
	561	Male	0	0.0	8	1.4	198	35.3	0	0.0	98	17.5	1	0.2	3	0.5	0	0.0	0	0.0	0	0.0	308	54.9
Season		Female	0	0.0	0	0.0	51	9.1	0	0.0	184	32.8	0	0.0	18	3.2	0	0.0	0	0.0	0	0.0	253	45.1
		Total	0	0.0	8	1.4	249	44.4	0	0.0	282	50.3	1	0.2	21	3.7	0	0.0	0	0.0	0	0.0	561	100.0
		Male Mean Length	-		571		749		-		841		710		877		-		-		-			
		SE	-		5		4		-		6		-		12		-		-		-			
		Female Mean Length	-		-		793		-		852		-		898		-		-		-			
		SE	-		-		6		-		3		-		10		-		-		-			
		Male Mean Weight	-		7.0		15.6		-		22.0		13.4		22.9		-		-		-			
		SE	-		0.3		0.2		-		0.6		-		2.2		-		-		-			
		Female Mean Weight	-		-		18.6		-		22.4		-		25.6		-		-		-			
		SE	-		-		0.5		-		0.3		-		0.9		-		-		-			
		Male Mean Girth	-		331		461		-		519		443		514		-		-		-			
		SE	-		-		-		-		-		-		-		-		-		-			
		Female Mean Girth	-		-		490		-		521		-		546		-		-		-			
		SE	-		-		5		-		2		-		7		-		-		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix A15.–Yukon River, Middle Mouth, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lb), and mean girth (mm), 2008.

			Brood Year (Age)																	
			2005		2004		2003			2002			2001			2000				
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
6/5, 7-17	175	Male	0	0.0	0	0.0	77	44.0	1 0.6	36	20.6	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	114	65.1
Quartile 1		Female	0	0.0	0	0.0	16	9.1	0 0.0	42	24.0	0 0.0	3	1.7	0 0.0	0	0.0	0 0.0	61	34.9
		Subtotal	0	0.0	0	0.0	93	53.1	1 0.6	78	44.6	0 0.0	3	1.7	0 0.0	0	0.0	0 0.0	175	100.0
6/18-26	237	Male	0	0.0	2	0.8	81	34.2	0 0.0	43	18.1	1 0.4	3	1.3	0 0.0	0	0.0	0 0.0	130	54.9
Quartile 2		Female	0	0.0	0	0.0	20	8.4	0 0.0	81	34.2	0 0.0	6	2.5	0 0.0	0	0.0	0 0.0	107	45.1
		Subtotal	0	0.0	2	0.8	101	42.6	0 0.0	124	52.3	1 0.4	9	3.8	0 0.0	0	0.0	0 0.0	237	100.0
6/27-29	88	Male	0	0.0	0	0.0	27	30.7	0 0.0	13	14.8	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	40	45.5
Quartile 3		Female	0	0.0	0	0.0	7	8.0	0 0.0	38	43.2	0 0.0	2	2.3	1 1.1	0	0.0	0 0.0	48	54.5
		Subtotal	0	0.0	0	0.0	34	38.6	0 0.0	51	58.0	0 0.0	2	2.3	1 1.1	0	0.0	0 0.0	88	100.0
6/30-7/15	210	Male	0	0.0	5	2.4	52	24.8	0 0.0	31	14.8	0 0.0	2	1.0	1 0.5	0	0.0	0 0.0	91	43.3
Quartile 4		Female	0	0.0	0	0.0	34	16.2	0 0.0	80	38.1	0 0.0	5	2.4	0 0.0	0	0.0	0 0.0	119	56.7
		Subtotal	0	0.0	5	2.4	86	41.0	0 0.0	111	52.9	0 0.0	7	3.3	1 0.5	0	0.0	0 0.0	210	100.0
Season	710	Male	0	0.0	7	1.0	237	33.4	1 0.1	123	17.3	1 0.1	5	0.7	1 0.1	0	0.0	0 0.0	375	52.8
		Female	0	0.0	0	0.0	77	10.8	0 0.0	241	33.9	0 0.0	16	2.3	1 0.1	0	0.0	0 0.0	335	47.2
		Total	0	0.0	7	1.0	314	44.2	1 0.1	364	51.3	1 0.1	21	3.0	2 0.3	0	0.0	0 0.0	710	100.0
		Male Mean Length	-		566		756		540	854		630	933		935	-		-		
		SE	-		16		3		-	5		-	17		-	-		-		
		Female Mean Length	-		-		809		-	855		-	909		865	-		-		
		SE	-		-		5		-	3		-	8		-	-		-		
		Male Mean Weight	-		6.6		16.1		6.3	22.5		8.5	28.5		31.1	-		-		
		SE	-		0.6		0.2		-	0.4		-	2.0		-	-		-		
		Female Mean Weight	-		-		19.4		-	22.5		-	25.3		24.7	-		-		
		SE	-		-		0.4		-	0.2		-	0.8		-	-		-		
		Male Mean Girth	-		336		463		340	519		370	564		590	-		-		
		SE	-		11		2		-	4		-	14		-	-		-		
		Female Mean Girth	-		-		496		-	523		-	542		555	-		-		
		SE	-		-		4		-	2		-	7		-	-		-		

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix A16.–Yukon River, Big Eddy and Middle Mouth combined, Chinook salmon 8.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), mean weight (lb), and mean girth (mm), 2008.

			Brood Year (Age)																	
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/4-17	347	Male	0	0.0	2	0.6	152	43.8	1	0.3	65	18.7	1	0.3	1	0.3	0	0.0	0	0.0	0	0.0	222	64.0
Quartile 1		Female	0	0.0	0	0.0	34	9.8	0	0.0	83	23.9	0	0.0	8	2.3	0	0.0	0	0.0	0	0.0	125	36.0
		Subtotal	0	0.0	2	0.6	186	53.6	1	0.3	148	42.7	1	0.3	9	2.6	0	0.0	0	0.0	0	0.0	347	100.0
6/18-26	373	Male	0	0.0	6	1.6	127	34.0	0	0.0	68	18.2	1	0.3	4	1.1	0	0.0	0	0.0	0	0.0	206	55.2
Quartile 2		Female	0	0.0	0	0.0	37	9.9	0	0.0	123	33.0	0	0.0	7	1.9	0	0.0	0	0.0	0	0.0	167	44.8
		Subtotal	0	0.0	6	1.6	164	44.0	0	0.0	191	51.2	1	0.3	11	2.9	0	0.0	0	0.0	0	0.0	373	100.0
6/27-29	178	Male	0	0.0	1	0.6	52	29.2	0	0.0	29	16.3	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	83	46.6
Quartile 3		Female	0	0.0	0	0.0	14	7.9	0	0.0	74	41.6	0	0.0	6	3.4	1	0.6	0	0.0	0	0.0	95	53.4
		Subtotal	0	0.0	1	0.6	66	37.1	0	0.0	103	57.9	0	0.0	7	3.9	1	0.6	0	0.0	0	0.0	178	100.0
6/30-7/15	373	Male	0	0.0	6	1.6	104	27.9	0	0.0	59	15.8	0	0.0	2	0.5	1	0.3	0	0.0	0	0.0	172	46.1
Quartile 4		Female	0	0.0	0	0.0	43	11.5	0	0.0	145	38.9	0	0.0	13	3.5	0	0.0	0	0.0	0	0.0	201	53.9
		Subtotal	0	0.0	6	1.6	147	39.4	0	0.0	204	54.7	0	0.0	15	4.0	1	0.3	0	0.0	0	0.0	373	100.0
Season	1,271	Male	0	0.0	15	1.2	435	34.2	1	0.1	221	17.4	2	0.2	8	0.6	1	0.1	0	0.0	0	0.0	683	53.7
		Female	0	0.0	0	0.0	128	10.1	0	0.0	425	33.4	0	0.0	34	2.7	1	0.1	0	0.0	0	0.0	588	46.3
		Total	0	0.0	15	1.2	563	44.3	1	0.1	646	50.8	2	0.2	42	3.3	2	0.2	0	0.0	0	0.0	1,271	100.0
		Male Mean Length	-		569		753		540		848		670		912		935		-		-			
		SE	-		8		2		-		4		40		15		-		-		-			
		Female Mean Length	-		-		802		-		853		-		903		865		-		-			
		SE	-		-		4		-		2		-		6		-		-		-			
		Male Mean Weight	-		6.8		15.9		6.3		22.3		11.0		26.4		31.3		-		-			
		SE	-		0.3		0.2		-		0.4		2.5		1.7		-		-		-			
		Female Mean Weight	-		-		19.1		-		22.5		-		25.5		24.7		-		-			
		SE	-		-		0.3		-		0.2		-		4.7		-		-		-			
		Male Mean Girth	-		333		462		340		519		407		545		590		-		-			
		SE	-		14		2		-		3		37		14		-		-		-			
		Female Mean Girth	-		-		493		-		523		-		544		-		-		-			
		SE	-		-		3		-		2		-		5		-		-		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix A17.–Yukon River, Comparative Mesh Size study, Chinook salmon 7.0-, 7.5, and 8.0-inch mesh drift gillnet test fishery project age and sex composition, 2008.

			Brood Year (Age)															
			2005		2004		2003			2002			2001			2000		
	Sample		(1.1)		(1.2)		(1.3)		(2.2)	(1.4)		(2.3)	(1.5)		(2.4)	(1.6)		(2.5)	Total	
Mesh Size	Size		No.	%	No.	%	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%	No. %	No.	%
7.0"	61	Male	0	0.0	0	0.0	36	59.0	0 0.0	11	18.0	0 0.0	1	1.6	0 0.0	0	0.0	0 0.0	48	78.7
		Female	0	0.0	0	0.0	2	3.3	0 0.0	11	18.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	13	21.3
		Subtotal	0	0.0	0	0.0	38	62.3	0 0.0	22	36.1	0 0.0	1	1.6	0 0.0	0	0.0	0 0.0	61	100.0
7.5"	58	Male	0	0.0	0	0.0	34	58.6	0 0.0	3	5.2	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	37	63.8
		Female	0	0.0	0	0.0	8	13.8	0 0.0	13	22.4	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	21	36.2
		Subtotal	0	0.0	0	0.0	42	72.4	0 0.0	16	27.6	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	58	100.0
8.0"	54	Male	0	0.0	2	3.7	27	50.0	0 0.0	7	13.0	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	36	66.7
		Female	0	0.0	0	0.0	2	3.7	0 0.0	16	29.6	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	18	33.3
		Subtotal	0	0.0	2	3.7	29	53.7	0 0.0	23	42.6	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	54	100.0
All Mesh	173	Male	0	0.0	2	1.2	97	56.1	0 0.0	21	12.1	0 0.0	1	0.6	0 0.0	0	0.0	0 0.0	121	69.9
Combined		Female	0	0.0	0	0.0	12	6.9	0 0.0	40	23.1	0 0.0	0	0.0	0 0.0	0	0.0	0 0.0	52	30.1
		Total	0	0.0	2	1.2	109	63.0	0 0.0	61	35.3	0 0.0	1	0.6	0 0.0	0	0.0	0 0.0	173	100.0

Appendix A18.–Yukon River, Comparative Mesh Size study, Chinook salmon 7.0-, 7.5-, and 8.0-inch mesh drift gillnet test fishery mean length (mm), mean girth (mm) and mean weight (lb), 2008.

