Fishery Management Report No. 25-12

2023 Kuskokwim Area Management Report

by

David Runfola

and

Sean Larson

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

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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by
David Runfola and Sean Larson
Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

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David Runfola and Sean Larson,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
333 Raspberry Road, Anchorage, AK 99518, USA

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TABLE OF CONTENTS

Page

TABLES OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued)

LIST OF FIGURES

ABSTRACT

This report summarizes the 2023 season and historical information regarding subsistence and commercial Pacific salmon (*Oncorhynchus* spp.) and Pacific herring (*Clupea pallasii*) fisheries within the Kuskokwim Area (5 AAC 01.250). These fisheries mainly target 4 species of salmon (Chinook *O. tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, and chum salmon *O. keta*). There was no large-scale commercial salmon processor in the area in 2023. From 2013 through 2023, amounts reasonably necessary for subsistence (ANS) were not achieved for Chinook salmon. Harvests of chum salmon have not met ANS since 2018, nor have coho salmon harvests since 2021. Sockeye salmon harvests have consistently achieved ANS for nearly 20 years. There are 22 escapement goals for salmon within the Kuskokwim Area; 5 were met or exceeded, 2 were below the lower escapement bound, and 15 were not assessed in 2022. Historically, Pacific herring have been harvested for commercial and subsistence purposes. The market for commercial herring has declined, and no commercial harvest has occurred since 2013.

Keywords: Pacific salmon *Oncorhynchus* spp., Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, sockeye *O. nerka*, coho *O. kisutch*, Pacific herring, *Clupea pallasii*, subsistence, subsistence fisheries, commercial fisheries, Annual Management Report, AMR, Kuskokwim River, Kuskokwim Bay

INTRODUCTION

MANAGEMENT AREA DESCRIPTION

The Kuskokwim Area (5 AAC 01.250) is defined in regulation as all waters of Alaska between Cape Newenham and the Naskonat Peninsula, including Nunivak and St. Matthew Islands, and those waters draining into the Bering Sea (Figure 1). The mainstem Kuskokwim River is 702 miles long (1,130 km) with a 48,000 mile^2 (120,000 km^2) watershed. As of 2024, there are 37 permanent and 2 seasonal communities of approximately 4,400 households within the area. Of those households, more than two-thirds are situated within the drainage of the Kuskokwim River (McDevitt et al. 2020). Most Pacific salmon (*Oncorhynchus* spp.) fishing effort occurs within the mainstem of the Kuskokwim River; however, fishing also occurs in many of the tributaries that contain salmon. Residents of Quinhagak, Goodnews Bay, and Platinum, located along the south shore of Kuskokwim Bay, harvest salmon stocks primarily from the Kanektok, Arolik, and Goodnews River systems. Residents of Kipnuk, Kwigillingok, and Kongiganak, located on north Kuskokwim Bay, harvest salmon from within the Kuskokwim River drainage and from local drainages that empty into Kuskokwim Bay. Residents of Toksook Bay, Nightmute, Tununak, Newtok, Mertarvik, Chefornak, and Mekoryuk are situated on or near the Bering Sea Coast and harvest salmon from coastal waters and local streams.

The Kuskokwim Area has 4 commercial salmon fishing districts (5 AAC 07.200). Districts 1, 2, 3, and 4 were established in 1960; however, District 3, Upper Kuskokwim River, was removed from regulation in 1966 due to a lack of landings. District 5, Goodnews Bay, was established in 1968. District 1, Lower Kuskokwim River, consists of the Kuskokwim River from a line between Apokak Slough and the southernmost tip of Eek Island and Popokamiut upstream to a line between the Alaska Department of Fish and Game (ADF&G) regulatory markers located at Bogus Creek, about 9 miles upstream of the Tuluksak River mouth (Figure 2). District 1 was divided into Subdistricts 1-A and 1-B in 2000. Subdistrict 1-A consists of that portion of District 1 upstream from a line between regulatory markers located at the downstream end of Steamboat Slough. Subdistrict 1-B consists of that portion of District 1 downstream from regulatory markers at Steamboat Slough (Figure 2). District 2, Middle Kuskokwim River, consists of Kuskokwim River from ADF&G regulatory markers located at the upstream entrance to the second slough on the west bank downstream from Kalskag to the regulatory markers at Chuathbaluk (Figure 3). The most recent District 2 commercial fishing periods were in 2000. District 4, Quinhagak, consists of

Kuskokwim Bay waters from the northernmost edge of the mouth of Weelung Creek to the southernmost tip of the south mouth of the Arolik River and extending for 3 miles from the coast (Figure 4). District 5 consists of that portion of Goodnews Bay east of a line from ADF&G regulatory markers located approximately 2 miles south and 2 miles north on the seaward side of the entrance of Goodnews Bay and west of a line between the mouth of Ukfigag Creek to the mouth of the Tunulik River (Figure 5).

MANAGEMENT

Background

The large size of the Kuskokwim River drainage and the distances between the fisheries and escapement monitoring projects throughout the drainage, coupled with overlapping multispecies runs, add complexity to the management of the Kuskokwim River. Chinook salmon (*Oncorhynchus tshawytscha*) begin entry into the Kuskokwim River in late May, and sockeye (*O. nerka*) and chum (*O. keta*) salmon begin their entry in mid-June. Chinook and sockeye salmon runs diminish in early July. The chum salmon run diminishes in late July when the coho salmon (*O. kisutch*) run begins. Coho salmon entry to the Kuskokwim River diminishes in late August to early September. Fishery management information about run size and timing by species is limited until the salmon are distributed throughout the drainage and on their spawning grounds. Salmon spawn in headwater sections of Kuskokwim River tributary streams and rivers. Many of these spawning areas are hundreds of miles from Kuskokwim Bay and the lower Kuskokwim River. Consequently, migrating salmon will not reach their spawning areas until weeks after the start of the lower river fishery.

The run timings of Kuskokwim Bay salmon in the Kanektok, Goodnews, and Arolik Rivers are similar to those of the Kuskokwim River. However, these are small drainages compared to the Kuskokwim River. Although run size and timing evaluation in the Kuskokwim Bay rivers are not immediate, they are timelier than those of the Kuskokwim River. Many factors that make Kuskokwim River fisheries management difficult are absent in Kuskokwim Bay fisheries.

Total annual landings in the commercial salmon fishery increased steadily, with some variability each year through the 1960s, 1970s, and 1980s. From 1987 to 1996, harvest ranged between approximately 975,000 to 2.3 million fish (Table 1), effort ranged between 714 and 824 permits fished, and exvessel value ranged between $2.9 million and $12.7 million (Table 2). Beginning in 1997, the value of salmon, particularly chum salmon, began to decline (Table 3), which led to decreases in fishing effort, the number of fish harvested, and the exvessel value of the fishery. In the following years, commercial salmon harvests in the area ranged from 755,330 fish in 1998 to 184,871 in 2002 (Table 1). Efforts ranged from 707 permits in 1998 to 407 permits in 2002, and the exvessel value of the fishery ranged from $1.6 million to $319,000 during the same period (Table 2). Poor Chinook and chum salmon returns from 1999 through 2001 resulted in limited commercial salmon fishing opportunities in the Kuskokwim River in June and July.

Kuskokwim River Chinook and chum salmon abundances increased in the mid-2000s; however, due to the area's poor market conditions and reduced processing capacity, ADF&G continued to limit commercial salmon fishing opportunities in District 1, and registered buyers imposed harvest limits. These factors resulted in fewer commercial fishing opportunities in Districts 4 and 5.

Following 2002, annual commercial salmon harvests increased initially, and then a decline began. Annual harvests ranged between 687,843 fish in 2004 and 233,931 fish in 2015 (Table 1). Efforts

ranged from 396 permit holders to 530 permit holders, and the salmon exvessel value ranged from $876,000 to $2.9 million (Table 2). From 2009 through 2016, Coastal Villages Seafoods (CVS) operated a fish processing plant in Platinum, which temporarily improved processing capacity in the area, mainly in Districts W4 and W5. Improvements in the chum salmon market and greater processing capacity led to increased fishing opportunities during this time. The Bethel-based fish processor, Kuskokwim Seafoods, permanently closed operations in 2013, which limited fish processing in the area to the CVS facility. In 2016, CVS discontinued salmon buying and processing operations, which left the area without a large-scale salmon processor for the first time since statehood. Between 2016 and 2019, commercial fishing within the area was limited to individuals registered with ADF&G as a catcher–seller. Because few individuals registered as catcher–sellers, salmon harvests between 2016 and 2019 were below the historical average.[1] In 2020 and 2021, a single salmon processor operated within Kuskokwim Bay Districts 4 and 5. Kuskokwim River District 1 commercial fisheries were limited to individuals registered as catcher–sellers in 2020 and 2021 (Smith and Gray 2022). No large-scale commercial fish processors were operating in the area in 2022 and 2023, and commercial fisheries were once again limited to individuals registered as catcher–sellers.

Kuskokwim River Chinook salmon are harvested primarily for subsistence use but have been incidentally harvested during commercial fishing periods directed at chum and sockeye salmon in late June and July. The guideline harvest range for Chinook salmon harvest in the Kuskokwim River commercial fishery is 0–50,000 fish. Subsistence harvest of Chinook salmon in the Kuskokwim River averaged 84,157 fish between 1990 and 2011. Recent poor Chinook salmon run sizes have severely limited subsistence harvests since 2012, with an average of 27,513 fish harvested between 2012 and 2022 (Table 4). From 2000 to 2015, Chinook salmon commercial harvest contributed between 0% and 4% of the total District 1 harvest and between 0% and 13% of the total District 1 exvessel value (Tables 5 and 6). Chinook salmon run reconstruction information indicates an exploitation rate of Chinook salmon of approximately 33% since 2000, with most of the harvest (98%) attributed to the subsistence fishery (Table 4; Larson 2023).

Kuskokwim River sockeye salmon are primarily harvested in the subsistence fishery but were also harvested during past District 1 commercial fisheries (Table 7). Subsistence harvest of sockeye salmon in the Kuskokwim River between 1990 and 2022 averaged 43,076 fish annually. Commercial harvest of sockeye salmon was considered incidental to chum salmon harvest in Kuskokwim River from 1987 to 2003; however, ADF&G established a guideline harvest level of 0–50,000 sockeye salmon in 2004. Kuskokwim River commercial sockeye salmon harvests made up approximately 6% of the total District 1 harvest and approximately 15% of the total District 1 exvessel value between 1990 and 2015 (Tables 5 and 6).

Before the commercial processors left the Kuskokwim River, coho salmon accounted for the largest number of commercially harvested salmon (Table 8) and the greatest value, accounting for over half of the District 1 exvessel value (Table 6). Due to the absence of a large-scale commercial fishery, nearly all coho salmon are harvested in the subsistence fishery.

Kuskokwim River chum salmon are an important subsistence species that have also been targeted for commercial use in the Kuskokwim River (Table 9). Annual subsistence harvest of chum salmon in the Kuskokwim River between 1990 and 2022 averaged 60,984 fish. Since the late 1990s,

[1] Confidentiality requirements prohibit the release of catcher–seller harvest data.

commercial fishing has been constrained by low market interest in chum salmon and limited processing capacity. From 1996 to 2010, commercial chum salmon harvests contributed less than 18% of the total District 1 harvest. From 2011 to 2015, chum salmon harvests contributed 29% of the total harvest and over 40% of the total exvessel value in District 1 (Tables 5 and 6).

Participation in Kuskokwim Bay subsistence and commercial fisheries is typically much smaller than in the Kuskokwim River. Between 1990 and 2022, the total annual subsistence harvest of Chinook, sockeye, coho, and chum salmon among the Kuskokwim Bay communities of Quinhagak, Goodnews Bay, and Platinum averaged 4,348 Chinook, 3,006 sockeye, 2,521 coho, and 1,766 chum salmon (Tables 10–13). Trends in commercial catches have varied over time in Districts 4 and 5, primarily because of delays in season opener dates due to Chinook salmon conservation. In Districts 4 and 5, Chinook salmon conservation has shifted the primary target species to sockeye, chum, and coho salmon. The 10-year commercial harvest average (2006–2015) for District 4 indicates sockeye salmon were most harvested, followed by chum, coho, and Chinook salmon (Table 14). This pattern was similar for District 5; however, coho salmon was ranked second most harvested and chum salmon third (Table 15). In both districts, the 10-year exvessel values (2006–2015) indicate that sockeye salmon is the most valuable species harvested, followed by coho, chum, and Chinook salmon (Tables 16 and 17).

Salmon stock status

Salmon returns to most Western Alaska rivers, including the Kuskokwim River, were generally below average from 1997 to 2001 (Table 4); however, these declines were less evident in Kuskokwim Bay rivers. The Kuskokwim Area was declared an economic disaster area by the State of Alaska in 1997, 1998, 2000, and 2001 because of the extremely low chum and Chinook salmon commercial harvests and exvessel values (Tables 1 and 2). In 2001, the Alaska Board of Fisheries (BOF) designated Kuskokwim River Chinook and chum salmon as stocks of yield concern (Burkey et al. 2000).

In 2002, Chinook and chum salmon returns to the Kuskokwim River increased and reached near record abundances from 2004 through 2007 (Table 4; Linderman and Bergstrom 2006; Estensen et al. 2009). The BOF discontinued the stock of concern status for both species in the winter of 2007. Since 2007, Chinook salmon abundance has decreased. In 2011 and 2012, the Kuskokwim River was again declared a fisheries disaster by the State of Alaska because of low Chinook salmon returns. Total run estimates for Kuskokwim River Chinook salmon in 2012, 2013, and 2014 are the 3 lowest on record (Larson 2023). From 2010 through 2013, most tributary escapement goals were not achieved, nor was the Kuskokwim River drainagewide sustainable escapement goal in 2013, which the BOF had established in January. Since 2014, a very conservative management approach has been employed in the Kuskokwim River, which has resulted in the achievement of most tributary escapement goals. Chinook returns increased from 2014 to 2018 but was still below the 1976–2010 average. The 2019 Chinook salmon total run was near average and was the largest run observed since 2009. Chinook salmon total run in 2020 and 2022 declined significantly compared to 2019, similar to run sizes observed between 2015 and 2018.

Lacking total drainagewide run and escapement estimates, Kuskokwim River chum, sockeye, and coho salmon stock status is evaluated using harvest and tributary escapement data. Between 2007 and 2019, chum salmon runs returned to near-average levels. The 2020 chum salmon run was well below average, the 2021 chum salmon run was the lowest on record, and the 2022 chum salmon run was the second lowest. Sockeye salmon abundance since 2016 has varied between average and

above average for lake and river life histories. The 2022 sockeye salmon abundance was mixed throughout the drainage with above-average lake-type abundance and below-average river-type abundance. There is limited information about the size and quality of the coho salmon escapement; however, available data from stock assessment projects and subsistence fishing household surveys suggest that coho salmon run sizes since 2016 have been below average to average. Assessment data also indicate that the 2022 coho salmon run may have been one of the lowest on record.

There are no drainagewide run or escapement estimates for Kuskokwim Bay salmon stocks. Kuskokwim Bay salmon are monitored in the Kanektok River and Goodnews River drainages. Historically, Chinook, sockeye, chum, and coho salmon stocks have been evaluated through some combination of catch monitoring, counting towers, weirs, and aerial surveys. Recent budget constraints have made aerial surveys and inseason commercial catch statistics the primary means of assessing escapement and run strength.

Salmon run timing and escapement trends are generally similar for the Kanektok and Goodnews River systems. The largest Chinook salmon escapements on record in the Kuskokwim Bay occurred in the early 2000s, and the lowest on record was in the early to mid-2010s (Tables 18–20). With the absence of a commercial fishery during 2016–2019, Chinook salmon escapement increased in these systems. Stocks consistently met escapement goals into 2021. Sockeye salmon have consistently met or exceeded escapement goals in both river systems since 1998. In 2018 and 2019, sockeye salmon returns were among some of the largest numbers on record and exceeded the upper bounds of Kanektok and Goodnews Rivers' aerial escapement goals by nearly an order of magnitude. Sockeye salmon escapements were lower in 2020 and 2021, but escapement goals in both river systems were met or exceeded. Chum salmon escapement monitored at the Goodnews River weir from 2003 to 2019 was above the escapement goal 13 out of 16 years. The low passages of Chinook salmon were in 2012, 2014, and 2015. Based on commercial catch statistics and subsistence reports, chum salmon run strength in 2020 and 2021 was well below average; however, the most recent subsistence reports indicate an average run size for chum salmon in 2023. Coho salmon escapement has not been fully assessed since 2011 due to variability in run timing, high water conditions during the peak of the run, and loss of funding for weirs or multiple aerial surveys. ADF&G relies on subsistence reports and catch statistics to approximate run strength for this species, and these data indicate average run strengths for 2023 and in recent years.

Subsistence

The subsistence salmon fishery in the Kuskokwim Area is one of the largest in Alaska. Many households throughout the area are harvesting, processing, and preserving salmon for subsistence use. In ADF&G's annual postseason subsistence salmon harvest survey effort in 2021, approximately 1,815 households harvested salmon. In 2021, these households represented 45% of the estimated 4,037 households in the area (McDevitt and Koster 2022). Households not directly involved in catching salmon participate by assisting family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning, and freezing). Surveys conducted between 2010 and 2014 found that, on average, salmon contributed 40% of the total subsistence resource harvest (in edible pounds) in the Lower Kuskokwim River communities, with contributions of salmon averaging 65% and 25% in the middle and upper river communities, respectively (McDevitt et al. 2020).

Alaska Statute Title 16.05.258, *Subsistence Use and Allocation of Fish and Game*, establishes the subsistence use priority for reasonable harvest opportunity consistent with sustained yield when

resources are not abundant enough to provide for all consumptive uses. In 1993, the BOF made a positive finding for the customary and traditional use of all salmon in the area. In 2001, ADF&G recommended that the BOF amend 5 AAC 01.286 to include a finding of the amounts reasonably necessary for subsistence (ANS) for the Kuskokwim Area using subsistence harvest data through 1999. During the 2013 BOF meeting, ANS ranges for the Kuskokwim Area were revised to 67,200–109,800 Chinook salmon, 41,200–116,400 chum salmon, 32,200–58,700 sockeye salmon, 27,400–57,600 coho salmon, and 500–2,000 pink salmon based on data from 1990 to 2011. The ANS range for District 4 (Quinhagak) and District 5 (Goodnews Bay) is 6,900–17,000 salmon, and the remainder of the Kuskokwim Area is 12,500–14,400 salmon.

COOPERATIVE MANAGEMENT PROCESS

The Kuskokwim River Salmon Management Working Group (Working Group) was formed in 1988 by the BOF in response to requests from stakeholders in the Kuskokwim River that sought a more active role in the management of salmon fishery resources (Francisco et al. 1989). The Working Group is the forum where inseason management decisions regarding Kuskokwim River subsistence, commercial, and sport salmon fisheries are discussed. Working Group representative participation in meetings in Bethel and outside the Kuskokwim River drainage allows for the exchange of information between members and fishery managers. Representatives can also testify at regulatory meetings in support of Working Group positions.

The Working Group met 8 times in 2023. During these meetings, fishery management information was presented by state and federal staff, Working Group members, Tribal organizations, fishery partners, and the public. The Working Group discussed subsistence fishing reports from members and the public; the lower Kuskokwim River inseason subsistence harvest report; test fishery project summaries; and reports from weir, sonar, and aerial survey programs.

FEDERAL SUBSISTENCE PROGRAM

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 prioritizes rural Alaska residents to take fish and wildlife on federal public lands. The ANILCA created regional advisory councils (RACs) to provide rural residents' input into the Federal Subsistence Program. On October 1, 1999, the Secretaries of Interior and Agriculture published regulations to expand federal involvement in subsistence fisheries to waters where the federal government claims a federal reserved water right (applicable waters). The Secretary of Interior and the Secretary of Agriculture delegated their authority in Alaska to the Federal Subsistence Board (FSB) to ensure rural residents receive a priority for subsistence taking on federal public lands and applicable waters. The FSB adopts federal subsistence fishing regulations. The RACs provide recommendations and information to the FSB, review policies and management plans, provide a public forum, and deal with other matters relating to subsistence uses. If necessary, the FSB may close fishing for other uses on federal public lands and applicable waters to ensure a priority for federally qualified rural subsistence use by issuing a Special Action.

Federal subsistence fishing schedules, openings, closings, and fishing methods are established in regulation (Department of Interior 36 CFR Part 242 and 50 CFR Part 100). These regulations are generally the same as those issued for the subsistence taking of fish under the Alaska Administrative Code; however, regulations differ in some cases.

SALMON RUN STRENGTH INDICATORS

Bethel Test Fishery

Daily inseason assessments of Kuskokwim River salmon run strength and timing are available from a drift gillnet test fishery operated 5 km upriver from Bethel. The project began in 1984, and the methodology has remained largely unchanged (Bue and Lipka 2016). The Bethel test fishery (BTF) catches from each tide are tallied by species, and the fish not released alive during sampling are distributed to the community as food. Catch statistics for Chinook, sockeye, chum, and coho salmon are presented as daily catch per unit effort (CPUE) indices and season cumulative CPUE indices by species (Bue and Lipka 2016). Comparisons are made to test fishery results from previous years; however, these comparisons are subjective because variables such as water level, fishing patterns, and changing river morphology can change year to year.

Historically, other test fisheries have been attempted in the Kuskokwim River: Kwegooyuk test fishery, 1966–1983 (Huttunen 1984); Eek test fishery, 1988–1994; Kuskokwim River subsistence test fishery, 1988–1990 (Kuskokwim Fishermen's Cooperative 1991); Aniak test fishery, 1992–1995 and 2015–2023; Chuathbaluk test fishery, 1992–1993; and the Lower Kuskokwim River test fishery, 1995. Most of these projects were initiated at the prompting of groups other than ADF&G. All except the Aniak test fishery were eventually discontinued for various reasons, including ambiguous results, consistency problems, difficulties with catch distribution, and lack of funding.

Bethel Sonar

The Kuskokwim River sonar project operates 20 km upriver from Bethel in the Kuskokwim River near the head of Church Slough. A 3-year study was initiated in 2014 to assess the feasibility of using sonar and drift gillnetting to estimate salmon abundance in the Kuskokwim River (Brodersen et al. 2016). Between 2017 and 2019, the sonar project operated between June 1 and July 26. This operational period provided timely information about the abundance of Chinook salmon, chum salmon, sockeye salmon, and whitefish species as they migrated up the Kuskokwim River (Birchfield and Smith 2019). The sonar operation end date was extended to August 25 starting in 2020 (Birchfield 2023). This extension was intended to provide information about the abundance of Kuskokwim River coho salmon. The abundance information provided by the sonar is considered ancillary to the Bethel test fishery and inseason harvest monitoring.

Inseason Subsistence Catch Monitoring

Inseason subsistence use interviews have been conducted in the Bethel area by Orutsararmiut Native Council (ONC) technicians in cooperation with ADF&G since 2001. The Fisheries Information Services (FIS) Division of the U.S. Fish and Wildlife Service (USFWS) Office of Subsistence Management (OSM) provides funding for this cooperative program. Information from the interviews and other fisheries information is used to assess salmon run timing and relative abundance. This program can provide timely insight into the subsistence fishery, a relative index of catches based on those interviewed, and an avenue for local user input into the management process. Summaries of interview responses are presented during Working Group meetings throughout the season.

Escapement Projects

In the Kuskokwim River drainage, escapement projects provide limited utility during the season because of the great distances between harvest areas and project locations. Consequently,

managers rely on the BTF, Kuskokwim River sonar, commercial catch statistics, and informal subsistence and sport fishery reports to augment escapement data.

Historically, ADF&G operated escapement monitoring projects in Kuskokwim Bay, such as fish weirs in the Kanektok and Middle Fork Goodnews Rivers, which were relatively close to the commercial fishing districts. The proximity of these projects to commercial fishing activity provided escapement data readily available for fisheries management inseason. Without weirs or other similarly comprehensive escapement projects, ADF&G uses historical commercial catch statistics and aerial surveys of spawning areas to inform inseason management decisions. Managers also rely upon timely information from subsistence and sport fisheries. Catch statistics are especially important in District 4, where reliable escapement monitoring has been historically lacking.

Postseason Subsistence Survey

In the months following each salmon fishing season, ADF&G conducts annual household surveys to collect information about the harvest and use of salmon in the Kuskokwim Area. ADF&G developed methods to estimate the total annual subsistence harvest in collaboration with local tribal organizations to complete the annual postseason harvest surveys (McDevitt and Koster 2022). Subsistence surveys primarily document information characterizing the harvest and use of Chinook, chum, sockeye, and coho salmon. This includes quantitative estimates of total annual salmon harvests in the subsistence fishery. Pink salmon are harvested in the area and are typically available only during even-numbered years. Data for subsistence pink salmon harvests have not been consistently collected during the annual fall survey efforts, nor for other anadromous and freshwater nonsalmon species such as sheefish and whitefishes, burbot, and northern pike.

Commercial Catch Statistics

Comparison of commercial catch statistics with historical data is another common method for assessing run strength; however, the utility of this information is limited. Commercial catch data can be confounded by inconsistencies in the number of fishing participants, the duration of commercial fishing periods, environmental conditions such as variable water depths, and other factors that might influence catch or fishing efforts.

