

Salmon Age, Sex, and Length Catalog for the Kuskokwim Area, 2014

by

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March 2016

Alaska Department of Fish and Game

Division of Commercial Fisheries



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

REGIONAL INFORMATION REPORT 3A.16-02

**SALMON AGE, SEX, AND LENGTH CATALOG FOR THE
KUSKOKWIM AREA, 2014**

by

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
ABSTRACT	1
INTRODUCTION	1
OBJECTIVES.....	2
METHODS.....	3
Sample Size	3
Sampling Strategies	3
Escapement Projects	3
Commercial Harvest	3
Subsistence Harvest.....	4
Bethel Test Fishery	4
Age, Sex and Length Sampling Procedures.....	4
Age Estimation	5
Estimates of Age, Sex, and Length Composition	5
Historical Data Summaries	7
Archiving.....	7
User Generated Reports.....	7
RESULTS.....	7
Historical Data Summaries	8
Kuskokwim Area ASL Data in the AYKDBMS	9
DISCUSSION.....	9
Revisions to Historical Summaries.....	9
2014 Aging	10
Chinook Salmon	10
Sockeye Salmon.....	11
Chum Salmon	11
Coho Salmon	11
Sources of Bias	12
Data Quality, AYKDBMS.....	12
ACKNOWLEDGEMENTS.....	13
REFERENCES CITED	13
TABLES AND FIGURES.....	15

LIST OF FIGURES

1	Project locations where ASL data were collected in 2014.	16
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LIST OF TABLES

Table	Page
1 Projects and salmon species for which age, sex, and length data were collected in 2014.	17
2 Reporting status and contact persons for salmon monitoring projects that collected age, sex, and length data from the Kuskokwim Area in 2014.	18
3 Summary of Chinook salmon age, sex, and length sampling methods by project, 2014.	19
4 Summary of chum salmon age, sex, and length sampling methods by project, 2014.	20
5 Summary of sockeye salmon age, sex, and length sampling methods by project, 2014.	21
6 Summary of coho salmon age, sex, and length sampling methods by project, 2014.	22
7 Minimum sample size requirements for estimating salmon age, sex, and length composition in 2014.	23
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, 2014.	23
9 Percent of samples collected by gillnet mesh size in the lower and middle Kuskokwim River Chinook salmon subsistence fishery, 2014.	24
10 Postseason stratification used to account for disproportionate sampling of Chinook salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2014.	25
11 Postseason stratification used to account for disproportionate sampling of chum salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2014.	26
12 Postseason stratification used to account for disproportionate sampling of sockeye salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2014.	27
13 Postseason stratification used to account for disproportionate sampling of coho salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2014.	28
14 Summary of Chinook salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.	29
15 Summary of chum salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.	29
16 Summary of sockeye salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.	30
17 Summary of coho salmon age, sex, length samples collected from Kuskokwim Area projects in 2014.	30
18 Aging errors for Chinook salmon scale samples collected in the Kuskokwim Management Area, 2014.	31
19 Aging errors for chum salmon scale samples collected in the Kuskokwim Management Area, 2014.	32
20 Aging errors for sockeye salmon scale samples collected in the Kuskokwim Management Area, 2014.	33
21 Aging errors for coho salmon scale samples collected in the Kuskokwim Management Area, 2013.	34
22 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the District W4 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	35
23 Number of Kuskokwim Area Chinook salmon sampled from the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	35
24 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the Bethel test fishery by gillnet mesh size, 2014.	36
25 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence gillnet fishery, 2014.	37
26 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence fishery by gillnet mesh size, 2014.	38
27 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Goodnews River (Middle Fork) weir, 2014.	39
28 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Kanektok River weir, 2014.	40
29 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Salmon River (Aniak) weir, 2014.	41

LIST OF TABLES (Continued)

Table	Page
30 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the George River weir, 2014.	42
31 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the Tatlawiksuk River weir, 2014.	43
32 Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at Kogrukluk River weir, 2014.	44
33 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	45
34 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	46
35 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	47
36 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Goodnews River (Middle Fork) weir, 2014.	48
37 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kanektok River weir, 2014.	49
38 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the George River weir, 2014.	50
39 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Salmon River (Aniak) weir, 2014.	51
40 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Tatlawiksuk River weir, 2014.	52
41 Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kogrukluk River weir, 2014.	53
42 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	54
43 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	55
44 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	56
45 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the Bethel test fishery, 2014.	57
46 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Goodnews River (Middle Fork) weir, 2014.	58
47 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Kanektok River weir, 2014.	59
48 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Salmon River weir, 2014.	60
49 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Kogrukluk River weir, 2014.	61
50 Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Telaquana River weir, 2014.	62
51 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	63
52 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	64
53 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.	65
54 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Salmon River weir, 2014.	66
55 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon that escaped past the George River weir, 2014.	67

LIST OF TABLES (Continued)

Table	Page
56 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Tatlawiksuk River weir, 2014.	68
57 Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Kogruklu River weir, 2014.	69
58 Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W1 commercial gillnet fishery, 1964–2014.	70
59 Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W4 commercial gillnet fishery, 1969–2014.	72
60 Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvest in the W5 commercial gillnet fishery, 1990–2014.	74
61 Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the Bethel test fishery, 2001–2014.	75
62 Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the lower Kuskokwim River subsistence fishery, 2001–2014.	76
63 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Middle Fork Goodnews River weir, 1991–2014.	77
64 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kanektok River weir, 2002–2014.	78
65 Estimated age and sex composition, mean length, and total escapement of Kuskokwim River Chinook salmon past the George River weir, 1996–2014.	79
66 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Tatlawiksuk River weir, 1998–2014.	80
67 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kogruklu River weir, 1976–2014.	81
68 Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W1 commercial gillnet fishery, 1972–2014.	82
69 Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W4 commercial gillnet fishery, 1984–2014.	83
70 Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W5 commercial gillnet fishery, 1984–2014.	84
71 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Middle Fork Goodnews River weir, 1991–2014.	85
72 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kanektok River weir, 2002–2014.	86
73 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the George River weir, 1996–2014.	87
74 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Tatlawiksuk River weir, 1998–2014.	88
75 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kogruklu River weir, 1976–2014.	89
76 Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W1 commercial gillnet fishery, 1984–2014.	90
77 Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W4 commercial gillnet fishery, 1990–2014.	91
78 Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W5 commercial gillnet fishery, 1985–2014.	92
79 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Middle Fork Goodnews River weir, 1991–2014.	93
80 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Kanektok River weir, 2002–2014.	94
81 Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W1 commercial gillnet fishery, 1984–2014.	95

LIST OF TABLES (Continued)

Table	Page
82 Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W4 commercial gillnet fishery, 1990–2014.	96
83 Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W5 commercial gillnet fishery, 1990–2014.	97
84 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Middle Fork Goodnews River weir, 1991–2014.	98
85 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the George River weir, 1997–2014.	99
86 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Tatlawiksuk River weir, 1999–2014.	100
87 Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Kogrukluk River weir, 1989–2014.	101
88 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.	102
89 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.	103
90 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.	104
91 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.	105

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 2014, 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 2014, (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 2014 season at 13 project locations including commercial catch, subsistence catch, escapement, and test fishery. Sampling during the 2014 seasons resulted in 12,813 salmon sampled for age, sex, or length. Chum *O. keta* made up 33% of the samples collected, followed by sockeye *O. nerka* (30%), coho *O. kisutch* (22%), and Chinook *O. tshawytscha* salmon (16%).

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 2015) 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 System¹ (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). 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., Hansen et al. 2016), and the salmon ASL catalog for the Kuskokwim Area is the only published source for ASL data summaries.

The 2014 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 2015) and a detailed description of data processing, analysis, and archiving. This document provides

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

standardized data summaries for all projects that operated in 2014 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 15 Kuskokwim Area projects collected ASL data from Chinook, chum, sockeye, and coho salmon in 2014. Samples were collected from all salmon species harvested in commercial fisheries operated in the Kuskokwim River (District 1) and Kuskokwim Bay (Districts 4 and 5). With the exception of Kuskokwim River Chinook salmon, commercial harvest samples are assumed to be representative of the subsistence harvest due to similarity of gear and harvest timing. For Chinook salmon, the gear types used by subsistence fishermen and the timing of subsistence fishing activities are very different compared to the current commercial fishery. Therefore, dedicated sampling effort occurred for Chinook salmon harvested in the lower Kuskokwim River subsistence fishery where majority of the total subsistence harvest occurs. In addition, minor sampling effort occurred opportunistically in the middle Kuskokwim River subsistence fishery. Chinook salmon and sockeye 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 2014 were processed by USFWS and data summaries are presented in Miller et al. 2015a and Miller et al. 2015b. Weirs operated on the George and Tatlawiksuk rivers index salmon escapement to the middle portion of the Kuskokwim River. Weirs operated on the Salmon and Kogrukluks rivers index salmon escapement to the Aniak and Holitna rivers respectively. The Telaquana River weir is used to index escapement of lake-spawning sockeye salmon. The Kanektok and Goodnews river weirs index salmon escapement to District 4 and 5, respectively in Kuskokwim Bay.

OBJECTIVES

The goal of this project was to process, compile, and analyze salmon scale, sex, and length samples collected in 2014 from Kuskokwim Area subsistence and commercial 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 2014;
2. Provide a single source document for detailed project ASL data summaries produced in 2014;
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 2014, ASL samples were collected from 15 projects. Target species differed by project type and location (Table 1). Project types included commercial catch, test fishery, subsistence catch, and escapement. Detailed operational and ASL collection methods are summarized in individual project reports (Table 2). In addition, project reports for the Kwethluk and Tuluksak River weirs describe all analytical methods and present resulting estimates of ASL composition (Miller et al. 2015a and 2015b). 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 $\pm 10\%$ ($\alpha = 0.05$ 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 (Hansen et al. 2016; Miller et al. 2015a and 2015b), 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 pre-season by distributing the season total sample size proportional to historical run timing. Daily sample schedules were adjusted as needed in-season 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

ASL samples from Kuskokwim Area commercial harvests were from drift gillnets with a mesh no larger than 6 inches stretched. The proportion of each mesh size used during any given

commercial opener is unknown. Similarly, the exact mesh size used to harvest fish sampled for ASL is unknown.

Grab sampling is a stratified sampling design that was used for all species harvested in Kuskokwim Area commercial fisheries: Districts 1, 4, and 5. We attempted to collect a minimum sized sample (Table 7) from Chinook, chum, sockeye, and coho salmon harvested during at least one commercial opening during each third of the run. Samples were from commercial fish deliveries made to the Coastal Villages Seafood (CVS) processing plant in Platinum Alaska, which was the only commercial processor operating in 2014. Fish harvested by commercial fishermen were placed into large totes, where a single tote could contain the harvest from one fisherman or many. ADF&G staff informed CVS of the sampling priorities, and CVS staff selected enough fish totes to achieve the desired sample size. The selection of totes was opportunistic and was done in a way that minimized disruption to CVS operations.

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 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 2014, a total of 5 subsistence samplers participated in the program (Table 8). Samples were collected from harvests representing 3 communities. All samples contributed by the participant from Tuntutuliak were from fish harvested in District W4 (Kuskokwim Bay) and were not used to estimate ASL composition of the Kuskokwim River subsistence harvest. Samples collected from Chinook salmon subsistence harvests were from gillnets with mesh that ranged in size from 4 inch to 7 1/2 inch (Table 9).

Bethel Test Fishery

Census sampling was conducted for Chinook and sockeye 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. Samples from sockeye salmon harvested in the test fishery were from 4 5/8 inch and 5 3/8 inch drift gillnets.

AGE, SEX AND LENGTH SAMPLING PROCEDURES

To the extent practicable sampling procedures were standardized across all projects (Eaton 2015; Tables 3–6). Scales were collected from the left side of the fish approximately two 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, three scales were collected from each fish. Only one scale per fish was collected from chum salmon. The number of scales collected from each sockeye salmon differed by project (Table 5), with more scales collected from locations where reabsorption (i.e., deterioration of the outer scale edge) is prolific. 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. 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 two numbers plus one 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

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

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

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

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

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

where

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

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

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

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

$$\hat{N}_c = \sum_i \hat{N}_{c,i}, \quad (6)$$

where

$$\hat{N}_{c,i} = \hat{p}_{c,i} N_i. \quad (7)$$

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 j -th fish 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

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

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 is 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 Brazil et al. 2011 and the Statewide electronic fish ticket database² (ADF&G); subsistence harvest estimates from Carroll and Hamazaki 2012 and Shelden et al. 2015, and escapement data on file with the ADF&G Kuskokwim Research Group.

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.

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 12,813 salmon were sampled for age, sex, or length during the 2014 season. Chum salmon made up 33% of the samples collected, followed by sockeye salmon (30%), coho salmon (22%), and Chinook salmon (16%). 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 (Table 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 35%, 37%, 35%, and 17% respectively. Collection of regenerated scales was the primary reason Chinook ($n = 333$, 50%) and coho salmon samples ($n = 433$, 93%) could not be aged. Collection of reabsorbed scales was the primary reason chum ($n = 1,046$, 73%) and sockeye salmon samples ($n = 958$, 84%) could not be aged. Although less common, reabsorbed

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].

Chinook salmon and regenerated chum and sockeye scales were prolific throughout the 2014 collections. All sockeye salmon scales collected at Kogrukluuk, Salmon River (Aniak), and Telaquana River showed considerable reabsorption. Consequently, saltwater age was not summarized for these samples; however, minimum saltwater age estimates are archived in the AYKDBMS. 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 2014 were summarized by project for each salmon species sampled (Table 1). Chinook salmon summaries include commercial harvest composition for 2 Kuskokwim Bay subdistricts (Tables 22 and 23), one test fishery operated near Bethel (Table 24), subsistence harvest composition from the lower Kuskokwim River (Tables 25 and 26), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Tables 27 and 28), and 4 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 29–32). Chum salmon summaries include commercial harvest composition for one Kuskokwim River (Table 33) and 2 Kuskokwim Bay subdistricts (Tables 34 and 35), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Tables 36 and 37), and 4 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 38–41). Sockeye salmon summaries include commercial harvest composition for one Kuskokwim River (Table 42) and 2 Kuskokwim Bay subdistricts (Tables 43 and 44), one test fishery operated near Bethel (Table 45), 2 escapement monitoring weirs operated in tributaries that drain into Kuskokwim Bay (Tables 46 and 47), 3 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 48–50). Coho salmon summaries include commercial harvest composition for one Kuskokwim River (Table 51) and 2 Kuskokwim Bay subdistricts (Tables 52 and 53), and 4 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 54–57).