	Sample Size		Brood Year (Age) 2005 (1.1)	2004 (1.2)	2003 (1.3)	(2.2)	2002 (1.4)	(2.3)	2001 (1.5)	(2.4)	2000 (1.6)	(2.5)
Mean Length 7.0"	61	Male	-	-	718	-	756	-	865	-	-	-
		Female	-	-	785	-	838	-	-	-	-	-
Mean Length 7.5"	58	Male	-	-	713	-	760	-	-	-	-	-
		Female	-	-	786	-	825	-	-	-	-	-
Mean Length 8.0"	54	Male	-	585	714	-	833	-	-	-	-	-
		Female	-	-	730	-	845	-	-	-	-	-
Mean Length All Mesh Combined		Male	-	585	715	-	782	-	865	-	-	-
		SE	-	40	4	-	14	-	-	-	-	-
		Female	-	-	777	-	836	-	-	-	-	-
		SE	-	-	14	-	6	-	-	-	-	-
Mean Girth 7.0"	61	Male	-	-	447	-	464	-	497	-	-	-
		Female	-	-	502	-	525	-	-	-	-	-
Mean Girth 7.5"	58	Male	-	-	446	-	469	-	-	-	-	-
		Female	-	-	498	-	507	-	-	-	-	-
Mean Girth 8.0"	54	Male	-	378	447	-	483	-	-	-	-	-
		Female	-	-	506	-	522	-	-	-	-	-
Mean Girth All Mesh Combined		Male	-	378	447	-	471	-	497	-	-	-
		SE	-	28	3	-	9	-	-	-	-	-
		Female	-	-	500	-	518	-	-	-	-	-
		SE	-	-	13	-	6	-	-	-	-	-
Mean Weight 7.0"	61	Male	-	-	13.4	-	15.3	-	20.9	-	-	-
		Female	-	-	18.0	-	21.7	-	-	-	-	-
Mean Weight 7.5"	58	Male	-	-	13.4	-	16.0	-	-	-	-	-
		Female	-	-	18.0	-	19.8	-	-	-	-	-
Mean Weight 8.0"	54	Male	-	7.5	13.3	-	18.0	-	-	-	-	-
		Female	-	-	15.1	-	21.9	-	-	-	-	-
Mean Weight All Mesh Combined		Male	-	7.5	13.4	-	16.3	-	20.9	-	-	-
		SE	-	27.5	3.1	-	9.4	-	-	-	-	-
		Female	-	-	17.5	-	21.1	-	-	-	-	-
		SE	-	-	1.0	-	6.0	-	-	-	-	-

Appendix A19.–Yukon River, Marshall, Chinook salmon 8.25-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

Sample Dates [a]	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	2003 (2.2) No.	%	2002 (1.4) No.	%	2002 (2.3) No.	%	2001 (1.5) No.	%	2001 (2.4) No.	%	2000 (1.6) No.	%	2000 (2.5) No.	%	Total No.	%
6/12-18	129	Male	0	0.0	1	0.8	79	61.2	0	0.0	15	11.6	0	0.0	4	3.1	0	0.0	0	0.0	0	0.0	99	76.7
Quartile 1		Female	0	0.0	0	0.0	8	6.2	0	0.0	22	17.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	30	23.3
		Subtotal	0	0.0	1	0.8	87	67.4	0	0.0	37	28.7	0	0.0	4	3.1	0	0.0	0	0.0	0	0.0	129	100.0
6/20-24	125	Male	0	0.0	8	6.4	60	48.0	0	0.0	18	14.4	0	0.0	1	0.8	1	0.8	0	0.0	0	0.0	88	70.4
Quartile 2		Female	0	0.0	0	0.0	7	5.6	0	0.0	30	24.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	37	29.6
		Subtotal	0	0.0	8	6.4	67	53.6	0	0.0	48	38.4	0	0.0	1	0.8	1	0.8	0	0.0	0	0.0	125	100.0
6/26-29	146	Male	0	0.0	3	2.1	47	32.2	0	0.0	15	10.3	0	0.0	1	0.7	1	0.7	0	0.0	0	0.0	67	45.9
Quartile 3		Female	0	0.0	0	0.0	15	10.3	0	0.0	60	41.1	0	0.0	4	2.7	0	0.0	0	0.0	0	0.0	79	54.1
		Subtotal	0	0.0	3	2.1	62	42.5	0	0.0	75	51.4	0	0.0	5	3.4	1	0.7	0	0.0	0	0.0	146	100.0
6/30-7/15	115	Male	0	0.0	2	1.7	22	19.1	0	0.0	22	19.1	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	47	40.9
Quartile 4		Female	0	0.0	0	0.0	13	11.3	0	0.0	46	40.0	1	0.9	8	6.9	0	0.0	0	0.0	0	0.0	68	59.1
		Subtotal	0	0.0	2	1.7	35	30.4	0	0.0	68	59.1	1	0.9	9	7.8	0	0.0	0	0.0	0	0.0	115	100.0
Season	515	Male	0	0.0	14	2.7	208	40.4	0	0.0	70	13.6	0	0.0	7	1.4	2	0.4	0	0.0	0	0.0	301	58.4
		Female	0	0.0	0	0.0	43	8.3	0	0.0	158	30.7	1	0.2	12	2.3	0	0.0	0	0.0	0	0.0	214	41.6
		Total	0	0.0	14	2.7	251	48.7	0	0.0	228	44.3	1	0.2	19	3.7	2	0.4	0	0.0	0	0.0	515	100.0
		Male Mean Length	-		555		737		-		833		-		937		770		-		-			
		SE	-		11		4		-		9		-		18		-		-		-			
		Female Mean Length	-		-		812		-		867		850		884		-		-		-			
		SE	-		-		7		-		4		-		15		-		-		-			

[a] Sample dates were stratified by quartiles based on the Marshall 8.25-inch mesh drift gillnet catch totals.

Appendix A20.–Yukon River, Pilot Station sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length, 2008.

			Brood Year (Age)																	
			2005		2004		2003				2002		2001		2000					
Sample Dates	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	Total			
Mesh Size	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/11-7/4	3	Male	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	66.7
2.75" Mesh		Female	0	0.0	0	0.0	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	0	0.0	1	33.3
		Subtotal	0	0.0	0	0.0	2	66.7	0	0.0	1	33.3	0	0.0	0	0.0	0	0.0	3	100.0
		Male Mean Length	-		-		687		-		-	-	-	-	-	-				
		SE	-		-		43		-		-	-	-	-	-	-				
		Female Mean Length	-		-		-		-		820	-	-	-	-	-				
		SE	-		-		-		-		-	-	-	-	-	-				
6/10 - 7/15	30	Male	3	10.0	4	13.3	15	50.0	0	0.0	2	6.7	0	0.0	0	0.0	0	0.0	24	80.0
4.0" Mesh		Female	0	0.0	0	0.0	4	13.3	0	0.0	2	6.7	0	0.0	0	0.0	0	0.0	6	20.0
		Subtotal	3	10.0	4	13.3	19	63.3	0	0.0	4	13.3	0	0.0	0	0.0	0	0.0	30	100.0
		Male Mean Length	454		526		693		-		744	-	-	-	-	-				
		SE	51		21		14		-		64	-	-	-	-	-				
		Female Mean Length	-		-		733		-		818	-	-	-	-	-				
		SE	-		-		10		-		27	-	-	-	-	-				
6/2-7/12	23	Male	0	0.0	8	34.8	7	30.4	0	0.0	2	8.7	0	0.0	0	0.0	0	0.0	17	73.9
5.25" Mesh		Female	0	0.0	0	0.0	4	17.4	0	0.0	2	8.7	0	0.0	0	0.0	0	0.0	6	26.1
		Subtotal	0	0.0	8	34.8	11	47.8	0	0.0	4	17.4	0	0.0	0	0.0	0	0.0	23	100.0
		Male Mean Length	-		559		695		-		695	-	-	-	-	-				
		SE	-		32		10		-		48	-	-	-	-	-				
		Female Mean Length	-		-		739		-		815	-	-	-	-	-				
		SE	-		-		51		-		31	-	-	-	-	-				
6/17	1	Male	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0
5.75" Mesh		Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0
		Male Mean Length	-		578		-		-		-	-	-	-	-	-				
		SE	-		-		-		-		-	-	-	-	-	-				
		Female Mean Length	-		-		-		-		-	-	-	-	-	-				
		SE	-		-		-		-		-	-	-	-	-	-				
6/7-7/19	177	Male	0	0.0	9	5.1	102	57.6	0	0.0	24	13.6	0	0.0	2	1.1	0	0.0	0	0.0	137	77.4
6.50" Mesh		Female	0	0.0	1	0.6	21	11.9	0	0.0	17	9.6	0	0.0	1	0.6	0	0.0	0	0.0	40	22.6
		Subtotal	0	0.0	10	5.6	123	69.5	0	0.0	41	23.2	0	0.0	3	1.7	0	0.0	0	0.0	177	100.0
		Male Mean Length	-		590		698		-		798	-	959	-	-	-				
		SE	-		15		5		-		17	-	19	-	-	-				
		Female Mean Length	-		677		716		-		826	-	895	-	-	-				
		SE	-		-		12		-		12	-	-	-	-	-				

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Sample Dates Mesh Size	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	(2.2) No.	%	2002 (1.4) No.	%	(2.3) No.	%	2001 (1.5) No.	%	(2.4) No.	%	2000 (1.6) No.	%	(2.5) No.	%	Total No.	%
6/7-8/12	276	Male	1	0.4	5	1.8	144	52.2	0	0.0	39	14.1	0	0.0	6	2.2	2	0.7	0	0.0	0	0.0	197	71.4
7.50" Mesh		Female	0	0.0	0	0.0	37	13.4	0	0.0	36	13.0	0	0.0	5	1.8	1	0.4	0	0.0	0	0.0	79	28.6
		Subtotal	1	0.4	5	1.8	181	65.6	0	0.0	75	27.2	0	0.0	11	4.0	3	1.1	0	0.0	0	0.0	276	100.0
		Male Mean Length	-		610		708		-		803		-		876		799		-		-			
		SE	-		37		4		-		11		-		26		54		-		-			
		Female Mean Length	-		-		749		-		817		-		893		770		-		-			
		SE	-		-		8		-		8		-		20		-		-		-			
6/8-7/14	113	Male	1	0.9	3	2.7	41	36.3	0	0.0	19	16.8	0	0.0	1	0.9	1	0.9	0	0.0	0	0.0	66	58.4
8.50" Mesh		Female	0	0.0	0	0.0	12	10.6	0	0.0	30	26.5	0	0.0	5	4.4	0	0.0	0	0.0	0	0.0	47	41.6
		Subtotal	1	0.9	3	2.7	53	46.9	0	0.0	49	43.4	0	0.0	6	5.3	1	0.9	0	0.0	0	0.0	113	100.0
		Male Mean Length	520		598		735		-		834		-		745		860		-		-			
		SE	-		71		8		-		14		-		-		-		-		-			
		Female Mean Length	-		-		765		-		853		-		896		-		-		-			
		SE	-		-		11		-		10		-		25		-		-		-			
All Mesh	623	Male	5	0.8	30	4.8	311	49.9	0	0.0	86	13.8	0	0.0	9	1.4	3	0.5	0	0.0	0	0.0	444	71.3
Combined		Female	0	0.0	1	0.2	78	12.5	0	0.0	88	14.1	0	0.0	11	1.8	1	0.2	0	0.0	0	0.0	179	28.7
		Total [a]	5	0.8	31	5.0	389	62.4	0	0.0	174	27.9	0	0.0	20	3.2	4	0.6	0	0.0	0	0.0	623	100.0
		Male Mean Length	483		577		707		-		805		-		880		819		-		-			
		SE	33		13		3		-		8		-		27		37		-		-			
		Female Mean Length	-		677		741		-		831		-		895		770		-		-			
		SE	-		-		6		-		6		-		14		-		-		-			

[a] The season total percentages by age group were based on sample size and do not indicate the age composition of the run passage by Pilot Station sonar.

Appendix A21.–Yukon River, Eagle sonar, Chinook salmon variable mesh drift gillnet test fishery project age and sex composition and mean length, 2008.

