

**Fishery Data Series No. 16-28**

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**Salmon Age and Sex Composition and Mean Lengths  
for the Yukon River Area, 2014**

by

**Shane M. Eaton**

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July 2016

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Mathematics, statistics</b>	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	$H_A$
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	$e$
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, $\chi^2$ , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient	
milliliter	mL	west	W	(multiple)	R
millimeter	mm	copyright	©	correlation coefficient (simple)	r
		corporate suffixes:		covariance	cov
<b>Weights and measures (English)</b>		Company	Co.	degree (angular)	$^\circ$
cubic feet per second	ft <sup>3</sup> /s	Corporation	Corp.	degrees of freedom	df
foot	ft	Incorporated	Inc.	expected value	$E$
gallon	gal	Limited	Ltd.	greater than	>
inch	in	District of Columbia	D.C.	greater than or equal to	$\geq$
mile	mi	et alii (and others)	et al.	harvest per unit effort	HPUE
nautical mile	nmi	et cetera (and so forth)	etc.	less than	<
ounce	oz	exempli gratia	e.g.	less than or equal to	$\leq$
pound	lb	(for example)		logarithm (natural)	ln
quart	qt	Federal Information Code	FIC	logarithm (base 10)	log
yard	yd	id est (that is)	i.e.	logarithm (specify base)	log <sub>2</sub> , etc.
		latitude or longitude	lat or long	minute (angular)	'
<b>Time and temperature</b>		monetary symbols (U.S.)	\$, ¢	not significant	NS
day	d	months (tables and figures): first three letters	Jan, ..., Dec	null hypothesis	$H_0$
degrees Celsius	°C	registered trademark	®	percent	%
degrees Fahrenheit	°F	trademark	™	probability	P
degrees kelvin	K	United States (adjective)	U.S.	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
hour	h	United States of America (noun)	USA	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
minute	min	U.S.C.	United States Code	second (angular)	"
second	s	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard deviation	SD
<b>Physics and chemistry</b>				standard error	SE
all atomic symbols				variance	
alternating current	AC			population sample	Var
ampere	A			sample	var
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				

***FISHERY DATA SERIES NO. 16-28***

**SALMON AGE AND SEX COMPOSITION AND MEAN LENGTHS FOR  
THE YUKON RIVER AREA, 2014**

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## ABSTRACT

Biological data were collected from Chinook (*Oncorhynchus tshawytscha*), summer chum (*O. keta*), fall chum (*O. keta*), and coho (*O. kisutch*) salmon at 19 locations along the U.S. portion of the Yukon River drainage in 2014. Age, sex, and length (ASL) data were obtained from 2,969 Chinook, 4,637 summer chum, 3,120 fall chum, and 1,654 coho salmon from commercial and subsistence harvests, as well as test fisheries and escapement projects. Samples were collected from salmon caught with gillnets, dip nets, fish wheels, beach seines, weir traps, and from hand-picked carcass. Where available, escapement estimates from weir projects were separated into temporal segments (strata) and commercial harvests were separated by fishing periods. The ASL data collected during the corresponding stratum or period were applied to the corresponding escapement estimate or commercial harvest to generate estimates of proportions and numbers by age and sex. At test fishery projects, ASL data were stratified into quartiles based on catch per unit effort (CPUE), commercial period, or mesh size.

In 2014, age-1.3 Chinook salmon predominated from all of the test fishery and escapement projects and most of the subsistence harvest samples. At many long-standing projects 5-year-old (age-1.3 and age-2.2) Chinook salmon percentages were above the long-term and 5-year averages, whereas the 4-year-old (age-1.2 and age-2.1) and 6-year-old (age-1.4 and age-2.3) percentages were near or below the long-term and 5-year averages. Both summer and fall chum salmon 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: age, sex, length (ASL), salmon, Chinook *Oncorhynchus tshawytscha*, summer chum, fall chum *O. keta*, coho *O. kisutch*, escapement, weir, test fishery, subsistence, commercial, Yukon River.

## INTRODUCTION

Age, sex, and length (ASL) data have been collected from Yukon River salmon species since the 1960s. In order to characterize annual spawning runs of each species, by specific location and for the drainage as a whole, ASL sampling must be conducted to adequately represent fisheries (subsistence and commercial) and escapement. Age composition estimates are necessary in order to estimate the total returns of salmon from each parent brood year; this information is used for inseason management, preseason outlooks, run reconstructions, and analysis of escapement goals.

Adult Chinook *Oncorhynchus tshawytscha* and summer chum *O. keta* salmon runs typically enter the mouth of the Yukon River during late May or early June to begin their upstream migration (Figure 1). These runs are followed by fall chum salmon, which enter the Yukon River from mid-July through early September. Summer chum salmon are genetically distinct from fall chum salmon and can be distinguished from their fall counterparts by their smaller size, lower oil content, and different spawning locations. Summer chum salmon spawn in the lower and middle portion of the drainage, whereas fall chum salmon spawn in the upper portion of the drainage (Crane et al. 2001; Estensen et al. 2013). Coho salmon *O. kisutch* enter the Yukon River from late July through September.

## COMMERCIAL FISHERIES

Commercial fishing for summer and fall chum and coho salmon occurs throughout the mainstem Yukon River and in the lower 224 river miles (rm) of the Tanana River. No commercial Chinook salmon harvest has taken place in the Yukon drainage since 2007 due to decreased run abundance. In 2014, the majority of the commercially-caught summer chum salmon were harvested from Districts 1, 2, and 4 (Figure 2; Newland and Garcia 2014). Most of the fall chum and coho salmon were harvested in Districts 1 and 2 (Figure 2; Estensen and Borba 2014).

In 2014, commercial fishing targeting summer chum salmon occurred from June 9 to July 15 in District 1, and fishing gear was restricted to dip net and beach seines for most of the summer

fishing season. During these periods fishermen were required to live release incidentally-caught Chinook salmon. Fishing with 6 in or less mesh gillnets was allowed starting on July 3 in District 1 until the end of the summer season, after the majority of the Chinook salmon run passed through this area. Concurrent subsistence and commercial fishing periods during this time allowed incidentally-caught Chinook salmon to be retained for subsistence purposes or live released (Newland and Garcia 2014). These gear restrictions allowed for earlier harvest of summer chum while reducing incidental harvest of Chinook salmon. Summer chum salmon commercial fishing occurred in Subdistrict 4A from June 23 to July 27 and in District 6 from July 11 to August 6. During most commercial fishing periods in Subdistrict 4A and 5, fishing periods in District 6 fish wheels only were allowed, and later the addition of 6 in or less mesh gillnets was allowed (Newland and Garcia 2014).

During the fall season (starting July 16 in District 1), fishing occurred from July 17 through September 5. All districts were allowed gillnets with 6 in or less mesh sizes to target fall chum and coho salmon, as well as fish wheels in Districts 4, 5, and 6. Commercial fishing in Subdistrict 5B targeting fall chum salmon occurred from August 12 to August 17 and in District 6 from August 22 to September 28. During all fall chum salmon directed commercial fishing periods in Districts 1, 5, and 6 the sale of incidentally harvested coho salmon was allowed (Estensen and Borba 2014).

## **SUBSISTENCE FISHERIES**

Subsistence fishing occurs throughout the Yukon River drainage, and most of the effort concentrated in the mainstem. Chinook, summer chum, fall chum, and coho salmon are the principal species utilized by subsistence fishermen. ASL data of subsistence salmon harvests have been collected from the Yukon River since 1961. The primary gear used to harvest subsistence salmon in Districts 4 and 5 was set and drift gillnets, and fish wheels were used in District 6 (Jallen et al. 2012).

## **TEST FISHERIES**

Test fishery projects provide assessments of run strength, timing, and ASL composition. Test fishery projects in 2014 operated at 6 locations in the mainstem Yukon River.

### **Lower Yukon test fishery**

The Big Eddy and Middle Mouth test fishery sites, 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 site is located on Kwikluak Pass (South Mouth) near the village of Emmonak (Figure 1). The Middle Mouth test fishery site is located on Kwipak Pass, upstream of Kawanak Pass (Middle Mouth) and Apoon Pass (North Mouth, Figure 1; Padilla and Brandt 2014).

During the summer season (ending July 15), 8.5 in mesh set gillnets were used to target Chinook salmon, and 5.5 in mesh drift gillnets were used to target summer chum salmon. With a very conservative Chinook salmon management strategy in place for 2014, all salmon caught in the LYTF 8.25 in mesh drift gillnet were released alive without sampling for ASL, and 8.5 in mesh set gillnet fishing was discontinued after June 6 for the Big Eddy location (Newland and Garcia 2014). This strategy achieved the LYTF project goals of estimating Chinook run timing and

relative abundance, even though ASL estimates could not be made. During the fall season (July 16 through September 16), 6.0 in mesh drift gillnets were used to target fall chum and coho salmon (Padilla and Brandt 2014).

### **Mountain Village test fishery**

The Mountain Village drift gillnet test fishery has operated irregularly during the fall season in District 2 since 1995 and began collecting ASL data in 2001. G. Sandone Consulting LLC, in cooperation with Asacarsarmiut Traditional Council, operated the project in 2014. The objectives were to estimate the 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 operated from July 17 to August 31 for the fall season, using 5.875 in mesh drift gillnets to target fall chum and coho salmon.

### **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 has collected ASL data from Chinook salmon annually since 1998. Test fishing was conducted to apportion the passage estimates by species; a series of gillnets with varying mesh sizes were drifted through the sonar site at regular intervals within a 24 hour period (Lozori and McIntosh 2014).

### **Eagle sonar**

Located in District 5, the Eagle sonar project (rm 1,206; Figure 1) estimates run timing and passage for Chinook and fall chum salmon. To apportion the passage estimates by species, a test fishery is conducted where gillnets of varying mesh sizes are drifted through the sonar site.

## **ESCAPEMENT PROJECTS**

Annual assessments of spawning escapements are monitored in Yukon River tributaries by means of weirs, counting towers, sonar projects, and carcass and aerial surveys (Estensen et al. 2013). The ground-based tributary assessment projects typically include an ASL sampling program, whereby samples are collected by capturing salmon with a trap built into a weir (see Tobin 1994 for an example of weir sampling and operation methods), fishing a beach seine, or hand-picking carcasses on the spawning grounds.

### **East Fork Andreafsky River weir**

The Andreafsky River joins the Yukon River near the village of Saint Mary's (rm 104, Figure 1). A weir has operated to estimate Chinook and summer chum salmon escapements in the East Fork Andreafsky River since 1994 (Mears 2013). The weir typically operates from mid-June to late July to estimate escapement and run timing of Chinook and summer chum salmon (Mears 2013). A weir trap was used to collect samples from Chinook and summer chum salmon in 2014.

### **Anvik River sonar**

The Anvik River flows for 124 river miles before joining the Yukon River near the community of Anvik (rm 318, Figure 1). Summer chum salmon escapements to the Anvik River have been monitored since 1979 using sonar (McEwen 2014). The sonar typically operates from late June to late July. ASL data were collected from summer chum salmon in 2014 caught with a beach seine.

### **Chena River tower**

The Chena River (rm 920) is a tributary of the Tanana River, located 225 rm upriver from the confluence of the Tanana and Yukon rivers (Figure 1). A counting tower has operated to estimate Chinook and summer chum salmon escapements in the Chena River since 1993 (Savereide and Huang 2014). ASL data from Chinook salmon were collected in 2014 from hand-picked carcasses.

### **Delta River carcass survey**

The Delta River (rm 1031) is a tributary of the Tanana River drainage 336 rm upstream from the confluence of the Tanana and Yukon rivers (Figure 1). Carcass surveys have been used to monitor Delta River fall chum salmon escapements since 1972 (JTC 2014). These surveys are typically conducted from late October to late November, contingent on run timing. Salmon are usually aged using scales; however, because of the location and timing of some projects higher in the drainage, scales are too absorbed to accurately estimate age; therefore, vertebrae were collected for age determination in 2014 from the Delta River.

### **Gisasa River weir**

The Gisasa River flows into the Koyukuk River 56 rm upstream from 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 the Koyukuk River (Carlson 2014). Chinook and summer chum salmon were captured for ASL sampling using a weir trap in 2014.

### **Salcha River tower**

The Salcha River (rm 965) is a tributary of the Tanana River, located 270 rm upriver from the confluence of the Tanana and Yukon rivers (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 (Savereide and Huang 2014). Counting is conducted from late June to early September. ASL data were collected from Chinook and summer chum salmon carcasses in 2014.

Yukon River ASL sampling projects were designed to account for temporal and spatial variability that exists within salmon populations, but there is potential for some biases caused by small sample sizes, scale absorption, and collection methods. ASL data users are cautioned to be aware of these inherent biases when interpreting data.

One possible bias, because of 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 because little of the outermost annulus remains. For these reasons, fall chum salmon carcasses were aged from vertebrae.

Another bias often results from inherent size selectivity in sample collection methods, which can also potentially skew sex composition because of the size difference between male and female 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; Molyneaux et al.

2005). This bias is most apparent with Chinook salmon, because of the large range in fish size, where males and younger aged fish predominate in the smaller size fish. In spawning ground carcass recoveries, Kissner and Hubartt (1986) indicated that Chinook salmon males tend to drift downstream whereas females tend to remain near their redds; 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 also 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).

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 Alaska Department of Fish and Game (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 and 1990–2003, data were published in the Regional Information Report series (e.g., Menard 1996). In 2004, ADF&G Division of Commercial Fisheries (CF) began using the Fishery Data Series to report annual Yukon River Area ASL data (e.g., Eaton 2014). Individual salmon ASL data records collected in the Yukon River area are available from the Artic-Yukon-Kuskokwim Salmon Database Management System website (AYKDBMS)<sup>1</sup>.

The purpose of this report is to provide a summary of the 2014 Yukon River drainage salmon ASL 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 age, size, and sex distribution of escapements, and spawner-recruit analysis.

## STUDY AREA

The Yukon River drainage encompasses coastal waters from Canal Point light, near Cape Stephens, southward to the Naskonat Peninsula (Estensen et al. 2013), and upstream to the headwaters near Whitehorse, Canada (Figure 1). The drainage supports major runs of Chinook, summer chum, fall chum, and coho salmon. In Alaska, all 3 of these salmon species are harvested in 1 or more fisheries: commercial, subsistence, personal use, test, or sport. For management purposes, the Alaska 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. Harvests also occur in the Canadian portion of the drainage by commercial, subsistence, aboriginal, sport, and domestic fishermen (JTC 2014). Pink (*O. gorbuscha*) and sockeye (*O. nerka*) salmon are indigenous to the drainage; however, neither species are harvested by fishermen to any significant extent.

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

## **OBJECTIVE**

The objective of the Yukon River ASL project was to summarize ASL data from Chinook, summer chum, fall chum, and coho salmon by fishery and location or by escapement project location throughout the Yukon River drainage in Alaska.

## **METHODS**

Various state, federal, and non-governmental agencies collected ASL samples and data. Methods described are those procedures recommended by ADF&G; other organizations may have collected and recorded data using slightly different procedures.

### **GENERAL SAMPLING PROCEDURES**

Scales were removed from the preferred area of the fish and mounted on gum cards for age determination by ADF&G staff (INPFC 1963). The preferred area is located on the left side of the fish, 2 rows of scales above the lateral line along a line from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin. Each chum salmon had 1 scale removed, and a minimum of 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 (Bales and DuBois 2007). In some tributaries, vertebrae were used to age summer and fall chum salmon when scale absorption made aging scales difficult. Vertebrae were removed from fish collected during carcass sampling projects. Sex was determined by examining internal reproductive organs or external characteristics such as kype development and presence of reproductive organs at the vent. At the LYTF, Mountain Village test fishery, and carcass sampling projects, sex was identified by inspection of internal organs; this method is considered more accurate than projects using external characteristics. Internal organs were not examined from commercial and some subsistence harvests and some non-ADF&G staffed projects because cutting fish would decrease fish value to commercial buyers and subsistence fishermen prefer to cut their fish immediately before processing.

Lengths were determined by measuring each fish from mid-eye to fork-of-tail with a flexible cloth tape, fish board, meter stick, caliper, or fish cradle and were recorded to the nearest 1 mm increment. A rigid measurement device was recommended to reduce errors that can occur when using a cloth tape.

### **SAMPLE COLLECTION**

#### **Commercial harvest sampling**

ADF&G Division of Commercial Fisheries crews conducted commercial harvest sampling for summer chum, fall chum, and coho salmon in Districts 1, 5, 6 and Subdistrict 4A (Table 1). Sample goals were 160 (each) summer and fall chum, and 120 coho salmon by period or week and district (Bromaghin 1993). District 1 samples were collected from a fish processor in Emmonak. Subdistrict 4A samples were collected from a processor in Kaltag where mostly female chum salmon were purchased. Subdistrict 5B samples were collected on site in Rampart Rapids. District 6 samples were collected at the fishing site and from a processing plant in North Pole.

Off-loading crews placed each chum or coho salmon in a species-specific tote or bin. When excess fish were not available, 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.

### **Subsistence harvest sampling**

The sample design for Chinook salmon subsistence harvests was to collect samples from selected villages in each district along the Yukon River mainstem. The resulting age composition estimates were later combined for a drainagewide estimate (e.g., Leba and DuBois 2011). ADF&G selected villages for sampling based on past success and data gaps among districts. Participants were given formal training on sample collection and asked to sample each fish caught for subsistence purposes (Molyneaux and Stockdale 2013). Collecting subsistence harvest samples was opportunistic and depended on timing, availability, and willingness of fishermen to participate. Assuming consistent effort by samplers, more fish were sampled when more fish were available which tended to self-weight the samples by gear, area, and time period collected.

Due to Chinook salmon subsistence harvest restrictions in 2014, few Chinook salmon samples were collected and sampling was not directed by specific gear types or mesh sizes; instead, any fish available were sampled. Samples were collected from the Fort Yukon Chinook salmon subsistence harvests, and Rampart Rapids and Tanana fall chum salmon subsistence harvests. Age, sex, length, gear type, and mesh size were collected from these locations. Spearfish Research organized sampling in Fort Yukon and ADF&G collected samples from Tanana and Rampart Rapids harvests (Table 1).

### **Test fishery sampling**

The test fishery sampling goals were up to 30 (each) Chinook, summer chum, and fall chum salmon daily, and up to 20 coho salmon daily. Every fish was sampled until the daily sample goal was reached, which was typically attained only during periods of peak run passage. In 2014, ADF&G crews sampled Chinook salmon at the LYTF Big Eddy and Middle Mouth sites from 8.5 in mesh set gillnets, summer chum salmon from 5.5 in drift gillnets, and fall chum and coho salmon from 6.0 in mesh drift gillnets (Table 1). Sex of fish from LYTF was determined by examination of internal reproductive organs for accuracy. The Pilot Station sonar crew (ADF&G) sampled Chinook salmon caught in a suite of drift gillnets of various mesh sizes (2.75 in, 4.0 in, 5.0 in, 5.25 in, 5.75 in, 6.5 in, 7.5 in, and 8.5 in) from early June to early August. The Eagle sonar crew (ADF&G) also used a suite of drift gillnets of various mesh sizes to sample Chinook (5.25 in, 6.5 in, 7.5 in, and 8.5 in) and fall chum salmon (5.25 in and 7.5 in). ASL sampling at Eagle sonar for Chinook salmon occurred from late June to late August and for fall chum from late July to late September. The Mountain Village test fishery (G. Sandone Consulting LLC.) used 5.875 in mesh drift gillnets to obtain samples from fall chum salmon. Every fish available was sampled from the Pilot Station sonar and Eagle sonar test fisheries because sample sizes rarely reached the daily sample goal. Sex determination from these sonar projects was from external characteristics because most of these fish were released live.

### **Escapement sampling**

Several organizations that operated weirs, sonar projects, counting towers, and other ground-based surveys conducted escapement sampling (Table 1). Sampling goals varied among projects,

but generally were 160 Chinook and 160 summer or fall chum salmon per event. An event may have been weekly sampling, quartiles based on run timing, or a single sample goal for the season. Suggested sample goals, specific project objectives, fish abundance, historical fish passage, run timing, water levels, personnel, and budget were some of the issues considered by project leaders when assessing sample goals. The U.S. Fish and Wildlife Service (USFWS) collected samples from the East Fork Andreafsky and Gisasa River weirs. Samples from the Anvik and Delta rivers were collected by ADF&G. Samples from the Chena River were collected by ADF&G Division of Sport Fish (SF). Chinook salmon samples from the Salcha River were collected by Bering Sea Fisherman's Association (BSFA) and chum salmon samples were collected by ADF&G.

## **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. Annuli are the regions of the scale where the circuli, or rings, are tightly spaced representing slower growth rates associated with winter conditions (Mosher 1969). Ages were recorded using European notation, with 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 1 to account for time spent in the gravel before hatching. Vertebrae samples were frozen, cleaned, and dried; ages were determined by visually counting annuli. Ages were entered into Microsoft Access or into a Microsoft Excel file depending upon the format in which sex and length data were originally recorded.<sup>2</sup>

## **DATA ANALYSIS**

The ASL composition of a returning salmon population often changes over the course of the season (Molyneaux et al. 2006); therefore, sample proportions may not be representative of the entire season if samples were not collected throughout the season and proportional to the harvest or escapement being described. Commercial harvest and escapement samples were used to estimate the ASL composition for the season total commercial harvest or escapement passage. To account for seasonal changes in ASL composition, these samples were grouped into time strata and the sample proportions from each stratum were applied to the harvest or escapement for each respective stratum. Strata were determined by examining the number and distribution of samples collected relative to the harvest or escapement and making a good fit among these with 3 or more strata. An attempt was made to include sufficient sample sizes within each stratum to estimate the proportion of each major age class in order to obtain a 95% confidence interval width no greater than of 10% of the estimate (Bromaghin 1993). The escapement or harvest by date was provided by project leaders and ADF&G fish ticket harvest reports.

Age and sex percentages and mean lengths from commercial harvest samples were applied to harvest numbers for summer chum, fall chum, and coho salmon in Districts 1, 4, 5 and 6. ASL compositions from escapement samples were applied to escapement passage estimates for Chinook and summer chum salmon at the East Fork Andreafsky and Gisasa river weirs and at the Anvik River sonar.

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<sup>2</sup> Product names used in this report are included for scientific completeness, but do not constitute a product endorsement.



For those projects where sample ASL estimates were applied to estimate proportions of harvest or escapement by age or sex, the following method was used.

### Estimation of proportion by age and sex

Proportion of fish of age class  $a$  of sex  $s$  during the stratified period  $i$  was estimated as

$$\hat{p}_{a,s,i} = \frac{n_{a,s,i}}{n_i}, \quad (1)$$

where

$n_{a,s,i}$  = number of samples for age class  $a$  of sex  $s$  in stratified period  $i$ , and

$n_i$  = number of samples in stratified period  $i$ .

The number of fish of specific age class  $a$  and sex  $s$  during a stratified period  $i$  was estimated as

$$\hat{N}_{a,s,i} = \frac{n_{a,s,i}}{n_i} N_i, \quad (2)$$

where

$n_{a,s,i}$  = number of samples for age class  $a$  of sex  $s$  in stratified period  $i$ ,

$n_i$  = number of samples in stratified period  $i$ , and

$N_i$  = number of fish during the stratified period  $i$ .

When data for all strata were available, the seasonwide proportion and number of fish of specific age  $a$  and sex  $s$  was estimated as

$$\hat{p}_{a,s} = \frac{1}{N} \sum_i N_i \hat{p}_{a,s,i}, \quad N = \sum_i N_i \quad (3)$$

$$\hat{N}_{a,s} = \sum_i \hat{N}_{a,s,i}.$$

Seasonwide age proportion was estimated as

$$\hat{p}_a = \frac{1}{N} \sum_i \sum_s N_i \hat{p}_{a,s,i}. \quad (4)$$

Seasonwide female proportion was estimated as

$$\hat{p}_{s=f} = \frac{1}{N} \sum_i \sum_a N_i \hat{p}_{a,s,i}. \quad (5)$$

### Estimation of mean length by age and sex

For the length, mean length and standard error for fish of age  $a$  and sex  $s$  in stratified period  $i$  was estimated as

$$\bar{y}_{a,s,i} = \frac{\sum_j y_{a,s,i,j}}{n_{a,s,i}} \quad (6)$$

$$se = \sqrt{\frac{s_{a,s,i}^2}{n_{a,s,i}}},$$

where

$y_{a,s,i,j}$  = length of  $j$  fish of age  $a$  and sex  $s$ , sampled during period  $i$ , and

$$s_{a,s,i}^2 = \frac{\sum_j (y_{a,s,i,j} - \bar{y}_{a,s,i})^2}{n_{a,s,i} - 1}. \quad (7)$$

When data for all strata were available, seasonwide mean length and standard error for fish of age  $a$  and sex  $s$  was estimated as

$$\bar{y}_{a,s} = \frac{1}{N_{a,s}} \sum_i N_{a,s,i} \bar{y}_{a,s,i} \quad (8)$$

$$se = \sqrt{\hat{V}(\bar{y}_{a,s})},$$

where

$$\hat{V}(\bar{y}_{a,s}) = \frac{1}{N_{a,s}^2} \sum_i N_{a,s,i}^2 \hat{V}(\bar{y}_{a,s,i}) \quad (9)$$

$$\hat{V}(\bar{y}_{a,s,i}) = \left( \frac{s_{a,s,i}^2}{n_{a,s,i}} \right).$$

Samples from other projects (test fisheries and subsistence harvests) were summarized by sample size only, without applying them to harvest numbers or run strength indices. Some of these samples were also be summarized by mesh size, gear type, location, or date ranges.

## RESULTS

### CHINOOK SALMON

In 2014, a total of 2,969 Chinook salmon was sampled for ASL data from the U.S. portion of the Yukon River drainage (Tables 2–5; Appendices A1–A11).

Age, sex, and length samples were collected from 105 subsistence-harvested Chinook salmon (Table 2; Appendix A1). In Subdistrict 5D, samples were collected from 105 Chinook salmon from the Fort Yukon subsistence harvest. Age-1.3 fish (47.6%) predominated, followed by age-1.2 (24.8%) and age-1.4 fish (15.2%; Appendix A1). Females represented 36.2% of the Fort Yukon subsistence harvest (Table 2).

ASL samples were collected from a total of 1,730 Chinook salmon at 4 test fisheries (Tables 2 and 3; Appendices A2–A7). Age-1.3 fish predominated from all locations. The Pilot Station sonar project had the highest percentages of age-1.3 fish at 66.0% ( $n = 444$ ; Table 2; Appendix A5). The LYTF Middle Mouth site had the highest percentage of age-1.4 fish at 47.8% ( $n = 519$ ), and the Tanana River sonar project had the lowest at 18.2% ( $n = 66$ ; Table 2; Appendices

A3 and A6). The Tanana River sonar also had the highest percentages of age-1.1 (4.5%) and age-1.2 (10.6%) fish (Table 2; Appendix A6). Female percentages from test fishery projects that operated continuously throughout the Chinook salmon run ranged from 30.6% from Pilot Station sonar ( $n = 444$ ) to 48.6% from the LYTF Middle Mouth site ( $n = 519$ ; Table 2; Appendices A5 and A3). At the LYTF Big Eddy site, females represented only 29.5% ( $n = 95$ ) of the samples, this is probably because of the project operating only during the early portion of the run (Table 2; Appendix A2).

Age distribution was different by sex from LYTF, where 100% of the age-1.1 and age-1.2 fish were male, 75.9% of the age-1.3 fish were male, and 69.4% of the age-1.4 fish were female (Appendix A4).