Chinook Salmon Run Reconstruction

The Kuskokwim River Chinook salmon run reconstruction was first published in 2012 (Bue et al. 2012), and subsequent revisions were made in 2014 (Hamazaki and Liller 2015) and 2018 (Liller et al. 2018). Estimates of annual Kuskokwim River Chinook salmon total run and escapement since 1976 are made using a maximum likelihood model developed for use in data-limited situations. The model combines information on subsistence harvest, commercial catch and effort, sport harvest, test fishery harvest and CPUE at Bethel, mark–recapture estimates of inriver abundance, counts of salmon at 6 weirs, and peak aerial counts from 14 tributaries spread throughout the Kuskokwim River drainage (Larson 2023). Each of these data sources provides an index of total abundance. The model provides an approach to combine and weight available information about Kuskokwim River Chinook salmon abundance to arrive at a scientifically defensible estimate of total run size and escapement. Estimates produced by the model represent the most likely run size given the observed data. Estimates generated from the model have been combined with the available age structure of the stock information to reconstruct the total return by age and ultimately develop a brood table. The run reconstruction and brood table were used to

conduct a spawner–recruit analysis, develop (Hamazaki et al. 2012), and review (Liller and Savereide 2018) escapement goal recommendations for Kuskokwim River Chinook salmon.

2023 MANAGEMENT PLAN

In January 2013, after thorough public input, the BOF adopted a new *Kuskokwim River Salmon Management Plan* (5 AAC 07.365), which provides guidelines to manage the Kuskokwim River salmon fishery to meet escapement goals and subsistence use priority.

The BOF met in January 2016 to deliberate Arctic-Yukon-Kuskokwim in-cycle proposals. The BOF passed a proposal establishing specifications for beach seine gear used for subsistence fishing. Several other proposals sought to reduce the harvest of Chinook salmon as they migrate into the middle and upper Kuskokwim River, including one that proposed an early-season (or "front-end") closure to Chinook salmon subsistence fishing. The proposed front-end closure was supported by a group of Kuskokwim River fishery stakeholders who were in attendance. In support of the proposal, the BOF passed language that would annually suspend directed subsistence fishing for Chinook salmon in the Kuskokwim River until after June 11. The BOF's decision did not specify a start date for the front-end closure. Instead, they left that to be determined each year by ADF&G.

Also, in the 2016 meeting, the BOF deliberated on 2 proposals related to subsistence salmon fishing permits in the area. The BOF tabled the proposals until later to provide more time for public discussion of subsistence salmon fishing permits in the Kuskokwim River. The BOF met again in Anchorage in 2017 to reconsider the tabled proposals. It established a limited permit system from the Yukon Delta National Wildlife Refuge boundary at Aniak upstream to the Kuskokwim River. This permit's first and only implementation was in 2018.

At the March 2020 Statewide meeting, the BOF deliberated 1 area proposal to address legal subsistence fishing gear changes. After the front-end closure, the BOF passed a compromise proposal with substitute language allowing bank-oriented set gillnets with 6-inch or less mesh for subsistence salmon fishing. This amended the standing regulation that had limited set gillnet mesh size to 4 inches or less. Additionally, when Chinook salmon abundance is projected to be above the drainagewide escapement goal, the once-weekly bank-oriented set gillnet periods during the front-end closure are permitted to be fished with 6-inch or less mesh. If the projection is within the escapement goal range, the once-weekly bank-oriented set net periods during the front-end closure will still be fished with 4-inch or less mesh.

The Kuskokwim Bay fisheries are managed according to the *Districts 4 and 5 Management Plan* (5 AAC 07.367). These regulations provide ADF&G guidance about establishing commercial fishing periods.

2023 COMMERCIAL SALMON FISHERY

No licensed commercial salmon buyers or processors operated within the Kuskokwim Area in 2023. Consequently, besides limited opportunities for catcher–sellers in District 1, no commercial fisheries occurred in the area in 2023 (Tables 2 and 3).

KUSKOKWIM RIVER

Catcher–sellers were provided 8 fishing periods in District 1 from August 16 to August 30 to target coho salmon for direct consumer marketing. Because few individuals are registered as catcher–

sellers, confidentiality requirements prohibit the release of their commercial harvest data. (Tables 5 and 6).

KUSKOKWIM BAY

There was no commercial salmon fishery in Districts 4 and 5 in 2023 (Tables 14–17).

2023 SUBSISTENCE SALMON FISHERY

KUSKOKWIM RIVER

The 2023 Kuskokwim River Chinook salmon forecast was for a range of 115,000 and 170,000 fish. The drainagewide Chinook salmon escapement goal is 65,000–120,000 fish. Preseason management actions to achieve escapement goals included early-season subsistence fishing closures, tributary closures, time and area restrictions, gillnet mesh size and length restrictions, and live release requirements.

Between June 1 and August 13, a Federal Special Action (FSA) closed the Kuskokwim River gillnet fishery to non-federally qualified use within the Yukon Delta National Wildlife Refuge (YDNWR) boundary. The USFWS determined that adopting the FSA was warranted due to the expectation that Chinook and coho salmon runs were below average and that the chum salmon run forecast indicated a poor run. The early-season front-end closure to gillnet subsistence fishing began on June 1, from the YDNWR boundary at the mouth of the Kuskokwim River upriver to the YDNWR boundary at Aniak (Subsistence Sections 1–3). On June 7, the front-end closure began upstream of the YDNWR boundary at Aniak to the Kuskokwim River headwaters (Subsistence Sections 4 and 5). With the closure came additional restrictions, including tributary closures and required live release of Chinook and chum salmon captured in selective gears. Subsequently, at 12:01 AM June 7, ADF&G opened Sections 4 and 5 to subsistence fishing until further notice with gillnets of 6-inch or less mesh and up to 25 fathoms in length. Subsistence Section 4 (from the refuge boundary at Aniak to the Holitna River mouth) and Section 5 (Holitna River mouth to headwaters) are located outside the YDNWR boundary and were not subject to the FSA. On June 20, the USFWS opened those waters between the Kalskag Bluffs to the YDNWR boundary at Aniak until further notice to subsistence fishing with gillnets of 6-inch or less mesh and 25 fathoms in length.

During the FSA, the USFWS offered 6-inch set gillnet opportunities on June 3, 6, and 9. The USFWS also offered a 24-hour set gillnet fishing period June 30–July 1; 48 hours July 4–6; 12 hours July 7–8; three 12-hour periods on July 17, 19, and 21; and two 6-hour periods on July 24 and 26. During those openings, subsistence fishing was allowed with set gillnets of 6-inch or less mesh and 75 feet long. The USFWS offered seven 12-hour set and drift gillnet fishing periods on June 12, 17, and 23; July 7; and August 3, 9, and 12. Additionally, the USFWS offered a 6-hour set and drift gillnet fishing period on July 11. During these periods, subsistence fishing was allowed with drift gillnets of 6-inch or less mesh, 25 fathoms above the Johnson River mouth and 50 fathoms below the Johnson River mouth.

On July 7, the USFWS also offered a fishing period for subsistence fishing using rod and reel for Chinook salmon with some bag and possession limits. Rod and reel were prohibited gear for retaining chum or coho salmon. Harvests of sockeye salmon with rod and reel gear were not restricted. Fishing with rod and reel was allowed between the ADF&G regulatory marker below the Aniak River mouth and upstream to the YDNWR boundary (aka “the Aniak box”). On

August 1, the USFWS allowed the retention of coho salmon caught with rod and reel in the Kuskokwim River and all tributaries within YDNWR.

On August 13, the USFWS rescinded the FSA and the associated fishing closures that had been in place in the Kuskokwim River within the YDNWR boundaries. On August 14, ADF&G resumed fisheries management in Subsistence Sections 1–3 and subsequently opened subsistence fishing with gillnets until further notice from the mouth of the Kuskokwim River upstream to its headwaters. Based on preliminary inseason run assessment data, ADF&G determined that ending restrictions to fishing with gillnets was warranted. The BTF cumulative CPUE on August 10 for coho salmon was 1,977; the total coho salmon passage past the sonar was 198,000 fish. These BTF and sonar data indicated that the coho salmon escapement goals at the Kwethluk River weir and Kogrukluk River weir would be met. On average, approximately 58% of the coho salmon run has passed through Bethel on August 10 each year. By August 10, an average of 100% of the Chinook salmon run, 100% of the sockeye salmon run, and 99% of the chum salmon run will have passed through Bethel. The tributary restrictions were kept in place beyond the mainstem restrictions for conservation while Chinook and chum salmon were on their spawning grounds.

KUSKOKWIM BAY

The BOF met via web conference on April 19, 2023, to consider a proposal concerning District 4 (Quinhagak) subsistence and commercial fisheries. The BOF adopted that proposal and established changes that went into effect beginning in 2023. Regulation changes closed District 4 to subsistence and commercial fishing on all Sundays between June 1 and July 15. Also, only 1 gillnet can operate per boat in District 4 commercial and subsistence fisheries between June 1 and July 15. Subsistence fishing without restrictions was permitted in District 5 (Goodnews Bay) throughout the 2023 season. There were no commercial salmon fishing periods in Districts 4 and 5 in 2023 due to a lack of a buyer or processor.

SUBSISTENCE HARVEST

Subsistence harvests of Chinook, chum, sockeye, and coho salmon remained relatively stable from 1990 to 2011, with an annual average of approximately 243,000 fish harvested within the area. From 2011 to 2020, total salmon harvest declined to an average of 169,457 fish per year within the area. The areawide decline in salmon harvest is mostly due to reduced Chinook salmon harvest because of below-average run sizes and subsistence salmon fishing restrictions (Tables 10–13). The area's 2023 total subsistence salmon harvest estimate was 160,716 fish (Table 21). Residents of communities in the Lower Kuskokwim River, from Tuntutuliak and Eek, to Tuluksak, took approximately 84% of the total 2023 subsistence salmon harvest. The lower river communities are relatively densely populated and include approximately 75% of the total households in the area (McDevitt and Koster 2022). In 2023, subsistence salmon harvests in the Kuskokwim River drainage included an estimated 37,091 Chinook, 57,434 sockeye, 25,093 chum, 25,892 coho, and 1,236 pink salmon. The estimated total subsistence harvest of salmon in Kuskokwim Bay (i.e., Districts 4 and 5) was 13,971 fish. These harvests included an estimated 3,344 Chinook, 5,647 sockeye, 2,609 chum, 2,248 coho, and 123 pink salmon.

2021 BETHEL TEST FISHERY ASSESSMENT

In 2023, the BTF operated from June 1 through August 24 (Table 22). During the 85 days, there were 147 high tides in which 516 drifts resulted in cumulative CPUE indices of 382 Chinook, 1,788 sockeye, 4,160 coho, and 4,303 chum salmon (Tables 22 and 23). Chinook, sockeye, and

chum salmon migrations had primarily all passed the BTF site before the project ended, but catches of sockeye and coho salmon continued through the final drift session. Twenty-four days during the project's operational period had only 1 high tide. Seven tides were missed during the 2022 season due to weather or mechanical issues.

CHINOOK SALMON

The BTF caught the first Chinook salmon on June 2. The greatest daily CPUE index of 25 occurred on June 28, and the cumulative daily CPUE index through August 24 was 382. Based on the cumulative index, the central 50% of the run passed the BTF site between June 19 and July 2, and the midpoint occurred on June 25, 3 days later than the average midpoint of June 22 (Table 22). The season total cumulative index of 382 was well below the 10-year average (2013–2022) of 568 (Table 23).

SOCKEYE SALMON

The BTF caught the first sockeye salmon on June 9. The peak daily CPUE index of 243 occurred on July 7, and the cumulative CPUE index through August 24 was 1,788. Based on the cumulative CPUE index, the central 50% of the sockeye salmon run passed the BTF site between June 29 and July 8, and the midpoint of passage occurred on July 5 (Table 22). The season total cumulative index was slightly below the 2013–2022 average of 1,889 (Table 23).

CHUM SALMON

The first chum salmon was caught in the BTF on June 2. The peak daily CPUE index of 240 occurred on July 21, and the cumulative CPUE index through August 24 was 4,303. Based on the cumulative CPUE index, the central 50% of the chum salmon run passed the BTF site between July 7 and July 21, and the midpoint of passage occurred on July 15 (Table 22). The total cumulative CPUE index was slightly below the 2013–2022 average of 4,426 (Table 23).

COHO SALMON

The first coho salmon was caught in the BTF on July 14 and catches continued through the last drift session of the season on August 24. The peak daily CPUE index of 300 occurred on August 6, and the cumulative CPUE index through August 24 was 4,160. Based on the cumulative CPUE index, the central 50% of the coho salmon run passed the BTF site between August 5 and August 17, and the midpoint of passage occurred on August 11 (Table 22). The cumulative CPUE index was above the 2013–2022 average of 2,456 (Table 23).

2023 KUSKOKWIM RIVER SONAR ASSESSMENT

The Kuskokwim River sonar project operated from June 9 through August 26, and sonar uptime was measured as the total duration for which each unit was fully functional and running. The ARIS (adaptive resolution imaging sonar) uptime was 70.6 days, the DIDSON (dual-frequency identification sonar) uptime was 65.8 days, and the HTI (Hydroacoustic Technology Inc.) split-beam uptime was 73.3 days out of approximately 78 days of project operations. There were no full days of downtime following deployment, but the start date was delayed by 9 days due to high water. An estimated 3,099,859 fish passed the sonar site from June 9 through August 26.

SALMON

The Chinook salmon passage estimate was 79,166 fish (95% CI: 63,371–94,961), with median run timing occurring June 28. The sockeye salmon passage estimate was 899,180 fish (95% CI: 851,441–946,919), with median run timing occurring July 7. The chum salmon passage estimate was 251,542 fish (95% CI: 210,925–292,159), with median run timing occurring July 18. The coho salmon passage estimate was 379,736 fish (95% CI: 286,730–472,742). The average coho salmon daily passage during the final 3 days of operations was 1.1% of total passage, indicating incomplete coho salmon passage and run timing estimates. The pink salmon passage estimate was 23,218 fish (95% CI: 8,587–37,849), with median run timing occurring July 21 (Table 24).

NONSALMON

All nonsalmon species totaled 1,467,017 fish (95% CI: 1,336,365–1,597,669). The combined Bering and least Cisco passage estimate was 819,784 fish (95% CI: 714,584–924,984), with median run timing on August 5. The broad whitefish passage estimate was 8,879 fish (95% CI: 0–29,920), with median run timing on August 9. The humpback whitefish passage estimate was 598,832 fish (95% CI: 525,111–672,553), with median run timing occurring July 24. The sheefish passage estimate was 28,551 fish (95% CI: 18,519–38,583), with median run timing occurring July 11. Other species (including burbot, Dolly Varden, northern pike, and longnose sucker) totaled 10,971 fish (95% CI: 5,994–15,948; Table 24).

2023 ESCAPEMENT

The large size, remoteness, and geomorphic diversity of the Kuskokwim Area present challenges to monitoring salmon escapements and assessing salmon run abundance. For the last 2 decades, efforts have been taken to expand coverage and apply new technologies to improve the estimation of salmon run timing and run strength monitoring by comparing the current year to historical information. Aerial spawning ground surveys have been the most cost-effective means of monitoring salmon escapements. The more thorough projects such as weirs, counting towers, and sonar have been operated in only a few locations because of costs and limited utility (Tables 25–29). Since 2000, the number of escapement projects in the area has increased through cooperative partnerships with federal agencies and local organizations. These cooperative efforts have added substantially to ADF&G's ability to monitor salmon escapements and to evaluate the effectiveness of management actions postseason.

There are 17 established escapement goals within the Kuskokwim Area, with 9 within the Kuskokwim River and 8 within Kuskokwim Bay. The Kuskokwim River tributaries have 4 Chinook, 1 sockeye, 2 coho, and 1 chum salmon goal (Tables 25–28). Beginning in 2013, a Kuskokwim River drainagewide Chinook salmon escapement goal of 65,000–120,000 fish was established (Table 4). Within Kuskokwim Bay are 3 Chinook, 1 chum, 1 coho, and 3 sockeye salmon goals (Tables 18, 19, and 30). Comprehensive reviews of escapement data for most area goals are conducted in unison with the Kuskokwim Area BOF cycle. The last escapement goal review was completed in 2022 for the 2023 BOF meeting (Liller and Savereide 2022).

2023 ESCAPEMENT ASSESSMENT

As described above, numerous escapement assessment projects exist throughout the Kuskokwim River drainage (Figure 6) and Kuskokwim Bay drainage (Figure 7). Methods, daily passage counts, climate and hydrological information, and escapement age, sex, and length (ASL)

information can be found in annual project reports such as Froning and Smith (2020). The AYKDBMS[2] contains current and historical ASL information from the area escapement monitoring projects (past and present), escapement counts, and catch statistics from area commercial and subsistence harvests.

Kuskokwim River

Kwethluk River Weir

Kwethluk River weir escapement included 36,035 coho salmon. No escapement estimates were available for Chinook, chum, or sockeye salmon because actual operational dates were inadequate for reliable escapement estimates (Tables 25–28). Coho salmon escapement exceeded the sustainable escapement goal (SEG) of at least 19,000 fish.

Salmon River (Aniak) Weir

Salmon River (Aniak) weir escapements included 1,228 Chinook, 2,693 sockeye, and 4,050 chum salmon (Tables 25, 26, and 28). No escapement estimates were available for coho salmon because weir operations ended before the arrival of the majority of the run.

George River Weir

George River weir escapements included 2,834 Chinook, 1,181 sockeye, 15,253 chum, and 33,439 coho salmon (Tables 25–28). Chinook salmon escapement fell within the SEG range of 1,800–3,300 fish.

Kogrukluk River Weir

Kogrukluk River weir escapement included 28,132 coho salmon. No escapement estimates were available for Chinook, chum, or sockeye salmon because actual operational dates were inadequate to produce reliable escapement estimates (Tables 25–28). Coho salmon escapement exceeded the SEG range of 13,000-28,000 fish.

Takotna River Weir

The Takotna River weir escapement included 233 Chinook salmon and 2,763 chum salmon. This project did not assess other salmon species (Tables 25–28).

Telaquana River Weir

The Telaquana River sockeye salmon escapement was 283,014 fish (Table 26), the highest observed escapement on record since the weir was established in 2010.

Salmon River (Pitka Fork) Weir

Salmon River (Pitka Fork) Chinook salmon escapement was 4,791 fish (Table 25). Other salmon species were not assessed at this project.

[2] Arctic-Yukon-Kuskokwim Database Management System (AYKDBMS). 2006– . Alaska Department of Fish and Game, Division of Commercial Fisheries. Juneau, AK. https://www.adfg.alaska.gov/CF_R3/external/sites/aykdbms_website/Default.aspx (accessed July 2023).

Kuskokwim Bay

Middle Fork Goodnews River Weir

Due to budgetary constraints, the Middle Fork Goodnews River weir did not operate during the 2023 season (Table 30). Therefore, none of the established escapement goals for Chinook, chum, sockeye, and coho salmon were evaluated.

AERIAL SURVEYS

Aerial survey escapement goals do not represent the entire spawning populations in surveyed streams. The surveys are conducted once each season during a window of time when the maximum numbers of fish are expected to be on the spawning grounds (July 17 to August 5). The estimates of salmon observed during aerial surveys represent minimum spawning escapements. The escapement goals developed from these surveys are based on the raw, unexpanded counts; therefore, each count serves as an index of abundance rather than a complete census. All aerial survey counts presented herein were flown under either optimal or good survey conditions.

Aerial surveys are generally conducted on clearwater streams, lakes, and coastal streams throughout the Kuskokwim Area. Tributaries in the middle and upper Kuskokwim River are often stained by organic compounds and particulate matter or clouded by sediments from glacier runoff. Such sources of dissolved and suspended material markedly reduce water clarity and fish visibility. Aerial surveys are best directed at indexing Chinook and sockeye salmon spawning populations because these fish are typically more visible than chum and coho salmon.

KUSKOKWIM RIVER AERIAL SURVEYS

Lower, Middle, and Upper Kuskokwim River

Eight aerial surveys were carried out for Chinook salmon in the Kuskokwim River during 2023 (Table 29). A single aerial survey escapement goal was evaluated in the Pitka Fork of the Salmon River in the Kuskokwim River headwaters. The Chinook salmon aerial survey estimate at the Salmon (Pitka Fork) River was 671 fish, which fell within the SEG range of 470–1,600.

KUSKOKWIM BAY

An aerial survey was completed on the Kanektok River in 2023. The Chinook salmon aerial survey SEG of 3,900–12,000 fish was achieved with an estimated 6,688 fish. The sockeye salmon aerial survey SEG of 15,300–41,000 fish was exceeded with an estimate of 90,360 fish (Table 18).

An aerial survey was completed on the North Fork Goodnews River in 2023. The Chinook salmon aerial survey SEG of 640–3,300 fish was exceeded with a count of 4,336 fish. The sockeye salmon aerial survey SEG of 9,600–18,000 fish was exceeded, with 33,020 fish counted (Table 19).

KUSKOKWIM HERRING FISHERY

The Kuskokwim Area herring fishery includes all waters of Alaska that flow into the Bering Sea between Cape Newenham and the Naskonat Peninsula (lat 60°58.17′N, long 165°11′W) to 3 miles seaward as well as the waters surrounding Nunivak and St. Matthew Islands to 3 miles seaward (5 AAC 27.870). This area supports a subsistence Pacific herring (*Clupea pallasii*) fishery and historically supported 5 commercial herring sac roe districts. Herring stock assessment activities occurred until 2013, when the commercial market left the Kuskokwim Area. Tiernan and Gray (2020) provide a complete history of the assessment and harvest of Kuskokwim Area herring.

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TABLES AND FIGURES

Table 1.–Commercial salmon harvest, excluding personal use, Kuskokwim Area, 1960–2023.

	Commercial harvest					
Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960[a]	5,969	5,649	5,498	0	0	17,116
1961[a]	23,246	2,308	5,090	90	18,864	49,598
1962[a]	20,867	10,313	12,432	4,340	45,707	93,659
1963[a]	18,571	0	15,660	0	0	34,231
1964[a]	21,230	13,422	28,992	939	707	65,290
1965[a]	24,965	1,886	12,191	0	4,242	43,284
1966	25,823	1,030	22,985	268	2,610	52,716
1967	29,986	652	58,239	0	8,235	97,112
1968	43,157	5,884	154,275	75,818	19,684	298,818
1969	64,777	10,362	110,473	1,251	50,377	237,240
1970	64,722	12,654	62,245	27,422	60,566	227,609
1971	44,936	6,054	10,006	13	99,423	160,432
1972	55,598	4,312	23,880	1,952	97,197	182,939
1973	51,374	5,224	152,408	634	184,207	393,847
1974	30,670	29,003	179,588	60,099	196,127	495,487
1975	28,219	17,705	110,576	915	225,308	382,723
1976	49,262	14,636	112,130	39,998	231,877	447,903
1977	58,256	18,621	263,727	434	298,959	639,997
1978	63,194	13,734	247,271	61,968	282,044	668,211
1979	53,314	39,463	308,683	574	297,167	699,201
1980	48,599	42,213	327,878	30,306	560,943	1,009,939
1981	79,377	105,940	278,551	463	485,653	949,984
1982	79,816	97,716	567,452	18,259	326,481	1,089,724
1983	93,676	90,834	248,389	379	306,554	739,832
1984	74,017	81,304	826,774	23,902	488,480	1,494,477
1985	74,083	121,221	382,096	111	224,680	802,191
1986	44,972	142,029	736,910	16,561	349,269	1,289,741
1987	65,558	170,849	478,594	163	603,274	1,318,438
1988	74,563	149,949	623,733	37,645	1,443,953	2,329,843
1989	67,003	82,628	556,312	819	802,199	1,508,961
1990	84,449	203,918	443,783	16,082	520,885	1,269,117
1991	48,170	202,441	556,818	522	502,187	1,310,138
1992	67,597	192,341	772,449	85,978	436,506	1,554,871
1993	26,636	167,235	686,570	71	94,937	975,449
1994	27,345	191,169	856,100	84,870	360,893	1,520,377
1995	72,352	198,045	555,539	318	707,212	1,533,466
1996	22,959	122,260	1,099,853	1,663	301,975	1,548,710
1997	47,990	123,002	166,648	7	67,200	404,847
1998	44,192	129,449	311,910	2,720	267,059	755,330
1999	25,019	81,201	32,251	2	72,659	211,132
2000	26,115	109,939	307,439	17	49,573	493,083
2001	14,384	59,545	220,804	0	21,893	316,626

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Table 1.–Page 2 of 2.

Year	Commercial harvest					
	Chinook	Sockeye	Coho	Pink	Chum	Total
2002	12,531	24,190	113,199	0	34,951	184,871
2003	16,014	63,646	346,555	0	36,225	462,440
2004	30,332	63,682	541,894	0	51,935	687,843
2005	31,014	120,379	205,762	19	85,236	442,410
2006	24,860	148,784	224,905	1	94,981	493,531
2007	22,878	153,812	189,456	6	79,864	446,016
2008	23,958	112,581	259,681	15	98,239	494,474
2009	22,093	170,370	161,073	18	185,099	538,653
2010	18,721	201,869	76,621	7	227,441	524,659
2011	18,226	76,613	119,938	2	236,466	451,245
2012	8,576	91,192	143,123	0	150,822	393,713
2013	2,723	51,682	156,777	1	122,966	334,149
2014	2,470	82,114	222,063	3	37,046	343,696
2015	8,254	56,260	148,349	0	21,068	233,931
2016	[b]	[b]	[b]	[b]	[b]	[b]
2017	[b]	[b]	[b]	[b]	[b]	[b]
2018	[b]	[b]	[b]	[b]	[b]	[b]
2019	[b]	[b]	[b]	[b]	[b]	[b]
2020[c]	4,787	142,708	40,302	0	9,568	197,365
2021[c]	2,582	114,425	14,204	29	5,845	137,085
2022	[d]	[d]	[d]	[d]	[d]	[d]
2023	[d]	[d]	[b]	[d]	[b]	[b]

[a] Includes harvests from District 3.

[b] Confidential information.

[c] Harvest from Districts 4 and 5 only. All other districts are confidential.

[d] No commercial fishery occurred.