Sample Dates Mesh Size	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	2003 (2.2) No.	%	2002 (1.4) No.	%	2002 (2.3) No.	%	2001 (1.5) No.	%	2001 (2.4) No.	%	2000 (1.6) No.	%	2000 (2.5) No.	%	Total No.	%
7/26 - 8/22	49	Male	0	0.0	6	12.2	26	53.1	0	0.0	7	14.3	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	40	81.6
5.25" Mesh		Female	0	0.0	0	0.0	1	2.0	0	0.0	8	16.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	18.4
		Subtotal	0	0.0	6	12.2	27	55.1	0	0.0	15	30.6	0	0.0	1	2.0	0	0.0	0	0.0	0	0.0	49	100.0
		Male Mean Length	-		600		714		-		873		-		1,000		-		-		-			
		SE	-		40		9		-		36		-		-		-		-		-			
		Female Mean Length	-		-		760		-		867		-		-		-		-		-			
		SE	-		-		-		-		18		-		-		-		-		-			
7/11 - 8/15	95	Male	0	0.0	2	2.1	53	55.8	0	0.0	10	10.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	65	68.4
6.5" Mesh		Female	0	0.0	0	0.0	13	13.7	0	0.0	16	16.8	0	0.0	1	1.1	0	0.0	0	0.0	0	0.0	30	31.6
		Subtotal	0	0.0	2	2.1	66	69.5	0	0.0	26	27.4	0	0.0	1	1.1	0	0.0	0	0.0	0	0.0	95	100.0
		Male Mean Length	-		575		720		-		855		-		-		-		-		-			
		SE	-		45		6		-		24		-		-		-		-		-			
		Female Mean Length	-		-		729		-		833		-		760		-		-		-			
		SE	-		-		16		-		10		-		-		-		-		-			
7/11 - 8/22	159	Male	0	0.0	1	0.6	74	46.5	0	0.0	15	9.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	90	56.6
7.5" Mesh		Female	0	0.0	0	0.0	14	8.8	0	0.0	45	28.3	0	0.0	5	3.1	5	3.1	0	0.0	0	0.0	69	43.4
		Subtotal	0	0.0	1	0.6	88	55.3	0	0.0	60	37.7	0	0.0	5	3.1	5	3.1	0	0.0	0	0.0	159	100.0
		Male Mean Length	-		470		731		-		852		-		-		-		-		-			
		SE	-		-		6		-		21		-		-		-		-		-			
		Female Mean Length	-		-		781		-		854		-		900		840		-		-			
		SE	-		-		13		-		6		-		37		22		-		-			
7/11 - 8/15	70	Male	0	0.0	0	0.0	26	37.1	0	0.0	12	17.1	0	0.0	2	2.9	0	0.0	0	0.0	0	0.0	40	57.1
8.50" Mesh		Female	0	0.0	0	0.0	4	5.7	0	0.0	23	32.9	0	0.0	3	4.3	0	0.0	0	0.0	0	0.0	30	42.9
		Subtotal	0	0.0	0	0.0	30	42.9	0	0.0	35	50.0	0	0.0	5	7.1	0	0.0	0	0.0	0	0.0	70	100.0
		Male Mean Length	-		-		713		-		905		-		1,000		-		-		-			
		SE	-		-		12		-		17		-		-		-		-		-			
		Female Mean Length	-		-		760		-		875		-		883		-		-		-			
		SE	-		-		52		-		8		-		13		-		-		-			
All Mesh	373	Male	0	0.0	9	2.4	179	48.0	0	0.0	44	11.8	0	0.0	3	0.8	0	0.0	0	0.0	0	0.0	235	63.0
Combined		Female	0	0.0	0	0.0	32	8.6	0	0.0	92	24.7	0	0.0	9	2.4	5	1.3	0	0.0	0	0.0	138	37.0
		Total [a]	0	0.0	9	2.4	211	56.6	0	0.0	136	36.5	0	0.0	12	3.2	5	1.3	0	0.0	0	0.0	373	100.0
		Male Mean Length	-		580		723		-		870		-		1,000		-		-		-			
		SE	-		30		4		-		12		-		0		-		-		-			
		Female Mean Length	-		-		757		-		856		-		879		840		-		-			
		SE	-		-		10		-		4		-		25		22		-		-			

[a] The all mesh combined total percentages by age group are based on sample size and do not indicate the age composition of the run passage by Eagle sonar.

Appendix A22.–Andreafsky River (East Fork) weir, Chinook salmon escapement project age composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	(2.2) No.	%	2002 (1.4) No.	%	(2.3) No.	%	2001 (1.5) No.	%	2000 (2.4) No.	%	(1.6) No.	%	(2.5) No.	%	Total No.	%
6/25-7/4	60	Male	0	0.0	3	1.7	107	61.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	110	63.3
(6/25-7/4)		Female	0	0.0	6	3.3	43	25.0	0	0.0	12	6.7	0	0.0	3	1.7	0	0.0	0	0.0	0	0.0	63	36.7
		Subtotal	0	0.0	9	5.0	150	86.7	0	0.0	12	6.7	0	0.0	3	1.7	0	0.0	0	0.0	0	0.0	173	100.0
7/5-11	119	Male	0	0.0	115	5.9	1,212	62.2	0	0.0	33	1.7	0	0.0	16	0.8	0	0.0	0	0.0	0	0.0	1,376	70.6
(7/5-11)		Female	0	0.0	0	0.0	328	16.8	0	0.0	245	12.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	573	29.4
		Subtotal	0	0.0	115	5.9	1,540	79.0	0	0.0	278	14.3	0	0.0	16	0.8	0	0.0	0	0.0	0	0.0	1,949	100.0
7/12-18	148	Male	0	0.0	30	2.0	869	59.5	0	0.0	89	6.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	988	67.6
(7/12-19)		Female	0	0.0	0	0.0	277	18.9	0	0.0	168	11.5	10	0.7	20	1.4	0	0.0	0	0.0	0	0.0	474	32.4
		Subtotal	0	0.0	30	2.0	1,146	78.4	0	0.0	257	17.6	10	0.7	20	1.4	0	0.0	0	0.0	0	0.0	1,462	100.0
7/20-27	139	Male	0	0.0	9	1.4	213	32.4	0	0.0	66	10.1	0	0.0	0	0.0	5	0.7	0	0.0	0	0.0	293	44.6
(7/20-30)		Female	0	0.0	0	0.0	114	17.2	0	0.0	232	35.2	0	0.0	19	2.9	0	0.0	0	0.0	0	0.0	365	55.4
		Subtotal	0	0.0	9	1.4	327	49.6	0	0.0	298	45.3	0	0.0	19	2.9	5	0.7	0	0.0	0	0.0	658	100.0
Season	466	Male	0	0.0	156	3.7	2,401	56.6	0	0.0	188	4.4	0	0.0	16	0.4	5	0.1	0	0.0	0	0.0	2,767	65.2
		Female	0	0.0	6	0.1	761	17.9	0	0.0	657	15.5	10	0.2	42	1.0	0	0.0	0	0.0	0	0.0	1,475	34.8
		Total [a]	0	0.0	162	3.8	3,162	74.5	0	0.0	845	19.9	10	0.2	58	1.4	5	0.1	0	0.0	0	0.0	4,242	100.0
		Male Mean Length	-		539		691		-		785		-		915		825		-		-			
		SE	-		10		4		-		9		-		.		-		-		-			
		Female Mean Length	-		563		707		-		818		745		845		-		-		-			
		SE	-		53		8		-		6		-		15		-		-		-			

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

Appendix A23.–Anvik River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)																			
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates	Size [a]		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/30, 8/1-7	116	Male	0	0.0	3	2.6	84	72.4	0	0.0	10	8.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	97	83.6
		Female	0	0.0	0	0.0	3	2.6	0	0.0	15	12.9	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	19	16.4
		Subtotal	0	0.0	3	2.6	87	75.0	0	0.0	25	21.6	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	116	100.0
8/8-11	107	Male	0	0.0	14	13.1	62	57.9	0	0.0	8	7.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	84	78.5
		Female	0	0.0	0	0.0	6	5.6	0	0.0	16	15.0	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	23	21.5
		Subtotal	0	0.0	14	13.1	68	63.6	0	0.0	24	22.4	0	0.0	1	0.9	0	0.0	0	0.0	0	0.0	107	100.0
Season	223	Male	0	0.0	17	7.6	146	65.5	0	0.0	18	8.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	181	81.2
		Female	0	0.0	0	0.0	9	4.0	0	0.0	31	13.9	0	0.0	2	0.9	0	0.0	0	0.0	0	0.0	42	18.8
		Total [b]	0	0.0	17	7.6	155	69.5	0	0.0	49	22.0	0	0.0	2	0.9	0	0.0	0	0.0	0	0.0	223	100.0
		Male Mean Length	-		546		695		-		796		-		-		-		-		-			
		SE	-		8		4		-		13		-		-		-		-		-			
		Female Mean Length	-		-		775		-		820		-		808		-		-		-			
		SE	-		-		10		-		8		-		18		-		-		-			

[a] Twenty-five fish in stratum one were sampled from the Anvik River Lodge sport fishery. Anglers released females, resulting in only males sampled at the lodge.

[b] The numbers of fish in each age group were based on sample size and do not indicate the Anvik River run passage composition.

Appendix A24.–Chena River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)																					
			2005		2004		2003				2002				2004				2000					
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/7, 13-14	36	Male	0	0.0	3	8.3	15	41.7	0	0.0	2	5.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	20	55.6
		Female	0	0.0	0	0.0	7	19.4	0	0.0	7	19.4	0	0.0	2	5.6	0	0.0	0	0.0	0	0.0	16	44.4
		Total [a]	0	0.0	3	8.3	22	61.1	0	0.0	9	25.0	0	0.0	2	5.6	0	0.0	0	0.0	0	0.0	36	100.0
		Male Mean Length	-		593		719		-		873		-		-		-		-		-			
		SE	-		34		10		-		118		-		-		-		-		-			
		Female Mean Length	-		-		814		-		866		-		920		-		-		-			
		SE	-		-		15		-		13		-		0		-		-		-			

[a] The season total is the sample size and does not indicate the Chena River run passage composition.

Appendix A25.–Gisasa River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (1.1)		2004 (1.2)		2003 (1.3)		2002 (2.2)		2002 (1.4)		2002 (2.3)		2001 (1.5)		2001 (2.4)		2000 (1.6)		2000 (2.5)		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/27-7/10	189	Male	4	1.1	90	21.2	279	65.6	0	0.0	16	3.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	389	91.5
(6/26-7/11)		Female	0	0.0	2	0.5	18	4.2	0	0.0	13	3.2	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	36	8.5
		Subtotal	4	1.1	92	21.7	297	69.8	0	0.0	29	6.9	0	0.0	2	0.5	0	0.0	0	0.0	0	0.0	425	100.0
7/13-16	129	Male	0	0.0	139	19.4	445	62.0	0	0.0	45	6.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	629	87.6
(7/12-18)		Female	0	0.0	0	0.0	28	3.9	0	0.0	33	4.7	0	0.0	28	3.9	0	0.0	0	0.0	0	0.0	89	12.4
		Subtotal	0	0.0	139	19.4	473	65.9	0	0.0	78	10.9	0	0.0	28	3.9	0	0.0	0	0.0	0	0.0	718	100.0
7/20-29	148	Male	0	0.0	100	16.9	284	48.0	0	0.0	48	8.1	4	0.7	0	0.0	0	0.0	0	0.0	0	0.0	436	73.6
(7/19-30)		Female	0	0.0	0	0.0	52	8.8	0	0.0	80	13.5	0	0.0	24	4.1	0	0.0	0	0.0	0	0.0	156	26.4
		Subtotal	0	0.0	100	16.9	336	56.8	0	0.0	128	21.6	4	0.7	24	4.1	0	0.0	0	0.0	0	0.0	592	100.0
Season	466	Male	4	0.3	329	19.0	1,008	58.1	0	0.0	108	6.3	4	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1,454	83.8
		Female	0	0.0	2	0.1	98	5.6	0	0.0	127	7.3	0	0.0	54	3.1	0	0.0	0	0.0	0	0.0	281	16.2
		Total	4	0.3	332	19.1	1,108	63.9	0	0.0	232	13.4	4	0.2	54	3.1	0	0.0	0	0.0	0	0.0	1,735	100.0
		Male Mean Length	390		539		692		-		760		710		-		-		-		-			
		SE	10		6		3		-		10		-		-		-		-		-			
		Female Mean Length	-		510		756		-		827		-		871		-		-		-			
		SE	-		-		9		-		8		-		15		-		-		-			

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

Appendix A26.–Henshaw Creek weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (1.1) No.	%	2004 (1.2) No.	%	2003 (1.3) No.	%	(2.2) No.	%	2002 (1.4) No.	%	(2.3) No.	%	2001 (1.5) No.	%	(2.4) No.	%	2000 (1.6) No.	%	(2.5) No.	%	Total No.	%
7/4-12	121	Male	0	0.0	32	17.4	111	60.3	2	0.8	2	0.8	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0	149	81.0
(7/2-12)		Female	0	0.0	3	1.6	29	15.7	0	0.0	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	35	19.0
		Subtotal	0	0.0	35	19.0	140	76.0	2	0.8	5	2.5	3	1.7	0	0.0	0	0.0	0	0.0	0	0.0	184	100.0
7/13-18	111	Male	2	0.9	30	14.4	101	47.8	0	0.0	6	2.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	139	65.8
(7/13-18)		Female	0	0.0	4	1.8	51	24.3	0	0.0	9	4.5	2	0.9	6	2.7	0	0.0	0	0.0	0	0.0	72	34.2
		Subtotal	2	0.9	34	16.2	152	72.1	0	0.0	15	7.2	2	0.9	6	2.7	0	0.0	0	0.0	0	0.0	211	100.0
7/19-8/2	117	Male	3	0.9	60	16.2	187	50.4	0	0.0	16	4.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	266	71.8
(7/19-8/8)		Female	0	0.0	0	0.0	35	9.4	0	0.0	57	15.4	0	0.0	6	1.7	3	0.9	0	0.0	3	0.9	105	28.2
		Subtotal	3	0.9	60	16.2	222	59.8	0	0.0	73	19.7	0	0.0	6	1.7	3	0.9	0	0.0	3	0.9	371	100.0
Season	349	Male	5	0.7	122	16.0	399	52.1	2	0.2	23	3.0	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0	554	72.3
		Female	0	0.0	7	0.9	115	15.0	0	0.0	70	9.1	2	0.2	12	1.6	3	0.4	0	0.0	3	0.4	212	27.7
		Total	5	0.7	129	16.9	514	67.1	2	0.2	93	12.1	5	0.6	12	1.6	3	0.4	0	0.0	3	0.4	766	100.0
		Male Mean Length	438		538		684		495		754		660		-		-		-		-			
		SE	-		6		4		-		14		10		-		-		-		-			
		Female Mean Length	-		536		705		-		821		800		886		820		-		825			
		SE	-		22		10		-		10		-		19		-		-		-			

Note: Samples were collected by the Tanana Chiefs Conference (TCC).