HISTORICAL DATA SUMMARIES

Historical summaries were produced for select projects. Historical ASL data summaries for Chinook salmon include commercial harvest composition from one Kuskokwim River (Table 58) and 2 Kuskokwim Bay (Tables 59 and 60) subdistricts, one test fishery near Bethel (Table 61), subsistence harvest composition from the lower Kuskokwim River (Table 62), 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Tables 63 and 64), and 3 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 65–67). Historical ASL summaries for chum salmon include commercial harvest composition from one Kuskokwim River (Table 68) and 2 Kuskokwim Bay subdistricts (Tables 69 and 70), 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Tables 71 and 72), and 3 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 73–75). Historical ASL summaries for sockeye salmon include commercial harvest composition from one Kuskokwim River (Table 76) and 2 Kuskokwim Bay subdistricts (Tables 77 and 78), and 2 escapement monitoring weir projects located on tributaries that drain into Kuskokwim Bay (Tables 79 and 80). Historical ASL summaries for coho salmon include commercial harvest composition from one Kuskokwim River (Table 81) and 2 Kuskokwim Bay subdistricts (Tables 82 and 83), one escapement monitoring weir project located on a tributary that drains into Kuskokwim Bay

(Table 84), and 3 escapement monitoring weirs operated in tributaries throughout the middle and upper Kuskokwim River (Tables 85–87).

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 88), chum salmon data from 24 projects (Table 89), sockeye salmon data from 27 projects (Table 90), and coho salmon data from 19 projects (Table 113). 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 110–113).

DISCUSSION

REVISIONS TO HISTORICAL SUMMARIES

The following historical summary tables were updated to include age and sex composition for all years when the sample size exceeded 30 fish: District 5 Chinook and Sockeye salmon (Tables 60 and 78); Middle Fork Goodnews River Chinook and Sockeye salmon (Tables 63 and 79); and Kuskokwim River Chinook salmon (Tables 65–67). The age and sex compositions represent a summary of the samples collected. In some cases the sample sizes were small or the timing of sample collections did not span the entire escapement or harvest. As a result the age and sex composition for those years may not be representative of the entire escapement or harvest. All such years are clearly noted in the historical summary tables.

Age sample sizes larger than 30 fish were used to inform brood table development for Kuskokwim River Chinook salmon and Middle Fork Goodnews River Chinook and Sockeye salmon. The brood table for Kuskokwim River Chinook salmon is reconstructed using age information collected annually from District W1, Bethel Test Fishery, subsistence harvest, and up to 7 escapement monitoring locations throughout the lower, middle, and upper portions of the Kuskokwim River drainage. Similarly, brood tables for Middle Fork Goodnews River Chinook and sockeye salmon are informed by age data collected from the commercial fishery (District 5) and a weir that samples majority of the escapement. In most cases, brood year returns by age-class were informed from large sample sizes collected from all major temporal and spatial components of the run. In a subset of years, sample collection was not optimal for representing the age composition of the entire run. In these instances, the available age information collected during that year was used to inform the brood table, rather than using indirect methods to estimate age composition (e.g., averages or sibling relationships).

2014 AGING

Aging Kuskokwim Area salmon scales is difficult. A variety of scale patterns can be seen amongst fish of the same age, and scale quality often deteriorates as mature fish travel from marine environments to distant freshwater spawning locations. The true age of sampled fish is not known with certainty, and in 2014 experienced scale agers applied standard techniques to estimate age from Kuskokwim Area salmon scales. Scale samples collected near the mouth of the Kuskokwim River and Kuskokwim Bay are generally higher quality compared to more distant spawning locations where scales may be missing a portion of the overall age information. As a result, in 2014, scale agers spent considerable time aging salmon harvested in marine and lower river commercial fisheries to learn common scale patterns. Knowledge of scale patterns was then used to make informed estimates of total age from scales collected at escapement locations.

Consistency in aging among agers and over time is critical if estimates of age composition are to be compared. An extensive quality control process was implemented in 2014 to ensure that age estimates were reproducible. A percentage of the entire sample for each species and location was aged twice. The actual percent of scales that was re-aged was based on the size and complexity of the project being reviewed. Percent agreement was evaluated and used as a metric of consistency, and disagreements were evaluated for patterns that would indicate inconsistent aging. In addition, age composition was estimated separately using first and second round ages and compared. Inconsistencies in the total age composition were reviewed and appropriate measures were implemented to reach consensus.

Chinook Salmon

A total of 567 Chinook salmon were re-aged for quality control, which represented an average of 31% of each project (range: 20%–39%). Percent agreement averaged 81%. Majority of the disagreements were related to decisions to age or not age the scale. When both agers assigned an age, the percent agreement was 96%. Estimates of total age composition were similar between first and second round ages indicating that age composition estimates were reproducible.

Overall, the quality of Chinook salmon scales collected in 2014 was poor. The percent of scales that could not be aged exceeded 20% at all but one project location. As a result of low sample sizes, reliable estimates of age composition could not be generated for most projects. Scales with missing freshwater age information were common at all project locations, and can likely be mitigated in future years with additional training. The quality of scales collected from escapement projects was further reduced by deterioration of the outer scale edge, which prevented reliable estimation of saltwater age. There is often very little that can be done to mitigate collection of absorbed scales from fish near the spawning ground. Minimum sample sizes may need to be increased in future years to ensure that an adequate number of usable samples are available for estimating age composition.

The current standard in the AYK Region is to use only those fish with a valid age, sex, and length for estimating age and sex composition. The decision to not age a particular scale should not affect the estimate of sex and age composition as long as scales are discarded proportional to the true sex and age composition. In 2014, Kuskokwim Area scale agers commented that Chinook salmon scales were lower quality compared to previous years, and in particular scales collected from males were worse than scales collected from females. A detailed review of unaged fish confirmed that age error codes were assigned to scales collected from male Chinook

salmon at a higher rate than females. As a result, the estimates of percent females presented in this report are biased larger than what would be estimated using all available data. The percent difference was most pronounced for Salmon River (16%) where 69% of scales were not aged and Kanektok River (12%) where many of the scales collected during the early portion of the run were lost. The percent difference averaged 4% across all other projects (range: 0%–8%). This issue would presumably affect estimates of age composition as well, albeit to a lesser extent. As a result, samples were not applied to the total escapement for most projects, rather, a summary of the samples collected was provided. This source of bias appears to be isolated to the 2014 Kuskokwim Area Chinook salmon ASL projects. Generally, negligible differences are detected when comparing estimates of percent female using only aged fish and estimates using all fish sampled (Larry Dubois, Division of Commercial Fisheries Biologist, Region III Stock Biology Coordinator, ADF&G, Anchorage; personal communication).

Sockeye Salmon

A total of 974 sockeye salmon were re-aged for quality control, which represented an average of 29% of each project (range: 10%–31%). Percent agreement was only 69%. Decisions to age or not age the scale accounted for a minority (21%) of the overall disagreements. Majority (79%) of the disagreements were associated with freshwater age estimation. In particular, many scales displayed minimal circuli constriction in the freshwater growth zone near where a second annulus would be expected. During the initial round of age estimation, agers did not interpret this pattern to be a true second annulus. However, the interpretation of this pattern changed after reviewing all available scales and consulting with staff from Cordova and Bristol Bay age labs. Inconsistent interpretation of the freshwater age was identified for most projects during the quality control assessment. Agers reevaluated all sockeye salmon scales collected in 2014 and assigned final ages using a consistent interpretation of the freshwater scale pattern.

Chum Salmon

A total of 1,209 chum salmon were re-aged for quality control, which represented an average of 29% of each project (range: 21%–32%). Percent agreement was 87%. Majority of the disagreements were related to decisions to age or not age the scale. When both agers assigned an age, the percent agreement was 99%. Estimates of total age composition were similar between first and second round ages indicating that age composition estimates were reproducible. Scale agers commented that chum salmon scale patterns were generally easy to interpret in 2014. In 2014, older aged chum salmon often had an annulus located very near to the outer margin of the scale. As a result even slight deterioration of outer edge of the scale could result in under aging. To mitigate the potential for under aging, our agers attempted to age only those scales with at least some portion of the true edge visible.

Coho Salmon

A total of 890 coho salmon were re-aged for quality control, which represented an average of 32% of each project (range: 25%–35%). Percent agreement was 91%. A minority (44%) of the disagreements was related to decisions to age or not age the scale. Majority of the age disagreements occurred when distinguishing between freshwater age-2 and age-3. When both agers assigned an age, the percent agreement was 95%. Estimates of total age composition were similar between first and second round ages indicating that age composition estimates were reproducible.

The few age-4.1 coho salmon observed in 2014 were of special interest because of the relative rarity of that age class. In 2014, there were 6 total age-4.1 fish sampled across 4 different locations: District W1 and W5 commercial fisheries; Kogruklu River weir; Salmon (Aniak) River weir. This age class was first documented in the Kuskokwim Area in 2012 ($n = 2$) and then again in 2013 ($n = 2$). Coho salmon older than 3.1 are very rare throughout their range (Sandercock 1991), although coho salmon up to 7 years total age have been documented from hatchery returns of coded wire tagged fish (Coronado and Hilborn 1998). Within Alaska, age-4.1 coho salmon have been documented in Karluk River on Kodiak Island as early as 1966. A cursory review of coho salmon ages archived in ADF&G databases revealed fewer than 800 observations of age-4.1 coho salmon since 1982. This age class has been observed throughout Alaska including Southeast Alaska, Alaska Peninsula, Kodiak Island, Kuskokwim, and Norton Sound areas. Given the rarity of age-4.1 coho salmon, special attention was given to the Kuskokwim River observations during quality control assessment. Although the scale patterns were clear, the true age of these Kuskokwim coho salmon is not known with certainty, and we cannot rule out the possibility of inaccurate age estimation.

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 are 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 for estimating 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

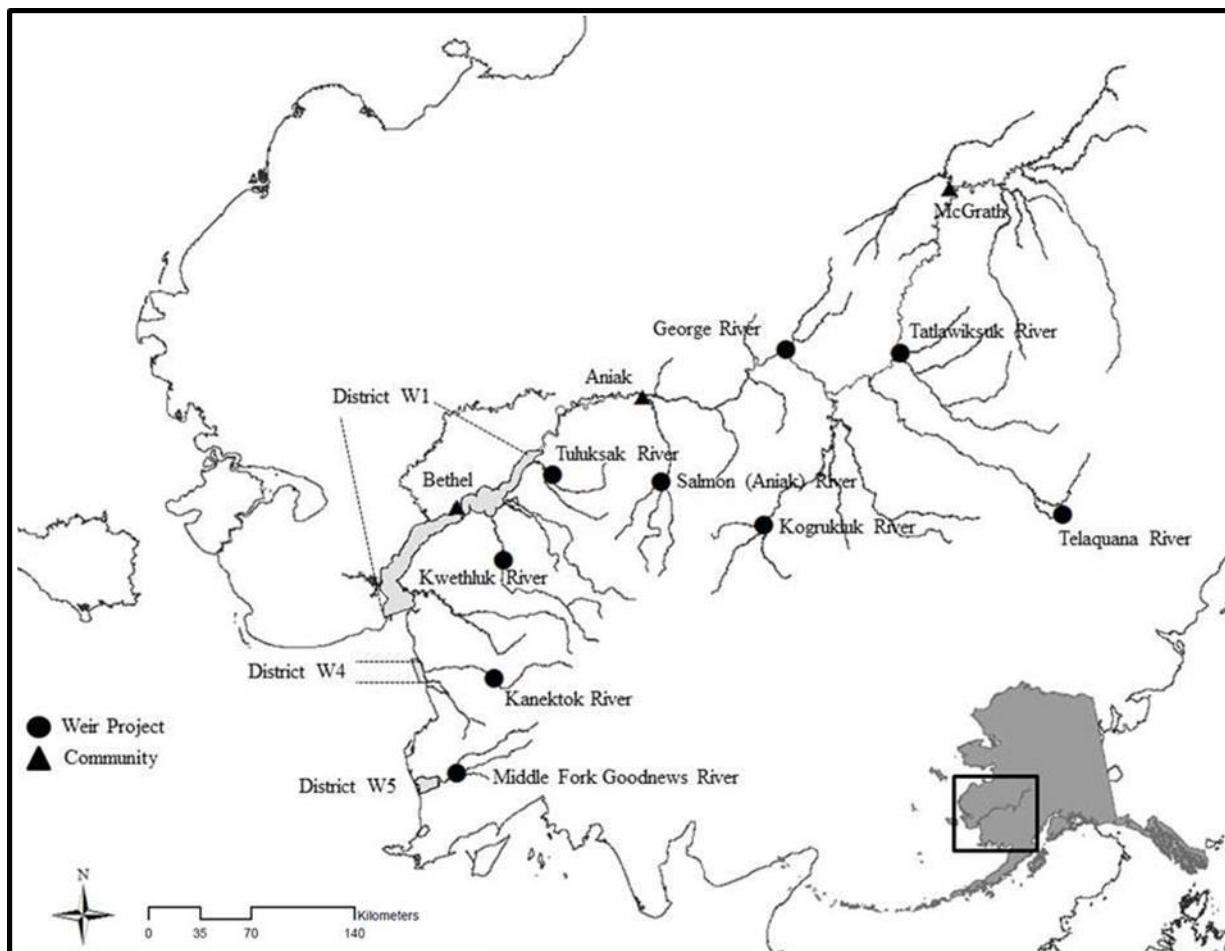


Figure 1.—Project locations where ASL data were collected in 2014.

Table 1.–Projects and salmon species for which age, sex, and length data were collected in 2014.

Project Type	Location	River km	Species			
			Chinook	Sockeye	Chum	Coho
Commercial Catch	W1(Subdistrict 1)	- ^a		X	X	X
	W4 (Subdistrict 4)	- ^b	X	X	X	X
	W5 (Goodnews Bay Subdistrict)	- ^c	X	X	X	X
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	111	X	X		
Subsistence Catch	Lower Kuskokwim River	- ^d	X			
	Middle Kuskokwim River	- ^e		X		
Escapement	Goodnews River (Middle Fork)	- ^f	X	X	X	
	Kanektok River	- ^g	X	X	X	
	Kwethluk River ^h	216	X	X	X	X
	Tuluksak River ^h	248	X	X	X	X
	Salmon River (Aniak)	404	X	X	X	X
	George River	453	X		X	X
	Tatlawiksuk River	568	X		X	X
	Kogrukluk River	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 District W1 is located in the lower Kuskokwim River and extends from the southernmost tip of Eek Island to the Bogus Creek, a distance of 203 rkm.

^b District W4 consists of Kuskokwim Bay between the mouth of Weelung Creek and the Arolik River.

^c District W5 consists of Goodnews Bay.

^d The lower Kuskokwim river consists of all waters between the Kuskokwim Bay and the Village of Tuluksak and approximates District W1.

