Regional Information Report 3A19-03

Salmon Age, Sex, and Length Catalog for the Kuskokwim Area, 2016

by

Kathryn E. Froning

and

Zachary W. Liller

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Alaska Department of Fish and Game **Division of Commercial Fisheries**

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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SALMON AGE, SEX, AND LENGTH CATALOG FOR THE KUSKOKWIM AREA, 2016

by
Kathryn E. Froning and Zachary W. Liller
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road, Anchorage, Alaska, 99518-1565

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Kathryn E. Froning and Zachary W. Liller
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Rd, Anchorage, Alaska, 99518, USA

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ABSTRACT

Pacific salmon *Oncorhynchus* spp. age, sex, and length (ASL) data have been collected from Kuskokwim Area harvests and escapements since 1961. Since 1995, the salmon age, sex, and length catalog for the Kuskokwim Area has been produced as a means to compile ASL data into historical summaries useful to Kuskokwim Area fishery managers, contributing project leaders, and other interested parties. This report provides (1) an overview of projects that collected ASL information in 2016, and highlights new data added to the Arctic-Yukon-Kuskokwim Database Management System or AYKDBMS, (2) a single source document for project specific data summaries produced in 2016, (3) a historical summary of ASL data for select long-term monitoring projects, and (4) a quick reference guide to the available historical ASL data archived in the AYKDBMS. This report presents details of ASL sampling efforts which occurred during the 2016 season at 11 project locations including subsistence harvest, test fishery harvest, and escapement. Sampling during the 2016 seasons resulted in 4,843 salmon sampled for age, sex, or length. Chum *O. keta* made up 36% of the samples collected, followed by Chinook *O. tshawytscha* salmon at 32%, sockeye *O. nerka* at 25%, and coho *O. kisutch* (7%).

Key words: Age, sex, length, ASL, Pacific salmon, *Oncorhynchus* spp., Kuskokwim River, Kuskokwim Bay, age class composition, sex composition, length composition, Arctic-Yukon-Kuskokwim Database Management System, AYKDBMS.

INTRODUCTION

Since 1961, age, sex, and length (ASL) data have been collected from Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, sockeye *O. nerka*, and coho *O. kisutch* salmon returning to the Kuskokwim Management Area (Figure 1; Brannian et al. 2005). The Kuskokwim Area ASL sampling program collects data from salmon harvest and escapement monitoring projects operated throughout Kuskokwim River and Kuskokwim Bay. Standardized methods are used to collect ASL data (Eaton 2016) that can be used for a wide range of purposes including management evaluation, trend analysis, and brood table development.

ASL data are available from discontinuous time series of sample collections from commercial, subsistence, and sport harvests, escapement monitoring projects, test fisheries, mark–recapture studies, and other special projects. A variety of organizations including state, federal, tribal, and non-government groups have jointly funded and participated in the collection of Kuskokwim Area salmon ASL data. Primary data are archived in the Arctic-Yukon-Kuskokwim (AYK) Database Management System[1] (AYKDBMS). The AYKDBMS is an online clearinghouse maintained by the Alaska Department of Fish and Game (ADF&G) and provides a public interface for querying and downloading data. Since 1995, summarized data have been published by the ADF&G as part of the salmon ASL catalog for the Kuskokwim Area (Molyneaux and DuBois 1996, 1998, 1999; DuBois and Molyneaux 2000; Molyneaux and Folletti 2005, 2007; Molyneaux et al. 2006, 2008, 2009, 2010; Liller et al. 2013a; Brodersen et al. 2013; Liller et al. 2015; Liller et al. 2016). Prior to 2014, summarized ASL data was also reported in agency project reports and fisheries management reports. Beginning in 2014, ADF&G project reports only provide information regarding data collection efforts (e.g., Head and Liller 2017), and the salmon ASL catalog for the Kuskokwim Area is the only published source for ASL data summaries.

The 2016 ASL catalog format provides a single source document for all ASL data collected by ADF&G and partner organizations throughout the Kuskokwim Management Area. This document provides a general description of the methods used to collect ASL data (Eaton 2016)

[1] AYKDBMS [Arctic-Yukon-Kuskokwim Database Management System] Home Page. http://sf.adfg.state.ak.us/CommFishR3/WebSite/AYKDBMSWebsite/Default.aspx.

and a detailed description of data processing, analysis, and archiving. This document provides standardized data summaries for all projects that operated in 2016 and historical summaries for select long-term projects. This report format complements the AYKDBMS by providing a quick reference guide to the archived data by species, project type (e.g., harvest or escapement), project name, and year.

A total of 11 Kuskokwim Area projects collected ASL data from Chinook, chum, sockeye, and coho salmon in 2016. No commercial harvest occurred anywhere in the Kuskokwim Area in 2016 for the first time since statehood. For Chinook salmon, the gear types used by subsistence fishermen and the timing of subsistence fishing activities are very different compared to other sources of harvest (e.g., test fisheries). Therefore, dedicated sampling effort occurred for Chinook salmon harvested in the lower Kuskokwim River subsistence fishery where majority of the total subsistence harvest occurs. Chinook salmon were sampled from a test fishery that operated in the lower portion of the Kuskokwim River near Bethel. Samples collected from the test fishery are assumed to be reasonably representative of the total run. ASL data were collected for all salmon species monitored at 9 weirs located on select spawning tributaries. Weirs were operated on the Kwethluk and Tuluksak rivers by the U.S. Fish and Wildlife Service (USFWS) to index salmon escapement to the lower portion of the Kuskokwim River and ASL data were collected to represent age-sex-size composition of these portions of each species' run. ASL data collected from the Kwethluk and Tuluksak rivers in 2016 were processed by USFWS and data summaries were published by USFWS. Weirs operated on the George and Tatlawiksuk rivers indexed salmon escapement to the middle portion of the Kuskokwim River. Weirs operated on the Salmon and Kogrukluk rivers indexed salmon escapement to the Aniak and Holitna rivers respectively. The Telaquana River weir was used to index escapement of lake-spawning sockeye salmon. The Salmon River (Pitka Fork) provided and index of escapement to the headwaters of the Kuskokwim River drainage.

OBJECTIVES

The goal of this project was to process, compile, and analyze salmon age (scales), sex, and length samples collected in 2016 from Kuskokwim Area subsistence fisheries, escapement, and other projects.

Specific objectives of this report were to:

1. Provide an overview of projects and methods used to collect ASL information in 2016;
2. Provide a single source document for detailed project ASL data summaries produced in 2016;
3. Provide a historical summary of annual ASL composition estimates for select long-term monitoring projects; and
4. Provide a quick reference guide to the available historical ASL data archived in the AYKDBMS.

METHODS

In 2016, ASL samples were collected from 11 projects. Target species differed by project type and location (Table 1). Project types included test fishery, subsistence catch, and escapement. Detailed operational and ASL collection methods are summarized in individual project reports

(Table 2). Capture gear and sampling and measurement methods varied by species and project (Tables 3–6).

SAMPLE SIZE

A minimum sample size was determined for each species to achieve 95% confidence intervals no wider than ±10% ($\alpha = 0.05$ and $d = 0.10$; Bromaghin 1993) for all major age-sex combinations (Table 7). Recommended sample sizes were increased by at least 20% to account for scales that could not be aged for a variety of reasons. This minimum sample size was required to estimate the age-sex composition for any location or temporal strata of interest. For less abundant species (e.g., Chinook salmon) collecting the minimum number of samples was often not practical. In the event that the sample size was inadequate, we provided a simple summary of the samples collected.

Sampling Strategies

Viewed from a fixed location, such as an escapement project or a fishing district, the ASL composition of an upstream-migrating salmon population often changes over the course of the season. The following are sampling strategies which were implemented to collect representative samples from the various project types.

Escapement Projects

ASL samples, from Kuskokwim Area escapement monitoring projects, were collected using weirs with an integrated trap. Weir designs and specifications varied by location (Head and Liller 2017; Miller et al. 2016a and 2016b), however, all weirs functioned as a complete barrier to upstream movement for target species. Target species passed upstream of the weir through a designated chute. A trap was integrated into the passage chute at the upstream side of the weir. The trap included an entrance and exit gate that could be manually closed to capture salmon for sampling.

A daily sampling strategy was used for all salmon species sampled at Kuskokwim River and Kuskokwim Bay escapement monitoring locations. Daily sample goals were determined preseason by distributing the season total sample size proportional to historical run timing. Daily sample schedules were adjusted as needed inseason to account for observed run abundance. Furthermore, staff was given discretion to modify the timing and intensity of daily sampling activities to accommodate other work priorities, as long as the sum of the daily samples for each week of project operations met or exceeded the predetermined schedule.

Commercial Harvest

No commercial harvest occurred in the Kuskokwim Area in 2016. In prior years, samples were from commercial fish deliveries made to local processing plants in Bethel, Quinhagak, and Platinum Alaska.

Subsistence Harvest

Opportunistic sampling was used to collect samples from the Kuskokwim River Chinook salmon subsistence harvest (e.g., Liller et al. 2013b). ADF&G partnered with Orutsaramuit Tribal Native Council to recruit and train subsistence fishermen to sample their own harvest and the harvest of others. Samplers were paid for each fish sampled. All interested individuals were encouraged to participate regardless of their fishing practices. Subsistence samplers were encouraged to sample

from their entire harvest of Chinook salmon. We assumed that a sufficiently large pool of subsistence fishermen would adequately represent the range of fishing practices implemented in the subsistence fishery. Therefore, we assumed the resulting samples adequately represent the total subsistence harvest in the lower Kuskokwim River.

In 2016, a total of 9 subsistence samplers participated in the program and sampled 261 Chinook salmon form 11 individual harvesters (Table 8). All samples were collected from residents of Bethel. Samples collected from Chinook salmon subsistence harvests were from gillnets with mesh sizes of 5 1/2 inch, 5 3/4 inch, or 6 inch (Table 9).

Bethel Test Fishery

Census sampling was conducted for Chinook salmon harvested in the Bethel Test Fishery. We attempted to collect ASL samples from all fish harvested. Samples from Chinook salmon harvested in the test fishery were taken with 5 3/8 inch and 8 inch drift gillnets.

AGE, SEX, AND LENGTH SAMPLING PROCEDURES

To the extent practicable sampling procedures were standardized across all projects (Eaton 2016; Tables 3–6). Scales were collected from the left side of the fish approximately 2 rows above the lateral line in an area crossed by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Because of the high rate of scale regeneration (i.e., lost and regrown) among Chinook and coho salmon, 3 scales were collected from each fish. Only 1 scale per fish was collected from chum salmon. Three scales were collected from sockeye salmon sampled at the Goodnews River weir in Kuskokwim Bay, and no scales were collected from Kuskokwim River weir projects (Table 5). The sex of each salmon sampled was verified by visual examination of the gonads (harvest projects) or visual examination of external characteristics (escapement projects). Fish length was measured from the mideye to tail fork (MEF) to the nearest millimeter using a straight edge measuring device.

AGE ESTIMATION

Age was estimated from scales. Scales were mounted on gummed cards and impressions were made in cellulose acetate (Clutter and Whitesel 1956). Scale impressions were magnified using a microfiche reader with a 15 mm, 48 x, F/2.8 lens. Trained scale agers estimated total age by counting the number of annuli in the freshwater and saltwater zones. An annulus was defined as a concentration and interruption in the growth pattern of the ridges (circuli) on the upper surface of the anterior field of the scale (Mosher 1969). Typically, annuli presented as 3 or more tightly spaced and broken circuli that appear to cross over each other. Freshwater age was estimated for all scales that had less than 10 mm of regeneration around the scale focus. Saltwater age was estimated for all scales that had at least some portion the outer edge of the scale visible. Total age was reported in European notation (Koo 1962); numerals preceding the decimal refer to the number of freshwater annuli and numerals following the decimal refer to the number of marine annuli. Total age from time of egg deposition, or brood year, is the sum of these 2 numbers plus 1 to account for incubation time.

ESTIMATES OF AGE, SEX, AND LENGTH COMPOSITION

Samples were used to estimate the ASL composition of the escapement or harvest, when adequate sample sizes were available and sampling occurred in proportion to abundance. Generally, it was not possible to collect samples in proportion to abundance, due to imperfect

knowledge of the abundance and timing of escapement or harvest. Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection (Tables 10–13).

The number of salmon sampled (n) during stratum i with a valid age and sex determination were used to estimate the proportion of the stratum composition by age, sex, and age/sex category. Let c equal any age or sex category of interest. The proportion (p) of the total abundance (N) in stratum (i) which belonged to each category (c) was estimated as:

$$\hat{p}_{c,i} = n_{c,i} / n_i \,. \tag{1}$$

The percent of the season total abundance that belonged to each category ($\hat{p}_c$) was estimated from the weighted average across all strata as:

$$\hat{p}_c = \frac{1}{N} \sum_i N_i \hat{p}_{c,i} \,. \tag{2}$$

The variance ($\hat{V}$) of the season total percentage by category was estimated as:

$$\hat{V}(\hat{p}_c) = \frac{1}{N^2} \sum_i N_i^2 \hat{V}(\hat{p}_{c,i}) \,, \tag{3}$$

Where:

$$\hat{V}(\hat{p}_{c,i}) = \left(\frac{N_i - n_i}{N_i} \right) \left(\frac{\hat{p}_{c,i}(1 - \hat{p}_{c,i})}{n_i - 1} \right). \tag{4}$$

Confidence intervals (95%) around the percent composition for each category were calculated as:

$$1.96 * \sqrt{\hat{V}(\hat{p}_c)} * 100. \tag{5}$$

The season total abundance by category ($\hat{N}_c$) was estimated as the sum of all stratum estimates $\left(\hat{N}_{c,i}\right)$ as:

$$\hat{N}_c = \sum_i \hat{N}_{c,i} \,, \tag{6}$$

Where:

$$\hat{N}_{c,i} = \hat{p}_{c,i} N_i \,. \tag{7}$$

Seasonal mean length by sex and age category was estimated using all salmon samples (n) with a valid age, sex, and length. Let $y_{c,i,j}$ equal the length of the fish (j) in any age/sex category (c), sampled during stratum (i). The mean length of fish in any age/sex category ($\bar{y}_{c,i}$) was estimated as:

$$\bar{y}_{c,i} = \frac{\sum_j y_{c,i,j}}{n_{c,i}}. \quad (8)$$

Seasonal mean length by age/sex category was estimated as:

$$\bar{y}_c = \frac{1}{N_c} \sum_i N_{c,i} \bar{y}_{c,i}, \quad (9)$$

with a variance of:

$$\hat{V}(\bar{y}_c) = \frac{1}{N_c^2} \sum_i N_{c,i}^2 \hat{V}(\bar{y}_{c,i}), \quad (10)$$

Where:

$$\hat{V}(\bar{y}_{c,i}) = \left(\frac{\sum_j (y_{c,i,j} - \bar{y}_{c,i})^2 \Big/ (n_{c,i} - 1)}{n_{c,i}} \right). \quad (11)$$

Standardized data summaries were produced for all projects (Table 1). Each summary table consists of 2 parts. The top portion presents the age and sex composition, and the bottom portion presents length summaries for each age and sex class. In the event that sample sizes or timing were not adequate to estimate ASL composition, a summary of the samples collected was presented.

HISTORICAL DATA SUMMARIES

Historical ASL data summaries were produced for select projects as a convenient way to compile foundational data needed for additional analysis, such as development of brood tables. Each summary table presents total abundance, percent by age and sex, and mean length (mm MEF) for each project year. Annual estimates of ASL composition prior to 2010 were obtained from Molyneaux et al. 2010, with the exception of Chinook salmon subsistence harvest compositions which were recalculated in 2011 based on data archived in the AYKDBMS. Abundance information was obtained from multiple sources: commercial harvest data from Poetter and Tiernan 2017 and the statewide electronic fish ticket database[2] (ADF&G); subsistence harvest estimates from Shelden et al. 2016, and escapement data on file with the ADF&G Kuskokwim Research Group. Minor differences in harvest and escapement numbers may exist between annual and historical data summaries due timing of reporting and use of preliminary versus final estimates.

ARCHIVING

Raw data forms, scale cards, and acetate impressions are archived in the Alaska Department of Fish and Game, Anchorage Regional Office. ASL data are archived in the AYKDBMS.

[2] ADF&G (Alaska Department of Fish and Game). Statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK: ADF&G, Division of Commercial Fisheries. (cited September 10, 2012). [URL not publically available as some information is confidential].

USER GENERATED REPORTS

ASL data are publicly accessible through the AYKDBMS. By following the "Search" link on the main database page, users are directed to a series of data filters that allow for focused searches by management area, data type, project type, and method type. An alphabetical list of all projects and associated date ranges that meet the user defined search criteria is available by selecting the "Go to Projects" link. Selection of a specific project yields a general project description and annual year notes that provide context (i.e., metadata) regarding the type, quality, quantity, and utility of the data available. ASL data for a specific project are available by selecting the "ASL" link and selecting from the range of years of available data. A report is generated with all associated data for each fish sampled, including information about data collection (e.g., date of sample, location, method of capture, method of sex determination, etc.), archival references (i.e., scale card number and fish number) and primary biological data such as fresh water age, saltwater age, sex, and length.

RESULTS

A total of 4,843 salmon were sampled for age, sex, or length during the 2016 season. Chum salmon made up 36% of the samples collected, followed by Chinook salmon (32%), sockeye salmon (25%), and coho salmon (7%). All projects attempted to collect paired age, sex, and length data from each fish. Although age samples were collected for majority of fish sampled, not all fish could be successfully aged (Tables 14–17).

Some scale samples could not be aged for at least 1 of 6 different reasons (Tables 18–21). Overall, the percentage of Chinook, chum, sockeye, and coho salmon scales that were not successfully aged was 12%, 9%, 7%, and 31% respectively. Collection of regenerated scales was the primary reason Chinook (n = 167, 92%), sockeye (n = 37, 86%), and coho salmon samples (n = 44, 92%) could not be aged. Regenerated scales were the most common reason chum salmon scales could not be aged (n = 61, 41%), followed by inverted scales (n = 42, 28%). Presentation of age errors was intended as feedback to project leaders but may also be useful when considering sample sizes needed to achieve desired statistical accuracy and precision.

ASL data collected in 2016 were summarized by project for each salmon species sampled (Table 1). Chinook salmon summaries include 1 test fishery operated near Bethel (Table 22), subsistence harvest composition from the lower Kuskokwim River (Tables 23 and 24), 1 escapement monitoring weir operated in a tributary that drains into Kuskokwim Bay (Table 25), and 5 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 26–30). Chum salmon summaries include 1 escapement monitoring weir operated in a tributary that drains into Kuskokwim Bay (Table 31), and 4 escapement monitoring weirs operated in tributaries throughout the middle Kuskokwim River (Tables 32–35). Sockeye salmon summaries include 1 escapement monitoring weir operated in a tributary that drains into Kuskokwim Bay (Table 36), and 2 escapement monitoring weirs operated in tributaries throughout the middle Kuskokwim River (Tables 37 and 38). Coho salmon summaries include 2 escapement monitoring weirs operated in tributaries throughout the middle Kuskokwim River (Tables 39–40).

HISTORICAL DATA SUMMARIES

Historical summaries were produced for select projects. Historical ASL data summaries for Chinook salmon include commercial harvest composition from 1 Kuskokwim River (Table 41)

and 2 Kuskokwim Bay (Tables 42 and 43) subdistricts, 1 test fishery near Bethel (Table 44), subsistence harvest composition from the lower Kuskokwim River (Table 45), 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Tables 46 and 47), and 5 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 48–52). Historical ASL summaries for chum salmon include commercial harvest composition from 1 Kuskokwim River (Table 53) and 2 Kuskokwim Bay (Tables 54 and 55) subdistricts, 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Tables 56 and 57), and 4 escapement monitoring weirs operated in tributaries throughout the middle Kuskokwim River (Tables 58–61). Historical ASL summaries for sockeye salmon include commercial harvest composition from 1 Kuskokwim River (Table 62) and 2 Kuskokwim Bay (Tables 63 and 64) subdistricts, and 2 escapement monitoring weir project located on tributaries that drain into Kuskokwim Bay (Tables 65 and 66). Historical ASL summaries for coho salmon include commercial harvest composition from 1 Kuskokwim River (Table 67) and 2 Kuskokwim Bay (Tables 68 and 69) subdistricts, and 4 escapement monitoring weirs operated in tributaries throughout the middle Kuskokwim River (Tables 70–73).