Table 2.–Estimated exvessel value of the commercial salmon harvest and permits fished, Kuskokwim Area, 1987–2023.

	District 1		District 2		District 4		District 5			
Year	Value of catch ($)	Permits fished [a]	Value of catch ($)	Permits fished [a]	Value of catch ($)	Permits fished [a]	Value of catch ($)	Permits fished [a]	Total value ($)	Total permits
1987	4,893,016	705	139,049	29	858,818	310	572,293	116	6,463,176	800
1988	10,060,427	745	246,069	29	1,381,661	289	1,038,041	125	12,726,198	813
1989	3,883,321	743	131,168	30	746,071	227	378,962	88	5,139,522	824
1990	3,385,636	742	121,329	22	1,013,472	390	360,664	82	4,881,101	823
1991	2,971,767	749	111,651	23	592,436	346	274,919	72	3,950,773	819
1992	3,764,804	741	147,992	22	993,664	349	405,447	111	5,311,907	814
1993	2,860,795	737	90,906	20	898,255	408	441,135	114	4,291,091	804
1994	3,581,992	706	129,555	17	837,157	307	649,747	116	5,198,451	793
1995	2,766,882	712	107,913	21	1,047,188	382	286,398	87	4,208,381	798
1996	2,117,245	620	11,015	8	534,726	218	222,589	54	2,885,575	714
1997	2,288,766	604	2,944	4	497,071	289	122,868	53	2,911,649	702
1998	983,633	615	617	3	467,843	203	184,265	50	1,636,358	707
1999	169,769	509	0	0	279,091	218	103,662	73	552,522	604
2000	514,930	532	3,039	4	436,561	230	213,014	46	1,167,544	623

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Table 2.–Page 2 of 2.

Year	District 1 Value of catch ($)	District 1 Permits fished [a]	District 2 Value of catch ($)	District 2 Permits fished [a]	District 4 Value of catch ($)	District 4 Permits fished [a]	District 5 Value of catch ($)	District 5 Permits fished [a]	Total value ($)	Total permits
2001	424,199	412	[b]	[b]	228,615	159	98,849	32	751,663	514
2002	126,361	318	[b]	[b]	167,749	114	24,802	30	318,912	407
2003	453,187	359	[b]	[b]	304,553	114	135,107	34	892,847	438
2004	943,766	390	[b]	[b]	405,345	116	135,246	29	1,484,357	467
2005	448,853	403	[b]	[b]	571,965	145	134,295	29	1,155,113	484
2006	451,390	373	[b]	[b]	551,182	132	141,265	24	1,143,837	453
2007	380,840	366	[b]	[b]	660,865	125	222,330	28	1,264,035	456
2008	538,310	374	[b]	[b]	750,731	146	198,070	25	1,487,111	462
2009	502,848	342	[b]	[b]	747,325	179	192,031	39	1,442,204	434
2010	765,606	433	[b]	[b]	1,655,321	241	470,661	48	2,891,588	530
2011	764,358	413	[b]	[b]	1,176,436	219	346,022	48	2,286,816	510
2012	597,998	379	[b]	[b]	824,435	179	617,765	58	2,040,198	477
2013	1,184,847	378	[b]	[b]	761,537	197	452,651	71	2,399,035	469
2014	843,356	358	[b]	[b]	858,638	194	584,654	61	2,286,648	457
2015	246,016	283	[b]	[b]	498,564	189	131,616	61	876,196	396
2016	[c]	[c]	[b]	[b]	[b]	[b]	[b]	[b]	[c]	[c]
2017	[c]	[c]	[b]	[b]	[b]	[b]	[b]	[b]	[c]	[c]
2018	[c]	[c]	[b]	[b]	[b]	[b]	[b]	[b]	[c]	[c]
2019	[c]	[c]	[b]	[b]	[b]	[b]	[b]	[b]	[c]	[c]
2020[d]	[c]	[c]	[b]	[b]	468,074	67	128,196	17	596,270	78
2021[d]	[c]	[c]	[b]	[b]	357,273	74	136,186	13	493,460	87
2022	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2023	[c]	[c]	[b]	[b]	[b]	[b]	[b]	[b]	[c]	[c]
Average 2008–2022	–	–	–	–	809,833	169	325,785	44	1,679,953	390

Note: En dash means no data.

[a] Number of permits that made at least 1 delivery.

[b] No commercial fishery occurred.

[c] Confidential information.

[d] Harvest from Districts 4 and 5 only.

Table 3.–Commercially harvested salmon average weights and prices paid, Kuskokwim Area, 1967–2023.

	Average weight (lb)					Average price per pound ($)				
Year	Chinook	Sockeye	Coho	Pink	Chum	Chinook	Sockeye	Coho	Pink	Chum
1967	27.8	7.4	5.9	–	7.0	0.13	0.05	0.09	–	0.04
1968	23.8	6.2	7.2	4.0	7.9	0.16	0.10	0.09	0.05	0.04
1969	19.6	6.2	7.3	3.6	5.8	0.19	0.15	0.10	0.06	0.07
1970	18.9	5.4	7.3	3.3	6.1	0.20	0.21	0.14	0.08	0.08
1971[a]	26.2	6.9	6.1	–	6.4	0.17	0.10	0.13	–	0.08
1972	24.7	–	6.4	–	6.5	0.20	–	0.16	–	0.08
1973	26.7	–	5.8	–	6.8	0.25	–	0.26	–	0.19
1974	17.1	6.3	7.5	4.1	6.8	0.46	0.34	0.27	0.23	0.25
1975	14.9	–	8.2	–	6.4	0.54	–	0.31	–	0.26
1976[b]	17.0	6.7	7.8	3.5	7.0	0.64	0.43	0.40	0.25	0.27
1977	22.7	8.3	7.8	3.9	7.3	1.15	0.45	0.65	0.25	0.45
1978	24.2	6.5	7.1	3.9	8.9	0.50	0.49	0.40	0.12	0.32
1979	16.6	6.9	7.9	3.9	7.0	0.66	0.53	0.75	0.11	0.37
1980	14.1	6.7	6.9	3.6	6.4	0.47	0.31	0.64	0.12	0.24
1981	17.8	7.2	6.4	3.5	7.5	0.84	0.61	0.63	0.11	0.23
1982	19.3	7.2	7.3	3.6	7.3	0.82	0.41	0.53	0.05	0.22
1983	18.8	6.8	6.8	3.5	7.4	0.54	0.51	0.39	0.05	0.33
1984	16.4	6.6	7.7	3.2	6.7	0.89	0.52	0.55	0.07	0.28
1985	17.0	7.0	7.5	3.6	7.1	0.71	0.59	0.51	0.05	0.25
1986	17.0	7.2	6.4	3.4	6.8	0.80	0.70	0.60	0.05	0.25
1987	15.2	7.5	7.2	3.7	6.8	1.10	1.30	0.73	0.10	0.27
1988	14.1	7.3	7.2	3.4	6.9	1.30	1.42	1.25	0.15	0.40
1989	16.6	7.2	7.3	3.4	6.8	0.75	1.20	0.55	0.05	0.26
1990	15.1	6.7	6.5	3.2	6.9	0.56	1.05	0.62	0.12	0.26
1991	15.3	6.9	6.5	3.4	6.3	0.56	0.67	0.45	0.12	0.31
1992	13.4	7.0	7.3	3.9	6.8	0.66	0.90	0.45	0.06	0.32
1993	14.3	7.1	6.6	3.4	6.5	0.62	0.70	0.58	0.25	0.40
1994	15.6	6.9	7.6	3.6	6.6	0.51	0.53	0.57	0.08	0.21
1995	17.3	6.9	7.2	3.7	6.9	0.60	0.71	0.41	0.12	0.18
1996	15.7	7.2	8.0	3.8	7.2	0.26	0.40	0.25	0.12	0.11
1997	16.2	7.1	7.5	2.7	7.3	0.28	0.42	0.33	0.10	0.12
1998	14.2	6.8	7.8	3.8	6.9	0.27	0.53	0.32	0.10	0.13

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Table 3.–Page 2 of 2.

Year	Average weight (lb)					Average price per pound ($)				
	Chinook	Sockeye	Coho	Pink	Chum	Chinook	Sockeye	Coho	Pink	Chum
1999	15.5	6.5	6.6	3.0	7.3	0.32	0.58	0.32	0.05	0.10
2000	15.6	6.8	6.9	3.2	7.6	0.39	0.55	0.28	0.10	0.10
2001	20.0	7.6	7.7	–	7.5	0.36	0.35	0.28	–	0.10
2002	13.9	6.7	7.9	–	7.9	0.35	0.35	0.20	–	0.10
2003	13.6	7.3	6.9	–	8.0	0.35	0.44	0.10	–	0.21
2004	12.1	6.6	6.9	–	6.9	0.35	0.35	0.32	–	0.08
2005	14.5	6.7	7.4	3.7	6.7	0.59	0.55	0.27	0.05	0.05
2006	13.9	6.4	6.3	4.0	6.9	0.54	0.48	0.33	0.25	0.05
2007	14.1	6.6	7.2	–	6.8	0.59	0.53	0.38	–	0.05
2008	12.9	6.7	7.1	4.2	7.1	0.73	0.58	0.43	0.06	0.05
2009	13.1	6.5	7.6	3.5	6.9	0.71	0.56	0.35	0.00	0.15
2010	13.1	6.8	7.1	2.8	6.9	1.60	1.13	1.01	0.00	0.26
2011	12.5	6.5	7.1	4.0	6.4	0.85	0.86	0.75	0.00	0.68
2012	15.3	6.8	6.1	0.0	6.6	0.85	0.85	0.73	0.00	0.77
2013	17.1	6.4	7.6	0.0	6.8	1.00	1.00	1.00	0.00	1.00
2014	10.5	5.7	7.0	4.3	6.6	1.00	1.25	0.96	0.00	0.60
2015	10.1	6.1	8.0	0.0	6.4	0.50	0.50	0.49	0.00	0.50
2016	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
2017	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
2018	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
2019	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
2020[d]	9.9	5.3	7.9	0.0	8.2	0.55	0.55	0.45	0.00	0.15
2021[d]	11.3	6.0	6.9	4.7	7.4	0.80	0.60	0.50	0.05	0.15
2022	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]
2023	[e]	[e]	[c]	[e]	[c]	[e]	[e]	[c]	[e]	[c]
Average 2008–2022	12.6	6.3	7.2	2.4	6.9	0.9	0.8	0.7	0.0	0.4

Note: En dash means no data.

[a] Information on price per pound was not available for District 5.

[b] Information was not available for District 4.

[c] Confidential information.

[d] Information available only for Districts 4 and 5.

[e] No commercial fishery occurred.

Table 4.–Estimated total run and escapement of Chinook salmon and harvest utilization Kuskokwim River, 1990–2023.

Year	Estimated total run	Estimated escapement	Harvest				
			Subsistence	Commercial [a]	Sport	Test fish [b]	Total
1990	270,020	105,834	109,778	53,504	394	257	163,933
1991	215,900	102,752	74,820	37,778	401	149	113,148
1992	261,053	129,953	82,654	46,872	367	518	130,411
1993	277,856	178,189	87,674	8,735	587	2,515	99,511
1994	406,098	283,994	103,343	16,211	1,139	1,850	122,543
1995	373,831	239,102	102,110	30,846	541	1,001	134,498
1996	306,070	200,495	96,413	7,419	1,432	247	105,511
1997	298,489	207,155	79,381	10,441	1,227	332	91,381
1998	189,600	89,628	81,213	17,359	1,434	210	100,216
1999	161,598	83,005	72,775	4,705	252	98	77,830

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Table 4.–Page 2 of 2.

Year	Estimated total run	Estimated escapement	Harvest				
			Subsistence	Commercial [a]	Sport	Test fish [b]	Total
2001	206,792	128,152	78,009	90	290	0	78,389
2002	224,504	142,656	80,982	72	319	0	81,373
2003	232,722	164,017	67,134	158	401	0	67,693
2004	364,208	263,567	96,788	2,305	857	19	99,969
2005	326,453	234,677	85,863	4,784	572	2	91,221
2006	320,091	225,706	90,812	2,777	444	0	94,033
2007	244,891	148,031	94,898	179	1,683	0	96,760
2008	213,331	114,426	88,912	8,865	739	0	98,516
2009	189,192	101,258	79,896	6,664	917	0	87,477
2010	113,266	42,602	67,286	2,732	354	0	70,372
2011	115,713	51,684	62,366	747	757	0	63,870
2012	80,837	57,345	22,544	627	0	0	23,171
2013	84,404	36,916	47,113	174	0	0	47,287
2014	85,035	73,269	11,234	35	0	0	11,269
2015	125,745	109,141	16,124	8	0	0	16,132
2016	131,446	100,228	30,693	[c]	0	0	30,693
2017	131,358	114,688	16,380	[c]	0	0	16,380
2018	132,532	109,801	22,264	[c]	0	0	22,264
2019	220,554	182,050	37,941	[c]	0	0	37,941
2020	124,322	88,121	35,847	[c]	0	0	35,847
2021	129,556	100,805	28,365	[c]	0	0	28,365
2022	142,495	107,980	34,134	[d]	0	0	34,134
2023	134,007	96,630	37,091	[d]	0	0	37,091
SEG	–	65,000–120,000[e]	–	–	–	–	–
Average 2013–2022	130,745	102,300	28,010	NA	0	0	28,031

Note: Total run and escapement values were estimated using the Kuskokwim River Chinook salmon run reconstruction model (Larson 2023). SEG means sustainable escapement goal; en dash means no data.

[a] Not including personal use.

[b] Test fishery sales only; does not include community distribution.

[c] Confidential information.

[d] No commercial fishery.

[e] Escapement goal established in 2013; prior years should not be compared.

Table 5.–Commercial salmon harvest in Districts 1 and 2 combined, including personal use, 1960–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960[a]	5,969	0	2,498	0	0	8,467
1961[a]	18,918	0	5,044	0	0	23,962
1962[a]	15,341	0	12,432	0	0	27,773
1963[a]	12,016	0	15,660	0	0	27,676
1964[a]	17,149	0	28,613	0	0	45,762
1965[a]	21,989	0	12,191	0	0	34,180
1966	25,545	0	22,985	0	0	48,530
1967	29,986	0	56,313	0	148	86,447
1968	34,278	0	127,306	0	187	161,771
1969	43,997	322	83,765	0	7,165	135,249
1970	39,290	117	38,601	44	1,664	79,716
1971	40,274	2,606	5,253	0	68,914	117,047
1972	39,454	102	22,579	8	78,619	140,762
1973	32,838	369	130,876	33	148,746	312,862
1974	18,664	136	147,269	84	171,887	338,040
1975	22,135	23	81,945	10	184,171	288,284
1976	30,735	2,971	88,501	133	177,864	300,204
1977	35,830	9,379	241,364	203	248,721	535,497
1978	45,641	733	213,393	5,832	248,656	514,255
1979	38,966	1,054	219,060	78	261,874	521,032
1980	35,881	360	222,012	803	483,211	742,267
1981	47,663	48,375	211,251	292	418,677	726,258
1982	48,234	33,154	447,117	1,748	278,306	808,559
1983	33,174	68,855	196,287	211	276,698	575,225
1984	31,742	48,575	623,447	2,942	423,718	1,130,424
1985	37,889	106,647	335,606	75	199,478	679,695
1986	19,414	95,433	659,988	3,422	309,213	1,087,470
1987	36,179	136,602	399,467	43	574,336	1,146,627
1988	55,716	92,025	524,296	10,825	1,381,674	2,064,536
1989	43,217	42,747	479,856	464	749,182	1,315,466
1990	53,504	84,414	409,053	3,397	459,974	1,010,342
1991	37,778	108,946	500,935	378	431,802	1,079,839
1992	46,872	92,218	666,170	7,451	344,603	1,157,314
1993	8,735	27,008	610,739	64	43,337	689,883
1994	16,211	49,365	724,689	30,949	271,115	1,092,329
1995	30,846	92,500	471,461	93	605,918	1,200,818
1996	7,419	33,878	937,299	1,621	207,877	1,188,094
1997	10,441	21,989	130,803	2	17,026	180,261
1998	17,359	60,906	210,481	92	207,809	496,647
1999	4,705	16,976	23,593	2	23,006	68,282
2000	444	4,130	261,379	7	11,570	277,530

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Table 5.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
2001	90	84	192,998	0	1,272	194,444
2002	72	84	83,463	0	1,900	85,519
2003	158	282	284,064	0	2,764	287,268
2004	2,305	8,532	435,407	0	20,150	466,394
2005	4,784	27,645	142,319	0	69,139	243,887
2006	2,777	12,618	185,636	1	44,152	245,184
2007	179	703	141,049	0	10,783	152,714
2008	8,865	15,601	142,877	15	30,798	198,156
2009	6,664	25,673	104,552	18	76,956	213,863
2010	2,732	22,433	58,031	7	93,917	177,120
2011	747	13,497	74,123	2	118,316	206,685
2012	627	2,857	86,394	0	65,195	155,073
2013	174	768	114,069	1	52,236	167,248
2014	35	2,720	117,588	3	19,080	139,426
2015	8	130	65,034	0	507	65,679
2016	[b]	[b]	[b]	[b]	[b]	[b]
2017	[b]	[b]	[b]	[b]	[b]	[b]
2018	[b]	[b]	[b]	[b]	[b]	[b]
2019	[b]	[b]	[b]	[b]	[b]	[b]
2020	[b]	[b]	[b]	[b]	[b]	[b]
2021	[b]	[b]	[b]	[b]	[b]	[b]
2022	[c]	[c]	[c]	[c]	[c]	[c]
2023	[c]	[c]	[b]	[c]	[b]	[b]

[a] Includes harvest from District 3.

[b] Confidential information.

[c] No commercial fishery occurred.

Table 6.–District 1 commercial salmon harvest and exvessel value, 1993–2023.

	Chinook		Sockeye		Coho		Pink		Chum		Total	
Year	Number	Value ($)	Number	Value ($)	Number	Value ($)	Number	Value ($)	Number	Value ($)	Number	Value ($)
1993	8735	72,659	27,008	140,000	610,739	2,535,321	64	59	43,337	112,756	689,883	2,860,795
1994	16211	126,892	49,365	188,691	724,689	2,875,803	30,930	8,967	271,115	381,639	1,092,310	3,581,992
1995	30846	280,287	92,500	448,530	471,461	1,313,742	335	50	605,918	724,273	1,201,060	2,766,882
1996	7419	23,665	33,878	97,176	937,299	1,824,683	1,621	744	207,877	170,977	1,188,094	2,117,245
1997	10441	36,843	21,989	64,922	130,803	2,167,491	2	1	17,026	19,509	180,261	2,288,766
1998	17359	74,387	60,906	209,860	210,481	516,024	92	55	207,809	183,307	496,647	983,633
1999	4705	22,266	16,976	86,442	23,593	44,633	2	–	23,006	16,428	68,282	169,769
2000	444	3,044	4,130	14,272	261,379	489,644	7	3	11,570	7,967	277,530	514,930
2001	90	534	84	265	192,998	422,573	–	–	1,272	827	194,444	424,199
2002	72	212	84	196	83,463	124,763	–	–	1,900	1,190	85,519	126,361
2003	158	846	282	803	284,064	450,451	–	–	2,764	1,087	287,268	453,187
2004	2305	9,815	8,532	19,549	435,407	907,791	–	–	20,150	6,611	466,394	943,766
2005	4784	29,040	27,645	109,063	142,319	287,635	–	–	69,139	23,115	243,887	448,853
2006	2777	16,192	12,618	41,891	185,598	378,318	1	1	44,070	14,988	245,064	451,390
2007	179	1,607	703	2,411	141,049	373,789	–	–	10,763	3,033	152,694	380,840
2008	8865	70,988	15,601	59,777	142,862	396,329	15	4	30,516	11,212	197,859	538,310
2009	6664	61,452	25,673	101,445	104,546	263,457	2	0	76,790	76,494	213,675	502,848
2010	2731	53,134	22,428	167,575	58,031	382,452	–	–	93,148	162,445	176,338	765,606
2011	49	411	13,482	79,370	74,108	334,452	1	–	118,256	350,124	205,896	764,357
2012	14	225	2,857	16,154	86,389	323,687	–	–	65,171	257,932	154,431	597,998
2013	1	6	768	5,226	114,069	833,327	–	–	52,236	346,288	167,074	1,184,847
2014	–	–	2,720	19,943	117,588	751,850	3	–	19,080	71,563	139,388	843,356
2015	2	9	130	395	65,034	244,045	–	–	507	1,567	65,673	246,016
2016 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2017 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2018 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2019 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2020 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2021 [a]	–	–	–	–	–	–	–	–	–	–	–	–
2022 [b]	–	–	–	–	–	–	–	–	–	–	–	–
2023 [a]	–	–	–	–	–	–	–	–	–	–	–	–

Note: En dash means no data.

[a] Confidential information.

[b] No commercial fishery occurred.

Table 7.–Sockeye salmon utilization, Kuskokwim River 1990−2023.

	Harvest				
Year	Commercial [a]	Subsistence	Test fish [b]	Sport fish	Total
1990	84,414 [c]	45,897	456	61	130,828
1991	108,946 [c]	47,370	383	38	156,737
1992	92,218 [c]	43,514	1,264	131	137,127
1993	27,008 [c]	51,616	4,706	348	83,678
1994	49,365 [c]	42,362	2,561	359	94,647
1995	92,500 [c]	30,905	1,992	95	125,492
1996	33,878 [c]	40,591	623	315	75,407
1997	21,989 [c]	38,744	584	423	61,740
1998	60,906	36,103	625	178	97,812
1999	16,976	47,360	562	54	64,952
2000	4,130	45,942	410	46	50,528
2001	84	53,245	510	231	54,070
2002	84	32,296	0	26	32,406
2003	282	32,241	0	289	32,812
2004	8,532 [c]	39,127	44	512	48,215
2005	27,645 [c]	41,885	7	792	70,329
2006	12,618 [c]	43,577	0	187	56,382
2007	703 [c]	46,817	4	382	47,906
2008	15,601 [c]	52,213	0	273	68,087
2009	25,673 [c]	35,747	0	631	62,051
2010	22,428 [c]	38,735	0	419	61,582
2011	13,482 [c]	43,245	0	98	56,825
2012	2,857 [c]	47,396	1	196	50,450
2013	768 [c]	39,382	0	85	40,235
2014	2,720	48,372	0	270	51,362
2015	130	37,419	0	14	37,563
2016	[d]	51,552	0	175	51,727
2017	[d]	48,462	0	40	48,502
2018	[d]	35,448	0	17	35,465
2019	[d]	48,754	0	329	49,083
2020	[d]	43,499	0	192	43,499
2021	[d]	44,264	0	443	44,264
2022	[e]	47,432	0	[f]	47,432
2023	[d]	[f]	0	[f]	0
Average 2013–2022	[f]	44,458	0	174	44,913

[a] Not including personal use.

[b] Test fishery sales only, does not include donations.

[c] Districts 1 and 2 only.

[d] Confidential information.

[e] No commercial fishery occurred.

[f] Information not available.

Table 8.–Coho salmon utilization, Kuskokwim River, 1990−2023.

	Harvest				
Year	Commercial [a]	Subsistence	Test fish [b]	Sport fish	Total
1990	409,053 [c]	57,560	1,279	581	468,473
1991	500,935 [c]	39,252	1,188	1,003	542,378
1992	666,170 [c]	52,299	10,109	1,692	730,270
1993	610,739 [c]	28,485	8,084	980	648,288
1994	724,689 [c]	36,609	7,854	1,925	771,077
1995	471,461 [c]	36,823	6,620	1,497	516,401
1996	937,299 [c]	43,173	3,013	3,423	986,908
1997	130,803 [c]	29,816	1,103	2,408	164,130
1998	210,481 [c]	24,667	607	2,419	238,174
1999	23,593	27,409	343	1,998	53,343
2000	261,379 [c]	42,341	2,818	1,689	308,227
2001	192,998	31,089	1,530	1,204	226,821
2002	83,463	42,602	680	2,030	128,775
2003	284,064	33,259	570	3,244	321,137
2004	435,407 [c]	45,450	464	4,996	486,317
2005	142,319 [c]	32,755	454	3,539	179,067
2006	185,598 [c]	41,175	169	1,474	228,416
2007	141,049 [c]	33,766	446	2,355	177,616
2008	142,862 [c]	44,724	0	3,755	191,341
2009	104,546 [c]	29,767	0	3,257	137,570
2010	58,031 [c]	33,580	0	1,482	93,093
2011	74,108 [c]	32,172	0	896	107,176
2012	86,389 [c]	28,200	151	974	115,714
2013	114,069 [c]	26,409	0	1,147	141,625
2014	117,588	49,736	0	1,059	168,383
2015	65,034	33,939	0	1,412	100,385
2016	[d]	36,787	0	1,686	38,473
2017	[d]	37,786	0	976	38,762
2018	[d]	19,981	0	416	20,397
2019	[d]	31,167	0	1,154	32,321
2020	[d]	31,958	0	1,246	33,204
2021	[d]	22,555	0	1,674	24,229
2022	[e]	15,401	0	[f]	15,401
2023	[d]	[f]	0	[f]	0
Average 2013–2022	[f]	30,572	0	1,197	61,318

[a] Not including personal use.

[b] Test fishery sales only, does not include donations.

[c] Districts 1 and 2.

[e] No commercial fishery occurred.

[d] Confidential information.

[f] Information not available.

Table 9.–Chum salmon utilization, Kuskokwim River, 1990–2023.