ASL samples were collected from a total of 1,134 Chinook salmon at 4 escapement projects (Tables 2 and 4; Appendices A8–A11). Age-1.3 Chinook salmon predominated from all escapement projects (Table 2; Appendices A8–A11). Female percentages ranged from 19.2% at the Gisasa River weir to 44.3% from the East Fork Andreafsky weir (Table 2; Appendices A10 and A8).

The male mean length by age from all projects was 579 mm for age-1.2, 710 mm for age-1.3, 830 mm for age-1.4, and 953 mm for age-1.5 fish. The female mean length by age was 599 mm for age-1.2, 749 mm for age-1.3, 844 mm for age-1.4, and 881 mm for age-1.5 fish (Table 5).

## **SUMMER CHUM SALMON**

A total of 4,637 summer chum salmon were sampled for ASL data from the Alaska portion of Yukon River drainage in 2014 (Tables 6–9; Appendices B1–B10).

ASL samples were collected from 1,905 commercially-harvested summer chum salmon; most of these ( $n = 1,096$ ) were from District 1 (Tables 6 and 7; Appendices B1–B3). Age-0.4 summer chum from the District 1 and Subdistrict 4A commercial harvests represented 63.0% and 57.4%, respectively. Age-0.3 fish from the District 6 harvest represented 52.7% of the harvest. Females from the summer chum salmon commercial harvest represented 54.9% from District 1, 89.8% from Subdistrict 4A, and 53.7% from District 6 (Tables 6 and 7). Female percentage was high in the Subdistrict 4A harvest because only female fish were bought by the processor during most fishing periods and males were released alive at fishing locations.

ASL samples from 1,580 summer chum salmon were collected from the LYTF project (Table 6; Appendices B4–B6). Age-0.4 fish were the most common age class from the LYTF project sites. Females made up 60.7% of the total at the LYTF Big Eddy site and 44.0% of the total at the LYTF Middle Mouth site (Table 6; Appendices B4–B6).

ASL samples from 1,152 summer chum salmon were collected from 4 escapement projects in tributaries of the Yukon River (Table 6; Appendices B7–B10). Age-0.3 fish predominated samples from the East Fork Andreafsky (70.5%) and Gisasa (47.8%) rivers (Table 6; Appendices B7 and B9). Age-0.4 fish predominated from the Anvik (48.3%) and Salcha (69.2%) rivers (Table 6; Appendix B10). The average percentage of females from all escapement projects was 50.2%. Samples from summer chum salmon escapement projects had female percentages ranging from 32.9% at East Fork Andreafsky River weir to 62.9% at Salcha River carcass survey (Table 6; Appendices B7 and B10).

The mean length for male summer chum salmon by age was 509 mm for age-0.2, 561 mm for age-0.3, 591 mm for age-0.4, 608 mm for age-0.5 fish, and 582 mm for age-0.6 fish. The female mean length by age was 522 mm for age-0.2, 537 mm for age-0.3, 564 mm for age-0.4, and 570 mm for age-0.5 fish (Table 9).

## **FALL CHUM SALMON**

A total of 3,120 fall chum salmon were sampled for ASL data from the Alaska portion of the Yukon River drainage in 2014 (Tables 6, 7, 9 and 10; Appendices C1–C11).

ASL samples were collected from 1,127 commercially-harvested fall chum salmon; most of these ( $n = 997$ ) were from District 1. Age-0.3 fish predominated from Districts 1 and 6. In Subdistrict 5B, age-0.3 and age-0.4 fish were nearly equally represented, at 47.4% and 50.0% of the total. Females represented 58.8% of the District 1, 50.7% of the Subdistrict 5B, and 65.5% of the District 6 commercial harvest (Tables 6 and 7; Appendices C1–3).

ASL samples were collected from 1,833 fall chum salmon harvested in 3 test fisheries (Table 6; Appendices C5–C9). Overall, the test fishery samples were predominated by age-0.3 fish (52.4%), with the exception of the LYTF Middle Mouth site (Table 6). The LYTF sites and Mountain Village test fishery had similar female percentages (ranging from 57.7% to 61.1%), whereas females at the Eagle sonar project represented only 37.6% of samples (Table 6).

ASL samples from 160 fall chum salmon were collected from the Delta River carcass survey project (Table 6; Appendices C10–C11). The percentages of age-0.3 and age-0.4 fish were nearly equal at 48.8% and 43.1%, respectively. Females represented 42.5% (Table 6 and 10; Appendices C10–C11).

The mean length for male fall chum salmon by age was 566 mm for age-0.2, 584 mm for age-0.3, 614 mm for age-0.4, 613 mm for age-0.5, and 589 mm for age-0.6 fish. The female mean length by age was 541 mm for age-0.2, 566 mm for age-0.3, 586 mm for age-0.4, and 593 mm for age-0.5 fish (Table 9).

## **COHO SALMON**

A total of 1,654 coho salmon were sampled for ASL data from the Yukon River drainage in 2014 (Tables 11 and 12; Appendices D1–D5).

ASL samples were collected from 1,096 commercially-harvested coho salmon from District 1 (Table 11). Age-2.1 fish predominated from District 1 at 80.0% of the harvest. Females comprised 52.3% of the District 1 commercial harvest (Table 11; Appendices D1).

ASL samples were collected from 558 coho salmon from the LYTF ( $n = 426$ ) and Mountain Village test fishery ( $n = 132$ ; Table 11; Appendices D2–D5). Overall, the test fishery samples were predominated by age-2.1 fish (81.8%), followed by age-1.1 (10.0%) and age-3.1 fish (8.2%). Females represented 52.9% of the test fishery samples (Table 11).

The male mean length from all sampled coho salmon by age was 541 mm for age-1.1, 554 mm for age-2.1, and 565 mm for age-3.1 fish. The female mean length from all sampled coho salmon by age was 552 mm for age-1.1, 559 mm for age-2.1, and 567 mm for age-3.1 fish (Table 12). In 2014, there was a difference in mean length by sex because females are slightly larger than males at age.

## DISCUSSION

Each year there are notable fluctuations in the ASL compositions from individual projects or single components of projects. These fluctuations in composition may show larger patterns in population structure; however, this study is not designed to find the cause of these fluctuations in the various projects. In 2014, several projects had components of the ASL composition that had notable deviations from historical averages.

In 2014, percentages of 3-year-old Chinook salmon from all escapement projects and LYTF were above long-term averages (Table 3 and Table 4). Pilot station test fishery caught more than average 3-year-old Chinook salmon, catching 18 age-1.1 fish where in the past 16 years the highest catch was 5 (Tables 3–4; AYKDBMS). This also correlates with anecdotal reports from fishermen and project leaders seeing more small Chinook salmon returning in 2014 than have been seen in the past (Stephanie Schmidt, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication, January 21, 2015). Percentages of 4-year-old (age-1.2 and age-2.1, brood year 2009) Chinook salmon from the 4 escapement projects and LYTF ranged from nearly equal to 16 percentage points below historical average. All escapement projects and LYTF had higher 5-year-old (brood year 2008) and lower 6-year-old (brood year 2007) Chinook salmon percentages than average (Table 4). Above average percentages of Chinook salmon from the 2009 brood year and below average percentages from the 2008 brood year were also observed in 2013.

The LYTF Big Eddy and Middle Mouth female summer chum salmon percentages showed a difference of 16.7 percentage points (Table 6). This difference in female percentages between Big Eddy and Middle Mouth has been observed in the past and is perplexing given that both of these projects use identical gear and operate concurrently (Table 8). Summer chum salmon from LYTF and fall chum salmon from the Delta River carcass survey had similar age percentages in 2014 compared to averages (Table 10). Age-0.3 LYTF summer chum and Delta River fall chum salmon were below average by 28 and 13 percentage points, respectively. Age-0.4 LYTF summer chum salmon and Delta River fall chum salmon were 25 and 12 percentage points above the recent 5-year and 1986–2013 averages, respectively (Table 8 and Table 10). This pattern was also observed in 2013.

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## **TABLES AND FIGURES**

Table 1.–Projects and salmon species for which age, sex, and length (ASL) data were collected in 2014 from the Yukon River Area.

Project type	Location	Salmon species (ASL summaries present = X)			
		Chinook	Summer chum	Fall chum	Coho
Commercial					
	District 1 <sup>a</sup>		X	X	X
	Subdistrict 4A <sup>a</sup>		X		
	District 5 <sup>a</sup>			X	
	District 6 <sup>a</sup>		X	X	
Subsistence					
	Subdistrict 5B <sup>a</sup>			X	
	Subdistrict 5D, Fort Yukon <sup>b</sup>	X			
Test fishery					
	Big Eddy <sup>a</sup>	X	X	X	X
	Middle Mouth <sup>a</sup>	X	X	X	X
	Mountain Village test fishery <sup>c</sup>			X	X
	Pilot Station sonar <sup>a</sup>	X			
	Tanana River sonar <sup>a</sup>	X			
	Eagle sonar <sup>a</sup>	X		X	
Escapement					
	Andreafsky River, East Fork <sup>d</sup>	X	X		
	Anvik River <sup>a</sup>		X		
	Chena River <sup>e</sup>	X			
	Delta River <sup>a</sup>			X	
	Gisasa River <sup>d</sup>	X	X		
	Salcha River	X <sup>f</sup>	X <sup>a</sup>		

<sup>a</sup> Project was operated by the Alaska Department of Fish and Game, Division of Commercial Fisheries.

<sup>b</sup> Project was operated by Spearfish Research.

<sup>c</sup> Project was operated by Gene Sandone Consulting, LLC.

<sup>d</sup> Project was operated by the United States Fish and Wildlife Service.

<sup>e</sup> Project was operated by the Alaska Department of Fish and Game, Division of Sport Fish.

<sup>f</sup> Project was operated by the Bering Sea Fishermen's Association.

Table 2.–Yukon River Chinook salmon age and female percentages from commercial, subsistence, test fishery, escapement, and sampling projects, 2014.

Project type Location (gear)	Sample size	Percent (%)											
		Brood year (age)										Female	
		2010 (1.1)	2009 (1.2)	(2.1)	2008 (1.3)	(2.2)	2007 (1.4)	(2.3)	2006 (1.5)	(2.4)	2005 (1.6)		(2.5)
Subsistence													
Subdistrict 5–D, Fort Yukon (gillnet, fish wheel)	105	10.5	24.8	–	47.6	–	15.2	1.9	–	–	–	–	36.2
Test fishery													
LYTF Big Eddy site (8.5" mesh set gillnet)	95	–	3.2	–	65.3	–	31.6	–	–	–	–	–	29.5
LYTF Middle Mouth site (8.5" mesh set gillnet)	519	0.2	0.8	–	48.0	–	47.8	0.2	1.9	1.2	–	–	48.6
LYTF Big Eddy & Middle Mouth sites combined (8.5" mesh set gillnet)	614	0.2	1.1	–	50.7	–	45.3	0.2	1.6	1.0	–	–	45.6
Pilot Station sonar (2.75" to 8.5" mesh drift gillnet)	444	4.1	9.5	–	66.0	–	18.7	0.9	0.9	–	–	–	30.6
Tanana River sonar (2.75" to 7.5" mesh drift gillnet, fish wheel)	66	4.5	10.6	–	65.2	–	18.2	–	–	1.5	–	–	48.5
Eagle sonar (5.25" to 8.5" mesh drift gillnet)	606	0.2	6.6	–	50.3	0.2	39.3	0.8	1.2	1.5	–	–	35.1
Escapement													
Andreafsky River, East Fork (weir trap)	317	1.1	6.8	0.1	80.8	0.1	10.9	0.2	–	–	–	–	44.3
Chena River (carcass)	284	1.4	3.5	–	83.1	–	10.9	0.7	–	0.4	–	–	33.1
Gisasa River (weir trap)	130	0.8	17.7	–	66.2	–	13.8	–	1.5	–	–	–	19.2
Salcha River (carcass)	403	1.5	14.6	–	59.6	0.2	22.6	–	1.5	–	–	–	32.0
Total Chinook <sup>a</sup>		2,969											

<sup>a</sup> Does not include sample size from Big Eddy and Middle Mouth sites combined.

Table 3.–Chinook salmon age and female percentages from the Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) 8.5 in mesh set gillnet, 1985–2014.

Year	Sample size	Number of days	Percent (%)						Female
			Age						
			3 yr (1.1)	4 yr (1.2, 2.1)	5 yr (1.3, 2.2)	6 yr (1.4, 2.3)	7 yr (1.5, 2.4)	8 yr (1.6, 2.5)	
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
2009	1,035	42	0.0	3.4	9.1	85.5	2.0	0.0	60.3
2010	1,328	37	0.2	4.1	59.6	33.6	2.6	0.0	47.8
2011	998	42	0.0	1.4	31.7	62.8	4.0	0.1	52.4
2012	807	34	0.0	1.2	29.9	66.7	2.2	0.0	62.6
2013	559	34	0.2	1.8	21.1	73.9	3.0	0.0	62.4
2014	614	43	0.2	1.1	50.7	45.4	2.6	0.0	45.6
Average <sup>a</sup> (1994, 1998–2011)	1,030	41	0.0	2.0	29.2	63.7	5.0	0.0	52.6
5-yr average (2009–2013)	945	37.8	0.1	2.4	30.3	64.5	2.8	0.0	57.1

Note: The Lower Yukon River test fishery was conducted from the end of May through July 15. Before 1998, this test fishery was often discontinuous or was not conducted throughout the season. “Number of days” refers only to those days that scale samples were collected from Chinook salmon and aged.

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

Table 4.—Yukon River Chinook salmon age and female percentages from selected escapement projects, 1985–2014.

Project	Year	Sample size	Percent (%)						Female
			Age						
			3 yr (1.1)	4 yr (1.2, 2.1)	5 yr (1.3, 2.2)	6 yr (1.4, 2.3)	7 yr (1.5, 2.4)	8 yr (1.6, 2.5)	
Andreafsky River,	1985 <sup>a</sup>	445	0.0	39.6	12.8	43.6	4.0	0.0	33.2
East Fork	1986 <sup>b</sup>	275	0.0	2.2	69.8	21.8	6.2	0.0	23.3
	1987 <sup>b</sup>	383	0.3	4.7	8.9	83.7	2.4	0.0	56.1
	1988 <sup>b</sup>	403	0.2	27.8	29.5	26.8	15.6	0.0	38.7
	1989	227	0.0	5.3	71.8	21.2	1.7	0.0	13.6
	1990	583	0.6	31.8	28.7	37.9	0.9	0.0	41.6
	1991	424	0.0	10.3	56.9	30.5	2.3	0.0	33.9
	1992	367	0.0	23.1	48.1	25.0	3.8	0.0	21.2
	1993	406	0.4	16.9	38.7	41.8	2.3	0.0	29.9
	1994 <sup>c</sup>	440	0.0	8.0	53.0	34.5	4.3	0.2	35.5
	1995 <sup>c</sup>	340	0.0	35.0	15.7	47.5	1.7	0.0	43.7
	1996 <sup>c</sup>	332	1.2	6.6	74.1	13.9	4.2	0.0	41.9
	1997 <sup>c</sup>	410	0.0	52.7	15.6	31.7	0.0	0.0	36.8
	1998 <sup>c</sup>	370	0.0	16.8	71.4	11.1	0.8	0.0	29.0
	1999 <sup>c</sup>	357	0.3	34.5	32.2	32.5	0.6	0.0	28.6
	2000 <sup>c</sup>	175	0.0	12.6	49.1	38.3	0.0	0.0	54.3
	2001 <sup>c, d</sup>	124	0.0	14.5	18.5	64.5	2.4	0.0	63.7
2002 <sup>c</sup>	436	0.0	30.5	48.2	20.0	1.4	0.0	21.1	
2003 <sup>c</sup>	510	0.5	16.0	51.9	30.7	0.8	0.0	46.2	
2004 <sup>c</sup>	508	0.0	39.9	42.6	17.1	0.4	0.0	37.3	
2005 <sup>c</sup>	389	0.0	15.0	64.3	20.2	0.5	0.0	50.2	
2006 <sup>c</sup>	454	0.0	17.0	54.9	28.1	0.0	0.0	42.6	
2007 <sup>c, e</sup>	631	0.0	41.7	25.7	32.0	0.6	0.0	—	
2008 <sup>c</sup>	466	0.0	3.8	74.5	20.1	1.5	0.0	34.8	
2009 <sup>c</sup>	2,312	0.1	25.0	15.5	58.7	0.5	0.0	46.0	
2010 <sup>c</sup>	624	0.3	41.3	46.8	10.5	1.0	0.1	48.6	
2011 <sup>c</sup>	542	0.0	45.6	39.6	14.6	0.2	0.0	19.9	
2012 <sup>c</sup>	572	0.2	11.1	64.6	23.7	0.3	0.0	28.2	
2013 <sup>c</sup>	447	0.6	47.9	21.6	29.3	0.6	0.0	40.4	
2014 <sup>c</sup>	317	1.1	7.0	80.9	10.7	0.0	0.0	44.3	
Average (1985–2013) <sup>f</sup>			0.2	23.7	43.8	30.3	2.1	0.0	36.2
5-yr Average (2009–2013) <sup>f</sup>			0.2	34.2	37.6	27.4	0.5	0.0	36.6

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Table 4.–Page 2 of 4.

Project	Year	Sample size	Percent (%)						Female
			Age						
			3 yr (1.1)	4 yr (1.2, 2.1)	5 yr (1.3, 2.2)	6 yr (1.4, 2.3)	7 yr (1.5, 2.4)	8 yr (1.6, 2.5)	
Chena River	1985 <sup>g</sup>	513	0.0	12.1	21.7	59.2	7.0	0.0	52.5
	1986 <sup>g</sup>	729	0.1	9.3	51.2	29.9	9.3	0.1	25.4
	1987 <sup>g</sup>	560	0.0	2.9	13.1	75.6	8.4	0.0	58.0
	1988 <sup>g</sup>	468	0.6	10.5	17.5	46.4	24.6	0.4	60.9
	1989 <sup>g</sup>	288	0.3	4.2	30.2	54.9	10.4	0.0	64.9
	1990 <sup>g</sup>	522	0.0	23.8	25.7	46.7	3.8	0.0	46.2
	1991 <sup>g</sup>	337	0.0	8.3	55.8	28.5	7.4	0.0	31.5
	1992 <sup>g</sup>	464	1.9	40.7	16.4	40.5	0.4	0.0	37.7
	1993 <sup>b</sup>	187	0.5	29.4	41.2	27.8	1.1	0.0	16.6
	1994 <sup>b</sup>	512	0.0	2.9	43.6	51.2	2.3	0.0	45.1
	1995 <sup>b</sup>	464	0.0	4.4	20.9	70.9	3.8	0.0	66.0
	1996 <sup>b</sup>	514	2.1	6.2	44.2	23.5	23.9	0.0	44.0
	1997 <sup>b</sup>	702	0.3	37.2	13.4	48.0	1.1	0.0	39.6
	1998 <sup>b</sup>	228	0.0	4.4	72.4	18.4	4.8	0.0	41.2
	1999 <sup>b</sup>	318	0.9	7.9	25.2	65.4	0.6	0.0	58.8
	2000 <sup>b</sup>	149	0.0	20.1	35.6	35.6	8.7	0.0	34.9
	2001 <sup>b</sup>	521	0.6	9.6	33.6	51.2	5.0	0.0	44.0
	2002 <sup>b</sup>	373	0.1	29.0	29.8	38.5	2.7	0.0	31.7
	2003 <sup>b</sup>	370	0.0	5.1	46.5	41.6	6.8	0.0	44.9
	2004 <sup>b</sup>	158	0.0	8.9	17.7	71.5	1.9	0.0	66.5
	2005 <sup>b</sup>	553	0.0	6.5	49.9	39.5	4.1	0.0	42.4
	2006 <sup>b</sup>	362	0.0	12.7	45.6	40.6	1.1	0.0	45.9
	2007 <sup>b, h</sup>	50	0.0	16.0	50.0	34.0	0.0	0.0	40.0
	2008 <sup>b, h</sup>	36	0.0	27.8	61.1	11.1	0.0	0.0	44.4
	2009 <sup>b</sup>	442	0.0	14.5	17.0	67.8	0.7	0.0	55.1
	2010 <sup>b</sup>	80	0.0	13.6	51.9	32.1	2.5	0.0	30.9
	2011 <sup>b</sup>	425	0.2	22.6	46.8	28.7	1.6	0.0	31.8
	2012 <sup>b</sup>	198	0.5	5.1	45.5	49.0	0.0	0.0	55.6
	2013 <sup>b</sup>	176	1.1	29.0	22.2	46.6	1.1	0.0	40.3
	2014 <sup>b</sup>	284	1.4	3.5	83.1	11.6	0.4	0.0	33.1
Average (1985–2013) <sup>f</sup>			0.3	14.1	34.6	45.5	5.4	0.0	44.9
5-yr Average (2009–2013) <sup>f</sup>			0.4	17.0	36.7	44.8	1.2	0.0	42.7

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Table 4.–Page 3 of 4.

Project	Year	Sample size	Percent (%)						Female
			Age						
			3 yr (1.1)	4 yr (1.2, 2.1)	5 yr (1.3, 2.2)	6 yr (1.4, 2.3)	7 yr (1.5, 2.4)	8 yr (1.6, 2.5)	
Gisasa	1995 <sup>c</sup>	346	0.0	0.6	21.4	74.2	3.8	0.0	46.0
River	1996 <sup>c</sup>	339	0.0	0.0	27.3	39.4	33.3	0.0	19.5
	1997 <sup>c</sup>	497	0.0	1.6	7.8	89.9	0.8	0.0	26.0
	1998 <sup>c</sup>	352	0.0	1.8	36.8	50.9	10.5	0.0	16.2
	1999 <sup>c</sup>	509	0.0	0.0	7.5	91.8	0.7	0.0	26.3
	2000 <sup>c</sup>	646	0.5	0.0	23.0	70.7	5.9	0.0	34.4
	2001 <sup>c</sup>	636	0.2	16.7	21.9	58.5	2.8	0.0	49.2
	2002 <sup>c</sup>	526	0.0	31.9	41.8	23.4	2.9	0.0	20.7
	2003 <sup>c</sup>	472	0.4	5.5	67.8	25.4	1.0	0.0	35.3
	2004 <sup>c</sup>	540	0.5	41.2	32.9	25.2	0.2	0.0	30.1
	2005 <sup>c</sup>	591	0.0	28.5	55.3	15.8	0.4	0.0	34.0
	2006 <sup>c</sup>	530	0.1	18.9	67.2	13.6	0.2	0.0	28.2
	2007 <sup>c</sup>	336	0.0	30.4	20.7	48.7	0.2	0.0	39.0
	2008 <sup>c</sup>	466	0.3	19.1	63.9	13.6	3.1	0.0	16.2
	2009 <sup>c</sup>	521	0.0	42.6	24.1	33.1	0.2	0.0	29.3
2010 <sup>c</sup>	492	0.3	43.7	46.7	8.7	0.5	0.0	29.0	
2011 <sup>c</sup>	597	0.0	30.4	56.7	12.3	0.3	0.3	18.0	
2012 <sup>c</sup>	523	0.0	11.4	60.9	26.9	0.7	0.0	33.4	
2013 <sup>c</sup>	459	0.0	28.7	30.3	39.6	1.2	0.0	34.1	
2014 <sup>c</sup>	130	0.8	17.7	66.2	13.8	1.5	0.0	19.2	
Average (1995–2013) <sup>f</sup>			0.1	18.6	37.6	40.1	3.6	0.0	29.7
5-yr Average (2009–2013) <sup>f</sup>			0.1	31.4	43.7	24.1	0.6	0.1	28.8

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Table 4.–Page 4 of 4.

Project	Year	Sample size	Percent (%)						Female
			Age						
			3 yr (1.1)	4 yr (1.2, 2.1)	5 yr (1.3, 2.2)	6 yr (1.4, 2.3)	7 yr (1.5, 2.4)	8 yr (1.6, 2.5)	
Salcha River	1985 <sup>g</sup>	511	0.0	12.3	17.6	64.8	5.3	0.0	48.5
	1986 <sup>g</sup>	586	0.2	11.8	43.7	29.5	14.8	0.0	35.8
	1987 <sup>g</sup>	551	0.2	6.0	12.6	73.5	7.8	0.0	62.8
	1988 <sup>g</sup>	497	0.4	20.3	22.5	42.1	14.7	0.0	39.6
	1989 <sup>g</sup>	222	0.5	4.1	28.9	57.8	8.8	0.0	62.2
	1990 <sup>g</sup>	498	0.2	17.6	24.9	48.9	8.3	0.0	48.9
	1991 <sup>g</sup>	515	0.2	8.2	44.3	41.4	5.8	0.2	47.2
	1992 <sup>g</sup>	646	1.2	30.8	28.6	38.2	1.1	0.0	34.4
	1993 <sup>b</sup>	453	0.9	28.0	39.1	31.1	0.9	0.0	27.6
	1994 <sup>b</sup>	524	0.6	2.7	39.1	52.9	4.8	0.0	44.5
	1995 <sup>b</sup>	646	0.0	13.6	20.6	62.8	3.1	0.0	56.0
	1996 <sup>b</sup>	406	2.7	6.2	38.4	28.6	24.1	0.0	50.8
	1997 <sup>b</sup>	180	0.0	14.4	14.4	69.4	1.7	0.0	50.0
	1998 <sup>b</sup>	352	2.4	4.9	72.4	17.9	2.4	0.0	30.0
	1999 <sup>b</sup>	307	0.0	9.1	24.1	66.4	0.3	0.0	54.7
	2000 <sup>b, g</sup>	41	0.0	22.0	48.8	24.4	4.9	0.0	43.9
	2001 <sup>b</sup>	192	0.5	10.4	33.9	52.1	3.1	0.0	37.5
	2002 <sup>b</sup>	282	0.0	36.2	13.8	38.7	11.3	0.0	34.8
	2003 <sup>b</sup>	151	0.7	7.3	42.4	42.4	7.3	0.0	42.4
	2004 <sup>b</sup>	229	0.0	9.2	8.3	81.7	0.9	0.0	62.9
	2005 <sup>b</sup>	602	0.0	9.3	41.5	46.2	3.0	0.0	54.3
	2006 <sup>b</sup>	509	0.0	5.7	49.3	43.0	2.0	0.0	43.4
	2007 <sup>b</sup>	308	0.0	22.4	26.9	50.3	0.3	0.0	35.7
	2008 <sup>b</sup>	303	0.7	9.9	51.8	36.0	1.7	0.0	39.3
	2009 <sup>b</sup>	458	0.0	31.7	21.4	46.7	0.2	0.0	39.1
	2010 <sup>b</sup>	410	0.5	25.5	58.0	14.8	1.2	0.0	30.3
	2011 <sup>b</sup>	527	0.2	14.6	35.5	48.2	1.5	0.0	42.1
	2012 <sup>b</sup>	420	0.2	6.0	32.9	59.3	1.7	0.0	59.8
	2013 <sup>b</sup>	179	1.1	11.2	15.6	69.3	2.8	0.0	50.3
	2014 <sup>b</sup>	403	1.5	14.6	59.8	22.6	1.5	0.0	32.0
	Average (1985–2013) <sup>f</sup>		0.5	13.9	32.2	48.4	5.0	0.0	45.2
	5-yr average (2009–2013) <sup>f</sup>		0.4	17.8	32.7	47.7	1.5	0.0	44.3

<sup>a</sup> Project was operated as sonar.

<sup>b</sup> Project was operated as a counting tower.

<sup>c</sup> Project was operated as weir.

<sup>d</sup> Sampling dates may not represent run, 2001 East Fork Andreafsky River is not included in average.

<sup>e</sup> Percent female data not available.

<sup>f</sup> Averages were not weighted by number of fish sampled each year.

<sup>g</sup> Samples were from mark–recapture project.