KUSKOKWIM AREA ASL DATA IN THE AYKDBMS

The goal of the AYKDBMS is to provide managers, researchers, and the public involved in fisheries in the AYK Region with a system to enter and process new data, as well as to retrieve historical data. The AYKDBMS provides access to Kuskokwim Area project descriptions and biological measurements of salmon age, sex, and length. For each salmon species, we provided a comprehensive list of all Kuskokwim Area projects that have collected salmon ASL data and highlighted the years for which at least some data are available. Tables were developed by querying data directly from the AYKDBMS. Overview tables provide a quick reference for agency staff and members of the public who may be interested in Kuskokwim Area ASL data for independent research but are unfamiliar with the scope of the data available. The AYKDBMS contains Chinook salmon ASL data collected from 27 different projects (Table 74), chum salmon data from 24 projects (Table 75), sockeye salmon data from 27 projects (Table 76), and coho salmon data from 19 projects (Table 77). For each salmon species, ASL data are available from a range of project types including commercial catch, subsistence catch, escapement monitoring, mark–recapture experiments, and test fisheries. The length and continuity of the time series of available data varies considerably within and between project types (Tables 74–77).

DISCUSSION

SOURCES OF BIAS

Users of Kuskokwim Area ASL data are responsible for ensuring that all data used are appropriate for the intended purpose. Since 1961, numerous changes have occurred regarding how fisheries and fisheries monitoring projects have been executed, including how ASL data are collected, processed, and analyzed. Examples of differences between project types or between years at the same project include: (1) changes in harvest regulation including time, area, and gear restrictions; (2) changes in capture methods including weir picket spacing and gillnet dimensions and mesh sizes; (3) differences in length measurement methods including cloth tape, hard rulers, fish cradles, and calipers; (4) changes in method used to sex fish including using internal or external characteristics; (5) changes in staff responsible for collection and processing ASL samples; and (6) changes in study design including assumptions and sample size requirements.

Prospective users are encouraged to review the original reports or other sources to understand the methods used for specific ASL data collections, including any changes in methodology. Previous versions of the Kuskokwim Area ASL catalog also provide some examples of bias and data quality concerns (e.g., Molyneaux et al. 2010).

DATA QUALITY, AYKDBMS

The AYKDBMS was populated with data archived in a variety of formats, including paper data forms, digital scan forms, spreadsheets, and other database programs. Considerable care was taken to reduce transcription errors during the data upload process. However, most of the Kuskokwim Area ASL data in the AYKDBMS has not been reviewed for errors. As such, we acknowledge that some unknown level of data transcription errors, incorrect labeling, and erroneous data may exist in the database. ADF&G stock biologists, who regularly use the database, generally agree that fewer errors exist for data collected after 2000. Earlier data should be used with caution, and if a data quality concern exists, users are encouraged to contact agency staff for assistance.

The AYKDBMS provides project leaders with tools for archiving metadata. To date, the level of metadata available for database users is not sufficient. Kuskokwim Area ADF&G staff provides general project descriptions, methods, and project year notes in the AYKDBMS. However, the AYKDBMS does not currently provide details regarding aging or methods to estimate ASL composition. Users of the database should review annual project reports or consult ADF&G staff for information regarding data collection and limitations.

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TABLES AND FIGURES

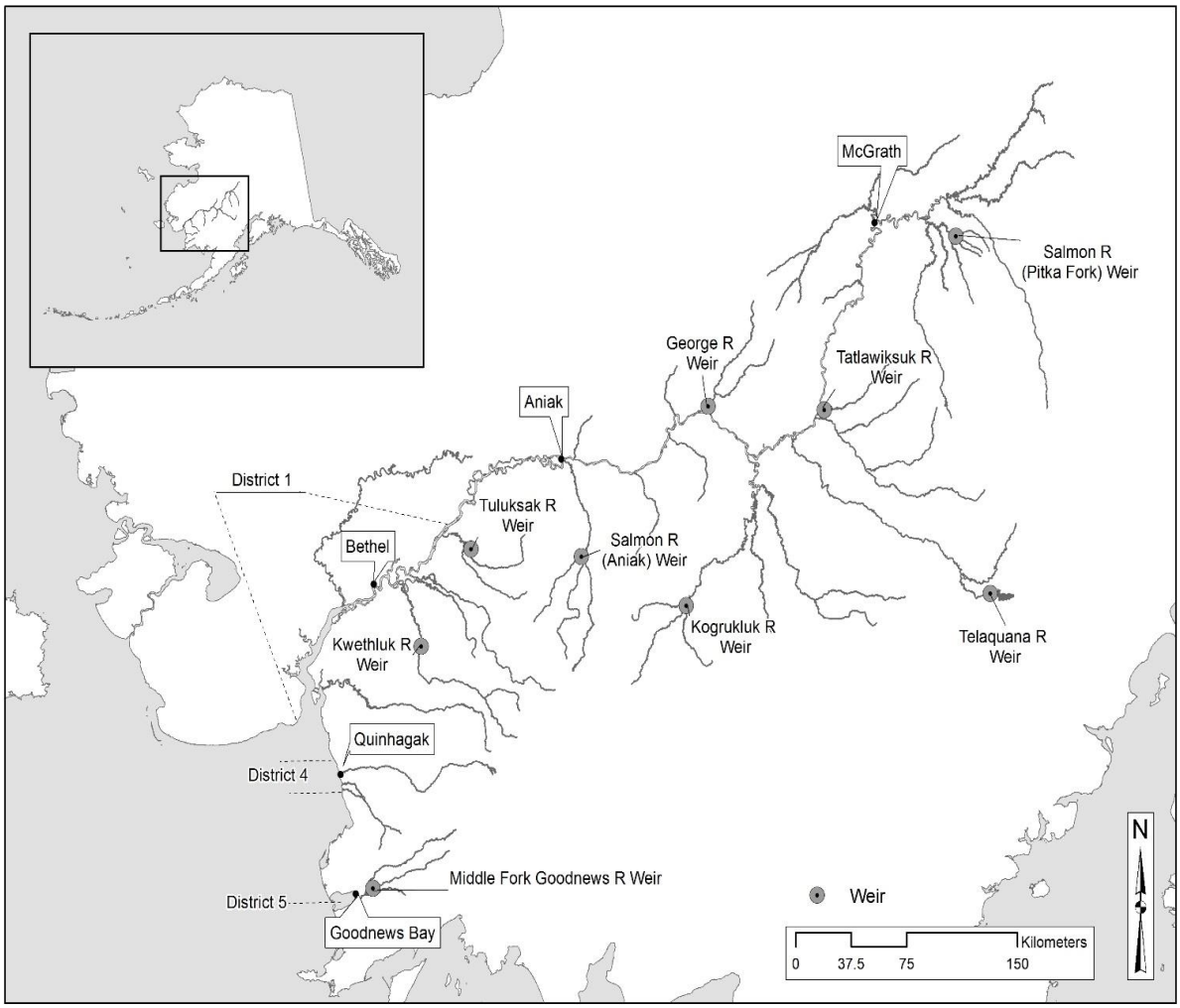

Figure 1.–Project locations where ASL data were collected in 2016.

Table 1.–Projects and salmon species for which age, sex, and length data were collected in 2016.

Project type	Location	River km	Species			
			Chinook	Sockeye	Chum	Coho
Test fishery	Bethel - subdistrict W1A (Above Bethel)	111	X			
Subsistence catch	Lower Kuskokwim River	– [a]	X			
Escapement	Goodnews River (Middle Fork)	– [b]	X	X	X	
	Kwethluk River [c]	216	X	X	X	X
	Tuluksak River [c]	248	X	X	X	X
	Salmon River (Aniak)	404	X		X	
	Salmon River (Pitka Fork)	916	X			
	George River	453	X		X	X
	Tatlawiksuk River	568	X		X	X
	Kogrukluk River [d]	710	X	X	X	X
	Telaquana River	772		X		

Note: "X" designates that samples were collected. All escapement projects were weirs. Harvest and test fisheries used gillnets of variable mesh size.

[a] The lower Kuskokwim river consists of all waters between the Kuskokwim Bay and the Village of Tuluksak and approximates District W1.

[b] Flows into Goodnews Bay and District W5.

[c] Data were collected and processed by U.S. Fish and Wildlife Service and are not presented in this report. Data will be added to the Arctic Yukon Kuskokwim Database Management System.

[d] Coho salmon samples were collected at the Kogrukluk River weir in 2016, but samples were lost. No ages are available.

Table 2.–Reporting status and contact persons for salmon monitoring projects that collected age, sex and length data from the Kuskokwim Area in 2016.

Project type and location	Report status	Contact person
Test fishery [a]	No Report	Aaron Tiernan, Kuskokwim Area Commercial Fisheries Management Biologist, ADF&G, Anchorage, Alaska.
Subsistence Catch		
Lower Kuskokwim River	In prep	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Escapement		
Goodnews River (Middle Fork)	Published	Aaron Tiernan, Assistant Kuskokwim Area Commercial Fisheries Management Biologist, ADF&G, Anchorage, Alaska.
Kwethluk River	Published	Aaron Webber, U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge, Bethel, Alaska
Tuluksak River	Published	Aaron Webber, U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge, Bethel, Alaska
Salmon River (Aniak)	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Salmon River (Pitka Fork)	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
George River	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Tatlawiksuk River	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Kogrukluk River	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Telaquana River	Published	Nicholas Smith, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.

[a] No annual report has been designated. Methods followed guidelines presented in the salmon age, sex, and length catalog for the Kuskokwim Area, 2016.

Table 3.–Summary of Chinook salmon age, sex, and length sampling methods by project, 2016.

Project type	Location	Capture gear		Sample design			Length measurement		Sexing		Scales per fish
		Gillnet [a]	Weir	Census [b]	Daily [c]	Opportunistic [d]	Caliper	Straight edge [e]	External [f]	Internal [g]	Three
Test fishery	Bethel - subdistrict W1A (above Bethel)	X		X			X			X	X
Subsistence catch	Lower Kuskokwim River	X				X		X		X	X
Escapement	Goodnews River (Middle Fork)		X		X			X	X		X
	Salmon River (Aniak)		X		X			X	X		X
	Salmon River (Pitka Fork)		X		X			X	X		X
	George River		X		X			X	X		X
	Tatlawiksuk River		X		X			X	X		X
	Kogrukluk River		X		X			X	X		X

Note: "X" designates the primary method used.

[a] Includes a range of mesh sizes.

[b] Intent was to sample all harvested fish.

[c] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[d] Samples were collected by self-selected subsistence fishermen who sampled opportunistically from their own harvest or the harvest of others.

[e] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[f] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[g] Abdominal cavity was cut and visually inspected for gonads.

Table 4.–Summary of chum salmon age, sex, and length sampling methods by project, 2016.

Project type	Location	Capture gear	Sample design	Length measurement	Sexing	Scales per fish
		Weir	Daily [a]	Straight edge [b]	External [c]	One
Escapement	Goodnews River (Middle Fork)	X	X	X	X	X
	Salmon River (Aniak)	X	X	X	X	X
	George River	X	X	X	X	X
	Tatlawiksuk River	X	X	X	X	X
	Kogrukluk River	X	X	X	X	X

Note: "X" designates the primary method used.

[a] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[b] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[c] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

Table 5.–Summary of sockeye salmon age, sex, and length sampling methods by project, 2016.

Project type	Location	Capture gear	Sample design	Length measurement	Sexing	Scales per fish
		Weir	Daily [a]	Straight edge [b]	External [c]	Three
Escapement	Goodnews River (Middle Fork)	X	X	X	X	X
	Kogrukluk River [d]	X	X	X	X	
	Telaquana River [d]	X	X	X	X	

Note: "X" designates the primary method used.

[a] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[b] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[c] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

[d] No scales collected.

Table 6.–Summary of coho salmon age, sex, and length sampling methods by project, 2016.

Project type	Location	Capture gear	Sampling design	Length measurement	Sexing	Scales per fish
		Weir	Daily [a]	Straight edge [b]	External [c]	Three
Escapement	George River	X	X	X	X	X
	Kogrukluk River	X	X	X	X	X
	Tatlawiksuk River	X	X	X	X	X

Note: "X" designates the primary method used.

[a] Season sampling goal was stratified such that small numbers of samples were collected daily in proportion to historic run timing.

[b] Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

[c] Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

Table 7.–Minimum sample size requirements to estimate salmon age, sex, and length composition in 2016.

Species	Number categories [a]	Sample size [b]	Adjusted sample size [c]	Age classes [d]
Chinook	8	190	230	1.1, 1.2, 1.3, 1.4, and other
Sockeye	6	205	230	0.3, 1.2, 1.3, 2.2, 1.4, and 2.3
Chum	4	180	220	0.2, 0.3, 0.4, and other
Coho	3	168	200	1.1, 2.1, and 3.1

[a] Age/sex categories.

[b] From Bromaghin 1993, $\alpha = 0.05$, $d = 0.1$. Does not include correction for small population size.

[c] Increased by approximately 20% to account for unageable scales.

[d] Common age classes that make up at least 1% of historical average. Other category is comprised of all minor age classes which in aggregate generally account for <1% of historical average.

Table 8.–Sample collections by community residents used to represent the age, sex, and length composition of Chinook salmon harvested in lower Kuskokwim River subsistence fishery, 2016.

Location		River km	Number of samplers	Harvests sampled [a]	Sample size [b]	Percent
	Bethel	106	9	11	261	100.0%
	Total		9	11	261	100.0%

[a] Participants were encouraged to sample from as many households as possible.

[b] Sample sizes include Chinook salmon whose age could not be determined.

Table 9.–Percent of samples collected by gillnet mesh size in the lower Kuskokwim River Chinook salmon subsistence fishery, 2016.

Mesh size [a]	Bethel (n=261)	Total (n=261)
Small		
5.5 inch	5.4%	5.4%
5.75 inch	7.3%	7.3%
6 inch	87.4%	87.4%
Subtotal	100.0%	100.0%
Total	100.0%	100.0%

Note: Sample sizes include Chinook salmon whose age could not be determined.

[a] Drift and set gillnets combined.

Table 10.–Postseason stratification used to account for disproportionate sampling of Chinook salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2016.

Project location	Stratum	Sample size	Escapement / harvest	Stratum dates	Sample dates
Bethel Test Fishery	5.4 inch	202	237	5/25–8/08	5/25–5/27, 5/31–6/03, 6/05–8/08
	8 inch	262	287	5/23–7/15	5/23–5/24, 5/27–7/11, 7/13–7/15
Subsistence Catch	5.5 inch	12		6/12–7/02	6/12, 6/16, 6/30–7/02
	5.75 inch	16		6/10–7/02	6/10, 6/18, 7/02
	6 inch	198		6/12–7/02	6/12, 6/16–6/17, 6/21–23, 6/29–7/02
George River [a]	1	43	1,663		7/11–7/15, 7/21, 7/24, 7/26, 7/29
Goodnews River Middle Fork [a]	1	89	3,788		6/26, 6/28, 7/04, 7/07, 7/10–7/2, 7/14, 7/25–7/26, 7/29–7/31
Kogrukluk River	1	66	934	6/25–7/10	6/28, 7/01, 7/04–7/09
	2	97	5,001	7/11–7/25	7/11–7/19, 7/21–7/24
	3	38	1,124	7/26–8/26	7/26–7/29, 8/01
Salmon River (Aniak) [a]	1	47	776		7/20–7/21, 7/247/29, 7/31–8/01
Salmon River (Pitka Fork)	1	62	2,141	6/21–7/05	6/25, 6/28–7/05
	2	118	2,060	7/06–7/18	7/06–7/07, 7/10–7/18
	3	78	2,125	7/19–8/09	7/19–7/31
Tatlawiksuk River [a]	1	62	2,494		6/25, 6/29–7/02, 7/12–7/16, 7/20, 7/22, 7/24, 7/26, 7/28

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Sample size was not sufficient to stratify and apply to escapement. Only a summary of the samples was generated for this project.

Table 11.–Postseason stratification used to account for disproportionate sampling of chum salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2016.

Project location	Stratum	Sample size	Escapement / harvest	Stratum dates	Sample dates
George River	1	126	7,868	7/11–7/14	7/11–7/14
	2	121	5,871	7/15–7/24	7/15, 7/18, 7/24
	3	73	7,095	7/25–8/02	7/26–7/27, 7/29, 8/02
Goodnews River Middle Fork	1	101	14,428	6/22–7/16	7/7, 7/9, 7/11, 7/13, 7/15
	2	135	11,869	7/17–7/27	7/18, 7/20, 7/25–7/27
	3	115	15,528	7/28–8/31	7/28–7/31
Kogrukluk River	1	227	11,835	6/28–7/19	6/28–7/01, 7/03–7/09, 7/11–7/19
	2	131	18,872	7/20–7/29	7/21–7/24, 7/26–7/29
	3	197	14,624	7/30–8/31	7/30–8/06, 8/08–8/09
Salmon River (Aniak) [a]	1	97	817		7/22–7/25, 7/27–7/29, 7/31–8/01
Tatlawiksuk River	1	112	3,882	6/17–7/18	6/30–7/02,7/12–7/16
	2	52	3,100	7/19–7/24	7/20–7/22, 7/24
	3	113	3,582	7/25–9/12	7/25–7/28,7/30–7/31, 8/05

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Sample size was not sufficient to stratify and apply to escapement. Only a summary of the samples was generated for this project.

Table 12.–Postseason stratification used to account for disproportionate sampling of sockeye salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2016.

Project location	Stratum	Sample size	Escapement / harvest	Stratum dates	Sample dates
Goodnews River Middle Fork	1	275	49,888	6/21–7/10	6/27–6/28, 6/30 , 7/04–7/05, 7/07, 7/09
	2	181	58,093	7/11–7/19	7/11, 7/13, 7/15
	3	104	63,134	7/20–8/31	7/20, 7/24
Kogrukluk River [a]	1	94	5,271	7/05–7/23	7/05–7/06, 7/13–7/14,7/16–7/19, 7/21–7/23
	2	55	8,349	7/24–7/29	7/24, 7/26–7/29
	3	104	6,467	7/30–8/30	7/30–8/04
Telaquana River [a]	1	157	28,352	7/08–7/23	7/15–7/23
	2	50	26,777	7/24–7/27	7/25–7/27
	3	127	27,577	7/28–8/26	7/28–7/31, 8/02–8/03, 8/05–8/06, 8/08–8/09

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] No scales taken.

Table 13.–Postseason stratification used to account for disproportionate sampling of coho salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2016.

Project location	Stratum	Sample size	Escapement / harvest	Stratum dates	Sample dates
George River [a]	1	42	17,239	9/7–9/10	9/7–9/10
Tatlawiksuk River	1	40	6,087	7/21–8/26	8/20–8/21, 8/24
	2	66	2,005	8/27–9/02	8/29–9/01
	3	102	3,805	9/03–9/20	9/03–9/12

Note: Disproportionate sampling was addressed postseason by stratifying the total escapement/harvest by the timing of sample collection. Stratum estimates were weighted by the proportion of the total escapement/harvest and combined to estimate the overall age and sex composition and mean length of the entire escapement/harvest.

[a] Sample size was not sufficient to stratify and apply to escapement. Only a summary of the samples was generated for this project.

Table 14.–Summary of Chinook salmon age, sex, and length samples collected from Kuskokwim Area projects, 2016.

Project type	Location	Age samples	Number aged	Number sexed	Number lengths
Test fishing	Bethel - subdistrict W1A (above Bethel)	524	464	524	524
Subsistence catch	Lower Kuskokwim River	263	229	262	263
Escapement	George River	46	44	45	45
	Goodnews River (Middle Fork)	100	89	100	100
	Kogrukluk River	232	201	232	232
	Salmon River (Aniak)	47	36	47	47
	Salmon River (Pitka Fork)	288	258	288	288
	Tatlawiksuk River	63	62	63	63
	Totals	1,563	1,383	1,561	1,562

Table 15.–Summary of chum salmon age, sex, and length samples collected from Kuskokwim Area projects, 2016.

Project type	Location	Age samples	Number aged	Number sexed	Number lengths
Escapement	George River	328	320	328	328
	Goodnews River (Middle Fork)	419	351	419	419
	Kogrukluk River	606	555	606	606
	Salmon River (Aniak)	97	93	97	96
	Tatlawiksuk River	290	277	290	290
	Totals	1,740	1,596	1,740	1,739

Table 16.–Summary of sockeye salmon age, sex, and length samples collected from Kuskokwim Area projects, 2016.

Project type	Location	Age samples	Number aged	Number sexed	Number lengths
Escapement	Goodnews River (Middle Fork)	603	560	603	603
	Kogrukluk River	0	0	253	253
	Telaquana River	0	0	334	334
	Totals	603	560	1,190	1,190

Table 17.–Summary of coho salmon age, sex, and length samples collected from Kuskokwim Area projects in 2016.

Project type	Location	Age samples	Number aged	Number sexed	Number lengths
Escapement	George River	49	42	101	101
	Tatlawiksuk River	249	208	249	249
	Totals	298	250	350	350

Table 18.–Aging errors for Chinook salmon scale samples collected in the Kuskokwim Management Area, 2016.

Project type	Location	Age samples	Number age errors	% Age errors	Resorbed [a]	Illegible [b]	Inverted [c]	Missing [d]	Regenerated [e]	Wrong species [f]
Subsistence catch	Lower Kuskokwim River	265	36	14%		1	8		25	2
Escapement	George River	46	2	4%			1		1	
	Goodnews River (Middle Fork)	100	11	11%					11	
	Kogrukluk River	232	31	13%				1	30	
	Salmon River (Aniak)	46	10	22%					10	
	Salmon River (Pitka Fork)	288	30	10%	1				29	
	Tatlawiksuk River	63	1	2%					1	
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	524	60	11%					60	
	Totals	1,564	181	12%	1	1	9	1	167	2

Note: More than 1 age error may apply to a single scale.