	Harvest				
Year	Commercial [a]	Subsistence	Test fish [b]	Sport fish	Total
1990	459,974 [c]	153,825	1,650	533	615,982
1991	431,802 [c]	87,237	1,014	378	520,431
1992	344,603 [c]	116,391	12,409	608	474,011
1993	43,337 [c]	59,797	8,365	359	111,858
1994	271,115 [c]	76,937	11,637	1,280	360,969
1995	605,918 [c]	70,977	16,241	226	693,362
1996	207,877 [c]	100,913	2,864	280	311,934
1997	17,026 [c]	37,366	790	86	55,268
1998	207,809 [c]	61,732	1,140	291	270,972
1999	23,006	44,242	363	180	67,791
2000	11,570	56,499	1,033	26	69,128
2001	1,272	56,005	19	112	57,408
2002	1,900	86,381	7	53	88,341
2003	2,764	41,167	0	53	43,984
2004	20,150 [c]	64,140	113	84	84,487
2005	69,139 [c]	58,555	96	500	128,290
2006	44,152 [c]	89,674	0	13	133,839
2007	10,783 [c]	73,560	53	403	84,799
2008	30,798 [c]	63,789	0	121	94,708
2009	76,956 [c]	44,324	0	285	121,565
2010	93,917 [c]	45,089	0	85	139,091
2011	118,316 [c]	54,316	0	83	172,715
2012	65,195 [c]	79,631	93	106	145,025
2013	52,236 [c]	53,627	0	31	105,894
2014	19,080 [c]	68,398	0	36	87,514
2015	507 [c]	42,612	0	102	43,221
2016	[d]	44,857	0	103	44,960
2017	[d]	52,589	0	29	52,618
2018	[d]	45,918	0	0	45,918
2019	[d]	34,571	0	0	34,571
2020	[d]	26,920	0	0	26,920
2021	[d]	9,621	0	0	9,621
2022	[e]	10,864	0	[f]	10,864
2023	[d]	[f]	0	[f]	0
Average 2013–2022	[f]	38,998	0	33	46,210

[a] Not including personal use.

[b] Test fishery sales only, does not include donations.

[c] Districts 1 and 2.

[e] No commercial fishery occurred.

[d] Confidential information.

[f] Information not available.

Table 10.–Subsistence Chinook salmon harvest estimates by community, Kuskokwim Area, 1990–2023.

Community	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kongiganak	1,559	729	929	680	1,281	1,095	1,108	1,376	1,128	1,153
North Kuskokwim Bay	1,559	729	929	680	1,281	1,095	1,108	1,376	1,128	1,153
Tuntutuliak	4,174	4,156	3,750	3,905	5,019	3,928	4,256	3,159	3,797	3,412
Eek	4,923	2,617	2,057	2,496	2,976	3,679	2,786	2,009	2,215	1,730
Kasigluk	3,300	2,875	**3,150**	**3,609**	**3,351**	**3,208**	**3,294**	**3,480**	**2,617**	**5,473**
Nunapitchuk	4,192	4,004	4,123	3,852	4,580	4,543	3,479	3,605	4,502	4,215
Atmautluak	2,895	1,661	1,239	1,715	1,856	2,016	1,752	1,648	1,397	1,372
Napakiak	4,427	2,573	4,147	3,822	3,355	3,515	3,842	2,908	3,436	2,265
Napaskiak	6,586	4,008	5,299	5,566	6,521	4,862	5,261	4,756	4,901	3,633
Oscarville	1,263	1,476	**1,501**	1,496	1,390	1,046	995	**1,056**	754	1,543
Bethel	34,925	18,041	22,220	19,800	31,251	32,463	32,116	20,100	24,877	22,751
Kwethluk	10,657	7,298	6,949	9,280	9,546	9,907	9,786	6,319	7,502	6,366
Akiachak	8,395	5,607	8,130	7,678	7,622	6,410	5,689	6,699	6,026	5,210
Akiak	5,966	3,168	3,452	4,478	4,653	4,401	4,851	3,196	2,943	2,377
Tuluksak	2,022	3,114	2,330	3,662	4,414	4,175	3,309	5,456	3,554	2,239
Lower Kuskokwim River	93,725	60,598	68,347	71,359	86,534	84,153	81,416	64,391	68,521	62,586
Lower Kalskag	2,946	4,022	2,338	3,603	4,087	4,541	3,513	3,103	1,954	1,726
Upper Kalskag	1,618	1,031	1,321	1,682	1,297	1,447	1,304	941	1,394	1,670
Aniak	3,589	3,562	3,976	4,651	3,714	3,506	3,343	3,640	3,466	2,603
Chuathbaluk	1,718	998	986	1,443	1,013	2,461	914	1,204	730	1,035
Middle Kuskokwim River	9,871	9,613	8,621	11,379	10,111	11,955	9,074	8,888	7,544	7,034
Crooked Creek	971	916	583	707	1,126	874	890	963	768	702
Red Devil	297	154	400	449	409	412	359	404	243	141
Sleetmute	777	887	782	1,795	1,295	964	1,265	1,171	978	414
Stony River	574	614	247	445	391	534	596	874	**293**	46
Lime Village	399	70	**162**	40	195	180	**141**	57	241	145
McGrath	896	902	1,586	550	1,026	804	1,223	995	872	1,033
Takotna	74	0	**6**	0	0	**11**	**7**	**3**	2	0
Nikolai	635	337	818	426	449	938	398	212	380	284
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	4,623	3,880	4,584	4,412	4,891	4,717	4,879	4,679	3,777	2,765
Kuskokwim River total	109,778	74,820	82,481	87,830	102,817	101,921	96,477	79,334	80,969	73,538
Quinhagak	3,881	3,753	4,394	3,634	3,977	2,864	3,506	3,186	3,774	2,815
Goodnews Bay	358	852	548	590	672	789	392	441	735	759
Platinum	202	20	67	75	74	24	**41**	14	**57**	69
South Kuskokwim Bay	4,441	4,625	5,009	4,299	4,723	3,677	3,939	3,641	4,566	3,643
Total estimate	109,778	74,820	82,481	87,830	102,817	101,921	96,477	79,334	80,969	73,538

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Table 10.–Page 2 of 4.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kipnuk	3,205	–	–	–	322	–	–	–	–	–
Kwigillingok	–	–	–	–	–	–	–	–	–	–
Kongiganak	1,285	1,612	1,349	2,003	2,663	1,536	1,729	**1,865**	2,233	1,243
North Kuskokwim Bay	1,285	1,612	1,349	2,003	2,663	1,536	1,729	1,865	2,233	1,243
Tuntutuliak	2,826	2,958	3,907	2,657	3,912	4,545	4,469	4,614	**4,266**	3,067
Eek	2,140	2,035	2,514	2,075	2,954	3,133	**2,501**	**2,512**	**2,966**	1,982
Kasigluk	3,857	**5,054**	**4,685**	**4,711**	7,859	**5,242**	**4,905**	**5,167**	2,471	2,464
Nunapitchuk	3,425	3,328	4,503	3,179	4,921	4,103	4,121	4,661	**4,234**	3,468
Atmautluak	1,191	754	1,479	547	2,153	1,927	**1,758**	1,890	**1,298**	1,567
Napakiak	2,073	2,408	2,702	2,438	2,839	3,060	**5,125**	3,245	1,903	2,387
Napaskiak	4,175	4,596	3,922	3,390	4,058	4,485	5,877	6,392	4,555	5,372
Oscarville	**1,259**	1,779	1,115	1,153	1,325	1,069	1,052	1,360	1,351	754
Bethel	20,629	24,684	22,892	24,584	29,443	28,293	27,805	30,422	27,800	26,170
Kwethluk	5,174	6,460	6,880	4,206	7,157	6,089	7,258	6,466	8,451	7,130
Akiachak	6,311	6,978	6,946	2,493	7,131	5,411	5,561	7,621	9,719	7,361
Akiak	2,335	3,528	3,390	3,905	3,775	3,860	4,423	4,297	4,090	3,247
Tuluksak	2,464	2,520	2,860	3,286	3,766	2,655	2,372	**3,266**	2,937	3,212
Lower Kuskokwim River	57,859	67,082	67,795	58,624	81,293	73,872	77,228	81,914	76,040	68,181
Lower Kalskag	1,691	2,432	1,535	1,556	1,991	1,417	3,494	1,937	1,748	2,525
Upper Kalskag	1,234	1,149	1,545	1,328	2,498	2,533	1,569	1,383	2,435	1,696
Aniak	3,100	2,684	4,576	1,837	3,022	1,977	2,412	3,417	3,100	2,130
Chuathbaluk	281	700	505	405	1,460	913	887	**973**	772	877
Middle Kuskokwim River	6,306	6,965	8,161	5,126	8,971	6,840	8,362	7,710	8,055	7,228
Crooked Creek	592	689	859	582	946	948	736	**647**	488	608
Red Devil	95	174	293	31	156	181	232	301	148	258
Sleetmute	412	505	604	600	906	522	750	861	933	693
Stony River	**178**	167	415	118	688	**311**	**288**	**530**	514	704
Lime Village	69	251	**178**	34	69	**171**	**103**	**95**	**29**	**75**
McGrath	656	444	970	395	587	**910**	689	495	288	600
Takotna	0	5	10	**0**	16	**8**	0	**10**	**0**	**8**
Nikolai	144	280	535	**224**	493	**564**	696	**471**	184	298
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	2,146	2,515	3,864	1,984	3,861	3,615	3,494	3,409	2,584	3,244
Kuskokwim River total	67,596	78,174	81,169	67,737	96,788	85,863	90,812	94,898	88,912	79,896
Quinhagak	3,053	3,177	2,649	2,563	4,563	3,505	5,163	4,686	3,125	3,312
Goodnews Bay	564	863	723	807	863	869	713	**647**	898	569
Platinum	99	57	154	45	122	74	45	**66**	42	61
South Kuskokwim Bay	3,716	4,097	3,526	3,415	5,548	4,448	5,921	5,399	4,065	3,942
Total estimate	71,312	82,271	84,695	71,152	102,336	90,311	96,733	100,297	92,977	83,838

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Table 10.–Page 3 of 4.

Community	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kipnuk	–	–	–	–	–	–	–	–	–	–
Kwigillingok	–	–	–	–	–	–	–	–	–	–
Kongiganak	1,456	1,208	**287**	**641**	**964**	–	–	–	–	–
North Kuskokwim Bay	1,456	1,208	287	641	964	–	–	–	–	–
Tuntutuliak	3,261	3,032	1,123	2,448	**574**	1,668	1,963	1,459	2,178	2,102
Eek	1,761	1,378	1,004	1,188	665	850	1,460	825	706	1,323
Kasigluk	3,014	2,823	552	2,919	205	438	951	791	843	1,628
Nunapitchuk	2,548	3,559	845	2,563	287	1,051	1,695	761	1,389	1,975
Atmautluak	1,088	1,236	234	1,592	108	514	763	195	661	1,135
Napakiak	1,674	1,963	457	1,588	311	917	1,151	505	842	948
Napaskiak	4,333	3,360	1,108	2,939	422	816	1,535	858	1,079	2,551
Oscarville	618	694	51	585	68	120	208	122	123	238
Bethel	26,157	25,093	7,321	17,246	3,089	4,918	9,462	5,336	5,469	12,694
Kwethluk	4,440	2,467	1,709	3,192	959	900	1,731	1,019	1,518	2,679
Akiachak	4,470	3,852	2,862	3,585	1,033	1,103	3,438	1,415	2,520	3,443
Akiak	3,625	2,455	**1,218**	1,449	530	610	1,274	694	1,249	1,454
Tuluksak	2,057	1,230	651	732	404	231	709	511	705	1,026
Lower Kuskokwim River	59,046	53,142	19,135	42,026	8,655	14,136	26,340	14,493	19,282	33,196
Lower Kalskag	1,030	1260	459	744	283	351	578	260	474	1,000
Upper Kalskag	1,496	1772	562	1,317	258	334	838	190	638	746
Aniak	2,262	2214	993	1,440	344	542	1,293	718	803	1,315
Chuathbaluk	551	409	103	155	90	90	203	100	216	340
Middle Kuskokwim River	5,339	5,655	2,117	3,656	975	1,317	2,912	1,268	2,131	3,401
Crooked Creek	240	402	124	**145**	35	78	384	110	144	289
Red Devil	33	186	225	77	83	52	69	38	10	69
Sleetmute	272	242	132	96	58	137	169	36	76	133
Stony River	189	134	**151**	51	24	25	33	109	53	90
Lime Village	**47**	**118**	29	**43**	**32**	–	35	33	10	37
McGrath	262	829	68	95	173	75	384	118	239	375
Takotna	**0**	0	**0**	**0**	**0**	3	0	0	2	4
Nikolai	402	450	276	283	235	301	367	177	317	346
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	1,445	2,361	1,005	790	640	671	1,441	620	851	1,343
Kuskokwim River total	67,286	62,366	22,544	47,113	11,234	16,124	30,693	16,380	22,264	37,940
Quinhagak	2,793	2,588	2,396	3,143	3,723	3,082	4,822	5,217	3,592	5,690
Goodnews Bay	480	834	389	413	431	220	654	457	555	864
Platinum	17	62	24	39	46	11	99	96	67	142
South Kuskokwim Bay	3,290	3,484	2,809	3,595	4,200	3,313	5,575	5,770	4,214	6,696
Total estimate	70,576	65,850	25,353	50,708	15,434	19,437	36,268	22,151	26,478	44,636

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Table 10.–Page 4 of 4.

Community	2020	2021	2022	2023
Kipnuk	–	–	–	–
Kwigillingok	–	–	–	–
Kongiganak	–	–	–	–
North Kuskokwim Bay	–	–	–	–
Tuntutuliak	2,322	2,164	2,361	2,697
Eek	1,999	1,091	1,281	568
Kasigluk	1,908	905	1,532	1,070
Nunapitchuk	1,750	1,210	2,493	1,599
Atmautluak	692	654	728	2,017
Napakiak	869	775	806	682
Napaskiak	1,036	2,034	1,453	1,740
Oscarville	360	105	58	132
Bethel	13,582	8,511	12,639	15,645
Kwethluk	1,870	1,862	1,963	2,148
Akiachak	2,516	2,827	2,834	3,527
Akiak	1,245	2,052	1,321	1,003
Tuluksak	919	882	866	1,099
Lower Kuskokwim River	31,068	25,072	30,334	33,926
Lower Kalskag	685	513	923	490
Upper Kalskag	860	454	783	511
Aniak	1,544	1,325	1,128	1,337
Chuathbaluk	317	180	277	360
Middle Kuskokwim River	3,406	2,472	3,111	2,697
Crooked Creek	238	153	292	93
Red Devil	45	55	19	41
Sleetmute	176	140	80	81
Stony River	**95**	137	0	9
Lime Village	**6**	**12**	**19**	–
McGrath	439	87	88	63
Takotna	7	0	**0**	**3**
Nikolai	367	237	210	179
Telida	–	–	–	–
Upper Kuskokwim River	1,373	821	689	468
Kuskokwim River total	35,847	28,365	34,134	37,091
Quinhagak	4,757	2,656	4,004	2,466
Goodnews Bay	766	388	963	786
Platinum	84	78	215	92
South Kuskokwim Bay	5,607	3,122	5,182	3,344
Total estimate	41,454	31,487	39,316	40,435

Note: En dash means that harvest was not estimated. Bold font indicates Bayesian estimates.

Table 11.–Subsistence sockeye salmon harvest estimates by community, Kuskokwim Area, 1990–2023.

Community	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kongiganak	552	498	923	583	743	658	951	976	878	908
North Kuskokwim Bay	552	498	923	583	743	658	951	976	878	908
Tuntutuliak	2,132	1,768	1,846	1,063	3,289	1,082	1,561	1,724	1,227	2,070
Eek	1,293	479	669	363	452	308	526	503	375	595
Kasigluk	843	1,376	**1,690**	**1,608**	**976**	**1,179**	**1,127**	**1,315**	**1,012**	**3,287**
Nunapitchuk	1,520	2,193	2,329	2,743	1,633	870	1,877	2,082	2,029	3,258
Atmautluak	1,696	830	1,193	1,313	837	1,173	1,408	681	982	1,743
Napakiak	1,548	1,187	1,663	1,217	1,533	887	1,106	1,526	1,487	2,018
Napaskiak	1,660	2,850	3,116	3,508	1,933	1,573	3,180	2,209	1,457	1,929
Oscarville	287	726	**938**	957	398	301	208	**442**	249	1,724
Bethel	11,787	11,428	9,225	9,501	11,370	8,802	10,556	10,233	8,464	12,094
Kwethluk	4,271	3,746	1,958	3,802	3,864	2,536	3,963	3,288	3,785	3,485
Akiachak	3,461	4,029	3,970	4,990	3,241	1,942	2,767	2,737	2,395	3,066
Akiak	1,873	1,696	1,769	3,537	1,740	809	1,544	1,327	1,640	1,151
Tuluksak	1,225	3,427	2,063	2,452	1,390	1,270	1,108	1,514	1,413	1,412
Lower Kuskokwim River	33,596	35,735	32,428	37,054	32,656	22,732	30,931	29,581	26,515	37,832
Lower Kalskag	1,007	1,080	503	2,286	989	679	1,387	1,277	546	583
Upper Kalskag	284	314	354	346	288	82	284	216	238	586
Aniak	1,539	2,073	1,213	1,609	751	955	1,295	1,078	1,132	1,302
Chuathbaluk	1,157	1,471	497	822	924	465	687	796	223	441
Middle Kuskokwim River	3,987	4,938	2,567	5,063	2,952	2,181	3,653	3,367	2,139	2,912
Crooked Creek	1,607	968	738	752	558	177	311	350	717	710
Red Devil	455	391	355	662	336	576	914	637	692	497
Sleetmute	1,153	1,347	794	1,643	1,120	1,109	1,341	1,458	1,282	879
Stony River	933	1,966	1,389	1,485	758	1,281	1,267	1,626	**1,023**	1,018
Lime Village	2,125	1,110	**1,304**	2,743	1,733	857	**1,225**	642	2,782	2,619
McGrath	1,489	416	2,494	1,465	1,501	1,652	111	52	146	0
Takotna	0	0	**1**	0	0	**2**	**1**	**1**	0	0
Nikolai	0	1	0	5	25	65	23	0	16	43
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	7,762	6,199	7,075	8,755	6,031	5,719	5,193	4,766	6,658	5,766
Kuskokwim River total	45,897	47,370	42,993	51,455	42,382	31,290	40,728	38,690	36,190	47,418
Quinhagak	1,710	1,818	1,448	1,228	962	597	499	460	1,368	1,433
Goodnews Bay	982	1,061	1,293	733	646	202	387	480	499	715
Platinum	163	134	238	48	90	32	**56**	143	**80**	106
South Kuskokwim Bay	2,855	3,013	2,979	2,009	1,698	831	942	1,083	1,947	2,254
Total estimate	48,752	50,383	45,972	53,464	44,080	32,121	41,669	39,773	38,137	49,672

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Table 11.–Page 2 of 4.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kongiganak	1,770	1,546	1,347	929	1,809	1,103	1,464	**960**	1,502	1,018
North Kuskokwim Bay	1,770	1,546	1,347	929	1,809	1,103	1,464	960	1,502	1,018
Tuntutuliak	1,180	1,702	1,045	1,148	1,620	2,145	1,834	1,763	**2,120**	932
Eek	883	1,085	759	586	567	1,033	**684**	**558**	**834**	1,019
Kasigluk	3,805	**3,213**	**2,111**	**2,429**	1,668	**1,634**	**2,248**	**1,786**	1,041	1,215
Nunapitchuk	2,194	2,529	1,500	1,714	1,659	1,821	1,871	2,147	**2,549**	1,538
Atmautluak	1,540	988	1,150	679	1,103	1,444	**1,012**	1,041	**1,250**	624
Napakiak	1,916	1,917	1,688	1,453	1,351	2,122	1,845	1,962	1,244	917
Napaskiak	2,525	3,377	1,296	1,643	1,148	1,344	1,784	1,738	2,620	1,579
Oscarville	**1,115**	1,451	400	806	436	278	778	712	677	332
Bethel	11,613	14,264	8,850	12,198	11,679	14,297	12,816	13,902	15,247	11,272
Kwethluk	3,859	4,191	2,100	1,903	3,302	2,457	2,770	3,536	4,920	2,432
Akiachak	3,687	4,680	2,507	1,607	3,109	2,372	2,661	3,269	4,354	2,407
Akiak	1,036	2,005	1,214	995	1,258	1,920	2,000	3,695	2,881	1,290
Tuluksak	2,201	1,862	1,205	875	1,670	987	2,247	**1,845**	2,133	1,691
Lower Kuskokwim River	37,554	43,264	25,825	28,036	30,570	33,854	34,550	37,955	41,869	27,248
Lower Kalskag	824	918	347	515	775	439	1,434	780	1,583	1,044
Upper Kalskag	588	319	508	431	686	945	563	417	1,000	369
Aniak	1,136	2,167	1,059	756	996	1,015	692	1,261	1,585	923
Chuathbaluk	476	614	313	274	526	369	508	**484**	363	564
Middle Kuskokwim River	3,024	4,018	2,227	1,976	2,983	2,768	3,197	2,942	4,531	2,900
Crooked Creek	514	640	449	571	732	693	544	**523**	220	329
Red Devil	109	360	109	309	88	272	510	318	359	477
Sleetmute	725	1,008	706	504	980	673	1,181	1,303	1,164	684
Stony River	**654**	163	602	158	896	**688**	**746**	**1,019**	1,476	977
Lime Village	1,409	1,453	**1,186**	374	874	**1,368**	**1,216**	**1,406**	**659**	**1,080**
McGrath	43	273	407	112	194	**454**	149	375	417	965
Takotna	0	0	0	**1**	0	**1**	0	**1**	**3**	**3**
Nikolai	0	0	22	**2**	1	**10**	20	**14**	13	66
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	3,454	3,897	3,481	2,031	3,765	4,160	4,365	4,960	4,310	4,581
Kuskokwim River total	45,802	52,725	32,880	32,973	39,127	41,885	43,577	46,817	52,213	35,747
Quinhagak	1,368	1,054	909	805	1,375	1,745	3,128	1,755	2,097	1,960
Goodnews Bay	951	908	855	705	873	1,213	995	**920**	1,739	902
Platinum	188	83	257	64	183	90	63	**121**	156	186
South Kuskokwim Bay	2,507	2,045	2,021	1,574	2,431	3,048	4,186	2,796	3,992	3,048
Total estimate	48,309	54,770	34,901	34,547	41,558	44,933	47,763	49,613	56,205	38,795

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Table 11.–Page 3 of 4.

Community	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kongiganak	1,869	1,266	**1,307**	**1,031**	**1,230**	–	–	–	–	–
North Kuskokwim Bay	1,869	1,266	1,307	1,031	1,230	–	–	–	–	–
Tuntutuliak	2,068	1,274	1,516	1,183	**1,774**	1,999	1,707	1,438	1,978	1,969
Eek	1,241	664	1,490	1,319	1,450	1,111	888	1,266	1,138	1,048
Kasigluk	1,441	1,269	1,451	1,470	1,990	1,442	1,543	1,703	1,448	2,416
Nunapitchuk	1,902	2,223	2,396	1,806	2,059	2,851	2,508	1,570	1,532	3,273
Atmautluak	731	827	1,623	1,316	1,531	1,173	1,562	1,535	1,621	2,093
Napakiak	1,183	1,351	1,141	1,105	1,573	1,179	2,132	916	1,336	1,688
Napaskiak	1,979	1,587	2,065	2,069	2,514	2,022	2,086	1,404	1,980	3,029
Oscarville	250	228	323	347	679	282	329	260	234	541
Bethel	11,103	16,946	18,282	12,616	14,828	11,951	16,730	17,477	8,127	17,608
Kwethluk	2,534	2,357	2,884	2,705	5,921	1,955	2,464	3,257	2,233	2,381
Akiachak	2,433	2,647	3,443	2,594	3,047	2,551	2,726	3,316	2,848	2,770
Akiak	1,161	2,576	**1,818**	1,731	2,418	1,855	3,772	3,398	2,757	2,248
Tuluksak	2,483	1,699	1,380	1,541	622	1,037	1,249	1,256	1,231	1,074
Lower Kuskokwim River	30,509	35,648	39,812	31,802	40,406	31,408	39,696	38,796	28,463	42,138
Lower Kalskag	507	802	891	977	1,040	487	284	630	695	348
Upper Kalskag	460	938	770	662	839	718	1,176	509	516	426
Aniak	1,165	1,168	1,375	1,466	1,578	2,407	8,380	5,277	3,500	3,235
Chuathbaluk	403	300	297	480	481	382	210	631	466	328
Middle Kuskokwim River	2,535	3,208	3,333	3,585	3,938	3,994	10,050	7,047	5,177	4,337
Crooked Creek	302	243	234	**514**	391	303	264	508	297	687
Red Devil	475	502	511	270	151	88	238	206	137	67
Sleetmute	1,024	693	715	362	541	497	458	514	511	638
Stony River	372	303	**469**	447	137	91	95	138	92	357
Lime Village	**932**	**739**	780	**831**	**888**	**-**	541	325	224	420
McGrath	650	630	233	538	451	0	199	892	507	71
Takotna	**2**	0	2	2	3	0	5	1	0	0
Nikolai	65	13	0	0	236	400	34	35	40	30
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	3,822	3,123	2,945	2,964	2,798	1,379	1,834	2,619	1,808	2,270
Kuskokwim River total	38,735	43,245	47,396	39,382	48,372	36,781	51,580	48,462	35,448	48,745
Quinhagak	1,719	1,582	2,015	2,158	2,939	1,065	1,691	3,850	2,622	2,537
Goodnews Bay	1,093	1,328	1,197	1,113	1,370	797	975	677	777	1,201
Platinum	175	135	173	181	349	148	381	533	210	409
South Kuskokwim Bay	2,987	3,045	3,385	3,452	4,658	2,010	3,047	5,060	3,609	4,147
Total estimate	41,722	46,290	50,781	42,834	53,030	38,791	54,627	53,522	39,057	52,892

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Table 11.–Page 4 of 4.