^e The Middle Kuskokwim river consists of all waters from just below the Village of Lower Kalskag to the Village of Chuathbaluk.

^f Flows into Goodnews Bay and District W5.

^g Flows into Kuskokwim Bay and District W4.

^h 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.

Table 2.—Reporting status and contact persons for salmon monitoring projects that collected age, sex, and length data from the Kuskokwim Area in 2014.

Project Type and Location	Report Status	Contact Person
Commercial Catch		
W1 (Subdistrict 1)	No report ^a	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
W4 (Subdistrict 4)	No report ^a	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
W5 (Goodnews Bay Subdistrict)	No report ^a	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Test Fishery	Published	Aaron Poetter, Kuskokwim Area Commercial Fisheries Management Biologist, ADF&G, Anchorage, Alaska.
Subsistence Catch		
Lower Kuskokwim River	^b	Zachary Liller, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Middle Kuskokwim River	No report ^a	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.
Kanektok River	Published	Aaron Tiernan, Assistant Kuskokwim Area Commercial Fisheries Management Biologist, ADF&G, Anchorage, Alaska.
Kwethluk River	Published	Ken Harper, U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge, Soldotna, Alaska
Tuluksak River	Published	Ken Harper, U.S. Fish and Wildlife Service, Kenai National Wildlife Refuge, Soldotna, Alaska
Salmon River (Aniak)	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
George River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Tatlawiksuk River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Kogruklu River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.
Telaquana River	Published	Brittany Blain, Commercial Fisheries Biologist, ADF&G, Anchorage, Alaska.

^a No annual report has been designated. Methods followed guidelines presented in the annual report *Salmon age, sex, and length catalog for the Kuskokwim Area*.

^b Reporting for this project occurs every 4 years. The next multi-year report is scheduled for publication in 2015.

Table 3.–Summary of Chinook salmon age, sex, and length sampling methods by project, 2014.

Project Type	Location	Capture Gear		Sample Design				Length Measurement		Sexing		Scales per Fish
		Gillnet ^a	Weir	Census ^b	Daily ^c	Grab ^d	Opportunistic ^e	Caliper	Straight Edge ^f	External ^g	Internal ^h	
Commercial Catch	W4 (Subdistrict 4)	X				X		X			X	X
	W5 (Goodnews Bay Sub district)	X				X		X			X	X
Test Fishery	Bethel - subdistrict W1A (Above Bethel	X		X				X			X	X
Subsistence Catch	Lower Kuskokwim River	X					X		X		X	X
	Middle Kuskokwim River	X					X		X		X	X
Escapement	Goodnews River (Middle Fork)		X		X			X	X	X		X
	Kanektok River		X		X			X	X	X		X
	Salmon River (Aniak)		X		X			X	X	X		X
	George River		X		X			X	X	X		X
	Tatlawiksuk River		X		X			X	X	X		X
	Kogrukluk River		X		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 Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

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

^f Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

^g Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

^h Abdominal cavity was cut and visually inspected for gonads.

Table 4.–Summary of chum salmon age, sex, and length sampling methods by project, 2014.

Project Type	Location	Capture Gear				Length Measurement		Sexing		Scales per Fish
		Gillnet ^a	Weir	Daily ^b	Grab ^c	Caliper	Straight Edge ^d	External ^e	Internal ^f	
Commercial Catch	W1 (Subdistrict 1)	X			X	X			X	X
	W4 (Subdistrict 4)	X			X	X			X	X
	W5 (Goodnews Bay Subdistrict)	X			X	X			X	X
Escapement	Goodnews River (Middle Fork)		X	X			X	X		X
	Kanektok River		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 Includes a range of mesh sizes.

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

^c Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

^d Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

^e Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

^f Abdominal cavity was cut and visually inspected for gonads.

Table 5.–Summary of sockeye salmon age, sex, and length sampling methods by project, 2014.

Project Type	Location	Capture Gear		Sample Design				Length Measurement		Sexing		Scales per Fish	
		Gillnet ^a	Weir	Census ^b	Daily ^c	Pulse ^d	Grab ^e	Caliper	Straight Edge ^f	External ^g	Internal ^h	One	Three
Commercial Catch	W1 (Subdistrict 1)	X					X	X			X	X	
	W4 (Subdistrict 4)	X					X	X			X	X	
	W5 (Goodnews Bay Subdistrict)	X					X	X			X	X	
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	X		X				X			X		X
Escapement	Goodnews River (Middle Fork)		X		X				X	X			X
	Kanektok River		X		X				X	X		X	
	Salmon River (Aniak)		X		X				X	X			X
	Kogrukluk River		X		X				X	X			X
	Telaquana 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 Target sample goals were collected systematically over a short period of time throughout the duration of the migration.

^e Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

^f Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

^g Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

^h Abdominal cavity was cut and visually inspected for gonads.

Table 6.–Summary of coho salmon age, sex, and length sampling methods by project, 2014.

Project Type	Location	Capture Gear				Length Measurement		Sexing		Scales per Fish
		Gillnet ^a	Weir	Daily ^b	Grab ^c	Caliper	Straight Edge ^d	External ^e	Internal ^f	
Commercial Catch	W1 (Subdistrict 1)	X			X	X			X	X
	W4 (Subdistrict 4)	X			X	X			X	X
	W5 (Goodnews Bay Subdistrict)	X			X	X			X	X
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
	Kogrukluk River		X	X			X	X		X
	Tatlawiksuk River		X	X			X	X		X

Note: X designates the primary method used.

^a Includes a range of mesh sizes.

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

^c Target sample goals were collected opportunistically over a short period of time throughout the duration of the migration.

^d Includes a variety of straight-edge measuring devices such as fish cradles, meter sticks, and fish measuring boards.

^e Based on external sexual characteristics such as kype development, roundness of belly, and egg or milt secretion.

^f Abdominal cavity was cut and visually inspected for gonads.

Table 7.—Minimum sample size requirements for estimating salmon age, sex, and length composition in 2014.

Species	Number Categories ^a	Sample Size ^b	Adjusted Sample Size ^c	Age Classes ^d
Chinook	10	190	230	1.2, 1.3, 1.4, 1.5, and other
Sockeye	14	205	230	0.3, 1.2, 1.3, 2.2, 1.4, 2.3, and other
Chum	8	180	220	0.2, 0.3, 0.4, and 0.5
Coho	6	168	200	1.2, 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 unagable 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, 2014.

Location	River km	Number of Samplers	Harvests Sampled ^a	Sample Size ^b	Percent
Lower River					
Tuntutuliak ^c	45	1	1	60	31.4%
Bethel	106	3	4	92	48.2%
Subtotal		4	5	152	79.6%
Middle River					
Kalskag		1	2	39	20.4%
Subtotal		1	2	39	20.4%
Total		5	7	191	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.

^c Samples were collected from outside the study area (i.e., Kuskokwim Bay) and were not used in analysis.

Table 9.—Percent of samples collected by gillnet mesh size in the lower and middle Kuskokwim River Chinook salmon subsistence fishery, 2014.

Mesh Size ^a	Bethel (<i>n</i> = 92)	Kalskag (<i>n</i> = 39)	Tuntutuliak ^b (<i>n</i> = 60)	Total (<i>n</i> = 191)
Small				
4 inch	100.0%	66.7%	0.0%	61.8%
6 inch	0.0%	33.3%	66.7%	27.7%
Subtotal	100.0%	100.0%	66.7%	89.5%
Intermediate	0.0%	0.0%	0.0%	0.0%
7.5 inch	0.0%	0.0%	33.3%	10.5%
Subtotal	0.0%	0.0%	33.3%	10.5%
Total	48.2%	20.4%	31.4%	100.0%

^a Drift and set gillnets combined.

^b Samples were collected from outside the study area and were not used in analysis.

Table 10.—Postseason stratification used to account for disproportionate sampling of Chinook salmon at age, sex and length monitoring projects in the Kuskokwim Area, 2014.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-4 Commercial ^a	1	105			7/09
W-5 Commercial ^a	1	17			7/09
Bethel Test Fishery	5.4 inch	195	243	5/27-7/29	5/27-6/28, 6/30-7/07, 7/11-7/17, 7/19, 7/20, 7/29
	8 inch	213	277	5/27-7/15	5/27-6/29, 7/01-7/06, 7/09, 7/12, 7/13, 7/15
Subsistence Catch	4 inch	81		6/10-6/29	6/10, 6/11, 6/13-6/21, 6/23-6/29
	6 inch	10		6/17-6/30	6/17, 6/19, 6/21, 6/23, 6/30
George River	1	60	1,290	6/21-7/05	6/28, 6/29, 07/01-07/05
	2	39	665	7/06-7/09	7/06-7/09
	3	56	1,038	7/10-9/06	7/11-7/16, 7/18-7/24, 7/26
Goodnews River Middle Fork ^a	1	74			7/02-7/07, 7/09, 7/12, 7/14, 7/16, 7/19, 7/21, 7/23-7/25, 7/28, 7/29
Kanektok River ^a	1	117			7/15-8/01
Kogruklu River ^a	1	106			6/30-7/04, 7/06-7/12, 7/15-7/21, 7/23-7/25, 7/27, 7/30, 7/31, 8/02, 8/03
Salmon River (Aniak) ^a	1	45			6/30, 7/02-7/05, 7/07-7/12, 7/14-7/18, 7/20, 7/21, 7/24-7/27, 7/29
Tatlawiksuk River ^a	1	94			6/29, 7/02-7/16, 7/18, 7/21, 7/22, 7/25-7/27

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, 2014.

Project Location	Stratum	Sample Size	Escapement / Harvest	Stratum Dates	Sample Dates
W-1B Commercial ^a	1	202			7/14
W-4 Commercial	1	184	7,128	7/09-7/14	7/09
	2	157	7,435	7/16-8/27	7/18
W-5 Commercial	1	199	1,467	7/09-7/11	7/09
	2	131	1,936	7/14-8/27	7/18
George River	1	166	5516	6/19-7/12	6/26, 6/27, 6/29-7/03, 7/05-7/08, 7/11, 7/12
	2	91	6189	7/13-7/22	7/14-7/16, 7/18, 7/19, 7/21
	3	113	5443	7/23-9/20	7/23, 7/24, 7/26, 7/28, 7/31, 8/02, 8/04, 8/05
Goodnews River Middle Fork	1	61	3,858	6/25-7/12	7/06, 7/07, 7/09-7/11
	2	55	3,482	7/13-7/20	7/15, 7/18, 7/20
	3	168	4,178	7/21-8/31	7/22, 7/24, 7/28, 7/31, 8/04, 8/05
Kanektok River ^a	1	314			7/15, 7/16, 7/18, 7/19, 7/21-7/29, 8/02, 8/04
Kogruklu River	1	171	10,815	6/26-7/16	7/01-7/12, 7/14-7/16
	2	82	9,355	7/17-7/23	7/17-7/23
	3	49	10,593	7/24-9/12	7/24, 7/25, 7/27, 7/29, 7/30
Salmon River (Aniak) ^a	1	124			7/09, 7/12, 7/13, 7/17, 7/20-8/01, 8/03
Tatlawiksuk River	1	78	4,080	6/15-7/11	6/29, 7/01-7/08, 7/10, 7/11
	2	74	4,165	7/12-7/19	7/12-7/19
	3	59	4,210	7/20-9/15	7/20-7/30, 8/01, 8/02

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, 2014.

Project Location	Stratum	Sample Size	Escapement/Harvest	Stratum Dates	Sample Dates
W-1B Commercial ^a	1	52			7/14, 7/18
W-4 Commercial	1	193	23,834	7/09-7/11	7/09
	2	152	35,045	7/14-8/27	7/18
W-5 Commercial	1	178	11,034	7/09-7/14	7/09
	2	160	9,481	7/16-8/27	7/18
Bethel Test Fishery	4.6 inch	306	360	6/05-7/17	6/05, 6/07-7/17
	5.4 inch	373	470	5/28-7/17	5/28, 6/10-7/13, 7/15-7/17
Goodnews River Middle Fork ^a	1	494			6/27, 6/29, 7/01, 7/02, 7/04, 7/06, 7/07, 7/09-7/11, 7/14, 7/15, 7/20, 7/22, 7/24, 7/28
Kanektok River ^a	1	168			7/15-7/17, 7/20-7/22, 7/24, 7/26, 7/30
Kogruklu River	1	55	2,290	6/30-7/21	7/11, 7/14-7/17, 7/19-7/21
	2	58	2,490	7/22-7/27	7/22-7/25, 7/27
	3	99	1,633	7/28-9/11	7/29-7/31, 8/02-8/06
Salmon River (Aniak) ^a	1	60			7/22, 7/24-7/31, 8/03-8/05, 8/10-8/14
Telaquana River	1	114	8,110	7/06-7/17	7/8-7/17
	2	67	9,419	7/18-7/23	7/18-7/23
	3	94	6,764	7/24-8/26	7/24-8/02

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 13.–Postseason stratification used to account for disproportionate sampling of coho salmon at age, sex, and length monitoring projects in the Kuskokwim Area, 2014.

Project Location	Stratum	Sample Size	Escapement/ Harvest	Stratum Dates	Sample Dates
W-1B Commercial	1	182	5,384	7/14-7/21	7/18
	2	178	56,569	8/11-8/14	8/11
	3	176	55,604	8/18-8/26	8/21
W-4 Commercial	1	101	13,494	7/16-8/08	8/08
	2	65	38,823	8/11-8/27	8/11
W-5 Commercial	1	163	15,604	7/16-8/13	8/08
	2	178	36,554	8/15-8/27	8/22
George River	1	154	12,791	7/30-8/24	8/08, 8/10, 8/12, 8/15, 8/17, 8/18, 8/20, 8/24
	2	74	12,420	8/25-8/31	8/25, 8/27, 8/31
	3	161	10,560	9/01-9/20	9/02, 9/04, 9/08-9/10
Kogruklu River	1	42	19,866	7/27-8/28	8/11, 8/16, 8/28
	2	143	16,397	8/29-9/05	8/29, 8/30, 9/01-9/03, 9/05
	3	73	16,712	9/06-9/25	9/06, 9/11, 9/12
Salmon River (Aniak)	1	59	2,811	7/24-8/26	8/11-8/14, 8/20-8/22
	2	145	2,787	8/27-9/04	8/27-8/29, 9/01-9/03
	3	48	2,656	9/05-9/20	9/06, 9/10, 9/11
Tatlawiksuk River	1	115	6,649	7/21-8/16	8/03, 8/04, 8/06, 8/09, 8/10, 8/12, 8/14, 8/15
	2	81	7,477	8/17-8/23	8/18, 8/20-8/23
	3	148	5,688	8/24-9/20	8/24-8/28, 8/31, 9/02, 9/07, 9/08, 9/13

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.