Appendix A27.–Salcha River carcass survey, Chinook salmon escapement project age and sex composition and mean length (mm), 2007.

			Brood Year (Age)																	
			2005		2004		2003		2002				2001		2000					
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/28, 8/9, 8/11	138	Male	0	0.0	8	5.8	57	41.3	0	0.0	12	8.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	77	55.8
		Female	0	0.0	0	0.0	15	10.9	0	0.0	42	30.4	0	0.0	4	2.9	0	0.0	0	0.0	0	0.0	61	44.2
		Subtotal	0	0.0	8	5.8	72	52.2	0	0.0	54	39.1	0	0.0	4	2.9	0	0.0	0	0.0	0	0.0	138	100.0
8/15-16, 20-21	165	Male	2	1.2	22	13.3	64	38.8	0	0.0	19	11.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	107	64.8
		Female	0	0.0	0	0.0	21	12.7	0	0.0	36	21.8	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	58	35.2
		Subtotal	2	1.2	22	13.3	85	51.5	0	0.0	55	33.3	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	165	100.0
Season	303	Male	2	0.7	30	9.9	121	39.9	0	0.0	31	10.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	184	60.7
		Female	0	0.0	0	0.0	36	11.9	0	0.0	78	25.7	0	0.0	5	1.7	0	0.0	0	0.0	0	0.0	119	39.3
		Total [a]	2	0.7	30	9.9	157	51.8	0	0.0	109	36.0	0	0.0	5	1.7	0	0.0	0	0.0	0	0.0	303	100.0
		Male Mean Length	395		543		718		-		853		-		-		-		-		-			
		SE	5		12		6		-		18		-		-		-		-		-			
		Female Mean Length	-		-		779		-		851		-		878		-		-		-			
		SE	-		-		6		-		5		-		18		-		-		-			

[a] The numbers of fish in each age group were based on sample size and do not indicate the Salcha River run passage composition.

Appendix A28.–Tozitna River weir, Chinook salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)																			
			2005		2004		2003				2002				2001				2000			
Sample	Sample		(1.1)		(1.2)		(1.3)		(2.2)		(1.4)		(2.3)		(1.5)		(2.4)		(1.6)		(2.5)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/9-17	70	Male	0	0.0	13	10.0	109	82.9	0	0.0	4	2.9	2	1.4	0	0.0	0	0.0	0	0.0	0	0.0	127	97.1
(7/8-17)		Female	0	0.0	0	0.0	0	0.0	0	0.0	3	2.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	2.9
		Subtotal	0	0.0	13	10.0	109	82.9	0	0.0	7	5.7	2	1.4	0	0.0	0	0.0	0	0.0	0	0.0	131	100.0
7/18-21	77	Male	0	0.0	38	16.9	153	67.5	0	0.0	3	1.3	3	1.3	0	0.0	0	0.0	0	0.0	0	0.0	198	87.0
(7/18-21)		Female	0	0.0	3	1.3	15	6.5	0	0.0	12	5.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	29	13.0
		Subtotal	0	0.0	41	18.2	168	74.0	0	0.0	15	6.5	3	1.3	0	0.0	0	0.0	0	0.0	0	0.0	227	100.0
7/22-30, 8/6	92	Male	11	3.3	84	26.1	179	55.5	0	0.0	7	2.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	281	87.0
(7/22-8/7)		Female	0	0.0	0	0.0	21	6.5	0	0.0	18	5.4	0	0.0	4	1.1	0	0.0	0	0.0	0	0.0	42	13.0
		Subtotal	11	3.3	84	26.1	200	62.0	0	0.0	25	7.6	0	0.0	4	1.1	0	0.0	0	0.0	0	0.0	323	100.0
Season	239	Male	11	1.5	136	19.9	441	64.7	0	0.0	14	2.0	5	0.7	0	0.0	0	0.0	0	0.0	0	0.0	606	88.9
		Female	0	0.0	3	0.5	36	5.3	0	0.0	33	4.9	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	75	11.1
		Total	11	1.5	139	20.4	477	70.0	0	0.0	47	6.9	5	0.7	4	0.5	0	0.0	0	0.0	0	0.0	681	100.0
		Male Mean Length	398		533		682		-		777		669		-		-		-		-			
		SE	31		6		4		-		7		-		-		-		-		-			
		Female Mean Length	-		465		771		-		838		-		830		-		-		-			
		SE	-		-		12		-		14		-		-		-		-		-			

Note: Samples were collected by Bureau of Land Management (BLM).

APPENDIX B: SUMMER CHUM SALMON TABLES

Appendix B1.–Yukon River, District 1, summer chum salmon commercial gillnet harvest age and sex composition and mean length, 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/2	160	Male	0	0.0	761	13.8	1,419	25.6	208	3.8	0	0.0	2,387	43.1
Period 1		Female	0	0.0	1,107	20.0	1,834	33.1	208	3.8	0	0.0	3,149	56.9
		Subtotal	0	0.0	1,868	33.8	3,252	58.8	415	7.5	0	0.0	5,536	100.0
7/5	158	Male	0	0.0	4,026	19.6	5,714	27.8	260	1.3	0	0.0	9,999	48.7
Period 2		Female	0	0.0	4,805	23.4	5,454	26.6	260	1.3	0	0.0	10,519	51.3
		Subtotal	0	0.0	8,831	43.0	11,168	54.4	519	2.5	0	0.0	20,518	100.0
7/8	156	Male	0	0.0	1,995	14.7	3,210	23.7	1,215	9.0	0	0.0	6,420	47.4
Period 3		Female	0	0.0	1,822	13.5	5,032	37.2	260	1.9	0	0.0	7,114	52.6
		Subtotal	0	0.0	3,817	28.2	8,241	60.9	1,475	10.9	0	0.0	13,533	100.0
7/10	159	Male	0	0.0	3,026	19.5	4,002	25.8	586	3.8	0	0.0	7,614	49.1
Period 4		Female	0	0.0	2,733	17.6	4,490	28.9	683	4.4	0	0.0	7,906	50.9
		Subtotal	0	0.0	5,759	37.1	8,492	54.7	1,269	8.2	0	0.0	15,520	100.0
7/12	158	Male	51	0.6	1,583	19.6	1,991	24.7	306	3.8	0	0.0	3,931	48.7
Period 5		Female	0	0.0	1,889	23.4	1,991	24.7	204	2.5	51	0.6	4,136	51.3
		Subtotal	51	0.6	3,472	43.0	3,982	49.4	511	6.3	51	0.6	8,067	100.0
7/14	159	Male	27	0.6	620	14.5	1,105	25.8	135	3.1	0	0.0	1,886	44.0
Period 6		Female	0	0.0	943	22.0	1,401	32.7	54	1.3	0	0.0	2,399	56.0
		Subtotal	27	0.6	1,563	36.5	2,506	58.5	189	4.4	0	0.0	4,285	100.0
	950	Male	78	0.1	12,011	17.8	17,440	25.9	2,709	4.0	0	0.0	32,238	47.8
All Periods		Female	0	0.0	13,299	19.7	20,202	29.9	1,669	2.5	51	0.1	35,221	52.2
		Total	78	0.1	25,310	37.5	37,643	55.8	4,378	6.5	51	0.1	67,459	100.0
		Male Mean Length	553		570		586		588		-			
		SE	13		2		2		5		-			
		Female Mean Length	-		564		578		591		605			
		SE	-		2		2		5		-			

Note: All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

Appendix B2.–Yukon River, District 2, summer chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2008.

Sample Dates	Sample Size		Brood Year (Age) 2005 (0.2) No.	%	2004 (0.3) No.	%	2003 (0.4) No.	%	2002 (0.5) No.	%	2001 (0.6) No.	%	Total No.	%
7/4	160	Male	0	0.0	1,079	17.5	1,849	30.0	193	3.1	0	0.0	3,120	50.6
Period 1		Female	0	0.0	770	12.5	2,080	33.8	154	2.5	39	0.6	3,043	49.4
		Subtotal	0	0.0	1,849	30.0	3,929	63.8	347	5.6	39	0.6	6,163	100.0
7/6	0	Male	0	0.0	2,718	17.5	4,659	30.0	485	3.1	0	0.0	7,862	50.6
Period 2 [a]		Female	0	0.0	1,941	12.5	5,241	33.8	388	2.5	97	0.6	7,668	49.4
		Subtotal	0	0.0	4,659	30.0	9,900	63.8	874	5.6	97	0.6	15,530	100.0
	0	Male												
Periods 3-5 [b]		Female												
		Subtotal											36,446	
	160	Male												
All Periods		Female												
		Total											58,139	
		Male Mean Length [c]	-		569		587		587		-			
		SE	-		4		4		10		-			
		Female Mean Length [c]	-		559		570		564		645			
		SE	-		6		3		9		-			

Note: All commercial fishing periods were restricted to 6.0-inch or smaller mesh gillnets.

[a] Age and sex composition were estimated from period 1.

[b] Periods 3–5 were not sampled for age or sex composition, and age and sex estimates were not applied to the total harvest number for these periods.

[c] Mean lengths were estimated from period 1.

Appendix B3.–Yukon River, Subdistrict 4-A, summer chum salmon roe fishery commercial harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/10, 15	72	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Female	0	0.0	46	63.9	23	31.9	3	4.2	0	0.0	72	100.0
		Total	0	0.0	46	63.9	23	31.9	3	4.2	0	0.0	72	100.0
		Male Mean Length	-		-		-		-		-			
		SE	-		-		-		-		-			
		Female Mean Length	-		542		556		543		-			
		SE	-		3		6		12		-			

Note: Commercial fishing gear was fish wheels.

Appendix B4.–Yukon River, District 6 (Subdistricts 6-A, 6-B, and 6-C), chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/10	45	Male	0	0.0	20	44.4	9	20.0	1	2.2	0	0.0	30	66.7
		Female	0	0.0	7	15.6	8	17.8	0	0.0	0	0.0	15	33.3
		Total	0	0.0	27	60.0	17	37.8	1	2.2	0	0.0	45	100.0
		Male Mean Length	-		603		616		580		-			
		SE	-		7		7		-		-			
		Female Mean Length	-		583		604		-		-			
		SE	-		14		8		-		-			

Note: Commercial fishing gear was set gillnets.

Appendix B5.–Yukon River, District 1, summer chum salmon subsistence 5.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/6-7	3	Male	0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	3	100.0
		Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	3	100.0
6/11, 13-14	207	Male	0	0.0	35	16.9	84	40.6	17	8.2	0	0.0	136	65.7
		Female	0	0.0	16	7.7	51	24.6	4	1.9	0	0.0	71	34.3
		Subtotal	0	0.0	51	24.6	135	65.2	21	10.1	0	0.0	207	100.0
6/18	37	Male	0	0.0	7	18.9	19	51.4	0	0.0	0	0.0	26	70.3
		Female	0	0.0	2	5.4	7	18.9	2	5.4	0	0.0	11	29.7
		Subtotal	0	0.0	9	24.3	26	70.3	2	5.4	0	0.0	37	100.0
6/24	34	Male	0	0.0	7	20.6	12	35.3	0	0.0	0	0.0	19	55.9
		Female	0	0.0	7	20.6	7	20.6	1	2.9	0	0.0	15	44.1
		Subtotal	0	0.0	14	41.2	19	55.9	1	2.9	0	0.0	34	100.0
Season	281	Male	0	0.0	52	18.5	115	40.9	17	6.0	0	0.0	184	65.5
		Female	0	0.0	25	8.9	65	23.1	7	2.5	0	0.0	97	34.5
		Total	0	0.0	77	27.4	180	64.1	24	8.5	0	0.0	281	100.0
		Male Mean Length	-		583		605		617		-			
		SE	-		3		2		4		-			
		Female Mean Length	-		576		587		586		-			
		SE	-		4		3		7		-			

[a] Sample dates were stratified by week.