Community	2020	2021	2022	2023
Kongiganak	–	–	–	–
North Kuskokwim Bay	–	–	–	–
Tuntutuliak	1,839	2,549	2,618	2,731
Eek	1,422	1,505	2,549	1,248
Kasigluk	2,701	1,886	2,723	2,872
Nunapitchuk	2,609	3,238	3,444	2,408
Atmautluak	1,055	2,424	2,482	3,662
Napakiak	1,503	1,265	2,013	1,213
Napaskiak	1,708	3,831	3,055	3,505
Oscarville	497	212	384	666
Bethel	16,855	13,454	17,249	24,548
Kwethluk	2,540	2,355	2,703	3,086
Akiachak	2,126	3,836	2,362	4,195
Akiak	1,595	1,768	1,589	1,731
Tuluksak	870	1,110	1,387	1,412
Lower Kuskokwim River	37,320	39,433	44,561	53,279
Lower Kalskag	427	521	316	453
Upper Kalskag	661	217	562	374
Aniak	1,723	1,463	1,117	2,463
Chuathbaluk	280	274	175	325
Middle Kuskokwim River	3,091	2,475	2,170	3,614
Crooked Creek	678	328	310	136
Red Devil	118	98	25	117
Sleetmute	816	687	343	179
Stony River	**626**	726	0	16
Lime Village	**549**	**258**	**96**	–
McGrath	291	231	24	89
Takotna	0	0	**0**	**3**
Nikolai	10	28	0	1
Telida	–	–	–	–
Upper Kuskokwim River	3,088	2,356	702	541
Kuskokwim River total	43,499	44,264	47,432	57,434
Quinhagak	2,000	3,169	4,802	3,440
Goodnews Bay	941	1,684	2,460	1,885
Platinum	358	660	452	322
South Kuskokwim Bay	3,299	5,513	7,714	5,647
Total estimate	46,798	49,777	55,146	63,081

Note: En dash means that harvest was not estimated. Bold font indicates Bayesian estimates.

Table 12.–Subsistence coho salmon harvest estimates by community, Kuskokwim Area, 1990–2023.

Community	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kongiganak	474	490	605	448	569	662	579	514	204	203
North Kuskokwim Bay	474	490	605	448	569	662	579	514	204	203
Tuntutuliak	1,287	733	693	820	364	339	1,335	558	858	277
Eek	1,800	387	502	160	399	387	437	63	314	242
Kasigluk	922	1,723	**1,388**	**372**	**532**	**90**	**519**	**170**	**330**	**3,906**
Nunapitchuk	746	1,131	2,242	318	749	629	1,444	732	345	368
Atmautluak	398	237	333	380	402	634	534	485	283	190
Napakiak	1,470	599	1,570	586	871	344	602	161	739	459
Napaskiak	1,139	798	1,108	780	2,016	584	506	592	488	316
Oscarville	57	147	**151**	0	48	0	15	**0**	0	779
Bethel	32,988	17,677	24,908	12,310	17,082	22,007	21,982	17,077	12,058	11,565
Kwethluk	3,928	2,311	2,419	1,809	1,880	1,690	2,995	1,104	1,583	2,883
Akiachak	1,910	2,337	3,058	1,102	1,281	628	903	383	409	662
Akiak	1,789	2,193	1,072	1,373	1,099	481	920	798	521	259
Tuluksak	978	1,854	1,629	408	223	522	1,175	418	812	298
Lower Kuskokwim River	49,412	32,127	41,074	20,418	26,946	28,335	33,367	22,541	18,740	22,204
Lower Kalskag	445	500	526	823	881	715	1,246	572	345	285
Upper Kalskag	346	527	972	353	178	257	348	661	834	155
Aniak	1,669	1,171	1,933	1,104	1,768	1,244	2,723	1,428	1,284	1,419
Chuathbaluk	826	87	368	366	741	79	409	196	50	138
Middle Kuskokwim River	3,286	2,285	3,799	2,646	3,568	2,295	4,726	2,857	2,513	1,997
Crooked Creek	922	279	712	396	646	358	175	261	394	529
Red Devil	914	1,038	1,284	1,673	1,074	1,539	1,135	1,455	504	424
Sleetmute	1,036	1,588	937	912	626	1,104	870	419	267	210
Stony River	474	513	727	511	477	1,023	529	455	**378**	423
Lime Village	486	390	**345**	606	1,467	223	**607**	270	776	701
McGrath	466	477	2,146	563	998	604	824	745	734	338
Takotna	0	0	**4**	0	0	**6**	**6**	**2**	3	0
Nikolai	90	65	204	285	94	499	36	130	97	73
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	4,388	4,350	6,358	4,946	5,382	5,356	4,182	3,737	3,153	2,698
Kuskokwim River total	57,560	39,252	51,836	28,458	36,465	36,648	42,854	29,649	24,611	27,102
Quinhagak	3,799	3,230	3,291	2,029	2,544	2,480	1,734	1,105	1,537	1,781
Goodnews Bay	1,630	1,704	1,671	1,118	428	268	330	348	323	421
Platinum	95	36	290	27	87	11	**46**	55	**75**	147
South Kuskokwim Bay	5,524	4,970	5,252	3,174	3,059	2,759	2,110	1,508	1,935	2,349
Total estimate	63,084	44,222	57,088	31,632	39,524	39,407	44,964	31,157	26,546	29,451

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Table 12.–Page 2 of 4.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kongiganak	339	919	1,138	236	937	740	657	**883**	557	561
North Kuskokwim Bay	339	919	1,138	236	937	740	657	883	557	561
Tuntutuliak	3,264	335	1,239	2,092	1,189	1,074	948	703	**1,620**	359
Eek	493	241	821	747	1,018	378	**773**	**459**	**661**	176
Kasigluk	9,726	**1,058**	**2,195**	**1,762**	5,034	**1,304**	**3,070**	**1,753**	867	629
Nunapitchuk	355	425	821	627	555	807	692	1,752	**508**	286
Atmautluak	227	375	612	283	744	530	**254**	424	**262**	67
Napakiak	453	667	793	992	1,648	742	2,363	1,244	1,006	420
Napaskiak	836	455	717	983	655	602	1,640	639	903	786
Oscarville	**216**	90	161	19	304	60	175	180	62	67
Bethel	13,478	14,108	15,489	15,062	17,040	12,994	18,810	12,972	15,839	12,895
Kwethluk	3,435	1,773	2,706	1,787	3,430	3,048	1,245	1,624	7,262	4,333
Akiachak	2,555	1,912	1,690	1,627	2,397	1,817	1,714	2,355	4,311	1,790
Akiak	479	594	1,136	1,094	1,342	1,847	379	1,325	1,358	661
Tuluksak	520	1,136	1,349	921	1,007	484	498	**1,131**	635	857
Lower Kuskokwim River	36,037	23,169	29,729	27,996	36,363	25,687	32,561	26,561	35,293	23,326
Lower Kalskag	403	597	281	314	368	319	1,415	515	76	318
Upper Kalskag	286	536	1,069	462	1,500	594	1,799	381	2,350	181
Aniak	1,911	2,006	3,737	1,164	2,355	2,032	1,018	3,003	2,883	2,223
Chuathbaluk	462	733	610	259	284	346	727	**419**	525	96
Middle Kuskokwim River	3,062	3,872	5,697	2,199	4,507	3,291	4,959	4,318	5,834	2,818
Crooked Creek	137	97	440	375	713	312	401	**289**	952	283
Red Devil	161	426	499	351	65	331	171	193	307	126
Sleetmute	525	428	806	731	505	581	671	360	228	403
Stony River	**348**	397	662	214	679	**468**	**322**	**336**	552	634
Lime Village	556	559	**680**	46	231	**372**	**132**	**443**	**695**	**210**
McGrath	881	436	1,508	997	1,228	**799**	894	279	247	1,175
Takotna	20	31	25	**6**	51	**8**	0	**8**	**6**	**28**
Nikolai	30	131	93	**379**	171	**166**	407	**95**	53	203
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	2,658	2,505	4,713	3,099	3,643	3,037	2,998	2,005	3,040	3,062
Kuskokwim River total	42,096	30,465	41,277	33,531	45,450	32,755	41,175	33,766	44,724	29,767
Quinhagak	1,042	1,719	1,133	1,868	1,435	1,558	1,315	1,550	1,869	1,824
Goodnews Bay	380	548	198	1,228	1,542	634	605	**468**	769	261
Platinum	100	118	96	144	266	223	116	**106**	114	81
South Kuskokwim Bay	1,522	2,385	1,427	3,240	3,243	2,415	2,036	2,124	2,752	2,166
Total estimate	43,618	32,850	42,704	36,771	48,693	35,170	43,211	35,890	47,476	31,933

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Table 12.–Page 3 of 4.

Community	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kongiganak	483	613	**356**	**412**	**561**	–	–	–	–	–
North Kuskokwim Bay	483	613	356	412	561	–	–	–	–	–
Tuntutuliak	698	250	565	450	**794**	362	456	472	329	163
Eek	315	280	612	483	555	629	410	797	298	367
Kasigluk	1,043	430	303	418	851	446	394	390	422	436
Nunapitchuk	195	407	319	226	1,305	1,154	492	1,103	412	783
Atmautluak	36	263	383	203	176	311	81	415	81	482
Napakiak	877	927	402	634	740	1,117	506	379	597	1,073
Napaskiak	1,029	471	269	772	1,153	1,353	726	1,011	614	566
Oscarville	12	43	38	37	128	25	134	82	58	59
Bethel	20,426	18,141	13,280	12,662	19,364	12,277	16,772	17,852	8,978	15,596
Kwethluk	1,495	1,097	1,013	1,555	4,422	1,677	682	2,361	1,475	1,526
Akiachak	1,181	1,440	714	1,106	1,845	1,924	2,007	1,771	1,343	1,510
Akiak	475	505	**455**	454	1,501	1,423	2,403	3,566	683	1,768
Tuluksak	330	163	341	473	808	623	482	668	529	453
Lower Kuskokwim River	28,112	24,417	18,694	19,473	33,642	23,321	25,545	30,867	15,819	24,782
Lower Kalskag	96	684	1,107	529	907	419	228	347	430	339
Upper Kalskag	92	998	360	636	938	384	722	188	419	231
Aniak	2,533	2,215	3,365	3,102	9,566	7,705	7,530	4,883	2,107	2,698
Chuathbaluk	76	109	179	319	291	166	149	149	138	119
Middle Kuskokwim River	2,797	4,006	5,011	4,586	11,702	8,674	8,629	5,567	3,094	3,387
Crooked Creek	87	297	149	**255**	198	275	298	256	138	238
Red Devil	88	130	238	318	792	214	166	106	50	117
Sleetmute	458	426	784	219	993	752	524	61	400	205
Stony River	201	333	**358**	120	177	77	29	86	23	135
Lime Village	**146**	**596**	117	**384**	**226**	–	123	81	0	34
McGrath	1,053	1,331	2,257	523	1,189	173	769	663	411	2,260
Takotna	**20**	3	22	0	0	53	90	0	0	2
Nikolai	135	20	214	119	256	400	614	99	46	7
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	2,188	3,136	4,139	1,938	3,831	1,944	2,613	1,352	1,068	2,998
Kuskokwim River total	33,580	32,172	28,200	26,409	49,736	33,939	36,787	37,786	19,981	31,167
Quinhagak	1,599	1,369	1,380	1,087	2,240	2,238	2,014	1,734	1,486	1,791
Goodnews Bay	319	259	382	295	371	552	378	289	201	328
Platinum	197	143	124	50	240	87	180	273	254	142
South Kuskokwim Bay	2,115	1,771	1,886	1,432	2,851	2,877	2,572	2,296	1,941	2,261
Total estimate	35,695	33,943	30,086	27,841	52,587	36,816	39,359	40,082	21,922	33,428

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Table 12.–Page 4 of 4.

Community	2020	2021	2022	2023
Kongiganak	–	–	–	–
North Kuskokwim Bay	–	–	–	–
Tuntutuliak	423	371	465	633
Eek	553	652	906	297
Kasigluk	687	166	513	496
Nunapitchuk	614	329	580	371
Atmautluak	425	301	733	449
Napakiak	929	371	617	901
Napaskiak	865	1,783	616	1,020
Oscarville	63	81	37	40
Bethel	16,613	11,161	6,814	13,694
Kwethluk	1,963	1,195	824	1,748
Akiachak	1,230	1,613	894	2,151
Akiak	843	1,094	475	1,161
Tuluksak	673	490	423	457
Lower Kuskokwim River	25,881	19,607	13,897	23,419
Lower Kalskag	319	80	163	105
Upper Kalskag	390	164	148	152
Aniak	3,139	950	612	1,419
Chuathbaluk	126	95	7	208
Middle Kuskokwim River	3,974	1,289	931	1,883
Crooked Creek	243	170	68	90
Red Devil	30	35	0	11
Sleetmute	307	288	85	124
Stony River	**118**	135	10	28
Lime Village	**32**	**15**	**2**	–
McGrath	1,342	901	411	327
Takotna	0	0	**8**	**11**
Nikolai	31	115	0	0
Telida	–	–	–	–
Upper Kuskokwim River	2,103	1,659	574	590
Kuskokwim River total	31,958	22,555	15,401	25,892
Quinhagak	1,395	1,103	1,508	1,584
Goodnews Bay	155	222	162	641
Platinum	380	189	113	23
South Kuskokwim Bay	1,930	1,514	1,783	2,248
Total estimate	33,888	24,069	17,185	28,140

Note: En dash means that harvest was not estimated. Bold font indicates Bayesian estimates.

Table 13.–Subsistence chum salmon harvest estimates by community, Kuskokwim Area, 1990–2023.

Community	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kongiganak	1,009	978	1,584	708	1,414	1,269	1,763	753	1,579	1,049
North Kuskokwim Bay	1,009	978	1,584	708	1,414	1,269	1,763	753	1,579	1,049
Tuntutuliak	6,592	4,697	6,245	3,325	5,346	3,509	6,119	2,435	3,640	1,709
Eek	3,014	790	1,324	250	591	899	999	556	795	484
Kasigluk	3,877	3,013	**4,076**	**2,522**	**2,663**	**2,774**	**4,047**	**1,951**	**2,543**	**4,777**
Nunapitchuk	6,448	5,840	9,195	4,895	4,560	4,264	6,255	2,465	4,885	4,428
Atmautluak	4,676	2,241	2,614	1,300	1,420	3,768	2,660	1,395	1,875	1,552
Napakiak	9,714	2,351	5,474	2,269	3,819	2,820	4,352	1,430	3,605	1,495
Napaskiak	11,334	6,703	7,817	3,653	5,797	4,137	6,200	2,318	3,771	2,529
Oscarville	1,400	1,147	**1,598**	561	676	740	1,548	**348**	378	1,530
Bethel	34,257	16,781	17,231	8,608	15,722	17,416	21,706	8,078	12,522	9,918
Kwethluk	11,451	5,714	8,001	3,499	6,340	6,114	12,043	3,266	4,508	3,582
Akiachak	10,565	5,921	9,532	3,308	5,998	3,992	5,019	1,615	2,218	2,696
Akiak	9,226	6,575	6,679	7,577	4,483	2,007	4,967	1,639	1,894	1,210
Tuluksak	5,863	5,454	4,632	3,774	2,395	2,698	3,208	2,790	3,044	1,480
Lower Kuskokwim River	118,417	67,227	84,418	45,541	59,810	55,138	79,123	30,286	45,678	37,390
Lower Kalskag	4,980	2,958	2,807	2,938	2,856	1,438	4,070	1,298	968	733
Upper Kalskag	1,406	3,139	3,040	591	836	1,326	1,565	349	464	649
Aniak	10,160	3,511	7,687	2,926	2,538	3,454	8,569	1,678	4,964	1,753
Chuathbaluk	4,408	2,138	2,644	2,879	1,495	1,701	2,175	1,135	925	698
Middle Kuskokwim River	20,954	11,746	16,178	9,334	7,725	7,919	16,379	4,460	7,321	3,833
Crooked Creek	2,977	1,326	1,242	664	757	332	355	313	2,527	830
Red Devil	1,613	1,133	1,500	927	1,318	882	727	499	462	169
Sleetmute	2,006	1,880	2,961	692	1,520	1,683	1,250	417	870	340
Stony River	1,234	638	1,165	775	881	1,311	443	600	**395**	296
Lime Village	2,350	830	**1,299**	497	1,600	789	**306**	244	964	1,015
McGrath	2,326	1,083	4,472	578	1,264	1,525	211	138	1,510	242
Takotna	64	0	**15**	0	6	**1**	**0**	**0**	15	0
Nikolai	875	396	914	334	293	297	229	60	519	87
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	13,445	7,286	13,568	4,467	7,639	6,820	3,521	2,271	7,262	2,979
Kuskokwim River total	153,825	87,237	115,748	60,050	76,588	71,146	100,786	37,770	61,840	45,251
Quinhagak	3,161	1,631	2,287	1,053	1,401	669	943	572	1,375	1,587
Goodnews Bay	200	136	1,311	177	406	140	221	135	295	232
Platinum	149	4	137	0	51	3	**26**	0	**51**	33
South Kuskokwim Bay	3,510	1,771	3,735	1,230	1,858	812	1,190	707	1,721	1,852
Total estimate	157,335	89,008	119,483	61,280	78,446	71,958	101,975	38,477	63,561	47,103

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Table 13.–Page 2 of 4.

Community	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kongiganak	1,839	2,399	3,247	897	2,958	1,960	2,420	**2,353**	1,755	1,420
North Kuskokwim Bay	1,839	2,399	3,247	897	2,958	1,960	2,420	2,353	1,755	1,420
Tuntutuliak	2,622	2,585	4,150	1,288	2,546	3,568	4,024	3,350	**3,375**	3,330
Eek	636	402	1,228	578	688	877	**1,075**	**783**	**788**	782
Kasigluk	4,689	**5,158**	**5,513**	**3,581**	5,064	**4,194**	**5,461**	**4,309**	1,502	1,857
Nunapitchuk	4,865	4,724	8,002	2,865	5,053	4,167	5,150	6,619	**4,705**	3,468
Atmautluak	1,848	1,397	2,514	849	2,271	1,940	**2,337**	2,193	**2,177**	1,665
Napakiak	2,859	1,793	3,421	1,560	2,328	3,238	8,143	3,628	1,313	1,638
Napaskiak	2,757	2,364	4,010	2,061	2,705	2,205	4,323	3,032	2,400	1,451
Oscarville	**1,237**	1,831	1,319	804	828	686	1,151	932	847	534
Bethel	10,149	10,757	17,731	11,452	13,448	14,273	20,953	16,540	15,853	10,055
Kwethluk	5,232	4,601	8,019	2,294	4,288	4,328	6,328	6,291	5,729	4,111
Akiachak	4,719	3,170	5,173	2,650	3,880	2,428	4,333	4,782	6,856	2,872
Akiak	2,617	2,240	2,571	2,928	3,499	3,528	3,095	4,141	3,522	1,350
Tuluksak	2,492	2,068	3,719	894	2,433	2,183	3,094	**3,202**	2,920	1,570
Lower Kuskokwim River	46,722	43,090	67,370	33,804	49,031	47,615	69,466	59,803	51,988	34,683
Lower Kalskag	1,534	1,498	1,445	1,087	1,316	997	4,703	1,997	1,004	930
Upper Kalskag	1,550	1,502	2,460	516	1,656	1,201	2,469	294	2,432	329
Aniak	1,933	1,934	4,367	820	2,535	2,952	3,722	4,108	2,830	2,602
Chuathbaluk	654	2,711	1,458	2,502	2,352	530	1,451	**1,541**	593	937
Middle Kuskokwim River	5,671	7,645	9,730	4,925	7,859	5,680	12,345	7,940	6,859	4,798
Crooked Creek	809	1,211	1,417	750	1,583	1,064	1,513	**813**	352	519
Red Devil	54	334	384	63	135	214	41	186	188	244
Sleetmute	371	379	1,293	468	1,054	422	1,475	818	373	367
Stony River	**320**	172	696	361	754	**324**	**790**	**540**	1,247	771
Lime Village	451	651	**869**	110	199	**573**	**316**	**419**	**297**	**405**
McGrath	188	247	969	513	290	**470**	999	464	676	825
Takotna	0	10	1	**0**	0	**4**	0	**0**	**0**	**0**
Nikolai	56	53	187	**191**	277	**230**	308	**223**	54	292
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	2,249	3,057	5,816	2,456	4,292	3,301	5,442	3,464	3,187	3,423
Kuskokwim River total	56,480	56,191	86,163	42,082	64,140	58,555	89,674	73,560	63,789	44,324
Quinhagak	895	808	2,011	559	1,383	994	2,754	2,249	1,794	1,557
Goodnews Bay	251	187	349	200	240	192	555	**395**	586	138
Platinum	82	60	95	19	42	21	108	**77**	106	28
South Kuskokwim Bay	1,228	1,055	2,455	778	1,665	1,207	3,417	2,720	2,486	1,723
Total estimate	57,708	57,246	88,618	42,860	65,805	59,762	93,091	76,281	66,275	46,047

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Table 13.–Page 3 of 4.

Community	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kongiganak	2,522	2,809	**1,638**	**1,397**	**1,915**	–	–	–	–	–
North Kuskokwim Bay	2,522	2,809	1,638	1,397	1,915	–	–	–	–	–
Tuntutuliak	2,439	1,865	2,614	2,180	**2,967**	2,143	1,673	2,158	2,739	2,290
Eek	721	486	1,552	1,232	1,182	1,023	681	762	809	315
Kasigluk	2,338	2,029	3,261	2,197	3,612	2,080	1,485	2,360	2,312	2,007
Nunapitchuk	3,223	4,257	5,312	2,977	5,213	3,631	2,422	5,035	4,058	2,721
Atmautluak	1,386	1,864	2,701	2,409	3,327	2,165	1,609	2,090	2,509	1,502
Napakiak	1,759	1,546	1,711	1,185	2,392	1,508	2,091	1,726	1,959	1,386
Napaskiak	3,110	1,783	3,216	2,589	3,171	2,173	1,901	2,355	2,402	2,045
Oscarville	352	402	599	490	599	350	240	261	553	386
Bethel	9,575	15,324	26,872	12,506	18,017	10,958	13,471	17,780	9,385	10,493
Kwethluk	3,112	3,484	3,849	3,825	4,318	2,230	2,326	4,501	2,994	1,805
Akiachak	2,856	3,205	4,150	3,417	4,744	2,085	2,176	3,311	3,897	1,652
Akiak	1,163	2,421	**2,925**	2,212	2,982	2,348	5,803	3,026	3,299	2,033
Tuluksak	3,180	2,697	2,585	3,062	2,274	1,747	2,698	2,408	2,623	1,738
Lower Kuskokwim River	35,214	41,363	61,347	40,281	54,798	34,441	38,576	47,773	39,539	30,373
Lower Kalskag	691	1,643	3,284	1,214	1,458	1,233	624	1,019	1,081	369
Upper Kalskag	391	1,599	1,930	1,534	1,038	642	1,055	204	883	147
Aniak	2,515	2,391	5,667	2,880	4,695	1,395	2,422	1,604	1,822	2,038
Chuathbaluk	535	686	796	935	805	342	347	606	872	190
Middle Kuskokwim River	4,132	6,319	11,677	6,563	7,996	3,612	4,448	3,433	4,658	2,744
Crooked Creek	539	862	610	**1,803**	391	383	831	374	295	553
Red Devil	122	434	516	981	284	48	129	121	72	23
Sleetmute	524	689	1,004	542	633	337	268	147	142	115
Stony River	338	516	**491**	27	89	44	14	109	0	128
Lime Village	**314**	**499**	419	**909**	**295**	–	232	135	175	90
McGrath	944	476	885	598	642	7	150	145	706	518
Takotna	**0**	0	**0**	**12**	**0**	**0**	5	0	0	0
Nikolai	440	349	1,044	513	1,356	2,000	205	352	331	24
Telida	–	–	–	–	–	–	–	–	–	–
Upper Kuskokwim River	3,221	3,825	4,970	5,386	3,690	2,819	1,834	1,383	1,721	1,451
Kuskokwim River total	45,089	54,316	79,631	53,627	68,398	40,872	44,858	52,589	45,918	34,568
Quinhagak	1,347	1,255	2,001	1,958	1,959	691	848	1,592	1,575	721
Goodnews Bay	324	349	322	153	268	197	219	90	147	114
Platinum	37	70	76	90	62	16	78	188	203	246
South Kuskokwim Bay	1,708	1,674	2,399	2,201	2,289	904	1,145	1,870	1,925	1,081
Total estimate	46,797	55,990	82,030	55,828	70,687	41,776	46,003	54,459	47,843	35,649

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Table 13.–Page 4 of 4.

Community	2020	2021	2022	2023
Kongiganak	–	–	–	–
North Kuskokwim Bay	–	–	–	–
Tuntutuliak	1,261	727	1,015	1,984
Eek	475	316	795	485
Kasigluk	2,697	661	653	1,285
Nunapitchuk	2,384	495	669	1,456
Atmautluak	957	227	643	2,316
Napakiak	879	210	325	286
Napaskiak	1,246	794	594	1,495
Oscarville	502	27	110	292
Bethel	7,892	3,153	3,048	9,536
Kwethluk	1,709	720	544	1,501
Akiachak	1,318	707	596	1,370
Akiak	1,452	649	493	677
Tuluksak	987	349	663	1,040
Lower Kuskokwim River	23,759	9,035	10,148	23,723
Lower Kalskag	624	86	250	313
Upper Kalskag	295	89	193	96
Aniak	658	235	76	591
Chuathbaluk	291	51	67	159
Middle Kuskokwim River	1,868	461	585	1,159
Crooked Creek	179	28	33	85
Red Devil	25	5	0	1
Sleetmute	25	23	0	63
Stony River	**41**	42	0	5
Lime Village	**128**	**21**	**4**	**–**
McGrath	864	0	97	53
Takotna	0	0	**0**	**3**
Nikolai	31	6	0	1
Telida	–	–	–	–
Upper Kuskokwim River	1,293	125	130	211
Kuskokwim River total	26,920	9,621	10,864	25,093
Quinhagak	829	804	1,832	2,181
Goodnews Bay	146	26	26	294
Platinum	69	63	162	133
South Kuskokwim Bay	1,044	893	2,019	2,609
Total estimate	27,964	10,514	12,883	27,702

Note: En dash means that harvest was not estimated. Bold font indicates Bayesian estimates.