[a] Resorbed scales show deterioration along the outer edge and are missing age information necessary to estimate saltwater age.

[b] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[c] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper and an impression cannot be made.

[d] Missing scales were collected, but fell off of the gummed card before an impression was made.

[e] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged. Regenerated scales presented in this table are the sum of age error codes 3 and 9 as reported in the AYKDBMS.

[f] Wrong species are scales collected from another species other then what was labeled on the gummed card.

Table 19.–Aging errors for chum salmon scale samples collected in the Kuskokwim Management Area, 2016.

Project type	Location	Age samples	Number age errors	% Age errors	Resorbed [a]	Illegible [b]	Inverted [c]	Missing [d]	Regenerated [e]
Escapement	George River	328	8	2%	1	2			5
	Goodnews River (Middle Fork)	419	68	16%		11	27	4	26
	Kogrukluk River	606	51	8%	5	7	12	1	26
	Salmon River (Aniak)	103	10	10%	1	2	3		4
	Tatlawiksuk River	290	13	4%	7	2		4	
	Totals	1,746	150	9%	14	24	42	9	61

Note: More than 1 age error may apply to a single scale.

[a] Resorbed scales show deterioration along the outer edge and are missing age information necessary to estimate saltwater age.

[b] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[c] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[d] Missing scales were collected, but fell off of the gummed card before an impression was made.

[e] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged. Regenerated scales presented in this table are the sum of age error codes 3 and 9 as reported in the AYKDBMS.

Table 20.–Aging errors for sockeye salmon scale samples collected in the Kuskokwim Management Area, 2016.

Project type	Location	Age samples	Number age errors	% Age errors	Illegible [a]	Inverted [b]	Missing [c]	Regenerated [d]
Escapement	Goodnews River (Middle Fork)	603	43	7%	2	2	2	37
	Totals	603	43	7%	2	2	2	37

Note: More than 1 age error may apply to a single scale.

[a] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[b] Inverted scales are mounted on the gummed card so that their circuli are facing the gummed paper, and an impression cannot be made.

[c] Missing scales were collected, but fell off of the gummed card before an impression was made.

[d] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged. Regenerated scales presented in this table are the sum of age error codes 3 and 9 as reported in the AYKDBMS.

Table 21.–Aging errors for coho salmon scale samples collected in the Kuskokwim Management Area, 2016.

Project type	Location	Age samples	Number age errors	% Age errors	Illegible [a]	Regenerated [b]
Escapement	George River	49	7	14%		7
	Tatlawiksuk River	249	41	16%	4	37
	Totals	298	48	31%	4	44

Note: More than 1 age error may apply to a single scale.

[a] Illegible scales have debris or scratches on the gummed card or acetate that obscure the circuli.

[b] Regenerated scales have a missing or inadequate age information near the center inhibiting estimation of freshwater age. As a general rule, scales with an area of regeneration >10 mm in diameter were not aged. Regenerated scales presented in this table are the sum of age error codes 3 and 9 as reported in the AYKDBMS.

Table 22.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the Bethel test fishery by gillnet mesh size, 2016.

			Brood year (age)													
			2013		2012		2011		2011		2010		2009		2009			
	Sample		1.1		1.2		1.3		2.2		1.4		1.5		2.4		Total	
Mesh size	size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
5.375 inch	202	Male	2	1.0	100	49.5	64	31.7	1	0.5	9	4.5	0	0.0	0	0.0	176	87.1
		Female	0	0.0	0	0.0	18	8.9	0	0.0	8	4.0	0	0.0	0	0.0	26	12.9
		Subtotal	2	1.0	100	49.5	82	40.6	1	0.5	17	8.4	0	0.0	0	0.0	202	100.0
		Male mean length	375		575		707		632		767		–		–			
		SE	39		4		8		–		23		–		–			
		Range	336–414		486–684		574–907		632–632		626–842		–		–			
		n	2		100		64		1		9		–		–			
		Female mean length	–		–		782		–		823		–		–			
		SE	–		–		11		–		13		–		–			
		Range	–		–		694–851		–		796–887		–		–			
		n	–		–		18		–		8		–		–			
8 inch	262	Male	0	0.0	22	8.4	104	39.7	0	0.0	20	7.6	1	0.4	0	0.0	147	56.1
		Female	0	0.0	0	0.0	58	22.1	0	0.0	53	20.2	3	1.1	1	0.4	115	43.9
		Subtotal	0	0.0	22	8.4	162	61.8	0	0.0	73	27.9	4	1.5	1	0.4	262	100.0
		Male mean length	–		620		724		–		816		865		–			
		SE	–		14		4		–		10		–		–			
		Range	–		424–703		572–819		–		727–880		865–865		–			
		n	–		22		104		–		20		1		–			
		Female mean length	–		–		769		–		818		851		722			
		SE	–		–		6		–		6		19		–			
		Range	–		–		659–853		–		716–933		816–880		722–722			
		n	–		–		58		–		53		3		1			
	464	Male	2	0.4	122	26.3	168	36.2	1	0.2	29	6.3	1	0.2	0	0.0	323	69.6
		Female	0	0.0	0	0.0	76	16.4	0	0.0	61	13.1	3	0.6	1	0.2	141	30.4
Total		Total	2	0.4	122	26.3	244	52.6	1	0.2	90	19.4	4	0.9	1	0.2	464	100.0
All mesh		Male mean Length	375		583		717		632		801		865		–			
combined		SE	39		4		4		–		10		–		–			
		Range	336–414		424–703		572–907		632–632		626–880		865–865		–			
		n	2		122		168		1		29		1		–			
		Female mean length	–		–		772		–		819		851		722			
		SE	–		–		5		–		6		19		–			
		Range	–		–		659–853		–		716–933		816–880		722–722			
		n	–		–		76		–		61		3		1			

Note: Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 23.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence gillnet fishery, 2016.

			Brood year (age)													
			2013		2012		2011		2011		2010		2010			
			1.1		1.2		1.3		2.2		1.4		2.3		Total	
Sample dates	Sample size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/10, 6/12, 6/16–6/18, 6/21–6/23, 6/29–7/02	226	Male	1	0.4	94	41.6	95	42.0	1	0.4	9	4.0	2	0.9	202	89.4
		Female	0	0.0	2	0.9	14	6.2	0	0.0	8	3.5	0	0.0	24	10.6
		Total	1	0.4	96	42.5	109	48.2	1	0.4	17	7.5	2	0.9	226	100.0
		Male mean length	390		573		693		550		732		682			
		SE	–		7		7		–		36		26			
		Range	390–390		154–805		540–930		550–550		553–840		656–707			
		n	1		94		95		1		9		2			
		Female mean length	–		787		724		–		839		–			
		SE	–		19		20		–		27		–			
		Range	–		768–805		530–860		–		715–949		–			
		n	–		2		14		–		8		–			

Note: Samples were collected by subsistence fishermen in the lower Kuskokwim River, who sampled their own harvests or the harvests of others. Only samples from gillnets with known mesh sizes are summarized here. Known mesh sizes ranged from 5.5 to 6.0 inches. ASL samples were not applied to the total harvest. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 24.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence fishery by gillnet mesh size, 2016.

Sample dates (Mesh size)	Sample size		Brood year (age) 2013 1.1 N	%	2012 1.2 N	%	2011 1.3 N	%	2011 2.2 N	%	2010 1.4 N	%	2010 2.3 N	%	Total N	%
6/12, 6/16, 6/30, 7/01–02	12	Male	0	0.0	4	33.3	6	50.0	0	0.0	1	8.3	0	0.0	11	91.7
(5.5" mesh)		Female	0	0.0	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0	1	8.3
		Subtotal	0	0.0	5	41.7	6	50.0	0	0.0	1	8.3	0	0.0	12	100.0
		Male mean length	–		523		675		–		630		–			
		SE	–		16.35		37.08		–		–		–			
		Range	–		476–552		575–782		–		630–630		–			
		n	–		4		6		–		1		–			
		Female mean length	–		768		–		–		–		–			
		SE	–		–		–		–		–		–			
		Range	–		768–768		–		–		–		–			
		n	–		1		–		–		–		–			
6/10, 6/18, 7/02	16	Male	0	0.0	11	68.8	2	12.5	0	0.0	0	0.0	2	12.5	15	93.8
(5.75" mesh)		Female	0	0.0	0	0.0	0	0.0	0	0.0	1	6.3	0	0.0	1	6.3
		Subtotal	0	0.0	11	68.8	2	12.5	0	0.0	1	6.3	2	12.5	16	100.0
		Male mean length	–		560		667		–		–		682			
		SE	–		14.95		58.00		–		–		25.50			
		Range	–		501–638		609–725		–		–		656–707			
		n	–		11		2		–		–		2			
		Female mean length	–		–		–		–		914		–			
		SE	–		–		–		–		–		–			
		Range	–		–		–		–		914–914		–			
		n	–		–		–		–		1		–			
6/12, 6/16–17, 6/21–23,	198	Male	1	0.5	79	39.9	87	43.9	1	0.5	8	4.0	0	0.0	176	88.9
6/29–7/02		Female	0	0.0	1	0.5	14	7.1	0	0.0	7	3.5	0	0.0	22	11.1
(6" mesh)		Subtotal	1	0.5	80	40.4	101	51.0	1	0.5	15	7.6	0	0.0	198	100.0
		Male mean length	390		577		695		550		745		–			
		SE	–		8.30		7.49		–		38.21		–			
		Range	390–390		154–805		540–930		550–550		553–840		–			
		n	1		79		87		1		8		–			
		Female mean length	–		805		724		–		828		–			
		SE	–		–		19.97		–		28.16		–			
		Range	–		805–805		530–860		–		715–949		–			
		n	–		1		14		–		7		–			

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others. Samples were from gillnets with known mesh sizes. Known mesh sizes ranged from 5.5 to 6.0 inches. ASL samples were not applied to the total harvest. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 25.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Goodnews River (Middle Fork) weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 1.1 N	%	2012 1.2 N	%	2011 1.3 N	%	2010 1.4 N	%	Total N	%
6/26, 6/28, 7/04, 7/07, 7/10–7/12, 7/14–7/15, 7/26, 7/29–7/31	89	Male	5	5.6	51	57.3	18	20.2	0	0.0	74	83.1
		Female	0	0.0	1	1.1	9	10.1	5	5.6	15	16.9
		Subtotal	5	5.6	52	58.4	27	30.3	5	5.6	89	100.0
		Male mean length	449		597		754		–			
		SE	15		9		13		–			
		Range	402–484		452–715		641–856		–			
		n	5		51		18		–			
		Female mean length	–		550		801		839			
		SE	–		–		14		28			
		Range	–		550–550		741–868		743–915			
		n	–		1		9		5			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 26.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Salmon River (Aniak) weir, 2016.

Sample dates	Sample size		Brood year (age) 2012 1.2 N	%	2011 1.3 N	%	2010 1.4 N	%	2009 1.5 N	%	Total N	%
7/20, 7/21, 7/24, 7/25, 7/26, 7/27, 7/28, 7/29, 7/31, 8/01, 8/02, 8/05,	36	Male	7	19.4	8	22.2	3	8.3	0	0.0	18	50.0
		Female	1	2.8	10	27.8	6	16.7	1	2.8	18	50.0
		Subtotal	8	22.2	18	50.0	9	25.0	1	2.8	36	100.0
		Male mean length	595		592		806		–			
		SE	35		20		44		–			
		Range	516–798		465–662		722–873		–			
		n	7		8		3		–			
		Female mean length	570		617		821		880			
		SE	–		27		19		–			
		Range	570–570		533–799		757–874		880–880			
		n	1		10		6		1			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 27.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the George River weir, 2016.

Sample dates	Sample size		Brood year (age) 2012 1.2 N	%	2011 1.3 N	%	2010 1.4 N	%	Total N	%
7/11–7/15, 7/21, 7/24, 7/26, 7/29	43	Male	12	27.9	18	41.9	1	2.3	31	72.1
		Female	2	4.7	6	14.0	4	9.3	12	27.9
		Subtotal	14	32.6	25	55.8	5	11.6	43	100.0
		Male mean length	544		672		659			
		SE	27		17		–			
		Range	362–739		566–871		659–659			
		n	12		18		1			
		Female mean length	508		779		817			
		SE	30		19		25			
		Range	478–537		722–837		754–862			
		n	2		6		4			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 28.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Tatlawiksuk River weir, 2016.

Sample dates	Sample Size		Brood year (age) 2013 1.1 N	%	2012 1.2 N	%	2011 1.3 N	%	2010 1.4 N	%	Total N	%
6/25, 6/29,–7/02, 7/12–16, 7/20, 7/22, 7/24, 7/26, 7/28	62	Male	1	1.6	8	12.9	23	37.1	0	0.0	32	51.6
		Female	0	0.0	0	0.0	22	35.5	8	12.9	30	48.4
		Subtotal	1	1.6	8	12.9	45	72.6	8	12.9	62	100.0
		Male mean length	420		559		700		–			
		SE	–		13		12		–			
		Range	420–420		484–600		545–795		–			
		n	1		8		23		–			
		Female mean length	–		–		709		759			
		SE	–		–		10		18			
		Range	–		–		638–797		683–844			
		n	–		–		22		8			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 29.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at Kogrukluk River weir, 2016.

Sample dates	Sample size		Brood year (age) 2012 1.2 N	%	2011 1.3 N	%	2010 1.4 N	%	Total N	%
6/28, 7/01, 7/04–7/09, 7/11–7/19, 7/21–7/24, 7/26–7/29, 8/01	201	Male	1,571	22.3	3,303	46.8	211	3.0	5,086	72.0
		Female	42	0.6	1,411	20.0	520	7.4	1,973	28.0
		Total	1,614	22.9	4,714	66.8	731	10.4	7,059	100.0
		95% CI (± %)		6.1		6.9		4.4		0.2
		Male mean length	591		700		773			
		SE	9		7		35			
		Range	0–0		0–0		0–0			
		n	46		93		7			
		Female mean length	538		766		820			
		SE	26		9		11			
		Range	0–0		0–0		0–0			
		n	3		35		17			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 30.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Salmon River (Pitka Fork) weir, 2016.

			Brood year (age)											
			2012		2011		2011		2010		2010			
	Sample		1.2		1.3		2.2		1.4		2.3		Total	
Sample dates	size		N	%	N	%	N	%	N	%	N	%	N	%
6/25, 6/28–7/07, 7/10–7/31	258	Male	580	9.2	2,100	33.2	27	0.4	276	4.4	0	0.0	2,983	47.2
		Female	45	0.7	1,996	31.5	0	0.0	1,285	20.3	17	0.3	3,343	52.8
		Total	624	9.9	4,096	64.7	27	0.4	1,561	24.7	17	0.3	6,326	100.0
		95% CI (± %)		3.8		6.0		0.8		5.4		0.5		0.2
		Male mean length	578		707		614		754		–			
		SE	20		6		0		28		–			
		Range	0–0		0–0		0–0		0–0		0–0			
		n	23		87		1		13		–			
		Female mean length	713		712		–		792		743			
		SE	0		4		–		7		0			
		Range	0–0		0–0		0–0		0–0		0–0			
		n	2		82		–		49		1			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 31.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Goodnews River (Middle Fork) weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 0.2 N	%	2012 0.3 N	%	2011 0.4 N	%	Total N	%
7/07, 7/09, 7/11, 7/13, 7/15, 7/18, 7/20, 7/25–7/31	351	Male	1,097	2.6	14,670	35.1	3,697	8.8	19,464	46.5
		Female	2,978	7.1	17,035	40.7	2,347	5.6	22,361	53.5
		Total	4,076	9.7	31,705	75.8	6,044	14.5	41,825	100.0
		95% CI (± %)		3.1		4.5		3.8		0.1
		Male mean length	548		578		595			
		SE	11		3		6			
		Range	0–0		0–0		0–0			
		n	9		124		30			
		Female mean length	527		544		559			
		SE	4		3		6			
		Range	0–0		0–0		0–0			
		n	27		141		20			

Note: Samples were used to estimate total number and percent of harvest by age and sex category. Samples were used to estimate mean length and summary statistics for each age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 32.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Salmon River (Aniak) weir, 2016.

Sample dates	Sample size		Brood year (age) 2014 0.2 N	%	2013 0.3 N	%	2012 0.4 N	%	Total N	%
7/22, 7/23, 7/24, 7/25, 7/27, 7/28, 7/29, 7/31, 8/01, 8/02, 8/05,	93	Male	1	1.1	42	45.2	23	24.7	66	71.0
		Female	2	2.2	17	18.3	8	8.6	27	29.0
		Subtotal	3	3.2	59	63.4	31	33.3	93	100.0
		Male mean length	497		534		554			
		SE	–		5		8			
		Range	497–497		450–594		467–634			
		n	1		42		22			
		Female mean length	502		516		508			
		SE	7		7		13			
		Range	495–509		474–572		450–569			
		n	2		17		8			

Note: Samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 33.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the George River weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 0.2 N	%	2012 0.3 N	%	2011 0.4 N	%	Total N	%
7/11–7/15, 7/18, 7/24, 7/26–7/27, 7/29, 8/02	320	Male	500	2.4	8,138	39.1	1,367	6.6	10,004	48.0
		Female	944	4.5	8,131	39.0	1,755	8.4	10,830	52.0
		Total	1,443	6.9	16,269	78.1	3,122	15.0	20,834	100.0
		95% CI (± %)		3.0		4.7		4.0		0.2
		Male mean length	486		539		559			
		SE	7		3		8			
		Range	0–0		0–0		0–0			
		n	6		127		22			
		Female mean length	484		516		523			
		SE	6		3		4			
		Range	0–0		0–0		0–0			
		n	14		124		27			

Note: Samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 34.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Tatlawiksuk River weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 0.2 N	%	2012 0.3 N	%	2011 0.4 N	%	Total N	%
6/30–7/02, 7/12–7/16, 7/20–7/22, 7/24–7/28, 7/30–7/31, 8/05	277	Male	161	1.5	3,286	31.1	1,830	17.3	5,277	50.0
		Female	661	6.3	3,554	33.6	1,072	10.1	5,287	50.0
		Total	823	7.8	6,840	64.7	2,902	27.5	10,564	100.0
		95% CI (± %)		3.0		5.7		5.3		0.2
		Male mean length	503		550		578			
		SE	1		3		5			
		Range	0–0		0–0		0–0			
		n	5		85		45			
		Female mean length	492		525		538			
		SE	4		2		3			
		Range	0–0		0–0		0–0			
		n	19		93		30			

Note: Samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 35.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Kogrukluk River weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 0.2 N	%	2012 0.3 N	%	2011 0.4 N	%	2010 0.5 N	%	Total N	%
6/28–7/01, 7/03–7/09, 7/11–7/19, 7/21–7/24, 7/26–8/06, 8/08–8/09	555	Male	371	0.8	18,621	41.1	6,646	14.7	300	0.7	25,939	57.2
		Female	799	1.8	16,433	36.3	2,161	4.8	0	0.0	19,392	42.8
		Total	1,170	2.6	35,054	77.3	8,806	19.4	300	0.7	45,331	100.0
		95% CI (± %)		1.5		3.6		3.3		0.7		0.1
		Male mean length	517		557		578		595			
		SE	19		2		4		4			
		Range	0–0		0–0		0–0		0–0			
		n	5		226		96		4			
		Female mean length	507		532		550		–			
		SE	21		2		5		–			
		Range	0–0		0–0		0–0		0–0			
		n	7		186		31		–			

Note: Samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 36.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Goodnews River (Middle Fork) weir, 2016.

			Brood year (age)													
			2012		2012		2011		2011		2010		2010			
	Sample		0.3		1.2		1.3		2.2		1.4		2.3		Total	
Sample dates	size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/27–6/28, 6/30, 7/04–7/05, 7/07, 7/09, 7/11, 7/13, 7/15, 7/20, 7/24	560	Male	928	0.5	22,628	13.2	41,725	24.4	1,612	0.9	684	0.4	2,972	1.7	70,549	41.2
		Female	181	0.1	36,339	21.2	56,587	33.1	4,256	2.5	1,047	0.6	2,156	1.3	100,566	58.8
		Total	1,109	0.6	58,967	34.5	98,312	57.5	5,868	3.4	1,730	1.0	5,128	3.0	171,115	100.0
		95% CI (± %)		0.8		4.5		4.6		1.8		0.7		1.7		0.1
		Male mean length	576		514		567		516		607		563			
		SE	0		4		2		6		5		11			
		Range	0–0		0–0		0–0		0–0		0–0		0–0			
		n	2		75		132		5		3		7			
		Female mean length	572		497		532		499		553		530			
		SE	0		2		2		13		8		7			
		Range	0–0		0–0		0–0		0–0		0–0		0–0			
		n	1		110		201		11		5		8			

Note: Samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 37.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Kogrukluk River weir, 2016.