Table 14.–Summary of Chinook salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W4 (Subdistrict 4)	121	105	122	122
Commercial Catch	W5 (Goodnews Bay Subdistrict)	23	17	23	23
Test Fishing	Bethel - subdistrict W1A (Above Bethel)	517	408	520	518
Subsistence Catch	Middle Kuskokwim River	39	28	39	39
Subsistence Catch	Lower Kuskokwim River	85	67	89	85
Subsistence Catch	Kuskokwim Bay	60	40	53	60
Escapement	George River	231	155	230	231
Escapement	Goodnews River (Middle Fork)	108	74	108	108
Escapement	Kanektok River	177	117	265	265
Escapement	Kogruklu River	230	106	230	230
Escapement	Salmon River (Aniak)	143	45	143	143
Escapement	Tatlawiksuk River	185	94	187	187
Totals		1,919	1,256	2,009	2,011

Table 15.–Summary of chum salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1B (Below Bethel)	220	202	220	220
	W4 (Subdistrict 4)	369	341	369	369
	W5 (Goodnews Bay Subdistrict)	357	330	357	357
Escapement	George River	604	370	604	602
	Goodnews River (Middle Fork)	454	284	494	494
	Kanektok River	410	314	631	631
	Kogruklu River	616	302	616	616
	Salmon River (Aniak)	270	124	273	271
	Tatlawiksuk River	608	211	611	610
Totals		3,908	2,478	4,175	4,170

Table 16.–Summary of sockeye salmon age, sex, and length samples collected from Kuskokwim Area projects, 2014.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1B (Below Bethel)	120	52	200	200
	W4 (Subdistrict 4)	463	345	463	460
	W5 (Goodnews Bay Subdistrict)	460	338	460	460
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	799	679	800	800
Escapement	Goodnews River (Middle Fork)	605	494	605	605
	Kanektok River	242	168	722	722
	Kogrukluk River	233	212	234	234
	Salmon River (Aniak)	68	60	68	68
	Telaquana River	279	275	279	279
Totals		3,269	2,623	3,831	3,828

Table 17.–Summary of coho salmon age, sex, length samples collected from Kuskokwim Area projects in 2014.

Project Type	Location	Age Samples	Number Aged	Number Sexed	Number Lengths
Commercial Catch	W1 (Subdistrict 1)	600	536	600	600
	W4 (Subdistrict 4)	200	166	240	240
	W5 (Goodnews Bay Subdistrict)	400	341	400	400
Escapement	George River	422	389	422	422
	Kogrukluk River	327	257	327	327
	Salmon River (Aniak)	405	252	406	406
	Tatlawiksuk River	401	344	401	401
Totals		2,755	2,285	2,796	2,796

Table 18.—Aging errors for Chinook salmon scale samples collected in the Kuskokwim Management Area, 2014.

Project Type	Location	Age Samples	Number Age Errors	% Age Errors	Absorbed ^a	Illegible ^b	Inverted ^c	Missing ^d	Regenerated ^e	Wrong Species ^f
Commercial Catch	W4 (Subdistrict 4)	121	16	13%					16	
	W5 (Goodnews Bay Subdistrict)	23	6	26%	1				5	
Subsistence Catch	Middle Kuskokwim River	39	11	28%					11	
Subsistence Catch	Lower Kuskokwim River	145	38	26%		2	4		32	
Escapement	George River	231	76	33%	49	1			26	
	Goodnews River (Middle Fork)	108	34	31%	16				18	
	Kanektok River	177	60	34%	19	5			36	
	Kogruklu River	230	124	54%	85			1	38	
	Salmon River (Aniak)	143	98	69%	74	1			23	
	Tatlawiksuk River	185	91	49%	42	11		1	37	
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	517	109	21%		18			91	
Totals		1,919	663	35%	286	38	4	2	333	0

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

^a Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating 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.

^f Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 19.—Aging errors for chum salmon scale samples collected in the Kuskokwim Management Area, 2014.

Project Type	Location	Age Samples	Number Age Errors	% Age Errors	Absorbed ^a	Illegible ^b	Inverted ^c	Missing ^d	Regenerated ^e	Wrong species ^f
Commercial Catch	W1B (Below Bethel)	220	18	8%	1	1		1	14	1
	W4 (Subdistrict 4)	369	28	8%				1	20	7
	W5 (Goodnews Bay Subdistrict)	357	27	8%					26	1
Escapement	George River	604	234	39%	193	2	5	1	33	
	Goodnews River (Middle Fork)	454	170	37%	91	12		7	60	
	Kanektok River	410	96	23%	43	4	8	1	40	
	Kogruklu River	616	314	51%	272	1		1	40	
	Salmon River (Aniak)	270	146	54%	124		1	1	20	
	Tatlawiksuk River	608	397	65%	322	3	12	6	53	1
Totals		3,908	1,430	37%	1,046	23	26	19	306	10

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

^a Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating 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.

^f Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 20.—Aging errors for sockeye salmon scale samples collected in the Kuskokwim Management Area, 2014.

Project Type	Location	Number			Absorbed ^a	Illegible ^b	Inverted ^c	Missing ^d	Regenerated ^e	Wrong Species ^f
		Age Samples	Age Errors	% Age Errors						
Commercial Catch	W1B (Below Bethel)	120	47	39%	30	3	1	2	10	1
	W4 (Subdistrict 4)	463	95	21%	63	1		1	29	1
	W5 (Goodnews Bay Subdistrict)	457	114	25%	74	1			39	
Escapement	Goodnews River (Middle Fork)	605	97	16%	66				30	1
	Kanektok River	242	69	29%	48	3	1	1	15	1
	Kogrukluk River	233	233	100%	233	1			10	
	Salmon River (Aniak)	68	68	100%	68				2	
	Telaquana River	279	279	100%	279				3	
Test Fishery	Bethel - subdistrict W1A (Above Bethel)	800	117	15%	97	2			18	
Totals		3,267	1,135	35%	958	11	2	4	156	4

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

^a Absorbed scales show deterioration along the outer edge and are missing age information necessary for estimating 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.

^f Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 21.—Aging errors for coho salmon scale samples collected in the Kuskokwim Management Area, 2013.

Project Type	Location	Age Samples	Number Age Errors	% Age Errors	Illegible ^a	Inverted ^b	Missing ^c	Regenerated ^d	Wrong Species ^e
Commercial Catch	W1 (Subdistrict 1)	600	64	11%	4		1	59	
	W4 (Subdistrict 4)	200	34	17%	1		1	32	
	W5 (Goodnews Bay Subdistrict)	400	59	15%	6		1	52	
Escapement	George River	422	33	8%	4			29	
	Kogruklu River	327	70	21%	2		2	66	
	Salmon River (Aniak)	405	153	38%	9		3	141	
	Tatlawiksuk River	401	57	14%	1	2		54	
Totals		2,755	468	17%	27		8	433	0

Note: More than one 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.

^e Wrong Species, are scales collected from another species other than what was labeled on the gummed card.

Table 22.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the District W4 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

Sample Dates	Sample Size		Brood Year (Age)														Total	
			2011		2011		2010		2010		2009		2008		2007			
			0.2		1.1		0.3		1.2		1.3		1.4		1.5			
			N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
7/9	105	Male	2	1.9	16	15.2	1	1.0	43	41.0	23	21.9	4	3.8	0	0.0	89	84.8
		Female	0	0.0	0	0.0	0	0.0	0	0.0	3	2.9	12	11.4	1	1.0	16	15.2
		Subtotal	2	1.9	16	15.2	1	1.0	43	41.0	26	24.8	16	15.2	1	1.0	105	100.0
		Male Mean Length	515		392		597		570		674		782		-			
		Range	488-542		333-447		-		456-657		517-815		724-847		-			
		n	2		16		1		43		23		4		-			
		Female Mean Length	-		-		-		-		810		821		894			
		Range	-		-		-		-		755-839		712-871		-			
		n	-		-		-		-		3		12		1			

Note: Samples were not 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 23.—Number of Kuskokwim Area Chinook salmon sampled from the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

Sample Dates	Sample Size		Brood Year (Age)				Total
			2011	2010	2009	2008	
			N	N	N	N	N
7/9	17	Male	1	12	2	0	15
		Female	0	0	1	1	2
		Subtotal	1	12	3	1	17

Table 24.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the Bethel test fishery by gillnet mesh size, 2014.

		Brood Year (Age)													
		2010		2009		2009		2008		2007					
	Sample	1.2		1.3		2.2		1.4		1.5		Total			
Mesh Size	Size	N	%	N	%	N	%	N	%	N	%	N	%		
5.375 inch	195	Male	85	34.9	105	43.1	1	0.5	15	6.2	0	0.0	206	84.6	
		Female	0	0.0	19	7.7	0	0.0	17	7.2	1	0.5	37	15.4	
		Subtotal	85	34.9	123	50.8	1	0.5	32	13.3	1	0.5	243	100.0	
		Male Mean Length	565		691		583		800		-				
		Range	450-683		510-838		-		715-1004		-				
		n	68		84		1		12		-				
		Female Mean Length	-		738		-		830		921				
		Range	-		655-818		-		694-932		-				
		n	-		15		-		14		1				
8 inch	213	Male	16	5.6	104	37.6	0	0.0	42	15.0	0	0.0	161	58.2	
		Female	0	0.0	34	12.2	0	0.0	82	29.6	0	0.0	116	41.8	
		Subtotal	16	5.6	138	49.8	0	0.0	124	44.6	0	0.0	277	100.0	
		Male Mean Length	582		718		-		803		-				
		Range	499-668		593-821		-		706-986		-				
		n	12		80		-		32		-				
		Female Mean Length	-		782		-		836		-				
		SE	-		9		-		7		-				
		Range	-		684-851		-		696-954		-				
		n	-		26		-		63		-				
Total	408	Male	100	19.3	209	40.1	1	0.2	57	10.9	0	0.0	367	70.6	
All Mesh		Female	0	0.0	53	10.1	0	0.0	99	19.1	1	0.2	153	29.4	
Combined		Total	100	19.3	261	50.2	1	0.2	156	30.0	1	0.2	520	100.0	
		95% C.I. (± %)	1.6		2.3		0.2		2.0		0.2			0.0	
		Male Mean Length	568		704		583		802		-				
		SE	6		4		-		10		-				
		Range	450-683		510-838		-		706-1004		-				
		n	80		164		1		44		-				
		Female Mean Length	-		766		-		835		921				
		SE	-		7		-		7		-				
		Range	-		655-851		-		694-954		-				
		n	-		41		-		77		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 25.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence gillnet fishery, 2014.

		Brood Year (Age)												
		2011		2010		2009		2009		2008				
Sample		1.1		1.2		1.3		2.2		1.4		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	N	%	N	%	
6/10, 6/11, 6/13- 6/21, 6/23-6/30	91	Male	22	24.2	22	24.2	12	13.2	0	0.0	4	4.4	60	65.9
		Female	0	0.0	9	9.9	12	13.2	1	1.1	9	9.9	31	34.1
		Total	22	24.2	31	34.1	24	26.4	1	1.1	13	14.3	91	100.0
	Male Mean Length	395		492		721		-		858				
	Range	340-510		360-602		620-801		-		770-970				
	n	22		22		12		-		4				
	Female Mean Length	-		523		670		554		813				
	Range	-		410-665		572-800		-		668-1015				
	n	-		9		12		1		9				

Note: Sample summary includes the samples collected from the communities of Bethel and Kalskag. 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 4.0 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 26.–Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon harvested in the lower Kuskokwim River subsistence fishery by gillnet mesh size, 2014.

Sample Dates (Mesh Size)	Sample Size		Brood Year (Age)												Total	
			2011		2010		2009		2009		2008					
			1.1		1.2		1.3		2.2		1.4		N	%		
			N	%	N	%	N	%	N	%	N	%	N	%		
6/10, 6/11, 6/13-6/21, 6/23-6/29 (4 inch mesh)	81	Male	22	27.2	22	27.2	10	12.3	0	0.0	2	2.5	56	69.1		
		Female	0	0.0	7	8.6	9	11.1	1	1.2	8	9.9	25	30.9		
		Subtotal	22	27.2	29	35.8	19	23.5	1	1.2	10	12.3	81	100.0		
		Male Mean Length	395		492		719		-		801					
		Range	340-510		360-602		620-801		-		770-832					
		n	22		22		10		-		2					
		Female Mean Length	-		519		692		554		814					
		Range	-		410-665		598-800		-		668-1015					
		n	-		7		9		1		8					
6/17, 6/19, 6/21, 6/23, 6/30 (6 inch mesh)	10	Male	0	0.0	0	0.0	2	20.0	0	0.0	2	20.0	4	40.0		
		Female	0	0.0	2	20.0	3	30.0	0	0.0	1	10.0	6	60.0		
		Subtotal	0	0.0	2	20.0	5	50.0	0	0.0	3	30.0	10	100.0		
		Male Mean Length	-		-		730		-		915					
		Range	-		-		670-790		-		860-970					
		n	-		-		2		-		2					
		Female Mean Length	-		536		604		-		810					
		Range	-		521-550		572-640		-		-					
		n	-		2		3		-		1					

Note: Sample summary includes the samples collected from the communities of Bethel and Kalskag. 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 4.0 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 27.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at the Goodnews River (Middle Fork) weir, 2014.

			Brood Year (Age)														Total	
			2011		2010		2009		2008		2007		2007					
			1.1		1.2		1.3		1.4		1.5		2.4					
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
7/02-7/07,	74	Male	1	1.4	10	13.5	26	35.1	4	5.4	0	0.0	0	0.0	41	55.4		
7/09, 7/12,		Female	0	0.0	0	0.0	10	13.5	21	28.4	1	1.4	1	1.4	33	44.6		
7/14, 7/16,																		
7/19, 7/21,		Total	1	1.4	10	13.5	36	48.6	25	33.8	1	1.4	1	1.4	74	100.0		
7/23-7/25,																		
7/28, 7/29		Male Mean Length	493		538		730		816		-		-					
		Range	-		481-577		602-912		698-878		-		-					
		n	1		10		26		4		-		-					
		Female Mean Length	-		-		821		850		984		854					
		Range	-		-		782-879		741-964		-		-					
		n	-		-		10		21		1		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 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 Kanektok River weir, 2014.