Table 14.–District 4 commercial salmon harvest, including personal use, 1960–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	0	5,649	3,000	0	0	8,649
1961	4,328	2,308	46	90	18,864	25,636
1962	5,526	10,313	0	4,340	45,707	65,886
1963	6,555	0	0	0	0	6,555
1964	4,081	13,422	379	939	707	19,528
1965	2,976	1,886	0	0	4,242	9,104
1966	278	1,030	0	268	2,610	4,186
1967	0	652	1,926	0	8,087	10,665
1968	8,879	5,884	21,511	75,818	19,497	131,589
1969	16,802	3,784	15,077	953	38,206	74,822
1970	18,269	5,393	16,850	15,195	46,556	102,263
1971	4,185	3,118	2,982	13	30,208	40,506
1972	15,880	3,286	376	1,878	17,247	38,667
1973	14,993	2,783	16,515	277	19,680	54,248
1974	8,704	19,510	10,979	43,642	15,298	98,133
1975	3,928	8,584	10,742	486	35,233	58,973
1976	14,110	6,090	13,777	31,412	43,659	109,048
1977	19,090	5,519	9,028	202	43,707	77,546
1978	12,335	7,589	20,114	47,033	24,798	111,869
1979	11,144	18,828	47,525	295	25,995	103,787
1980	10,387	13,221	62,610	21,671	65,984	173,873
1981	24,524	17,292	47,551	160	53,334	142,861
1982	22,106	25,685	73,652	11,838	34,346	167,627
1983	46,385	10,263	32,442	168	23,090	112,348
1984	33,663	17,255	132,151	16,249	50,422	249,740
1985	30,401	7,876	29,992	28	20,418	88,715
1986	22,835	21,484	57,544	8,700	29,700	140,263
1987	26,022	6,489	50,070	66	8,557	91,204
1988	13,893	21,574	68,605	21,311	29,247	154,630
1989	20,820	20,582	44,607	273	39,395	125,677
1990	27,644	83,681	26,926	12,056	47,717	198,024
1991	9,480	53,657	42,571	115	54,493	160,316
1992	17,197	60,929	86,404	64,217	73,383	302,130
1993	15,784	80,878	55,817	7	40,924	193,410
1994	8,564	72,314	83,912	35,904	61,301	261,995
1995	38,584	68,194	66,203	186	81,462	254,629
1996	14,165	57,665	118,718[a]	20	81,505	272,073
1997	35,492	69,508	32,862	5	38,435	176,302
1998	23,158	41,382	80,183	2,217	45,097	192,037
1999	18,426	41,315	6,184	0	38,091	104,016
2000	21,229	68,557	30,529	3	30,553	150,871

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Table 14.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
2001	12,775	33,807	18,531	0	17,209	82,322
2002	11,480	17,802	26,695	0	29,252	85,229
2003	14,444	33,941	49,833	0	27,868	126,086
2004	25,462	34,627	82,398	0	25,820	168,307
2005	24,195	68,801	51,708	19	13,529	158,252
2006	19,184	106,308	26,831	0	39,151	191,474
2007	19,573	109,343	34,710	0	61,228	224,854
2008	13,812	69,743	94,257	0	57,033	234,845
2009	13,920	112,153	48,115	0	91,158	265,346
2010	14,230	138,362	13,690	0	106,610	272,892
2011	15,387	38,543	30,457	0	104,959	189,346
2012	6,675	37,688	31,214	0	61,140	136,717
2013	2,054	26,393	21,126	0	58,079	107,652
2014	2,265	58,879	52,317	0	14,563	128,024
2015	7,547	30,269	76,621	0	16,051	130,488
2016	[b]	[b]	[b]	[b]	[b]	[b]
2017	[b]	[b]	[b]	[b]	[b]	[b]
2018	[b]	[b]	[b]	[b]	[b]	[b]
2019	[b]	[b]	[b]	[b]	[b]	[b]
2020	4,345	113,849	29,374	0	6,531	154,099
2021	2,468	78,462	13,012	29	5,310	99,281
2022	[b]	[b]	[b]	[b]	[b]	[b]
2023	[b]	[b]	[b]	[b]	[b]	[b]

[a] Estimate of chum salmon roe included.

[b] No commercial fishery occurred.

Table 15.–District 5 commercial salmon harvest, including personal use, 1968–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1968	[a]	[a]	5,458	[a]	[a]	5,458
1969	3,978	6,256	11,631	298	5,006	27,169
1970	7,163	7,144	6,794	12,183	12,346	45,630
1971	477	330	1,771	0	301	2,879
1972	264	924	925	66	1,331	3,510
1973	3,543	2,072	5,017	324	15,781	26,737
1974	3,302	9,357	21,340	16,373	8,942	59,314
1975	2,156	9,098	17,889	419	5,904	35,466
1976	4,417	5,575	9,852	8,453	10,354	38,651
1977	3,336	3,723	13,335	29	6,531	26,954
1978	5,218	5,412	13,764	9,103	8,590	42,087
1979	3,204	19,581	42,098	201	9,298	74,382
1980	2,331	28,632	43,256	7,832	11,748	93,799
1981	7,193	40,299	19,749	11	13,679	80,931
1982	9,476	38,337	46,683	4,673	13,825	112,994
1983	14,117	11,716	19,660	0	6,772	52,265
1984	8,612	15,474	71,176	4,711	14,340	114,313
1985	5,793	6,698	16,498	8	4,784	33,781
1986	2,723	25,112	19,378	4,439	10,355	62,007
1987	3,357	27,758	29,057	54	20,381	80,607
1988	4,964	36,368	30,832	5,509	33,059	110,732
1989	2,966	19,299	31,849	82	13,622	67,818
1990	3,303	35,823	7,804	629	13,194	60,753
1991	912	39,838	13,312	29	15,892	69,983
1992	3,528	39,194	19,875	14,310	18,520	95,427
1993	2,117	59,293	20,014	0	10,657	92,081
1994	2,570	69,490	47,499	18,017	28,477	166,053
1995	2,922	37,351	17,875	39	19,832	78,019
1996	1,375	30,717	43,836	22	11,093	87,043
1997	2,039	31,451	2,983	0	11,729	48,202
1998	3,675	27,161	21,246	411	14,155	66,648
1999	1,888	22,910	2,474	0	11,562	38,834
2000	4,442	37,252	15,531	7	7,450	64,682
2001	1,519	25,654	9,275	0	3,412	39,860
2002	979	6,304	3,041	0	3,799	14,123
2003	1,412	29,423	12,658	0	5,593	49,086
2004	2,565	20,922	23,690	0	6,015	53,192
2005	2,035	23,933	11,735	0	2,568	40,271
2006	2,899	29,858	12,561	0	11,678	56,996
2007	3,126	43,766	13,697	6	7,853	68,448
2008	1,278	27,237	22,547	0	10,408	61,470
2009	1,509	32,544	8,406	0	16,985	59,444

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Table 15.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
2010	1,759	41,074	4,900	0	26,914	74,647
2011	2,092	24,573	15,358	0	13,191	55,214
2012	1,536	50,647	25,515	0	24,487	102,185
2013	495	24,521	21,582	0	12,651	59,249
2014	205	20,515	52,158	0	3,403	76,281
2015	705	25,861	7,030	0	4,510	38,106
2016	[b]	[b]	[b]	[b]	[b]	[b]
2017	[b]	[b]	[b]	[b]	[b]	[b]
2018	[b]	[b]	[b]	[b]	[b]	[b]
2019	[b]	[b]	[b]	[b]	[b]	[b]
2020	442	28,859	10,928	0	3,037	43,266
2021	114	35,963	1,192	0	535	37,804
2022	[b]	[b]	[b]	[b]	[b]	[b]
2023	[b]	[b]	[b]	[b]	[b]	[b]

[a] No harvest information available.

[b] No commercial fishery occurred.

Table 16.–District 4 commercial salmon fishing exvessel value, 1990–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1990	$253,562	$542,485	$123,936	$4,146	$89,343	$1,013,472
1991	$94,950	$246,734	$144,379	$52	$106,321	$592,436
1992	$166,471	$368,310	$303,740	$15,875	$139,268	$993,664
1993	$143,506	$402,763	$246,746	$4	$105,236	$898,255
1994	$67,584	$253,922	$420,802	$10,454	$84,395	$837,157
1995	$418,067	$323,104	$201,413	$81	$104,523	$1,047,188
1996	$61,004	$165,100	$246,930	$6	$61,686	$534,726
1997	$171,688	$204,190	$91,584	$0	$29,609	$497,071
1998	$82,168	$150,631	$197,676	$871	$36,497	$467,843
1999	$94,880	$140,846	$14,997	$0	$28,368	$279,091
2000	$131,351	$249,382	$31,898	$1	$23,929	$436,561
2001	$93,697	$89,334	$32,577	$0	$13,007	$228,615
2002	$56,356	$40,368	$47,651	$0	$23,374	$167,749
2003	$69,201	$107,287	$108,804	$0	$19,261	$304,553
2004	$107,700	$77,394	$201,879	$0	$18,372	$405,345
2005	$221,854	$241,478	$101,776	$4	$6,853	$571,965
2006	$147,802	$327,917	$61,433	$0	$14,030	$551,182
2007	$163,248	$374,004	$102,569	$0	$21,044	$660,865
2008	$140,580	$272,427	$317,143	$0	$20,581	$750,731
2009	$130,561	$384,209	$136,562	$0	$95,993	$747,325
2010	$294,163	$1,049,395	$117,658	$0	$194,105	$1,655,321
2011	$166,606	$207,642	$198,333	$0	$603,855	$1,176,436
2012	$85,934	$208,023	$167,638	$0	$362,840	$824,435
2013	$35,126	$154,135	$172,739	$0	$399,537	$761,537
2014	$22,940	$408,008	$367,817	$0	$59,873	$858,638
2015	$37,565	$89,262	$312,472	$0	$50,265	$489,564
2016	[a]	[a]	[a]	[a]	[a]	[a]
2017	[a]	[a]	[a]	[a]	[a]	[a]
2018	[a]	[a]	[a]	[a]	[a]	[a]
2019	[a]	[a]	[a]	[a]	[a]	[a]
2020	$23,715	$327,784	$107,906	$0	$8,669	$468,074
2021	$22,345	$283,670	$45,320	$7	$5,932	$357,273
2022	[a]	[a]	[a]	[a]	[a]	[a]
2023	[a]	[a]	[a]	[a]	[a]	[a]

[a] No commercial fishery occurred.

Table 17.–District 5 commercial salmon fishing exvessel value, 1990–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1990	$32,135	$263,598	$38,910	$254	$25,767	$360,664
1991	$8,370	$187,622	$47,519	$14	$31,394	$274,919
1992	$30,688	$257,457	$75,278	$2,913	$39,111	$405,447
1993	$21,351	$296,437	$95,043	$0	$28,304	$441,135
1994	$21,732	$309,577	$271,687	$5,442	$41,309	$649,747
1995	$31,339	$175,552	$58,061	$19	$21,427	$286,398
1996	$5,952	$87,427	$120,191	$4	$9,015	$222,589
1997	$10,867	$93,146	$9,497	$0	$9,358	$122,868
1998	$13,685	$100,171	$59,102	$174	$11,133	$184,265
1999	$9,020	$78,800	$7,515	$0	$8,327	$103,662
2000	$25,614	$146,708	$34,689	$2	$6,001	$213,014
2001	$10,496	$68,678	$17,089	$0	$2,586	$98,849
2002	$343	$15,846	$5,634	$0	$2,979	$24,802
2003	$6,461	$95,818	$28,945	$0	$3,883	$135,107
2004	$10,857	$49,741	$70,404	$0	$4,244	$135,246
2005	$16,696	$91,135	$25,010	$0	$1,454	$134,295
2006	$21,314	$87,996	$27,587	$0	$4,368	$141,265
2007	$23,951	$156,802	$38,796	$0	$2,781	$222,330
2008	$13,181	$104,296	$76,683	$0	$3,910	$198,070
2009	$13,333	$134,244	$25,456	$0	$18,998	$192,031
2010	$44,910	$334,366	$44,706	$0	$46,679	$470,661
2011	$19,224	$141,347	$106,471	$0	$78,980	$346,022
2012	$20,509	$299,187	$150,668	$0	$147,401	$617,765
2013	$8,546	$169,318	$185,332	$0	$89,455	$452,651
2014	$3,065	$152,446	$415,009	$0	$14,134	$584,654
2015	$3,823	$81,851	$30,737	$0	$15,205	$131,616
2016	[a]	[a]	[a]	[a]	[a]	[a]
2017	[a]	[a]	[a]	[a]	[a]	[a]
2018	[a]	[a]	[a]	[a]	[a]	[a]
2019	[a]	[a]	[a]	[a]	[a]	[a]
2020	$2,257	$87,602	$35,312	$0	$3,025	$128,196
2021	$954	$131,140	$3,571	$0	$521	$136,186
2022	[a]	[a]	[a]	[a]	[a]	[a]
2023	[a]	[a]	[a]	[a]	[a]	[a]

[a] No commercial fishery occurred.

Table 18.–Kanektok River salmon aerial survey estimates, 1980–2023.

Year	Chinook	Sockeye	Coho	Chum
1980	6,172	112,501	[a]	[a]
1981	[a]	[a]	25,950	69,325
1982	[a]	[a]	71,840	[a]
1983	8,890	[a]	[a]	[a]
1984	12,182	30,840	9,360	[a]
1985	13,465	15,570	53,060	46,830
1986	3,643	12,090	14,385	[a]
1987	4,213	51,753	16,790	[a]
1988	11,180	30,440	9,420	20,056
1989	7,914	14,735	20,583	[a]
1990	[a]	[a]	6,270	[a]
1991	[a]	[a]	2,475	[a]
1992	[a]	[a]	[a]	4,330
1993	[a]	[a]	25,675	[a]
1994	7,386	[a]	1,285	[a]
1995	[a]	[a]	10,000	[a]
1996	[a]	[a]	[a]	23,656
1997	[a]	[a]	[a]	[a]
1998	[a]	[a]	[a]	[a]
1999	[a]	[a]	[a]	[a]
2000	[a]	[a]	[a]	[a]
2001	6,510	[a]	11,440	[a]
2002	[a]	[a]	[a]	[a]
2003	6,206	21,335	[a]	[a]
2004	28,375	77,780	[a]	[a]
2005	12,780	95,900	[a]	[a]
2006	[a]	[a]	[a]	[a]
2007	[a]	[a]	[a]	[a]
2008	3,659	38,675	[a]	[a]
2009	[a]	[a]	[a]	[a]

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Table 18.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Chum
2010	1,208	16,180	[a]	[a]
2011	[a]	[a]	[a]	[a]
2012	[a]	[a]	[a]	[a]
2013	2,277	53,002	[a]	[a]
2014	1,840	136,400	[a]	[a]
2015	4,919	39,970	[a]	[a]
2016	5,631	80,160	[a]	[a]
2017	[a]	[a]	[a]	[a]
2018	4,246	326,200	[a]	[a]
2019	7,212	349,073	[a]	[a]
2020	4,405[b]	52,886[b]	[a]	[a]
2021	4,115	53,690[c]	[a]	[a]
2022	[a]	[a]	[a]	[a]
2023	6,688	90,360	[a]	[a]
SEG	3,900–12,000	15,300–41,000	–	–

Note: Aerial surveys are those rated as fair to good, obtained between July 17 and August 5 for Chinook and sockeye salmon, July 20–31 for chum salmon, and August 20 and September 5 for coho salmon. SEG means sustainable escapement goal. En dash means no aerial SEG set.

[a] Survey either not flown or did not meet acceptable survey criteria.

[b] Survey was flown outside the peak Chinook and sockeye salmon spawning period (July 20 to August 5).

[c] Survey was flown under poor weather conditions, hindering visibility in upper index reaches.

Table 19.–Goodnews River drainage salmon aerial survey estimates, 1980–2023.

	Goodnews River and lakes			Middle Fork Goodnews River and lakes		
Year	Chinook	Sockeye	Chum	Chinook	Sockeye	Chum
1980	1,228	75,639	1,975	1,164	[a]	3,782
1981	[a]	[a]	[a]	[a]	[a]	[a]
1982	[a]	[a]	9,700	[a]	[a]	6,300
1983	2,600	9,650	[a]	[a]	[a]	[a]
1984	3,245	12,807	17,250	1,910	8,546	9,172
1985	3,535	4,620	4,415	2,050	7,401	3,593
1986	1,068	8,960	11,850	1,249	16,990	7,645
1987	2,244	19,786	12,148	2,222	25,340	9,789
1988	[a]	[a]	[a]	[a]	[a]	[a]
1989	651	[a]	[a]	1,277	30,382	[a]
1990	658	27,689	[a]	[a]	[a]	[a]
1991	[a]	[a]	[a]	[a]	[a]	[a]
1992	875	[a]	1,950	[a]	[a]	3,270
1993	[a]	[a]	[a]	[a]	[a]	[a]
1994	[a]	[a]	[a]	[a]	[a]	[a]
1995	3,314	[a]	[a]	[a]	[a]	[a]
1996	[a]	[a]	[a]	[a]	[a]	[a]
1997	[a]	[a]	[a]	[a]	[a]	[a]
1998	578	3,497	2,743	731	11,393	3,619
1999	[a]	[a]	[a]	[a]	[a]	[a]
2000	[a]	[a]	[a]	[a]	[a]	[a]
2001	3,561	[a]	7,330	2,769	[a]	6,945
2002	1,470	[a]	3,075	1,195	2,627	1,208
2003	3,935	50,140	[a]	2,131	29,150	[a]
2004	7,462	31,695	[a]	2,617	33,670	[a]
2005	[a]	[a]	[a]	[a]	[a]	[a]
2006	[a]	[a]	[a]	[a]	[a]	[a]
2007	[a]	[a]	[a]	[a]	[a]	[a]
2008	2,155	32,500	[a]	2,190	13,935	[a]
2009	[a]	[a]	[a]	[a]	[a]	[a]

-continued-

Table 19.–Page 2 of 2.

	Goodnews River and lakes			Middle Fork Goodnews River and lakes		
Year	Chinook	Sockeye	Chum	Chinook	Sockeye	Chum
2010	[a]	[a]	[a]	[a]	[a]	[a]
2011	853	14,140	[a]	[a]	[a]	[a]
2012	378	16,710	[a]	355	[a]	[a]
2013	[a]	[a]	[a]	[a]	[a]	[a]
2014	630	[a]	[a]	612	12,262	[a]
2015	991	38,390	[a]	515	24,780	[a]
2016	1,120	90,060	[a]	1,301	68,978	
2017	[a]	[a]	[a]	[a]	[a]	[a]
2018	[a]	[a]	[a]	[a]	[a]	[a]
2019	2,462	162,930	[a]	[a]	[a]	[a]
2020	1,098	55,110	[a]	1,402	18,390	[a]
2021	2,273	95,020	[a]	4,115	21,410	[a]
2022	[a]	[a]	[a]	[a]	[a]	[a]
2023	4,336	33,020	[a]	[a]	[a]	[a]
SEG	640–3,300	9,600–18,000	–	–	–	–

Note: SEG means sustainable escapement goal. En dash means no aerial SEG set.

[a] Survey was either not flown or not rated as acceptable.

Table 20.–Kanektok River salmon weir escapement, 2003−2023.

Year	Chinook	Chum	Coho	Sockeye
2003	8,158	40,063	80,225	128,415
2004	19,602	45,894	104,075	103,150
2005	13,281	54,218	[a]	235,450
2006	[b]	[b]	[b]	[b]
2007	13,965	132,319	36,603	305,356
2008	[a]	[a]	[a]	[a]
2009	7,000	54,987	[a]	294,212
2010	6,457	69,236	[a]	208,300
2011	5,195	53,202	[a]	87,303
2012	1,495	26,425	[a]	99,604
2013	3,569	43,040	[a]	128,761
2014	3,594	18,586	[a]	256,970
2015	10,416	15,048	[a]	106,751
2016	[b]	[b]	[b]	[b]
2017	[b]	[b]	[b]	[b]
2018	[b]	[b]	[b]	[b]
2019	[b]	[b]	[b]	[b]
2020	[b]	[b]	[b]	[b]
2021	[b]	[b]	[b]	[b]
2022	[b]	[b]	[b]	[b]
2023	[b]	[b]	[b]	[b]
Average 2007–2020	6,461	51,605	36,603	185,907

[a] Weir did not operate.

[b] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

Table 21.–Estimated subsistence salmon harvest by species and community, Kuskokwim Area, 2023.

	Households (HH)			Chinook		
Community	Total *N*	Total *n*	% Survey	Average harvest/HH	Estimated total harvest	CI (95%)
Kongiganak[a]	90	0	0	–	–	–
North Kuskokwim Bay	90	0	0	–	–	–
Tuntutuliak	126	39	31	18.7	2,361	646
Eek	98	29	30	13.1	1,281	532
Kasigluk	109	48	44	14.1	1,532	408
Nunapitchuk	131	54	41	19.0	2,493	507
Atmautluak	62	21	34	11.7	728	369
Napakiak	111	27	24	7.3	806	398
Napaskiak	116	32	28	12.5	1,453	697
Oscarville	15	11	73	3.8	58	34
Bethel	1,795	369	21	7.0	12,639	2,972
Kwethluk	182	74	41	10.8	1,963	352
Akiachak	171	35	20	16.6	2,834	958
Akiak	91	24	26	14.5	1,321	476
Tuluksak	105	46	44	8.3	866	188
Lower Kuskokwim	3,112	809	26	9.7	30,334	3,373
Lower Kalskag	96	22	23	9.6	923	1,000
Upper Kalskag	55	16	29	14.2	783	505
Aniak	162	40	25	7.0	1,128	545
Chuathbaluk	30	20	67	9.2	277	26
Middle Kuskokwim	343	98	29	9.1	3,111	1,062
Crooked Creek	37	25	68	7.9	292	40
Red Devil	5	4	80	3.8	19	27
Sleetmute	28	14	50	2.9	80	21
Stony River[b]	8	4	50	0.0	0	0
Lime Village[b]	5	0	0	**3.8**	**19**	**7**
McGrath	94	32	34	0.9	88	83
Takotna	24	5	21	**0.0**	**0**	**–**
Nikolai	31	21	68	6.8	210	104
Telida[a]	2	0	0	–	–	–
Upper Kuskokwim	234	105	45	2.9	689	136
Kuskokwim River total	3,689	1,012	27	9.3	34,134	3,509
Quinhagak	195	76	39	20.5	4,004	767
Goodnews Bay	59	16	27	16.3	963	509
Platinum	17	10	59	12.7	215	55
South Kuskokwim Bay	271	102	38	19.1	5,182	881
Total	3,960	1,114	28	9.9	39,316	3,612

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Table 21.−Page 2 of 3.

Community	Chum			Sockeye		
	Average harvest/HH	Estimated total harvest	CI (95%)	Average harvest/HH	Estimated total harvest	CI (95%)
Kongiganak[a]	–	–	–	–	–	–
North Kuskokwim Bay	–	–	–	–	–	–
Tuntutuliak	8.1	1,015	296	20.8	2,618	904
Eek	6.3	795	448	20.2	2,549	1,239
Kasigluk	5.2	653	240	21.6	2,723	856
Nunapitchuk	5.3	669	243	27.3	3,444	989
Atmautluak	5.1	643	1,988	19.7	2,482	1,444
Napakiak	2.6	325	212	16.0	2,013	1,400
Napaskiak	4.7	594	346	24.2	3,055	1,237
Oscarville	0.9	110	77	3.1	384	211
Bethel	24.2	3,048	797	136.9	17,249	4,056
Kwethluk	4.3	544	216	21.5	2,703	517
Akiachak	4.7	596	366	18.7	2,362	1,074
Akiak	3.9	493	492	12.6	1,589	546
Tuluksak	5.3	663	197	11.0	1,387	812
Lower Kuskokwim	80.5	10,148	1,374	353.7	44,561	5,077
Lower Kalskag	2.0	250	80	2.5	316	115
Upper Kalskag	1.5	193	146	4.5	562	290
Aniak	0.6	76	54	8.9	1,117	586
Chuathbaluk	0.5	67	44	1.4	175	36
Middle Kuskokwim	4.6	585	157	17.2	2,170	633
Crooked Creek	0.3	33	9	2.5	310	9
Red Devil	0.0	0	0	0.2	25	36
Sleetmute	0.0	0	0	2.7	343	123
Stony River[b]	0.0	0	0	0.0	0	0
Lime Village[b]	**0.0**	**4**	**1**	**0.8**	**96**	**7**
McGrath	0.8	97	146	0.2	24	39
Takotna	**0.0**	**0**	**–**	**0.0**	**0**	**–**
Nikolai	0.0	0	0	0.0	**0**	**0**
Telida[a]	–	–	–	–	–	–
Upper Kuskokwim	1.0	130	146	5.6	702	127
Kuskokwim River total	86.2	10,864	1,388	376.4	47,432	5,112
Quinhagak	14.5	1,832	548	38.1	4,802	974
Goodnews Bay	0.2	26	15	19.5	2,460	770
Platinum	1.3	162	19	3.6	452	593
South Kuskokwim Bay	16.0	2,019	549	61.2	7,714	1,183
Total	102.2	12,883	1,477	437.7	55,146	5,237

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Table 21.–Page 3 of 3.