<sup>h</sup> Small sample size, not included in average.



Table 5.–Yukon River Chinook salmon mean length (mm) by sex, project, gear, and age, 2014.

Sex	Project location	Project type and (gear)	Brood year (Age)										
			2010 (1.1)	2009 (1.2) (2.1)		2008 (1.3) (2.2)		2007 (1.4) (2.3)		2006 (1.5) (2.4)		2005 (1.6) (2.5)	
Male	Subdistrict 5D, Fort Yukon	Sub (3.5" SGN, 6" SGN, FW)	422	614	–	705	–	908	665	–	–	–	–
	LYTF Big Eddy site	TF (8.5" SGN)	–	595	–	714	–	812	–	–	–	–	–
	LYTF Middle Mouth site	TF (8.5" SGN)	403	570	–	750	–	821	–	946	789	–	–
	Pilot Station Sonar	TF (DGN)	394	577	–	707	–	824	691	848	–	–	–
	Tanana River Sonar	TF (DGN)	408	652	–	727	–	883	–	–	–	–	–
	Eagle Sonar	TF (DGN)	405	570	–	710	518	871	685	966	831	–	–
	Andreafsky River, E.F.	Esc (WR)	397	526	351	702	456	830	–	–	–	–	–
	Chena River	Esc (CR)	371	573	–	693	–	754	–	–	812	–	–
	Gisasa River	Esc (WR)	415	536	–	675	–	770	–	–	–	–	–
	Salcha River	Esc (CR)	392	579	–	712	605	831	–	1,050	–	–	–
	Average male mean length <sup>a</sup>		401	579	351	710	526	830	680	953	811	–	–
	SE <sup>a</sup>		5	11	–	6	43	15	8	41	12	–	–
Female	Subdistrict 5D, Fort Yukon	Sub (3.5" SGN, 6" SGN, FW)	413	588	–	697	–	835	765	–	–	–	–
	LYTF Big Eddy site	TF (8.5" SGN)	–	–	–	797	–	863	–	–	–	–	–
	LYTF Middle Mouth site	TF (8.5" SGN)	–	–	–	784	–	840	811	905	830	–	–
	Pilot Station Sonar	TF (DGN)	402	610	–	720	–	842	–	864	–	–	–
	Tanana River Sonar	TF (DGN)	–	615	–	729	–	840	–	–	763	–	–
	Eagle Sonar	TF (DGN)	–	–	–	748	–	843	789	888	847	–	–
	Andreafsky River, E.F.	Esc (WR)	–	582	–	708	–	857	680	–	–	–	–
	Chena River	Esc (CR)	–	–	–	758	–	838	793	–	–	–	–
	Gisasa River	Esc (WR)	–	–	–	760	–	821	–	825	–	–	–
	Salcha River	Esc (CR)	–	–	–	791	–	857	–	922	–	–	–
	Average female mean length <sup>a</sup>		408	599	–	749	–	844	768	881	813	–	–
	SE <sup>a</sup>		6	8	–	11	–	4	23	17	26	–	–

Note: Com is commercial, Sub is subsistence, TF is test fishery, Esc is escapement, SGN is set gillnet, DGN is drift gillnet, FW is fish wheel, WR is weir, CR is carcass, DP is dip net, and BS is Beach Seine.

<sup>a</sup> Averages were not weighted by sample sizes.

Table 6.–Yukon River chum salmon age and female percentages from commercial, subsistence, test fishery, and escapement projects, 2014.

Project type Location (gear)	Sample size	Percent (%)					Female
		Age					
		0.2	0.3	0.4	0.5	0.6	
<b>Commercial - summer chum</b>							
District 1 (dip net, beach seine, ≤5.5" and ≤6" gillnet)	1,096	0.3	32.3	63.0	4.3	0.1	54.9
Subdistrict 4A (fish wheel) <sup>a</sup>	507	0.6	38.0	57.4	4.0	0.0	89.8
District 6 (fish wheel)	302	0.5	52.7	46.1	0.7	0.0	53.7
Commercial summer chum average <sup>b</sup>		0.5	41.0	55.5	3.0	0.0	66.1
<b>Commercial - fall chum</b>							
District 1 (≤6" gillnet)	997	1.9	64.9	32.5	0.8	0.0	58.8
District 5B (fish wheel)	75	0.0	47.4	50.0	2.6	0.0	50.7
District 6 (fish wheel)	55	0.0	63.9	36.1	0.0	0.0	65.5
Commercial fall chum average <sup>b</sup>		0.9	56.1	41.3	1.7	0.0	54.8
<b>Test fishery - summer chum</b>							
LYTF Big Eddy site (5.5" drift gillnet)	1,028	0.2	23.2	71.2	5.4	0.0	60.7
LYTF Middle Mouth site (5.5" drift gillnet)	552	0.0	11.9	84.0	4.1	0.0	44.0
Test fishery summer chum average <sup>b</sup>		0.1	17.6	77.6	4.8	0.0	52.4
<b>Test fishery - fall chum</b>							
LYTF Big Eddy site (6.0" drift gillnet)	721	2.8	55.2	41.0	0.9	0.0	58.8
LYTF Middle Mouth site (6.0" drift gillnet)	260	1.3	36.7	58.7	3.3	0.0	57.7
Mountain Village test fish (5.875" mesh drift gillnet)	229	0.7	55.7	40.7	2.9	0.0	61.1
Eagle sonar (5.25" and 7.5" mesh drift gillnet)	623	1.7	62.0	35.9	0.4	0.0	37.6
Test fishery fall chum average <sup>b</sup>		1.6	52.4	44.1	1.9	0.0	53.8
<b>Escapement - summer chum</b>							
Andreafsky River, East Fork (weir trap)	592	0.8	70.5	21.5	7.1	0.0	32.9
Anvik River (beach seine)	152	0.0	44.8	48.3	6.9	0.0	54.6
Gisasa River (weir trap)	249	1.8	47.8	47.0	3.4	0.0	50.3
Salcha River (carcass) <sup>c</sup>	159	0.0	25.8	69.2	5.0	0.0	62.9
Escapement summer chum average <sup>b</sup>		0.6	47.2	46.5	5.6	0.0	50.2
<b>Escapement - fall chum</b>							
Delta River (carcass) <sup>c</sup>	160	1.3	48.8	43.1	6.3	0.6	42.5
Escapement fall chum average <sup>b</sup>		1.3	48.8	43.1	6.3	0.6	42.5
Total summer chum	4,637						
Total fall chum	3,120						

<sup>a</sup> Only females were bought during all periods except Period 1 and Period 4.

<sup>b</sup> Averages were not weighted by sample sizes.

<sup>c</sup> Vertebrae were used for age determination.

Table 7.–Yukon River summer and fall chum salmon commercial harvest age and sex composition by district, 2014.

Season	District	Sample size	Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	No.	%	No.	%	No.	%	No.
Summer														
District 1 <sup>a</sup>	1,096	Male	121	0.1	28,066	14.2	56,244	28.4	4,748	2.4	130	0.1	89,309	45.1
		Female	554	0.3	35,924	18.1	68,643	34.6	3,810	1.9	–	–	108,931	54.9
		Total	675	0.3	63,990	32.3	124,887	63.0	8,558	4.3	130	0.1	198,240	100.0
Subdistrict 4A <sup>b, c</sup>	507	Male	–	–	3,363	3.5	6,068	6.3	427	0.4	–	–	9,858	10.2
		Female	569	0.6	33,277	34.5	49,278	51.1	3,404	3.5	–	–	86,527	89.8
		Total	569	0.6	36,639	38.0	55,345	57.4	3,831	4.0	–	–	96,385	100.0
District 6 <sup>b</sup>	302	Male	30	0.4	1,628	23.6	1,540	22.3	–	–	–	–	3,198	46.3
		Female	7	0.1	2,015	29.1	1,647	23.8	45	0.7	–	–	3,714	53.7
		Total	37	0.5	3,643	52.7	3,187	46.1	45	0.7	–	–	6,912	100.0
Fall														
District 1 <sup>a</sup>	997	Male	448	0.9	12,708	24.5	7,828	15.1	360	0.7	–	–	21,343	41.2
		Female	566	1.1	19,770	38.1	9,914	19.1	230	0.4	–	–	30,480	58.8
		Total	1,014	2.0	32,478	62.7	17,741	34.2	590	1.1	–	–	51,823	100.0
Subdistrict 5B <sup>b</sup>	75	Male	–	–	337	26.7	253	20.0	34	2.7	–	–	624	49.3
		Female	–	–	303	24.0	320	25.3	17	1.3	–	–	640	50.7
		Total	–	–	640	50.7	573	45.3	51	4.0	–	–	1,264	100.0
District 6 <sup>b</sup>	286	Male	–	–	490	14.5	674	20.0	–	–	–	–	1,163	34.5
		Female	–	–	1,408	41.8	796	23.6	–	–	–	–	2,205	65.5
		Total	–	–	1,898	56.4	1,470	43.6	–	–	–	–	3,368	100.0

<sup>a</sup> Commercial fishing was dip net, beach seine, ≤5.5 in and ≤6.0 in mesh gillnets.

<sup>b</sup> Commercial fishing gear was fish wheels.

<sup>c</sup> Only females were bought during most fishing periods.

Table 8.—Summer chum salmon age and female percentages from the Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) 5.5 in mesh gillnet, 1985–2014.

Year	Sample size	Number of days <sup>a</sup>	Percent (%)					Female
			Age					
			0.2	0.3	0.4	0.5	0.6	
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 <sup>a</sup>	91	16	0.0	42.9	47.3	9.9	0.0	65.9
2008 <sup>b</sup>	784	24	0.0	41.2	53.7	5.1	0.0	55.4
2009	1,042	33	1.2	48.8	47.9	1.8	0.2	54.3
2010	1,211	31	4.0	64.7	29.8	1.5	0.0	56.6
2011	1,493	41	0.1	44.1	55.5	0.4	0.0	63.2
2012	1,576	35	0.0	68.7	25.9	5.4	0.0	56.7
2013	1,180	33	0.0	42.3	55.4	2.4	0.0	50.4
2014	1,580	52	0.2	26.1	68.5	5.3	0.0	54.9
Average <sup>c</sup> (1987–1988, 1990–2006, 2009–2013)	1,273	38	1	48	49	3	0	58
5-yr average <sup>c</sup> (2009–2013)	1,300	35	1	54	43	2	0	56

Note: The Lower Yukon River test fishery was conducted from the end of May through July 15. Prior to 1990 this project was often discontinuous within the season or was not conducted throughout the season. “Number of Days” refers only to those days that scale samples were collected from summer chum salmon and aged.

<sup>a</sup> One set gillnet was operated at Big Eddy only.

<sup>b</sup> At Big Eddy 2 drift gillnets were operated and at Middle Mouth 1 drift gillnet was operated.

<sup>c</sup> Years used for average only include years when samples were collected throughout the season and include samples and a 30 day season minimum. Average was not weighted by number of fish sampled each year.

Table 9.–Sonar estimation of salmon passage in the Yukon River near Pilot Station, 2014.

Sex and season	Project location	Project type and (gear)	Brood year (Age)				
			2011 (0.2)	2010 (0.3)	2009 (0.4)	2008 (0.5)	2007 (0.6)
<b>Male summer chum</b>							
	District 1	Com (DP, BS, ≤5.5" GN, ≤6" GN)	522	551	588	598	582
	Subdistrict 4A <sup>a</sup>	Com (FW)	–	535	573	612	–
	District 6	Com (FW)	570	603	604	–	–
	LYTF Big Eddy site	TF (5.5" DGN)	537	549	588	597	–
	LYTF Middle Mouth site	TF (5.5" DGN)	–	569	596	610	–
	Andreafsky River, E.F.	Esc (WR)	405	540	575	598	–
	Anvik River	Esc (BS)	–	573	606	617	–
	Gisasa River	Esc (WR)	–	552	596	605	–
	Salcha River <sup>b</sup>	Esc (CR)	–	576	595	627	–
	Male summer chum average <sup>c</sup>		509	561	591	608	582
<b>Female summer chum</b>							
	District 1	Com (DP, BS, ≤5.5" GN, ≤6" GN)	529	531	560	569	–
	Subdistrict 4A <sup>a</sup>	Com (FW)	488	519	548	558	–
	District 6	Com (FW)	590	565	572	584	–
	LYTF Big Eddy site	TF (5.5" DGN)	528	534	564	567	–
	LYTF Middle Mouth site	TF (5.5" DGN)	–	559	579	574	–
	Andreafsky River, E.F.	Esc (WR)	463	505	551	563	–
	Anvik River	Esc (BS)	–	552	577	588	–
	Gisasa River	Esc (WR)	531	530	559	563	–
	Salcha River <sup>b</sup>	Esc (CR)	–	538	565	560	–
	Female summer chum average <sup>c</sup>		522	537	564	570	–
<b>Male fall chum</b>							
	District 1	Com (≤6" GN)	539	572	598	625	–
	Subdistrict 5B	Com (FW)	–	582	616	595	–
	District 6	Com (FW)	–	576	627	–	–
	LYTF Big Eddy site	TF (6.0" DGN)	563	587	619	617	–
	LYTF Middle Mouth site	TF (6.0" DGN)	588	585	607	636	–
	Mountain Village	TF (5.875" DGN)	–	587	602	557	–
	Eagle sonar	TF (DGN)	578	604	631	633	–
	Delta River <sup>b</sup>	Esc (CR)	560	576	611	625	589
	Male fall chum average <sup>c</sup>		566	584	614	613	589
<b>Female fall chum</b>							
	District 1	Com (≤6" GN)	536	558	580	589	–
	Subdistrict 5B	Com (FW)	–	567	573	603	–
	District 6	Com (FW)	–	549	576	–	–
	LYTF Big Eddy site	TF (6.0" DGN)	556	578	599	582	–
	LYTF Middle Mouth site	TF (6.0" DGN)	555	577	596	602	–
	Mountain Village	TF (5.875" DGN)	529	569	590	576	–
	Eagle Sonar	TF (DGN)	552	574	603	624	–
	Delta River <sup>b</sup>	Esc (CR)	515	553	574	575	–
	Female fall chum average <sup>c</sup>		541	566	586	593	–

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

<sup>a</sup> Only females harvested during most fishing periods.

<sup>b</sup> Ages were obtained from vertebrae.

<sup>c</sup> Average was not weighted by number of fish sampled in each project.

Table 10.—Yukon River fall chum salmon age and female percentages from selected escapement projects, 1986–2014.

Project	Year	Sample size <sup>a</sup>	Percent (%)					Female <sup>b</sup>
			Age					
			3 yr (0.2)	4 yr (0.3)	5 yr (0.4)	6 yr (0.5)	7 yr (0.6)	
Delta River <sup>c</sup>	1986	442	7.7	77.1	14.9	0.2	0.1	51.8
	1987	282	1.4	68.4	29.1	1.1	0.0	42.0
	1988	150	2.0	59.3	38.0	0.7	0.0	—
	1989	150	4.7	76.7	17.3	1.3	0.0	36.7
	1990	160	6.9	65.0	25.0	3.1	0.0	39.4
	1991	155	2.6	84.5	12.3	0.6	0.0	46.9
	1992	145	0.0	34.5	62.1	3.4	0.0	40.0
	1993	192	0.5	54.7	42.2	2.6	0.0	53.0
	1994	144	1.4	36.8	60.4	1.4	0.0	44.7
	1995	144	0.7	51.4	42.4	5.6	0.0	48.0
	1996	170	1.8	46.5	47.1	4.7	0.0	26.1
	1997	172	1.2	59.3	37.8	1.7	0.0	43.9
	1998	158	4.4	70.9	22.8	1.9	0.0	44.1
	1999	186	2.2	86.0	11.3	0.5	0.0	47.0
	2000	160	1.9	57.5	40.0	0.6	0.0	45.5
	2001	169	1.8	63.3	34.3	0.6	0.0	44.4
	2002	167	11.4	79.0	9.0	0.6	0.0	52.2
	2003	172	2.3	87.2	9.9	0.6	0.0	56.1
	2004	169	19.5	60.4	19.5	0.6	0.0	52.2
	2005	173	0.6	90.8	8.7	0.0	0.0	47.2
	2006	179	10.6	47.5	40.2	1.7	0.0	53.6
	2007	179	2.2	73.2	22.9	1.7	0.0	40.0
	2008	179	1.7	35.2	53.1	9.5	0.6	45.6
	2009	180	11.1	48.3	33.3	6.7	0.6	45.6
	2010	165	17.6	49.1	24.9	6.7	1.8	42.4
	2011	177	1.7	66.1	26.0	6.2	0.0	40.1
	2012	180	1.7	71.1	26.7	0.6	0.0	32.8
	2013	160	0.0	49.4	45.6	5.0	0.0	38.1
	2014	160	1.3	48.8	43.1	6.3	0.6	42.5
Average (1986–2013) <sup>d</sup>			4.3	62.5	30.6	2.5	0.1	44.4
5-yr average (2009–2013) <sup>d</sup>			6.4	56.8	31.3	5.0	0.5	39.8
Odd year average <sup>d</sup>			2.4	68.5	26.6	2.4	0.0	44.9
Even year average <sup>d</sup>			6.3	56.4	34.5	2.5	0.2	43.9

<sup>a</sup> Total samples aged.

<sup>b</sup> Sex ratio was from total sample.

<sup>c</sup> Age determination was from vertebrae.

<sup>d</sup> Averages are not weighted by sample size.

Table 11.–Yukon River coho salmon age and female percentages from commercial, and test fishery projects, 2014.

Project type Location (gear)	Sample size	Percent (%)			Female
		Age			
		(1.1)	(2.1)	(3.1)	
<b>Commercial</b>					
District 1 (gillnet) <sup>a</sup>	1,096	12.8	80.0	7.2	52.3
<b>Test Fishery</b>					
LYTF Big Eddy site (6.0" drift gillnet)	323	6.8	86.4	6.8	48.6
LYTF Middle Mouth site (6.0" drift gillnet)	103	12.6	75.7	11.7	60.2
Mountain Village test fish (5.875" drift gillnet)	132	10.6	83.3	6.1	50.0
Test fishery average <sup>b</sup>		10.0	81.8	8.2	52.9
Total		1,654			

<sup>a</sup> All commercial fishing periods were restricted to 6.0 in or smaller mesh gillnets.

<sup>b</sup> Averages are not weighted by sample size.

Table 12.—Yukon River coho salmon mean length (mm) by sex, project, gear, and age, 2014.

Sex	Project location	Project type and (gear)	Brood year (Age)		
			2010 (1.1)	2009 (2.1)	2008 (3.1)
Male	District 1 <sup>a</sup>	Com (≤6" GN)	559	555	567
	LYTF Big Eddy site	TF (6.0" DGN)	543	554	551
	LYTF Middle Mouth site	TF (6.0" DGN)	551	552	584
	Mountain Village	TF (5.875" DGN)	513	554	557
	Male average <sup>b</sup>			541	554
Female	District 1 <sup>a</sup>	Com (≤6" GN)	545	554	563
	LYTF Big Eddy site	TF (6.0" DGN)	561	562	568
	LYTF Middle Mouth site	TF (6.0" DGN)	550	564	565
	Mountain Village	TF (5.875" DGN)	550	556	570
	Female average <sup>b</sup>			552	559

*Note:* Com is commercial, and TF is test fish. GN is gillnet, DGN is drift gillnet preceded by mesh size.

<sup>a</sup> Commercial fishing gear was restricted to 6.0 in or smaller mesh gillnets.

<sup>b</sup> Averages were not weighted by sample size.



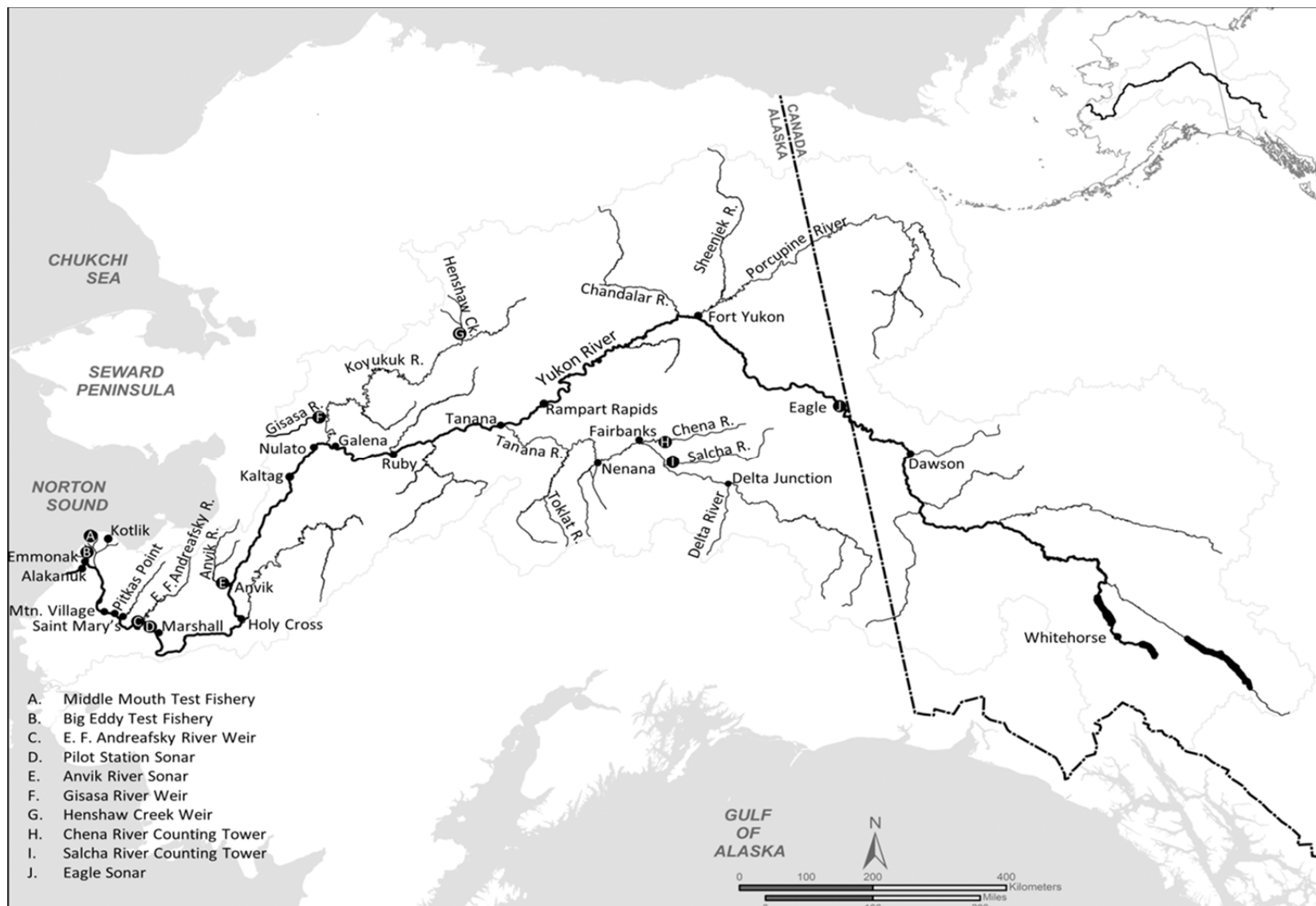


Figure 1.—Yukon River drainage in Alaska and Canada.

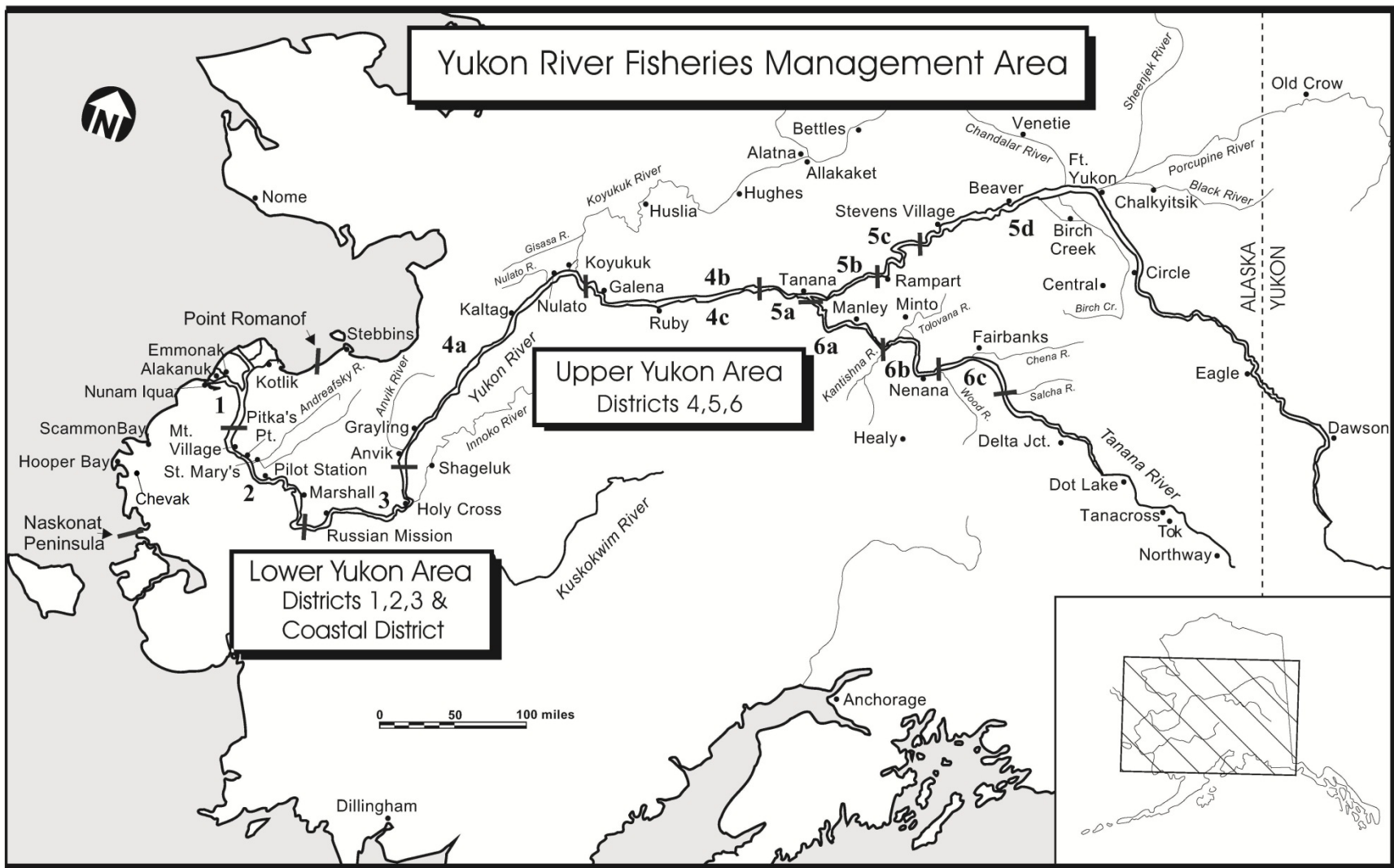


Figure 2.—Yukon River district and subdistrict map.

## **APPENDIX A: CHINOOK SALMON TABLES**

Appendix A1.–Yukon River Chinook salmon, subsistence harvest, age and sex composition and mean length (mm), 2014.