		Brood Year (Age)														Total	
		2011		2010		2009		2008		2008		2007					
		1.1	1.2	1.3	1.4	2.3	1.5										
Sample Dates	Sample Size	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
7/03-7/20	117	Male	1	0.9	22	18.8	23	19.7	12	10.3	0	0.0	0	0.0	58	49.6	
		Female	0	0.0	0	0.0	10	8.5	47	40.2	0	0.0	2	1.7	59	50.4	
		Total	1	0.9	22	18.8	33	28.2	59	50.4	0	0.0	2	1.7	117	100.0	
	Male Mean Length	398		531		697		825		-		-					
	Range	-		365-652		529-828		691-978		-		-					
	n	1		22		23		12		-		-					
	Female Mean Length	-		-		816		855		-		961					
	Range	-		-		755-894		764-945		-		916-1005					
	n	-		-		10		47		-		2					

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 the Salmon River (Aniak) weir, 2014.

		Brood Year (Age)										
		2010		2009		2009		2008				
		1.2		1.3		2.2		1.4		Total		
Sample Dates	Sample Size	N	%	N	%	N	%	N	%	N	%	
6/29-7/16	45	Male	6	13.3	18	40.0	1	2.2	6	13.3	31	68.9
		Female	0	0.0	5	11.1	0	0.0	9	20.0	14	31.1
		Total	6	13.3	23	51.1	1	2.2	15	33.3	45	100.0
	Male Mean Length	552		693		572		790				
	Range	495-628		578-781		-		603-974				
	n	6		18		1		6				
	Female Mean Length	-		779		-		865				
	Range	-		715-862		-		805-920				
	n	-		5		-		9				

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 30.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon that escaped past the George River weir, 2014.

			Brood Year (Age)												Total	
			2010		2009		2009		2008		2008		2007			
			1.2		1.3		2.2		1.4		2.3		1.5			
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%
6/26-6/29,	155	Male	366	12.2	437	14.6	22	0.7	498	16.6	0	0.0	37	1.2	1,360	45.4
7/01-7/09,		Female	19	0.6	213	7.1	0	0.0	1,340	44.8	22	0.7	40	1.3	1,633	54.6
7/11-7/24,		Total	385	12.9	649	21.7	22	0.7	1,839	61.4	22	0.7	77	2.6	2,993	100.0
7/26		95% C.I. (± %)		5.2		6.4		1.4		7.5		1.4		2.4		0.3
		Male Mean Length	525		700		591		805		-		963			
		SE	12		18		0		13		-		7			
		Range	438-600		491-862		-		649-978		-		956-969			
		n	18		23		1		26		-		2			
		Female Mean Length	461		733		-		855		680		856			
		SE	0		32		-		6		0		0			
		Range	-		510-891		-		700-944		-		825-891			
		n	1		11		-		70		1		2			

Note: Samples were used to estimate total number and percent of escapement 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 Chinook salmon that escaped past the Tatlawiksuk River weir, 2014.

				Brood Year (Age)							
				2010		2009		2008			
				1.2		1.3		1.4		Total	
Sample Dates	Sample Size			N	%	N	%	N	%	N	%
6/29, 7/01-7/17	94	Male		11	11.7	19	20.2	9	9.6	39	41.5
		Female		2	2.1	21	22.3	32	34.0	55	58.5
		Total		13	13.8	40	42.6	41	43.6	94	100.0
	Male Mean										
	Length		581		732		797				
	Range		420-830		552-846		722-997				
	n		11		19		9				
	Female Mean										
	Length		695		752		808				
	Range		661-728		582-869		634-998				
n		2		21		32					

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 32.—Age-sex composition and mean length (mm) of Kuskokwim Area Chinook salmon sampled at Kogrukluk River weir, 2014.

		Brood Year (Age)															
		2011		2010		2009		2008		2008		2007					
Sample Dates	Sample Size	1.1		1.2		1.3		1.4		2.3		1.5		Total			
		N	%	N	%	N	%	N	%	N	%	N	%	N	%		
6/30-7/12,	106	Male	1	0.9	17	16.0	40	37.7	8	7.5	0	0.0	0	0.0	66	62.3	
7/15-21,		Female	0	0.0	1	0.9	12	11.3	25	23.6	1	0.9	1	0.9	40	37.7	
7/23-7/27,		Total	1	0.9	18	17.0	52	49.1	33	31.1	1	0.9	1	0.9	106	100.0	
7/30-8/3		Male Mean Length	420		548		702		775		-		-				
		Range	420-420		474-642		571-924		649-863		-		-				
		n	1		17		40		8		-		-				
		Female Mean Length	-		540		820		868		600		945				
		Range	-		540-540		750-918		712-1003		600-600		945-945				
		n	-		1		12		25		1		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 age and 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 harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008				
Sample Dates	Sample Size	0.2		0.3		0.4		0.5		Total		
		N	%	N	%	N	%	N	%	N	%	
7/14	202	Male	283	1.5	4,621	24.3	6,224	32.7	283	1.5	11,410	59.9
		Female	189	1.0	2,452	12.9	4,809	25.2	189	1.0	7,638	40.1
		Total	471	2.5	7,072	37.1	11,033	57.9	471	2.5	19,048	100.0
		95% C.I. (± %)		2.1		6.6		6.8		2.1		0.2
		Male Mean Length	513		550		573		582			
		SE	16		5		4		15			
		Range	487-543		484-611		504-647		555-605			
		n	3		49		66		3			
		Female Mean Length	509		536		552		558			
		SE	6		5		3		21			
		Range	503-515		492-600		508-592		537-578			
		n	2		26		51		2			

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 34.–Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008				
Sample Dates	Sample Size	0.2		0.3		0.4		0.5		Total		
		N	%	N	%	N	%	N	%	N	%	
7/9, 7/18	341	Male	220	1.5	2,049	14.1	4,081	28.0	297	2.0	6,646	45.6
		Female	95	0.7	2,299	15.8	5,351	36.7	172	1.2	7,917	54.4
		Total	314	2.2	4,348	29.9	9,432	64.8	469	3.2	14,563	100.0
		95% C.I. (± %)		1.6		4.8		5.0		1.9		0.1
		Male Mean Length	536		554		594		604			
		SE	14		5		3		13			
		Range	510-578		480-665		513-669		564-676			
		n	5		48		98		7			
		Female Mean Length	489		541		564		581			
		SE	24		3		3		20			
		Range	465-513		503-600		494-649		540-611			
		n	2		52		125		4			

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 35.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)								
		2010		2009		2008				
Sample Dates	Sample Size	0.3		0.4		0.5		Total		
		N	%	N	%	N	%	N	%	
7/9, 7/18	330	Male	679	20.0	1,218	35.8	59	1.7	1,956	57.5
		Female	421	12.4	1,004	29.5	22	0.7	1,447	42.5
		Total	1,100	32.3	2,222	65.3	81	2.4	3,403	100.0
		95% C.I. (± %)		5.2		5.3		1.7		0.1
		Male Mean Length	557		589		597			
		SE	4		3		10			
		Range	474-639		505-669		564-652			
		n	69		128		6			
		Female Mean Length	533		561		591			
		SE	4		2		-			
		Range	493-599		510-629		587-600			
		n	33		92		2			

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 36.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Goodnews River (Middle Fork) weir, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008				
	Sample	0.2		0.3		0.4		0.5		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	N	%	
7/06, 7/07, 7/09-7/11, 7/13, 7/15, 7/18, 7/20, 7/22, 7/24, 7/28, 7/31, 8/04, 8/05	284	Male	0	0.0	2,599	22.6	3,811	33.1	642	5.6	7,052	61.2
		Female	25	0.2	1,521	13.2	2,606	22.6	314	2.7	4,466	38.8
		Total	25	0.2	4,121	35.8	6,417	55.7	956	8.3	11,518	100.0
		95% C.I. (± %)		0.4		6.0		6.3		3.5		0.2
		Male Mean Length	-		578		610		625			
		SE	-		4		5		15			
		Range	-		511-683		509-682		524-691			
		n	-		69		93		15			
		Female Mean Length	484		556		576		590			
		SE	-		7		3		5			
		Range	-		478-690		507-622		548-622			
		n	1		38		60		8			

Note: Samples were used to estimate total number and percent of escapement 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 37.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kanektok River weir, 2014.

		Brood Year (Age)								
		2010		2009		2008				
	Sample	0.3		0.4		0.5		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	
7/01-7/22	314	Male	48	15.3	123	39.2	7	2.2	178	56.7
		Female	48	15.3	83	26.4	5	1.6	136	43.3
		Total	96	30.6	206	65.6	12	3.8	314	100.0
	Male Mean Length		560		598		619			
	Range		477-628		526-680		573-663			
	n		48		123		7			
	Female Mean Length		537		572		555			
	Range		476-589		473-825		502-605			
	n		48		83		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 38.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the George River weir, 2014.

		Brood Year (Age)										
		2010		2009		2008		2007				
	Sample	0.3		0.4		0.5		0.6		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	N	%	
6/26, 6/27, 6/29- 7/03, 7/5-7/8, 7/11, 7/12	370	Male	3,159	18.4	4,177	24.4	853	5.0	68	0.4	8,258	48.2
		Female	4,060	23.7	4,369	25	462	2.7	0	0.0	8,890	51.8
		Total	7,219	42.1	8,546	49.8	1,315	7.7	68	0.4	17,148	100.0
		95% C.I. (± %)		5.0		5.2		2.6		0.8		0.1
		Male Mean Length	538		577		583		554			
	SE	5		4		8		0				
	Range	482-642		481-703		518-626		-				
	n	62		91		20		1				
	Female Mean Length	510		544		561		-				
	SE	3		3		6		-				
Range	452-592		494-614		506-592		-					
n	84		99		12		-					

Note: Samples were used to estimate total number and percent of escapement 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 39.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon sampled at the Salmon River (Aniak) weir, 2014.

		Brood Year (Age)										Total	
		2011		2010		2009		2008					
		0.2		0.3		0.4		0.5					
Sample Dates	Sample Size	N	%	N	%	N	%	N	%	N	%		
7/09, 7/10, 7/12-7/14, 7/16-7/18, 7/20-7/29	124	Male	1	0.8	30	24.2	79	63.7	4	3.2	114	91.9	
		Female	0	0.0	4	3.2	5	4.0	1	0.8	10	8.1	
		Total	1	0.8	34	27.4	84	67.7	5	4.0	124	100.0	
	Male Mean Length	577		544		580		556					
	Range	-		496-606		436-660		522-598					
	n	1		30		78		4					
	Female Mean Length	-		536		566		569					
	Range	-		509-564		546-585		-					
	n	-		4		5		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 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 chum salmon that escaped past the Tatlawiksuk River weir, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008		Total		
		0.2		0.3		0.4		0.5				
Sample Dates	Sample Size	N	%	N	%	N	%	N	%	N	%	
6/29, 7/01-7/08, 7/10, 7/11-8/02	211	Male	71	0.6	2,149	17.3	4,957	39.8	771	6.2	7,949	63.8
		Female	0	0.0	1,665	13.4	2,283	18.3	558	4.5	4,506	36.2
		Total	71	0.6	3,814	30.6	7,241	58.1	1,329	10.7	12,455	100.0
		95% C.I. (± %)		1.1		6.2		6.7		4.0		0.2
		Male Mean Length	509		546		596		607			
	SE	-		7		4		9				
	Range	-		420-627		483-692		541-670				
	n	1		35		85		14				
	Female Mean Length	-		508		559		555				
	SE	-		8		4		11				
	Range	-		437-606		508-601		484-606				
	n	-		28		38		10				

Note: Samples were used to estimate total number and percent of escapement 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 41.—Age-sex composition and mean length (mm) of Kuskokwim Area chum salmon that escaped past the Kogruklu River weir, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008				
Sample Dates	Sample Size	0.2		0.3		0.4		0.5		Total		
		N	%	N	%	N	%	N	%	N	%	
7/01-7/12, 7/14-7/25, 7/27, 7/29, 7/30	302	Male	63	0.2	4,048	13.2	13,529	44.0	1,014	3.3	18,654	60.6
		Female	0	0.0	3,161	10.3	8,226	26.7	722	2.3	12,109	39.4
		Total	63	0.2	7,209	23.4	21,756	70.7	1,736	5.6	30,763	100.0
		95% C.I. (± %)		0.4		5.6		5.9		2.7		0.2
		Male Mean Length	568		542		582		584			
		SE	0		6		4		6			
		Range	-		489-628		481-662		542-623			
		n	1		35		135		12			
		Female Mean Length	-		536		544		544			
		SE	-		5		3		8			
	Range	-		480-600		497-611		500-604				
	n	-		25		85		9				

Note: Samples were used to estimate total number and percent of escapement 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 42.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)																
		2010		2010		2009		2009		2009		2008		2008				
Sample Dates	Sample Size	0.3		1.2		0.4		1.3		2.2		1.4		2.3		Total		
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
7/14, 7/18	52	Male	0	0.0	14	26.9	1	1.9	10	19.2	2	3.8	5	9.6	2	3.8	34	65.4
		Female	1	1.9	3	5.8	0	0.0	11	21.2	0	0.0	3	5.8	0	0.0	18	34.6
		Total	1	1.9	17	32.7	1	1.9	21	40.4	2	3.8	8	15.4	2	3.8	52	100.0
		Male Mean Length	-		499		570		576		509		586		630			
		Range	-		462-527		-		559-596		499-518		563-611		618-641			
		n	-		14		1		10		2		5		2			
		Female Mean Length	497		492		-		554		-		549		-			
		Range	-		475-503		-		529-580		-		534-561		-			
		n	1		3		-		11		-		3		-			

Note: Samples were not 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 43.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

			Brood Year (Age)																
			2010		2010		2009		2009		2008		2008		2008				
	Sample		0.3		1.2		1.3		2.2		1.4		2.3		3.2		Total		
Sample Dates	Size		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
7/9, 7/18	345	Male	247	0.4	12,565	21.3	10,531	17.9	2,388	4.1	0	0.0	123	0.2	123	0.2	25,977	44.1	
		Female	741	1.3	13,215	22.4	17,636	30.0	939	1.6	370	0.6	0	0.0	0	0.0	32,902	55.9	
		Total	988	1.7	25,780	43.8	28,167	47.8	3,326	5.6	370	0.6	123	0.2	123	0.2	58,879	100.0	
		95% C.I. (± %)		1.1		5.4		5.5		2.5		0.7		0.4		0.4		0.2	
	Male Mean Length		592		507		565		515		-		584		507				
		SE	8		4		5		6		-		-		-				
		Range	584-599		389-563		453-634		485-551		-		-		-				
		n	2		74		59		14		-		1		1				
		Female Mean Length		544		483		535		471		526		-		-			
			SE	10		4		3		13		20		-		-			
			Range	523-589		410-541		434-596		450-532		489-558		-		-			
			n	6		68		109		5		3		-		-			

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 44.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)																						
		2011		2010		2010		2009		2009		2009		2008		2008		2007		2007				
Sample		1.1		0.3		1.2		0.4		1.3		2.2		1.4		2.3		2.4		3.3		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
7/9, 7/18	338	Male	62	0.3	248	1.2	5,241	25.5	248	1.2	4,209	20.5	1,573	7.7	186	0.9	1,142	5.6	0	0.0	59	0.3	12,969	63.2
		Female	0	0.0	240	1.2	3,184	15.5	186	0.9	2,605	12.7	420	2.0	124	0.6	665	3.2	59	0.3	62	0.3	7,546	36.8
		Total	62	0.3	488	2.4	8,425	41.1	434	2.1	6,814	33.2	1,994	9.7	310	1.5	1,808	8.8	59	0.3	121	0.6	20,515	100.0
		95% C.I. (± %)		0.6		1.6		5.2		1.5		5.0		3.1		1.3		3.0		0.6		0.8		0.1
		Male Mean Length	539		551		507		591		561		525		611		575		-		569			
		SE	-		15		3		10		3		4		18		4		-		-			
		Range	-		506-574		390-556		566-617		480-622		479-559		591-647		539-619		-		-			
		n	1		4		86		4		69		26		3		19		-		1			
		Female Mean Length	-		523		471		562		542		485		558		551		560		528			
		SE	-		14		3		1		3		9		24		3		-		-			
		Range	-		490-550		429-514		561-563		491-589		461-512		534-582		531-570		-		-			
		n	-		4		53		3		43		7		2		11		1		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 45.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon harvested in the Bethel test fishery, 2014.

