

Fishery Management Report No. 24-15

2023 Prince William Sound Area Finfish Management Report

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

FISHERY MANAGEMENT REPORT NO. 24-15

**2023 PRINCE WILLIAM SOUND AREA
FINFISH MANAGEMENT REPORT**

by

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ABSTRACT

This annual management report describes 2023 commercial, subsistence, and personal use salmon and herring fisheries in the Prince William Sound Management Area. In 2023, approximately 52.72 million salmon were harvested in the Prince William Sound commercial salmon fishery: 12,200 Chinook *Oncorhynchus tshawytscha*, 1.76 million sockeye *O. nerka*, 187,000 coho *O. kisutch*, 46.85 million pink *O. gorbuscha*, and 3.91 million chum salmon *O. keta*. Additionally, 13.64 million salmon were sold for hatchery cost recovery. During 2023, 444 drift gillnet, 22 set gillnet, and 209 purse seine permit holders harvested salmon. The estimated value, including hatchery sales, was approximately \$85.82 million. Exvessel values were \$27.56 million from drift gillnets, \$1.97 million from set gillnets, and \$34.18 million from purse seines. Revenue from hatchery cost recovery and raceway sales was \$22.11 million. Approximately 2,870 subsistence and 7,580 personal use permits were issued, and there was a total combined harvest of 253,000 salmon. The commercial fishery for Pacific herring *Clupea pallasii* was closed in 2023 for the 24th consecutive year because age structure and projected available surplus in the spawning biomass did not support a fishery.

Keywords: Pacific salmon, *Oncorhynchus* spp., Pacific herring, *Clupea pallasii*, harvest, hatchery, 2023, area management report, AMR, Copper River, Prince William Sound, exvessel value, commercial, personal use, subsistence

INTRODUCTION

OVERVIEW OF MANAGEMENT AREA

The Prince William Sound management area, registration Area E, encompasses all coastal waters and inland drainages entering the north central Gulf of Alaska between Cape Suckling and Cape Fairfield. This area includes the Bering River, Copper River, and all of Prince William Sound (PWS), with a total adjacent land area of approximately 38,000 square miles (Figure 1). The salmon management area is divided into 11 districts that correspond to the local geography and distribution of the 5 species of salmon (*Oncorhynchus* spp.) harvested in the commercial fisheries (Figure 1).

Six private nonprofit (PNP) hatcheries contribute to the area's fisheries. Five are operated by Prince William Sound Aquaculture Corporation (PWSAC). Gulkana Hatchery (GH; located between Paxson and Summit Lakes) augments production of sockeye salmon *O. nerka* to the Copper River. Cannery Creek Hatchery (CCH; located on the north shore of PWS in Unakwik Inlet) and Armin F. Koernig Hatchery (AFK; located in southwestern PWS on the east shore of Evans Island) produce pink salmon *O. gorbuscha* (Figure 1). Wally H. Noerenberg Hatchery (WNH; located in northwestern PWS on the south shore of Esther Island) produces pink, chum *O. keta*, and coho *O. kisutch* salmon (Figure 1). Main Bay Hatchery (MBH; located in western PWS at the head of Main Bay) produces sockeye salmon (Figure 1). Solomon Gulch Hatchery (SGH), operated by the Valdez Fisheries Development Association (VFDA) is located on the south shore of Port Valdez and produces pink and coho salmon (Figure 1).

COMMERCIAL SALMON FISHERIES

All districts are managed to achieve escapement goals, where established, and to allow for the orderly harvest of wild and enhanced salmon stocks surplus to spawning requirements, inriver goals, and hatchery cost-recovery and broodstock needs. In addition, the Alaska Department of Fish and Game (ADF&G) follows regulatory plans to manage fisheries and to work cooperatively with PNP hatcheries in achieving cost-recovery and broodstock objectives.

ADF&G forecasts PWS wild salmon runs, whereas PWSAC and VFDA forecast hatchery runs. Hatchery forecasts are contained in the annual hatchery management plans, which also contain

production goals, broodstock development, and harvest management of PWS hatchery returns (unpublished ADF&G manuscripts obtained from Lorna Wilson, Assistant Private Non-Profit Hatchery Coordinator, Juneau, Alaska; hereafter cited in text as “ADF&G *unpublished*”). Following each season, private nonprofit hatchery permit holders in Alaska are required (AS 16.10.470) to submit an annual report to ADF&G that includes details of egg takes, releases, and adult returns (ADF&G *unpublished*), and these reports are summarized in Wilson (2024).

Legal gear for commercial salmon fishing includes purse seines, drift gillnets, and set gillnets. The number of commercial limited entry permits in Area E is defined in 20 AAC 05.320. Drift gillnet permits are the most numerous (536 permits), and are allowed in the Bering River, Copper River, Unakwik, Coghill, and Eshamy Districts, and the Port Chalmers Subdistrict when allowed through the allocation plan. Set gillnet gear (28 permits) is only allowed in the Eshamy District. Purse seine gear (267 permits) is allowed in the Eastern, Northern, Unakwik, Coghill, Northwestern, Southwestern, Montague, and Southeastern Districts.