Appendix B6.–Yukon River, District 1, summer chum salmon subsistence 8.5-inch mesh gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/5, 10-11,	30	Male	0	0.0	5	16.7	15	50.0	2	6.7	0	0.0	22	73.3
13-14		Female	0	0.0	3	10.0	5	16.7	0	0.0	0	0.0	8	26.7
		Subtotal	0	0.0	8	26.7	20	66.7	2	6.7	0	0.0	30	100.0
6/18, 21	21	Male	0	0.0	4	19.0	10	47.6	0	0.0	0	0.0	14	66.7
		Female	0	0.0	4	19.0	1	4.8	2	9.5	0	0.0	7	33.3
		Subtotal	0	0.0	8	38.1	11	52.4	2	9.5	0	0.0	21	100.0
Season	51	Male	0	0.0	9	17.6	25	49.0	2	3.9	0	0.0	36	70.6
		Female	0	0.0	7	13.7	6	11.8	2	3.9	0	0.0	15	29.4
		Total	0	0.0	16	31.4	31	60.8	4	7.8	0	0.0	51	100.0
		Male Mean Length	-		588		606		623		-			
		SE	-		11		4		3		-			
		Female Mean Length	-		560		581		590		-			
		SE	-		14		7		15		-			

[a] Sample dates were stratified by week.

Appendix B7.–Yukon River, Big Eddy, summer chum salmon 5.5-inch mesh set gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/16-22	192	Male	0	0.0	39	20.3	46	24.0	5	2.6	0	0.0	90	46.9
Quartile 1		Female	0	0.0	29	15.1	68	35.4	5	2.6	0	0.0	102	53.1
		Subtotal	0	0.0	68	35.4	114	59.4	10	5.2	0	0.0	192	100.0
6/23-27	139	Male	0	0.0	33	23.7	33	23.7	3	2.2	0	0.0	69	49.6
Quartile 2		Female	0	0.0	27	19.4	39	28.1	4	2.9	0	0.0	70	50.4
		Subtotal	0	0.0	60	43.2	72	51.8	7	5.0	0	0.0	139	100.0
6/28-7/1, 3-4	154	Male	0	0.0	25	16.2	41	26.6	5	3.2	0	0.0	71	46.1
Quartile 3		Female	0	0.0	34	22.1	45	29.2	4	2.6	0	0.0	83	53.9
		Subtotal	0	0.0	59	38.3	86	55.8	9	5.8	0	0.0	154	100.0
7/5-9, 11	162	Male	0	0.0	37	22.8	30	18.5	3	1.9	0	0.0	70	43.2
Quartile 4		Female	0	0.0	50	30.9	40	24.7	2	1.2	0	0.0	92	56.8
		Subtotal	0	0.0	87	53.7	70	43.2	5	3.1	0	0.0	162	100.0
Season	647	Male	0	0.0	134	20.7	150	23.2	16	2.5	0	0.0	300	46.4
		Female	0	0.0	140	21.6	192	29.7	15	2.3	0	0.0	347	53.6
		Total	0	0.0	274	42.3	342	52.9	31	4.8	0	0.0	647	100.0
		Male Mean Length	-		569		590		584		-			
		SE	-		2		2		12		-			
		Female Mean Length	-		555		564		572		-			
		SE	-		2		2		6		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix B8.–Yukon River, Middle Mouth, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/16, 20	25	Male	0	0.0	6	24.0	6	24.0	1	4.0	0	0.0	13	52.0
Quartile 1		Female	0	0.0	3	12.0	7	28.0	2	8.0	0	0.0	12	48.0
		Subtotal	0	0.0	9	36.0	13	52.0	3	12.0	0	0.0	25	100.0
6/23-24, 27	55	Male	0	0.0	11	20.0	9	16.4	2	3.6	0	0.0	22	40.0
Quartile 2		Female	0	0.0	8	14.5	22	40.0	3	5.5	0	0.0	33	60.0
		Subtotal	0	0.0	19	34.5	31	56.4	5	9.1	0	0.0	55	100.0
6/28-29; 7/1, 4	41	Male	0	0.0	4	9.8	6	14.6	0	0.0	0	0.0	10	24.4
Quartile 3		Female	0	0.0	12	29.3	18	43.9	1	2.4	0	0.0	31	75.6
		Subtotal	0	0.0	16	39.0	24	58.5	1	2.4	0	0.0	41	100.0
7/5-7	16	Male	0	0.0	1	6.3	4	25.0	0	0.0	0	0.0	5	31.3
Quartile 4		Female	0	0.0	4	25.0	7	43.8	0	0.0	0	0.0	11	68.8
		Subtotal	0	0.0	5	31.3	11	68.8	0	0.0	0	0.0	16	100.0
Season	137	Male	0	0.0	22	16.1	25	18.2	3	2.2	0	0.0	50	36.5
		Female	0	0.0	27	19.7	54	39.4	6	4.4	0	0.0	87	63.5
		Total	0	0.0	49	35.8	79	57.7	9	6.6	0	0.0	137	100.0
		Male Mean Length	-		579		587		602		-			
		SE	-		5		5		4		-			
		Female Mean Length	-		559		570		578		-			
		SE	-		4		3		9		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix B9.–Yukon River, Big Eddy and Middle Mouth combined, summer chum salmon 5.5-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/16-22	217	Male	0	0.0	45	20.7	52	24.0	6	2.8	0	0.0	103	47.5
Quartile 1		Female	0	0.0	32	14.7	75	34.6	7	3.2	0	0.0	114	52.5
		Subtotal	0	0.0	77	35.5	127	58.5	13	6.0	0	0.0	217	100.0
6/23-27	194	Male	0	0.0	44	22.7	42	21.6	5	2.6	0	0.0	91	46.9
Quartile 2		Female	0	0.0	35	18.0	61	31.4	7	3.6	0	0.0	103	53.1
		Subtotal	0	0.0	79	40.7	103	53.1	12	6.2	0	0.0	194	100.0
6/28-7/4	195	Male	0	0.0	29	14.9	47	24.1	5	2.6	0	0.0	81	41.5
Quartile 3		Female	0	0.0	46	23.6	63	32.3	5	2.6	0	0.0	114	58.5
		Subtotal	0	0.0	75	38.5	110	56.4	10	5.1	0	0.0	195	100.0
7/5-7/11	178	Male	0	0.0	38	21.3	34	19.1	3	1.7	0	0.0	75	42.1
Quartile 4		Female	0	0.0	54	30.3	47	26.4	2	1.1	0	0.0	103	57.9
		Subtotal	0	0.0	92	51.7	81	45.5	5	2.8	0	0.0	178	100.0
Season	784	Male	0	0.0	156	19.9	175	22.3	19	2.4	0	0.0	350	44.6
		Female	0	0.0	167	21.3	246	31.4	21	2.7	0	0.0	434	55.4
		Total	0	0.0	323	41.2	421	53.7	40	5.1	0	0.0	784	100.0
		Male Mean Length	-		570		590		587		-			
		SE	-		2		2		10		-			
		Female Mean Length	-		556		566		573		-			
		SE	-		2		1		5		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 8.5-inch mesh set gillnet catch totals.

Appendix B10.–Andreafsky River (East Fork) weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (0.2) No.	%	2004 (0.3) No.	%	2003 (0.4) No.	%	2002 (0.5) No.	%	2001 (0.6) No.	%	Total No.	%
6/21-27	142	Male	0	0.0	198	6.4	1,671	53.5	22	0.7	0	0.0	1,891	60.6
(6/21-28)		Female	0	0.0	198	6.3	967	31.0	66	2.1	0	0.0	1,231	39.4
		Subtotal	0	0.0	396	12.7	2,638	84.5	88	2.8	0	0.0	3,122	100.0
6/29-7/3	148	Male	0	0.0	594	4.1	7,120	48.7	198	1.4	0	0.0	7,911	54.1
(6/29-7/4)		Female	0	0.0	1,483	10.1	4,845	33.1	395	2.7	0	0.0	6,724	45.9
		Subtotal	0	0.0	2,077	14.2	11,965	81.8	593	4.1	0	0.0	14,635	100.0
7/6-11	144	Male	0	0.0	1,006	4.9	10,495	50.7	0	0.0	0	0.0	11,501	55.6
(7/5-11)		Female	0	0.0	1,438	6.9	7,763	37.5	0	0.0	0	0.0	9,201	44.4
		Subtotal	0	0.0	2,444	11.8	18,258	88.2	0	0.0	0	0.0	20,702	100.0
7/13-17	140	Male	0	0.0	1,203	8.6	4,713	33.6	602	4.3	0	0.0	6,518	46.4
(7/12-18)		Female	0	0.0	1,605	11.4	5,917	42.1	0	0.0	0	0.0	7,521	53.6
		Subtotal	0	0.0	2,808	20.0	10,630	75.7	602	4.3	0	0.0	14,039	100.0
7/20-27	172	Male	0	0.0	222	4.7	1,716	36.0	111	2.3	0	0.0	2,048	43.0
(7/19-30)		Female	0	0.0	830	17.4	1,799	37.8	83	1.8	0	0.0	2,713	57.0
		Subtotal	0	0.0	1,052	22.1	3,515	73.8	194	4.1	0	0.0	4,761	100.0
Season	746	Male	0	0.0	3,222	5.6	25,715	44.9	932	1.6	0	0.0	29,869	52.2
		Female	0	0.0	5,554	9.7	21,291	37.3	545	1.0	0	0.0	27,390	47.8
		Total	0	0.0	8,776	15.3	47,006	82.1	1,477	2.6	0	0.0	57,259	100.0
		Male Mean Length	-		552		579		602		-			
		SE	-		3		2		9		-			
		Female Mean Length	-		527		538		546		-			
		SE	-		4		2		11		-			

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

Appendix B11.–Anvik River sonar, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
Sample			2005		2004		2003		2002		2001			
Dates	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
(Strata Dates)	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
6/28-7/2	122	Male	0	0.0	10,320	14.8	30,960	44.3	574	0.8	0	0.0	41,854	59.8
(6/18-7/3)		Female	573	0.8	9,174	13.1	17,774	25.4	573	0.8	0	0.0	28,094	40.2
		Subtotal	573	0.8	19,494	27.9	48,734	69.7	1,147	1.6	0	0.0	69,948	100.0
7/5-8	131	Male	0	0.0	26,490	18.3	39,735	27.5	4,415	3.1	0	0.0	70,640	48.9
(7/4-9)		Female	2,208	1.5	33,113	22.9	36,424	25.2	2,208	1.5	0	0.0	73,952	51.1
		Subtotal	2,208	1.5	59,603	41.2	76,159	52.7	6,623	4.6	0	0.0	144,592	100.0
7/11-13	139	Male	378	0.7	13,612	25.9	9,831	18.7	756	1.4	0	0.0	24,577	46.8
(7/10-14)		Female	1,134	2.2	15,881	30.2	9,831	18.7	1,135	2.2	0	0.0	27,981	53.2
		Subtotal	1,512	2.9	29,493	56.1	19,662	37.4	1,891	3.6	0	0.0	52,558	100.0
7/16-19	141	Male	0	0.0	18,354	17.0	11,471	10.6	2,294	2.1	0	0.0	32,120	29.8
(7/15-26)		Female	1,530	1.4	36,708	34.1	33,649	31.2	3,824	3.6	0	0.0	75,710	70.2
		Subtotal	1,530	1.4	55,062	51.1	45,120	41.8	6,118	5.7	0	0.0	107,830	100.0
Season	533	Male	378	0.1	68,777	18.3	91,998	24.5	8,039	2.1	0	0.0	169,192	45.1
		Female	5,445	1.5	94,875	25.3	97,678	26.1	7,739	2.1	0	0.0	205,736	54.9
		Total	5,823	1.6	163,652	43.6	189,676	50.6	15,778	4.2	0	0.0	374,928	100.0
		Male Mean Length	580		587		593		602		-			
		SE	-		3		3		16		-			
		Female Mean Length	525		546		557		550		-			
		SE	6		2		2		9		-			

Note: Samples were collected with a beach seine.