Sample dates (location; gear)	Sample size		Brood year (Age)														Total					
			2011		2010		2009		2008		2007		2006									
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%							
			N	%	N	%	N	%	N	%	N	%	N	%	N	%						
7/16–20, 22–25, 27 ( Subdistrict 5D Fort Yukon; 4" SGN)	18	Male	4	22.2	1	5.6	0	0.0	5	27.8	0	0.0	1	5.6	0	0.0	0	0.0	0	0.0	11	61.1
		Female	0	0.0	0	0.0	0	0.0	4	22.2	0	0.0	3	16.7	0	0.0	0	0.0	0	0.0	7	38.9
		Subtotal	4	22.2	1	5.6	0	0.0	9	50.0	0	0.0	4	22.2	0	0.0	0	0.0	0	0.0	18	100.0
			Male mean length	424		653			760				905									
			SE	3					26													
			Range	415–428					700–840													
			<i>n</i>	4		1			5				1									
			Female mean length						740				848									
			SE						14				32									
			Range						716–779				795–905									
			<i>n</i>						4				3									
7/21–28 ( Subdistrict 5D Fort Yukon; 5.5" SGN)	16	Male	0	0.0	6	37.5	0	0.0	5	31.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	11	68.8
		Female	0	0.0	0	0.0	0	0.0	2	12.5	0	0.0	3	18.8	0	0.0	0	0.0	0	0.0	5	31.3
		Subtotal	0	0.0	6	37.5	0	0.0	7	43.8	0	0.0	3	18.8	0	0.0	0	0.0	0	0.0	16	100.0
			Male mean length			605			707													
			SE			13			17													
			Range			566–645			660–755													
			<i>n</i>			6			5													
			Female mean length						671				866									
			SE						39				35									
			Range						632–710				796–907									
			<i>n</i>						2				3									

-continued-

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Sample dates (gear)	Sample size		Brood year (Age)												Total										
			2011		2010		2009		2008		2007		2006												
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%										
7/16–21 ( Subdistrict 5D Fort Yukon; 6" SGN)	71	Male	2	2.8	15	21.1	0	0.0	23	32.4	0	0.0	4	5.6	1	1.4	0	0.0	0	0.0	0	0.0	45	63.4	
		Female	5	7.0	4	5.6	0	0.0	11	15.5	0	0.0	5	7.0	1	1.4	0	0.0	0	0.0	0	0.0	26	36.6	
		Subtotal	7	9.9	19	26.8	0	0.0	34	47.9	0	0.0	9	12.7	2	2.8	0	0.0	0	0.0	0	0.0	71	100.0	
			Male mean length	420		615		–	693		–		909		665		–	–	–	–	–	–			
			SE	27		7		–	11		–		41		–		–	–	–	–	–	–			
			Range	393–446		585–688		–	615–780		–		792–975		–		–	–	–	–	–	–			
			<i>n</i>	2		15		–	23		–		4		1		–	–	–	–	–	–			
			Female mean length	413		588		–	687		–		809		765		–	–	–	–	–	–			
			SE	17		15		–	15		–		12		–		–	–	–	–	–	–			
			Range	346–446		550–620		–	623–795		–		780–842		–		–	–	–	–	–	–			
			<i>n</i>	5		4		–	11		–		5		1		–	–	–	–	–	–			
	Total Subdistrict 5D, Fort Yukon	105	Male	6	5.7	22	21.0	0	0.0	33	31.4	0	0.0	5	4.8	1	1.0	0	0.0	0	0.0	0	0.0	67	63.8
			Female	5	4.8	4	3.8	0	0.0	17	16.2	0	0.0	11	10.5	1	1.0	0	0.0	0	0.0	0	0.0	38	36.2
Total			11	10.5	26	24.8	0	0.0	50	47.6	0	0.0	16	15.2	2	1.9	0	0.0	0	0.0	0	0.0	105	100.0	
			Male mean length	422		614		–	705		–		908		665		–	–	–	–	–	–			
			SE	9		6		–	9		–		33		–		–	–	–	–	–	–			
			Range	393–446		566–688		–	615–840		–		792–975		–		–	–	–	–	–	–			
			<i>n</i>	6		22		–	33		–		5		1		–	–	–	–	–	–			
			Female mean length	413		588		–	697		–		835		765		–	–	–	–	–	–			
			SE	17		15		–	11		–		14		–		–	–	–	–	–	–			
			Range	346–446		550–620		–	623–795		–		780–907		–		–	–	–	–	–	–			
			<i>n</i>	5		4		–	17		–		11		1		–	–	–	–	–	–			

Appendix A2.–Lower Yukon River test fishery (Big Eddy site) Chinook salmon, 8.5 in mesh set gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)												Total							
			2011		2010		2009		2008		2007		2006									
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%							
			N	%	N	%	N	%	N	%	N	%	N	%	N	%						
5/26–6/06	95	Male	0	0.0	3	3.2	0	0.0	55	57.9	0	0.0	9	9.5	0	0.0	0	0.0	0	0.0	67	70.5
		Female	0	0.0	0	0.0	0	0.0	7	7.4	0	0.0	21	22.1	0	0.0	0	0.0	0	0.0	28	29.5
		Total	0	0.0	3	3.2	0	0.0	62	65.3	0	0.0	30	31.6	0	0.0	0	0.0	0	0.0	95	100.0
		Male mean length	–		595	–		714	–		812	–		–	–	–	–	–	–	–	–	–
		SE	–		18	–		8	–		15	–		–	–	–	–	–	–	–	–	–
		Range	–		569–629	–		562–837	–		742–868	–		–	–	–	–	–	–	–	–	–
		<i>n</i>	–		3	–		55	–		9	–		–	–	–	–	–	–	–	–	–
		Female mean length	–		–	–		797	–		863	–		–	–	–	–	–	–	–	–	–
		SE	–		–	–		18	–		9	–		–	–	–	–	–	–	–	–	–
		Range	–		–	–		740–875	–		796–929	–		–	–	–	–	–	–	–	–	–
		<i>n</i>	–		–	–		7	–		21	–		–	–	–	–	–	–	–	–	–

Appendix A3.–Lower Yukon River test fishery (Middle Mouth site) Chinook salmon, 8.5 in mesh set gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)												Total													
			2011		2010		2009		2008		2007		2006															
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%													
			N	%	N	%	N	%	N	%	N	%	N	%	N	%												
6/07–14 Quartile 1 <sup>a</sup>	101	Male	0	0.0	1	1.0	0	0.0	37	36.6	0	0.0	21	20.8	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	60	59.4		
		Female	0	0.0	0	0.0	0	0.0	4	4.0	0	0.0	34	33.7	0	0.0	2	2.0	1	1.0	0	0.0	0	0.0	41	40.6		
		Subtotal	0	0.0	1	1.0	0	0.0	41	40.6	0	0.0	55	54.5	0	0.0	3	3.0	1	1.0	0	0.0	0	0.0	101	100.0		
		Male mean length	–	–	–	604	–	–	734	–	–	836	–	–	841	–	–	–	–	–	–	–	–	–	–	–	–	
		SE	–	–	–	–	–	–	8	–	–	11	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
		Range	–	–	–	–	–	–	603–864	–	–	757–940	–	–	841–841	–	–	–	–	–	–	–	–	–	–	–	–	
		<i>n</i>	–	–	–	1	–	–	37	–	–	21	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	
		Female mean length	–	–	–	–	–	–	769	–	–	851	–	–	904	788	–	–	–	–	–	–	–	–	–	–	–	
		SE	–	–	–	–	–	–	6	–	–	7	–	–	48	–	–	–	–	–	–	–	–	–	–	–	–	
		Range	–	–	–	–	–	–	753–778	–	–	780–933	–	–	856–951	788–788	–	–	–	–	–	–	–	–	–	–	–	
		<i>n</i>	–	–	–	–	–	–	4	–	–	34	–	–	2	1	–	–	–	–	–	–	–	–	–	–	–	
		6/15–20 Quartile 2 <sup>a</sup>	154	Male	1	0.6	1	0.6	0	0.0	59	38.3	0	0.0	21	13.6	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	83	53.9
				Female	0	0.0	0	0.0	0	0.0	24	15.6	0	0.0	43	27.9	0	0.0	3	1.9	1	0.6	0	0.0	0	0.0	71	46.1
Subtotal	1			0.6	1	0.6	0	0.0	83	53.9	0	0.0	64	41.6	0	0.0	3	1.9	2	1.3	0	0.0	0	0.0	154	100.0		
Male mean length	403			–	–	535	–	–	741	–	–	801	–	–	–	804	–	–	–	–	–	–	–	–	–	–	–	
SE	–			–	–	–	–	–	6	–	–	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–		
Range	–			–	–	–	–	–	634–832	–	–	730–900	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
<i>n</i>	1			–	–	1	–	–	59	–	–	21	–	–	–	1	–	–	–	–	–	–	–	–	–	–		
Female mean length	–			–	–	–	–	–	783	–	–	837	–	–	903	864	–	–	–	–	–	–	–	–	–	–	–	
SE	–			–	–	–	–	–	7	–	–	9	–	–	14	–	–	–	–	–	–	–	–	–	–	–	–	
Range	–			–	–	–	–	–	724–844	–	–	589–932	–	–	881–928	–	–	–	–	–	–	–	–	–	–	–	–	
<i>n</i>	–			–	–	–	–	–	24	–	–	43	–	–	3	1	–	–	–	–	–	–	–	–	–	–	–	

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Sample dates	Sample size		Brood year (Age)												Total													
			2011		2010		2009		2008		2007		2006															
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%													
			N	%	N	%	N	%	N	%	N	%	N	%														
6/21–24 Quartile 3 <sup>a</sup>	98	Male	0	0.0	1	1.0	0	0.0	35	35.7	0	0.0	13	13.3	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	50	51.0		
		Female	0	0.0	0	0.0	0	0.0	12	12.2	0	0.0	35	35.7	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	48	49.0		
		Subtotal	0	0.0	1	1.0	0	0.0	47	48.0	0	0.0	48	49.0	0	0.0	0	0.0	2	2.0	0	0.0	0	0.0	98	100.0		
		Male mean length	–		599	–	760	–	816	–	–	798	–	–														
		SE	–		–	–	7	–	13	–	–	–	–	–														
		Range	–		–	–	671–847	–	760–949	–	–	–	–	–														
		<i>n</i>	–		1	–	35	–	13	–	–	1	–	–														
		Female mean length	–		–	–	790	–	834	–	–	839	–	–														
		SE	–		–	–	12	–	6	–	–	–	–	–														
		Range	–		–	–	731–856	–	742–925	–	–	–	–	–														
		<i>n</i>	–		–	–	12	–	35	–	–	1	–	–														
		6/25–7/04, 7/06, 7/07 Quartile 4 <sup>a</sup>	166	Male	0	0.0	1	0.6	0	0.0	50	30.1	0	0.0	21	12.7	0	0.0	1	0.6	1	0.6	0	0.0	0	0.0	74	44.6
				Female	0	0.0	0	0.0	0	0.0	28	16.9	0	0.0	60	36.1	1	0.6	3	1.8	0	0.0	0	0.0	0	0.0	92	55.4
Subtotal	0			0.0	1	0.6	0	0.0	78	47.0	0	0.0	81	48.8	1	0.6	4	2.4	1	0.6	0	0.0	0	0.0	166	100.0		
Male mean length	–				541	–	764	–	830	–	1050	765	–	–														
SE	–				–	–	7	–	14	–	–	–	–															
Range	–				–	–	614–861	–	703–928	–	–	–	–															
<i>n</i>	–				1	–	50	–	21	–	1	1	–	–														
Female mean length	–				–	–	785	–	841	811	908	–	–	–														
SE	–				–	–	6	–	7	–	19	–	–	–														
Range	–				–	–	691–845	–	650–959	–	886–946	–	–	–														
<i>n</i>	–				–	–	28	–	60	1	3	–	–	–														

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Sample dates	Sample size		Brood year (Age)												Total											
			2011		2010		2009		2008		2007		2006													
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%											
			N	%	N	%	N	%	N	%	N	%	N	%	N	%										
Total	519	Male	1	0.2	4	0.8	0	0.0	181	34.9	0	0.0	76	14.6	0	0.0	2	0.4	3	0.6	0	0.0	0	0.0	267	51.4
		Female	0	0.0	0	0.0	0	0.0	68	13.1	0	0.0	172	33.1	1	0.2	8	1.5	3	0.6	0	0.0	0	0.0	252	48.6
		Total	1	0.2	4	0.8	0	0.0	249	48.0	0	0.0	248	47.8	1	0.2	10	1.9	6	1.2	0	0.0	0	0.0	519	100.0
		Male mean length	403		570		–	750		–		821		–		946		789		–		–	–			
		SE	–		–		–	4		–		6		–		–		–		–		–	–			
		Range	–		535–604		–	603–864		–		703–949		–		841–1,050		765–804		–		–	–			
		n	1		4		–	181		–		76		–		2		3		–		–	–			
		Female mean length	–		–		–	784		–		840		811		905		830		–		–	–			
		SE	–		–		–	4		–		4		–		15		0		–		–	–			
		Range	–		–		–	691–856		–		589–959		–		856–951		788–864		–		–	–			
		n	–		–		–	68		–		172		1		8		3		–		–	–			

<sup>a</sup> Quartiles based on CPUE.

Appendix A4.–Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) Chinook salmon, 8.5 in mesh set gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)												Total												
			2011		2010		2009		2008		2007		2006														
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%												
			N	%	N	%	N	%	N	%	N	%	N	%	N	%											
5/26–6/14 Quartile 1 <sup>a</sup>	196	Male	0	0.0	4	2.0	0	0.0	92	46.9	0	0.0	30	15.3	0	0.0	1	0.5	0	0.0	0	0.0	0	0.0	127	64.8	
		Female	0	0.0	0	0.0	0	0.0	11	5.6	0	0.0	55	28.1	0	0.0	2	1.0	1	0.5	0	0.0	0	0.0	69	35.2	
		Subtotal	0	0.0	4	2.0	0	0.0	103	52.6	0	0.0	85	43.4	0	0.0	3	1.5	1	0.5	0	0.0	0	0.0	196	100.0	
		Male mean length	–	–	–	597	–	–	722	–	–	829	–	–	841	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	13	–	–	6	–	–	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
		Range	–	–	–	569–629	–	–	562–864	–	–	742–940	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	–	4	–	–	92	–	–	30	–	–	1	–	–	–	–	–	–	–	–	–	–	–	
		Female mean length	–	–	–	–	–	–	787	–	–	855	–	–	904	788	–	–	–	–	–	–	–	–	–	–	
		SE	–	–	–	–	–	–	12	–	–	5	–	–	48	–	–	–	–	–	–	–	–	–	–	–	
		Range	–	–	–	–	–	–	740–875	–	–	780–933	–	–	856–951	–	–	–	–	–	–	–	–	–	–	–	
		n	–	–	–	–	–	–	11	–	–	55	–	–	2	1	–	–	–	–	–	–	–	–	–	–	
6/15–20 Quartile 2 <sup>a</sup>	154	Male	1	0.6	1	0.6	0	0.0	59	38.3	0	0.0	21	13.6	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0	83	53.9	
		Female	0	0.0	0	0.0	0	0.0	24	15.6	0	0.0	43	27.9	0	0.0	3	1.9	1	0.6	0	0.0	0	0.0	71	46.1	
		Subtotal	1	0.6	1	0.6	0	0.0	83	53.9	0	0.0	64	41.6	0	0.0	3	1.9	2	1.3	0	0.0	0	0.0	154	100.0	
		Male mean length	403	–	–	535	–	–	741	–	–	801	–	–	–	804	–	–	–	–	–	–	–	–	–	–	
		SE	–	–	–	–	–	–	6	–	–	9	–	–	–	–	–	–	–	–	–	–	–	–	–		
		Range	–	–	–	–	–	–	634–832	–	–	730–900	–	–	–	–	–	–	–	–	–	–	–	–	–		
		n	1	–	–	1	–	–	59	–	–	21	–	–	–	1	–	–	–	–	–	–	–	–	–		
		Female mean length	–	–	–	–	–	–	783	–	–	837	–	–	903	864	–	–	–	–	–	–	–	–	–	–	
		SE	–	–	–	–	–	–	7	–	–	9	–	–	14	–	–	–	–	–	–	–	–	–	–		
		Range	–	–	–	–	–	–	724–844	–	–	589–932	–	–	881–928	–	–	–	–	–	–	–	–	–	–		
		n	–	–	–	–	–	–	24	–	–	43	–	–	3	1	–	–	–	–	–	–	–	–	–		

-continued-

Sample dates	Sample size		Brood Year (Age)												Total													
			2011		2010		2009		2008		2007		2006															
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)															
			N	%	N	%	N	%	N	%	N	%	N	%	N	%												
6/21–24 Quartile 3 <sup>a</sup>	98	Male	0	0.0	1	1.0	0	0.0	35	35.7	0	0.0	13	13.3	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	50	51.0		
		Female	0	0.0	0	0.0	0	0.0	12	12.2	0	0.0	35	35.7	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	48	49.0		
		Subtotal	0	0.0	1	1.0	0	0.0	47	48.0	0	0.0	48	49.0	0	0.0	2	2.0	0	0.0	0	0.0	0	0.0	98	100.0		
		Male mean length	–		599	–	760	–	816	–	–	798	–	–														
		SE	–		–	–	7	–	13	–	–	–	–	–														
		Range	–		–	–	671–847	–	760–949	–	–	–	–	–														
		<i>n</i>	–		1	–	35	–	13	–	–	1	–	–														
		Female mean length	–		–	–	790	–	834	–	–	839	–	–														
		SE	–		–	–	12	–	6	–	–	–	–	–														
		Range	–		–	–	731–856	–	742–925	–	–	–	–	–														
		<i>n</i>	–		–	–	12	–	35	–	–	1	–	–														
		6/25–7/04, 7/06, 7/07 Quartile 4 <sup>a</sup>	166	Male	0	0.0	1	0.6	0	0.0	50	30.1	0	0.0	21	12.7	0	0.0	1	0.6	1	0.6	0	0.0	0	0.0	74	44.6
				Female	0	0.0	0	0.0	0	0.0	28	16.9	0	0.0	60	36.1	1	0.6	3	1.8	0	0.0	0	0.0	0	0.0	92	55.4
Subtotal	0			0.0	1	0.6	0	0.0	78	47.0	0	0.0	81	48.8	1	0.6	4	2.4	1	0.6	0	0.0	0	0.0	166	100.0		
Male mean length	–				541	–	764	–	830	–	1050	765	–	–														
SE	–				–	–	7	–	14	–	–	–	–															
Range	–				–	–	614–861	–	703–928	–	–	–	–															
<i>n</i>	–				1	–	50	–	21	–	1	1	–	–														
Female mean length	–				–	–	785	–	841	811	908	–	–	–														
SE	–				–	–	6	–	7	–	19	–	–	–														
Range	–				–	–	691–845	–	650–959	–	886–946	–	–	–														
<i>n</i>	–				–	–	28	–	60	1	3	–	–	–														

-continued-

Sample dates	Sample size		Brood Year (Age)												Total												
			2011		2010		2009		2008		2007		2006														
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%												
			N	%	N	%	N	%	N	%	N	%	N	%	N	%											
Total	614	Male	1	0.2	7	1.1	0	0.0	236	38.4	0	0.0	85	13.8	0	0.0	2	0.3	3	0.5	0	0.0	0	0.0	334	54.4	
		Female	0	0.0	0	0.0	0	0.0	75	12.2	0	0.0	193	31.4	1	0.2	8	1.3	3	0.5	0	0.0	0	0.0	280	45.6	
		Total	1	0.2	7	1.1	0	0.0	311	50.7	0	0.0	278	45.3	1	0.2	10	1.6	6	1.0	0	0.0	0	0.0	614	100.0	
		Male mean length	403		581		–	741		–	820		–	946		–	789		–	–							
		SE	–		7		–	3		–	6		–	–		–	–		–	–							
		Range	–		535–629		–	562–864		–	703–949		–	841–1050		765–804		–	–		–	–					
		n	1		7		–	236		–	85		–	2		3		–	–		–	–					
		Female mean length	–		–		–	786		–	843		811	905		830		–	–		–	–					
		SE	–		–		–	4		–	4		–	15		–		–	–		–	–					
		Range	–		–		–	691–875		–	589–959		–	856–951		788–864		–	–		–	–					
		n	–		–		–	75		–	193		1	8		3		–	–		–	–					

<sup>a</sup> Quartiles based on CPUE.

Appendix A5.–Yukon River Pilot Station sonar test fishery Chinook salmon, variable mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (gear)	Sample size	Brood year (Age)												Total												
		2011		2010		2009		2008		2007		2006														
		(1.1) N	(1.1) %	(1.2) N	(1.2) %	(2.1) N	(2.1) %	(1.3) N	(1.3) %	(2.2) N	(2.2) %	(1.4) N	(1.4) %	(2.3) N	(2.3) %	(1.5) N	(1.5) %	(2.4) N	(2.4) %	(1.6) N	(1.6) %	(2.5) N	(2.5) %	N	%	
6/05, 08, 15, 20, 22, 27; 7/03, 15 (2.75" mesh drift gillnet)	8	Male	1	12.5	4	50.0	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	75.0
		Female	0	0.0	0	0.0	0	0.0	2	25.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	25.0
		Subtotal	1	12.5	4	50.0	0	0.0	3	37.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0
	Male mean length	384		557		–		701		–		–		–		–		–		–		–		–		
	SE	–		34		–		–		–		–		–		–		–		–		–		–		
	Range	–		480–628		–		–		–		–		–		–		–		–		–		–		
	<i>n</i>	1		4		–		1		–		–		–		–		–		–		–		–		
	Female mean length	–		–		–		725		–		–		–		–		–		–		–		–		
	SE	–		–		–		77		–		–		–		–		–		–		–		–		
	Range	–		–		–		648–802		–		–		–		–		–		–		–		–		
<i>n</i>	–		–		–		2		–		–		–		–		–		–		–		–			
6/03, 05, 07, 09, 11, 18– 19, 21–26, 28, 30; 7/02-04 (4" mesh drift gillnet)	25	Male	12	48.0	1	4.0	0	0.0	9	36.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	22	88.0
		Female	1	4.0	1	4.0	0	0.0	1	4.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	12.0
		Subtotal	13	52.0	2	8.0	0	0.0	10	40.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	25	100.0
	Male mean length	391		451		–		697		–		–		–		–		–		–		–		–		
	SE	6		–		–		17		–		–		–		–		–		–		–		–		
	Range	353–435		–		–		610–766		–		–		–		–		–		–		–		–		
	<i>n</i>	12		1		–		9		–		–		–		–		–		–		–		–		
	Female mean length	402		565		–		778		–		–		–		–		–		–		–		–		
	SE	–		–		–		–		–		–		–		–		–		–		–		–		
	Range	–		–		–		–		–		–		–		–		–		–		–		–		
<i>n</i>	1		1		–		1		–		–		–		–		–		–		–		–			

-continued-

Sample dates (gear)	Sample size		Brood year (Age)												Total					
			2011		2010		2009		2008		2007		2006							
			(1.1) <i>N</i> %	(1.2) <i>N</i> %	(2.1) <i>N</i> %	(1.3) <i>N</i> %	(2.2) <i>N</i> %	(1.4) <i>N</i> %	(2.3) <i>N</i> %	(1.5) <i>N</i> %	(2.4) <i>N</i> %	(1.6) <i>N</i> %	(2.5) <i>N</i> %	<i>N</i>	%					
7/22; 8/01 (5" mesh drift gillnet)	2	Male	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0
		Female	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0
		Subtotal	0	0.0	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	2	100.0
		Male mean length	–	–	–	–	747	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		<i>n</i>	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
		Female mean length	–	–	–	–	745	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		<i>n</i>	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–
6/05, 09–14, 16–22, 27, 29; 7/01, 03 (5.25" mesh drift gillnet)	29	Male	1	3.4	9	31.0	0	0.0	13	44.8	0	0.0	0	0.0	0	0.0	0	0.0	23	79.3
		Female	0	0.0	0	0.0	0	0.0	5	17.2	0	0.0	1	3.4	0	0.0	0	0.0	6	20.7
		Subtotal	1	3.4	9	31.0	0	0.0	18	62.1	0	0.0	1	3.4	0	0.0	0	0.0	29	100.0
		Male mean length	441	–	566	–	–	–	671	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	15	–	–	–	19	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	514–636	–	–	–	560–820	–	–	–	–	–	–	–	–	–	–	–
		<i>n</i>	1	–	9	–	–	–	13	–	–	–	–	–	–	–	–	–	–	–
		Female mean length	–	–	–	–	–	–	719	–	830	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	16	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	662–755	–	–	–	–	–	–	–	–	–	–	–
		<i>n</i>	–	–	–	–	–	–	5	–	1	–	–	–	–	–	–	–	–	–

-continued-

Sample dates (gear)	Sample size		Brood year (Age)												Total							
			2011		2010		2009		2008		2007		2006									
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%							
			N	%	N	%	N	%	N	%	N	%	N	%	N	%						
8/4 (5.75" mesh drift gillnet)	1	Male	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	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				
		Subtotal	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0				
			Male mean length	–	490	–	–	–	–	–	–	–	–	–	–	–	–	–				
			SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
			Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
			<i>n</i>	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–				
			Female mean length	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
			SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
			Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
			<i>n</i>	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–				
6/2-19 (6.5" mesh drift gillnet)	128	Male	1	0.8	14	10.9	0	0.0	74	57.8	0	0.0	6	4.7	1	0.8	0	0.0	96	75.0		
		Female	0	0.0	2	1.6	0	0.0	17	13.3	0	0.0	11	8.6	0	0.0	2	1.6	0	0.0	32	25.0
		Subtotal	1	0.8	16	12.5	0	0.0	91	71.1	0	0.0	17	13.3	1	0.8	2	1.6	0	0.0	128	100.0
			Male mean length	390	592	–	690	–	825	690	–	–	–	–	–	–	–	–	–			
			SE	–	9	–	6	–	35	–	–	–	–	–	–	–	–	–				
			Range	–	525–658	–	525–781	–	665–897	–	–	–	–	–	–	–	–	–				
			<i>n</i>	1	14	–	74	–	6	1	–	–	–	–	–	–	–	–				
			Female mean length	–	619	–	700	–	833	–	881	–	–	–	–	–	–	–				
			SE	–	14	–	14	–	14	–	15	–	–	–	–	–	–	–				
			Range	–	605–632	–	580–819	–	756–892	–	866–895	–	–	–	–	–	–	–				
			<i>n</i>	–	2	–	17	–	11	–	2	–	–	–	–	–	–					

-continued-

Sample dates (gear)	Sample size	Brood year (Age)												Total													
		2011		2010			2009		2008		2007		2006														
		(1.1) N	(1.1) %	(1.2) N	(1.2) %	(2.1) N	(2.1) %	(1.3) N	(1.3) %	(2.2) N	(2.2) %	(1.4) N	(1.4) %	(2.3) N	(2.3) %	(1.5) N	(1.5) %	(2.4) N	(2.4) %	(1.6) N	(1.6) %	(2.5) N	(2.5) %	N	%		
6/1–18 (7.5" mesh drift gillnet)	167	Male	2	1.2	6	3.6	0	0.0	83	49.7	0	0.0	10	6.0	3	1.8	1	0.6	0	0.0	0	0.0	0	0.0	105	62.9	
		Female	0	0.0	3	1.8	0	0.0	37	22.2	0	0.0	21	12.6	0	0.0	1	0.6	0	0.0	0	0.0	0	0.0	62	37.1	
		Subtotal	2	1.2	9	5.4	0	0.0	120	71.9	0	0.0	31	18.6	3	1.8	2	1.2	0	0.0	0	0.0	0	0.0	167	100.0	
		Male mean length	401		613		–		712		–		822		691		848		–		–		–				
		SE	11		5		–		6		–		23		38		–		–		–		–				
		Range	390–411		600–629		–		587–905		–		725–937		620–750		–		–		–		–				
		n	2		6		–		83		–		10		3		1		–		–		–				
		Female mean length	–		619		–		718		–		845		–		831		–		–		–				
		SE	–		28		–		11		–		10		–		–		–		–		–				
		Range	–		586–674		–		594–891		–		765–940		–		–		–		–		–				
		n	–		3		–		37		–		21		–		1		–		–		–				
6/1-2, 04–06, 08–20 (8.5" mesh drift gillnet)	84	Male	0	0.0	1	1.2	0	0.0	37	44.0	0	0.0	16	19.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	54	64.3	
		Female	0	0.0	0	0.0	0	0.0	12	14.3	0	0.0	18	21.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	30	35.7	
		Subtotal	0	0.0	1	1.2	0	0.0	49	58.3	0	0.0	34	40.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	84	100.0	
		Male mean length	–		540		–		745		–		826		–		–		–		–		–				
		SE	–		–		–		9		–		13		–		–		–		–		–				
		Range	–		–		–		624–864		–		720–893		–		–		–		–		–				
		n	–		1		–		37		–		16		–		–		–		–		–				
		Female mean length	–		–		–		747		–		845		–		–		–		–		–				
		SE	–		–		–		17		–		11		–		–		–		–		–				
		Range	–		–		–		672–847		–		782–963		–		–		–		–		–				
		n	–		–		–		12		–		18		–		–		–		–		–				
Total	444	Male	17	3.8	36	8.1	0	0.0	218	49.1	0	0.0	32	7.2	4	0.9	1	0.2	0	0.0	0	0.0	0	0.0	308	69.4	
		Female	1	0.2	6	1.4	0	0.0	75	16.9	0	0.0	51	11.5	0	0.0	3	0.7	0	0.0	0	0.0	0	0.0	136	30.6	
		Total	18	4.1	42	9.5	0	0.0	293	66.0	0	0.0	83	18.7	4	0.9	4	0.9	0	0.0	0	0.0	0	0.0	444	100.0	
		Male mean length	394		577		–		707		–		824		691		848		–		–		–				
		SE	5		7		–		4		–		12		29		–		–		–		–				
		Range	353–441		451–658		–		525–905		–		665–937		620–750		–		–		–		–				
		n	17		36		–		218		–		32		4		1		–		–		–				
		Female mean length	402		610		–		720		–		842		–		864		–		–		–				
		SE	–		14		–		7		–		6		–		10		–		–		–				
		Range	–		565–674		–		580–891		–		756–963		0–0		831–895		–		–		–				
		n	1		6		–		75		–		51		–		3		–		–		–				



Appendix A6.–Yukon River Tanana River sonar test fishery Chinook salmon, variable mesh drift gillnet and fish wheel, age and sex composition and mean length (mm), 2014.