Sample dates	Sample size		N	%	Total N	Total %
7/05–7/06, 7/13–7/14, 7/16–7/19, 7/21–7/24, 7/26–8/04	253	Male	9,317	46.4	9,317	46.4
		Female	10,770	53.6	10,770	53.6
		Total	20,087	100.0	20,087	100.0
		95% CI (± %)		0.0		0.2
		Male mean length	561			
		SE	2			
		Range	0–0			
		n	121			
		Female mean length	527			
		SE	2			
		Range	0–0			
		n	132			

Note: Age samples were not collected at this project. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 38.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Telaquana River weir, 2016.

Sample dates	Sample size		N	%	Total N	Total %
7/15–7/23, 7/25–7/31, 8/02–8/03, 8/05–8/06, 8/08–8/09	334	Male	44,147	53.4	44,147	53.4
		Female	38,559	46.6	38,559	46.6
		Total	82,706	100.0	82,706	100.0
		95% CI (± %)		0.0		0.2
		Male mean length	530			
		SE	6			
		Range	0–0			
		n	175			
		Female mean length	523			
		SE	3			
		Range	0–0			
		n	159			

Note: Age samples were not collected at this project. Statistics shown represent the number, mean length, and percent composition of the samples by sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 39.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Salmon River (Aniak) weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 1.1 N	%	2012 1.2 N	%	2012 2.1 N	%	2011 3.1 N	%	Total N	%
8/18, 9/05–9/07, 9/09–9/10	42	Male	0	0.0	0	0.0	15	35.7	9	21.4	24	57.1
		Female	2	4.8	0	0.0	13	31.0	3	7.1	18	42.9
		Total	2	4.8	0	0.0	28	66.7	12	28.6	42	100.0
		Male mean length	–		–		510		506			
		SE	–		–		9		12			
		Range	–		–		430–560		460–583			
		n	–		–		15		9			
		Female mean length	536		–		514		503			
		SE	15		–		11		26			
		Range	521–550		–		430–580		471–554			
		n	2		–		13		3			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 40.–Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Tatlawiksuk River weir, 2016.

Sample dates	Sample size		Brood year (age) 2013 1.1 N	%	2012 2.1 N	%	2011 3.1 N	%	Total N	%
8/20–/821, 8/24, 8/29–9/01, 9/03–9/12	208	Male	991	8.3	4,591	38.6	409	3.4	5,991	50.4
		Female	654	5.5	4,788	40.2	464	3.9	5,906	49.6
		Total	1,645	13.8	9,379	78.8	873	7.3	11,897	100.0
		95% CI (± %)		5.9		6.6		3.5		0.4
		Male mean length	528		535		541			
		SE	20		7		9			
		Range	0–0		0–0		0–0			
		n	15		65		9			
		Female mean length	523		524		543			
		SE	5		4		8			
		Range	0–0		0–0		0–0			
		n	15		91		13			

Note: ASL samples were not applied to the total escapement. Statistics shown represent the number, mean length, and percent composition of the samples by age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 41.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W1 commercial gillnet fishery, 1964–2016.

Year	Sample size	Total harvest	Percent by age class														Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1964	535	17,149	0.0	0.0	0.0	0.5	0.0		19.6	1.0	58.8	4.3	9.0	6.8	0.0	0.0	52.8	911
1965	322	21,989	0.0	0.0	0.0	0.0	0.0		43.4	0.0	27.5	5.0	12.8	9.4	0.0	1.9	45.1	884
1966	468	25,545	0.0	0.0	0.0	0.2	0.0	0.0	12.4	0.0	85.1	0.0	2.3	0.0	0.0	0.0	50.3	911
1967	654	29,986	0.0	0.0	0.0	0.1	0.0	0.0	8.2	0.0	74.4	0.0	17.3	0.0	0.0	0.0	55.8	880
1968	540	34,278	0.0	0.0	0.0	3.9	0.0	0.0	25.1	0.0	49.2	2.0	19.0	0.8	0.0	0.0	42.6	848
1969 [a]	0	43,997																
1970 [a]	0	39,290																
1971	791	40,274	0.0	0.0	0.0	2.9	0.1	0.0	23.0	0.0	73.3	0.0	0.7	0.0	0.0	0.0	53.0	865
1972	500	39,454	0.0	0.0	0.0	0.0	0.0	0.0	20.3	0.0	74.7	0.0	5.0	0.0	0.0	0.0	50.4	877
1973	470	32,838	0.0	0.0	0.0	2.3	0.0	0.0	25.7	0.0	65.4	0.0	6.6	0.0	0.0	0.0	55.3	857
1974 [b]	42	18,664	0.0	0.0	0.0	38.1	0.0	0.0	45.2	0.0	9.5	0.0	7.1	0.0	0.0	0.0	7.1	645
1975	307	20,816	0.0	0.0	2.2	0.2	0.0	1.7	81.3	0.0	13.5	0.0	1.3	0.0	0.0	0.0	25.6	765
1976 [a]	0	30,735																
1977	234	35,830	0.0	0.0	0.0	0.7	0.0	0.0	31.2	0.0	65.3	0.0	2.8	0.0	0.0	0.0	36.3	836
1978	289	45,641	0.0	0.0	0.0	0.2	0.0	0.0	12.8	0.0	82.2	0.0	4.8	0.0	0.0	0.0	58.2	856
1979	302	36,053	0.0	0.0	0.0	23.5	0.0	0.0	42.1	0.0	28.6	0.0	5.7	0.0	0.0	0.0	41.9	248
1980	273	35,881	0.0	0.0	0.0	10.9	0.0	0.0	65.1	0.0	20.7	0.0	3.2	0.0	0.0	0.0	29.0	759
1981	467	47,663	0.0	0.0	0.0	7.7	0.0	0.0	40.5	0.0	48.5	0.0	3.3	0.0	0.0	0.0	39.0	794
1982	715	48,234	0.0	0.3	0.0	10.4	0.0	0.0	23.2	0.0	63.1	0.0	2.8	0.1	0.0	0.0	41.1	791
1983	1,255	33,174	0.0	1.5	0.0	21.1	0.0	0.0	19.5	0.0	52.2	0.0	5.1	0.6	0.0	0.0	36.8	812
1984	664	31,742	0.0	0.7	0.0	12.3	0.1	0.0	39.0	0.4	36.7	1.3	8.1	1.4	0.0	0.0	29.9	783
1985	634	37,847	0.0	0.0	0.0	34.5	0.0	0.0	29.7	0.4	31.8	0.0	3.6	0.0	0.0	0.0	36.2	713
1986	141	19,413	0.0	2.2	0.0	12.5	0.0	0.0	56.5	0.0	24.2	0.0	4.6	0.0	0.0	0.0	32.0	715
1987	549	35,340	0.0	0.0	0.0	47.2	0.0	0.0	15.7	0.0	35.7	0.0	1.5	0.0	0.0	0.0	21.9	632
1988	645	55,769	0.0	0.0	0.0	30.9	0.0	0.0	44.0	0.0	19.1	0.0	6.0	0.0	0.0	0.0	35.5	699
1989	353	43,128	0.0	0.0	0.0	33.1	0.0	0.0	24.8	3.5	29.7	1.4	5.2	2.2	0.0	0.0	28.2	719
1990	408	53,502	0.0	0.0	0.0	41.4	0.0	0.0	37.7	0.0	17.4	0.0	3.5	0.0	0.0	0.0	18.0	691
1991	420	37,778	0.2	0.0	0.0	33.0	0.0	0.0	30.5	1.9	28.4	1.5	2.8	1.3	0.0	0.5	36.0	712
1992	717	46,848	0.0	1.2	0.0	45.7	0.0	0.0	27.7	0.2	24.0	0.0	1.0	0.1	0.0	0.0	22.6	658
1993	102	8,735	0.0	0.0	0.0	61.6	0.0	0.0	21.5	0.0	9.6	4.8	0.5	1.0	0.0	1.0	6.3	621

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Year	Sample size	Total harvest	Percent by age class														Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1994	208	16,211	0.0	0.5	0.0	17.3	0.0	0.0	50.3	1.9	26.0	1.0	2.0	1.0	0.0	0.0	23.7	708
1995	578	30,846	0.0	0.1	0.0	34.2	0.0	0.0	15.9	0.0	49.0	0.0	0.8	0.0	0.0	0.0	31.2	715
1996	592	6,973	0.0	0.3	0.0	27.7	0.0	0.0	42.6	0.0	19.9	0.1	9.4	0.0	0.1	0.0		686
1997	162	10,441	0.0	0.0	0.0	52.5	0.0	0.0	16.7	0.0	30.2	0.0	0.6	0.0	0.0	0.0	18.5	673
1998	437	17,359	0.0	1.1	0.0	23.8	0.0	0.0	59.0	0.0	13.9	0.0	2.2	0.0	0.0	0.0	22.0	692
1999	190	4,705	0.0	0.5	0.0	29.5	0.0	0.0	23.2	0.0	45.8	0.0	1.1	0.0	0.0	0.0	28.4	704
2000 [a]	0	444																
2001 [b]	20	90																
2002 [a]	0	72																
2003 [a]	0	158																
2004	353	2,305	0.0	1.2	0.0	58.2	0.0	0.0	25.4	0.0	14.6	0.0	0.6	0.0	0.0	0.0	11.6	645
2005	488	4,784	0.0	0.0	0.0	36.8	0.0	0.0	48.0	0.2	14.8	0.0	0.2	0.0	0.0	0.0	16.0	667
2006 [c]	184	2,777	0.0	1.1	0.0	60.9	0.0	0.0	27.2	0.0	10.3	0.0	0.5	0.0	0.0	0.0	7.1	617
2007 [a]	0	179																
2008	455	8,865	0.0	0.0	0.0	40.3	0.0	0.0	46.6	0.3	10.0	1.3	1.5	0.0	0.0	0.0	10.4	627
2009	388	6,664	0.0	0.0	0.0	41.9	0.0	0.0	30.0	0.5	26.3	0.0	1.0	0.2	0.0	0.0	20.1	673
2010	290	2,731	0.0	0.0	0.0	35.6	0.0	0.0	38.7	0.0	24.9	0.0	0.3	0.4	0.0	0.0	29.0	660
2011 [bd]	13	49																
2012 [ad]	0	14																
2013 [ad]	0	1																
2014 [ad]	0	0																
2015 [ad]	0	2																
2016 [e]	–	–																

Note: Harvest totals are Districts W1 and W2 combined. From 1964 to 1971 mesh size was unrestricted, from 1972 to 1984, both restricted (≤6 inch) and unrestricted mesh sizes were used, since 1985 mesh size has been restricted (≤6 inch). Harvest totals exclude fish kept for personal use.

[a] ASL data were not collected.

[b] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] Sale of Chinook salmon was prohibited.

[e] No commercial fishery occurred.

Table 42.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W4 commercial gillnet fishery, 1969–2016.

Year	Sample size	Total harvest	Percent by age class															Percent females	Mean length (mm)
			(0.1)	(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1969	204	16,802	0.0	0.0	1.7	0.0	31.1	0.0	0.0	19.3	0.0	39.8	0.0	6.7	1.3	0.0	0.0	39.1	709
1970	259	18,269	0.0	0.0	0.0	0.0	19.4	0.0	0.0	34.6	0.2	34.5	2.4	7.7	1.1	0.0	0.0	30.1	727
1971 [a]	0	4,185																	
1972 [a]	0	15,880																	
1973	213	14,993	0.0	0.0	0.0	0.0	6.1	0.0	0.0	11.0	0.0	70.8	0.0	12.1	0.0	0.0	0.0	53.8	848
1974	150	8,704	0.0	0.0	1.4	0.0	30.9	0.0	0.0	13.6	0.0	25.0	0.0	29.1	0.0	0.0	0.0	32.8	771
1975	198	3,928	0.0	0.0	1.1	0.0	33.3	0.0	0.0	44.6	0.0	16.3	0.0	4.7	0.0	0.0	0.0	26.1	679
1976	349	14,110	0.0	0.0	0.0	0.0	49.5	0.0	0.0	32.2	0.0	17.5	0.0	0.7	0.0	0.0	0.0	23.8	656
1977	480	19,090	0.0	0.0	0.0	0.0	2.5	0.0	0.0	39.0	0.0	56.5	0.0	2.0	0.0	0.0	0.0	49.0	818
1978	234	12,335	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	91.9	0.0	4.3	0.0	0.8	0.0	52.4	887
1979 [b]	377	11,144																	
1980	495	10,387	0.0	0.0	4.6	0.0	29.6	0.0	0.0	40.8	0.2	20.2	0.8	3.6	0.2	0.0	0.0	43.1	705
1981	612	24,524	0.0	0.0	0.1	0.0	55.1	0.0	0.0	23.6	0.0	19.2	0.0	1.9	0.0	0.0	0.0	57.9	667
1982 [b]	715	22,106																	
1983	762	46,385	0.0	0.0	0.3	0.0	26.2	0.0	0.0	7.2	0.0	64.0	0.0	2.3	0.0	0.0	0.0	39.1	779
1984	583	33,663	0.0	0.0	0.0	0.0	12.7	0.0	0.0	55.0	0.0	25.1	0.0	7.2	0.0	0.0	0.0	15.2	719
1985	568	30,401	0.0	0.0	0.0	0.0	19.4	0.0	0.0	23.1	0.0	55.3	0.0	2.2	0.0	0.0	0.0	32.3	778
1986	502	22,835	0.0	0.0	1.6	0.0	5.8	0.0	0.0	45.5	0.0	35.1	0.0	12.1	0.0	0.0	0.0	28.8	771
1987	524	26,022	0.0	0.0	0.5	0.0	27.0	0.0	0.0	17.5	0.0	52.5	0.0	2.5	0.0	0.0	0.0	16.3	738
1988	591	13,893	0.0	0.0	0.0	0.0	24.0	0.0	0.0	33.4	0.0	30.5	0.0	12.1	0.0	0.0	0.0	38.6	749
1989	422	20,820	0.0	0.0	2.2	0.0	20.4	0.0	0.0	18.8	0.0	53.3	0.0	5.3	0.0	0.0	0.0	46.0	780
1990	349	27,644	0.0	0.0	0.0	0.0	21.8	0.0	0.0	34.9	0.0	31.2	0.1	10.7	0.3	0.5	0.1	38.8	743
1991	503	9,480	0.0	0.0	0.1	0.0	18.5	0.0	0.0	25.8	0.0	48.4	0.4	6.6	0.0	0.0	0.1	39.5	768
1992	501	17,197	0.0	0.0	4.9	0.0	31.3	0.0	0.0	35.3	0.0	24.7	0.0	3.7	0.0	0.0	0.0	66.1	N/A
1993	337	15,784	0.0	0.0	0.0	0.0	36.4	0.0	0.0	27.9	0.3	30.9	1.0	3.3	0.2	0.0	0.0	38.5	706
1994	326	8,564	0.0	0.0	1.1	0.0	17.2	0.0	0.0	40.3	0.0	36.6	0.0	4.4	0.3	0.0	0.0	45.1	739
1995	603	38,584	0.0	0.0	0.0	0.0	23.6	0.0	0.0	15.8	0.0	60.0	0.0	0.6	0.0	0.0	0.0	44.4	761
1996 [c]	399	14,165																	
1997	573	35,492	0.0	0.0	1.1	0.0	35.2	0.1	0.0	12.0	0.0	51.0	0.0	0.6	0.0	0.0	0.0	35.0	710
1998	724	23,158	0.0	0.0	3.1	0.0	24.1	0.0	0.0	51.3	0.0	19.4	0.0	2.1	0.0	0.0	0.0	20.7	692

-continued-

Table 42.–Page 2 of 2.

Year	Sample size	Total harvest	Percent by age class														Percent females	Mean length (mm)
			(0.1)	(0.2)	(1.1)	(0.3)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)	
1999	662	18,426	0.0	0.0	0.4	0.0	29.8	0.0	0.0	22.2	0.1	45.6	0.0	1.6	0.2	0.0	0.0	30.2	718
2000	480	21,229	0.0	0.0	0.7	0.0	13.3	0.0	0.0	43.0	0.0	40.5	0.0	2.4	0.0	0.0	0.0	30.4	734
2001	570	12,775	0.0	0.0	0.3	0.0	9.6	0.0	0.0	13.5	0.0	75.3	0.0	1.2	0.0	0.0	0.0		791
2002	436	11,486	0.0	0.0	1.0	0.0	30.8	0.0	0.0	27.6	0.0	36.3	0.0	4.3	0.0	0.0	0.0	23.3	687
2003	547	14,444	0.0	0.0	2.9	0.0	27.6	0.0	0.0	34.3	0.0	32.6	0.0	2.5	0.0	0.0	0.0	23.7	681
2004	208	25,365	0.0	0.0	0.5	0.0	46.6	0.0	0.0	29.4	0.0	21.7	0.0	1.9	0.0	0.0	0.0	14.0	677
2005	866	24,195	0.0	0.0	0.5	0.0	22.1	0.0	0.0	49.4	0.0a	27.3	0.0	0.7	0.0	0.0	0.0	25.8	717
2006	658	19,184	0.0	0.0	0.2	0.0	32.9	0.0	0.0	30.9	0.3	33.4	0.0	2.3	0.0	0.0	0.0	26.9	696
2007	615	19,573	0.0	0.0	0.4	0.0	36.0	0.0	0.0	23.2	0.0	38.0	0.2	1.6	0.6	0.0	0.0	26.9	687
2008	529	13,812	0.0	0.0	0.0	0.0	30.3	0.0	0.0	42.4	0.0	25.7	0.0	1.1	0.5	0.0	0.0	24.0	678
2009	567	13,920	0.0	0.0	1.5	0.0	44.5	0.0	0.0	26.9	0.5	26.0	0.1	0.4	0.1	0.0	0.0	17.6	657
2010	479	14,233	0.0	0.0	2.0	0.0	22.7	0.0	0.0	50.3	0.0	24.5	0.0	0.5	0.0	0.0	0.0	28.4	692
2011	749	15,387	0.0	0.0	1.4	0.0	42.0	0.0	0.0	32.7	0.5	22.1	0.4	0.8	0.2	0.0	0.0	20.1	658
2012	789	6,675	0.0	0.4	0.5	0.1	28.8	0.1	0.0	38.5	0.5	30.5	0.0	0.6	0.0	0.0	0.0	33.6	700
2013	257	2,054	0.8	0.9	0.3	0.0	19.3	0.0	0.0	37.0	0.3	40.5	0.0	1.0	0.0	0.0	0.0	39.9	732
2014 [c]	105	2,265																	
2015	302	7,547	0.0	0.0	6.4	0.0	61.5	0.0	0.6	22.1	0.0	8.8	0.2	0.4	0.0	0.0	0.0	17.7	624
2016 [d]	–	–																	

Note: From 1969 to 1971 mesh size was unrestricted, from 1972 to 1984 both restricted (≤6 inch) and unrestricted mesh sizes were used, and since 1985 mesh size has been restricted (≤6 inch).

[a] ASL data were not collected.

[b] Samples were not summarized in Molyneaux et al. 2010.

[c] Sampling was not appropriate to estimate ASL composition for the season.

[d] No commercial fishery occurred.

Table 43.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvest in the W5 commercial gillnet fishery, 1990–2016.