		Brood Year (Age)																				Total		
		2011		2010		2010		2009		2009		2009		2008		2008		2008		2007				
		0.2	0.3	0.3	0.4	1.2	1.3	1.4	1.5	2.2	2.3	2.4	2.5	3.4	3.5	4.4	4.5	5.4	5.5	6.4	6.5			
Mesh Size	Sample Size	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
4.625 inch	306	Male	1	0.3	1	0.3	56	15.7	1	0.3	56	15.7	11	2.9	0	0.0	9	2.6	7	2.0	0	0.0	144	39.9
		Female	0	0.0	8	2.3	51	14.1	2	0.7	128	35.6	9	2.6	0	0.0	8	2.3	9	2.6	0	0.0	216	60.1
		Subtotal	1	0.3	9	2.6	107	29.7	4	1.0	185	51.3	20	5.6	0	0.0	18	4.9	16	4.6	0	0.0	360	100.0
		Male Mean Length	404		486		470		581		577		545		-		591		620		-			
		Range	-		-		415-570		-		441-644		514-626		-		562-642		594-640		-			
		n	1		1		48		1		48		9		-		8		6		-			
		Female Mean Length	-		516		492		553		540		513		-		563		561		-			
		Range	-		482-544		444-537		535-570		493-593		491-537		-		541-583		540-596		-			
		n	-		7		43		2		109		8		-		7		8		-			
5.4 inch	373	Male	0	0.0	13	2.7	30	6.4	4	0.8	97	20.6	5	1.1	0	0.0	19	4.0	11	2.4	0	0.0	179	38.1
		Female	0	0.0	8	1.6	26	5.6	10	2.1	185	39.4	6	1.3	1	0.3	35	7.5	18	3.8	1	0.3	291	61.9
		Subtotal	0	0.0	20	4.3	57	12.1	14	2.9	282	60.1	11	2.4	1	0.3	54	11.5	29	6.2	1	0.3	470	100.0
		Male Mean Length	-		564		501		599		572		537		-		599		600		-			
		Range	-		540-583		426-623		579-612		500-638		523-545		-		570-637		559-640		-			
		n	-		10		24		3		77		4		-		15		9		-			
		Female Mean Length	-		535		501		567		540		511		584		561		552		465			
		Range	-		508-559		461-536		517-614		491-599		499-522		-		529-598		501-599		-			
		n	-		6		21		8		147		5		1		28		14		1			
Total All Mesh Combined	679	Male	1	0.1	14	1.7	87	10.4	5	0.6	153	18.5	16	1.9	0	0.0	28	3.4	18	2.2	0	0.0	322	38.9
		Female	0	0.0	16	1.9	77	9.3	12	1.5	313	37.8	16	1.9	1	0.2	44	5.2	27	3.3	1	0.2	508	61.1
		Total	1	0.1	30	3.6	164	19.7	17	2.1	467	56.3	31	3.8	1	0.2	72	8.7	45	5.5	1	0.2	830	100.0
		95% C.I. (± %)			0.1		0.6		1.2		0.5		1.6		0.6		0.1		0.9		0.7		0.1	
		Male Mean Length	404		557		481		595		574		542		-		596		608		-			
		Range	-		486-583		415-623		579-612		441-644		514-626		-		562-642		559-640		-			
		n	1		11		72		4		125		13		-		23		15		-			
		Female Mean Length	-		525		495		564		540		512		584		561		555		465			
		Range	-		482-559		444-537		517-614		491-599		491-537		-		529-598		501-599		-			
n	-		13		64		10		256		13		1		35		22		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 46.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Goodnews River (Middle Fork) weir, 2014.

		Brood Year (Age)																	
		2010		2010		2009		2009		2008		2008		2008		2007		Total	
Sample Dates	Sample Size	0.3		1.2		1.3		2.2		1.4		2.3		3.2		2.4		N	%
6/27, 6/29, 7/01, 7/02, 7/04, 7/06, 7/07, 7/09- 7/11, 7/14, 7/15, 7/20, 7/22, 7/24, 7/28	494	Male	0 0.0	1,603 3.9		14,961 36.1		619 1.5		637 1.5		574 1.4		0 0.0		46 0.1		18,440	44.5
		Female	46 0.1	1,868 4.5		18,476 44.6		501 1.2		1,012 2.4		1,085 2.6		46 0.1		0 0.0		23,033	55.5
		Total	46 0.1	3,471 8.4		33,438 80.6		1,120 2.7		1,649 4.0		1,659 4.0		46 0.1		46 0.1		41,473	100.0
		95% C.I. (± %)		0		2		4		2		2		2		0		0	
		Male Mean Length	-	513		583		519		576		588		-		664			
		SE	-	14		2		5		8		3		-		-			
		Range	-	410-638		492-639		508-532		541-619		572-622		-		-			
		n	-	22		173		6		10		7		-		1			
		Female Mean Length	543	489		543		494		554		546		510		-			
		SE	-	3		2		5		5		4		-		-			
		Range	-	435-531		471-612		469-532		491-617		508-561		-		-			
		n	1	39		203		9		13		9		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 age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 47.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Kanektok River weir, 2014.

Sample Dates	Sample Size		Brood Year (Age)								Total	
			2010		2009		2009		2008			
			1.2		1.3		2.2		1.4			
			N	%	N	%	N	%	N	%	N	%
6/30, 7/02, 7/03, 7/05, 7/07, 7/08, 7/10, 7/12-7/17, 7/20-7/22, 7/24, 7/26	168	Male	22	13.1	59	35.1	3	1.8	0	0.0	84	50.0
		Female	27	16.1	54	32.1	2	1.2	1	0.6	84	50.0
		Total	49	29.2	113	67.3	5	3.0	1	0.6	168	100.0
		Male Mean Length	531		570		538		-			
		Range	470-567		477-636		508-554		-			
		n	22		59		3		-			
		Female Mean Length	502		530		503		472			
		Range	422-599		442-605		502-503		-			
		n	27		54		2		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 age and sex category. Discrepancies in sums or statistics are attributed to rounding errors.

Table 48.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Salmon River weir, 2014.

Sample Dates	Sample Size		Freshwater Age						Total	
			0		1		2			
			N	%	N	%	N	%	N	%
7/22, 7/24-7/31, 8/03-8/05, 8/10-8/14	60	Male	0	0.0	39	65.0	1	1.7	40	66.7
		Female	2	3.3	18	30.0	0	0.0	20	33.3
		Total	2	3.3	57	95.0	1	1.7	60	100.0
		Male Mean Length	-		564		570			
		Range	-		435-620		-			
		n	-		39		1			
		Female Mean Length	542		543		-			
		Range	527-556		511-577		-			
		n	2		18		-			

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate mean length and summary statistics for each age and sex category. Samples were not applied to the total escapement. Discrepancies in sums or statistics are attributed to rounding errors.

Table 49.–Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon sampled at the Kogrukluk River weir, 2014.

Sample Dates	Sample Size		Freshwater Age						Total	
			0		1		2			
			N	%	N	%	N	%	N	%
7/11, 7/12, 7/14- 7/17, 7/19-7/25, 7/27, 7/29-7/31, 8/02-8/06	211	Male	59	0.9	2,390	37.3	42	0.7	2,491	38.8
		Female	59	0.9	3,863	60.2	0	0.0	3,922	61.2
		Total	118	1.8	6,252	97.5	42	0.7	6,413	100.0
		95% C.I. (± %)		1.9		2.3		1.3		0.3
		Male Mean Length	559		568		595			
	SE	-		3		-				
	Range	554-598		513-618		-				
	n	2		83		1				
	Female Mean Length	535		531		-				
	SE	-		3		-				
	Range	450-573		461-678		-				
	n	2		123		-				

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate total number and percent of escapement 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 50.—Age-sex composition and mean length (mm) of Kuskokwim Area sockeye salmon that escaped past the Telaquana River weir, 2014.

		Freshwater Age											
	Sample		0		1		2		3		Total		
Sample Dates	Size		N	%	N	%	N	%	N	%	N	%	
7/8-7/17,	275	Male	0	0.0	8,604	35.4	2,982	12.3	72	0.3	11,658	48.0	
7/18-7/23,		Female	72	0.3	8,665	35.7	3,898	16.0	0	0.0	12,635	52.0	
7/24-8/02		Total	72	0.3	17,269	71.1	6,880	28.3	72	0.3	24,293	100.0	
		95% C.I. (± %)		0.6		5.7		5.6		0.6		0.2	
		Male Mean Length	-		531		577		609				
		SE	-		8		7		-				
		Range	-		323-658		457-636		-				
		n	-		100		32		1				
		Female Mean Length	518		530		556		-				
		SE	-		4		6		-				
		Range	-		467-607		475-626		-				
		n	1		97		44		-				

Note: Only freshwater ages are provided in this summary, because saltwater age could not be determined due to extensive reabsorption of the scale edge. Samples were used to estimate total number and percent of escapement 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 51.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W1 restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)										
		2011		2010		2009		2008				
Sample Dates	Sample Size	1.1		2.1		3.1		4.1		Total		
		N	%	N	%	N	%	N	%	N	%	
7/18, 8/11, 8/21	536	Male	2,450	2.1	42,605	36.2	3,640	3.1	30	0.0	48,724	41.4
		Female	3,828	3.3	59,439	50.6	5,247	4.5	318	0.3	68,833	58.6
		Total	6,278	5.3	102,044	86.8	8,887	7.6	347	0.3	117,557	100.0
		95% C.I. (± %)		2.2		3.4		2.6		0.5		0.1
		Male Mean Length	530		543		540		467			
		SE	12		2		9		-			
		Range	481-598		399-623		479-588		-			
		n	15		236		16		1			
		Female Mean Length	530		544		547		535			
		SE	9		2		7		-			
		Range	470-584		471-626		496-586		-			
		n	13		232		22		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 52.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W4 (Subdistrict 4) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

		Brood Year (Age)								
		2011		2010		2009				
Sample Dates	Sample Size	1.1		2.1		3.1		Total		
		N	%	N	%	N	%	N	%	
8/8, 8/11	166	Male	5,446	10.4	22,940	43.8	731	1.4	29,117	55.7
		Female	3,788	7.2	17,486	33.4	1,925	3.7	23,200	44.3
		Total	9,234	17.7	40,426	77.3	2,656	5.1	52,317	100.0
		95% C.I. (± %)		7.4		8.2		4.4		0.4
		Male Mean Length	537		541		565			
		SE	14		6		0			
		Range	458-599		453-628		494-581			
		n	13		78		2			
		Female Mean Length	563		567		584			
		SE	10		4		6			
		Range	504-611		484-626		549-600			
		n	11		58		4			

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 53.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon harvested in the District W5 (Goodnews Bay Subdistrict) restricted mesh (≤ 6 inch) commercial gillnet fishery, 2014.

			Brood Year (Age)								Total	
			2011		2010		2009		2008			
			1.1		2.1		3.1		4.1		N	%
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
8/8, 8/22	341	Male	1,424	2.7	21,952	42.1	2,026	3.9	96	0.2	25,497	48.9
		Female	1,725	3.3	23,924	45.9	808	1.5	205	0.4	26,661	51.1
		Total	3,148	6.0	45,875	88.0	2,833	5.4	301	0.6	52,158	100.0
		95% C.I. (± %)		2.8		3.8		2.6		0.8		0.2
		Male Mean Length	570		573		580		616			
		SE	14		3		9		-			
		Range	535-633		473-667		525-634		-			
		n	8		148		12		1			
		Female Mean Length	561		578		563		566			
		SE	8		2		6		-			
		Range	522-583		501-639		551-584		-			
		n	10		156		5		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 54.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Salmon River weir, 2014.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2011		2010		2009			
			1.1		2.1		3.1			
			N	%	N	%	N	%	N	%
8/10-8/14, 8/20-8/22, 8/27-8/29, 9/01-9/03, 9/06, 9/10, 9/11	251	Male	48	0.6	4,644	56.3	712	8.6	5,404	65.5
		Female	0	0.0	2,753	33.4	97	1.2	2,850	34.5
		Total	48	0.6	7,397	89.6	809	9.8	8,254	100.0
		95% C.I. (± %)		1.1		4.1		3.9		0.2
		Male Mean Length	553		521		528			
		SE	-		3		5			
		Range	-		424-614		495-585			
		n	1		143		21			
		Female Mean Length	-		533		537			
		SE	-		4		6			
		Range	-		445-590		514-546			
		n	-		81		5			

Note: Samples were used to estimate total number and percent of escapement 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 55.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon that escaped past the George River weir, 2014.

Sample Dates	Sample Size		Brood Year (Age)						Total	
			2011		2010		2009			
			1.1		2.1		3.1			
			N	%	N	%	N	%	N	%
8/08, 8/10, 8/12, 8/15, 8/17, 8/18, 8/20, 8/24	389	Male	232	0.6	14,580	40.8	2,314	6.5	17,126	47.9
		Female	299	0.8	16,144	45.1	2,203	6.2	18,645	52.1
		Total	531	1.5	30,724	85.9	4,517	12.6	35,771	100.0
		95% C.I. (± %)		1.3		3.7		3.5		0.1
		Male Mean Length	501		529		519			
		SE	14		4		11			
		Range	478-516		389-656		379-601			
		n	3		153		23			
		Female Mean Length	498		530		529			
		SE	20		3		8			
		Range	426-518		420-621		420-603			
		n	3		180		27			

Note: Samples were used to estimate total number and percent of escapement 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 56.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Tatlawiksuk River weir, 2014.