Sample dates (gear)	Sample size		Brood year (Age)																Total					
			2011		2010		2009		2008		2007		2006											
			(1.1) N	(1.1) %	(1.2) N	(1.2) %	(2.1) N	(2.1) %	(1.3) N	(1.3) %	(2.2) N	(2.2) %	(1.4) N	(1.4) %	(2.3) N	(2.3) %	(1.5) N	(1.5) %	(2.4) N	(2.4) %	(1.6) N	(1.6) %	(2.5) N	(2.5) %
6/28 (2.75" mesh drift gillnet)	1	Male	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
		Female	0	0.0	0	0.0	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
		Subtotal	0	0.0	0	0.0	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	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Female mean length	–	–	–	–	–	–	684	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6/26–27, 30; 7/02, 11, 17 (4" mesh drift gillnet)	6	Male	1	16.7	0	0.0	0	0.0	4	66.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	83.3
		Female	0	0.0	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	16.7
		Subtotal	1	16.7	0	0.0	0	0.0	5	83.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100.0
		Male mean length	405	–	–	–	–	–	756	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	24	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	690–802	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	1	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Female mean length	–	–	–	–	–	–	767	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
6/27, 29; 7/09, 13, 15 (5.25" mesh drift gillnet)	7	Male	0	0.0	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	28.6
		Female	0	0.0	1	14.3	0	0.0	4	57.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5	71.4
		Subtotal	0	0.0	1	14.3	0	0.0	6	85.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	7	100.0
		Male mean length	–	–	–	–	–	–	787	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	11	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	776–797	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Female mean length	–	–	590	–	–	–	715	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		SE	–	–	–	–	–	–	27	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		Range	–	–	–	–	–	–	640–765	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		n	–	–	1	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

-continued-

Sample dates (gear)	Sample size		Brood year (Age)												Total											
			2011		2010		2009		2008		2007		2006													
			(1.1) N %	(1.2) N %	(2.1) N %	(1.3) N %	(2.2) N %	(1.4) N %	(2.3) N %	(1.5) N %	(2.4) N %	(1.6) N %	(2.5) N %	N	%											
6/27, 28; 7/02, 09–10, 13, 16 (6.5" mesh gillnet)	8	Male	0	0.0	0	0.0	0	0.0	6	75.0	0	0.0	0	0.0	0	0.0	0	0.0	6	75.0						
		Female	0	0.0	0	0.0	0	0.0	1	12.5	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	2	25.0				
		Subtotal	0	0.0	0	0.0	0	0.0	7	87.5	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	8	100.0				
		Male mean length	–	–	–	726	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–					
		SE	–	–	–	52	–	–	–	–	–	–	–	–	–	–	–	–	–	–						
		Range	–	–	–	633–965	–	–	–	–	–	–	–	–	–	–	–	–	–	–						
		n	–	–	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–						
		Female mean length	–	–	–	738	–	845	–	–	–	–	–	–	–	–	–	–	–	–						
		SE	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–						
		Range	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–						
		n	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–						
		6/26–28; 7/01, 04, 10– 11, 13–14, 18 (7.5" mesh drift gillnet)	15	Male	1	6.7	1	6.7	0	0.0	5	33.3	0	0.0	1	6.7	0	0.0	0	0.0	0	0.0	0	0.0	8	53.3
Female	0			0.0	0	0.0	0	0.0	4	26.7	0	0.0	2	13.3	0	0.0	0	0.0	1	6.7	0	0.0	0	0.0	7	46.7
Subtotal	1			6.7	1	6.7	0	0.0	9	60.0	0	0.0	3	20.0	0	0.0	0	0.0	1	6.7	0	0.0	0	0.0	15	100.0
Male mean length	420			635	–	737	–	851	–	–	–	–	–	–	–	–	–	–	–	–						
SE	–			–	–	7	–	–	–	–	–	–	–	–	–	–	–	–	–							
Range	–			–	–	721–760	–	–	–	–	–	–	–	–	–	–	–	–	–							
n	1			1	–	5	–	1	–	–	–	–	–	–	–	–	–	–	–							
Female mean length	–			–	–	714	–	806	–	–	763	–	–	–	–	–	–	–	–							
SE	–			–	–	24	–	2	–	–	–	–	–	–	–	–	–	–	–							
Range	–			–	–	671–783	–	804–808	–	–	–	–	–	–	–	–	–	–	–							
n	–			–	–	4	–	2	–	–	1	–	–	–	–	–	–	–	–							
7/11–20, 27; 8/02 (Fish wheel)	29			Male	1	3.4	3	10.3	0	0.0	7	24.1	0	0.0	2	6.9	0	0.0	0	0.0	0	0.0	0	0.0	13	44.8
		Female	0	0.0	2	6.9	0	0.0	8	27.6	0	0.0	6	20.7	0	0.0	0	0.0	0	0.0	0	0.0	16	55.2		
		Subtotal	1	3.4	5	17.2	0	0.0	15	51.7	0	0.0	8	27.6	0	0.0	0	0.0	0	0.0	0	0.0	29	100.0		
		Male mean length	398	657	–	689	–	899	–	–	–	–	–	–	–	–	–	–	–							
		SE	–	41	–	15	–	37	–	–	–	–	–	–	–	–	–	–								
		Range	–	587–728	–	634–745	–	862–935	–	–	–	–	–	–	–	–	–	–								
		n	1	3	–	7	–	2	–	–	–	–	–	–	–	–	–	–								
		Female mean length	–	628	–	743	–	850	–	–	–	–	–	–	–	–	–	–								
		SE	–	24	–	15	–	17	–	–	–	–	–	–	–	–	–	–								
		Range	–	604–652	–	701–823	–	778–887	–	–	–	–	–	–	–	–	–	–								
		n	–	2	–	8	–	6	–	–	–	–	–	–	–	–	–	–								

-continued-

Sample dates (gear)	Sample size	Brood year (Age)												Total												
		2011		2010		2009		2008		2007		2006														
		(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%												
Total	66	Male	3	4.5	4	6.1	0	0.0	24	36.4	0	0.0	3	4.5	0	0.0	0	0.0	0	0.0	0	0.0	34	51.5		
		Female	0	0.0	3	4.5	0	0.0	19	28.8	0	0.0	9	13.6	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0	32	48.5
		Total	3	4.5	7	10.6	0	0.0	43	65.2	0	0.0	12	18.2	0	0.0	0	0.0	1	1.5	0	0.0	0	0.0	66	100.0
		Male mean length	408		652			727		883																
		SE	–		31			14		24																
		Range	398–420		587–728			633–965		851–935																
		n	3		4			24		3																
		Female mean length	–		615			729		840							763									
		SE	–		16			10		11																
		Range	–		590–652			640–823		778–887																
		n	–		3			19		9							1									

Appendix A7.–Yukon River Eagle sonar test fishery Chinook salmon, variable mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (gear)	Sample size	Brood year (Age)												Total	
		2011		2010		2009		2008		2007		2006			
		(1.1) <i>N</i> %	(1.2) <i>N</i> %	(2.1) <i>N</i> %	(1.3) <i>N</i> %	(2.2) <i>N</i> %	(1.4) <i>N</i> %	(2.3) <i>N</i> %	(1.5) <i>N</i> %	(2.4) <i>N</i> %	(1.6) <i>N</i> %	(2.5) <i>N</i> %	<i>N</i>	%	
6/30; 7/02, 04, 06–08, 10–12, 14–16, 18–20, 22–24 (5.25" mesh drift gillnet)	171	Male	1 0.6	28 16.4	0 0.0	81 47.4	1 0.6	18 10.5	0 0.0	0 0.0	1 0.6	0 0.0	0 0.0	130	76.0
		Female	0 0.0	0 0.0	0 0.0	8 4.7	0 0.0	31 18.1	0 0.0	1 0.6	1 0.6	0 0.0	0 0.0	41	24.0
		Subtotal	1 0.6	28 16.4	0 0.0	89 52.0	1 0.6	49 28.7	0 0.0	1 0.6	2 1.2	0 0.0	0 0.0	171	100.0
		Male mean length	405	575	–	694	518	875	–	–	819	–	–		
		SE	–	7	–	6	–	14	–	–	–	–	–		
		Range	–	494–642	–	535–834	–	773–965	–	–	–	–	–		
		<i>n</i>	1	28	–	81	1	18	–	–	1	–	–		
		Female mean length	–	–	–	750	–	847	–	856	913	–	–		
		SE	–	–	–	20	–	10	–	–	–	–	–		
		Range	–	–	–	643–804	–	693–940	–	–	–	–	–		
		<i>n</i>	–	–	–	8	–	31	–	1	1	–	–		
	6/29–7/01, 03–05, 07– 09, 11–13, 15–17, 19–21 (6.5" mesh drift gillnet)	160	Male	0 0.0	3 1.9	0 0.0	79 49.4	0 0.0	21 13.1	4 2.5	0 0.0	1 0.6	0 0.0	0 0.0	108
Female			0 0.0	0 0.0	0 0.0	9 5.6	0 0.0	39 24.4	1 0.6	0 0.0	3 1.9	0 0.0	0 0.0	52	32.5
Subtotal			0 0.0	3 1.9	0 0.0	88 55.0	0 0.0	60 37.5	5 3.1	0 0.0	4 2.5	0 0.0	0 0.0	160	100.0
		Male mean length	–	582	–	701	–	880	685	–	843	–	–		
		SE	–	17	–	7	–	15	25	–	–	–	–		
		Range	–	553–611	–	555–873	–	750–1008	622–741	–	–	–	–		
		<i>n</i>	–	3	–	79	–	21	4	–	1	–	–		
		Female mean length	–	–	–	722	–	833	789	–	869	–	–		
		SE	–	–	–	11	–	8	–	–	24	–	–		
		Range	–	–	–	675–764	–	739–942	–	–	822–900	–	–		
		<i>n</i>	–	–	–	9	–	39	1	–	3	–	–		

-continued-

Sample dates (gear)	Sample size	Brood year (Age)												Total	
		2011		2010		2009		2008		2007		2006			
		(1.1) <i>N</i> %	(1.2) <i>N</i> %	(2.1) <i>N</i> %	(1.3) <i>N</i> %	(2.2) <i>N</i> %	(1.4) <i>N</i> %	(2.3) <i>N</i> %	(1.5) <i>N</i> %	(2.4) <i>N</i> %	(1.6) <i>N</i> %	(2.5) <i>N</i> %			
7/01–03, 05–07, 09–11, 13–15, 17–19, 21–23 (7.5" mesh drift gillnet)	149	Male	0 0.0	5 3.4	0 0.0	65 43.6	0 0.0	14 9.4	0 0.0	2 1.3	0 0.0	0 0.0	0 0.0	86 57.7	
		Female	0 0.0	0 0.0	0 0.0	18 12.1	0 0.0	42 28.2	0 0.0	1 0.7	2 1.3	0 0.0	0 0.0	63 42.3	
		Subtotal	0 0.0	5 3.4	0 0.0	83 55.7	0 0.0	56 37.6	0 0.0	3 2.0	2 1.3	0 0.0	0 0.0	149 100.0	
		Male mean length	–	563	–	732	–	872	–	966	–	–	–		
		SE	–	8	–	8	–	21	–	49	–	–	–		
		Range	–	547–588	–	648–903	–	762–1030	–	917–1015	–	–	–		
		<i>n</i>	–	5	–	65	–	14	–	2	–	–	–		
		Female mean length	–	–	–	754	–	846	–	897	784	–	–		
		SE	–	–	–	14	–	8	–	–	2	–	–		
		Range	–	–	–	630–859	–	683–940	–	–	782–785	–	–		
		<i>n</i>	–	–	–	18	–	42	–	1	2	–	–		
7/01–02, 04–06, 08–10, 12–14, 16–18, 20–22, 24 (8.5" mesh drift gillnet)	126	Male	0 0.0	4 3.2	0 0.0	38 30.2	0 0.0	27 21.4	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	69 54.8	
		Female	0 0.0	0 0.0	0 0.0	7 5.6	0 0.0	46 36.5	0 0.0	3 2.4	1 0.8	0 0.0	0 0.0	57 45.2	
		Subtotal	0 0.0	4 3.2	0 0.0	45 35.7	0 0.0	73 57.9	0 0.0	3 2.4	1 0.8	0 0.0	0 0.0	126 100.0	
		Male mean length	–	538	–	726	–	861	–	–	–	–	–		
		SE	–	24	–	9	–	12	–	–	–	–	–		
		Range	–	475–589	–	630–859	–	778–1005	–	–	–	–	–		
		<i>n</i>	–	4	–	38	–	27	–	–	–	–	–		
		Female mean length	–	–	–	760	–	848	–	895	843	–	–		
		SE	–	–	–	21	–	5	–	12	–	–	–		
		Range	–	–	–	649–811	–	763–932	–	872–910	–	–	–		
		<i>n</i>	–	–	–	7	–	46	–	3	1	–	–		

-continued-

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Sample dates (gear)	Sample size	Brood year (Age)														Total										
		2011		2010			2009			2008			2007					2006								
		(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%	N	%										
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%									
Total	606	Male	1	0.2	40	6.6	0	0.0	263	43.4	1	0.2	80	13.2	4	0.7	2	0.3	2	0.3	0	0.0	0	0.0	393	64.9
		Female	0	0.0	0	0.0	0	0.0	42	6.9	0	0.0	158	26.1	1	0.2	5	0.8	7	1.2	0	0.0	0	0.0	213	35.1
		Total	1	0.2	40	6.6	0	0.0	305	50.3	1	0.2	238	39.3	5	0.8	7	1.2	9	1.5	0	0.0	0	0.0	606	100.0
		Male mean length	405		570		–	710	518	871	685	966	831	–	–											
		SE	–		6		–	4	–	8	25	49	–	–												
		Range	–		475–642		–	535–903	–	750–1030	622–741	917–1015	819–843	–	–											
		<i>n</i>	1		40		–	263	1	80	4	2	2	–	–											
		Female mean length	–		–		–	748	–	843	789	888	847	–	–											
		SE	–		–		–	8	–	4	–	7	10	–	–											
		Range	–		–		–	630–859	–	683–942	–	856–910	782–913	–	–											
		<i>n</i>	–		–		–	42	–	158	1	5	7	–	–											

Appendix A8.–Andreafsky River (East Fork) weir Chinook salmon, escapement, age and sex composition and mean length (mm), 2014.

Sample dates (strata dates)	Sample size	Brood year (Age)												Total												
		2011		2010		2009		2008		2007		2006														
		(1.1) <i>N</i>	(1.1) %	(1.2) <i>N</i>	(1.2) %	(2.1) <i>N</i>	(2.1) %	(1.3) <i>N</i>	(1.3) %	(2.2) <i>N</i>	(2.2) %	(1.4) <i>N</i>	(1.4) %	(2.3) <i>N</i>	(2.3) %	(1.5) <i>N</i>	(1.5) %	(2.4) <i>N</i>	(2.4) %	(1.6) <i>N</i>	(1.6) %	(2.5) <i>N</i>	(2.5) %	<i>N</i>	%	
6/22, 24, 26– 27, 30–7/04 (6/22–7/4)	90	Male	30	4.4	45	6.7	8	1.1	227	33.3	8	1.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	318	46.7
		Female	0	0.0	23	3.3	0	0.0	310	45.6	0	0.0	30	4.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	363	53.3
		Subtotal	30	4.4	68	10.0	8	1.1	537	78.9	8	1.1	30	4.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	681	100.0
	Male mean length		414		533		351		664		456		–		–		–		–		–		–			
	SE		2		20		–		6		–		–		–		–		–		–		–			
	Range		409–419		474–599		–		581–736		–		–		–		–		–		–		–			
	<i>n</i>		4		6		1		30		1		–		–		–		–		–		–			
	Female mean length		–		586		–		696		–		778		–		–		–		–		–			
	SE		–		23		–		10		–		7		–		–		–		–		–			
	Range		–		540–611		–		550–831		–		769–798		–		–		–		–		–			
	<i>n</i>		–		3		–		41		–		4		–		–		–		–		–			
7/5 (7/5–7/7)	100	Male	12	1.0	141	12.0	0	0.0	412	35.0	0	0.0	24	2.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	588	50.0
		Female	0	0.0	47	4.0	0	0.0	470	40.0	0	0.0	59	5.0	12	1.0	0	0.0	0	0.0	0	0.0	0	0.0	588	50.0
		Subtotal	12	1.0	188	16.0	0	0.0	882	75.0	0	0.0	82	7.0	12	1.0	0	0.0	0	0.0	0	0.0	0	0.0	1,176	100.0
	Male mean length		413		529		–		690		–		808		–		–		–		–		–			
	SE		–		11		–		10		–		36		–		–		–		–		–			
	Range		–		470–599		–		573–828		–		772–844		–		–		–		–		–			
	<i>n</i>		1		12		–		35		–		2		–		–		–		–		–			
	Female mean length		–		580		–		694		–		839	680	–		–		–		–		–			
	SE		–		14		–		9		–		28		–		–		–		–		–			
	Range		–		546–612		–		539–798		–		752–911		–		–		–		–		–			
	<i>n</i>		–		4		–		40		–		5	1	–		–		–		–		–			

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Sample dates (strata dates)	Sample size		Brood year (Age)												Total													
			2011		2010		2009		2008		2007		2006															
			(1.1) N	(1.1) %	(1.2) N	(1.2) %	(2.1) N	(2.1) %	(1.3) N	(1.3) %	(2.2) N	(2.2) %	(1.4) N	(1.4) %	(2.3) N	(2.3) %	(1.5) N	(1.5) %	(2.4) N	(2.4) %	(1.6) N	(1.6) %	(2.5) N	(2.5) %	N	%		
7/8 (7/8–7/9)	62	Male	0	0.0	88	3.2	0	0.0	1,581	58.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1,668	61.3		
		Female	0	0.0	0	0.0	0	0.0	878	32.3	0	0.0	176	6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1,054	38.7		
		Subtotal	0	0.0	88	3.2	0	0.0	2,459	90.3	0	0.0	176	6.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2,722	100.0		
		Male mean length	–		518		–		709		–		–		–		–		–		–		–					
		SE	–		29		–		10		–		–		–		–		–		–		–					
		Range	–		489–547		–		589–839		–		–		–		–		–		–		–					
		n	–		2		–		36		–		–		–		–		–		–		–					
		Female mean length	–		–		–		706		–		864		–		–		–		–		–					
		SE	–		–		–		14		–		46		–		–		–		–		–					
		Range	–		–		–		564–831		–		735–938		–		–		–		–		–					
		n	–		–		–		20		–		4		–		–		–		–		–					
		7/10–15, 18, 21–25, 28, 30 (7/10–7/31)	65	Male	21	1.5	63	4.6	0	0.0	611	44.6	0	0.0	42	3.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	738	53.8
				Female	0	0.0	0	0.0	0	0.0	316	23.1	0	0.0	316	23.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	632	46.2
Subtotal	21			1.5	63	4.6	0	0.0	927	67.7	0	0.0	358	26.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1,370	100.0		
Male mean length	364				528		–		708		–		842		–		–		–		–		–					
SE	–				47		–		11		–		16		–		–		–		–		–					
Range	–				436–586		–		570–816		–		826–857		–		–		–		–		–					
n	1				3		–		29		–		2		–		–		–		–		–					
Female mean length	–				–		–		745		–		864		–		–		–		–		–					
SE	–				–		–		15		–		12		–		–		–		–		–					
Range	–				–		–		610–832		–		797–951		–		–		–		–		–					
n	–				–		–		15		–		15		–		–		–		–		–					

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Sample dates (strata dates)	Sample size	Brood year (Age)												Total										
		2011		2010		2009		2008		2007		2006												
		(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%										
		N	%	N	%	N	%	N	%	N	%	N	%	N	%									
Total	317	Male	63	1.1	338	5.7	8	0.1	2,830	47.6	8	0.1	66	1.1	0	0.0	0	0.0	0	0.0	0	0.0	3,312	55.7
		Female	0	0.0	70	1.2	0	0.0	1,975	33.2	0	0.0	581	9.8	12	0.2	0	0.0	0	0.0	0	0.0	2,637	44.3
		Total	63	1.1	407	6.8	8	0.1	4,805	80.8	8	0.1	647	10.9	12	0.2	0	0.0	0	0.0	0	0.0	5,949	100.0
		Male mean length	397		526		351		702		456		830		–		–		–		–			
		SE	1		13		–		6		–		16		–		–		–		–			
		Range	364–419		436–599		–		570–839		–		772–857		–		–		–		–			
		n	6		23		1		130		1		4		–		–		–		–			
		Female mean length	–		582		–		708		–		857		680		–		–		–			
		SE	–		12		–		7		–		16		–		–		–		–			
		Range	–		540–612		–		539–832		–		735–951		–		–		–		–			
		n	–		7		–		116		–		28		1		–		–		–			

Appendix A9.–Chena River carcass survey Chinook salmon age and sex composition and mean length (mm), 2014.

Sample dates (gear)	Sample size		Brood year (Age)																Total							
			2011		2010		2009		2008		2007		2006													
			(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%											
			N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%								
Total	284	Male	4	1.4	10	3.5	0	0.0	171	60.2	0	0.0	4	1.4	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0	190	66.9
		Female	0	0.0	0	0.0	0	0.0	65	22.9	0	0.0	27	9.5	2	0.7	0	0.0	0	0.0	0	0.0	0	0.0	94	33.1
		Total	4	1.4	10	3.5	0	0.0	236	83.1	0	0.0	31	10.9	2	0.7	0	0.0	1	0.4	0	0.0	0	0.0	284	100.0
		Male mean length	371		573		–	693		754		–	–	812		–	–	–	–	–	–	–	–	–	–	–
		SE	9		9		–	5		61		–	–	–		–	–	–	–	–	–	–	–	–	–	
		Range	345–385		521–615		–	550–860		625–866		–	–	–		–	–	–	–	–	–	–	–	–	–	–
		n	4		10		–	171		4		–	–	1		–	–	–	–	–	–	–	–	–	–	
		Female mean length	–		–		–	758		838		793	–	–		–	–	–	–	–	–	–	–	–	–	
		SE	–		–		–	6		8		7	–	–		–	–	–	–	–	–	–	–	–	–	
		Range	–		–		–	630–870		750–923		786–800	–	–		–	–	–	–	–	–	–	–	–	–	
		n	–		–		–	64		27		2	–	–		–	–	–	–	–	–	–	–	–	–	

Appendix A10.–Gisasa River weir Chinook salmon escapement age and sex composition and mean length (mm), 2014.

Sample dates (strata dates)	Sample size	Brood year (Age)												Total	
		2011		2010		2009		2008		2007		2006			
		(1.1) <i>N</i> %	(1.2) <i>N</i> %	(2.1) <i>N</i> %	(1.3) <i>N</i> %	(2.2) <i>N</i> %	(1.4) <i>N</i> %	(2.3) <i>N</i> %	(1.5) <i>N</i> %	(2.4) <i>N</i> %	(1.6) <i>N</i> %	(2.5) <i>N</i> %	<i>N</i>	%	
7/02–12	130	Male	12 0.8	278 17.7	0 0.0	918 58.5	0 0.0	60 3.8	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1,268	80.8
(7/2–7/13)		Female	0 0.0	0 0.0	0 0.0	121 7.7	0 0.0	157 10.0	0 0.0	24 1.5	0 0.0	0 0.0	0 0.0	302	19.2
Total		Subtotal	12 0.8	278 17.7	0 0.0	1,039 66.2	0 0.0	217 13.8	0 0.0	24 1.5	0 0.0	0 0.0	0 0.0	1,570	100.0
		Male mean length	415	536	–	675	–	770	–	–	–	–	–		
		SE	–	10	–	5	–	8	–	–	–	–	–		
		Range	–	420–620	–	561–782	–	750–800	–	–	–	–	–		
		<i>n</i>	1	23	–	76	–	5	–	–	–	–	–		
		Female mean length	–	–	–	760	–	821	–	825	–	–	–		
		SE	–	–	–	19	–	14	–	67	–	–	–		
		Range	–	–	–	662–832	–	731–889	–	758–892	–	–	–		
		<i>n</i>	–	–	–	10	–	13	–	2	–	–	–		

Appendix A11.–Salcha River carcass survey Chinook salmon escapement age and sex composition and mean length (mm), 2014.