Community	Coho			Pink		
	Average harvest/HH	Estimated total harvest	CI (95%)	Average harvest/HH	Estimated total harvest	CI (95%)
Kongiganak[a]	–	–	–	–	–	–
North Kuskokwim Bay	–	–	–	–	–	–
Tuntutuliak	3.7	465	217	0.1	14	5
Eek	7.2	906	433	0.1	18	21
Kasigluk	4.1	513	265	0.1	8	6
Nunapitchuk	4.6	580	298	0.9	109	188
Atmautluak	5.8	733	805	0.3	33	122
Napakiak	4.9	617	414	0.2	25	32
Napaskiak	4.9	616	3,310	0.1	14	18
Oscarville	0.3	37	27	0.0	0	0
Bethel	54.1	6,814	1,856	1.9	240	143
Kwethluk	6.5	824	351	0.5	68	47
Akiachak	7.1	894	1,439	0.4	51	176
Akiak	3.8	475	276	0.6	79	143
Tuluksak	3.4	423	153	1.0	123	100
Lower Kuskokwim	110.3	13,897	2,385	6.2	781	290
Lower Kalskag	1.3	163	202	0.4	53	74
Upper Kalskag	1.2	148	201	0.8	105	254
Aniak	4.9	612	686	0.0	0	0
Chuathbaluk	0.1	7	5	0.0	1	0
Middle Kuskokwim	7.4	931	711	1.3	159	251
Crooked Creek	0.5	68	0	0.0	0	0
Red Devil	0.0	0	0	0.0	0	0
Sleetmute	0.7	85	87	0.0	0	0
Stony River[b]	0.1	10	0	0.0	0	0
Lime Village[b]	**0.0**	**2**	**10**	**–**	–	–
McGrath	3.3	411	453	0.0	3	5
Takotna	**0.1**	**8**	**24**	–	–	–
Nikolai	0.0	0	0	0.0	0	0
Telida[a]	–	–	–	–	–	–
Upper Kuskokwim	4.6	574	458	0.0	3	5
Kuskokwim River total	122.2	15,401	2,511	7.5	944	352
Quinhagak	12.0	1,508	541	0.8	107	62
Goodnews Bay	1.3	162	136	0.3	41	28
Platinum	0.9	113	48	0.0	4	0
South Kuskokwim Bay	14.2	1,783	551	1.2	152	66
Total	136.4	17,185	2,564	8.7	1,096	357

Source: ADF&G Division of Subsistence household surveys, 2022.

Note: En dashes indicate data are not available. Bold text indicates Bayesian estimates.

[a] Community was not surveyed. Harvest was not estimated due to a lack of recent data.

[b] Bayesian imputation was used to develop estimates.

Table 22.–Daily mean tidal CPUE, cumulative mean tidal CPUE, and percent passage for the Bethel test fishery, 2023.

	Chinook			Sockeye			Coho			Chum		
Date	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
6/1	0	0	0	0	0	0	0	0	0	0	0	0
6/2	1	1	0	0	0	0	0	0	0	3	3	0
6/3	0	1	0	0	0	0	0	0	0	0	3	0
6/4	1	2	1	0	0	0	0	0	0	0	3	0
6/5	4	6	2	0	0	0	0	0	0	0	3	0
6/6	1	8	2	0	0	0	0	0	0	3	5	0
6/7	1	9	2	0	0	0	0	0	0	0	5	0
6/8	0	9	2	0	0	0	0	0	0	0	5	0
6/9	1	10	3	3	3	0	0	0	0	0	5	0
6/10	3	13	3	0	3	0	0	0	0	0	5	0
6/11	0	13	3	0	3	0	0	0	0	0	5	0
6/12	0	13	3	0	3	0	0	0	0	0	5	0
6/13 [a]	11	24	6	0	3	0	0	0	0	1	6	0
6/14	0	24	6	0	3	0	0	0	0	3	9	0
6/15	8	32	8	3	5	0	0	0	0	11	20	0
6/16	4	37	10	6	11	1	0	0	0	11	31	1
6/17	15	51	13	5	16	1	0	0	0	8	39	1
6/18	17	68	18	13	30	2	0	0	0	8	47	1
6/19	22	91	24	21	50	3	0	0	0	8	55	1
6/20	18	108	28	72	122	7	0	0	0	38	92	2
6/21	18	127	33	39	161	9	0	0	0	45	137	3
6/22	18	145	38	23	184	10	0	0	0	18	155	4
6/23	9	154	40	27	211	12	0	0	0	13	168	4
6/24	21	175	46	29	240	13	0	0	0	21	189	4
6/25 [a]	12	187	**49**	40	280	16	0	0	0	40	229	5
6/26	14	201	53	65	346	19	0	0	0	17	246	6
6/27	19	220	58	25	371	21	0	0	0	63	309	7
6/28	25	246	64	58	429	24	0	0	0	99	408	9

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Table 22.−Page 2 of 4.

Date		Chinook			Sockeye			Coho			Chum		
		Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
6/29		18	264	69	15	444	25	0	0	0	79	488	11
6/30		11	275	72	89	533	30	0	0	0	150	638	15
7/1		21	296	78	33	567	32	0	0	0	69	707	16
7/2		5	302	79	21	588	33	0	0	0	23	730	17
7/3		7	308	81	29	616	34	0	0	0	15	745	17
7/4		1	309	81	109	726	41	0	0	0	35	780	18
7/5		8	317	83	188	914	**51**	0	0	0	44	824	19
7/6		1	318	83	75	989	55	0	0	0	56	880	20
7/7		7	326	85	243	1232	69	0	0	0	208	1088	25
7/8		9	335	88	103	1,335	75	0	0	0	114	1,202	28
7/9		12	347	91	25	1,360	76	0	0	0	190	1,393	32
7/10		3	349	91	31	1,392	78	0	0	0	153	1,546	36
7/11		8	357	94	33	1,424	80	0	0	0	40	1,586	37
7/12		1	359	94	29	1,453	81	0	0	0	162	1,748	41
7/13		0	359	94	19	1,472	82	0	0	0	120	1,868	43
7/14		4	363	95	29	1,502	84	3	3	0	98	1,966	46
7/15	[a,b]	8	370	97	41	1,542	86	1	3	0	205	2,172	**50**
7/16		0	370	97	37	1,579	88	2	5	0	136	2,307	54
7/17		0	370	97	49	1,628	91	2	7	0	178	2,486	58
7/18		2	372	97	29	1,657	93	5	13	0	205	2,691	63
7/19		0	372	97	20	1,678	94	13	25	1	159	2,850	66
7/20		2	374	98	13	1,690	95	11	36	1	220	3,070	71
7/21		2	376	98	18	1,709	96	26	62	1	240	3,309	77
7/22		2	378	99	14	1,723	96	25	87	2	149	3,458	80
7/23		2	379	99	17	1,740	97	26	113	3	155	3,613	84
7/24		0	379	99	7	1,747	98	52	165	4	104	3,717	86
7/25		0	379	99	2	1,749	98	18	183	4	29	3,746	87

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Table 22.−Page 3 of 4.

Date		Chinook			Sockeye			Coho			Chum		
		Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
7/26		0	379	99	13	1,762	99	84	267	6	136	3,882	90
7/27		0	379	99	0	1,762	99	62	329	8	101	3,983	93
7/28		0	379	99	2	1,763	99	71	401	10	84	4,067	95
7/29		0	379	99	5	1,769	99	48	449	11	53	4,120	96
7/30		0	379	99	0	1,769	99	21	469	11	13	4,134	96
7/31		0	379	99	2	1,771	99	36	506	12	7	4,141	96
8/1		0	379	99	0	1,771	99	33	539	13	20	4,161	97
8/2		0	379	99	2	1,773	99	76	615	15	12	4,173	97
8/3		0	379	99	2	1,774	99	40	655	16	7	4,180	97
8/4		2	381	100	2	1,776	99	153	808	19	32	4,212	98
8/5	[a]	0	382	100	0	1,777	99	207	1,015	24	26	4,238	98
8/6		0	382	100	0	1,777	99	300	1,315	32	24	4,262	99
8/7	[a]	0	382	100	0	1,777	99	268	1,582	38	9	4,271	99
8/8		0	382	100	0	1,777	99	229	1,811	44	2	4,273	99
8/9		0	382	100	2	1,778	99	56	1,867	45	0	4,273	99
8/10		0	382	100	0	1,778	99	110	1,977	48	0	4,273	99
8/11	[a]	0	382	100	2	1,781	100	119	2,097	**50**	9	4,282	99
8/12		0	382	100	0	1,781	100	182	2,278	55	2	4,283	100
8/13	[a]	0	382	100	2	1,783	100	245	2,524	61	3	4,287	100
8/14		0	382	100	0	1,783	100	154	2,677	64	2	4,288	100
8/15		0	382	100	0	1,783	100	140	2,817	68	0	4,288	100
8/16		0	382	100	0	1,783	100	146	2,963	71	4	4,292	100
8/17		0	382	100	0	1,783	100	192	3,155	76	0	4,292	100
8/18		0	382	100	2	1,784	100	218	3,373	81	8	4,300	100
8/19		0	382	100	0	1,784	100	242	3,615	87	0	4,300	100
8/20		0	382	100	0	1,784	100	179	3,793	91	4	4,303	100

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Table 22.−Page 4 of 4.

Date	Chinook			Sockeye			Coho			Chum		
	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage	Daily mean tidal CPUE	Cumulative mean tidal CPUE	Percent passage
8/21	0	382	100	0	1,784	100	127	3,920	94	0	4,303	100
8/22	0	382	100	2	1,786	100	163	4,083	98	0	4,303	100
8/23	0	382	100	0	1,786	100	68	4,151	100	0	4,303	100
8/24	0	382	100	2	1,788	100	9	4,160	100	0	4,303	100
Totals	382			1,788			4,160			4,303		

Note: The boxes represent the central 50% of the run, and the bold represents the median passage date of the run.

[a] Estimated CPUE index.

[b] Use of the 8-inch mesh gillnet was discontinued after July 15.

Table 23.–Bethel test fishery cumulative CPUE, by species, 1984–2023.

Year	Chinook	Sockeye	Coho	Chum
1984	272	579	3,126	2,387
1985	114	1,654	1,778	1,327
1986	201	2,445	4,471	4,066
1987	582	2,762	1,960	4,900
1988	361	1,501	3,437	5,189
1989	523	799	2,609	2,607
1990	445	1,114	2,307	2,718
1991	172	581	1,527	1,262
1992	349	1,109	2,707	3,058
1993	472	1,705	2,697	2,585
1994	362	1,475	2,938	4,797
1995	443	1,367	1,911	3,985
1996	458	1,794	5,630	8,255
1997	478	1,424	2,080	1,955
1998	344	1,455	1,326	2,332
1999	130	1,247	416	548
2000	95	1,048	5,236	2,592
2001	122	1,211	2,914	3,395
2002	410	566	4,289	6,794
2003	649	1,718	4,819	4,803
2004	1,134	2,108	6,771	5,240
2005	883	3,019	3,678	18,177
2006	664	2,136	3,164	13,925
2007	513	1,520	3,328	10,654
2008	623	1,708	5,494	6,737
2009	706	1,521	4,495	8,245
2010	458	1,374	2,024	7,651
2011	579	1,517	3,234	10,028
2012	418	1,171	2,376	6,890
2013	261	1,146	2,865	5,701
2014	650	1,367	4,697	6,338
2015	625	2,158	2,736	2,942
2016	683	2,463	3,530	3,894
2017	374	2,690	6,785	3,245
2018	667	2,273	900	8,203
2019	848	2,685	1,801	6,427
2020	487	1,061	1,822	1,442
2021	532	1,694	1,696	327
2022	504	1,372	1,281	2,191
2023	382	1,788	4,160	4,303
Average 2013–2022	563	1,891	2,811	4,071

Table 24.–Passage estimates at the Kuskokwim River sonar, 2018–2023.

Year	Chinook	Sockeye	Chum	Coho	Pink	Cisco	Broad	Humpback	Sheefish	Other [a]
2018	132,970	679,230	555,570	9,144	51,477	286,184	8,758	407,328	12,970	20,501
2019	162,672	924,579	385,409	29,467	32,346	608,122	6,726	697,627	17,984	6,582
2020	106,265	575,334	76,323	163,708	19,793	1,217,611	7,892	633,815	8,236	13,659
2021	102,552	745,037	25,689	237,285	41,912	823,091	22,859	667,285	20,731	18,375
2022	145,896	614,712	103,864	161,469	38,715	591,150	7,661	612,604	40,515	25,161
2023	79,166	899,180	251,542	379,736	23,218	819,784	8,879	598,832	28,551	10,971
Average 2018–2022	130,071	707,778	229,371	–	–	–	–	–	–	–
Average 2020–2022	118,238	645,028	68,625	187,487	33,473	877,284	12,804	637,901	23,161	19,065

Note: Operations ended July 26, 2018, and July 27, 2019, before most coho salmon passage and a large portion of pink salmon and nonsalmon passage occurred. Operations ended August 25, 2020, August 26, 2021, August 26, 2022, and August 26, 2023, before some coho salmon, pink salmon, and nonsalmon passage occurred, resulting in incomplete passage estimates. En dash means that harvest was not estimated.

[a] Other includes burbot, Dolly Varden, northern pike, and longnose sucker.

Table 25.–Chinook salmon escapements at Kuskokwim River weir projects, 2003–2023.

	Chinook salmon escapement						
Year	Kwethluk	Salmon (Aniak)	George	Kogrukluk	Tatlawiksuk	Takotna River	Salmon (Pitka Fork)
2003	14,475	[a]	[b]	11,751	[b]	378	[a]
2004	28,801	[a]	5,392	19,880	2,833	461	[a]
2005	[a]	[a]	3,845	21,686	2,858	499	[a]
2006	17,019	6,901	4,359	19,305	1,700	537	[a]
2007	15,112	6,214	4,972	[b]	2,058	412	[a]
2008	5,642	2,376	3,383	9,740	1,194	413	[a]
2009	5,826	1,823	3,664	9,201	1,071	311	[a]
2010	1,716	[a]	1,500	5,160	554	183	[a]
2011	4,056	[a]	1,605	6,926	1,011	149	[a]
2012	[b]	[b]	2,362	[b]	1,116	238	[a]
2013	[b]	711	1,267	1,919	495	104	[a]
2014	3,191	1,722	2,988	3,726	2,050	[a]	[a]
2015	8,163	2,401	2,301	8,333	2,131	[a]	7,156
2016	[b]	[b]	2,218	7,062	2,693	[a]	6,371
2017	7,207	2,611	3,669	7,787	2,146	318	8,298
2018	[b]	2,252	3,322	6,292	[a]	205	5,354
2019	8,505	[a]	3,828	10,301	[a]	554	4,823
2020	[a]	1,228	2,418	5,645	[a]	357	4,825
2021	[a]	1,303	2,920	6,969	[a]	323	3,992
2022	6,808	1,620	4,318	5,837	[a]	[b]	1,330
2023	[b]	1,228	2,834	[b]	[a]	233	4,791
SEG	4,100–7,500		1,800–3,300	4,800–8,800			
Average 2013–2022	6,775	1,731	2,925	6,384	1,903	310	5,269

Note: SEG means sustainable escapement goal.

[a] Weir did not operate.

[b] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

Table 26.–Sockeye salmon escapements at Kuskokwim River weir projects, 2003–2023.

	Sockeye salmon escapement				
Year	Kwethluk	Salmon (Aniak)	George	Kogrukluk	Telaquana
2003	2,930	[a]	14	9,203	[a]
2004	3,607	[a]	177	6,895	[a]
2005	[a]	[a]	272	37,685	[a]
2006	[b]	5,190	146	60,507	[a]
2007	5,805	2,114	65	16,798	[a]
2008	[b]	1,181	92	19,663	[a]
2009	4,577	1,366	54	22,216	[a]
2010	4,336	[a]	113	13,306	71,932
2011	[b]	[a]	43	8,079	35,099
2012	[a]	950	79	[b]	23,002
2013	677	966	150	7,793	28,058
2014	3,880	934	156	6,479	24,292
2015	8,998	1,504	159	6,647	95,570
2016	21,618	310	2,807	20,108	82,710
2017	28,806	[b]	912	24,696	145,281
2018	19,544	2,537	1,615	21,343	197,368
2019	42,212	[a]	3,973	32,116	198,485
2020	[a]	234	281	9,923	177,509
2021	[a]	907	937	13,534	123,958
2022	8,563	1,414	519	10,278	153,374
2023	[b]	2,693	1,181	[b]	283,014
SEG				4,400–17,000	
Average 2013–2022	16,789	1,101	1,151	15,292	122,661

Note: SEG means sustainable escapement goal.

[a] Weir did not operate.

[b] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

Table 27.–Coho salmon escapements at Kuskokwim River weir projects, 2003–2023.

	Coho salmon escapement			
Year	Kwethluk	Salmon (Aniak)	George	Kogrukluk
2003	111,059	[a]	33,741	74,903
2004	87,448	[a]	12,499	26,078
2005	[a]	[a]	8,296	25,313
2006	[b]	[b]	12,693	22,300
2007	22,758	[b]	28,513	26,798
2008	53,582	10,974	21,931	29,300
2009	23,939	6,351	12,491	22,544
2010	[b]	[a]	12,866	14,558
2011	[b]	[a]	31,900	21,950
2012	20,627	[b]	14,844	13,462
2013	[b]	2,834	14,823	23,800
2014	48,478	8,189	35,771	54,001
2015	32,124	[b]	35,790	32,900
2016	38,152	[b]	[b]	[b]
2017	55,722	[b]	25,338	[b]
2018	[b]	[b]	8,993	8,169
2019	34,561	[a]	13,277	16,470
2020	[a]	[b]	21,426	[b]
2021	[a]	[b]	31,491	14,373
2022	8,702	[b]	9,934	[b]
2023	36,035	[b]	33,439	28,132
SEG	>19,000			13,000–28,000
Average 2013–2022	36,290	5,512	21,871	24,952

Note: SEG means sustainable escapement goal.

[a] Weir did not operate.

[b] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

Table 28.–Chum salmon escapements at Kuskokwim River weir projects, 2003–2023.

	Chum salmon escapement				
Year	Kwethluk	Salmon (Aniak)	George	Kogrukluk	Takotna River
2003	41,813	[a]	30,944	23,708	3,292
2004	38,759	[a]	14,172	24,429	1,633
2005	[a]	[a]	14,847	194,896	648
2006	48,257	41,159	41,596	183,743	12,643
2007	62,456	25,228	62,681	53,064	8,906
2008	20,757	9,459	29,616	44,717	5,704
2009	32,226	9,336	7,940	81,829	2,528
2010	18,919	[a]	26,187	63,612	3,995
2011	17,552	[a]	45,257	76,649	8,562
2012	[a]	[b]	33,277	[b]	6,039
2013	[a]	7,685	37,945	65,648	6,516
2014	17,942	2,777	17,183	30,697	[a]
2015	23,071	5,511	17,554	33,091	[a]
2016	31,666	1,691	19,469	45,234	[a]
2017	52,202	9,754	39,971	85,793	6,557
2018	59,150	18,770	48,915	52,937	6,007
2019	33,100	[a]	43,072	71,006	5,618
2020	[a]	1,995	8,943	19,020	[b]
2021	[a]	537	1,371	4,153	[b]
2022	2,368	1,050	8,429	13,471	[b]
2023	[b]	4,040	15,253	[b]	2,763
SEG				15,000–49,000	
Average 2013–2022	25,231	5,530	24,285	42,105	6,175

Note: SEG means sustainable escapement goal.

[a] Weir did not operate.

[b] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

Table 29.–Kuskokwim River drainage Chinook salmon aerial survey estimates, 2003–2023.

	Lower Kuskokwim River[a]				Middle Kuskokwim River[a]		
Year	Eek	Kwethluk Canyon Creek	Kisaralik	Tuluksak	Aniak	Kipchuk	Salmon (Aniak)
2003	1,236	2,661	654	94	3,514	1,493	1,242
2004	4,653	6,801	5,157	1,196	5,362	1,868	2,177
2005	[b]	5,059	2,206	672	[b]	1,679	4,097
2006	[b]	[b]	4,734	[b]	5,639	1,618	[b]
2007	[b]	[b]	692	173	3,984	2,147	1,458
2008	[b]	487	1,074	[b]	3,222	1,061	589
2009	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2010	[b]	[b]	235	[b]	[b]	[b]	[b]
2011	263	[b]	534	[b]	[b]	116	79
2012	[b]	[b]	588	[b]	[b]	193	49
2013	240	1,165	599	83	754	261	154
2014	189	[b]	622	[b]	3,201	1,220	497
2015	[b]	[b]	709	[b]	[b]	917	810
2016	[b]	[b]	622	[b]	718	898	[b]
2017	[b]	[b]	[b]	[b]	1,781	889	423
2018	[b]	[b]	584	[b]	1,534	1,123	442
2019	[b]	[b]	1,063	[b]	3,160	1,344	950
2020	[b]	721	350	[b]	1,264	723	269
2021	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2022	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2023	[b]	[b]	[b]	[b]	628	[b]	[b]
SEG							
Average 2013–2022	231	943	630	83	1,773	768	408

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Table 29.–Page 2 of 2.

	Middle Kuskokwim River [a]					Upper Kuskokwim River [a]		
Year	Holokuk	Oskawaluk	Holitna	Gagarayah	Cheeneetnuk	Bear (Pitka)	Salmon (Pitka)	Upper Pitka Fork
2003	1,096	844	[b]	1,095	810	176	1,242	197
2004	539	293	4,051	670	918	206	1,138	290
2005	510	582	1,760	788	1,155	367	1,801	744
2006	705	386	1,866	531	1,015	347	862	170
2007	[b]	[b]	[b]	1,035	[b]	165	943	131
2008	418	213	[b]	177	290	245	1,033	242
2009	565	379	[b]	303	323	209	632	187
2010	229	[b]	587	62	[b]	75	135	67
2011	61	26	[b]	96	249	145	767	85
2012	36	51	[b]	178	229	[b]	670	[b]
2013	[b]	38	532	74	138	64	469	[b]
2014	80	200	[b]	359	340	[b]	1,865	[b]
2015	77	[b]	662	19	[b]	1,381	2,016	[b]
2016	100	47	1,157	135	217	580	1,578	[b]
2017	140	136	676	453	660	492	687	234
2018	162	[b]	980	438	565	550	1,399	471
2019	719	638	1,377	760	1,345	542	1,918	330
2020	99	169	854	[b]	419	321	1,150	160
2021	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2022	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2023	660	373	[b]	449	645	326	671	28
SEG							470–1,600	
Average 2013–2022	164	163	891	279	462	509	1,252	256

Note: SEG means sustainable escapement goal.

[a] Estimates are from aerial surveys conducted during peak spawning periods under good to fair survey conditions.

[b] Survey was either not flown or did not meet acceptable survey criteria.

Table 30.–Middle Fork Goodnews River salmon escapement, 2003–2023.

Year	Chinook	Sockeye	Coho	Chum
2003	2,245	37,882	52,504	21,664
2004	4,550	53,131	42,049	32,447
2005	4,591	115,167	20,168	26,411
2006	4,558	126,734	26,909	54,599
2007	3,874	74,111	19,442	48,973
2008	2,329	41,228	37,690	39,821
2009	1,632	26,197	19,123	18,503
2010	1,968	37,273	26,287	24,794
2011	2,181	20,188	24,668	19,974
2012	1,131	30,352	[a]	9,512
2013	1,263	24,117	[a]	27,692
2014	750	41,473	[a]	11,518
2015	1,543	54,757	[a]	11,475
2016	1,659	169,544	[a]	33,671
2017	6,775	182,043	[a]	44,876
2018	[b]	[b]	[b]	[b]
2019	6,039	162,711	[a]	38,072
2020	[b]	[b]	[b]	[b]
2021	[b]	[b]	[b]	[b]
2022	[b]	[b]	[b]	[b]
2023	[b]	[b]	[b]	[b]
SEG	1,500–3,600	22,000–43,000	>12,000	>12,000
Average 2013–2022	3,005	105,774		27,884

Note: SEG means sustainable escapement goal.

[a] Historical run timing indicates that more than 40% of the run was missed; annual escapement was not determined.

[b] Weir did not operate.