		Brood Year (Age)								
		2011		2010		2009				
	Sample	1.1		2.1		3.1		Total		
Sample Dates	Size	N	%	N	%	N	%	N	%	
8/03, 8/04, 8/06, 8/09,	344	Male	328	1.7	10,364	52.3	542	2.7	11,234	56.7
8/10, 8/12, 8/14, 8/15,		Female	231	1.2	7,629	38.5	720	3.6	8,580	43.3
8/18, 8/20-8/28, 8/31,		Total	558	2.8	17,993	90.8	1,262	6.4	19,814	100.0
9/02, 9/07, 9/08, 9/13		95% C.I. (± %)		1.6		3.2		2.9		0.2
		Male Mean Length	512		537		589			
		SE	15		3		12			
		Range	462-556		444-631		540-644			
		n	6		177		8			
		Female Mean Length	523		541		539			
		SE	16		3		5			
		Range	493-552		413-597		519-584			
		n	5		136		12			

Note: Samples were used to estimate total number and percent of escapement 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 57.—Age-sex composition and mean length (mm) of Kuskokwim Area coho salmon sampled at the Kogruklu River weir, 2014.

			Brood Year (Age)								Total	
			2011		2010		2009		2008			
			1.1		2.1		3.1		4.1			
Sample Dates	Sample Size		N	%	N	%	N	%	N	%	N	%
8/11, 8/16, 8/28-8/30, 9/01-9/03, 9/05, 9/06, 9/9/11, 9/12	258	Male	459	0.9	18,897	35.7	3,267	6.2	0	0.0	22,623	42.7
		Female	702	1.3	25,582	48.3	3,954	7.5	115	0.2	30,352	57.3
		Total	1,161	2.2	44,479	84.0	7,221	13.6	115	0.2	52,975	100.0
		95% C.I. (± %)		2.1		5.6		5.3		0.4		0.3
		Male Mean Length	481		493		517		-			
	SE	21		6		19		-				
	Range	442-532		380-603		438-594		-				
	n	4		98		13		-				
	Female Mean Length	501		513		529		517				
	SE	-		3		7		-				
Range	500-502		439-590		488-584		-					
n	2		123		17		1					

Note: Samples were used to estimate total number and percent of escapement 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 58.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W1 commercial gillnet fishery, 1964–2014.

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		43,997																
1970 ^a		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		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	37,889	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	19,414	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	36,179	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	55,716	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

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Table 58.—Page 2 of 2.

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)		
1989	353	43,217	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	53,504	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	46,872	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
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	7,419	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		444																
2001 ^b	20	90																
2002 ^a		72																
2003 ^a		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		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}		14																
2013 ^{ad}		1																
2014 ^{ad}		0																

Note: Harvest totals are Districts W1 and W2 combined. From 1964-1971 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 for estimating 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.

Table 59.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvested in the W4 commercial gillnet fishery, 1969–2014.

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)	(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	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	34.6	0.2	34.5	2.4	7.7	1.1	0.0	0.0	30.1	727
1971 ^a		4,185																
1972 ^a		15,880																
1973	213	14,993	0.0	0.0	0.0	0.0	6.1	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	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	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	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	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	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	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	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	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	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	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	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	17.5	0.0	52.5	0.0	2.5	0.0	0.0	0.0	16.3	738
1988	591	13,883	0.0	0.0	0.0	0.0	24.0	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	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	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	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	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	27.9	0.3	30.9	1.0	3.3	0.2	0.0	0.0	38.5	706

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Table 59.–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)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)	(2.5)		
1994	326	8,564	0.0	0.0	1.1	0.0	17.2	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	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	35,510	0.0	0.0	1.1	0.0	35.2	0.1	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	51.3	0.0	19.4	0.0	2.1	0.0	0.0	0.0	20.7	692
1999	662	18,426	0.0	0.0	0.4	0.0	29.8	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	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	13.5	0.0	75.3	0.0	1.2	0.0	0.0	0.0		791
2002	436	11,480	0.0	0.0	1.0	0.0	30.8	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	34.3	0.0	32.6	0.0	2.5	0.0	0.0	0.0	23.7	681
2004	208	25,465	0.0	0.0	0.5	0.0	46.6	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	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	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	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	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	26.9	0.5	26.0	0.1	0.4	0.1	0.0	0.0	17.6	657
2010	479	14,230	0.0	0.0	2.0	0.0	22.7	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	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	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	37.0	0.3	40.5	0.0	1.0	0.0	0.0	0.0	39.9	732
2014 ^c	105	2,265																

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 mesh (≤ 6 inch). N/A designates years when length data were not available or not summarized.

^a ASL data were not collected.

^b Samples were not summaries in Molyneaux et al. 2010.

^c Sampling was not appropriate for estimating ASL composition for the season.

Table 60.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area Chinook salmon harvest in the W5 commercial gillnet fishery, 1990–2014.

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)	(1.6)	(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	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	0.0	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	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	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	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	0.0	31.6	
1996 ^b		1,375	0.0	28.1	9.4	0.0	0.0	28.1	0.0	25.0	0.0	9.4	0.0	0.0	0.0	31.3	
1997	471	2,039	0.0	0.9	46.6	0.0	0.0	12.3	0.0	38.8	0.0	1.4	0.0	0.0	0.0	32.1	714
1998	404	3,675	0.0	1.5	16.2	0.0	0.0	57.6	0.0	22.3	0.0	2.4	0.0	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	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	0.0	51.7	705
2001	262	1,519	0.0	0.2	12.5	0.0	0.0	22.4	0.0	63.1	0.0	1.8	0.0	0.0	0.0	60.1	775
2002	164	979	0.0	0.8	38.2	0.0	0.0	31.4	0.0	27.9	0.0	1.7	0.0	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	0.0	N/A	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	0.0	N/A	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	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	0.0	17.6	674
2007	369	3,126	0.0	0.0	39.8	0.0	0.0	21.9	0.0	35.0	0.6	0.4	2.3	0.0	0.0	27.5	696
2008 ^b		1,281															
2009	515	1,509	0.0	0.3	52.9	0.0	0.0	19.2	0.2	26.1	0.8	0.5	0.0	0.0	0.0	21.3	643
2010	621	1,752	0.0	2.2	32.3	0.0	0.0	50.8	0.2	13.7	0.0	0.9	0.0	0.0	0.0	23.4	666
2011	540	2,091	0.0	0.2	62.6	0.0	0.0	21.4	0.3	15.1	0.0	0.4	0.0	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	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	0.0	37.7	718
2014 ^c	17	205															

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

^a Sampling was not appropriate for estimating ASL composition for the season. Composition, if shown, represents samples collected only.

^b ASL data were not collected.

^c Sampling was not appropriate for estimating ASL composition for the season.

Table 61.—Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the Bethel test fishery, 2001–2014.

Year	Sample Size	Total Harvest	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)		
2001	75	86	0.0	30.8	26.6	0.0	33.2	0.0	6.6	2.7	24.0	723
2002	197	288	0.0	33.4	33.1	1.6	31.4	0.0	0.5	0.0	14.8	689
2003	311	409	0.3	35.8	39.9	0.0	20.0	0.0	3.9	0.0	13.9	674
2004	322	691	0.0	38.3	41.7	0.6	17.7	0.0	1.6	0.0	12.1	684
2005	335	557	0.0	28.7	43.0	0.0	27.0	0.3	1.1	0.0	24.0	708
2006	244	352	0.0	28.4	30.2	0.0	37.1	0.0	4.4	0.0	29.6	744
2007	98	305	0.0	34.1	37.0	0.0	24.5	0.0	4.3	0.0	28.1	720
2008 ^a	30	420										
2009 ^b		470										
2010 ^b		292										
2011	216	337	0.0	38.8	30.0	0.0	29.2	0.0	1.9	0.0	29.1	693
2012	228	321	0.0	19.3	56.6	0.0	22.8	0.4	0.4	0.4	25.0	717
2013	146	201	0.0	28.0	35.8	0.0	34.3	0.0	1.9	0.0	33.2	723
2014	408	520	0.0	19.3	50.2	0.2	30.0	0.0	0.2	0.0	29.4	719

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 for estimating ASL composition for the season.

^b ASL data were not collected.

Table 62.—Estimated age and sex composition, mean length, and total number of Chinook salmon harvest in the lower Kuskokwim River subsistence fishery, 2001–2014.

Year	Number of Samplers	Sample Size	Total Harvest	Percent by Age Class												Percent Females	Mean Length (mm)
				(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(1.5)	(2.4)	(1.6)			
2001	18	1,059	78,009	0.0	0.0	4.7	0.0	30.2	0.0	60.6	0.0	4.3	0.1	0.0	a	33.6	777
2002	24	2,015	80,982	0.0	0.0	7.8	0.0	33.0	0.0	53.9	0.0	5.2	0.0	0.0		40.5	769
2003	32	2,035	67,737	0.2	0.0	6.7	0.0	44.2	0.0	42.1	0.0	6.7	0.0	0.0		37.3	781
2004	21	2,032	96,788	0.1	0.0	15.2	0.0	35.9	0.3	45.9	0.0	2.6	0.0	0.0		33.2	759
2005	30	2,409	85,863	0.0	0.0	5.4	0.0	49.8	0.0	42.7	0.2	1.8	0.1	0.0	a	36.7	776
2006	23	1,684	90,812	0.2	0.0	6.3	0.0	35.7	0.1	53.3	0.2	4.1	0.1	0.0		42.3	787
2007	32	1,987	94,898	0.0	0.0	6.5	0.0	37.1	0.0	52.8	0.3	2.6	0.7	0.0		42.2	734
2008	46	2,802	88,912	0.2	0.0	8.2	0.0	53.8	0.0	34.3	0.6	2.6	0.2	0.0		33.8	752
2009	54	3,606	79,896	0.1	0.0	10.0	0.0	34.7	0.1	53.6	0.1	1.3	0.1	0.0	a	38.0	770
2010	35	1,695	67,286	0.1	0.1	7.8	0.1	49.2	0.1	39.7	0.0	3.0	0.0	0.0		42.4	773
2011	20	968	62,366	0.3	0.0	13.3	0.0	47.7	0.0	36.5	0.2	1.9	0.0	0.1		34.4	746
2012	8	265	22,544	0.0	0.0	14.0	0.0	52.8	0.0	30.2	0.4	2.6	0.0	0.0		32.1	758
2013	16	595	47,113	0.2	0.0	5.7	0.0	30.4	0.0	61.8	0.5	1.2	0.2	0.0		41.3	776
2014	5	91	11,203	24.2	0.0	34.1	0.0	26.4	1.1	14.3	0.0	0.0	0.0	0.0		34.1	574

Note: Samples were collected by subsistence fishermen who sampled their own harvests or the harvests of others.

^a Age class was present but represented less than 0.1%.

Table 63.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Middle Fork Goodnews River weir, 1991–2014.

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	1,952	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	1,905	1.4	7.1	27.1	1.4	58.6	0.0	4.3	0.0	0.0	54.3	
1993 ^a	31	2,349	0.0	12.9	22.6	0.0	54.8	0.0	9.7	0.0	0.0	67.7	
1994 ^a	208	3,856	0.5	3.8	33.2	0.0	50.0	0.0	10.6	1.9	0.0	46.6	
1995	308	4,836	0.0	17.4	17.5	0.0	64.3	0.0	0.8	0.0	0.0	43.8	798
1996 ^a	42	2,931	4.6	11.8	42.1	0.0	37.5	0.0	3.9	0.0	0.0	45.4	
1997	121	2,937	0.6	60.3	9.1	0.0	30.0	0.0	0.0	0.0	0.0	25.0	691
1998 ^a	8	4,584											
1999 ^a	28	3,221											
2000	214	2,500	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	3,085	0.0	31.0	23.7	0.0	41.1	0.0	4.2	0.0	0.0	32.2	713
2003	241	2,389	3.2	13.6	44.1	0.0	34.4	0.0	4.7	0.0	0.0	41.6	742
2004 ^a	174	4,388	4.0	52.0	23.4	0.6	20.0	0.0	0.0	0.0	0.0	30.3	
2005 ^a	155	4,633	1.3	14.7	52.6	0.0	30.8	0.0	0.0	0.6	0.0	36.5	
2006 ^a	57	4,559	1.8	33.3	26.3	0.0	36.8	0.0	1.8	0.0	0.0	47.4	
2007	209	3,852	1.2	33.7	27.2	0.0	34.8	0.3	1.2	1.6	0.0	37.2	713
2008	123	2,161	7.8	17.5	42.0	0.0	26.1	0.0	6.5	0.0	0.0	46.6	718
2009 ^a	57	1,630	0.0	28.1	14.0	0.0	57.9	0.0	0.0	0.0	0.0	47.4	
2010 ^a	76	2,244	13.8	29.2	40.0	0.0	13.8	1.5	1.5	0.0	0.0	32.3	
2011 ^a	44	1,861	0.0	31.8	36.4	0.0	31.8	0.0	0.0	0.0	0.0	34.1	
2012 ^a	45	513	0.0	8.9	66.7	0.0	24.4	0.0	0.0	0.0	0.0	48.9	
2013	175	1,189	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	

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

^a Sampling was not appropriate for estimating ASL composition for the season. Composition, if shown, represents samples collected only.

Table 64.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kanektok River weir, 2002–2014.

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	5,343	2.3	22.9	25.0	0.0	43.1	0.0	6.6	0.0	37.5	712
2003	174	8,231	2.3	23.6	35.3	0.0	36.7	0.0	2.0	0.0	32.7	704
2004	428	19,528	0.2	58.3	25.2	0.0	15.6	0.0	0.7	0.0	13.6	658
2005 ^a	224	14,331										
2006 ^b												
2007	431	14,120	0.9	32.9	19.1	0.0	44.2	0.0	2.7	0.2	34.9	706
2008 ^a	34	6,578										
2009	468	6,841	0.4	26.2	23.2	0.2	49.5	0.0	0.2	0.2	37.3	740
2010	224	5,800	0.9	35.2	44.0	0.4	19.1	0.0	0.5	0.0	23.7	659
2011	159	5,032	0.0	59.2	27.9	0.0	12.9	0.0	0.0	0.0	22.0	617
2012 ^a	48	1,568										
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										

^a Sampling was not appropriate for estimating ASL composition for the season.

^b Weir did not operate.

Table 65.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim River Chinook salmon past the George River weir, 1996–2014.

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

^a Sampling was not appropriate for estimating 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 66.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Tatlawiksuk River weir, 1998–2014.