Year	Sample size	Total harvest	Percent by age class												Percent females	Mean length (mm)
			(0.2)	(1.1)	(1.2)	(2.1)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(2.5)		
1990 [a]	148	3,303	0.0	0.0	39.2	0.0	0.0	20.3	0.0	36.5	0.7	3.4	0.0	0.0	25.7	
1991	258	912	0.0	0.0	27.9	0.0	0.0	41.5	0.2	24.1	0.0	3.6	2.3	0.4	38.6	N/A
1992	140	3,528	0.0	0.7	29.9	0.0	0.0	35.3	1.1	30.5	0.0	1.5	1.1	0.0	35.2	N/A
1993 [a]	152	2,117	0.0	0.0	32.2	0.0	0.0	27.6	0.0	36.2	0.0	3.9	0.0	0.0	60.5	
1994 [a]	150	2,570	0.0	0.0	18.7	0.0	0.0	37.3	0.0	41.3	0.0	2.7	0.0	0.0	52.0	
1995 [a]	196	2,922	0.0	0.0	44.9	0.0	0.0	13.3	0.0	41.3	0.0	0.5	0.0	0.0	31.6	
1996 [b]	0	1,375														
1997	471	2,039	0.0	0.8	46.6	0.0	0.0	12.3	0.0	38.8	0.0	1.4	0.0	0.0	32.1	714
1998	404	3,675	0.0	1.0	16.2	0.0	0.0	57.6	0.0	22.3	0.0	2.4	0.0	0.0	25.8	722
1999 [a]	312	1,888	0.0	0.0	26.5	0.0	0.0	13.6	0.0	58.5	0.0	1.4	0.0	0.0	51.7	
2000	376	4,442	0.0	0.0	20.4	0.0	0.0	58.4	0.0	19.5	0.0	1.7	0.0	0.0	51.7	705
2001	262	1,519	0.0	0.4	12.5	0.0	0.0	22.4	0.0	63.1	0.0	1.8	0.0	0.0	60.1	775
2002	164	979	0.0	0.6	38.2	0.0	0.0	31.4	0.0	27.9	0.0	1.7	0.0	0.0	22.0	644
2003 [a]	142	1,412	0.0	1.4	23.9	0.0	0.0	31.0	0.0	40.8	0.0	2.8	0.0	0.0		742
2004	129	2,565	0.0	0.0	53.2	0.0	0.0	26.1	0.0	16.3	0.0	4.5	0.0	0.0		655
2005 [a]	208	2,035	0.0	0.5	27.9	0.0	0.0	58.7	0.0	13.0	0.0	0.0	0.0	0.0	13.0	683
2006	182	2,892	0.0	0.0	33.0	0.0	0.0	45.1	0.0	20.3	0.0	1.6	0.0	0.0	17.6	674
2007	369	3,112	0.0	0.0	39.8	0.0	0.0	21.9	0.0	35.0	0.6	0.4	2.3	0.0	27.5	696
2008 [b]	0	1,281														
2009	515	1,509	0.0	0.2	52.9	0.0	0.0	19.2	0.2	26.1	0.8	0.5	0.0	0.0	21.3	643
2010	621	1,759	0.0	1.6	32.3	0.0	0.0	50.8	0.2	13.7	0.0	0.9	0.0	0.0	23.4	666
2011	540	2,092	0.2	0.2	62.6	0.0	0.0	21.4	0.3	15.1	0.0	0.4	0.0	0.0	12.1	611
2012	664	1,531	0.0	0.0	19.2	0.0	0.0	65.6	0.2	15.1	0.0	0.0	0.0	0.0	28.7	703
2013	106	495	0.0	0.0	25.5	0.0	0.9	37.7	0.0	35.8	0.0	0.0	0.0	0.0	37.7	718
2014 [c]	17	205														
2015	198	705	0.0	0.2	71.9	0.0	0.0	23.1	0.0	4.8	0.0	0.0	0.0	0.0	5.5	624
2016 [d]	–	–														

Note: From 1990 to 2012 restricted mesh (≤6 inch) gillnets were used. ASL samples are available discontinuously back to 1973 but summaries have not been produced.

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[b] ASL data were not collected.

[c] Sampling was not appropriate to estimate ASL composition for the season.

[d] No commercial fishery occurred.

Table 44.–Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the Bethel Test Fishery, 2001–2016.

Year	Sample size	Total harvest	Percent by age class									Percent females	Mean length (mm)
			(1.1)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
2001	75	86	0.0	30.8	0.0	26.6	0.0	33.2	0.0	6.6	2.7	24.0	723
2002	197	288	0.0	33.4	0.0	33.1	1.6	31.4	0.0	0.5	0.0	14.8	689
2003	311	409	0.3	35.8	0.0	39.9	0.0	20.0	0.0	3.9	0.0	13.9	674
2004	322	691	0.0	38.3	0.0	41.7	0.6	17.7	0.0	1.6	0.0	12.1	684
2005	335	557	0.0	28.7	0.0	43.0	0.0	27.0	0.3	1.1	0.0	24.0	708
2006	244	352	0.0	28.4	0.0	30.2	0.0	37.1	0.0	4.4	0.0	29.6	744
2007	98	305	0.0	34.1	0.0	37.0	0.0	24.5	0.0	4.3	0.0	28.1	720
2008 [a]	30	420											
2009 [b]	0	470											
2010 [b]	0	292											
2011	216	337	0.0	38.8	0.0	30.0	0.0	29.2	0.0	1.9	0.0	29.1	693
2012	228	321	0.0	19.3	0.0	56.6	0.0	22.8	0.4	0.4	0.4	25.0	717
2013	146	201	0.0	28.0	0.0	35.8	0.0	34.3	0.0	1.9	0.0	33.2	723
2014	408	520	0.0	19.3	0.0	50.2	0.2	30.0	0.0	0.2	0.0	29.4	719
2015	430	477	0.0	50.2	0.2	24.9	0.2	23.3	0.2	0.7	0.2	20.7	665
2016	464	524	0.4	26.3	0.0	52.6	0.2	19.4	0.0	0.9	0.2	30.4	707

Note: Bethel test fishery uses a 5 3/8 inch and 8.0 inch drift gillnet to index run timing and relative abundance of Chinook salmon.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] ASL data were not collected.

Table 45.–Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the lower Kuskokwim River subsistence fishery, 2001–2016.

Year	Number of samplers	Sample size	Total harvest	Percent by age class												Percent females	Mean length (mm)
				(0.1)	(0.2)	(1.1)	(1.2)	(2.1)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)		
2001	20	1,052	78,174	0.0	0.0	0.1	4.1	0.0	29.4	0.0	62.1	0.0	4.1	0.1	0.0	33.9	780
2002	24	1,489	81,169	0.0	0.0	0.0	7.8	0.0	34.0	0.0	53.3	0.0	4.8	0.0	0.1	41.6	769
2003	32	1,941	67,737	0.0	0.0	0.2	7.1	0.0	43.7	0.0	42.7	0.0	6.3	0.0	0.0	37.8	770
2004	22	2,277	96,788	0.0	0.0	0.1	15.1	0.0	35.8	0.3	45.9	0.0	2.6	0.0	0.0	32.6	758
2005	30	2,826	85,863	0.0	0.0	0.0	5.4	0.0	49.8	0.0	42.7	0.2	1.8	0.1	0.0	37.0	775
2006	20	1,972	90,812	0.0	0.0	0.2	6.3	0.0	35.9	0.1	53.2	0.2	4.0	0.1	0.0	41.6	786
2007	28	2,475	94,898	0.0	0.0	0.0	6.6	0.0	37.5	0.0	52.4	0.3	2.6	0.6	0.0	41.7	782
2008	48	3,397	88,912	0.0	0.0	0.2	8.2	0.0	53.9	0.0	34.2	0.6	2.6	0.2	0.0	34.5	752
2009	55	4,218	79,896	0.0	0.0	0.1	9.9	0.0	34.6	0.1	53.8	0.1	1.3	0.1	0.0	38.4	769
2010	37	2,153	67,286	0.0	0.0	0.2	8.2	0.0	49.1	0.1	39.5	0.0	3.0	0.0	0.0	41.7	769
2011	21	1,482	62,366	0.0	0.0	0.3	13.6	0.0	47.5	0.0	36.5	0.2	1.8	0.0	0.1	33.0	749
2012	9	407	22,544	0.0	0.0	0.0	12.6	0.0	52.4	0.0	32.3	0.3	2.4	0.0	0.0	32.0	739
2013	16	873	47,113	0.0	0.0	0.2	5.8	0.0	29.9	0.0	62.3	0.5	1.2	0.2	0.0	42.2	779
2014	4	131	11,234	1.1	0.0	24.2	33.7	0.0	25.3	1.1	14.7	0.0	0.0	0.0	0.0	29.7	577
2015	9	299	16,124	0.0	0.4	1.6	34.1	0.4	35.7	0.0	26.4	1.2	0.4	0.0	0.0	38.1	677
2016	9	261	30,676	0.0	0.0	0.4	42.3	0.0	48.5	0.4	7.5	0.9	0.0	0.0	0.0	13.1	654

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others. Age and sex percentages and mean length were calculated separately using all fish and may differ from annual summaries that are based on a subset of fish with a complete record of paired age, sex, and length data. Mesh sizes used in the subsistence fishery have changed over time.

Table 46.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Middle Fork Goodnews River weir, 1991–2016.

Year	Sample size	Total escapement	Percent by age class									Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(2.5)		
1991	279	2,080	0.0	17.3	32.0	0.0	39.1	0.0	11.0	0.3	0.3	44.7	N/A
1992 [a]	70	1,445	1.4	7.1	27.1	1.4	58.6	0.0	4.3	0.0	0.0	54.3	
1993 [a]	31	2,132	0.0	12.9	22.6	0.0	54.8	0.0	9.7	0.0	0.0	67.7	
1994 [a]	208	3,061	0.5	3.8	33.2	0.0	50.0	0.0	10.6	1.9	0.0	46.6	
1995	308	4,678	0.0	17.4	17.5	0.0	64.3	0.0	0.8	0.0	0.0	43.8	798
1996 [a]	42		4.6	11.8	42.1	0.0	37.5	0.0	3.9	0.0	0.0	45.4	
1997	121	2,897	0.6	60.3	9.1	0.0	30.0	0.0	0.0	0.0	0.0	25.0	691
1998 [a]	8	3,553											
1999 [a]	28	3,703											
2000	214	2,670	1.1	11.9	63.9	0.0	22.2	0.0	0.9	0.0	0.0	32.0	738
2001 [a]	39	5,351	0.0	12.8	12.8	0.0	71.8	0.0	0.0	2.6	0.0	46.2	
2002	199	3,025	0.0	31.0	23.7	0.0	41.1	0.0	4.2	0.0	0.0	32.2	713
2003	241	2,248	3.2	13.6	44.1	0.0	34.4	0.0	4.7	0.0	0.0	41.6	742
2004 [a]	174	4,438	4.0	52.0	23.4	0.6	20.0	0.0	0.0	0.0	0.0	30.3	
2005 [a]	155	4,781	1.3	14.7	52.6	0.0	30.8	0.0	0.0	0.6	0.0	36.5	
2006 [a]	57	4,572	1.8	33.3	26.3	0.0	36.8	0.0	1.8	0.0	0.0	47.4	
2007	209	3,914	1.2	33.7	27.2	0.0	34.8	0.3	1.2	1.6	0.0	37.2	713
2008	123	2,223	7.8	17.5	42.0	0.0	26.1	0.0	6.5	0.0	0.0	46.6	718
2009 [a]	57	1,669	0.0	28.1	14.0	0.0	57.9	0.0	0.0	0.0	0.0	47.4	
2010 [a]	76	2,176	13.8	29.2	40.0	0.0	13.8	1.5	1.5	0.0	0.0	32.3	
2011 [a]	44	2,045	0.0	31.8	36.4	0.0	31.8	0.0	0.0	0.0	0.0	34.1	
2012 [a]	45	524	0.0	8.9	66.7	0.0	24.4	0.0	0.0	0.0	0.0	48.9	
2013	175	1,187	0.5	14.8	22.4	0.0	60.8	0.0	1.0	0.5	0.0	56.7	795
2014 [a]	74	750	1.4	13.5	48.6	0.0	33.8	0.0	1.4	1.4	0.0	44.6	
2015 [a]	111	1,494	3.6	58.6	15.3	0.0	22.5	0.0	0.0	0.0	0.0	27.9	
2016 [a]	89	3,788	5.6	58.4	30.3	0.0	5.6	0.0	0.0	0.0	0.0	16.9	

Note: N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

Table 47.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kanektok River weir, 2002–2016.

Year	Sample size	Total escapement	Percent by age class								Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
2002	188	5,304	2.3	22.9	25.0	0.0	43.1	0.0	6.6	0.0	37.5	712
2003	174	8,211	2.3	23.6	35.3	0.0	36.7	0.0	2.0	0.0	32.7	704
2004	428	19,569	0.2	58.3	25.2	0.0	15.6	0.0	0.7	0.0	13.6	658
2005 [a]	224	14,177										
2006 [b]												
2007	431	13,965	0.9	32.9	19.1	0.0	44.2	0.0	2.7	0.2	34.9	706
2008 [a]	34											
2009	468	7,065	0.4	26.2	23.2	0.2	49.5	0.0	0.2	0.2	37.3	740
2010	224	6,537	0.9	35.2	44.0	0.4	19.1	0.0	0.5	0.0	23.7	659
2011	159	5,170	0.0	59.2	27.9	0.0	12.9	0.0	0.0	0.0	22.0	617
2012 [a]	48	1,561										
2013	153	3,569	0.0	35.2	25.7	0.0	37.8	0.5	0.8	0.0	36.8	689
2014 [a]	117	3,594										
2015	311	10,416	9.1	51.5	21.9	0.0	17.3	0.0	0.1	0.0	26.2	651
2016 [b]	–	–										

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate.

Table 48.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Salmon River (Aniak) weir, 2006–2016.

Year	Sample size	Total escapement	Percent by age class									Percent females	Mean length (mm)
			(1.1)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
2006	345	7,075	0.4	36.1	0.0	29.6	0.0	30.3	0.0	3.5	0.0	22.9	680
2007	403	6,255	0.2	47.8	0.0	23.9	0.0	25.9	0.8	0.1	1.4	15.0	628
2008	219	2,376	0.0	21.9	0.0	50.7	0.0	23.6	1.3	2.5	0.0	28.5	684
2009	0	1,656											
2010 [b]													
2011 [b]													
2012 [ac]	48	473	0.0	12.5	0.0	45.8	0.0	37.5	0.0	4.2	0.0	27.1	740
2013 [a]	76	625	0.0	46.1	1.3	26.3	1.3	23.7	0.0	1.3	0.0	30.3	673
2014 [a]	45	1,757	0.0	13.3	0.0	51.1	2.2	33.3	0.0	0.0	0.0	31.1	683
2015	149	2,404	1.3	55.0	0.0	23.7	0.0	19.5	0.4	0.0	0.0	12.1	619
2016 [a]	36	776	0.0	22.2	0.0	50.0	0.0	25.0	0.0	2.8	0.0	50.0	661

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[b] Weir did not operate.

[c] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 49.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim River Chinook salmon past the George River weir, 1996–2016.

Year	Sample size	Total escapement	Percent by age class									Percent females	Mean length (mm)
			(0.2)	(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1996	191	7,770	0.0	0.0	7.1	23.2	0.4	39.8	0.0	29.4	0.0	44.3	816
1997	269	7,810	0.0	0.0	34.6	11.7	0.0	53.7	0.0	0.0	0.0	37.4	736
1998 [ab]	75	2,505	0.0	0.0	30.7	50.7	0.0	17.6	0.0	0.0	0.0	25.7	671
1999 [ab]	54	2,439	0.0	0.0	9.3	14.8	0.0	75.9	0.0	0.0	0.0	53.7	799
2000 [a]	72	2,959	0.0	0.0	9.7	20.8	0.0	68.1	0.0	1.4	0.0	52.8	805
2001 [a]	62	3,277	0.0	0.0	12.9	24.2	0.0	53.2	0.0	9.7	0.0	38.7	762
2002	315	2,443	0.0	0.0	12.6	18.3	0.0	60.9	0.0	8.2	0.0	40.6	759
2003 [ab]	23	975											
2004	269	5,488	0.0	0.5	25.9	21.2	0.0	49.6	0.0	2.7	0.0	37.7	763
2005	471	3,845	0.0	0.0	10.6	43.9	0.0	40.7	1.2	3.3	0.3	35.7	756
2006	223	4,355	0.0	0.2	24.9	28.2	0.0	35.8	0.0	10.8	0.0	35.1	736
2007	249	4,011	0.0	0.0	54.0	22.2	0.0	22.0	0.0	1.3	0.5	16.8	623
2008	288	2,563	0.0	0.0	19.8	48.7	0.0	27.3	1.0	3.2	0.0	27.9	699
2009	152	3,663	0.0	0.0	21.1	25.0	0.0	52.0	0.0	1.0	0.9	41.9	762
2010	163	1,498	0.0	1.1	35.8	27.9	0.0	29.9	0.0	5.3	0.0	30.6	647
2011	167	1,547	0.0	1.2	35.2	33.5	0.0	27.7	0.4	1.7	0.4	37.5	686
2012	138	2,201	0.6	0.0	30.2	41.2	0.0	25.6	1.4	1.1	0.0	30.5	695
2013 [a]	85	1,292	0.0	0.0	16.5	30.6	0.0	51.8	0.0	1.2	0.0	60.0	643
2014	155	2,993	0.0	0.0	12.9	21.7	0.7	61.4	0.7	2.6	0.0	54.6	705
2015	174	2,282	0.0	1.7	50.2	21.6	0.0	26.5	0.0	0.0	0.0	24.3	643
2016 [a]	43	1,663	0.0	0.0	32.6	55.8	0.0	11.6	0.0	0.0	0.0	27.9	658

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 50.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Tatlawiksuk River weir, 1998–2016.

Year	Sample size	Total escapement	Percent by age class								Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1998 [ab]	15	970										
1999 [b]	7	1,484										
2000 [b]	7	807										
2001 [b]	74	1,978	0.0	12.2	39.2	0.0	44.6	0.0	4.1	0.0	39.2	733
2002	279	2,237	0.0	23.2	19.7	0.4	52.9	0.0	3.6	0.0	36.8	716
2003 [ab]	39	601	0.0	7.7	56.4	0.0	28.2	0.0	7.7	0.0	38.5	765
2004	301	2,833	0.0	26.5	40.6	0.0	32.9	0.0	0.0	0.0	32.6	716
2005	384	2,864	0.0	13.4	49.5	0.0	35.6	0.0	1.4	0.0	42.6	729
2006	178	1,700	0.0	21.0	44.1	0.0	30.4	0.0	4.6	0.0	41.4	682
2007	275	2,032	0.4	34.7	43.9	0.0	19.7	0.0	1.0	0.4	27.2	653
2008	93	1,075	0.0	10.3	57.4	0.0	32.3	0.0	0.0	0.0	39.0	709
2009	93	1,071	0.0	31.7	40.1	0.0	27.5	0.0	0.0	0.8	40.0	730
2010	80	546	1.0	29.4	43.2	0.0	23.3	0.0	2.0	1.1	39.4	706
2011	123	992	0.0	45.5	30.2	0.0	21.7	0.0	1.7	0.8	25.5	664
2012	91	1,116	0.0	21.9	61.4	0.0	16.7	0.0	0.0	0.0	42.8	713
2013 [b]	66	495	0.0	7.6	37.9	0.0	53.0	0.0	1.5	0.0	53.0	704
2014 [b]	94	1,904	0.0	13.8	42.6	0.0	43.6	0.0	0.0	0.0	58.5	750
2015	176	2,104	0.0	38.7	49.5	0.0	11.8	0.0	0.0	0.0	26.7	649
2016 [b]	62	2,494	1.6	12.9	72.6	0.0	12.9	0.0	0.0	0.0	48.4	688

[a] Weir did not operate for most of the season. Only observed escapement counts are presented.

[b] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

Table 51.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kogrukluk River weir, 1976–2016.