Appendix B12.–Gisasa weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (0.2) No.	%	2004 (0.3) No.	%	2003 (0.4) No.	%	2002 (0.5) No.	%	2001 (0.6) No.	%	Total No.	%
6/28-7/3	123	Male	0	0.0	355	7.3	2,528	52.0	237	4.9	0	0.0	3,120	64.2
(6/12-7/4)		Female	0	0.0	198	4.1	1,343	27.7	197	4.0	0	0.0	1,738	35.8
		Subtotal	0	0.0	553	11.4	3,871	79.7	434	8.9	0	0.0	4,858	100.0
7/5-10	155	Male	0	0.0	1,098	12.9	2,636	31.0	330	3.9	0	0.0	4,063	47.7
(7/5-11)		Female	0	0.0	769	9.0	3,294	38.7	384	4.5	0	0.0	4,448	52.3
		Subtotal	0	0.0	1,867	21.9	5,930	69.7	714	8.4	0	0.0	8,511	100.0
7/12-17	151	Male	0	0.0	1,593	13.9	3,944	34.4	0	0.0	0	0.0	5,537	48.3
(7/12-18)		Female	0	0.0	1,820	15.9	3,717	32.5	379	3.3	0	0.0	5,917	51.7
		Subtotal	0	0.0	3,413	29.8	7,661	66.9	379	3.3	0	0.0	11,454	100.0
7/19-24	147	Male	56	0.7	1,283	15.7	2,287	27.9	502	6.1	0	0.0	4,128	50.3
(7/19-25)		Female	0	0.0	1,673	20.4	2,231	27.2	167	2.1	0	0.0	4,072	49.7
		Subtotal	56	0.7	2,956	36.1	4,518	55.1	669	8.2	0	0.0	8,200	100.0
7/26-29	83	Male	0	0.0	540	14.5	1,035	27.7	225	6.0	0	0.0	1,800	48.2
(7/26-30		Female	45	1.2	1,215	32.5	630	16.9	45	1.2	0	0.0	1,935	51.8
		Subtotal	45	1.2	1,755	47.0	1,665	44.6	270	7.2	0	0.0	3,735	100.0
Season	659	Male	56	0.2	4,870	13.3	12,430	33.8	1,294	3.5	0	0.0	18,649	50.7
		Female	45	0.1	5,675	15.4	11,215	30.5	1,173	3.2	0	0.0	18,109	49.3
		Total	101	0.3	10,545	28.7	23,645	64.3	2,467	6.7	0	0.0	36,758	100.0
		Male Mean Length	575		554		580		595		-			
		SE	-		3		2		7		-			
		Female Mean Length	470		535		552		560		-			
		SE	-		2		2		5		-			

Note: Samples were collected by the US Fish and Wildlife Service (USFWS).

Appendix B13.–Henshaw Creek weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (0.2) No.	%	2004 (0.3) No.	%	2003 (0.4) No.	%	2002 (0.5) No.	%	2001 (0.6) No.	%	Total No.	%
7/6, 8, 10, 12	130	Male	257	2.3	3,765	33.8	2,909	26.1	257	2.3	0	0.0	7,187	64.6
(7/2-12)		Female	171	1.5	1,797	16.2	1,711	15.4	256	2.3	0	0.0	3,936	35.4
		Subtotal	428	3.8	5,562	50.0	4,620	41.5	513	4.6	0	0.0	11,123	100.0
7/14, 16,	163	Male	621	1.9	14,690	43.6	2,276	6.8	1,035	3.0	0	0.0	18,621	55.2
18-19, 21		Female	620	1.8	9,931	29.4	3,310	9.8	1,241	3.7	0	0.0	15,104	44.8
(7/13-21)		Subtotal	1,241	3.7	24,621	73.0	5,586	16.6	2,276	6.7	0	0.0	33,725	100.0
7/22, 24, 26	179	Male	772	2.2	14,286	41.3	2,896	8.4	772	2.2	0	0.0	18,726	54.2
7/27, 30		Female	965	2.8	12,355	35.8	1,930	5.6	579	1.7	0	0.0	15,830	45.8
(7/22-30)		Subtotal	1,737	5.0	26,641	77.1	4,826	14.0	1,351	3.9	0	0.0	34,556	100.0
7/31, 8/2, 4	174	Male	398	2.3	4,481	25.9	1,195	6.9	299	1.7	0	0.0	6,373	36.8
8/5, 7		Female	199	1.1	10,058	58.0	597	3.4	99	0.6	0	0.0	10,954	63.2
(7/31-8/6)		Subtotal	597	3.4	14,539	83.9	1,792	10.3	398	2.3	0	0.0	17,327	100.0
Season	646	Male	2,048	2.1	37,222	38.5	9,276	9.6	2,362	2.4	0	0.0	50,907	52.6
		Female	1,956	2.0	34,141	35.3	7,549	7.8	2,177	2.3	0	0.0	45,824	47.4
		Total	4,004	4.1	71,363	73.8	16,825	17.4	4,539	4.7	0	0.0	96,731	100.0
		Male Mean Length	538		556		579		575		-			
		SE	7		2		4		-		-			
		Female Mean Length	524		533		554		569		-			
		SE	6		2		3		4		-			

Note: Samples were collected by the Tanana Chiefs Conference (TCC).

Appendix B14.–Salcha River carcass survey, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/12	160	Male	1	0.6	31	19.4	27	16.9	5	3.1	2	1.3	66	41.3
		Female	0	0.0	51	31.9	37	23.1	5	3.1	1	0.6	94	58.8
		Total	1	0.6	82	51.3	64	40.0	10	6.3	3	1.9	160	100.0
		Male Mean Length	560		545		585		598		565			
		SE	-		6		8		17		25			
		Female Mean Length	-		531		548		544		520			
		SE	-		4		5		14		-			

Note: Samples were collected by Bering Sea Fishermen's Association. Ages were determined using vertebrae.

Appendix B15.–Tozitna River weir, summer chum salmon escapement project age and sex composition and mean length (mm), 2008.

Sample Dates (Strata Dates)	Sample Size		Brood Year (Age) 2005 (0.2) No.	%	2004 (0.3) No.	%	2003 (0.4) No.	%	2002 (0.5) No.	%	2001 (0.6) No.	%	Total No.	%
7/5-12	96	Male	0	0.0	119	29.2	174	42.7	47	11.5	0	0.0	340	83.3
(7/3-12)		Female	4	1.0	21	5.2	43	10.4	0	0.0	0	0.0	68	16.7
		Subtotal	4	1.0	140	34.4	217	53.1	47	11.5	0	0.0	408	100.0
7/13-19	132	Male	14	1.5	243	26.5	340	37.1	21	2.3	0	0.0	617	67.4
(7/13-19)		Female	7	0.8	97	10.6	166	18.2	28	3.0	0	0.0	298	32.6
		Subtotal	21	2.3	340	37.1	506	55.3	49	5.3	0	0.0	915	100.0
7/20-26	178	Male	32	1.1	879	30.3	700	24.1	114	3.9	0	0.0	1,725	59.6
(7/20-26)		Female	98	3.4	570	19.7	439	15.2	65	2.3	0	0.0	1,172	40.4
		Subtotal	130	4.5	1,449	50.0	1,139	39.3	179	6.2	0	0.0	2,897	100.0
7/27-8/1	144	Male	79	2.8	674	23.6	634	22.2	40	1.4	0	0.0	1,427	50.0
(7/27-8/3)		Female	60	2.1	832	29.2	456	16.0	79	2.8	0	0.0	1,426	50.0
		Subtotal	139	4.9	1,506	52.8	1,090	38.2	119	4.2	0	0.0	2,853	100.0
8/5-7	74	Male	19	1.3	415	29.7	151	10.8	0	0.0	0	0.0	585	41.9
(8/4-7)		Female	132	9.5	472	33.8	189	13.5	19	1.4	0	0.0	812	58.1
		Subtotal	151	10.8	887	63.5	340	24.3	19	1.4	0	0.0	1,397	100.0
Season	624	Male	145	1.7	2,329	27.5	1,999	23.6	221	2.6	0	0.0	4,694	55.4
		Female	300	3.6	1,992	23.5	1,293	15.3	191	2.3	0	0.0	3,776	44.6
		Total	445	5.3	4,321	51.0	3,292	38.9	412	4.9	0	0.0	8,470	100.0
		Male Mean Length	544		561		579		583		-			
		SE	8		2		3		10		-			
		Female Mean Length	521		542		558		567		-			
		SE	4		3		3		7		-			

Note: Samples were collected by the Bureau of Land Management (BLM).

APPENDIX C: FALL CHUM SALMON TABLES

Appendix C1.–Yukon River, District 1, fall chum salmon commercial gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)			
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/17	76	Male	28	1.3	280	13.2	393	18.4	0	0.0	0	0.0	701	32.9
Period 1		Female	0	0.0	533	25.0	729	34.2	168	7.9	0	0.0	1,430	67.1
		Subtotal	28	1.3	813	38.2	1,122	52.6	168	7.9	0	0.0	2,131	100.0
7/22	149	Male	0	0.0	1,052	17.4	1,781	29.5	162	2.7	0	0.0	2,995	49.7
Period 2		Female	0	0.0	1,093	18.1	1,902	31.5	40	0.7	0	0.0	3,035	50.3
		Subtotal	0	0.0	2,145	35.6	3,683	61.1	202	3.4	0	0.0	6,030	100.0
7/25	159	Male	0	0.0	1,018	20.8	1,481	30.2	93	1.9	0	0.0	2,591	52.8
Period 3		Female	31	0.6	802	16.4	1,357	27.7	123	2.5	0	0.0	2,314	47.2
		Subtotal	31	0.6	1,820	37.1	2,838	57.9	216	4.4	0	0.0	4,905	100.0
7/29	157	Male	0	0.0	2,957	15.3	5,668	29.3	123	0.6	0	0.0	8,748	45.2
Period 4		Female	123	0.6	3,080	15.9	7,023	36.3	370	1.9	0	0.0	10,596	54.8
		Subtotal	123	0.6	6,037	31.2	12,691	65.6	493	2.5	0	0.0	19,344	100.0
8/1	158	Male	0	0.0	3,591	19.6	4,402	24.1	232	1.3	0	0.0	8,225	44.9
Period 5		Female	0	0.0	5,213	28.5	4,634	25.3	232	1.3	0	0.0	10,078	55.1
		Subtotal	0	0.0	8,804	48.1	9,036	49.4	463	2.5	0	0.0	18,303	100.0
8/26	158	Male	62	0.6	2,424	24.7	2,424	24.7	124	1.3	0	0.0	5,035	51.3
Period 6		Female	62	0.6	2,362	24.1	2,300	23.4	62	0.6	0	0.0	4,786	48.7
		Subtotal	124	1.3	4,786	48.7	4,724	48.1	186	1.9	0	0.0	9,821	100.0
8/30	66	Male	0	0.0	219	25.8	245	28.8	13	1.5	0	0.0	477	56.1
Period 7		Female	26	3.0	206	24.2	129	15.2	13	1.5	0	0.0	374	43.9
		Subtotal	26	3.0	426	50.0	374	43.9	26	3.0	0	0.0	851	100.0
9/2	158	Male	0	0.0	570	34.8	435	26.6	0	0.0	0	0.0	1,005	61.4
Period 8		Female	0	0.0	363	22.2	269	16.5	0	0.0	0	0.0	632	38.6
		Subtotal	0	0.0	932	57.0	705	43.0	0	0.0	0	0.0	1,637	100.0
9/5	152	Male	27	1.3	553	27.0	405	19.7	13	0.7	0	0.0	999	48.7
Period 9		Female	40	2.0	513	25.0	499	24.3	0	0.0	0	0.0	1,052	51.3
		Subtotal	67	3.3	1,066	52.0	904	44.1	13	0.7	0	0.0	2,051	100.0
9/8	155	Male	0	0.0	476	23.9	463	23.2	26	1.3	0	0.0	964	48.4
Period 10		Female	13	0.6	527	26.5	476	23.9	13	0.6	0	0.0	1,028	51.6
		Subtotal	13	0.6	1,002	50.3	938	47.1	39	1.9	0	0.0	1,992	100.0
	0	Male	0	0.0	153	23.9	148	23.2	8	1.3	0	0.0	309	48.4
Period 11 [a]		Female	4	0.6	169	26.5	153	23.9	4	0.6	0	0.0	330	51.6
		Subtotal	4	0.6	322	50.3	301	47.1	12	1.9	0	0.0	639	100.0
	1,388	Male	117	0.2	13,293	19.6	17,844	26.4	794	1.2	0	0.0	32,048	47.3
All Periods		Female	299	0.4	14,860	21.9	19,471	28.8	1,025	1.5	0	0.0	35,656	52.7
		Total	417	0.6	28,154	41.6	37,314	55.1	1,819	2.7	0	0.0	67,704	100.0
		Male Mean Length	536		572		589		580		580			
		SE	16		1		2		8		-			
		Female Mean Length	542		566		580		574		-			
		SE	5		1		1		8		-			

Note: All District 1 fall commercial fishing periods allowed unrestricted mesh size gillnets. However, it is likely fishermen used 6-inch or smaller mesh size.

[a] Age and sex composition was estimated from period 10.