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

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

^b Sampling was not appropriate for estimating ASL composition for the season. Composition, if shown, represents samples collected only.

Table 67.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area Chinook salmon past the Kogrukluk River weir, 1976–2014.

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}		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
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

^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 for estimating ASL composition for the season. Composition, if shown, represents samples collected only.

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

Table 68.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W1 commercial gillnet fishery, 1972–2014.

Year	Sample Size	Total Harvest	Percent by Age Class				Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)		
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	199,478	0.8	36.8	62.0	0.4	54.1	585
1986	1,064	309,213	0.4	76.5	22.6	0.5	53.1	581
1987	1,312	574,336	1.5	52.9	44.8	0.8	57.0	581
1988	2,404	1,381,674	0.8	79.3	19.1	0.8	49.1	577
1989	655	749,182	0.2	36.9	61.8	1.1	52.1	584
1990	558	461,624	0.6	70.6	27.5	1.3	51.8	576
1991	1,630	431,802	2.2	64.9	32.8	0.1	55.6	566
1992	1,677	344,603	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	207,877	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	11,570	2.4	73.6	23.0	1.0	52.6	566
2001 ^b	118	1,272						
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	118,316	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	19,048	2.5	37.1	57.9	2.5	40.1	556

Note: Harvest data are from Districts W1 and W2 combined. The commercial chum salmon fishery was executed using restricted mesh (≤ 6 inch) gillnets.

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

^b Sampling was not appropriate for estimating ASL composition for the season.

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

Table 69.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W4 commercial gillnet fishery, 1984–2014.

Year	Sample Size	Total Harvest	Percent by Age Class					Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)		
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	29,220	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	40,943	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	83,005							
1997	1,221	38,445	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	29,252	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	25,820	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	93,760	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

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

^a Sampling was not appropriate for estimating ASL composition for the season.

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

Table 70.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area chum salmon harvested in the District W5 commercial gillnet fishery, 1984–2014.

Year	Sample Size	Total Harvest	Percent by Age Class				Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)		
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	7,853						
2008 ^c		10,408						
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	13,190	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

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

^a Samples were not appropriate for estimating 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.

Table 71.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Middle Fork Goodnews River weir, 1991–2014.

Year	Sample Size	Total Escapement	Percent by Age Class				Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)		
1991	291	31,644	0.0	73.1	26.9	0.0	40.5	566
1992 ^a	493	22,023						
1993 ^a	236	14,952						
1994 ^a	207	34,849						
1995 ^a	280	33,699						
1996 ^a	311	40,450						
1997	526	17,369	0.4	31.5	67.8	0.2	44.4	589
1998	705	28,832	0.3	86.1	13.4	0.2	49.9	578
1999	672	19,513	0.0	65.4	34.3	0.3	49.9	587
2000 ^a	418	13,791						
2001	768	26,820	0.7	70.6	28.7	0.1	55.5	587
2002	725	30,300	2.9	37.1	58.6	1.4	55.0	600
2003	556	21,637	0.7	84.5	12.6	2.3	45.6	572
2004	1,220	31,616	4.2	59.3	36.4	0.1	51.8	579
2005	907	26,690	1.5	83.4	15.0	0.1	52.9	571
2006	776	54,699	1.3	69.7	28.6	0.3	23.9	574
2007	865	49,285	0.8	54.1	44.2	0.9	51.4	570
2008	1,241	44,699	0.3	44.9	49.0	5.7	61.5	578
2009 ^a	196	19,715						
2010	189	26,687	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	10,723						
2013	494	28,091	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

^a Sampling was not appropriate for estimating ASL composition for the season.

Table 72.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kanektok River weir, 2002–2014.

Year	Sample Size	Total Escapement	Percent by Age Class				Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)		
2002	738	42,009	2.5	43.1	53.0	1.4	57.5	586
2003	733	40,066	0.8	86.8	10.4	1.9	49.6	566
2004	736	46,444	5.7	49.9	44.2	0.3	48.2	568
2005 ^a	894	53,580						
2006 ^b								
2007	1,121	133,215	0.1	63.3	34.7	2.0	48.4	566
2008 ^a	725	54,024						
2009	631	51,652	0.6	68.0	29.4	2.1	35.9	591
2010	663	62,567	1.2	65.1	32.3	1.4	51.5	573
2011	936	50,908	0.2	44.7	53.8	1.3	51.9	570
2012	382	24,173	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	18,586						

^a Sampling was not appropriate for estimating ASL composition for the season.

^b Weir did not operate.

Table 73.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the George River weir, 1996–2014.

Year	Sample Size	Total Escapement	Percent by Age Class					Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)		
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

^a Sampling was not appropriate for estimating ASL composition for the season."

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

Table 74.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Tatlawiksuk River weir, 1998–2014.

Year	Sample Size	Total Escapement	Percent by Age Class					Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)	(0.6)		
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

^a Sampling was not appropriate for estimating ASL composition for the season.

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

Table 75.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area chum salmon past the Kogrukluk River weir, 1976–2014.

Year	Sample Size	Total Escapement	Percent by Age Class				Percent Females	Mean Length (mm)
			(0.2)	(0.3)	(0.4)	(0.5)		
1976	219	8,477	0.3	37.8	60.5	1.4	18.7	602
1977 ^{ab}		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

^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 for estimating ASL composition for the season.

^d Historical data summary not available.

^e Samples were applied to observed escapement.

Table 76.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W1 commercial gillnet fishery, 1984–2014.

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	106,647	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	95,433	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	136,602	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	92,025	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	42,747	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	84,870	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	92,218	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	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	33,878	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		84															
2002 ^b		84															
2003 ^b		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		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	13,497	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	2,714	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

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 for estimating ASL composition for the season.

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

Table 77.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W4 commercial gillnet fishery, 1990–2014.

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	80,934	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	69,562	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	17,802	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	34,627	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	38,535	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

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 for estimating 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 .

Table 78.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area sockeye salmon harvested in the District W5 commercial gillnet fishery, 1985–2014.

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	43,766	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		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	24,463	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

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

^a Sampling was not appropriate for estimating 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.

Table 79.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Middle Fork Goodnews River weir, 1991–2014.

Year	Sample	Total	Percent by Age Class												Percent	Mean
	Size	Escapement	(0.2)	(1.1)	(0.3)	(1.2)	(0.4)	(1.3)	(2.2)	(1.4)	(2.3)	(3.2)	(2.4)	(3.3)	Females	Length (mm)
1991 ^a	272	47,397	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 ^a	204	27,268	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	26,452	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	50,801	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	39,009	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 ^a	246	58,290	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	35,530	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	49,513	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	48,205	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	32,341	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	21,024	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	22,101	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	44,387	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	55,926	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	113,809	0.0	^b	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	126,772	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	72,282	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	50,459	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	25,465	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	35,762	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	17,946	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	30,472	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	23,243	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

^a Sampling was not appropriate for estimating ASL composition for the season. Composition, if shown, represents samples collected only.

^b Age class was represented in samples but percent composition was <0.05.

Table 80.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area sockeye salmon past the Kanektok River weir, 2002–2014.

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	58,326	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	127,471	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	102,867	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	242,208													
2006 ^b															
2007	793	307,750	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 ^a	307	141,388												36.8	558
2009	585	272,483	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	202,643	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	84,805	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	88,800	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	256,969	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

^a Sampling was not appropriate for estimating ASL composition for the season.

^b Weir did not operate.

Table 81.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W1 commercial gillnet fishery, 1984–2014.

Year	Sample Size	Total Harvest	Percent by Age Class				Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)	(4.1)		
1984	1,333	623,447	4.4	92.5	3.1	0.0	48.2	N/A
1985	1,119	335,606	8.5	86.8	4.7	0.0	45.8	N/A
1986	841	659,988	4.8	92.0	3.2	0.0	46.1	N/A
1987	820	399,467	7.2	76.9	15.9	0.0	53.1	N/A
1988	1,427	524,296	4.4	94.1	1.5	0.0	50.1	N/A
1989	743	479,856	8.9	88.3	2.8	0.0	45.5	N/A
1990	389	410,332	4.8	90	5.2	0.0	43.1	N/A
1991	573	500,935	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	610,739	5.8	91.2	3.0	0.0	48.1	549
1994	826	724,689	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	937,299	4.3	94.4	1.3	0.0	48.6	570
1997 ^a	324	130,803						
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	192,998	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		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	74,122	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	117,557	5.3	86.8	7.6	0.3	58.6	543

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 for estimating ASL composition for the season.

^b ASL data were not collected.

Table 82.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W4 commercial gillnet fishery, 1990–2014.

Year	Sample Size	Total Harvest	Percent by Age Class			Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)		
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		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	82,398	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	27,754	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

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 for estimating 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.

Table 83.—Estimated age and sex composition, mean length, and total number of Kuskokwim Area coho salmon harvested in the District W5 commercial gillnet fishery, 1990–2014.

Year	Sample Size	Total Harvest	Percent by Age Class				Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)	(4.1)		
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		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		12,436						
2007 ^b		13,697						
2008 ^b		22,547						
2009 ^a	43	8,406						
2010	600	4,900	10.6	87.3	2.2	0.0	40.7	572
2011	558	13,475	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

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 for estimating 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.

Table 84.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Middle Fork Goodnews River weir, 1991–2014.

Year	Sample Size	Total Escapement	Percent by Age Class			Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)		
1991 ^a	182	1,978					
1992 ^{ab}		150					
1993 ^{ab}		1,451					
1994 ^{ab}		309					
1995 ^a	191	5,415	2.5	93.9	3.6	42.0	571
1996 ^a	150	10,869	2.0	93.3	4.0	36.7	608
1997 ^b		13,413					
1998	429	36,596	8.4	89.6	2.0	57.9	605
1999	411	11,545	10.0	88.0	2.0	55.8	590
2000 ^a	419	13,907	1.5	97.9	0.6	48.1	595
2001	439	19,626	7.1	89.0	3.9	50.6	613
2002 ^c	564	27,364	1.4	92.6	6.0	41.7	620
2003	167	52,810	5.0	87.1	7.9	44.0	608
2004	197	47,916	12.2	84.5	3.4	55.8	579
2005 ^d	328	15,683					586
2006	343	15,969	20.0	78.3	1.7	47.8	563
2007	463	20,975	12.7	83.1	4.3	52.4	582
2008	579	36,630	9.2	85.5	5.3	53.0	543
2009	358	20,000	7.4	87.3	5.2	48.2	606
2010	438	23,839	13.1	83.4	3.4	53.6	598
2011	251	23,826	21.1	72.9	6.0	41.8	592
2012 ^{ad}	262	11,081					
2013 ^{ad}	132	11,893					
2014 ^{ab}		5,294					

^a Weir did not operate throughout the entire the coho salmon return. Partial escapement is shown.

^b ASL data were not collected.

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

^d Sampling was not appropriate for estimating ASL composition for the season.

Table 85.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the George River weir, 1997–2014.

Year	Sample Size	Total Escapement	Percent by Age Class					Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)	(3.2)	(4.1)		
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

^a Weir was inoperable during coho salmon season.

^b Sampling was not appropriate for estimating ASL composition for the season.

Table 86.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Tatlawiksuk River weir, 1999–2014.

Year	Sample Size	Total Escapement	Percent by Age Class			Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)		
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

^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 for estimating ASL composition for the season.

Table 87.—Estimated age and sex composition, mean length, and total escapement of Kuskokwim Area coho salmon past the Kogruklu River weir, 1989–2014.

Year	Sample Size	Total Escapement	Percent by Age Class			Percent Females	Mean Length (mm)
			(1.1)	(2.1)	(3.1)		
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		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

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

^b Sampling was not appropriate for estimating ASL composition for the season.

^c ASL Samples were not collected.

Table 88.–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, 2001-2014
Kuskokwim Bay	1975, 2007, 2014
Escapement	
Aniak River	1980-1983, 1985, 1989, 1996, 2007
Eek River	1989
George River	1996-2014
Goodnews River (Middle Fork)	1983-1985, 1987-2014
Kanektok River	1983-1987, 1989, 1997, 2002-2005, 2007-2014
Kipchuk River	1989
Kisaralik River	1986, 2001
Kogruklu River	1968, 1969, 1971-1973, 1976, 1978-2014
Kwethluk River	1989, 1991, 1992, 2000-2004, 2006-2014
NYAC Weir	1988
Salmon River (Aniak)	1989, 2006-2008, 2012, 2014
Salmon River (Pitka Fork)	1981, 1982, 1989
Takotna River	2000-2013
Tatlawiksuk River	1998-2014
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, 2011-2014

Table 89.– 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, 2007-2014
W5 (Goodnews Bay Subdistrict)	1974, 1978, 1980-2005, 2007, 2009-2014
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	1996-2014
Goodnews River (Middle Fork)	1983-2014
Kanektok River	1983-1987, 1989, 1997, 2002-2005, 2007-2014
Kisaralik River	1986
Kogrukluk River	1971-1973, 1976, 1978-2014
Kwethluk River	1989, 1991, 1992, 1997, 2000-2014
Nikolai (Village/City)	2004
NYAC Weir	1988
Salmon River (Aniak)	2006-2008, 2014
Salmon River (Pitka Fork)	1981, 1982
Takotna River	2000-2013
Tatlawiksuk River	1998-2014
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 90.–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 1964, 1965, 1967-1970, 1974-1978, 1980-1985, 1987-2001, 2003-2005, 2007-2014
W4 (Subdistrict 4)	
W5 (Goodnews Bay Subdistrict)	1969, 1974, 1977, 1978, 1980-2005, 2007, 2009-2014
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, 1985-2014
Goodnews River (North Fork)	1989
Kanektok River	1984, 1985, 1987, 1989, 1997, 2002-2005, 2007-2014
Kisaralik River	1986
Kogrukluk River	1968, 1976, 1978, 1980-1994, 2007, 2009-2014
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	2010-2014
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 91.–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, 2004-2014
W4 (Subdistrict 4)	1967, 1968, 1974-1978, 1980-1998, 2000-2005, 2007-2014
W5 (Goodnews Bay Subdistrict)	1974, 1977, 1980-2001, 2003, 2005, 2009-2014
Subsistence Catch	
Lower Kuskokwim River	1989, 1992
Escapement	
Aniak River	1980
George River	1997, 1999-2014
Goodnews River (Middle Fork)	1988, 1991, 1995, 1996, 1998-2001, 2003-2013
Kanektok River	1983, 1997, 2001-2005, 2007-2009
Kisaralik River	1986
Kogruklu River	1981-1996, 1998-2014
Kwethluk River	1989, 2000-2004, 2006-2014
Salmon River (Aniak)	2008, 2009, 2013, 2014
Takotna River	2000-2013
Tatlawiksuk River	1999-2002, 2004-2014
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