Year	Sample size	Total escapement	Percent by age class									Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)		
1976	347	5,638	0.0	7.6	40.7	0.4	50.8	0.0	0.4	0.0	0.0	44.7	815
1977 [ab]	0	1,385											
1978	516	14,533	0.2	17.0	10.5	0.0	55.9	1.4	3.0	12.1	0.0	46.2	849
1979	383	11,393	0.0	66.2	14.4	0.0	16.3	0.0	3.1	0.0	0.0	13.3	691
1980 [ac]	118	843	0.0	21.2	51.7	0.0	19.5	0.0	7.6	0.0	0.0	29.7	755
1981	797	16,809	0.3	7.4	30.3	0.0	58.2	0.0	3.9	0.0	0.0	44.0	830
1982	392	13,126	0.0	4.1	24.5	0.0	66.3	0.0	5.1	0.0	0.0	51.7	779
1983 [a]	448	1,080	0.2	20.0	19.6	0.0	55.9	0.0	4.2	0.0	0.0	30.5	763
1984	1,376	4,922	0.1	22.5	47.5	0.0	26.4	0.0	3.5	0.0	0.1	21.0	701
1985	1,042	4,442	0.0	16.2	35.7	0.0	44.9	0.0	3.2	0.0	0.1	31.5	745
1986 [a]	679	2,968	0.4	8.6	50.9	0.0	32.8	0.0	7.2	0.0	0.0	30.4	726
1987 [ac]	117	770	0.0	25.6	24.8	0.0	48.7	0.0	0.9	0.0	0.0	28.2	743
1988	867	8,028	0.0	8.0	52.7	0.0	31.4	0.0	8.0	0.0	0.0	35.3	728
1989 [ac]	217	4,911	0.0	14.7	25.3	0.0	58.1	0.0	1.8	0.0	0.0	34.6	781
1990 [d]	367	10,093	2.7	23.7	62.3	0.0	11.2	0.0	0.2	0.0	0.0	22.2	714
1991	315	6,835	0.0	6.4	29.8	0.3	62.4	0.0	1.1	0.0	0.0	49.3	830
1992	349	6,563	0.0	21.3	40.3	0.0	36.5	0.0	1.7	0.0	0.0	32.6	762
1993 [c]	313	12,377	0.0	34.5	24.9	0.0	35.5	0.0	4.8	0.3	0.0	29.7	729
1994 [ac]	222	8,310	0.0	9.9	59.0	0.2	29.7	0.0	0.9	0.0	0.0	28.4	771
1995	533	20,662	0.0	19.1	25.5	0.0	55.1	0.1	0.2	0.1	0.0	42.9	796
1996	480	13,771	0.0	12.6	54.9	0.0	25.3	0.4	6.8	0.0	0.0	24.0	761
1997	472	13,190	0.0	33.7	20.4	0.0	45.4	0.0	0.4	0.0	0.0	31.4	758
1998 [ac]	86	3,009	0.0	4.7	54.7	0.0	38.4	0.0	2.3	0.0	0.0	44.2	794
1999	305	5,543	0.3	5.4	25.2	0.3	67.3	0.0	1.5	0.0	0.0	53.2	782
2000	98	3,242	0.0	9.9	49.2	0.0	39.1	0.0	1.8	0.0	0.0	41.2	743
2001	397	7,475	0.0	15.3	39.3	0.0	43.8	0.0	1.5	0.0	0.0	28.5	739
2002	466	10,025	0.0	17.4	50.0	0.0	31.2	0.0	1.4	0.0	0.0	25.5	719
2003	373	12,008	0.0	18.7	42.6	0.0	36.0	0.0	2.8	0.0	0.0	31.3	732
2004	731	19,819	0.0	44.7	36.2	0.0	18.5	0.0	0.6	0.0	0.0	16.4	675
2005	734	21,819	0.3	24.3	46.5	0.0	28.1	0.0	0.9	0.0	0.0	34.7	714

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Year	Sample size	Total escapement	Percent by age class									Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)		
2006	711	20,205	0.5	34.9	30.9	0.0	29.4	0.0	4.3	0.0	0.0	33.4	705
2007 [a]	289	6,923	0.0	32.3	33.0	0.0	31.7	0.0	2.9	0.0	0.0	28.4	699
2008	296	9,750	0.5	35.9	43.4	0.0	19.1	0.2	1.0	0.0	0.0	23.2	676
2009	245	9,528	0.0	22.2	52.4	0.7	22.9	0.4	1.4	0.0	0.0	28.2	730
2010	298	5,812	0.0	44.0	28.8	0.0	25.6	0.0	1.5	0.0	0.0	26.2	672
2011	268	6,731	0.0	47.2	32.6	0.3	19.5	0.3	0.0	0.0	0.0	20.1	673
2012 [ac]	87	1,156	0.0	5.7	56.3	0.0	36.8	1.1	0.0	0.0	0.0	54.0	765
2013 [c]	61	1,819	0.0	26.2	36.1	0.0	37.7	0.0	0.0	0.0	0.0	49.2	636
2014 [c]	106	3,732	0.9	17.0	49.1	0.0	31.1	0.9	0.9	0.0	0.0	37.7	732
2015	225	8,081	0.0	58.3	33.9	0.0	7.7	0.0	0.0	0.0	0.0	15.1	632
2016	201	7,056	0.0	24.4	63.7	0.0	11.9	0.0	0.0	0.0	0.0	27.4	694

[a] Weir did not operate for most of the season. Only observed escapement counts are presented.

[b] ASL Samples were not collected.

[c] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[d] All 1990 scales need re-aged due to potential errors.

Table 52.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Salmon River (Pitka Fork) weir, 1981–1982 and 2015–2016.

Year	Sample size	Total escapement	Percent by age class								Percent females	Mean length (mm)
			(1.1)	(1.2)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)		
1981	132	1,700	0.0	0.8	9.8	0.0	78.0	0.0	10.6	0.0	47.0	852
1982	142	730	0.0	4.9	16.2	0.0	71.1	0.0	7.7	0.0	51.0	793
2015	195	6,736	0.0	22.1	33.1	0.0	43.3	0.0	0.0	0.0	37.0	722
2016	258	6,326	0.0	9.9	64.7	0.4	24.7	0.3	0.0	0.0	52.8	715

Note: In 1981 and 1982 the weir was located 200 m upstream from the of the south fork. The weir was re-established in 2015 immediately downriver of the south and north forks.

Table 53.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W1 commercial gillnet fishery, 1972–2016.

Year	Sample size	Total harvest	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
1972	542	78,619	3.1	39.4	57.5	0.0	54.9	585
1973	534	148,746	0.4	60.8	35.8	2.9	46.5	583
1974	163	171,887	1.3	46.8	47.1	4.9	47.7	553
1975	527	184,171	1.0	85.6	13.0	0.4	53.5	575
1976 [a]	514	177,864						
1977	679	248,721	9.6	83.0	7.3	0.1	56.6	581
1978	877	248,656	6.0	64.8	29.0	0.2	54.5	579
1979 [a]	962	261,874						
1980	507	483,751	0.5	98.1	1.4	0.0	56.8	557
1981	855	418,677	1.8	37.0	61.1	0.1	51.3	580
1982	888	278,306	1.0	67.8	29.7	1.4	53.5	583
1983	1,705	276,698	0.8	47.0	50.8	1.3	52.8	587
1984	1,834	423,718	0.8	89.1	9.7	0.7	60.0	576
1985	1,063	199,563	0.8	36.8	62.0	0.4	54.1	585
1986	1,064	309,048	0.4	76.5	22.6	0.5	53.1	581
1987	1,312	570,708	1.5	52.9	44.8	0.8	57.0	581
1988	2,404	1,384,267	0.8	79.3	19.1	0.8	49.1	577
1989	655	748,338	0.2	36.9	61.8	1.1	52.1	584
1990	558	459,974	0.6	70.6	27.5	1.3	51.8	576
1991	1,630	431,798	2.2	64.9	32.8	0.1	55.6	566
1992	1,677	344,470	0.0	44.5	53.5	2.0	48.9	555
1993	318	43,337	1.4	32.2	60.2	6.2	45.9	554
1994	1,389	271,115	0.7	72.5	24.7	2.0	56.7	546
1995	1,811	605,918	3.6	58.0	37.0	1.4	54.5	557
1996	2,169	200,298	0.3	73.0	24.5	2.2	53.7	565
1997	355	17,026	3.3	52.1	42.2	2.4	47.6	571
1998	1,433	207,809	0.8	87.2	11.8	0.1	57.1	557
1999	268	23,006	0.0	58.0	41.9	0.0	50.7	576
2000	253	11,571	2.4	73.6	23.0	1.0	52.6	566
2001 [b]	118	1,273						
2002 [b]	93	1,900						
2003 [b]	118	2,764						
2004	737	20,150	30.7	42.2	27.1	0.0	47.3	551
2005	779	69,139	0.9	93.1	5.9	0.1	53.4	558
2006 [c]	392	44,070	0.4	49.9	49.7	0.0	45.9	571
2007 [b]	201	10,763						
2008	865	30,516	0.3	20.7	74.3	4.7	41.9	563
2009	1,199	76,790	2.1	66.6	29.1	2.2	42.6	564
2010	1,265	93,148	2.8	72.6	23.5	1.1	44.7	552
2011	903	118,256	0.3	63.9	35.0	0.8	43.2	553
2012	668	65,171	1.7	73.2	23.3	1.7	56.8	547
2013	196	52,235	0.0	81.6	17.3	1.0	48.0	555
2014	202	19,080	2.5	37.1	57.9	2.5	40.1	556
2015 [d]	0	507						
2016 [e]	–	–						

[a] ASL samples were not summarized in Molyneaux et al. 2010.

[b] Sampling was not appropriate to estimate ASL composition for the season.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] ASL data were not collected.

[e] No commercial fishery occurred.

Table 54.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W4 commercial gillnet fishery, 1984–2016.

Year	Sample size	Total harvest	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent females	Mean length (mm)
1984	464	50,422	0.3	75.5	23.6	0.6	0.0	54.1	589
1985	457	20,418	0.0	46.2	53.1	0.7	0.0	53.5	597
1986	398	29,700	0.0	58.6	41.4	0.0	0.0	53.8	584
1987 [a]	241	8,557							
1988	593	29,247	1.3	68.0	29.3	1.4	0.0	49.6	583
1989	703	39,395	0.0	49.0	49.7	1.3	0.0	53.4	590
1990	618	47,717	0.8	77.3	21.3	0.6	0.0	55.0	584
1991	656	54,493	1.0	72.5	26.5	0.0	0.0	52.0	565
1992	546	73,383	0.2	35.4	62.9	1.5	0.0	52.3	590
1993	398	40,924	0.9	42.2	47.1	9.8	0.0	51.1	550
1994 [a]	547	61,301							
1995	598	81,462	7.6	48.5	43.1	0.8	0.0	64.1	574
1996 [a]	615	81,505							
1997	1,221	38,435	1.5	37.5	59.9	1.1	0.0	54.4	582
1998	857	45,095	0.7	89.0	9.6	0.7	0.0	58.5	574
1999	814	38,091	0.2	70.0	29.6	0.2	0.0	57.7	583
2000	1,043	30,553	0.5	54.0	44.9	0.6	0.0	54.3	595
2001	576	17,209	0.4	49.9	49.5	0.2	0.0	59.0	575
2002	449	29,319	4.0	56.9	36.8	2.2	0.0	63.8	574
2003	243	27,868	1.1	88.0	9.7	1.3	0.0	52.1	562
2004	225	25,850	4.2	40.2	55.0	0.6	0.0	44.3	586
2005	958	13,529	0.6	86.0	12.7	0..7	0.0	48.0	561
2006 [b]	1,320	39,151	4.6	43.7	51.4	0.4	0.0	50.5	559
2007	1,134	61,228	0.0	79.1	19.2	1.8	0.0	55.6	549
2008	585	57,033	0.8	34.6	60.5	4.2	0.0	47.3	580
2009	1,101	91,158	2.6	69.3	27.1	1.1	0.0	55.4	573
2010	1,174	106,610	1.0	66.8	31.0	1.2	0.0	46.9	566
2011	903	104,959	1.6	61.2	36.3	1.0	0.0	50.2	567
2012	921	61,140	0.6	72.8	24.9	1.7	0.0	54.3	570
2013	667	58,079	0.0	43.0	55.9	0.9	0.2	54.6	568
2014	341	14,563	2.2	29.9	64.8	3.2	0.0	54.4	568
2015	339	16,051	1.5	83.3	15.0	0.2	0.0	43.9	562
2016 [c]	–	–							

Note: Commercial chum salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] No commercial fishery occurred.

Table 55.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W5 commercial gillnet fishery, 1984–2016.

Year	Sample size	Total harvest	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
1984 [a]	459	14,340						
1985 [a]	270	4,784						
1986	353	10,356	0.4	69.3	29.4	1.0	48.5	588
1987	430	20,381	0.0	68.2	31.8	0.0	46.7	589
1988	469	33,059	0.3	17.4	80.5	1.7	54.4	606
1989	543	13,622	0.1	45.2	52.5	2.2	39.4	597
1990	359	13,194	0.4	77.6	21.8	0.2	43.9	583
1991	565	15,892	2.0	79.8	18.2	0.0	52.3	571
1992	418	18,520	0.0	14.5	83.5	2.0	59.4	573
1993 [a]	191	10,657						
1994 [a]	512	28,477						
1995 [a]	355	19,832						
1996 [a]	190	11,093						
1997	805	11,729	0.6	30.0	69.0	0.4	51.9	585
1998	469	14,155	0.5	85.7	13.3	0.5	48.6	576
1999	455	11,562	0.2	77.0	22.5	0.3	55.0	579
2000	598	7,450	0.0	42.5	57.1	0.4	60.4	601
2001	647	3,412	0.2	56.9	42.9	0.0	61.4	583
2002	234	3,799	0.3	50.3	47.9	15.0	56.1	590
2003	296	5,593	0.0	88.0	9.3	2.7	44.1	564
2004 [a]	76	5,965						
2005 [a]	105	2,568						
2006 [ab]	193	11,568						
2007 [a]	543	7,519						
2008 [c]	0	10,340						
2009	1,268	16,985	2.1	40.1	55.6	2.3	37.9	579
2010	752	26,914	1.8	74.5	21.0	2.6	36.2	564
2011	644	13,191	0.2	43.7	55.2	1.0	33.1	567
2012	1,288	24,487	0.3	65.7	30.8	3.2	0.0	570
2013	782	12,651	0.0	38.6	58.7	2.7	40.1	572
2014	330	3,403	0.0	32.3	65.3	2.4	42.5	569
2015	630	4,510	8.1	72.0	17.8	2.1	26.1	565
2016 [d]	–	–						

Note: Commercial chum salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Samples were not appropriate to estimate ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] ASL Samples were not collected.

[d] No commercial fishery occurred.

Table 56.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Middle Fork Goodnews River weir, 1991–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
1991	291	27,632	0.0	73.1	26.9	0.0	40.5	566
1992 [a]	493	21,096						
1993 [a]	236	14,581						
1994 [a]	207	35,652						
1995 [a]	280	33,559						
1996 [ab]	311	26,719						
1997	526	17,151	0.4	31.5	67.8	0.2	44.4	589
1998	705	26,996	0.3	86.1	13.4	0.2	49.9	578
1999	672	21,818	0.0	65.4	34.3	0.3	49.9	587
2000 [a]	418	14,405						
2001	768	26,820	0.7	70.6	28.7	0.1	55.5	587
2002	725	29,905	2.9	37.1	58.6	1.4	55.0	600
2003	556	21,778	0.7	84.5	12.6	2.3	45.6	572
2004	1,220	32,442	4.2	59.3	36.4	0.1	51.8	579
2005	907	26,501	1.5	83.4	15.0	0.1	52.9	571
2006	776	54,689	1.3	69.7	28.6	0.3	23.9	574
2007	865	50,232	0.8	54.1	44.2	0.9	51.4	570
2008	1,241	39,548	0.3	44.9	49.0	5.7	61.5	578
2009 [a]	196	19,236						
2010	189	24,789	2.1	74.5	22.7	0.7	59.7	564
2011	447	19,974	0.6	44.2	52.6	2.6	43.0	572
2012 [a]	347	9,065						
2013	494	27,682	0.0	32.8	64.5	2.7	44.4	585
2014	284	11,518	0.2	35.8	55.7	8.3	38.8	588
2015	445	11,517	6.8	67.3	25.6	0.3	38.5	564
2016	351	41,661	9.7	75.8	14.5	0.0	53.5	564

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 57.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kanektok River weir, 2002–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
2002	738	41,912	2.5	43.1	53.0	1.4	57.5	586
2003	733	40,086	0.8	86.8	10.4	1.9	49.6	566
2004	736	46,008	5.7	49.9	44.2	0.3	48.2	568
2005 [a]	894	55,340						
2006 [b]								
2007	1,121	131,000	0.1	63.3	34.7	2.0	48.4	566
2008 [ac]	725	53,077						
2009	631	55,846	0.6	68.0	29.4	2.1	35.9	591
2010	663	68,186	1.2	65.1	32.3	1.4	51.5	573
2011	936	53,050	0.2	44.7	53.8	1.3	51.9	570
2012	382	28,726	0.0	56.1	38.1	5.8	47.7	582
2013	573	43,040	0.0	26.0	70.3	3.7	45.1	582
2014 [a]	314	18,602						
2015	662	15,048	1.7	75.5	22.2	0.6	47.7	569
2016 [b]								

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate.

[c] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 58.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Salmon River (Aniak) weir, 2006–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
2006	846	42,825	1.6	51.9	46.2	0.4	36.8	559
2007	759	25,340	2.1	62.2	33.6	2.1	38.8	554
2008	668	9,459	0.2	24.1	70.0	5.7	30.2	564
2009	0	9,392						
2010 [a]								
2011 [a]								
2012 [bc]	253	3,134	2.0	51.4	39.1	7.5	36.4	554
2013	653	7,723	0.0	55.0	41.1	3.8	19.0	563
2014 [b]	124	2,890	0.8	27.4	67.7	4.0	8.1	566
2015	570	5,657	1.9	57.2	39.8	1.0	27.4	529
2016 [b]	93	817						

[a] Weir did not operate.

[b] Sampling was not appropriate to estimate ASL composition for the season.

[c] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 59.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the George River weir, 1996–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent females	Mean length (mm)
1996	765	24,214	1.6	59.9	36.8	1.7	0.0	46.1	582
1997	641	5,906	0.7	51.4	46.3	1.6	0.0	42.8	562
1998 [ab]	322	6,391							
1999 [a]	611	8,684							
2000	235	3,507	1.4	46.7	50.4	1.6	0.0	43.5	580
2001	782	11,287	0.0	66.3	33.7	0.0	0.0	53.8	556
2002	955	6,534	6.4	46.3	45.8	1.5	0.0	47.3	571
2003	597	33,648	1.5	88.2	10.0	0.3	0.0	49.7	540
2004	923	15,012	9.2	38.6	52.0	0.2	0.0	47.9	555
2005	985	14,834	5.2	89.8	4.5	0.6	0.0	46.8	539
2006	934	42,318	3.5	50.8	45.5	0.2	0.0	57.5	542
2007 [a]	705	61,531							
2008	787	29,396	0.6	17.4	78.8	3.2	0.0	48.4	551
2009	690	7,944	10.6	52.7	30.6	6.1	0.0	50.0	545
2010	1,067	26,275	3.9	87.8	7.5	0.7	0.1	51.6	531
2011	1,023	46,650	0.8	50.0	48.8	0.4	0.0	48.2	547
2012	672	33,310	0.0	58.2	33.8	7.9	0.0	52.4	553
2013	547	37,879	0.6	36.9	61.0	1.4	0.0	55.1	549
2014	370	17,148	0.0	42.1	49.8	7.7	0.4	51.8	546
2015	631	17,551	3.4	66.1	29.7	0.8	0.0	53.5	538
2016	320	20,834	6.9	78.1	15.0	0.0	0.0	52.0	526

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 60.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Tatlawiksuk River weir, 1998–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	(0.6)	Percent females	Mean length (mm)
1998 [ab]	330	5,726							
1999	856	9,739	0.1	72.1	27.5	0.3	0.0	52.6	575
2000	705	7,076	2.0	57.6	39.9	0.5	0.0	48.2	577
2001	847	23,863	0.4	65.7	33.5	0.4	0.0	51.0	571
2002	1,346	24,539	6.7	58.6	33.2	1.5	0.0	50.3	567
2003 [ab]	57	479							
2004	1,299	21,245	14.6	42.1	43.1	0.2	0.0	38.7	565
2005	1,075	55,599	5.2	89.4	5.4	0.0	0.0	58.1	557
2006	935	32,776	1.8	55.6	42.3	0.3	0.0	42.1	560
2007	920	83,484	3.3	80.2	15.8	0.6	0.0	52.3	549
2008	799	30,129	0.5	21.3	76.2	2.0	0.0	52.3	559
2009	829	19,975	7.8	64.4	23.9	3.8	0.0	51.9	540
2010	1,082	37,737	8.9	82.7	7.9	0.5	0.0	51.6	551
2011	938	88,202	0.5	67.9	31.3	0.3	0.0	52.5	554
2012	593	44,569	0.6	45.7	49.2	4.5	0.0	54.7	560
2013	553	32,249	0.1	40.1	57.5	2.2	0.2	50.0	558
2014	211	12,455	0.6	30.6	58.1	10.7	0.0	36.2	568
2015	297	10,379	2.7	65.3	30.8	0.8	0.4	37.5	534
2016	277	10,564	7.8	64.7	27.5	0.0	0.0	50.0	538

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 61.– Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kogrukluk River weir, 1976–2016.

Year	Sample size	Total escapement	Percent by age class (0.2)	(0.3)	(0.4)	(0.5)	Percent females	Mean length (mm)
1976	219	8,477	0.3	37.8	60.5	1.4	18.7	602
1977 [ab]	0	10,388						
1978	322	50,710	0.8	49.9	49.3	0.0	44.2	597
1979 [c]	59	16,424						
1980 [b]	83	6,323	0.0	90.5	9.5	0.0	10.2	572
1981	191	56,693	0.0	15.0	84.4	0.6	40.0	601
1982	259	58,219	0.0	59.9	40.0	0.1	48.8	577
1983 [bc]	484	3,375						
1984	1,252	41,418	0.0	81.4	17.4	1.3	36.3	572
1985	874	14,611	0.2	27.9	71.3	0.5	41.7	574
1986	566	12,785	0.5	71.5	25.7	2.3	39.3	574
1987 [bc]	160	2,349						
1988 [d]	665	29,408						
1989 [bc]	147	15,543						
1990	371	26,556	1.4	65.5	31.7	1.4	20.9	585
1991	293	23,093	0.4	57.9	41.6	0.0	15.8	580
1992	362	42,569	2.7	42.9	53.7	0.8	33.0	582
1993	361	30,163	0.0	34.0	61.0	5.0	18.4	589
1994 [bc]	125	23,756						
1995	848	32,967	1.4	45.9	51.8	0.8	13.3	587
1996	827	48,238	1.8	67.8	28.8	1.6	15.4	605
1997	641	7,975	0.4	42.9	56.0	0.6	4.1	603
1998 [bc]	193	13,013						
1999	737	14,134	0.0	49.3	50.4	0.3	8.5	593
2000	583	11,416	1.2	67.4	31.0	0.3	15.3	586
2001	738	31,587	0.5	58.5	41.0	0.0	17.4	583
2002	999	52,973	0.2	75.7	23.1	1.1	15.1	579
2003	1,014	23,779	1.8	65.9	31.7	0.6	8.9	573
2004	1,033	24,405	9.2	59.4	30.9	0.5	9.2	565
2005	1,198	194,887	4.0	90.5	5.6	0.0	45.1	545
2006	1,275	188,003	1.6	62.2	36.0	0.3	38.2	550
2007	640	52,961	2.9	59.2	34.9	3.0	37.6	555
2008	524	44,744	1.5	53.8	42.0	2.6	34.9	560
2009	806	82,483	2.6	74.8	21.8	0.8	44..8	561
2010	746	69,258	2.8	62.2	34.1	0.8	45.3	553
2011	788	76,823	1.8	64.2	32.7	1.2	42.0	552
2012 [be]	229	14,297	0.9	71.4	26.0	1.7	23.2	550
2013	661	65,644	0.1	55.3	43.9	0.7	46.8	555
2014	302	30,763	0.2	23.4	70.7	5.6	39.4	562
2015	799	33,201	11.4	70.6	17.6	0.4	40.8	539
2016	555	45,329	2.6	77.3	19.4	0.7	42.8	552

[a] ASL data were not collected.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

[c] Sampling was not appropriate to estimate ASL composition for the season.