Sample dates	Sample size	Brood year (Age)												Total												
		2011		2010		2009		2008		2007		2006														
		(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	N	%												
8/04, 06, 08-10, 17, 19	403	Male	6	1.5	59	14.6	0	0.0	192	47.6	1	0.2	15	3.7	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	274	68.0
		Female	0	0.0	0	0.0	0	0.0	48	11.9	0	0.0	76	18.9	0	0.0	5	1.2	0	0.0	0	0.0	0	0.0	129	32.0
		Total	6	1.5	59	14.6	0	0.0	240	59.6	1	0.2	91	22.6	0	0.0	6	1.5	0	0.0	0	0.0	0	0.0	403	100.0
		Male mean length	392		579		–		712		605		831		–		1,050		–		–		–			
		SE	11		6		–		4		–		17		–		–		–		–		–			
		Range	355–420		475–660		–		560–905		–		695–935		–		–		–		–		–			
		<i>n</i>	6		59		–		192		1		15		–		1		–		–		–			
		Female mean length	–		–		–		791		–		857		–		922		–		–		–			
		SE	–		–		–		7		–		5		–		15		–		–		–			
		Range	–		–		–		705–960		–		740–970		–		890–970		–		–		–			
		<i>n</i>	–		–		–		48		–		76		–		5		–		–		–			

## **APPENDIX B: SUMMER CHUM SALMON TABLES**

Appendix B1.–Yukon River District 1 summer chum salmon, commercial dip net/beach seine and gillnet harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample size	Brood year (Age)												
		2011		2010		2009		2008		2007		Total		
		(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	N	%	
6/11 (Period 1–5) <sup>a</sup>	152	Male	0	0.0	1,101	8.6	4,489	34.9	593	4.6	0	0.0	6,182	48.0
		Female	0	0.0	1,524	11.8	4,573	35.5	593	4.6	0	0.0	6,691	52.0
		Subtotal	0	0.0	2,625	20.4	9,062	70.4	1,186	9.2	0	0.0	12,873	100.0
		Male mean length	–		563		600		591		–			
		SE	–		8		3		11		–			
		Range	–		525–623		555–644		539–629		–			
		<i>n</i>	–		13		53		7		–			
		Female mean length	–		533		563		580		–			
		SE	–		5		4		9		–			
		Range	–		500–573		511–619		540–607		–			
		<i>n</i>	–		18		54		7		–			
6/16 (Period 6–8) <sup>a</sup>	155	Male	0	0.0	3,245	16.1	6,101	30.3	519	2.6	130	0.6	9,995	49.7
		Female	0	0.0	2,986	14.8	6,620	32.9	519	2.6	0	0.0	10,125	50.3
		Subtotal	0	0.0	6,231	31.0	12,721	63.2	1,038	5.2	130	0.6	20,120	100.0
		Male mean length	–		547		592		602		582			
		SE	–		4		5		23		–			
		Range	–		513–595		501–674		562–665		–			
		<i>n</i>	–		25		47		4		1			
		Female mean length	–		520		553		569		–			
		SE	–		4		3		11		–			
		Range	–		471–557		500–599		541–595		–			
		<i>n</i>	–		23		51		4		–			
6/20 (Period 9–12) <sup>a</sup>	160	Male	0	0.0	4,827	12.5	12,309	31.9	965	2.5	0	0.0	18,102	46.9
		Female	0	0.0	9,896	25.6	10,137	26.3	483	1.3	0	0.0	20,515	53.1
		Subtotal	0	0.0	14,723	38.1	22,446	58.1	1,448	3.8	0	0.0	38,617	100.0
		Male mean length	–		550		596		616		–			
		SE	–		4		4		16		–			
		Range	–		521–606		546–645		575–654		–			
		<i>n</i>	–		20		51		4		–			
		Female mean length	–		525		559		588		–			
		SE	–		3		5		8		–			
		Range	–		490–610		499–618		580–596		–			
		<i>n</i>	–		41		42		2		–			

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Sample dates (period)	Sample size		Brood year (Age)													
			2011		2010		2009		2008		2007		Total			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)									
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%			
6/24 (Period 13–16) <sup>a</sup>	157	Male	0	0.0	2,971	14.6	6,071	29.9	646	3.2	0	0.0	9,688	47.8		
		Female	129	0.6	4,650	22.9	5,684	28.0	129	0.6	0	0.0	10,592	52.2		
		Subtotal	129	0.6	7,621	37.6	11,755	58.0	775	3.8	0	0.0	20,280	100.0		
		Male mean length	–		551		582		589		–					
		SE	–		4		5		5		–					
		Range	–		512–580		511–644		576–603		–					
		<i>n</i>	–		23		47		5		–					
		Female mean length	526		524		547		582		–					
		SE	–		3		3		–		–					
		Range	–		491–578		503–587		–		–					
		<i>n</i>	–	1		36		44		1		–				
		6/29 (Period 17–21) <sup>a</sup>	158	Male	121	0.6	3,882	20.3	5,337	27.8	485	2.5	0	0.0	9,826	51.3
				Female	0	0.0	3,760	19.6	5,459	28.5	121	0.6	0	0.0	9,340	48.7
Subtotal	121			0.6	7,642	39.9	10,796	56.3	607	3.2	0	0.0	19,166	100.0		
Male mean length	522				540		585		592		–					
SE	–				4		6		13		–					
Range	–				481–588		498–665		564–627		–					
<i>n</i>	–			1		32		44		4		–				
Female mean length	–				521		552		520		–					
SE	–				4		4		–		–					
Range	–				492–583		500–607		–		–					
<i>n</i>	–				31		45		1		–					
7/03 (Period 22–23) <sup>b</sup>	158			Male	0	0.0	3,965	19.0	6,211	29.7	264	1.3	0	0.0	10,441	50.0
				Female	0	0.0	2,907	13.9	7,269	34.8	264	1.3	0	0.0	10,441	50.0
		Subtotal	0	0.0	6,872	32.9	13,480	64.6	529	2.5	0	0.0	20,881	100.0		
		Male mean length	–		558		578		578		–					
		SE	–		5		4		6		–					
		Range	–		496–596		515–626		572–583		–					
		<i>n</i>	–		30		47		2		–					
		Female mean length	–		539		570		556		–					
		SE	–		4		3		15		–					
		Range	–		509–574		522–623		541–570		–					
		<i>n</i>	–		22		55		2		–					

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Sample dates (period)	Sample size		Brood year (Age)													
			2011		2010		2009		2008		2007		Total			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)			N	%					
			N	%	N	%	N	%	N	%	N	%				
7/11 (Period 24–27) <sup>b</sup>	156	Male	0	0.0	8,075	12.2	15,726	23.7	1,275	1.9	0	0.0	25,076	37.8		
		Female	425	0.6	10,200	15.4	28,901	43.6	1,700	2.6	0	0.0	41,227	62.2		
		Subtotal	425	0.6	18,276	27.6	44,627	67.3	2,975	4.5	0	0.0	66,303	100.0		
		Male mean length	–		554		584		599		–					
		SE	–		5		5		25		–					
		Range	–		516–590		520–646		557–642		–					
		<i>n</i>	–		19		37		3		–					
		Female mean length	530		545		563		565		–					
		SE	–		5		3		16		–					
		Range	–		495–588		507–631		537–594		–					
		<i>n</i>	1		24		68		4		–					
		Season	1,096	Male	121	0.1	28,066	14.2	56,244	28.4	4,748	2.4	130	0.1	89,309	45.1
				Female	554	0.3	35,924	18.1	68,643	34.6	3,810	1.9	0	0.0	108,931	54.9
Total	675			0.3	63,990	32.3	124,887	63.0	8,558	4.3	130	0.1	198,240	100.0		
Male mean length	522				551		588		598		582					
SE	–				2		2		8		–					
Range	–				481–623		498–674		539–665		–					
<i>n</i>	1				162		326		29		1					
Female mean length	529				531		560		569		–					
SE	–				2		2		7		–					
Range	526–530				471–610		499–631		520–607		–					
<i>n</i>	2				195		359		21		–					

<sup>a</sup> For Periods 1–21 gear was mixed 4.5 in mesh dip net and less than 6 in mesh beach seine.

<sup>b</sup> For Periods 22–27 gear 6 in or less mesh gillnet.



Appendix B2.–Yukon River Subdistrict 4A summer chum salmon, commercial fish wheel and gillnet harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample size		Brood year (Age)											
			2011		2010		2009		2008		2007		Total	
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)							
			<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
6/27–7/02 (Period 1–10) <sup>a</sup>	103	Male	0	0.0	1,498	4.9	4,196	13.6	300	1.0	0	0.0	5,994	19.4
		Female	0	0.0	4,196	13.6	18,880	61.2	1,798	5.8	0	0.0	24,874	80.6
		Subtotal	0	0.0	5,694	18.4	23,076	74.8	2,098	6.8	0	0.0	30,868	100.0
		Male mean length	–		550		577		616		–			
		SE	–		6		8		–		–			
		Range	–		533–566		533–626		–		–			
		<i>n</i>	–		5		14		1		–			
		Female mean length	–		534		557		557		–			
		SE	–		9		3		15		–			
		Range	–		461–604		504–613		507–598		–			
		<i>n</i>	–		14		63		6		–			
7/04–07, 09 (Period 11–17) <sup>a</sup>	112	Male	0	0.0	963	3.6	482	1.8	0	0.0	0	0.0	1,445	5.4
		Female	0	0.0	11,558	42.9	13,003	48.2	963	3.6	0	0.0	25,524	94.6
		Subtotal	0	0.0	12,521	46.4	13,485	50.0	963	3.6	0	0.0	26,969	100.0
		Male mean length	–		525		553		–		–			
		SE	–		2		7		–		–			
		Range	–		522–529		546–559		–		–			
		<i>n</i>	–		4		2		–		–			
		Female mean length	–		521		541		537		–			
		SE	–		3		4		4		–			
		Range	–		474–558		464–610		527–548		–			
		<i>n</i>	–		48		54		4		–			
7/10–13, 15 (Period 18–23) <sup>a</sup>	100	Male	0	0.0	0	0.0	925	4.0	0	0.0	0	0.0	925	4.0
		Female	231	1.0	10,638	46.0	10,869	47.0	463	2.0	0	0.0	22,201	96.0
		Subtotal	231	1.0	10,638	46.0	11,794	51.0	463	2.0	0	0.0	23,126	100.0
		Male mean length	–		–		573		–		–			
		SE	–		–		9		–		–			
		Range	–		–		548–587		–		–			
		<i>n</i>	–		–		4		–		–			
		Female mean length	479		515		547		606		–			
		SE	–		3		5		14		–			
		Range	–		478–572		480–619		592–619		–			
		<i>n</i>	1		46		47		2		–			

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Sample dates (period)	Sample size		Brood year (Age)											
			2011		2010		2009		2008		2007		Total	
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)							
			<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
7/16–18, 20 (Period 24–28) <sup>a</sup>	71	Male	0	0.0	638	7.0	255	2.8	128	1.4	0	0.0	1,021	11.3
		Female	128	1.4	3,575	39.4	4,213	46.5	128	1.4	0	0.0	8,044	88.7
		Subtotal	128	1.4	4,213	46.5	4,469	49.3	255	2.8	0	0.0	9,065	100.0
		Male mean length	–		525		550		603		–			
		SE	–		16		2		–		–			
		Range	–		482–558		548–551		–		–			
		<i>n</i>	–		5		2		1		–			
		Female mean length	497		509		538		563		–			
		SE	–		3		5		–		–			
		Range	–		485–540		481–614		–		–			
		<i>n</i>	1		28		33		1		–			
		7/21–22, 24–25 (Period 29–35) <sup>b</sup>	121	Male	0	0.0	263	4.1	210	3.3	0	0.0	0	0.0
Female	210			3.3	3,310	52.1	2,312	36.4	53	0.8	0	0.0	5,884	92.6
Subtotal	210			3.3	3,573	56.2	2,522	39.7	53	0.8	0	0.0	6,357	100.0
Male mean length	–				513		575		–		–			
SE	–				8		9		–		–			
Range	–				489–530		549–590		–		–			
<i>n</i>	–				5		4		–		–			
Female mean length	493				513		544		557		–			
SE	2				3		6		–		–			
Range	486–496				474–574		476–678		–		–			
<i>n</i>	4				63		44		1		–			
Season	507			Male	0	0.0	3,363	3.5	6,068	6.3	427	0.4	0	0.0
		Female	569	0.6	33,277	34.5	49,278	51.1	3,404	3.5	0	0.0	86,527	89.8
		Total	569	0.6	36,639	38.0	55,345	57.4	3,831	4.0	0	0.0	96,385	100.0
		Male mean length	–		535		573		612		–			
		SE	–		4		5		0		–			
		Range	–		482–566		533–626		603–616		–			
		<i>n</i>	–		19		26		2		–			
		Female mean length	488		519		548		558		–			
		SE	1		2		2		8		–			
		Range	479–497		461–604		464–678		507–619		–			
		<i>n</i>	6		199		241		14		–			

<sup>a</sup> For Periods 1–28 the gear was fish wheel.

<sup>b</sup> For Periods 29–35 the gear used was 6 in or less mesh gillnet.

Appendix B3.–Yukon River District 6 summer chum salmon, commercial fish wheel harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample size		Brood year (Age)											
			2011		2010		2009		2008		2007		Total	
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)							
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
7/12 (Period 1)	96	Male	7	1.0	167	25.0	139	20.8	0	0.0	0	0.0	312	46.9
		Female	7	1.0	201	30.2	139	20.8	7	1.0	0	0.0	354	53.1
		Subtotal	14	2.1	368	55.2	278	41.7	7	1.0	0	0.0	666	100.0
		Male mean length	604		607		614		–		–			
		SE	–		6		5		–		–			
		Range	–		535–661		573–664		–		–			
		<i>n</i>	1		24		20		–		–			
		Female mean length	590		576		585		603		–			
		SE	–		4		7		–		–			
		Range	–		540–627		539–662		–		–			
<i>n</i>	1		29		20		1		–					
7/14, 21 (Period 2–4)	107	Male	23	0.9	506	20.6	713	29.0	0	0.0	0	0.0	1,243	50.5
		Female	0	0.0	552	22.4	667	27.1	0	0.0	0	0.0	1,219	49.5
		Subtotal	23	0.9	1,058	43.0	1,381	56.1	0	0.0	0	0.0	2,462	100.0
		Male mean length	560		595		609		–		–			
		SE	–		7		5		–		–			
		Range	–		547–680		553–665		–		–			
		<i>n</i>	1		22		31		–		–			
		Female mean length	–		569		577		–		–			
		SE	–		6		4		–		–			
		Range	–		517–618		530–618		–		–			
<i>n</i>	–		24		29		–		–					
7/28 (Period 5–8)	99	Male	0	0.0	956	25.3	688	18.2	0	0.0	0	0.0	1,644	43.4
		Female	0	0.0	1,261	33.3	841	22.2	38	1.0	0	0.0	2,140	56.6
		Subtotal	0	0.0	2,217	58.6	1,529	40.4	38	1.0	0	0.0	3,784	100.0
		Male mean length	–		606		598		–		–			
		SE	–		6		6		–		–			
		Range	–		547–656		555–657		–		–			
		<i>n</i>	–		25		18		–		–			
		Female mean length	–		561		566		580		–			
		SE	–		5		5		–		–			
		Range	–		492–609		512–612		–		–			
<i>n</i>	–		33		22		1		–					

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Sample dates (period)	Sample size	Brood year (Age)										Total		
		2011		2010		2009		2008		2007				
		(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Season	302	Male	30	0.4	1,628	23.6	1,540	22.3	0	0.0	0	0.0	3,198	46.3
		Female	7	0.1	2,015	29.1	1,647	23.8	45	0.7	0	0.0	3,714	53.7
		Total	37	0.5	3,643	52.7	3,187	46.1	45	0.7	0	0.0	6,912	100.0
			Male mean length	570		603		604		–		–		
			SE	–		4		4		–		–		
			Range	560–604		535–680		553–665		–		–		
			<i>n</i>	2		71		69		–		–		
			Female mean length	590		565		572		584		–		
			SE	–		3		3		–		–		
			Range	–		492–627		512–662		580–603		–		
			<i>n</i>	1		86		71		2		–		

Appendix B4.–Lower Yukon River test fishery (Big Eddy site) summer chum salmon, 5.5 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
5/24–6/11 Quartile 1 <sup>a</sup>	322	Male	0	0.0	14	4.3	80	24.8	9	2.8	0	0.0	103	32.0		
		Female	0	0.0	17	5.3	188	58.4	14	4.3	0	0.0	219	68.0		
		Subtotal	0	0.0	31	9.6	268	83.2	23	7.1	0	0.0	322	100.0		
		Male mean length	–		550		594		604		–					
		SE	–		6		3		9		–					
		Range	–		513–598		530–667		555–639		–					
		<i>n</i>	–		14		80		9		–					
		Female mean length	–		535		568		579		–					
		SE	–		4		2		6		–					
		Range	–		506–564		489–700		553–619		–					
		<i>n</i>	–		17		188		14		–					
		6/12–19 Quartile 2 <sup>a</sup>	179	Male	0	0.0	32	17.9	38	21.2	0	0.0	0	0.0	70	39.1
				Female	0	0.0	28	15.6	71	39.7	10	5.6	0	0.0	109	60.9
Subtotal	0			0.0	60	33.5	109	60.9	10	5.6	0	0.0	179	100.0		
Male mean length	–				554		600		–		–					
SE	–				4		4		–		–					
Range	–				517–633		543–655		–		–					
<i>n</i>	–				32		38		–		–					
Female mean length	–				539		564		557		–					
SE	–				3		3		9		–					
Range	–				503–567		523–617		516–606		–					
<i>n</i>	–				28		71		10		–					
6/20–22, 24–27 Quartile 3 <sup>a</sup>	191			Male	1	0.5	38	19.9	36	18.8	4	2.1	0	0.0	79	41.4
				Female	0	0.0	34	17.8	73	38.2	5	2.6	0	0.0	112	58.6
		Subtotal	1	0.5	72	37.7	109	57.1	9	4.7	0	0.0	191	100.0		
		Male mean length	535		550		583		587		–					
		SE	–		3		5		17		–					
		Range	–		502–590		487–639		538–611		–					
		<i>n</i>	1		38		36		4		–					
		Female mean length	–		533		563		564		–					
		SE	–		3		3		15		–					
		Range	–		490–571		512–634		529–611		–					
		<i>n</i>	–		34		73		5		–					

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Sample dates	Sample size	Brood year (Age)										Total			
		2011		2010		2009		2008		2007					
		(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
6/28–7/13 Quartile 4 <sup>a</sup>	336	Male	1	0.3	78	23.2	67	19.9	6	1.8	0	0.0	152	45.2	
		Female	1	0.3	66	19.6	112	33.3	5	1.5	0	0.0	184	54.8	
		Subtotal	2	0.6	144	42.9	179	53.3	11	3.3	0	0.0	336	100.0	
			Male mean length	538		546		578		593		–			
			SE	–		3		4		10		–			
			Range	–		481–596		505–626		568–637		–			
			<i>n</i>	1		78		67		6		–			
			Female mean length	528		533		559		556		–			
			SE	–		2		2		4		–			
			Range	–		479–577		492–631		548–568		–			
			<i>n</i>	1		66		112		5		–			
	Total	1,028	Male	2	0.2	162	15.8	221	21.5	19	1.8	0	0.0	404	39.3
			Female	1	0.1	145	14.1	444	43.2	34	3.3	0	0.0	624	60.7
Total			3	0.3	307	29.9	665	64.7	53	5.2	0	0.0	1,028	100.0	
			Male mean length	537		549		588		597		–			
			SE	–		2		2		6		–			
			Range	535–538		481–633		487–667		538–639		–			
			<i>n</i>	2		162		221		19		–			
			Female mean length	528		534		564		567		–			
			SE	–		2		1		4		–			
			Range	–		479–577		489–700		516–619		–			
			<i>n</i>	1		145		444		34		–			

<sup>a</sup> Quartiles based on CPUE.

Appendix B5.–Lower Yukon River test fishery (Middle Mouth site) summer chum salmon, 5.5 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
6/7–11 Quartile 1 <sup>a</sup>	58	Male	0	0.0	2	3.4	28	48.3	6	10.3	0	0.0	36	62.1
		Female	0	0.0	1	1.7	20	34.5	1	1.7	0	0.0	22	37.9
		Subtotal	0	0.0	3	5.2	48	82.8	7	12.1	0	0.0	58	100.0
		Male mean length	–		568		603		604		–			
		SE	–		12		5		11		–			
		Range	–		556–580		550–656		585–656		–			
		<i>n</i>	–		2		28		6		–			
		Female mean length	–		566		580		589		–			
		SE	–		–		5		–		–			
		Range	–		–		544–633		–		–			
		<i>n</i>	–		1		20		1		–			
		6/12–19 Quartile 2 <sup>a</sup>	161	Male	0	0.0	14	8.7	65	40.4	6	3.7	0	0.0
Female	0			0.0	7	4.3	65	40.4	4	2.5	0	0.0	76	47.2
Subtotal	0			0.0	21	13.0	130	80.7	10	6.2	0	0.0	161	100.0
Male mean length	–				572		603		614		–			
SE	–				8		4		8		–			
Range	–				531–642		532–672		591–641		–			
<i>n</i>	–				14		65		6		–			
Female mean length	–				565		581		579		–			
SE	–				6		2		8		–			
Range	–				545–590		525–629		564–603		–			
<i>n</i>	–				7		65		4		–			
6/20–25, 27 Quartile 3 <sup>a</sup>	171			Male	0	0.0	30	17.5	66	38.6	3	1.8	0	0.0
		Female	0	0.0	9	5.3	61	35.7	2	1.2	0	0.0	72	42.1
		Subtotal	0	0.0	39	22.8	127	74.3	5	2.9	0	0.0	171	100.0
		Male mean length	–		571		592		619		–			
		SE	–		5		4		14		–			
		Range	–		532–648		513–653		592–635		–			
		<i>n</i>	–		30		66		3		–			
		Female mean length	–		562		580		562		–			
		SE	–		6		3		20		–			
		Range	–		539–601		521–642		542–581		–			
		<i>n</i>	–		9		61		2		–			

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Sample dates	Sample size		Brood year (Age)										Total		
			2011		2010		2009		2008		2007				
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
6/28–7/06, 08, 11–13, 15 Quartile 4 <sup>a</sup>	162	Male	0	0.0	30	18.5	54	33.3	5	3.1	0	0.0	89	54.9	
		Female	0	0.0	12	7.4	58	35.8	3	1.9	0	0.0	73	45.1	
		Subtotal	0	0.0	42	25.9	112	69.1	8	4.9	0	0.0	162	100.0	
			Male mean length	–	565	589	605	–							
			SE	–	4	4	10	–							
			Range	–	517–620	545–699	583–637	–							
			<i>n</i>	–	30	54	5	–							
			Female mean length	–	553	574	571	–							
			SE	–	7	3	10	–							
			Range	–	511–589	513–625	555–590	–							
			<i>n</i>	–	12	58	3	–							
	Total	552	Male	0	0.0	76	13.8	213	38.6	20	3.6	0	0.0	309	56.0
			Female	0	0.0	29	5.3	204	37.0	10	1.8	0	0.0	243	44.0
Total			0	0.0	105	19.0	417	75.5	30	5.4	0	0.0	552	100.0	
			Male mean length	–	569	596	610	–							
			SE	–	3	2	5	–							
			Range	–	517–648	513–699	583–656	–							
			<i>n</i>	–	76	213	20	–							
			Female mean length	–	559	579	574	–							
			SE	–	4	2	6	–							
			Range	–	511–601	513–642	542–603	–							
			<i>n</i>	–	29	204	10	–							

<sup>a</sup> Quartiles based on CPUE.



Appendix B6.–Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) summer chum salmon, 5.5 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total		
			2011		2010		2009		2008		2007				
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
5/24–6/11 Quartile 1 <sup>a</sup>	380	Male	0	0.0	16	4.2	108	28.4	15	3.9	0	0.0	139	36.6	
		Female	0	0.0	18	4.7	208	54.7	15	3.9	0	0.0	241	63.4	
		Subtotal	0	0.0	34	8.9	316	83.2	30	7.9	0	0.0	380	100	
		Male mean length	–		552		596		604		–				
		SE	–		6		3		7		–				
		Range	–		513–598		530–667		555–656		–				
		<i>n</i>	–		16		108		15		–				
		Female mean length	–		536		569		580		–				
		SE	–		4		2		6		–				
		Range	–		506–566		489–700		553–619		–				
		<i>n</i>	–		18		208		15		–				
		6/12–19 Quartile 2 <sup>a</sup>	340	Male	0	0.0	46	13.5	103	30.3	6	1.8	0	0.0	155
Female	0			0.0	35	10.3	136	40.0	14	4.1	0	0.0	185	54.4	
Subtotal	0			0.0	81	23.8	239	70.3	20	5.9	0	0.0	340	100	
Male mean length	–				560		602		614		–				
SE	–				4		3		8		–				
Range	–				517–642		532–672		591–641		–				
<i>n</i>	–				46		103		6		–				
Female mean length	–				544		572		564		–				
SE	–				3		2		7		–				
Range	–				503–590		523–629		516–606		–				
<i>n</i>	–				35		136		14		–				
6/20–27 Quartile 3 <sup>a</sup>	362			Male	1	0.3	68	18.8	102	28.2	7	1.9	0	0.0	178
		Female	0	0.0	43	11.9	134	37.0	7	1.9	0	0.0	184	50.8	
		Subtotal	1	0.3	111	30.7	236	65.2	14	3.9	0	0.0	362	100	
		Male mean length	535		560		589		601		–				
		SE	–		3		3		12		–				
		Range	–		502–648		487–653		538–635		–				
		<i>n</i>	1		68		102		7		–				
		Female mean length	–		539		571		563		–				
		SE	–		3		2		11		–				
		Range	–		490–601		512–642		529–611		–				
		<i>n</i>	–		43		134		7		–				

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Sample dates	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
6/28–7/13, 15 Quartile 4 <sup>a</sup>	498	Male	1	0.2	108	21.7	121	24.3	11	2.2	0	0.0	241	48.4		
		Female	1	0.2	78	15.7	170	34.1	8	1.6	0	0.0	257	51.6		
		Subtotal	2	0.4	186	37.3	291	58.4	19	3.8	0	0.0	498	100		
		Male mean length	538		551		583		599		–					
		SE	–		2		3		7		–					
		Range	–		481–620		505–699		568–637		–					
		<i>n</i>	1		108		121		11		–					
		Female mean length	528		536		564		561		–					
		SE	–		3		2		5		–					
		Range	–		479–589		492–631		548–590		–					
		<i>n</i>	1		78		170		8		–					
		Season	1,580	Male	2	0.1	238	15.1	434	27.5	39	2.5	0	0.0	713	45.1
				Female	1	0.1	174	11.0	648	41.0	44	2.8	0	0.0	867	54.9
Total	3			0.2	412	26.1	1,082	68.5	83	5.3	0	0.0	1580	100		
Male mean length	537				555		592		604		–					
SE	–				2		1		4		–					
Range	535–538				481–648		487–699		538–656		–					
<i>n</i>	2				238		434		39		–					
Female mean length	528				538		569		569		–					
SE	–				2		1		4		–					
Range	–				479–601		489–700		516–619		–					
<i>n</i>	1				174		648		44		–					

<sup>a</sup> Quartiles based on CPUE.

Appendix B7.–Andreafsky River (East Fork) weir summer chum salmon, escapement, age and sex composition and mean length (mm), 2014.