Appendix C2.–Yukon River, District 5 (Subdistricts 5-B and 5-C), fall chum salmon commercial harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/11	133	Male	4	0.8	215	38.3	169	30.1	0	0.0	0	0.0	388	69.2
Period 1		Female	0	0.0	76	13.5	97	17.3	0	0.0	0	0.0	173	30.8
		Subtotal	4	0.8	291	51.9	266	47.4	0	0.0	0	0.0	561	100.0
8/14-15	147	Male	0	0.0	120	18.4	204	31.3	9	1.4	0	0.0	333	51.0
Period 2		Female	0	0.0	147	22.4	160	24.5	13	2.0	0	0.0	320	49.0
		Subtotal	0	0.0	267	40.8	364	55.8	22	3.4	0	0.0	653	100.0
8/17	150	Male	5	0.7	244	36.0	370	54.7	9	1.3	0	0.0	627	92.7
Period 3		Female	0	0.0	18	2.7	32	4.7	0	0.0	0	0.0	50	7.3
		Subtotal	5	0.7	262	38.7	402	59.3	9	1.3	0	0.0	677	100.0
Periods 4-9 [a]	0	Male												
		Female												
		Subtotal											2,665	
Periods 1-3	430	Male	9	0.5	579	30.6	743	39.3	18	0.9	0	0.0	1,349	71.3
		Female	0	0.0	241	12.7	289	15.3	13	0.7	0	0.0	542	28.7
		Subtotal	9	0.5	819	43.3	1,032	54.6	31	1.7	0	0.0	1,891	100.0
All Periods	430	Male												
		Female												
		Total											4,556	
		Male Mean Length [b]	620		614		638		653		-			
		SE	30		3		2		16		-			
		Female Mean Length [b]	-		594		619		638		-			
		SE	-		3		3		12		-			

Note: Samples were collected from fish wheels.

[a] Periods 4–9 were not sampled for age or sex composition, and age and sex estimates were not applied to the total harvest number for these periods.

[b] Mean lengths were estimated from periods 1, 2, and 3.

Appendix C3.–Yukon River, District 6 (Subdistricts 6-A, 6-B, and 6-C), fall chum salmon commercial fish wheel harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	0	Male												
Periods 1-3 [a]		Female												
		Subtotal											1,174	
9/12-14	0	Male	25	2.1	246	20.8	279	23.6	8	0.7	0	0.0	558	47.2
Period 4 [b]		Female	0	0.0	345	29.2	271	22.9	8	0.7	0	0.0	624	52.8
		Subtotal	25	2.1	591	50.0	550	46.5	16	1.4	0	0.0	1,182	100.0
9/15-17	144	Male	19	2.1	188	20.8	213	23.6	6	0.7	0	0.0	427	47.2
Period 5		Female	0	0.0	264	29.2	207	22.9	6	0.7	0	0.0	477	52.8
		Subtotal	19	2.1	452	50.0	421	46.5	13	1.4	0	0.0	904	100.0
9/19-21	137	Male	0	0.0	379	26.3	348	24.1	11	0.7	0	0.0	738	51.1
Period 6		Female	32	2.2	327	22.6	316	21.9	32	2.2	0	0.0	706	48.9
		Subtotal	32	2.2	706	48.9	664	46.0	42	2.9	0	0.0	1,444	100.0
9/22-24	144	Male	4	0.7	131	23.6	131	23.6	4	0.7	0	0.0	269	48.6
Period 7		Female	8	1.4	131	23.6	146	26.4	0	0.0	0	0.0	285	51.4
		Subtotal	12	2.1	262	47.2	277	50.0	4	0.7	0	0.0	554	100.0
9/26-28	131	Male	9	2.3	73	18.3	109	27.5	6	1.5	0	0.0	197	49.6
Period 8		Female	0	0.0	115	29.0	82	20.6	3	0.8	0	0.0	201	50.4
		Subtotal	9	2.3	188	47.3	191	48.1	9	2.3	0	0.0	398	100.0
9/29-10/1	0	Male	2	2.3	14	18.3	22	27.5	1	1.5	0	0.0	39	49.6
Period 9 [c]		Female	0	0.0	23	29.0	16	20.6	1	0.8	0	0.0	40	50.4
		Subtotal	2	2.3	37	47.3	38	48.1	2	2.3	0	0.0	79	100.0
Periods 4-9	556	Male	58	1.3	1,032	22.6	1,102	24.2	36	0.8	0	0.0	2,229	48.9
		Female	39	0.9	1,204	26.4	1,039	22.8	50	1.1	0	0.0	2,332	51.1
		Subtotal	98	2.1	2,237	49.0	2,141	46.9	86	1.9	0	0.0	4,561	100.0
		Male												
All Periods		Female												
		Total											5,735	
		Male Mean Length [d]	546		601		624		623		-			
		SE	8		3		3		9		-			
		Female Mean Length [d]	561		575		599		605		-			
		SE	17		3		3		24		-			

Note: Fish were often presorted by the commercial processors. Samples are not random.

[a] Periods 1–3 were not sampled for age or sex composition, and age and sex estimates were not applied to the total harvest number for these periods.

[b] Age and sex composition was estimated from period 5.

[c] Age and sex composition was estimated from period 8.

[d] Mean lengths were estimated from periods 5, 6, 7, and 8.

Appendix C4.–Yukon River, Subdistrict 5-B, Tanana, fall chum salmon subsistence harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/11	136	Male	0	0.0	39	28.7	37	27.2	1	0.7	0	0.0	77	56.6
		Female	0	0.0	33	24.3	24	17.6	2	1.5	0	0.0	59	43.4
		Total	0	0.0	72	52.9	61	44.9	3	2.2	0	0.0	136	100.0
		Male Mean Length	-		603		614		590		-			
		SE	-		4		4		-		-			
		Female Mean Length	-		579		607		570		-			
		SE	-		4		4		35		-			

Note: Samples were collected from fish wheels.

Appendix C5.–Yukon River, Subdistrict 5-B, Rampart Rapids, fall chum salmon subsistence harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/17	109	Male	0	0.0	12	11.0	20	18.3	0	0.0	0	0.0	32	29.4
		Female	0	0.0	37	33.9	40	36.7	0	0.0	0	0.0	77	70.6
		Total	0	0.0	49	45.0	60	55.0	0	0.0	0	0.0	109	100.0
		Male Mean Length	-		598		638		-		-			
		SE	-		8		7		-		-			
		Female Mean Length	-		582		601		-		-			
		SE	-		4		4		-		-			

Note: Samples were collected from fish wheels.

Appendix C6.–Yukon River, Big Eddy, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/17, 21-22	82	Male	0	0.0	9	11.0	14	17.1	0	0.0	0	0.0	23	28.0
7/25-28, 30		Female	0	0.0	14	17.1	42	51.2	3	3.7	0	0.0	59	72.0
Quartile 1		Subtotal	0	0.0	23	28.0	56	68.3	3	3.7	0	0.0	82	100.0
7/31- 8/7	157	Male	0	0.0	26	16.6	36	22.9	2	1.3	0	0.0	64	40.8
8/9-10, 12-13		Female	0	0.0	35	22.3	57	36.3	1	0.6	0	0.0	93	59.2
Quartile 2		Subtotal	0	0.0	61	38.9	93	59.2	3	1.9	0	0.0	157	100.0
8/14	30	Male	0	0.0	7	23.3	9	30.0	0	0.0	0	0.0	16	53.3
Quartile 3		Female	0	0.0	9	30.0	4	13.3	1	3.3	0	0.0	14	46.7
		Subtotal	0	0.0	16	53.3	13	43.3	1	3.3	0	0.0	30	100.0
8/15-16, 18-19	154	Male	1	0.6	27	17.5	23	14.9	0	0.0	0	0.0	51	33.1
8/22-28		Female	0	0.0	41	26.6	59	38.3	3	1.9	0	0.0	103	66.9
Quartile 4		Subtotal	1	0.6	68	44.2	82	53.2	3	1.9	0	0.0	154	100.0
Season	423	Male	1	0.2	69	16.3	82	19.4	2	0.5	0	0.0	154	36.4
		Female	0	0.0	99	23.4	162	38.3	8	1.9	0	0.0	269	63.6
		Total	1	0.2	168	39.7	244	57.7	10	2.4	0	0.0	423	100.0
		Male Mean Length	560		582		604		598		-			
		SE	-		3		3		33		-			
		Female Mean Length	-		579		596		604		-			
		SE	-		2		2		10		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

Appendix C7.–Yukon River, Middle Mouth, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/16, 21, 23-24	61	Male	0	0.0	14	23.0	13	21.3	0	0.0	0	0.0	27	44.3
7/28, 30		Female	0	0.0	18	29.5	15	24.6	1	1.6	0	0.0	34	55.7
Quartile 1		Subtotal	0	0.0	32	52.5	28	45.9	1	1.6	0	0.0	61	100.0
7/31- 8/5	75	Male	0	0.0	14	18.7	12	16.0	0	0.0	0	0.0	26	34.7
8/7-8, 13		Female	1	1.3	23	30.7	24	32.0	1	1.3	0	0.0	49	65.3
Quartile 2		Subtotal	1	1.3	37	49.3	36	48.0	1	1.3	0	0.0	75	100.0
8/14	7	Male	0	0.0	2	28.6	2	28.6	0	0.0	0	0.0	4	57.1
Quartile 3		Female	0	0.0	2	28.6	1	14.3	0	0.0	0	0.0	3	42.9
		Subtotal	0	0.0	4	57.1	3	42.9	0	0.0	0	0.0	7	100.0
8/15, 20-24, 26	26	Male	0	0.0	3	11.5	7	26.9	0	0.0	0	0.0	10	38.5
Quartile 4		Female	0	0.0	6	23.1	9	34.6	1	3.8	0	0.0	16	61.5
		Subtotal	0	0.0	9	34.6	16	61.5	1	3.8	0	0.0	26	100.0
Season	169	Male	0	0.0	33	19.5	34	20.1	0	0.0	0	0.0	67	39.6
		Female	1	0.6	49	29.0	49	29.0	3	1.8	0	0.0	102	60.4
		Total	1	0.6	82	48.5	83	49.1	3	1.8	0	0.0	169	100.0
		Male Mean Length	-		581		608		-		-			
		SE	-		5		5		-		-			
		Female Mean Length	550		587		605		622		-			
		SE	-		4		4		16		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

Appendix C8.–Yukon River, Big Eddy and Middle Mouth combined, fall chum salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)											
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/16-17, 21-30	143	Male	0	0.0	23	16.1	27	18.9	0	0.0	0	0.0	50	35.0
Quartile 1		Female	0	0.0	32	22.4	57	39.9	4	2.8	0	0.0	93	65.0
		Subtotal	0	0.0	55	38.5	84	58.7	4	2.8	0	0.0	143	100.0
7/31- 8/13	232	Male	0	0.0	40	17.2	48	20.7	2	0.9	0	0.0	90	38.8
Quartile 2		Female	1	0.4	58	25.0	81	34.9	2	0.9	0	0.0	142	61.2
		Subtotal	1	0.4	98	42.2	129	55.6	4	1.7	0	0.0	232	100.0
8/14	37	Male	0	0.0	9	24.3	11	29.7	0	0.0	0	0.0	20	54.1
Quartile 3		Female	0	0.0	11	29.7	5	13.5	1	2.7	0	0.0	17	45.9
		Subtotal	0	0.0	20	54.1	16	43.2	1	2.7	0	0.0	37	100.0
8/15-16, 18-28	180	Male	1	0.6	30	16.7	30	16.7	0	0.0	0	0.0	61	33.9
Quartile 4		Female	0	0.0	47	26.1	68	37.8	4	2.2	0	0.0	119	66.1
		Subtotal	1	0.6	77	42.8	98	54.4	4	2.2	0	0.0	180	100.0
Season	592	Male	1	0.2	102	17.2	116	19.6	2	0.3	0	0.0	221	37.3
		Female	1	0.2	148	25.0	211	35.6	11	1.9	0	0.0	371	62.7
		Total	2	0.3	250	42.2	327	55.2	13	2.2	0	0.0	592	100.0
		Male Mean Length	560		582		605		598		-			
		SE	-		3		3		33		-			
		Female Mean Length	550		582		598		609		-			
		SE	-		2		2		8		-			

[a] Sample dates were stratified by quartiles based on combined Big Eddy and Middle Mouth 6.0-inch mesh drift gillnet catch totals.

Appendix C9.–Yukon River, Mountain Village, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)									
			2005		2004		2003		2002		2001			
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/17-29	111	Male	0	0.0	35	31.5	29	26.1	5	4.5	0	0.0	69	62.2
Quartile 1		Female	0	0.0	16	14.4	23	20.7	3	2.7	0	0.0	42	37.8
		Subtotal	0	0.0	51	45.9	52	46.8	8	7.2	0	0.0	111	100.0
7/30- 8/8	82	Male	0	0.0	15	18.3	21	25.6	1	1.2	0	0.0	37	45.1
Quartile 2		Female	0	0.0	12	14.6	33	40.3	0	0.0	0	0.0	45	54.9
		Subtotal	0	0.0	27	32.9	54	65.9	1	1.2	0	0.0	82	100.0
8/9-18	74	Male	0	0.0	14	18.9	18	24.3	1	1.4	0	0.0	33	44.6
Quartile 3		Female	0	0.0	16	21.6	24	32.5	1	1.3	0	0.0	41	55.4
		Subtotal	0	0.0	30	40.5	42	56.8	2	2.7	0	0.0	74	100.0
8/20- 9/10	97	Male	0	0.0	10	10.3	18	18.5	4	4.1	1	1.0	33	34.0
Quartile 4		Female	0	0.0	31	32.0	31	32.0	2	2.1	0	0.0	64	66.0
		Total	0	0.0	41	42.3	49	50.5	6	6.2	1	1.0	97	100.0
Season	364	Male	0	0.0	74	20.3	86	23.6	11	3.0	1	0.3	172	47.3
		Female	0	0.0	75	20.6	111	30.5	6	1.6	0	0.0	192	52.7
		Total	0	0.0	149	40.9	197	54.1	17	4.7	1	0.3	364	100.0
		Male Mean Length	-		585		605		598		-			
		SE	-		3		4		10		-			
		Female Mean Length	-		582		594		613		-			
		SE	-		3		3		13		-			

Note: Samples were collected by Asacarsarmiut Traditional Council.