[d] Historical data summary not available.

[e] Samples were applied to observed escapement.

Table 62.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W1 commercial gillnet fishery, 1984–2016.

Year	Sample size	Total harvest	Percent by age class													Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(1.5)	(2.4)	(3.3)		
1984	296	48,575	0.3	0.3	6.8	9.4	0.3	56.9	6.8	0.6	18.6	0.0	0.0	0.0	0.0	52.6	N/A
1985	893	106,659	0.0	0.0	2.7	5.7	1.1	65.6	10.9	1.1	12.9	0.0	0.0	0.0	0.0	55.9	N/A
1986	535	95,363	0.0	0.0	2.4	4.6	1.3	64.4	11.6	1.3	14.5	0.0	0.0	0.0	0.0	50.3	N/A
1987	567	136,160	0.0	0.0	1.4	6.7	0.4	75.7	1.3	1.3	13.2	0.0	0.0	0.0	0.0	53.0	N/A
1988	453	92,538	0.0	0.0	0.2	1.4	0.0	73.0	1.4	2.2	21.0	0.0	0.0	0.4	0.4	56.5	N/A
1989	175	42,484	0.0	0.0	0.0	3.4	0.0	59.0	10.3	4.5	21.1	0.0	0.0	1.1	0.6	55.5	590
1990	250	84,414	0.0	0.4	0.4	3.6	0.8	77.2	4.8	2.8	10.0	0.0	0.0	0.0	0.0	51.2	576
1991	513	108,946	0.3	0.0	1.6	10.0	0.8	81.1	0.8	2.0	3.5	0.0	0.0	0.0	0.0	49.8	N/A
1992	504	92,174	0.0	0.0	2.4	6.1	0.8	69.2	3.2	6.3	12.0	0.0	0.0	0.0	0.0	51.1	553
1993	186	27,008	0.0	0.0	1.6	22.1	1.1	55.3	9.1	2.2	8.6	0.0	0.0	0.0	0.0	50.0	557
1994	173	49,365	0.0	0.0	0.6	1.8	0.0	72.0	0.6	1.8	22.0	0.0	0.0	1.2	0.0	49.7	571
1995	419	92,500	0.0	0.0 [a]	1.8	7.8	0.3	81.8	1.7	2.5	4.0	0.0	0.0	0.0	0.0	58.3	564
1996	520	33,517	0.2	0.3	6.3	3.5	0.0	82.1	1.5	1.5	4.7	0.0	0.0	0.0	0.0	42.9	566
1997	89	21,989	0.0	0.0	0.0	25.8	0.0	50.6	11.2	2.2	10.1	0.0	0.0	0.0	0.0	50.6	566
1998	493	60,906	0.0	0.0	1.4	5.9	0.1	62.6	9.4	1.5	18.7	0.0	0.0	0.4	0.0	49.6	563
1999	189	16,976	0.0	0.0	0.0	4.2	0.0	65.6	5.8	5.3	19.0	0.0	0.0	0.0	0.0	58.7	578
2000	170	4,130	0.0	0.0	2.9	9.4	0.0	60.0	2.4	0.0	25.3	0.0	0.0	0.0	0.0	57.1	574
2001 [b]	0	84															
2002 [b]	0	84															
2003 [b]	0	282															
2004 [c]	416	8,532															
2005	551	27,645	0.0	0.0	1.4	8.9	0.0	80.7	0.8	1.2	7.0	0.0	0.0	0.0	0.0	54.3	562
2006 [cd]	179	12,618															572
2007 [b]	0	703															
2008	509	15,601	0.0	0.0	2.5	5.2	0.0	84.5	0.1	4.6	3.0	0.0	0.0	0.0	0.0	53.2	550
2009	525	25,673	0.0	0.0	6.9	6.3	0.0	67.4	1.8	12.8	4.8	0.0	0.0	0.0	0.0	52.3	557
2010	1,120	22,428	0.0	0.0	3.8	17.3	1.9	66.3	0.3	8.9	1.3	0.0	0.0	0.0	0.0	52.5	564
2011	682	13,482	0.0	0.0	13.3	2.5	2.6	64.6	0.6	13.1	2.8	0.0	0.1	0.3	0.0	54.7	562
2012	315	2,857	0.0	0.0	4.8	5.7	1.5	72.7	0.8	10.8	3.5	0.0	0.3	0.0	0.0	49.3	552
2013	183	768	0.0	0.0	4.4	7.1	0.0	47.5	1.6	4.4	29.5	0.5	0.0	1.1	3.8	47.0	555
2014	52	2,720	0.0	0.0	1.9	32.7	1.9	40.4	3.8	15.4	3.8	0.0	0.0	0.0	0.0	34.6	543
2015 [b]	0	130															
2016 [e]	–	–															

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Table 62.–Page 2 of 2.

Note: Harvest data are from Districts W1 and W2 combined. The commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Age class was represented in samples, but percent composition was <0.05.

[b] ASL data were not collected.

[c] Sampling was not appropriate to estimate ASL composition for the season.

[d] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[e] No commercial fishery occurred.

Table 63.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W4 commercial gillnet fishery, 1990–2016.

Year	Sample size	Total harvest	Percent by age class												Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(2.4)	(3.3)		
1990	573	83,681	0.2	0.1	6.7	49.3	0.3	41.7	0.1	0.3	1.2	0.0	0.0	0.0	44.0	N/A
1991	420	53,657	0.2	0.0	11.0	10.8	0.9	74.2	0.0	2.6	0.2	0.0	0.0	0.0	57.9	N/A
1992 [a]	255	60,929														
1993	535	80,878	0.9	0.0	8.0	24.2	3.5	55.3	1.4	4.8	1.9	0.0	0.0	0.0	42.6	N/A
1994	527	72,314	0.0	0.0	10.0	14.0	0.3	68.4	0.2	4.4	2.6	0.0	0.1	0.0	46.2	N/A
1995	620	68,194	0.7	0.0	0.0	37.6	0.0	49.8	6.3	4.3	1.3	0.0	0.0	0.0	46.8	540
1996	509	57,665	0.2	0.0	5.8	16.6	0.0	68.1	2.5	0.6	5.8	0.0	0.0	0.3	57.0	559
1997	952	69,508	0.2	0.0	3.2	17.9	3.4	55.2	1.3	10.4	8.5	0.0	0.0	0.0	51.1	561
1998	757	41,382	0.3	0.0	4.0	23.4	0.4	65.3	2.4	1.2	2.9	0.0	0.2	0.0	53.0	544
1999	539	41,315	0.0	0.0	1.7	46.2	0.3	45.4	1.1	3.6	1.7	0.0	0.0	0.0	43.6	545
2000	880	68,557	0.0	0.0	0.6	22.5	0.1	74.1	0.5	0.2	1.9	0.0	0.0	0.0	54.8	559
2001	713	33,807	0.0	0.0	1.0	2.7	0.0 [b]	89.8	0.2	1.8	4.5	0.0	0.0	0.0	44.0	568
2002 [b]	307	17,820	2.6	0.0	0.3	49.7	0.3	38.0	3.0	2.1	3.9	0.0	0.0	0.0	46.1	530
2003	365	33,941	0.0	0.0	0.2	26.5	0.0	66.2	2.8	1.8	2.5	0.0	0.0	0.0	45.7	558
2004	217	34,437	0.0	0.0	2.2	30.9	1.1	59.0	0.6	5.6	0.6	0.0	0.0	0.0	47.1	547
2005	937	68,801	0.1	0.0	2.0	28.6	0.0	66.6	0.5	1.0	1.3	0.0	0.0	0.0	45.8	538
2002 [b]	807	106,308	0.1	0.0	0.9	22.9	0.2	73.2	0.2	2.0	0.4	0.0	0.0	0.0	33.1	528
2007	1,005	109,343	0.0 [c]	0.0	4.4	45.7	0.0	45.8	0.1	2.4	1.6	0.0	0.0	0.0	44.6	524
2008	488	69,743	0.0	0.0	2.5	19.6	0.5	74.1	0.3	2.2	0.8	0.0	0.0	0.0	47.0	542
2009	976	112,153	0.0	0.0	2.4	53.8	0.1	40.5	0.5	1.5	1.2	0.0	0.0	0.0	51.7	540
2010	844	138,362	0.0 [c]	0.0	2.8	14.5	1.2	78.7	0.2	2.0	0.6	0.0	0.0	0.0	49.0	549
2011	602	38,543	0.3	0.0	5.3	29.3	1.6	50.1	5.3	4.2	3.5	0.2	0.2	0.0	48.9	541
2012	836	37,688	0.2	0.0	2.3	12.2	0.2	78.3	0.2	1.2	5.1	0.0	0.2	0.0	52.1	540
2013	602	26,393	0.0	0.3	1.7	60.2	0.4	29.8	1.4	2.2	4.0	0.0	0.0	0.0	54.3	520
2014	345	58,879	0.0	0.0	1.7	43.8	0.0	47.8	5.6	0.6	0.2	0.2	0.0	0.0	55.9	522
2015	551	30,269	0.0 [c]	0.0	3.6	7.4	0.3	77.6	7.5	1.9	1.8	0.0	0.0	0.0	43.5	545
2016 [d]	–	–														

Note: Commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] Age class was represented in samples, but percent composition was <0.05.

[d] No commercial fishery occurred.

Table 64.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W5 commercial gillnet fishery, 1985–2016.

Year	Sample size	Total harvest	Percent by age class												Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)	(3.4)		
1985	485	6,698	0.0	0.0	0.0	25.1	0.0	73.8	1.1	0.0	0.0	0.0	0.0	0.0	46.8	570
1986	548	25,112	0.0	0.0	0.0	7.6	0.0	91.8	0.7	0.0	0.0	0.0	0.0	0.0	43.5	586
1987	545	27,758	0.0	0.0	0.0	7.0	0.0	93.0	0.0	0.0	0.0	0.0	0.0	0.0	51.9	584
1988	738	36,368	0.1	0.0	0.4	3.9	0.4	90.0	0.4	4.5	0.2	0.1	0.0	0.0	43.6	597
1989	577	19,299	0.0	0.0	0.0	8.9	0.3	86.0	0.5	2.9	1.4	0.0	0.0	0.0	48.2	584
1990	458	35,823	0.0	0.0	5.9	11.2	0.5	63.7	8.0	1.5	9.3	0.0	0.0	0.0	33.7	575
1991	564	39,838	0.1	0.0	2.3	3.1	0.9	78.7	4.6	0.9	9.5	0.0	0.0	0.0	45.2	564
1992	573	39,194	4.6	0.6	9.1	23.3	1.4	53.4	0.9	3.5	2.5	0.8	0.0	0.0	42.6	575
1993	489	59,293	0.2	0.0	6.5	26.8	0.7	53.3	2.5	1.6	8.1	0.4	0.0	0.0	54.4	560
1994	485	69,490	0.0	0.0	5.3	1.8	0.2	83.4	0.6	1.8	6.8	0.1	0.0	0.0	53.4	567
1995 [a]	369	37,351	0.0	0.0	0.3	7.0	0.3	71.5	7.9	3.5	9.5	0.0	0.0	0.0	42.8	
1996 [a]	343	30,717	0.3	0.0	5.5	7.3	0.0	77.8	2.3	0.6	5.8	0.0	0.3	0.0	55.1	
1997	833	31,451	0.4	0.0	2.5	13.8	1.4	56.4	3.2	6.8	14.9	0.6	0.0	0.0	48.6	563
1998	840	27,161	0.0	0.0	3.1	8.9	0.1	72.9	3.9	0.5	10.4	0.1	0.2	0.0	45.7	555
1999	532	22,910	0.0	0.0	1.3	18.5	0.0	68.9	2.2	3.5	5.7	0.0	0.0	0.0	41.3	556
2000	715	37,252	0.0	0.0	1.1	7.5	0.0	82.1	5.1	0.0	4.3	0.0	0.0	0.0	40.2	575
2001	576	25,654	0.0	0.0	0.4	2.2	0.0	90.3	0.0	2.2	5.0	0.0	0.0	0.0	51.0	581
2002	539	6,304	0.0	0.0	2.8	19.4	0.0	51.6	6.5	8.9	10.7	0.3	0.0	0.0	46.4	562
2003	329	29,423	0.0	0.0	0.4	7.2	0.0	71.9	2.6	1.4	16.6	0.0	0.0	0.0	32.5	579
2004	182	20,523	0.0	0.0	0.0	21.1	0.0	62.6	6.8	1.7	7.9	0.0	0.0	0.0	29.8	547
2005 [a]	191	23,933	0.0	0.0	0.5	17.3	0.0	70.7	4.7	1.0	5.8	0.0	0.0	0.0	39.8	
2006 [ab]	95	29,857	0.0	0.0	8.4	8.4	0.0	74.7	0.0	3.2	2.3	0.0	0.0	0.0	32.6	
2007	705	43,716	0.0	0.0	4.2	10.0	0.0	71.4	2.0	3.6	8.7	0.0	0.0	0.0	37.7	549
2008 [c]	0	27,236														
2009	1,353	32,544	0.1	0.0	3.9	14.0	1.3	64.2	3.4	2.8	10.4	0.0	0.0	0.0	41.9	557
2010	685	41,074	0.0	0.0	2.2	13.2	1.1	79.6	0.8	2.3	0.8	0.0	0.0	0.0	36.9	550
2011	607	24,573	0.3	0.0	3.2	13.3	0.8	74.0	3.7	1.7	2.9	0.0	0.0	0.0	42.3	553
2012	1,217	50,635	0.0	0.0	0.7	7.7	0.3	70.3	5.1	1.6	13.8	0.0	0.4	0.0	46.1	550
2013	735	24,521	0.0	0.0	3.3	3.4	0.2	42.2	1.5	1.9	43.1	0.8	3.3	0.4	45.5	556
2014	338	20,515	0.0	0.3	2.4	41.1	2.1	33.2	9.7	1.5	8.8	0.3	0.6	0.0	36.8	527
2015	630	25,861	0.0	0.0	5.2	9.3	0.3	75.1	3.6	0.9	5.6	0.0	0.0	0.0	24.9	546
2016 [d]	–	–														

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Table 64.–Page 2 of 2.

Note: Commercial sockeye salmon fishery was executed using restricted mesh (≤6 inch) gillnets.

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[b] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[c] ASL data were not collected.

[d] No commercial fishery occurred.

Table 65.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Middle Fork Goodnews River weir, 1991–2016.

Year	Sample size	Total escapement	Percent by age class												Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(2.4)	(3.3)		
1991 [a]	272	41,656	1.1	0.0	2.9	7.1	0.4	83.2	1.1	2.1	2.1	0.0	0.0	0.0	56.4	
1992 [ab]	204	15,133	1.5	0.0	0.0	38.7	0.0	51.5	1.0	5.9	1.5	0.0	0.0	0.0	60.8	
1993 [a]	312	24,957	0.6	0.3	5.1	19.2	0.3	67.0	1.0	3.5	2.6	0.0	0.3	0.0	60.9	
1994 [a]	160	56,503	0.0	0.0	3.1	1.9	0.0	87.5	1.3	6.3	0.0	0.0	0.0	0.0	49.4	
1995	454	37,776	0.0	0.0	0.2	13.7	0.0	76.8	2.8	2.7	3.8	0.0	0.0	0.0	50.4	543
1996 [ab]	246	38,343	0.0	0.0	3.3	2.0	0.0	89.4	0.0	1.2	4.1	0.0	0.0	0.0	47.6	
1997	733	34,322	0.2	0.0	1.4	20.9	0.7	63.2	2.4	2.5	8.2	0.0	0.4	0.0	54.0	543
1998 [a]	542	38,493	0.0	0.0	2.4	19.9	0.0	64.2	5.4	0.9	7.2	0.0	0.0	0.0	55.5	
1999	789	49,321	0.0	0.0	1.2	11.6	0.2	77.9	2.0	1.7	5.1	0.0	0.3	0.0	48.4	548
2000	607	40,828	0.0	0.0	1.3	2.0	0.0	91.2	1.4	1.4	2.7	0.0	0.0	0.0	54.1	560
2001	432	21,194	0.0	0.0	0.9	2.1	0.0	79.2	0.6	9.6	7.7	0.0	0.0	0.0	48.9	572
2002	485	21,329	0.0	0.0	0.5	54.5	0.2	27.6	8.8	2.6	5.4	0.0	0.2	0.1	55.7	520
2003	657	37,933	0.0	0.0	0.6	8.5	0.0	86.6	0.4	1.7	2.3	0.0	0.0	0.0	45.6	575
2004	806	54,035	0.0	0.0	1.4	31.8	0.0	55.8	2.9	5.6	2.5	0.0	0.0	0.0	54.5	540
2005	955	118,969	0.0 [c]	0.0	0.1	13.5	0.0	79.0	2.7	1.1	3.6	0.0	0.0	0.0	54.3	543
2006	576	127,245	0.0	0.0	2.4	18.7	0.0	70.4	0.7	3.5	4.3	0.0	0.0	0.0	57.1	533
2007	727	73,768	0.6	0.0	8.1	12.2	0.4	70.0	1.6	3.0	4.2	0.0	0.0	0.0	50.1	550
2008	512	43,879	0.0	0.0	4.3	9.0	0.2	78.7	1.0	3.3	3.4	0.0	0.0	0.0	56.8	540
2009 [a]	161	27,494	0.0	0.0	4.3	31.7	0.0	54.7	1.9	2.5	5.0	0.0	0.0	0.0	57.8	540
2010	307	36,574	0.0	0.0	2.0	4.6	0.0	85.8	1.0	2.6	3.9	0.0	0.0	0.0	54.6	539
2011	440	19,643	0.0	0.0	3.0	6.4	0.2	84.1	0.2	3.9	2.0	0.0	0.2	0.0	56.1	550
2012	331	29,531	0.0	0.0	1.5	6.7	0.0	77.2	4.5	2.6	7.0	0.4	0.0	0.0	56.0	539
2013	625	23,545	0.1	0.0	1.8	6.8	0.0	52.5	3.1	6.4	21.4	0.0	2.6	5.3	56.3	549
2014	494	41,473	0.0	0.0	0.1	8.4	0.0	80.6	2.7	4.0	4.0	0.1	0.1	0.0	55.5	552
2015 [a]	425	57,809	0.0	0.0	0.9	10.1	0.0	86.4	0.7	1.2	0.7	0.0	0.0	0.0	55.8	532
2016	560	171,114	0.0	0.0	0.6	34.5	0.0	57.5	3.4	1.0	3.0	0.0	0.0	0.0	58.8	529

[a] Sampling was not appropriate to estimate ASL composition for the season. Composition, if shown, represents samples collected only.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

[c] Age class was represented in samples, but percent composition was <0.05.

Table 66.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Kanektok River weir, 2002–2016.

Year	Sample size	Total escapement	Percent by age class											Percent females	Mean length (mm)
			(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(2.4)	(3.3)		
2002	663	60,228	0.0	0.0	0.5	56.2	0.3	34.7	1.1	2.3	4.1	0.5	0.3	57.7	529
2003	403	128,030	0.0	0.0	0.2	26.6	0.0	69.0	0.2	2.0	2.0	0.0	0.0	50.6	551
2004	470	105,135	0.2	0.0	0.2	48.3	0.0	46.5	3.3	1.0	0.5	0.0	0.0	43.5	530
2005 [a]	688	268,537													
2006 [b]															
2007	793	304,086	0.5	0.0	2.9	45.3	0.0	48.3	0.0	2.2	0.8	0.0	0.0	36.0	542
2008 [ac]	307	68,192												36.8	558
2009	585	305,756	0.0	0.0	1.9	62.1	0.0	34.9	0.4	0.1	0.5	0.0	0.0	51.7	538
2010	819	204,954	0.0	0.0	0.8	8.5	0.4	87.8	0.2	2.2	0.1	0.0	0.0	45.8	563
2011	697	88,177	0.9	0.0	3.9	40.0	0.2	48.0	4.1	1.7	1.1	0.0	0.1	50.8	543
2012	575	115,021	0.0	0.0	1.2	18.3	0.0	75.4	0.5	0.5	4.2	0.0	0.0	52.8	546
2013	601	128,761	0.0	0.0	0.2	71.1	0.0	24.6	1.1	2.4	0.6	0.0	0.0	55.7	519
2014	168	259,406	0.0	0.0	0.0	29.2	0.0	67.3	3.0	0.6	0.0	0.0	0.0	50.0	539
2015	582	106,751	0.0	0.0	0.4	12.4	0.0	72.0	13.3	1.1	0.6	0.0	0.0	52.5	541
2016 [b]	–	–													

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] Weir did not operate.