Sample dates (Strata dates)	Sample size		Brood year (Age)											
			2011		2010		2009		2008		2007		Total	
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)							
			<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
6/20–28 (6/17–6/29)	179	Male	0	0.0	679	27.4	610	24.6	458	18.4	0	0.0	1,747	70.4
		Female	0	0.0	319	12.8	263	10.6	153	6.1	0	0.0	735	29.6
		Subtotal	0	0.0	998	40.2	874	35.2	610	24.6	0	0.0	2,482	100.0
		Male mean length	–		544		583		598		–			
		SE	–		4		5		7		–			
		Range	–		474–601		505–650		509–657		–			
		<i>n</i>	–		49		44		33		–			
		Female mean length	–		516		547		562		–			
		SE	–		7		10		8		–			
		Range	–		464–590		446–611		520–615		–			
		<i>n</i>	–		23		19		11		–			
		7/01–05 (6/30–7/5)	122	Male	0	0.0	8,764	54.1	2,125	13.1	1,062	6.6	0	0.0
Female	0			0.0	2,789	17.2	1,328	8.2	133	0.8	0	0.0	4,249	26.2
Subtotal	0			0.0	11,553	71.3	3,453	21.3	1,195	7.4	0	0.0	16,201	100.0
Male mean length	–				538		581		596		–			
SE	–				4		9		8		–			
Range	–				469–642		515–645		566–641		–			
<i>n</i>	–				66		16		8		–			
Female mean length	–				505		549		576		–			
SE	–				7		6		–		–			
Range	–				448–592		509–575		–		–			
<i>n</i>	–				21		10		1		–			
7/06–13 (7/6–7/13)	162			Male	74	0.6	5,269	43.8	1,930	16.0	445	3.7	0	0.0
		Female	74	0.6	3,562	29.6	445	3.7	223	1.9	0	0.0	4,305	35.8
		Subtotal	148	1.2	8,832	73.5	2,375	19.8	668	5.6	0	0.0	12,023	100.0
		Male mean length	516		541		570		594		–			
		SE	–		4		6		11		–			
		Range	–		459–686		509–624		555–623		–			
		<i>n</i>	1		71		26		6		–			
		Female mean length	483		505		559		557		–			
		SE	–		4		13		11		–			
		Range	–		442–565		511–602		535–572		–			
		<i>n</i>	1		48		6		3		–			

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Sample dates (Strata dates)	Sample size		Brood year (Age)													
			2011		2010		2009		2008		2007		Total			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)									
			<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%		
7/15, 17, 21– 25, 28, 30–31  (7/14–7/31)	129	Male	55	0.8	2,857	40.3	879	12.4	165	2.3	0	0.0	3,956	55.8		
		Female	110	1.6	2,417	34.1	549	7.8	55	0.8	0	0.0	3,131	44.2		
		Subtotal	165	2.3	5,274	74.4	1,428	20.2	220	3.1	0	0.0	7,087	100.0		
		Male mean length	256		541		567		621		–					
		SE	–		5		11		13		–					
		Range	–		437–618		492–647		597–643		–					
		<i>n</i>	1		52		16		3		–					
		Female mean length	449		502		550		555		–					
		SE	35		3		10		–		–					
		Range	414–484		465–556		514–599		–		–					
		<i>n</i>	2		44		10		1		–					
		Season	592	Male	129	0.3	17,570	46.5	5,543	14.7	2,130	5.6	0	0.0	25,373	67.1
				Female	184	0.5	9,087	24.0	2,586	6.8	563	1.5	0	0.0	12,420	32.9
Total	313			0.8	26,657	70.5	8,130	21.5	2,693	7.1	0	0.0	37,793	100.0		
Male mean length	405				540		575		598		–					
SE	–				2		4		5		–					
Range	256–516				437–686		492–650		509–657		–					
<i>n</i>	2				238		102		50		–					
Female mean length	463				505		551		563		–					
SE	21				3		5		5		–					
Range	414–484				442–592		446–611		520–615		–					
<i>n</i>	3				136		45		16		–					

Appendix B8.—Anvik River sonar summer chum salmon, escapement, age and sex composition and mean length (mm), 2014.

Sample dates (Strata dates)	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
6/27, 29 (6/17–6/30)	31	Male	0	0.0	9,430	9.7	31,433	32.3	6,287	6.5	0	0.0	47,149	48.4
		Female	0	0.0	12,573	12.9	31,433	32.3	6,287	6.5	0	0.0	50,293	51.6
		Subtotal	0	0.0	22,003	22.6	62,866	64.5	12,573	12.9	0	0.0	97,442	100.0
		Male mean length	–		588		612		593		–			
		SE	–		19		12		13		–			
		Range	–		550–610		550–670		580–605		–			
		<i>n</i>	–		3		10		2		–			
		Female mean length	–		556		587		583		–			
		SE	–		11		7		23		–			
		Range	–		530–580		555–620		560–605		–			
		<i>n</i>	–		4		10		2		–			
7/01–03 (7/1–7/05)	78	Male	0	0.0	25,544	21.8	24,042	20.5	3,005	2.6	0	0.0	52,591	44.9
		Female	0	0.0	24,042	20.5	33,057	28.2	7,513	6.4	0	0.0	64,612	55.1
		Subtotal	0	0.0	49,586	42.3	57,099	48.7	10,518	9.0	0	0.0	117,203	100.0
		Male mean length	–		571		612		607		–			
		SE	–		9		7		22		–			
		Range	–		528–673		575–690		585–628		–			
		<i>n</i>	–		17		16		2		–			
		Female mean length	–		570		568		593		–			
		SE	–		8		6		25		–			
		Range	–		498–615		510–665		530–647		–			
		<i>n</i>	–		16		22		5		–			

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Sample dates (Strata dates)	Sample size		Brood year (Age)										Total		
			2011 (0.2)		2010 (0.3)		2009 (0.4)		2008 (0.5)		2007 (0.6)				
			<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
7/08–09, 12, 14  (7/6–7/26)	43	Male	0	0.0	47,364	25.6	30,141	16.3	4,306	2.3	0	0.0	81,811	44.2	
		Female	0	0.0	60,282	32.6	43,058	23.3	0	0.0	0	0.0	103,340	55.8	
		Subtotal	0	0.0	107,646	58.1	73,199	39.5	4,306	2.3	0	0.0	185,151	100.0	
			Male mean length	–	572		595		660		–				
			SE	–	9		7		–		–				
			Range	–	531–628		569–612		–		–				
			<i>n</i>	–	11		7		1		–				
			Female mean length	–	545		576		–		–				
			SE	–	8		8		–		–				
			Range	–	494–598		538–612		–		–				
			<i>n</i>	–	14		10		–		–				
	Season	152	Male	0	0.0	82,338	20.6	85,551	21.4	13,598	3.4	0	0.0	181,551	45.4
			Female	0	0.0	96,897	24.2	107,432	26.9	13,800	3.5	0	0.0	218,245	54.6
Subtotal			0	0.0	179,235	44.8	192,982	48.3	27,397	6.9	0	0.0	399,796	100.0	
			Male mean length	–	573		606		617		–				
			SE	–	6		5		7		–				
			Range	–	528–673		550–690		580–660		–				
			<i>n</i>	–	31		33		5		–				
			Female mean length	–	552		577		588		–				
			SE	–	6		4		17		–				
			Range	–	494–615		510–665		530–647		–				
			<i>n</i>	–	34		42		7		–				

Appendix B9.–Gisasa River weir summer chum salmon, escapement, age and sex composition and mean length (mm), 2014.

Sample dates (Strata dates)	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
7/02–06 (7/2–7/6)	137	Male	0	0.0	3,014	19.7	4,019	26.3	670	4.4	0	0.0	7,703	50.4		
		Female	112	0.7	4,242	27.7	3,126	20.4	112	0.7	0	0.0	7,591	49.6		
		Subtotal	112	0.7	7,256	47.4	7,145	46.7	781	5.1	0	0.0	15,294	100.0		
		Male mean length	–		555		606		595		–					
		SE	–		7		5		17		–					
		Range	–		500–658		551–650		559–675		–					
		<i>n</i>	–		27		36		6		–					
		Female mean length	511		531		560		570		–					
		SE	–		4		6		–		–					
		Range	–		470–582		500–613		–		–					
		<i>n</i>	1		38		28		1		–					
		7/07–12 (7/7–7/13)	112	Male	0	0.0	4,060	24.1	4,060	24.1	150	0.9	0	0.0	8,271	49.1
				Female	451	2.7	4,060	24.1	3,910	23.2	150	0.9	0	0.0	8,572	50.9
Subtotal	451			2.7	8,121	48.2	7,970	47.3	301	1.8	0	0.0	16,843	100.0		
Male mean length	–				551		587		647		–					
SE	–				6		8		–		–					
Range	–				493–618		476–667		–		–					
<i>n</i>	–				27		27		1		–					
Female mean length	535				528		559		557		–					
SE	8				6		6		–		–					
Range	525–551				471–596		495–613		–		–					
<i>n</i>	3				27		26		1		–					
Season	249			Male	0	0.0	7,075	22.0	8,079	25.1	820	2.6	0	0.0	15,974	49.7
				Female	563	1.8	8,302	25.8	7,036	21.9	262	0.8	0	0.0	16,163	50.3
		Total	563	1.8	15,377	47.8	15,115	47.0	1,082	3.4	0	0.0	32,137	100.0		
		Male mean length	–		552		596		605		–					
		SE	–		4		5		14		–					
		Range	–		493–658		476–667		559–675		–					
		<i>n</i>	–		54		63		7		–					
		Female mean length	531		530		559		563		–					
		SE	6		4		4		–		–					
		Range	511–551		470–596		495–613		557–570		–					
		<i>n</i>	4		65		54		2		–					

Appendix B10.–Salcha River carcass survey summer chum salmon, escapement, age composition, sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total		
			2011		2010		2009		2008		2007				
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
8/28; 9/8	159	Male	0	0.0	10	6.3	43	27.0	6	3.8	0	0.0	59	37.1	
		Female	0	0.0	31	19.5	67	42.1	2	1.3	0	0.0	100	62.9	
		Total	0	0.0	41	25.8	110	69.2	8	5.0	0	0.0	159	100.0	
		Male mean length	–		576		595		627		–				
		SE	–		9		3		20		–				
		Range	–		550–645		540–635		560–680		–				
		<i>n</i>	–		10		43		6		–				
		Female mean length	–		538		565		560		–				
		SE	–		5		3		35		–				
		Range	–		490–605		505–635		525–595		–				
		<i>n</i>	–		31		67		2		–				

Note: Ages determined from vertebrae.



## **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), 2014.

Sample dates (period)	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
7/17, (Period 1)	159	Male	79	0.6	2,127	17.0	2,284	18.2	236	1.9	0	0.0	4,726	37.7
		Female	0	0.0	4,096	32.7	3,623	28.9	79	0.6	0	0.0	7,798	62.3
		Subtotal	79	0.6	6,223	49.7	5,908	47.2	315	2.5	0	0.0	12,524	100.0
		Male mean length	522		555		591		630		–			
		SE	–		5		5		12		–			
		Range	–		514–621		542–653		612–653		–			
		<i>n</i>	1		27		29		3		–			
		Female mean length	–		557		584		570		–			
		SE	–		4		5		–		–			
		Range	–		503–620		522–675		–		–			
		<i>n</i>	–		52		46		1		–			
7/21, 25 (Period 2–3)	159	Male	0	0.0	2,469	20.1	1,697	13.8	77	0.6	0	0.0	4,243	34.6
		Female	0	0.0	5,400	44.0	2,546	20.8	77	0.6	0	0.0	8,023	65.4
		Subtotal	0	0.0	7,869	64.2	4,243	34.6	154	1.3	0	0.0	12,266	100.0
		Male mean length	–		577		607		638		–			
		SE	–		7		8		–		–			
		Range	–		491–673		541–698		–		–			
		<i>n</i>	–		32		22		1		–			
		Female mean length	–		556		577		600		–			
		SE	–		3		4		–		–			
		Range	–		510–607		525–625		–		–			
		<i>n</i>	–		70		33		1		–			
7/28 (Period 4)	80	Male	0	0.0	466	27.5	127	7.5	0	0.0	0	0.0	593	35.0
		Female	0	0.0	889	52.5	191	11.3	21	1.3	0	0.0	1,101	65.0
		Subtotal	0	0.0	1,355	80.0	318	18.8	21	1.3	0	0.0	1,694	100.0
		Male mean length	–		557		581		–		–			
		SE	–		6		11		–		–			
		Range	–		510–596		542–610		–		–			
		<i>n</i>	–		22		6		–		–			
		Female mean length	–		556		589		560		–			
		SE	–		5		9		–		–			
		Range	–		501–657		530–620		–		–			
		<i>n</i>	–		42		9		1		–			

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Sample dates (period)	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		N	%
8/15, 19 (Period 5–6)	239	Male	93	0.8	2,406	21.8	1,620	14.6	46	0.4	0	0.0	4,164	37.7
		Female	231	2.1	4,581	41.4	2,082	18.8	0	0.0	0	0.0	6,895	62.3
		Subtotal	324	2.9	6,987	63.2	3,702	33.5	46	0.4	0	0.0	11,059	100.0
		Male mean length	539		575		605		582		–			
		SE	4		4		6		–		–			
		Range	535–542		508–627		528–669		–		–			
		<i>n</i>	2		52		35		1		–			
		Female mean length	532		563		578		–		–			
		SE	11		2		4		–		–			
		Range	494–557		497–608		506–632		–		–			
		<i>n</i>	5		99		45		–		–			
		8/25 (Period 7–8)	157	Male	159	1.9	3,133	37.6	1,221	14.6	0	0.0	0	0.0
Female	159			1.9	2,549	30.6	1,062	12.7	53	0.6	0	0.0	3,823	45.9
Subtotal	319			3.8	5,681	68.2	2,283	27.4	53	0.6	0	0.0	8,336	100.0
Male mean length	541				583		598		–		–			
SE	14				3		5		–		–			
Range	520–567				517–636		548–631		–		–			
<i>n</i>	3				59		23		–		–			
Female mean length	533				560		583		614		–			
SE	1				3		4		–		–			
Range	532–534				514–612		535–630		–		–			
<i>n</i>	3				48		20		1		–			
8/28; 9/01, 03 (Period 9–12)	203			Male	117	2.0	2,108	35.5	878	14.8	0	0.0	0	0.0
		Female	176	3.0	2,255	37.9	410	6.9	0	0.0	0	0.0	2,840	47.8
		Subtotal	293	4.9	4,363	73.4	1,288	21.7	0	0.0	0	0.0	5,944	100.0
		Male mean length	547		570		585		–		–			
		SE	5		3		5		–		–			
		Range	535–559		507–631		531–642		–		–			
		<i>n</i>	4		72		30		–		–			
		Female mean length	544		551		571		–		–			
		SE	4		3		5		–		–			
		Range	533–555		452–616		537–611		–		–			
		<i>n</i>	6		77		14		–		–			

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Sample dates (period)	Sample size	Brood year (Age)										Total		
		2011		2010		2009		2008		2007				
		(0.2)		(0.3)		(0.4)		(0.5)		(0.6)		N	%	
Season	997	Male	448	0.9	12,708	24.5	7,828	15.1	360	0.7	0	0.0	21,343	41.2
		Female	566	1.1	19,770	38.1	9,914	19.1	230	0.4	0	0.0	30,480	58.8
		Total	1,014	2.0	32,478	62.7	17,741	34.2	590	1.1	0	0.0	51,823	100.0
		Male mean length	539		572		598		625		–			
		SE	5		2		3		8		–			
		Range	520–567		491–673		528–698		582–653		–			
		<i>n</i>	10		264		145		5		–			
		Female mean length	536		558		580		589		–			
		SE	5		1		2		–		–			
		Range	494–557		452–657		506–675		560–614		–			
		<i>n</i>	14		388		167		4		–			

Note: All commercial fishing periods were restricted to 6.0 in or smaller mesh gillnet.

Appendix C2.–Yukon River Subdistrict 5B (Rampart Rapids) fall chum salmon, commercial fish wheel harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
8/15 Season	75	Male	0	0.0	337	26.7	253	20.0	34	2.7	0	0.0	624	49.3
		Female	0	0.0	303	24.0	320	25.3	17	1.3	0	0.0	640	50.7
		Total	0	0.0	640	50.7	573	45.3	51	4.0	0	0.0	1,264	100.0
		Male mean length	–		582		616		595		–			
		SE	–		6		10		21		–			
		Range	–		534–632		539–674		574–616		–			
		<i>n</i>	–		20		15		2		–			
		Female mean length	–		567		573		603		–			
		SE	–		6		4		–		–			
		Range	–		513–619		545–599		–		–			
		<i>n</i>	–		18		19		1		–			

Appendix C3.–Yukon River Subdistrict 5B fall chum salmon, subsistence fish wheel harvest, age and sex composition and mean length (mm), 2014.

Sample dates (Village)	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
9/11 (Tanana)	106	Male	1	0.9	35	33.0	29	27.4	0	0.0	0	0.0	65	61.3		
		Female	0	0.0	30	28.3	11	10.4	0	0.0	0	0.0	41	38.7		
		Subtotal	1	0.9	65	61.3	40	37.7	0	0.0	0	0.0	106	100.0		
		Male mean length	545		588		601		–		–					
		SE	–		5		7		–		–					
		Range	–		530–648		540–670		–		–					
		<i>n</i>	1		35		29		–		–					
		Female mean length	–		563		588		–		–					
		SE	–		6		10		–		–					
		Range	–		515–652		532–633		–		–					
		<i>n</i>	–		30		11		–		–					
		8/15 (Rampart Rapids)	13	Male	0	0.0	4	30.8	3	23.1	1	7.7	0	0.0	8	61.5
				Female	0	0.0	2	15.4	3	23.1	0	0.0	0	0.0	5	38.5
Subtotal	0			0.0	6	46.2	6	46.2	1	7.7	0	0.0	13	100.0		
Male mean length	–			578		601		651		–						
SE	–			7		14		–		–						
Range	–			564–596		575–622		–		–						
<i>n</i>	–			4		3		1		–						
Female mean length	–			579		608		–		–						
SE	–			26		10		–		–						
Range	–			553–604		588–622		–		–						
<i>n</i>	–			2		3		–		–						
Total	119			Male	1	0.8	39	32.8	32	26.9	1	0.8	0	0.0	73	61.3
				Female	0	0.0	32	26.9	14	11.8	0	0.0	0	0.0	46	38.7
		Total	1	0.8	71	59.7	46	38.7	1	0.8	0	0.0	119	100.0		
		Male mean length	545		587		601		651		–					
		SE	–		4		6		–		–					
		Range	–		530–648		540–670		–		–					
		<i>n</i>	1		39		32		1		–					
		Female mean length	–		564		592		–		–					
		SE	–		6		8		–		–					
		Range	–		515–652		532–633		–		–					
		<i>n</i>	–		32		14		–		–					

Appendix C4.–Yukon River District 6 fall chum salmon, commercial fish wheel harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample Size	Brood year (Age)												
		2011		2010		2009		2008		2007		Total		
		(0.2)	(0.3)	(0.4)	(0.5)	(0.6)								
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
8/26 Season	55	Male	0	0.0	490	14.5	674	20.0	0	0.0	0	0.0	1,163	34.5
		Female	0	0.0	1,408	41.8	796	23.6	0	0.0	0	0.0	2,205	65.5
		Total	0	0.0	1,898	56.4	1,470	43.6	0	0.0	0	0.0	3,368	100.0
		Male mean length	–		576		627		–		–			
		SE	–		20		8		–		–			
		Range	–		525–703		580–672		–		–			
		<i>n</i>	–		8		11		–		–			
		Female mean length	–		549		576		–		–			
		SE	–		9		13		–		–			
		Range	–		480–626		496–660		–		–			
		<i>n</i>	–		23		13		–		–			

Appendix C5.–Lower Yukon River test fishery (Big Eddy site) fall chum salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
7/16–18, 20–26, 28 Quartile 1 <sup>a</sup>	257	Male	1	0.4	62	24.1	57	22.2	1	0.4	0	0.0	121	47.1
		Female	3	1.2	60	23.3	71	27.6	2	0.8	0	0.0	136	52.9
		Subtotal	4	1.6	122	47.5	128	49.8	3	1.2	0	0.0	257	100.0
		Male mean length	590		586		615		635		–			
		SE	–		4		4		–		–			
		Range	–		527–671		537–665		–		–			
		<i>n</i>	1		62		57		1		–			
		Female mean length	551		576		596		573		–			
		SE	6		2		3		35		–			
		Range	543–563		531–615		527–644		538–607		–			
		<i>n</i>	3		60		71		2		–			
		7/29–30; 8/01–06, 08, 10, 12 Quartile 2 <sup>a</sup>	124	Male	1	0.8	43	34.7	17	13.7	1	0.8	0	0.0
Female	0			0.0	41	33.1	20	16.1	1	0.8	0	0.0	62	50.0
Subtotal	1			0.8	84	67.7	37	29.8	2	1.6	0	0.0	124	100.0
Male mean length	541				583		632		651		–			
SE	–				4		7		–		–			
Range	–				534–650		566–670		–		–			
<i>n</i>	1				43		17		1		–			
Female mean length	–				573		599		616		–			
SE	–				3		7		–		–			
Range	–				542–629		530–649		–		–			
<i>n</i>	–				41		20		1		–			
8/13–18 Quartile 3 <sup>a</sup>	153			Male	1	0.7	33	21.6	21	13.7	0	0.0	0	0.0
		Female	3	2.0	48	31.4	47	30.7	0	0.0	0	0.0	98	64.1
		Subtotal	4	2.6	81	52.9	68	44.4	0	0.0	0	0.0	153	100.0
		Male mean length	565		592		628		–		–			
		SE	–		5		8		–		–			
		Range	–		530–655		549–704		–		–			
		<i>n</i>	1		33		21		–		–			
		Female mean length	551		587		607		–		–			
		SE	3		3		4		–		–			
		Range	545–557		543–652		526–656		–		–			
		<i>n</i>	3		48		47		–		–			

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Sample dates	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
8/19–31; 9/02, 04–06, 09 Quartile 4 <sup>a</sup>	187	Male	3	1.6	45	24.1	10	5.3	1	0.5	0	0.0	59	31.6		
		Female	6	3.2	85	45.5	36	19.3	1	0.5	0	0.0	128	68.4		
		Subtotal	9	4.8	130	69.5	46	24.6	2	1.1	0	0.0	187	100.0		
		Male mean length	561		588		598		565		–					
		SE	10		4		10		–		–					
		Range	541–576		529–679		523–636		–		–					
		<i>n</i>	3		45		10		1		–					
		Female mean length	561		576		594		565		–					
		SE	8		2		5		–		–					
		Range	530–585		535–630		531–669		–		–					
		<i>n</i>	6		85		36		1		–					
		Season	721	Male	6	0.8	183	25.4	105	14.6	3	0.4	0	0.0	297	41.2
				Female	12	1.7	234	32.5	174	24.1	4	0.6	0	0.0	424	58.8
Total	18			2.5	417	57.8	279	38.7	7	1.0	0	0.0	721	100.0		
Male mean length	563				587		619		617		–					
SE	5				2		3		–		–					
Range	541–590				527–679		523–704		565–651		–					
<i>n</i>	6				183		105		3		–					
Female mean length	556				578		599		582		–					
SE	4				1		2		17		–					
Range	530–585				531–652		526–669		538–616		–					
<i>n</i>	12				234		174		4		–					

<sup>a</sup> Quartiles based on CPUE.

Appendix C6.–Lower Yukon River test fishery (Middle Mouth site) fall chum salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
7/16–26 Quartile 1 <sup>a</sup>	129	Male	0	0.0	11	8.5	49	38.0	0	0.0	0	0.0	60	46.5
		Female	0	0.0	10	7.8	56	43.4	3	2.3	0	0.0	69	53.5
		Subtotal	0	0.0	21	16.3	105	81.4	3	2.3	0	0.0	129	100.0
		Male mean length	–		578		605		–		–			
		SE	–		8		4		–		–			
		Range	–		545–636		537–662		–		–			
		<i>n</i>	–		11		49		–		–			
		Female mean length	–		579		600		599		–			
		SE	–		8		3		19		–			
		Range	–		544–613		542–681		561–622		–			
		<i>n</i>	–		10		56		3		–			
8/01–02, 05–08 Quartile 2 <sup>a</sup>	23	Male	0	0.0	4	17.4	3	13.0	0	0.0	0	0.0	7	30.4
		Female	0	0.0	5	21.7	9	39.1	2	8.7	0	0.0	16	69.6
		Subtotal	0	0.0	9	39.1	12	52.2	2	8.7	0	0.0	23	100.0
		Male mean length	–		582		603		–		–			
		SE	–		16		14		–		–			
		Range	–		542–611		582–630		–		–			
		<i>n</i>	–		4		3		–		–			
		Female mean length	–		573		605		608		–			
		SE	–		11		6		1		–			
		Range	–		542–596		576–624		607–609		–			
		<i>n</i>	–		5		9		2		–			
8/13–14, 18 Quartile 3 <sup>a</sup>	41	Male	0	0.0	8	19.5	10	24.4	0	0.0	0	0.0	18	43.9
		Female	1	2.4	15	36.6	7	17.1	0	0.0	0	0.0	23	56.1
		Subtotal	1	2.4	23	56.1	17	41.5	0	0.0	0	0.0	41	100.0
		Male mean length	–		595		619		–		–			
		SE	–		12		8		–		–			
		Range	–		551–654		575–654		–		–			
		<i>n</i>	–		8		10		–		–			
		Female mean length	528		584		601		–		–			
		SE	–		6		11		–		–			
		Range	–		546–622		561–641		–		–			
		<i>n</i>	1		15		7		–		–			

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Sample dates	Sample size	Brood year (Age)										Total			
		2011		2010		2009		2008		2007					
		(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
8/19–20, 22, 24– 25, 27, 29–31; 9/02, 06, 14–16 Quartile 4 <sup>a</sup>	67	Male	1	1.5	14	20.9	9	13.4	1	1.5	0	0.0	25	37.3	
		Female	1	1.5	25	37.3	16	23.9	0	0.0	0	0.0	42	62.7	
		Subtotal	2	3.0	39	58.2	25	37.3	1	1.5	0	0.0	67	100.0	
			Male mean length	588	586	605	636	–							
			SE	–	9	8	–	–							
			Range	–	546–637	571–634	–	–							
			<i>n</i>	1	14	9	1	–							
			Female mean length	581	573	576	–	–							
			SE	–	4	4	–	–							
			Range	–	539–614	546–600	–	–							
			<i>n</i>	1	25	16	–	–							
	Season	260	Male	1	0.4	37	14.2	71	27.3	1	0.4	0	0.0	110	42.3
			Female	2	0.8	55	21.2	88	33.8	5	1.9	0	0.0	150	57.7
Total			3	1.2	92	35.4	159	61.2	6	2.3	0	0.0	260	100.0	
			Male mean length	588	585	607	636	–							
			SE	–	5	3	–	–							
			Range	–	542–654	537–662	–	–							
			<i>n</i>	1	37	71	1	–							
			Female mean length	555	577	596	602	–							
			SE	–	3	2	11	–							
			Range	528–581	539–622	542–681	561–622	–							
			<i>n</i>	2	55	88	5	–							

<sup>a</sup> Quartiles based on CPUE.