[a] Sample dates were stratified by quartiles based on Mountain Village 5 ⅞-inch mesh drift gillnet catch totals.

Appendix C10.–Yukon River, Kaltag, fall chum salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)									
			2005		2004		2003		2002		2001	
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	Total	
Dates [a]	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7/25- 8/10	84	Male	1	1.2	33	39.3	20	23.8	1	1.2	0	0.0	55	65.5
Quartile 1		Female	0	0.0	11	13.1	16	19.1	2	2.4	0	0.0	29	34.5
		Subtotal	1	1.2	44	52.4	36	42.9	3	3.6	0	0.0	84	100.0
8/11-15	97	Male	0	0.0	14	14.5	33	34.0	3	3.1	0	0.0	50	51.5
Quartile 2		Female	0	0.0	14	14.4	32	33.0	1	1.0	0	0.0	47	48.5
		Subtotal	0	0.0	28	28.9	65	67.0	4	4.1	0	0.0	97	100.0
8/16-29	90	Male	0	0.0	18	20.0	21	23.3	0	0.0	0	0.0	39	43.3
Quartile 3		Female	0	0.0	28	31.1	23	25.6	0	0.0	0	0.0	51	56.7
		Subtotal	0	0.0	46	51.1	44	48.9	0	0.0	0	0.0	90	100.0
8/30- 9/18	85	Male	2	2.4	15	17.7	17	20.0	0	0.0	0	0.0	34	40.0
Quartile 4		Female	0	0.0	25	29.4	26	30.6	0	0.0	0	0.0	51	60.0
		Total	2	2.4	40	47.1	43	50.6	0	0.0	0	0.0	85	100.0
Season	356	Male	3	0.8	80	22.5	91	25.6	4	1.1	0	0.0	178	50.0
		Female	0	0.0	78	21.9	97	27.2	3	0.9	0	0.0	178	50.0
		Total	3	0.8	158	44.4	188	52.8	7	2.0	0	0.0	356	100.0
		Male Mean Length	553		592		617		615		-			
		SE	10		3		3		7		-			
		Female Mean Length	-		585		599		615		-			
		SE	-		3		3		13		-			

Note: Samples were collected by the City of Kaltag.

[a] Sample dates were stratified by quartiles based on Kaltag 5 ⅞-inch mesh drift gillnet catch totals.

Appendix C11.–Yukon River, Eagle sonar, fall chum salmon variable mesh drift gillnet test fishery project age and sex composition and mean length, 2008.

			Brood Year (Age)									
			2005		2004		2003		2002		2001	
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
8/2 - 10/4	359	Male	3	0.8	120	33.4	76	21.2	3	0.8	0	0.0	202	56.3
Mesh Size 5.25"		Female	7	1.9	93	25.9	56	15.6	1	0.3	0	0.0	157	43.7
		Subtotal	10	2.8	213	59.3	132	36.8	4	1.1	0	0.0	359	100.0
		Male Mean Length	573		605		619		640		-			
		SE	21		3		3		14		-			
		Female Mean Length	567		576		595		580		-			
		SE	15		3		4		-		-			
8/21 - 10/3	149	Male	0	0.0	64	43.0	63	42.3	2	1.3	0	0.0	129	86.6
Mesh Size 7.50"		Female	0	0.0	11	7.4	9	6.0	0	0.0	0	0.0	20	13.4
		Subtotal	0	0.0	75	50.3	72	48.3	2	1.3	0	0.0	149	100.0
		Male Mean Length	-		617		634		623		-			
		SE	-		4		3		13		-			
		Female Mean Length	-		599		601		-		-			
		SE	-		7		9		-		-			
All Mesh	508	Male	3	0.6	184	36.2	139	27.4	5	1.0	0	0.0	331	65.2
Combined		Female	7	1.4	104	20.5	65	12.8	1	0.2	0	0.0	177	34.8
		Total [a]	10	2.0	288	56.7	204	40.2	6	1.2	0	0.0	508	100.0
		Male Mean Length	573		609		626		633		-			
		SE	21		3		2		10		-			
		Female Mean Length	567		578		596		580		-			
		SE	15		3		3		-		-			

[a] The season total percentages by age group were based on sample size and do not indicate the age composition of the run passage estimate at Eagle sonar.

Appendix C12.–Chandalar River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)									
			2005		2004		2003		2002		2001	
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
10/11, 12	178	Male	2	1.1	28	15.7	42	23.6	6	3.4	0	0.0	78	43.8
		Female	4	2.2	45	25.3	41	23.0	7	3.9	3	1.7	100	56.2
		Total	6	3.4	73	41.0	83	46.6	13	7.3	3	1.7	178	100.0
		Male Mean Length	540		575		608		595		-			
		SE	10		6		4		4		-			
		Female Mean Length	543		552		578		560		593			
		SE	19		3		4		11		9			

Note: Samples were collected by the US Fish and Wildlife Service (USFWS). Ages were obtained using vertebrae.

Appendix C13.–Delta River carcass survey, fall chum salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)									
			2004		2003		2002		2001		2000	
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
10/30; 11/4, 17, 25	179	Male	0	0.0	33	18.4	56	31.3	9	5.0	0	0.0	98	54.7
		Female	3	1.7	30	16.8	39	21.8	8	4.5	1	0.6	81	45.3
		Total	3	1.7	63	35.2	95	53.1	17	9.5	1	0.6	179	100.0
		Male Mean Length	-		605		624		634		-			
		SE	-		4		4		9		-			
		Female Mean Length	573		578		596		614		-			
		SE	18		5		5		12		-			

Note: Ages were obtained using vertebrae.

Appendix C14.–Sheenjek River beach seine, fall chum salmon escapement project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)									
			2005		2004		2003		2002		2001	
Sample	Sample		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)	Total
Dates	Size		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9/3-22	116	Male	0	0.0	27	23.3	35	30.2	3	2.6	1	0.9	66	56.9
		Female	1	0.9	23	19.8	25	21.6	1	0.9	0	0.0	50	43.1
		Total	1	0.9	50	43.1	60	51.7	4	3.4	1	0.9	116	100.0
		Male Mean Length	-		589		621		623		680			
		SE	-		6		6		19		-			
		Female Mean Length	580		579		607		640		-			
		SE	-		7		5		-		-			

Note: Ages were obtained using vertebrae.

APPENDIX D: COHO SALMON TABLES

Appendix D1.–Yukon River, District 1, coho salmon commercial gillnet harvest age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)			
Dates	Size		No.	%	No.	%	No.	%	No.	%
7/17, 22, 25, 29	97	Male	16	1.03	736	46.39	33	2.06	785	49.48
Periods 1-4 [a]		Female	98	6.19	671	42.27	33	2.06	802	50.52
		Subtotal	115	7.22	1,407	88.66	65	4.12	1,587	100.0
8/1	110	Male	134	5.5	1,028	41.8	22	0.9	1,184	48.2
Period 5		Female	89	3.6	1,095	44.5	89	3.6	1,274	51.8
		Subtotal	223	9.1	2,123	86.4	112	4.5	2,458	100.0
8/26	98	Male	143	5.1	1,119	39.8	143	5.1	1,406	50.0
Period 6		Female	201	7.1	1,004	35.7	201	7.1	1,406	50.0
		Subtotal	344	12.2	2,123	75.5	344	12.2	2,812	100.0
8/30	103	Male	187	13.6	482	35.0	54	3.9	723	52.4
Period 7		Female	107	7.8	455	33.0	94	6.8	656	47.6
		Subtotal	295	21.4	937	68.0	147	10.7	1,379	100.0
9/2	107	Male	311	14.0	705	31.8	104	4.7	1,120	50.5
Period 8		Female	249	11.2	768	34.6	83	3.7	1,100	49.5
		Subtotal	560	25.2	1,473	66.4	187	8.4	2,220	100.0
9/5	54	Male	31	1.9	534	31.5	220	13.0	785	46.3
Period 9		Female	251	14.8	503	29.6	157	9.3	911	53.7
		Subtotal	283	16.7	1,036	61.1	377	22.2	1,696	100.0
9/8	52	Male	65	5.8	546	48.1	44	3.8	655	57.7
Period 10		Female	65	5.8	327	28.8	87	7.7	480	42.3
		Subtotal	131	11.5	873	76.9	131	11.5	1,135	100.0
9/10	0	Male	23	3.4	251	38.1	61	9.3	335	50.9
Period 11 [b]		Female	74	11.2	193	29.3	57	8.6	324	49.1
		Subtotal	96	14.6	444	67.5	118	17.9	659	100.0
	621	Male	912	6.5	5,401	38.7	681	4.9	6,994	50.2
All Periods		Female	1,135	8.1	5,016	36.0	801	5.7	6,952	49.8
		Total	2,047	14.7	10,417	74.7	1,482	10.6	13,946	100.0
		Male Mean Length	561		569		572			
		SE	5		2		6			
		Female Mean Length	568		565		568			
		SE	4		2		3			

Note: All District 1 fall commercial fishing periods allowed unrestricted mesh size gillnets. However, it is likely fishermen used 6-inch or smaller mesh size.

[a] Age and sex composition for periods 1–4 were estimated using samples collected during periods 3 and 4.

[b] Age and sex composition were estimated from periods 9 and 10.

Appendix D2.–Yukon River, Big Eddy, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%
7/26- 8/28	148	Male	2	1.4	75	50.7	8	5.4	85	57.4
		Female	7	4.7	46	31.1	10	6.8	63	42.6
		Total	9	6.1	121	81.8	18	12.2	148	100.0
		Male Mean Length	565		568		572			
		SE	5		3		7			
		Female Mean Length	573		570		577			
		SE	8		4		7			

Appendix D3.–Yukon River, Middle Mouth, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%
7/28- 8/28	56	Male	0	0.0	31	55.4	3	5.4	34	60.7
		Female	2	3.6	19	33.9	1	1.8	22	39.3
		Total	2	3.6	50	89.3	4	7.1	56	100.0
		Male Mean Length	-		562		575			
		SE	-		5		10			
		Female Mean Length	545		556		570			
		SE	25		6		-			

Appendix D4.–Yukon River, Big Eddy and Middle Mouth combined, coho salmon 6.0-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%
7/26- 8/28	204	Male	2	1.0	106	52.0	11	5.4	119	58.3
		Female	9	4.4	65	31.9	11	5.4	85	41.7
		Total	11	5.4	171	83.8	22	10.8	204	100.0
		Male Mean Length	565		566		573			
		SE	5		3		6			
		Female Mean Length	567		566		576			
		SE	9		3		6			

Appendix D5.–Yukon River, Mountain Village, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%
7/29- 9/7	153	Male	9	5.9	67	43.8	3	2.0	79	51.6
		Female	10	6.5	55	35.9	9	5.9	74	48.4
		Total	19	12.4	122	79.7	12	7.8	153	100.0
		Male Mean Length	570		562		560			
		SE	11		3		13			
		Female Mean Length	579		568		564			
		SE	5		3		8			

Note: Samples were collected by the Asacarsarmiut Traditional Council.

Appendix D6.–Yukon River, Kaltag, coho salmon 5 7/8-inch mesh drift gillnet test fishery project age and sex composition and mean length (mm), 2008.

			Brood Year (Age)							
			2005		2004		2003			
Sample	Sample		(1.1)		(2.1)		(3.1)		Total	
Dates	Size		No.	%	No.	%	No.	%	No.	%
8/17- 9/18	30	Male	1	3.3	13	43.3	1	3.3	15	50.0
		Female	3	10.0	11	36.7	1	3.3	15	50.0
		Total	4	13.3	24	80.0	2	6.7	30	100.0
		Male Mean Length	520		593		585			
		SE	-		8		-			
		Female Mean Length	563		565		590			
		SE	16		8		-			

Note: Samples were collected by the City of Kaltag.