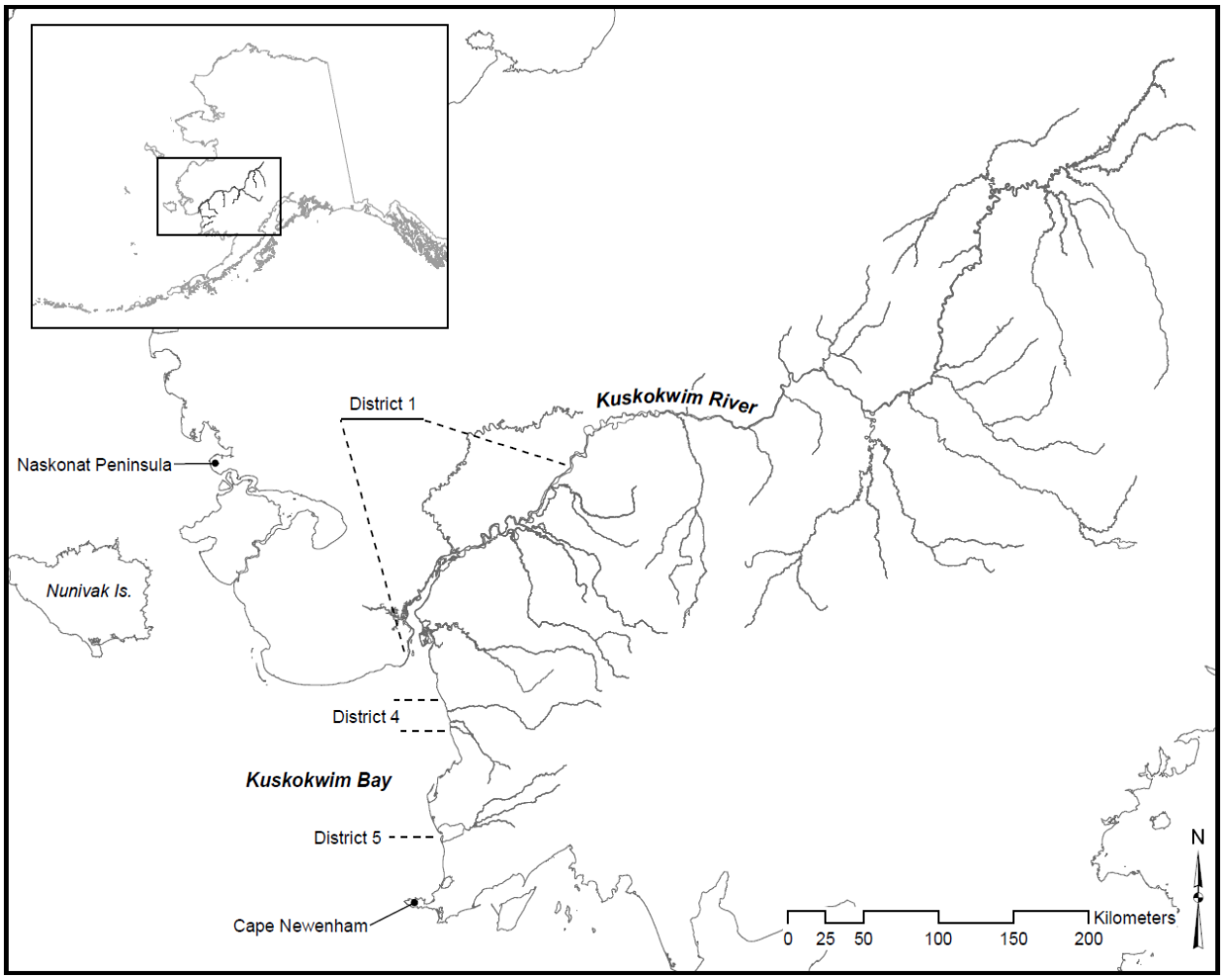

Figure 1.–The Kuskokwim Area and commercial fishing districts.

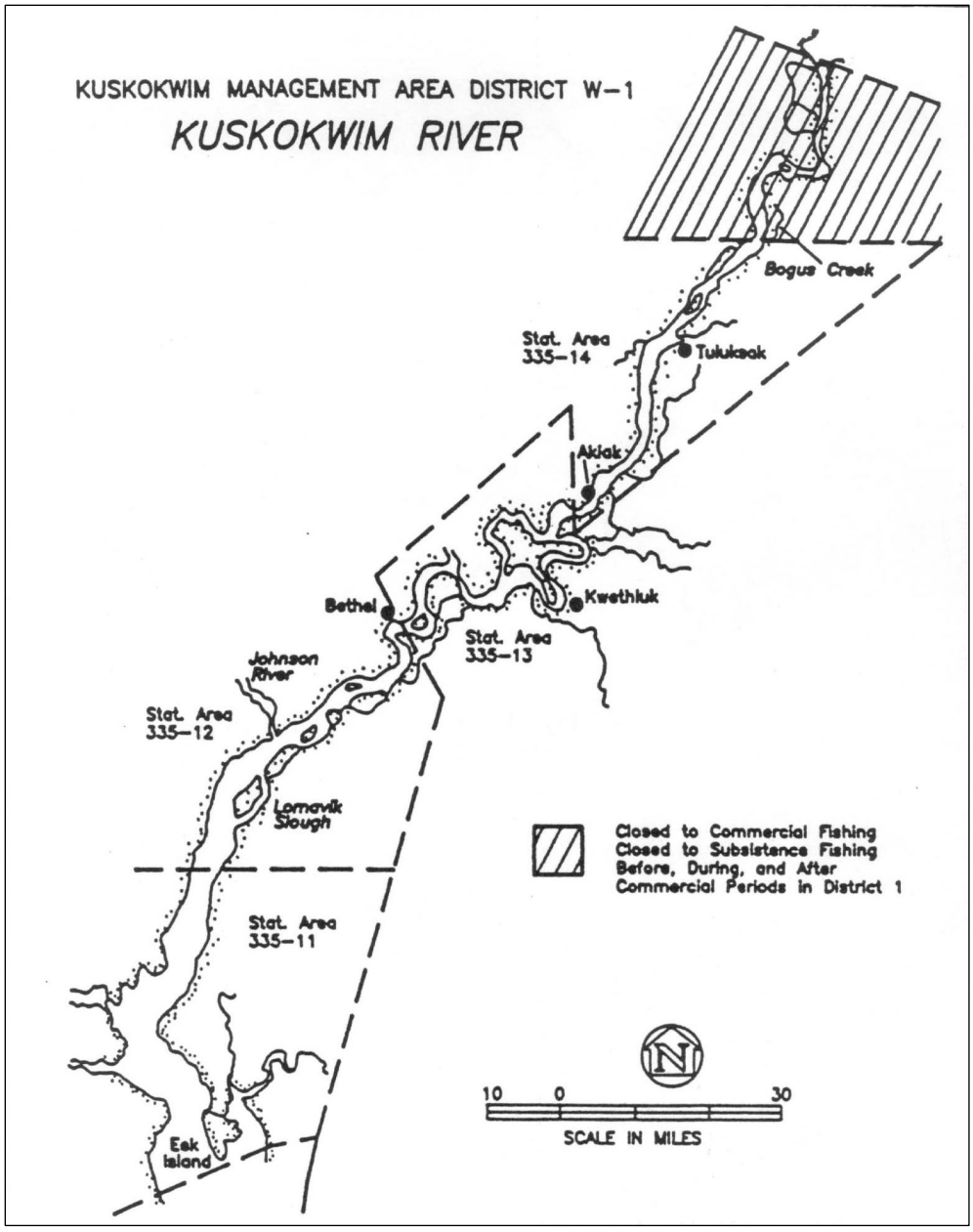

Figure 2.–Map of commercial fishing District W-1, Kuskokwim Area.

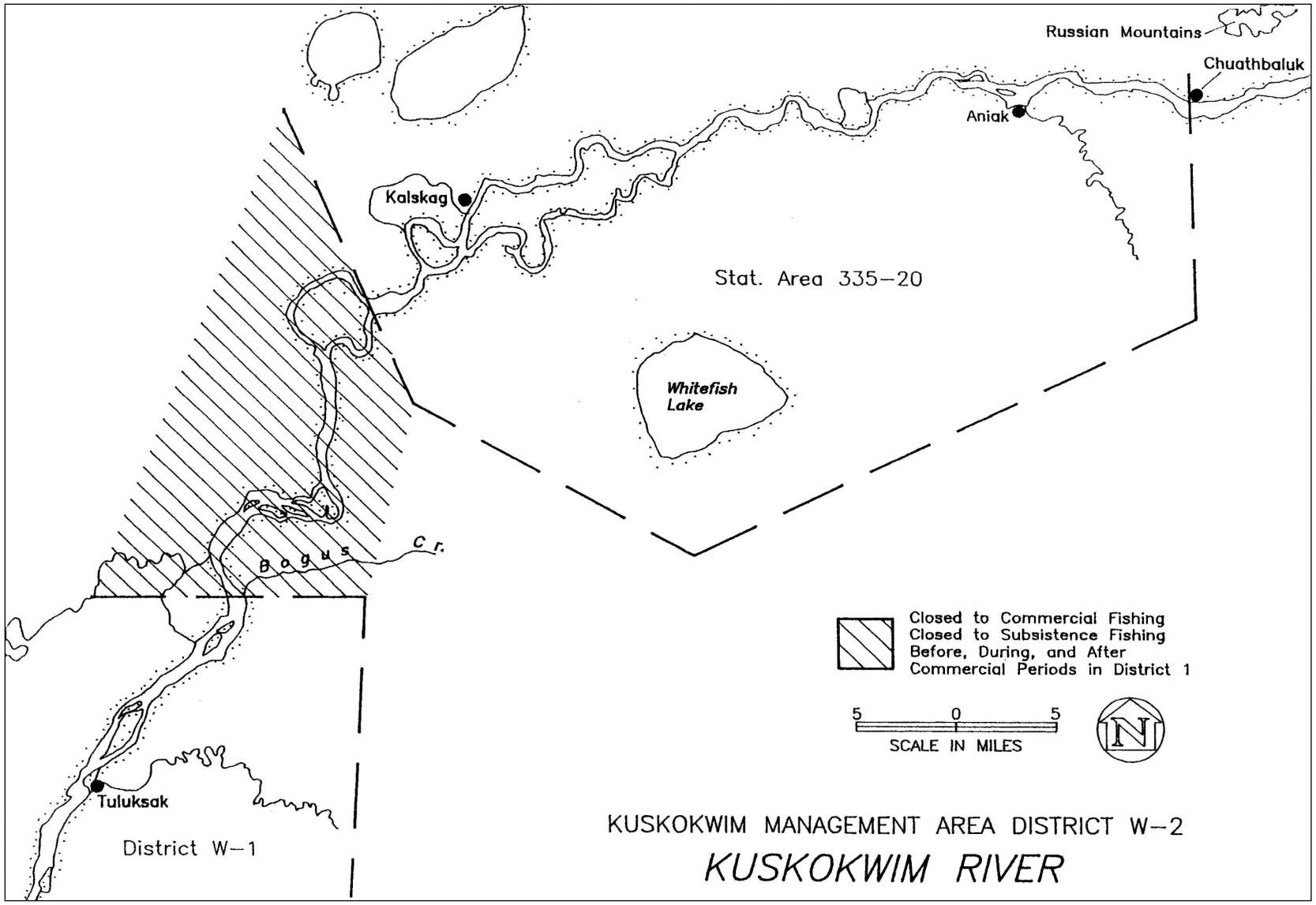

Figure 3.–Map of commercial fishing District W-2, Kuskokwim Area.

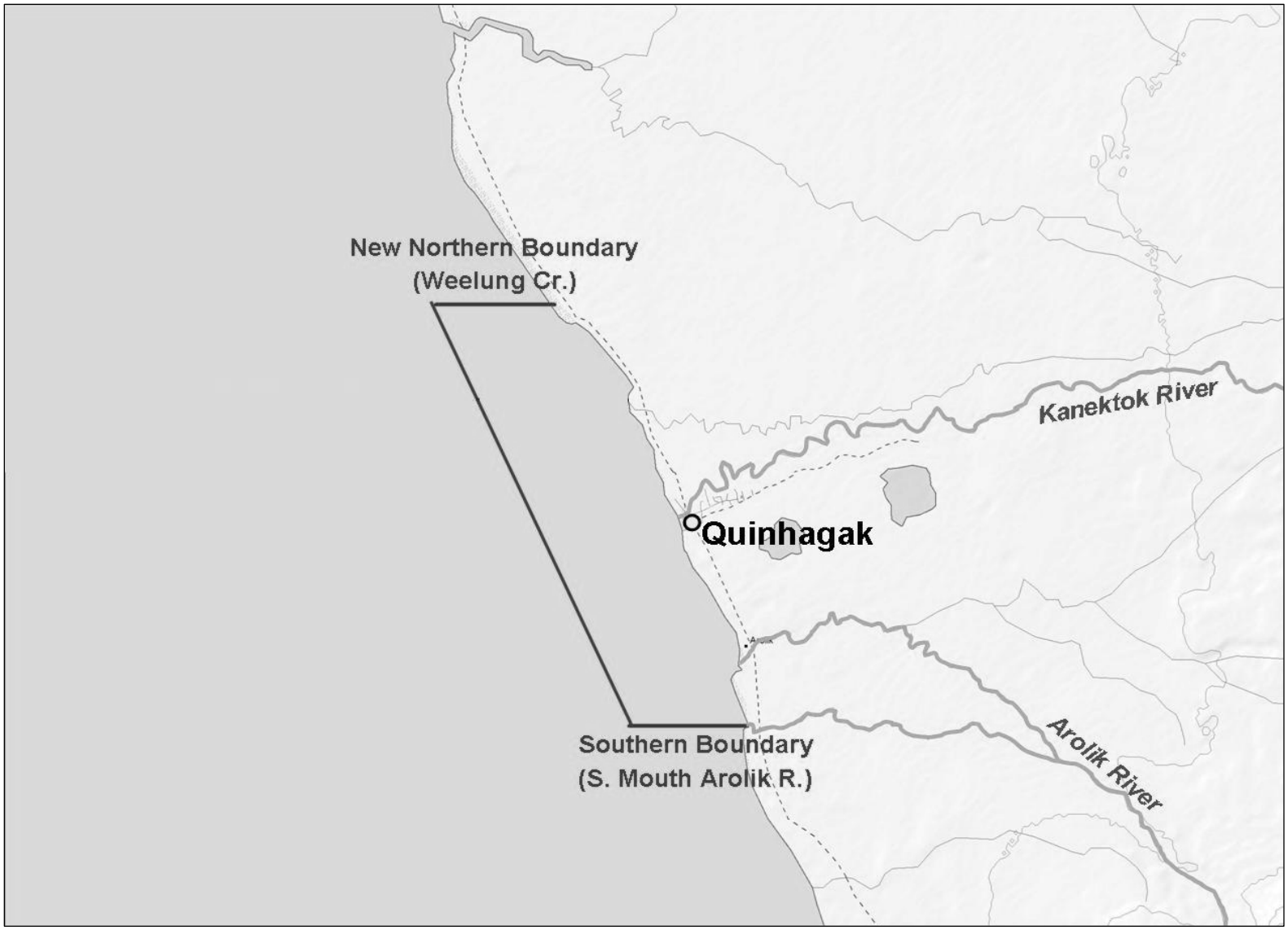

Figure 4.–Map of commercial fishing District W-4, Kuskokwim Area.

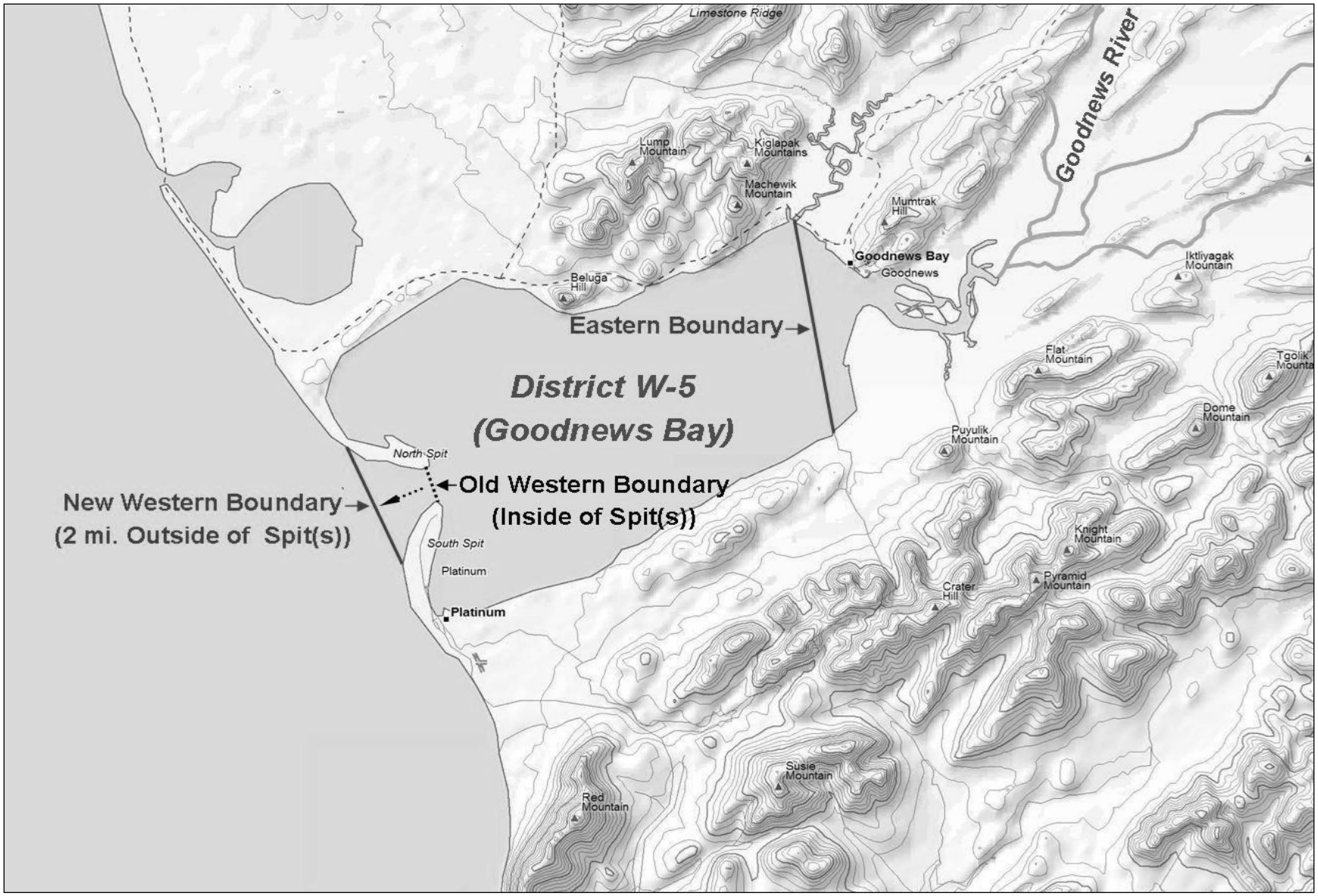

Figure 5.–Map of commercial fishing District W-5, Kuskokwim Area.

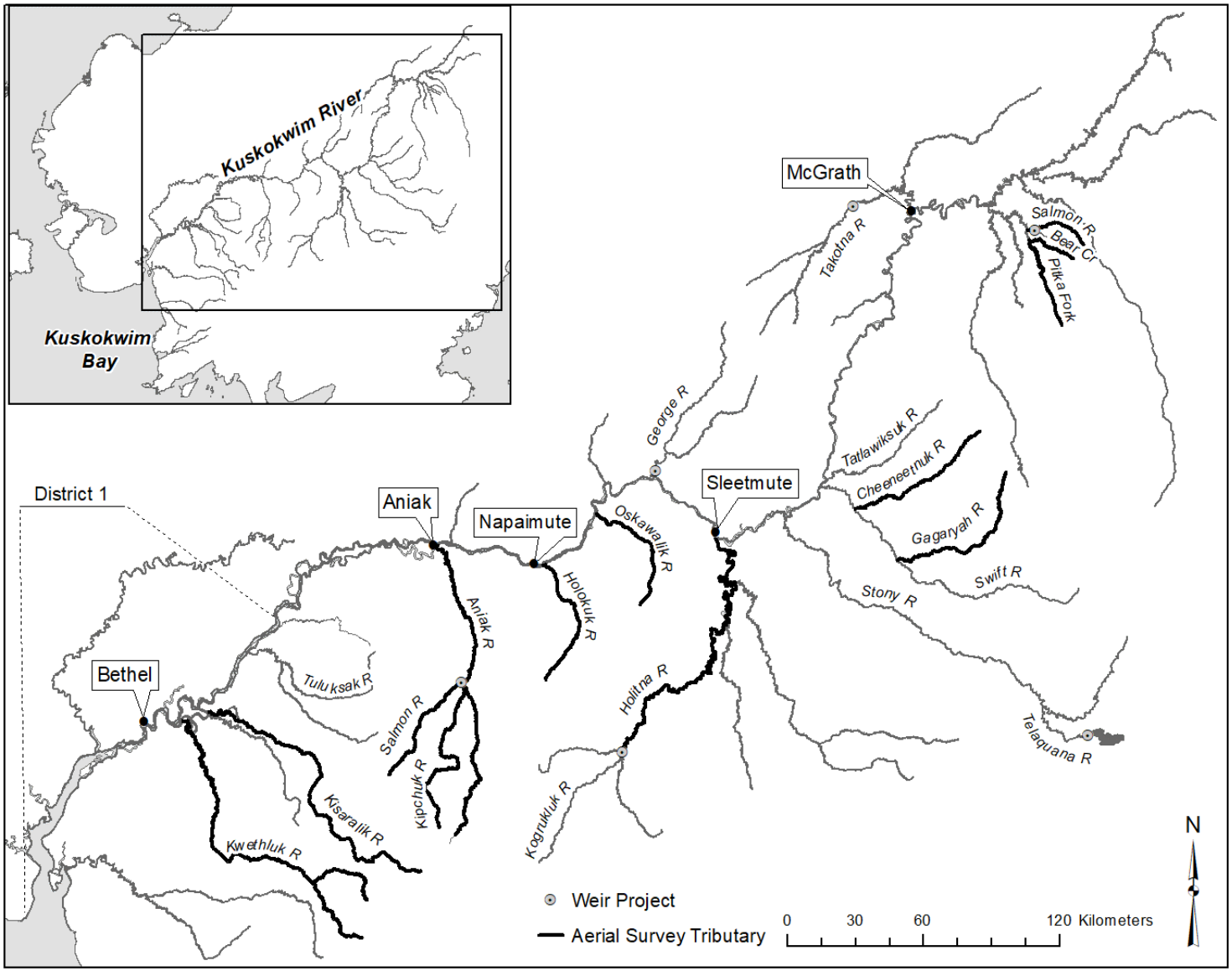

Figure 6.–Kuskokwim River tributaries where salmon escapement was monitored by ADF&G and partners, 2023.

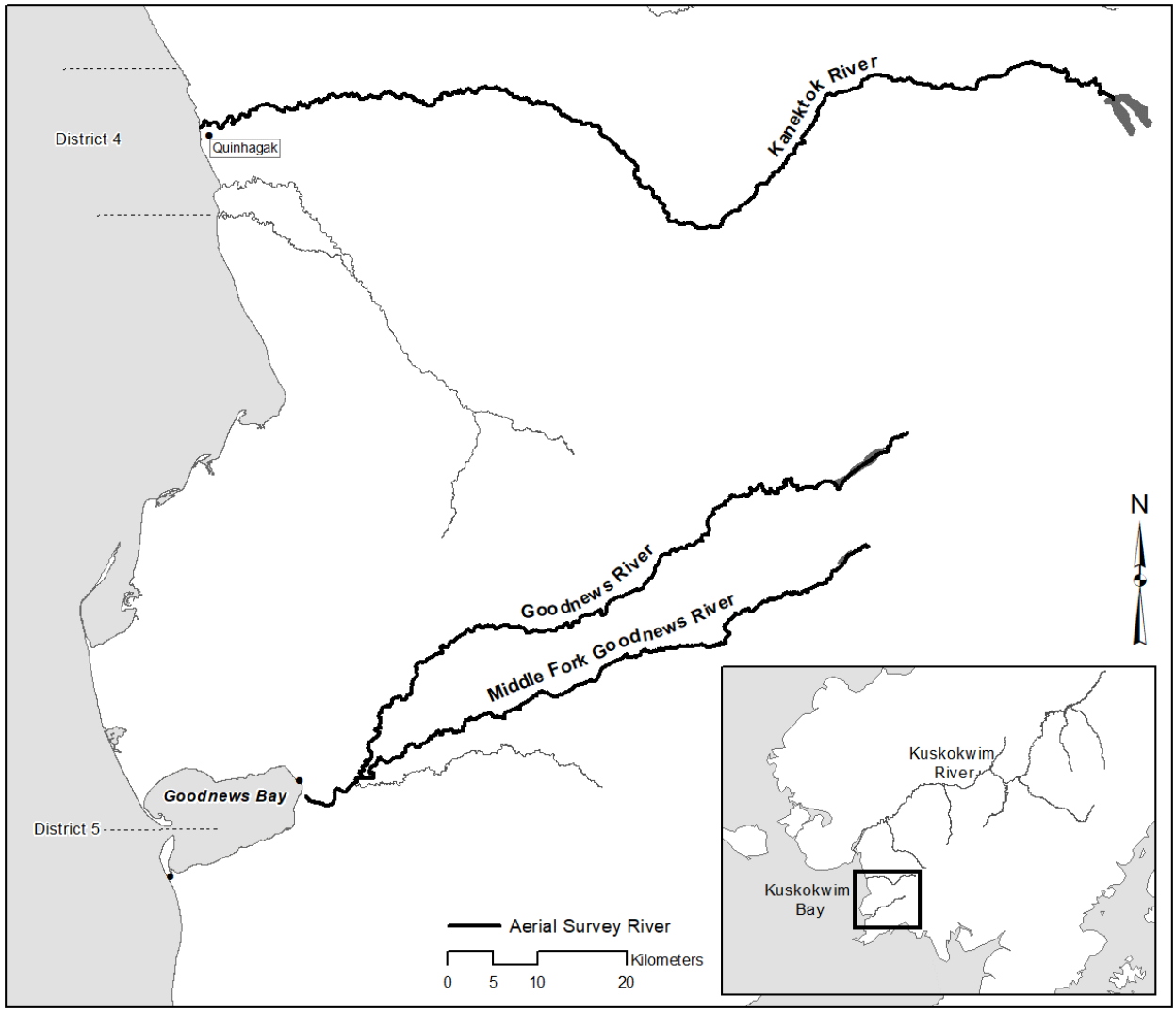

Figure 7.–Kuskokwim Bay rivers where salmon escapement was monitored in 2023.