Appendix C7.–Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) fall chum salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
7/16–26, 28 Quartile 1 <sup>a</sup>	386	Male	1	0.3	73	18.9	106	27.5	1	0.3	0	0.0	181	46.9
		Female	3	0.8	70	18.1	127	32.9	5	1.3	0	0.0	205	53.1
		Subtotal	4	1.0	143	37.0	233	60.4	6	1.6	0	0.0	386	100.0
		Male mean length	590		584		610		635		–			
		SE	–		4		3		–		–			
		Range	–		527–671		537–665		–		–			
		<i>n</i>	1		73		106		1		–			
		Female mean length	551		576		598		588		–			
		SE	6		2		2		16		–			
		Range	543–563		531–615		527–681		538–622		–			
		<i>n</i>	3		70		127		5		–			
7/29–30; 8/01– 08, 10, 12 Quartile 2 <sup>a</sup>	147	Male	1	0.7	47	32.0	20	13.6	1	0.7	0	0.0	69	46.9
		Female	0	0.0	46	31.3	29	19.7	3	2.0	0	0.0	78	53.1
		Subtotal	1	0.7	93	63.3	49	33.3	4	2.7	0	0.0	147	100.0
		Male mean length	541		583		628		651		–			
		SE	–		4		7		–		–			
		Range	–		534–650		566–670		–		–			
		<i>n</i>	1		47		20		1		–			
		Female mean length	–		573		600		611		–			
		SE	–		3		5		3		–			
		Range	–		542–629		530–649		607–616		–			
		<i>n</i>	–		46		29		3		–			
8/13–18 Quartile 3 <sup>a</sup>	194	Male	1	0.5	41	21.1	31	16.0	0	0.0	0	0.0	73	37.6
		Female	4	2.1	63	32.5	54	27.8	0	0.0	0	0.0	121	62.4
		Subtotal	5	2.6	104	53.6	85	43.8	0	0.0	0	0.0	194	100.0
		Male mean length	565		592		625		–		–			
		SE	–		5		6		–		–			
		Range	–		530–655		549–704		–		–			
		<i>n</i>	1		41		31		–		–			
		Female mean length	546		586		606		–		–			
		SE	6		3		4		–		–			
		Range	528–557		543–652		526–656		–		–			
		<i>n</i>	4		63		54		–		–			

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Sample dates	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
8/19–31; 9/02, 04–06, 09 Quartile 4 <sup>a</sup>	254	Male	4	1.6	59	23.2	19	7.5	2	0.8	0	0.0	84	33.1		
		Female	7	2.8	110	43.3	52	20.5	1	0.4	0	0.0	170	66.9		
		Subtotal	11	4.3	169	66.5	71	28.0	3	1.2	0	0.0	254	100.0		
		Male mean length	568		587		601		601		–					
		SE	10		4		7		36		–					
		Range	541–588		529–679		523–636		565–636		–					
		<i>n</i>	4		59		19		2		–					
		Female mean length	564		575		589		565		–					
		SE	7		2		4		–		–					
		Range	530–585		535–630		531–669		–		–					
		<i>n</i>	7		110		52		1		–					
		Season	981	Male	7	0.7	220	22.4	176	17.9	4	0.4	0	0.0	407	41.5
				Female	14	1.4	289	29.5	262	26.7	9	0.9	0	0.0	574	58.5
Total	21			2.1	509	51.9	438	44.6	13	1.3	0	0.0	981	100.0		
Male mean length	567				586		614		622		–					
SE	6				2		2		18		–					
Range	541–590				527–679		523–704		565–651		–					
<i>n</i>	7				220		176		4		–					
Female mean length	556				577		598		593		–					
SE	4				1		2		9		–					
Range	528–585				531–652		526–681		538–622		–					
<i>n</i>	14				289		262		9		–					

<sup>a</sup> Quartiles based on CPUE.

Appendix C8.–Yukon River Mountain Village test fishery fall chum salmon, 5.875 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (Strata dates) <sup>a</sup>	Sample Size		Brood year (Age)													
			2011		2010		2009		2008		2007		Total			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)									
		<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%			
7/17–19, 21–8/01 (7/17–8/1)	100	Male	0	0.0	15	15.0	23	23.0	1	1.0	0	0.0	39	39.0		
		Female	0	0.0	28	28.0	31	31.0	2	2.0	0	0.0	61	61.0		
		Subtotal	0	0.0	43	43.0	54	54.0	3	3.0	0	0.0	100	100.0		
		Male mean length	–		594		604		557		–					
		SE	–		10		7		–		–					
		Range	–		532–664		539–664		–		–					
		<i>n</i>	–		15		23		1		–					
		Female mean length	–		566		583		558		–					
		SE	–		4		5		29		–					
		Range	–		532–619		513–648		529–586		–					
		<i>n</i>	–		28		31		2		–					
		8/02–06, 11, 15–16, 18–22, 28–29, 31 (8/2–8/31)	129	Male	0	0.0	30	23.3	20	15.5	0	0.0	0	0.0	50	38.8
				Female	1	0.8	50	38.8	26	20.2	2	1.6	0	0.0	79	61.2
Subtotal	1			0.8	80	62.0	46	35.7	2	1.6	0	0.0	129	100.0		
Male mean length	–				584		600		–		–					
SE	–				6		10		–		–					
Range	–				523–646		544–688		–		–					
<i>n</i>	–				30		20		–		–					
Female mean length	529				570		598		595		–					
SE	–				5		5		9		–					
Range	–				396–631		543–685		586–604		–					
<i>n</i>	1				50		26		2		–					
Total	229			Male	0	0.0	45	19.7	43	18.8	1	0.4	0	0.0	89	38.9
				Female	1	0.4	78	34.1	57	24.9	4	1.7	0	0.0	140	61.1
		Total	1	0.4	123	53.7	100	43.7	5	2.2	0	0.0	229	100.0		
		Male mean length	–		587		602		557		–					
		SE	–		5		6		–		–					
		Range	–		523–664		539–688		–		–					
		<i>n</i>	–		45		43		1		–					
		Female mean length	529		569		590		576		–					
		SE	–		3		4		15		–					
		Range	–		396–631		513–685		529–604		–					
		<i>n</i>	1		78		57		4		–					

<sup>a</sup> Strata based on CPUE.

Appendix C9.–Yukon River Eagle sonar test fishery fall chum salmon, variable mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total			
			2011		2010		2009		2008		2007					
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
7/24–8/25 5.25" Mesh	426	Male	1	0.2	109	25.6	106	24.9	3	0.7	0	0.0	219	51.4		
		Female	4	0.9	132	31.0	71	16.7	0	0.0	0	0.0	207	48.6		
		Subtotal	5	1.2	241	56.6	177	41.5	3	0.7	0	0.0	426	100.0		
		Male mean length	610		598		622		626		–					
		SE	–		3		3		16		–					
		Range	–		534–672		533–708		597–654		–					
		<i>n</i>	1		109		106		3		–					
		Female mean length	552		573		600		–		–					
		SE	19		2		3		–		–					
		Range	509–598		507–634		545–662		–		–					
		<i>n</i>	4		132		71		–		–					
		7/30–9/04 7.5" Mesh	197	Male	1	0.5	56	28.4	110	55.8	3	1.5	0	0.0	170	86.3
				Female	0	0.0	13	6.6	13	6.6	1	0.5	0	0.0	27	13.7
Subtotal	1			0.5	69	35.0	123	62.4	4	2.0	0	0.0	197	100.0		
Male mean length	546				615		638		639		–					
SE	–				3		2		5		–					
Range	–				570–680		564–692		630–644		–					
<i>n</i>	1				56		110		3		–					
Female mean length	–				589		617		624		–					
SE	–				8		9		–		–					
Range	–				515–621		535–662		–		–					
<i>n</i>	–				13		13		1		–					
Total	623			Male	2	0.3	165	26.5	216	34.7	6	1.0	0	0.0	389	62.4
				Female	4	0.6	145	23.3	84	13.5	1	0.2	0	0.0	234	37.6
		Total	6	1.0	310	49.8	300	48.2	7	1.1	0	0.0	623	100.0		
		Male mean length	578		604		631		633		–					
		SE	–		2		2		9		–					
		Range	546–610		534–680		533–708		597–654		–					
		<i>n</i>	2		165		216		6		–					
		Female mean length	552		574		603		624		–					
		SE	19		2		3		–		–					
		Range	509–598		507–634		535–662		–		–					
		<i>n</i>	4		145		84		1		–					

Appendix C10.–Delta River carcass survey fall chum salmon, escapement, age and sex composition and mean length (mm), 2014.

Sample dates	Sample size		Brood year (Age)										Total	
			2011		2010		2009		2008		2007			
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
11/10, 19	160	Male	1	0.6	38	23.8	44	27.5	8	5.0	1	0.6	92	57.5
		Female	1	0.6	40	25.0	25	15.6	2	1.3	0	0.0	68	42.5
		Total	2	1.3	78	48.8	69	43.1	10	6.3	1	0.6	160	100.0
		Male mean length	560		576		611		625		589			
		SE	–		6		6		11		–			
		Range	–		510–645		510–690		583–680		–			
		<i>n</i>	1		38		44		8		1			
		Female mean length	515		553		574		575		–			
		SE	–		5		6		11		–			
		Range	–		490–620		513–640		564–586		–			
		<i>n</i>	1		40		25		2		–			

Note: Ages determined from vertebrae.



Appendix C11.—Yukon River fall chum salmon mean lengths (mm) by sex, year, and age from selected escapement projects 1973–2014.

Project and sex	Year	Percent (%)				
		Age				
		3 yr (0.2)	4 yr (0.3)	5 yr (0.4)	6 yr (0.5)	7 yr (0.6)
Delta River <sup>a</sup>	1973	–	–	–	–	–
Male	1974	551	601	560	–	–
	1975	530	602	632	–	–
	1976	508	553	607	–	–
	1977	600	624	611	–	–
	1978	570	608	643	–	–
	1979	–	–	–	–	–
	1980	516	592	621	–	–
	1981	–	–	–	–	–
	1982	583	610	621	655	–
	1983	555	598	621	595	–
	1984	569	584	628	–	–
	1985	611	601	636	590	–
	1986	545	588	616	–	–
	1987	588	610	641	643	–
	1988	–	–	–	–	–
	1989	572	603	612	640	–
	1990	–	–	–	–	–
	1991	543	586	594	–	–
	1992	–	599	624	617	–
	1993	535	586	600	597	–
	1994	530	547	584	578	–
	1995	–	–	584	592	596
	1996	595	613	634	636	–
	1997	545	599	635	640	–
	1998	579	591	603	630	–
	1999	603	591	609	660	–
	2000	558	593	625	–	–
	2001	555	606	625	–	–
	2002	581	613	635	665	–
	2003	–	612	607	620	–
	2004	–	565	595	610	–
	2005	–	575	604	589	–
	2006	561	577	597	565	–
	2007	580	598	619	653	–
	2008	–	605	624	634	–
	2009	558	602	614	633	–
	2010	588	596	601	618	598
	2011	548	607	619	626	–
	2012	546	582	592	606	–
	2013	–	585	608	622	–
	2014	560	576	611	625	589
Average (1973–2013) <sup>c</sup>		562	594	613	621	597
5-yr average (2009–2013) <sup>c</sup>		560	594	607	621	598
Odd year average <sup>c</sup>		566	599	615	621	596
Even year average <sup>c</sup>		559	590	612	619	598

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Project and Sex	Year	Percent (%)				
		Age				
		3 yr (0.2)	4 yr (0.3)	5 yr (0.4)	6 yr (0.5)	7 yr (0.6)
Delta River Female	1973 <sup>b</sup>	–	–	–	–	–
	1974	542	578	570	–	–
	1975	524	582	618	–	–
	1976	528	539	583	615	–
	1977	592	602	612	–	–
	1978	543	586	637	–	–
	1979	–	–	–	–	–
	1980	543	586	–	–	–
	1981	–	–	–	–	–
	1982	561	592	608	625	–
	1983	533	576	591	555	–
	1984	512	559	571	–	–
	1985	566	572	587	–	–
	1986	536	568	585	605	–
	1987	553	584	618	620	–
	1988 <sup>b</sup>	–	–	–	–	–
	1989	543	567	581	–	–
	1990 <sup>b</sup>	–	–	–	–	–
	1991	490	565	571	565	–
	1992	–	572	595	615	–
	1993	–	567	571	585	–
	1994	–	547	567	–	–
	1995	–	545	570	572	582
	1996	568	590	600	625	–
	1997	470	574	596	570	–
	1998	550	557	562	583	–
1999	575	564	581	–	–	
2000	535	561	598	605	–	
2001	535	565	597	560	–	
2002	544	584	606	–	–	
2003	556	581	591	–	–	
2004	–	547	563	576	550	
2005	–	–	573	599	–	
2006	531	535	562	578	–	
2007	557	569	591	–	–	
2008	573	578	596	614	625	
2009	548	563	578	588	585	
2010	555	568	571	605	580	
2011	515	577	607	599	–	
2012	542	556	568	–	–	
2013	–	562	580	607	–	
2014	515	553	574	575	–	
Average (1973–2013) <sup>c</sup>		542	569	587	593	584
5–yr average (2009–2013) <sup>c</sup>		540	565	581	600	583
Odd year average <sup>c</sup>		540	571	590	584	583
Even year average <sup>c</sup>		544	567	585	604	585

<sup>a</sup> Carcass samples collected on spawning grounds, unless otherwise noted.

<sup>b</sup> Samples aged. Missing information.

<sup>c</sup> Averages not weighted by sample size.

## **APPENDIX D: COHO SALMON TABLES**

Appendix D1.–Yukon River District 1 coho salmon, commercial gillnet harvest, age and sex composition and mean length (mm), 2014.

Sample dates (period)	Sample size		Brood year (Age)						Total			
			2011		2010		2009					
			(1.1)		(2.1)		(3.1)		N	%		
8/15 (Period 1–5) <sup>a</sup>	117	Male	162	3.4	2,269	47.9	122	2.6	2,553	53.8		
		Female	446	9.4	1,742	36.8	0	0.0	2,188	46.2		
		Subtotal	608	12.8	4,012	84.6	122	2.6	4,741	100.0		
		Male mean length	515		540		554					
		SE	23		4		16					
		Range	461–568		477–597		523–574					
		<i>n</i>	4		56		3					
		Female mean length	538		545		–					
		SE	6		4		–					
		Range	505–573		469–589		–					
		<i>n</i>	11		43		–					
		8/19, 25 (Period 6–8) <sup>a</sup>	132	Male	1,914	5.3	13,942	38.6	1,367	3.8	17,223	47.7
				Female	2,187	6.1	15,309	42.4	1,367	3.8	18,863	52.3
Subtotal	4,101			11.4	29,252	81.1	2,734	7.6	36,086	100.0		
Male mean length	557				555		569					
SE	12				5		19					
Range	497–588				489–633		513–616					
<i>n</i>	7				51		5					
Female mean length	548				555		573					
SE	8				4		4					
Range	493–564				457–610		562–584					
<i>n</i>	8				56		5					
8/28; 9/01, 03 (Period 9–12) <sup>a</sup>	156			Male	892	6.4	5,350	38.5	89	0.6	6,331	45.5
				Female	1,427	10.3	5,172	37.2	981	7.1	7,580	54.5
		Subtotal	2,319	16.7	10,522	75.6	1,070	7.7	13,911	100.0		
		Male mean length	571		560		549					
		SE	10		5		–					
		Range	522–619		456–639		–					
		<i>n</i>	10		60		1					
		Female mean length	543		553		550					
		SE	10		4		10					
		Range	489–619		475–626		507–601					
		<i>n</i>	16		58		11					
		Season	1,096	Male	2,967	5.4	21,562	39.4	1,578	2.9	26,107	47.7
				Female	4,060	7.4	22,224	40.6	2,348	4.3	28,631	52.3
Total	7,027			12.8	43,786	80.0	3,925	7.2	54,738	100.0		
Male mean length	559				555		567					
SE	8				3		17					
Range	461–619				456–639		513–616					
<i>n</i>	21				167		9					
Female mean length	545				554		563					
SE	6				3		5					
Range	489–619				457–626		507–601					
<i>n</i>	35				157		16					

<sup>a</sup> For all periods gear was 6 in or less mesh gillnet.

Appendix D2.–Lower Yukon River test fishery (Big Eddy site) coho salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (quartile)	Sample size		Brood year (Age)						Total		
			2011		2010		2009				
			(1.1)	(2.1)	(3.1)					N	%
			N	%	N	%	N	%	N	%	
7/21, 24–25, 27–29; 8/01–08, 12–15 Quartile 1 <sup>a</sup>	116	Male	8	6.9	59	50.9	5	4.3	72	62.1	
		Female	1	0.9	41	35.3	2	1.7	44	37.9	
		Subtotal	9	7.8	100	86.2	7	6.0	116	100.0	
		Male mean length		533		545		540			
		SE		6		3		12			
		Range		516–557		492–609		513–580			
		<i>n</i>		8		59		5			
		Female mean length		551		558		585			
		SE		–		3		20			
		Range		–		518–608		565–605			
		<i>n</i>		1		41		2			
		8/17–20 Quartile 2 <sup>a</sup>	77	Male	3	3.9	31	40.3	2	2.6	36
Female	2			2.6	34	44.2	5	6.5	41	53.2	
Subtotal	5			6.5	65	84.4	7	9.1	77	100.0	
Male mean length				553		557		538			
SE				8		6		5			
Range				544–568		468–619		533–542			
<i>n</i>				3		31		2			
Female mean length				585		564		570			
SE				36		4		10			
Range				549–621		527–631		545–608			
<i>n</i>				2		33		5			
8/21–27 Quartile 3 <sup>a</sup>	96			Male	4	4.2	36	37.5	5	5.2	45
		Female	2	2.1	48	50.0	1	1.0	51	53.1	
		Subtotal	6	6.3	84	87.5	6	6.3	96	100.0	
		Male mean length		561		565		568			
		SE		20		5		12			
		Range		532–621		484–643		522–593			
		<i>n</i>		4		36		5			
		Female mean length		556		561		559			
		SE		4		3		–			
		Range		552–560		515–608		–			
		<i>n</i>		2		48		1			

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Sample dates (quartile)	Sample size		Brood year (Age)						Total			
			2011		2010		2009					
			(1.1)	(2.1)	(3.1)					<i>N</i>	%	
8/28–31; 9/02, 05–08, 13, 16 Quartile 4 <sup>a</sup>	34	Male	1	2.9	12	35.3	0	0.0	13	38.2		
		Female	1	2.9	18	52.9	2	5.9	21	61.8		
		Subtotal	2	5.9	30	88.2	2	5.9	34	100.0		
		Male mean length	525		557		–					
		SE	–		10		–					
		Range	–		489–606		–					
		<i>n</i>	1		12		–					
		Female mean length	532		571		553					
		SE	–		6		4					
		Range	–		515–614		549–556					
		<i>n</i>	1		18		2					
		Season	323	Male	16	5.0	138	42.7	12	3.7	166	51.4
				Female	6	1.9	141	43.7	10	3.1	157	48.6
Total	22			6.8	279	86.4	22	6.8	323	100.0		
Male mean length	543				554		551					
SE	6				3		7					
Range	516–621				468–643		513–593					
<i>n</i>	16				138		12					
Female mean length	561				562		568					
SE	12				2		7					
Range	532–621				515–631		545–608					
<i>n</i>	6				140		10					

<sup>a</sup> Quartiles based on CPUE.

Appendix D3.–Lower Yukon River test fishery (Middle Mouth site) coho salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (quartile)	Sample size		Brood year (Age)						Total	
			2011		2010		2009			
			(1.1)	(2.1)	(3.1)					N
7/24–25, 29; 8/02, 13–14 Quartile 1 <sup>a</sup>	12	Male	1	8.3	4	33.3	0	0.0	5	41.7
		Female	2	16.7	5	41.7	0	0.0	7	58.3
		Subtotal	3	25.0	9	75.0	0	0.0	12	100.0
		Male mean length	566		553		–			
		SE	–		11		–			
		Range	–		526–573		–			
		<i>n</i>	1		4		–			
		Female mean length	539		557		–			
		SE	5		6		–			
		Range	534–544		541–573		–			
		<i>n</i>	2		5		–			
8/18–20 Quartile 2 <sup>a</sup>	24	Male	2	8.3	7	29.2	0	0.0	9	37.5
		Female	2	8.3	10	41.7	3	12.5	15	62.5
		Subtotal	4	16.7	17	70.8	3	12.5	24	100.0
		Male mean length	524		553		–			
		SE	12		9		–			
		Range	512–536		526–581		–			
		<i>n</i>	2		7		–			
		Female mean length	545		568		545			
		SE	16		4		15			
		Range	529–561		535–585		514–561			
		<i>n</i>	2		10		3			
8/24, 27 Quartile 3 <sup>a</sup>	1	Male	0	0.0	1	100.0	0	0.0	1	100.0
		Female	0	0.0	0	0.0	0	0.0	0	0.0
		Subtotal	0	0.0	1	100.0	0	0.0	1	100.0
		Male mean length	–		569		–			
		SE	–		–		–			
		Range	–		–		–			
		<i>n</i>	–		1		–			
		Female mean length	–		–		–			
		SE	–		–		–			
		Range	–		–		–			
		<i>n</i>	–		–		–			

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Sample dates (quartile)	Sample size		Brood year (Age)						Total			
			2011		2010		2009					
			(1.1)	(2.1)	(3.1)					<i>N</i>	%	
8/29–31; 9/02, 04–08, 10, 14–15, 20 Quartile 4 <sup>a</sup>	66	Male	4	6.1	19	28.8	3	4.5	26	39.4		
		Female	2	3.0	32	48.5	6	9.1	40	60.6		
		Subtotal	6	9.1	51	77.3	9	13.6	66	100.0		
		Male mean length	560		551		584					
		SE	16		6		17					
		Range	523–603		516–624		558–615					
		<i>n</i>	4		19		3					
		Female mean length	567		563		576					
		SE	5		5		12					
		Range	562–571		480–626		533–620					
		<i>n</i>	2		32		6					
		Season	103	Male	7	6.8	31	30.1	3	2.9	41	39.8
				Female	6	5.8	47	45.6	9	8.7	62	60.2
Total	13			12.6	78	75.7	12	11.7	103	100.0		
Male mean length	551				552		584					
SE	10				4		17					
Range	512–603				516–624		558–615					
<i>n</i>	7				31		3					
Female mean length	550				564		565					
SE	6				3		9					
Range	529–571				480–626		514–620					
<i>n</i>	6				47		9					

<sup>a</sup> Quartiles based on CPUE.



Appendix D4.–Lower Yukon River test fishery (combined Big Eddy and Middle Mouth sites) coho salmon, 6.0 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (quartile)	Sample size		Brood year (Age)						Total		
			2011		2010		2009				
			(1.1)	(2.1)	(3.1)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
7/21, 24–25, 27–29; 8/01–08, 12–15 Quartile 1 <sup>a</sup>	128	Male	9	7.0	63	49.2	5	3.9	77	60.2	
		Female	3	2.3	46	35.9	2	1.6	51	39.8	
		Subtotal	12	9.4	109	85.2	7	5.5	128	100.0	
		Male mean length	537		546		540				
		SE	6		3		12				
		Range	516–566		492–609		513–580				
		<i>n</i>	9		63		5				
		Female mean length	543		558		585				
		SE	5		3		20				
		Range	534–551		518–608		565–605				
		<i>n</i>	3		46		2				
		8/17–20 Quartile 2 <sup>a</sup>	101	Male	5	5.0	38	37.6	2	2.0	45
Female	4			4.0	44	43.6	8	7.9	56	55.4	
Subtotal	9			8.9	82	81.2	10	9.9	101	100.0	
Male mean length	541			556		538					
SE	9			5		5					
Range	512–568			468–619		533–542					
<i>n</i>	5			38		2					
Female mean length	565			565		560					
SE	20			4		9					
Range	529–621			527–631		514–608					
<i>n</i>	4			43		8					
8/21–27 Quartile 3 <sup>a</sup>	97			Male	4	4.1	37	38.1	5	5.2	46
		Female	2	2.1	48	49.5	1	1.0	51	52.6	
		Subtotal	6	6.2	85	87.6	6	6.2	97	100.0	
		Male mean length	561		566		568				
		SE	20		5		12				
		Range	532–621		484–643		522–593				
		<i>n</i>	4		37		5				
		Female mean length	556		561		559				
		SE	4		3		–				
		Range	552–560		515–608		–				
		<i>n</i>	2		48		1				

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Sample dates (quartile)	Sample size		Brood year (Age)						Total			
			2011		2010		2009					
			(1.1)		(2.1)		(3.1)		<i>N</i>	%	<i>N</i>	%
8/28–31; 9/02, 04–08, 10, 13–16, 20 Quartile 4 <sup>a</sup>	100	Male	5	5.0	31	31.0	3	3.0	39	39.0		
		Female	3	3.0	50	50.0	8	8.0	61	61.0		
		Subtotal	8	8.0	81	81.0	11	11.0	100	100.0		
		Male mean length	553		553		584					
		SE	15		5		17					
		Range	523–603		489–624		558–615					
		<i>n</i>	5		31		3					
		Female mean length	555		566		570					
		SE	12		4		10					
		Range	532–571		480–626		533–620					
		<i>n</i>	3		50		8					
		Season	426	Male	23	5.4	169	39.7	15	3.5	207	48.6
				Female	12	2.8	188	44.1	19	4.5	219	51.4
Total	35			8.2	357	83.8	34	8.0	426	100.0		
Male mean length	546			554		558						
SE	6			2		7						
Range	512–621			468–643		513–615						
<i>n</i>	23			169		15						
Female mean length	556			563		567						
SE	7			2		6						
Range	529–621			480–631		514–620						
<i>n</i>	12			187		19						

<sup>a</sup> Quartiles based on CPUE.

Appendix D5.–Yukon River Mountain Village test fishery coho salmon, 5.875 in mesh drift gillnet, age and sex composition and mean length (mm), 2014.

Sample dates (Strata dates)	Sample size		Brood year (Age)						Total	
			2011		2010		2009			
			(1.1)	(2.1)	(3.1)					N
7/27, 30–8/02, 04–07, 10–13, 15–18 (7/27–8/18) <sup>a</sup>	35	Male	2	5.7	20	57.1	0	0.0	22	62.9
		Female	2	5.7	10	28.6	1	2.9	13	37.1
		Subtotal	4	11.4	30	85.7	1	2.9	35	100.0
		Male mean length	491		536		–			
		SE	22		6		–			
		Range	469–513		484–582		–			
		<i>n</i>	2		19		–			
		Female mean length	542		555		530			
		SE	3		12		–			
		Range	539–544		467–598		–			
		<i>n</i>	2		10		1			
		8/19–22 (8/19–8/22) <sup>a</sup>	38	Male	3	7.9	16	42.1	2	5.3
Female	1			2.6	15	39.5	1	2.6	17	44.7
Subtotal	4			10.5	31	81.6	3	7.9	38	100.0
Male mean length	532				562		554			
SE	7				7		16			
Range	523–545				517–611		538–570			
<i>n</i>	3				16		2			
Female mean length	554				554		602			
SE	–				7		–			
Range	–				500–611		–			
<i>n</i>	1				15		1			
8/23–28 (8/23–8/28) <sup>a</sup>	24			Male	0	0.0	7	29.2	0	0.0
		Female	3	12.5	14	58.3	0	0.0	17	70.8
		Subtotal	3	12.5	21	87.5	0	0.0	24	100.0
		Male mean length	–		576		–			
		SE	–		8		–			
		Range	–		550–603		–			
		<i>n</i>	–		7		–			
		Female mean length	552		555		–			
		SE	7		7		–			
		Range	538–560		524–604		–			
		<i>n</i>	3		14		–			

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Sample dates (Strata dates)	Sample size		Brood year (Age)						Total			
			2011		2010		2009					
			(1.1)	(2.1)	(3.1)	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	
8/29–9/07, 09 (8/29–9/9) <sup>a</sup>	35	Male	1	2.9	13	37.1	2	5.7	16	45.7		
		Female	2	5.7	15	42.9	2	5.7	19	54.3		
		Subtotal	3	8.6	28	80.0	4	11.4	35	100.0		
		Male mean length	504		562		560					
		SE	–		5		27					
		Range	504–504		539–594		533–586					
		<i>n</i>	1		13		2					
		Female mean length	556		559		575					
		SE	1		8		5					
		Range	555–557		514–615		570–580					
		<i>n</i>	2		15		2					
		Total	132	Male	6	4.5	56	42.4	4	3.0	66	50.0
				Female	8	6.1	54	40.9	4	3.0	66	50.0
Total	14			10.6	110	83.3	8	6.1	132	100.0		
Male mean length	513			554		557						
SE	8			3		15						
Range	469–545			484–611		533–586						
<i>n</i>	6			55		4						
Female mean length	550			556		570						
SE	3			4		2						
Range	538–560			467–615		530–602						
<i>n</i>	8			54		4						

<sup>a</sup> Quartiles based on CPUE.