[c] Weir did not operate for most of the season. Only observed escapement counts are presented.

Table 67.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W1 commercial gillnet fishery, 1984–2016.

Year	Sample size	Total harvest	Percent by age class (1.1)	(2.1)	(3.1)	(4.1)	Percent females	Mean length (mm)
1984	1,333	623,447	4.4	92.5	3.1	0.0	48.2	N/A
1985	1,119	335,551	8.5	86.8	4.7	0.0	45.8	N/A
1986	841	659,708	4.8	92.0	3.2	0.0	46.1	N/A
1987	820	399,380	7.2	76.9	15.9	0.0	53.1	N/A
1988	1,427	525,502	4.4	94.1	1.5	0.0	50.1	N/A
1989	743	477,955	8.9	88.3	2.8	0.0	45.5	N/A
1990	389	409,053	4.8	90	5.2	0.0	43.1	N/A
1991	573	500,824	4.7	87.4	7.9	0.0	33.8	554
1992	804	666,170	13.5	81.6	4.9	0.0	50.3	563
1993	540	610,667	5.8	91.2	3.0	0.0	48.1	549
1994	826	724,721	6.7	83.7	9.6	0.0	39.5	566
1995	565	471,461	12.3	79.3	8.4	0.0	44.7	558
1996	666	936,066	4.3	94.4	1.3	0.0	48.6	570
1997 [a]	324	130,631						
1998	1,194	210,481	4.9	93.0	2.1	0.0	49.5	572
1999	151	23,593	4.6	82.1	13.2	0.0	43.7	550
2000	2,616	261,379	3.5	94.4	2.1	0.0	53.2	555
2001	422	193,154	6.7	82.6	10.8	0.0	56.8	573
2002	428	83,463	1.0	93.2	5.8	0.0	51.7	572
2003 [b]	0	284,064						
2004	662	435,407	1.1	89.1	9.8	0.0	48.2	550
2005	412	142,319	7.3	83.5	9.2	0.0	50.2	552
2006	411	185,598	14.1	82.2	3.8	0.0	50.7	539
2007	448	141,049	5.0	90.5	4.5	0.0	53.5	548
2008	493	142,862	5.6	78.3	16.0	0.0	50.4	554
2009	669	104,546	5.0	87.4	7.5	0.0	50.0	563
2010	425	58,031	7.7	89.1	3.2	0.0	51.3	549
2011	667	74,108	15.1	79.3	5.5	0.0	48.6	555
2012	702	86,389	15.8	78.8	5.4	0.1	45.7	522
2013	351	114,069	6.1	81.3	12.6	0.0	53.2	560
2014	536	117,588	5.3	86.8	7.6	0.3	58.6	543
2015	349	65,034	10.1	84.5	5.4	0.0	49.0	574
2016 [c]								

Note: Harvest data are from Districts W1 and W2 combined. The commercial coho salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] ASL data were not collected.

[c] No commercial fishery occurred.

Table 68.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W4 commercial gillnet fishery, 1990–2016.

Year	Sample size	Total harvest	Percent by age class (1.1)	(2.1)	(3.1)	Percent females	Mean Length (mm)
1990	607	26,926	5.8	88.4	5.8	42.4	N/A
1991	535	42,571	13.2	74.5	12.3	50.2	N/A
1992	590	86,404	16.9	79.1	4.0	46.6	N/A
1993	300	55,817	3.6	92.5	3.9	45.3	N/A
1994	429	83,912	6.6	89.7	3.7	52.8	N/A
1995	653	66,203	8.6	84.3	7.2	45.0	N/A
1996	556	118,718	6.0	92.5	1.5	43.1	596
1997 [a]	359	32,862					
1998	446	80,183	6.0	93.2	0.9	57.4	601
1999 [b]	0	6,184					
2000	285	30,529	1.4	97.0	1.6	49.2	580
2001	415	18,531	7.8	85.2	7.0	39.3	596
2002	460	26,695	1.4	89.1	9.6	50.3	599
2003	153	49,833	7.1	82.9	10.1	32.3	582
2004	186	82,710	4.8	94.3	0.9	46.3	573
2005	666	51,708	15.6	79.3	5.1	43.5	564
2006 [c]	377	26,831	13.3	84.8	1.9	48.8	538
2007 [a]	224	34,710					
2008	499	94,257	8.6	87.5	3.9	47.9	568
2009 [a]	198	48,115					
2010	189	13,690	11.6	85.8	2.6	46.4	566
2011	482	30,457	26.8	69.3	3.9	46.9	569
2012	519	31,214	13.1	83.5	3.5	52.4	547
2013	186	21,126	6.5	88.3	5.2	47.3	582
2014	166	52,317	17.7	77.3	5.1	44.3	553
2015	353	76,285	14.2	83.6	2.3	45.7	591
2016 [d]							

Note: Commercial coho salmon fishery was executed using restricted mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] ASL data were not collected.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] No commercial fishery occurred.

Table 69.–Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W5 commercial gillnet fishery, 1990–2016.

Year	Sample size	Total harvest	Percent by age class (1.1)	(2.1)	(3.1)	(4.1)	Percent females	Mean length (mm)
1990	250	7,804	5.2	91.6	3.2	0	42.8	N/A
1991	430	13,312	7.5	85.4	7.2	0.0	24.1	N/A
1992	404	19,875	12.0	85..5	2.6	0.0	42.7	N/A
1993	429	20,014	2.9	92.5	4.6	0.0	52.4	N/A
1994	415	47,499	9.0	86.5	4.5	0.0	48.1	N/A
1995	299	17,875	3.1	92.4	4.5	0.0	49.6	N/A
1996	457	43,836	6.3	90.2	3.5	0.0	52.3	622
1997 [a]	271	2,983						
1998	315	21,246	9.9	87.7	2.5	0.0	52.5	611
1999	205	2,474	10.3	84.9	4.8	0.0	47.7	592
2000	439	15,531	0.7	97.6	1.8	0.0	52.1	598
2001	414	9,275	4.8	89.6	5.5	0.0	47.4	619
2002 [b]	0	3,041						
2003 [a]	109	12,658						
2004 [c]	163	24,089	12.5	84.2	3.3	0.0	38.9	584
2005 [a]	69	11,735						
2006 [b]	0	12,436						
2007 [b]	0	13,689						
2008 [b]	0	22,547						
2009 [a]	43	8,406						
2010	600	4,900	10.6	87.3	2.2	0.0	40.7	572
2011	558	15,358	15.4	77.8	6.8	0.0	45.1	573
2012	542	25,515	9.8	85.7	4.6	0.0	44.6	551
2013	345	21,581	3.0	91.5	5.5	0.0	52.3	589
2014	341	52,158	6.0	88.0	5.4	0.6	51.1	575
2015 [a]	171	7,030						
2016 [d]								

Note: Commercial coho salmon fishery was executed using small mesh (≤6 inch) gillnets. N/A designates years when length data were not available or not summarized.

[a] Sampling was not appropriate to estimate ASL composition for the season.

[b] ASL data were not collected.

[c] Samples were collected, are archived at ADF&G, but data are not available through the AYKDBMS.

[d] No commercial fishery occurred.

Table 70.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Salmon River (Aniak) weir, 2008–2016.

Year	Sample size	Total escapement	Percent by age class (1.1)	(2.1)	(3.1)	Percent females	Mean length (mm)
2008	467	10,974	1.4	91.5	7.1	48.5	541
2009	652	6,351	2.1	91.4	6.5	47.3	551
2010 [a]							
2011 [a]							
2012 [b]	0	2,209					
2013	267	2,797	8.0	74.5	17.5	25.8	568
2014	251	8,254	0.6	89.6	9.8	34.5	527
2015 [bc]	9	267					
2016 [b]	0	560					

[a] Weir did not operate.

[b] Weir did not operate for most of the season. Only observed escapement counts are presented.

[c] Sampling was not appropriate to estimate ASL composition for the season.

Table 71.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the George River weir, 1997–2016.

Year	Sample size	Total escapement	Percent by age class (1.1)	(2.1)	(3.1)	(3.2)	(4.1)	Percent females	Mean length (mm)
1997	205	9,392	2.2	95.9	1.9	0.0	0.0	42.2	557
1998 [a]									
1999	338	8,914	2.7	69.8	27.4	0.0	0.0	40.9	547
2000	365	11,269	1.3	97.6	1.1	0.0	0.0	43.2	548
2001	371	16,724	0.8	65.6	33.6	0.0	0.0	53.3	557
2002 [b]	72	6,759							
2003	171	32,873	0.9	88.0	11.0	0.0	0.0	52.7	556
2004	191	12,499	1.3	89.8	8.9	0.0	0.0	36.6	538
2005	463	8,294	1.0	80.2	18.8	0.0	0.0	48.6	539
2006	440	12,705	4.4	88.0	7.7	0.0	0.0	50.5	525
2007 [b]	442	28,398							
2008	429	21,931	0.5	63.4	36.2	0.0	0.0	52.3	543
2009	524	12,490	1.6	92.8	5.6	0.0	0.0	44.7	553
2010	559	12,639	2.7	89.6	7.7	0.0	0.0	51.5	545
2011	552	29,120	4.9	90.0	5.0	0.1	0.0	51.2	552
2012	366	14,478	1.9	73.6	24.6	0.0	0.0	48.1	505
2013	275	15,308	5.3	63.0	31.4	0.0	0.2	50.7	562
2014	389	35,771	1.5	85.9	12.6	0.0	0.0	52.1	528
2015	400	35,812	4.4	93.8	1.8	0.0	0.0	45.6	544
2016	42	17,239	4.8	66.7	28.6	0.0	0.0	42.9	505

[a] Weir was inoperable during coho salmon season.

[b] Sampling was not appropriate to estimate ASL composition for the season.

Table 72.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Kogrukluk River weir, 1989–2016.

Year	Sample size	Total escapement	Percent by age class (1.1)	(2.1)	(3.1)	Percent females	Mean length (mm)
1989 [ab]	75	1,272					
1990 [b]	173	3,446					
1991	377	7,206	1.8	96.0	2.2	42.5	558
1992 [ab]	158	2,715					
1993 [a]	157	4,437	2.5	94.3	3.1	40.1	564
1994	463	28,110	1.5	90.1	8.3	47.8	581
1995 [a]	364	18,924	4.1	88.5	7.0	39.1	557
1996	639	50,003	3.0	94.9	2.1	37.0	594
1997 [c]	0	11,883					
1998	455	22,987	1.6	94.1	4.2	40.9	580
1999	343	10,908	2.5	88.1	9.4	17.0	563
2000	604	33,063	1.0	96.9	2.1	30.5	568
2001	504	19,983	1.5	91.3	7.2	49.1	577
2002	423	14,515	0.0	86.4	13.6	30.9	561
2003	161	74,915	1.6	81.5	16.8	40.2	566
2004	176	26,078	0.6	87.6	11.7	29.8	547
2005	447	25,407	6.0	84.9	9.1	49.7	543
2006	426	16,268	10.6	86.5	2.8	55.0	514
2007	394	26,423	3.5	90.7	5.8	44.6	542
2008	455	29,237	2.9	81.4	15.7	55.1	536
2009	520	22,289	1.5	90.2	8.2	56.5	541
2010	549	14,689	4.7	87.4	7.9	49.1	551
2011	535	21,800	4.5	87.3	8.2	51.1	545
2012 [b]	187	13,421					
2013	346	21,207	3.0	86.2	10.8	58.0	548
2014	257	52,975	2.2	84.2	13.7	57.2	506
2015	351	32,493	7.1	92.2	0.7	51.6	538
2016 [ad]	0	2,286					

[a] Weir did not operate for most of the season. Only observed escapement counts are presented.

[b] Sampling was not appropriate to estimate ASL composition for the season.

[c] ASL Samples were not collected.

[d] Crew misplaced samples in season.

Table 73.–Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Tatlawiksuk River weir, 1999–2016.

Year	Sample size	Total escapement	Percent by age class (1.1)	(2.1)	(3.1)	Percent females	Mean length (mm)
1999	287	3,621	8.0	79.1	12.9	43.3	550
2000 [a]	188	5,646	0.0	100.0	0.0	39.9	564
2001 [a]	518	5,669	2.2	91.2	6.6	52.1	571
2002	596	11,156	1.2	89.3	9.5	38.7	565
2003 [b]							
2004	361	16,446	3.1	94.4	2.5	50.6	544
2005	476	7,076	4.4	89.7	5.9	48.2	557
2006 [ac]	155	2,362					
2007 [c]	419	8,500					
2008	485	11,022	3.8	84.3	11.9	52.7	542
2009	508	10,148	6.3	83.9	9.8	47.8	551
2010	517	3,773	5.4	92.9	1.7	53.6	534
2011	359	14,184	5.0	87.5	7.5	56.3	560
2012	323	8,015	7.8	90.4	1.8	49.2	516
2013 [c]	170	12,764					
2014	344	19,814	2.8	90.8	6.4	43.3	539
2015	332	17,701	2.5	94.6	2.8	47.3	565
2016	208	11,897	13.8	78.8	7.3	49.6	526

[a] Weir did not operate for most of the season. Only observed escapement counts are presented.

[b] Weir did not operate during coho salmon season.

[c] Sampling was not appropriate to estimate ASL composition for the season.

Table 74.–List of years for which Chinook salmon age-sex-length data was collected from Kuskokwim Management Area projects and archived in the Arctic Yukon Kuskokwim Database Management System.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1964–1968, 1971–1975, 1977–1999, 2001, 2004, 2005, 2008–2011
W4 (Subdistrict 4)	1968–1970, 1973–2005, 2007–2014
W5 (Goodnews Bay Subdistrict)	1973, 1974, 1977, 1978, 1980–1995, 1997–2005, 2007, 2009–2014
Subsistence Catch	
Upper Kuskokwim River	1987, 1992, 2001–2003, 2012
Middle Kuskokwim River	1975, 1992, 2001–2003, 2014
Lower Kuskokwim River	1964, 1968, 1970, 1986, 1987, 1991–1995, 2001–2016
Kuskokwim Bay	1975, 2007, 2014
Escapement	
Aniak River	1980–1983, 1985, 1989, 1996, 2007
Eek River	1989
George River	1996–2016
Goodnews River (Middle Fork)	1983–1985, 1987–2016
Kanektok River	1983–1987, 1989, 1997, 2002–2005, 2007–2015
Kipchuk River	1989
Kisaralik River	1986, 2001
Kogrukluk River	1968, 1969, 1971–1973, 1976, 1978–2016
Kwethluk River	1989, 1991, 1992, 2000–2004, 2006–2015
NYAC Weir	1988
Salmon River (Aniak)	1989, 2006–2008, 2012, 2014–2016
Salmon River (Pitka Fork)	1981, 1982, 1989, 2016
Takotna River	2000–2013
Tatlawiksuk River	1998–2016
Tuluksak River	1991–1994, 2001–2014
Mark/Recapture	
Kalskag Fish Wheel	2007
Sport Catch (freshwater)	
Kanektok River	1983, 1985
Sport Catch (marine)	
W5 (Goodnews Bay Subdistrict)	1996
Test Fishing	
Kwegooyuk (Village/City)	1967, 1969, 1972–1976, 1978–1980, 1982, 1983
W1 (Subdistrict 1)	1981, 1993–1995, 2001–2008, 2011–2016

Table 75.–List of years for which chum salmon age-sex-length data was collected from Kuskokwim Management Area projects and archived in the Arctic Yukon Kuskokwim Database Management System.

Project Type / Name	Years with available ASL data
Commercial Catch	
Aniak River	1992
W1 (Subdistrict 1)	1966–1968, 1972–2005, 2007–2014
W4 (Subdistrict 4)	1965, 1967–1970, 1973–2005, 2007–2015
W5 (Goodnews Bay Subdistrict)	1974, 1978, 1980–2005, 2007, 2009–2015
Subsistence Catch	
Lower Kuskokwim River	1964, 1984–1986, 1993
Upper Kuskokwim River	1987, 1992
Escapement	
Aniak River	1980–1982, 1984, 1985, 1989, 1994–2011
George River	1996–2016
Goodnews River (Middle Fork)	1983–2015
Kanektok River	1983–1987, 1989, 1997, 2002–2005, 2007–2015
Kisaralik River	1986
Kogrukluk River	1971–1973, 1976, 1978–2016
Kwethluk River	1989, 1991, 1992, 1997, 2000–2014
Nikolai (Village/City)	2004
NYAC Weir	1988
Salmon River (Aniak)	2006–2008, 2014–2016
Salmon River (Pitka Fork)	1981, 1982
Takotna River	2000–2013
Tatlawiksuk River	1998–2016
Tuluksak River	1991–1994, 2001–2014
Mark/Recapture	
Birch Tree Crossing	2002
Kalskag Fish Wheel	2002
Test Fishing	
Kwegooyuk (Village/City)	1967, 1969, 1971–1975, 1977–1981
W1 (Subdistrict 1)	1981, 1993–1995, 2000–2005, 2007, 2008

Table 76.–List of years for which sockeye salmon age-sex-length data was collected from Kuskokwim Management Area projects and archived in the Arctic Yukon Kuskokwim Database Management System.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1969, 1972, 1975, 1977, 1980–2000, 2004, 2005, 2008–2014
W4 (Subdistrict 4)	1964, 1965, 1967–1970, 1974–1978, 1980–1985, 1987–2001, 2003–2005, 2007–2015
W5 (Goodnews Bay Subdistrict)	1969, 1974, 1977, 1978, 1980–2005, 2007, 2009–2015
Subsistence Catch	
Upper Kuskokwim River	1987
Middle Kuskokwim River	2014
Kuskokwim Bay	1980
Escapement	
Aniak River	1981, 1983, 1985, 2007
George River	2007
Goodnews River (Middle Fork)	1983, 1985–2016
Goodnews River (North Fork)	1989
Kanektok River	1984, 1985, 1987, 1989, 1997, 2002–2005, 2007–2015
Kisaralik River	1986
Kogrukluk River	1968, 1976, 1978, 1980–1994, 2007, 2009–2016
Kwethluk River	1991, 1992, 2000, 2003, 2004, 2006–2014
Salmon River (Aniak)	2007, 2008, 2013, 2014
Stony River	1989
Takotna River	2007
Tatlawiksuk River	2007
Telaquana River	2010–2016
Tuluksak River	1991–1994, 2002, 2003, 2007–2014
Mark/Recapture	
Birch Tree Crossing	2002
Kalskag Fish Wheel	2002, 2005–2007, 2012
Salmon River (Aniak)	2012
Kogrukluk River	2012
Telaquana River	2012
Test Fishing	
W1 (Subdistrict 1)	1981, 1994, 1995, 2001–2005, 2012–2014
Kwegooyuk (Village/City)	1967, 1971–1981

Table 77.–List of years for which coho salmon age-sex-length data was collected from Kuskokwim Management Area projects and archived in the Arctic Yukon Kuskokwim Database Management System.

Project Type / Name	Years with available ASL data
Commercial Catch	
W1 (Subdistrict 1)	1961, 1965–1969, 1971–1978, 1980–2002, 2004–2015
W4 (Subdistrict 4)	1967, 1968, 1974–1978, 1980–1998, 2000–2005, 2007–2015
W5 (Goodnews Bay Subdistrict)	1974, 1977, 1980–2001, 2003, 2005, 2009–2015
Subsistence Catch	
Lower Kuskokwim River	1989, 1992
Escapement	
Aniak River	1980
George River	1997, 1999–2016
Goodnews River (Middle Fork)	1988, 1991, 1995, 1996, 1998–2001, 2003–2013
Kanektok River	1983, 1997, 2001–2005, 2007–2009
Kisaralik River	1986
Kogrukluk River	1981–1996, 1998–2015
Kwethluk River	1989, 2000–2004, 2006–2014
Salmon River (Aniak)	2008, 2009, 2013–2015
Takotna River	2000–2013
Tatlawiksuk River	1999–2002, 2004–2016
Tuluksak River	1991–1994, 2001–2014
Mark/Recapture	
Kalskag Fish Wheel	2008, 2009
Test Fishing	
Aniak River	1995
Kwegooyuk (Village/City)	1974, 1975
W1 (Subdistrict 1)	1980, 1994, 1995