PRINCE WILLIAM SOUND MANAGEMENT AND SALMON ENHANCEMENT ALLOCATION PLAN

In December 2005, the Alaska Board of Fisheries (BOF) modified the *Prince William Sound Management and Salmon Enhancement Allocation Plan* (5 AAC 24.370). The modifications only allocated salmon produced by PWSAC and removed wild stocks and salmon produced by VFDA. Additionally, a 5-year rolling-average exvessel value is now used instead of annual value percentages. The set gillnet gear group is allocated 4% of the 5-year average value of PWSAC-enhanced salmon stocks. Drift gillnet and purse seine gear groups each receive 50% of the remaining value of PWSAC-enhanced salmon stocks. If the set gillnet gear group catches 5% or more of the previous 5-year average value of PWSAC-enhanced stocks, the set gillnet group will be limited to no more than 36 hours of fishing time per week beginning July 10, in the following year. If the drift gillnet gear group harvest value is calculated to be 45% or less, then the drift gillnet gear group shall have exclusive access to the Port Chalmers Subdistrict from June 1 through July 30 in the year following the calculation. If the purse seine gear group harvest value is calculated to be 45% or less, then the purse seine gear group shall have exclusive access to the Esther Subdistrict from June 1 through July 20 in the year following the calculation.

In addition, the *Prince William Sound Management and Salmon Enhancement Allocation Plan* limits the time and area open to specific gear groups. For example, the Southwestern District, excluding the areas within the Armin F. Koernig Hatchery Special Harvest Area and Terminal Harvest Area, is closed to purse seine fishing prior to July 18 to ensure that early season chum and sockeye salmon bound for other districts reach their intended destinations (5 AAC 24.370(e)(2)(A)). Furthermore, the purse seine gear group is allowed to fish in the Coghill District after July 21 when the harvest is predominantly pink salmon (5 AAC 24.370(e)(5)(B)). There are also regulatory provisions that allow for enhanced stock chum salmon to be harvested before July 21 within the Esther Subdistrict of the Coghill District when the available surplus is not being adequately harvested by the drift gillnet fleet.

2023 SALMON SEASON HARVEST SUMMARY

The total commercial harvest was approximately 52.70 million salmon composed of 11,500 Chinook *O. tshawytscha*, 1.75 million sockeye, 186,000 coho, 46.85 million pink, and 3.91 million chum salmon (Table 1, Figure 2). Additionally, 13.64 million salmon were harvested in the

hatchery cost-recovery fisheries and 13,600 fish were harvested for homepack (Table 1). Exvessel values from the 2023 commercial fisheries, excluding hatchery sales, were \$34.18 million (54%) for purse seine, \$27.56 million (43%) for drift gillnet, and \$1.97 million (3%) for set gillnet. Hatchery sales totaled \$22.11 million in 2023 (Table 2, Figure 3). The gillnet subareas average price per pound paid for Chinook salmon (\$1.98–\$11.53) was well above the 10-year (2013–2022) average (\$3.35–\$8.47; Table 3). Depending on gear and reporting area, the average price per pound paid for sockeye (\$0.99–\$2.25), coho (\$0.28–\$1.19), pink (\$0.26–\$0.33), and chum (\$0.29–\$0.46) salmon was consistently below the 10-year (2013–2022) average (Table 3). The purse seine average earnings per permit was \$164,000, which was 31% below the 10-year average (2013–2022) of \$236,000 (Table 4). Drift gillnet average earnings per permit was \$62,100, 12% below the 10-year (2013–2022) average of \$70,700, and set gillnet average earnings per permit was \$89,400, 23% above the 10-year (2013–2022) average of \$72,900 (Table 4).

2023 GILLNET SALMON SEASON SUMMARY

Overview

The PWS gillnet fishery had below-average Chinook, sockeye, and coho, and above-average chum salmon harvests. Early in the season, the Copper River sockeye salmon run and inriver passage was well below average, prompting the use of short-duration fishing periods and extended closures into mid-June. When Chinook salmon passage was near complete and after sockeye salmon run strength had improved, the fishery was able to maintain a consistent fishing schedule from mid-June through the end of the season. In PWS gillnet fisheries, below-average sockeye and above-average chum salmon hatchery runs with large cost-recovery goals prompted irregular fishing opportunity near hatcheries throughout June and July. The WNH chum salmon run was 44% above forecast and the Port Chalmers chum salmon run was 83% above forecast, whereas the hatchery sockeye salmon run was 8% below forecast. Hatchery cost recovery and broodstock harvest accounted for 45% of the WNH chum salmon run and 31% of the MBH sockeye salmon run (ADF&G *unpublished*). Weak coho salmon runs to the Copper River and Bering River Districts resulted in conservative management of those fisheries near the end of the season. Below average grounds prices for Chinook, sockeye, chum, and coho salmon drove the season total exvessel value for the drift gillnet fleet below 2022 exvessel value totals (Table 4) despite the large chum salmon harvests in Coghill and Montague Districts in 2023 (Table 1).

Fishery participation was low in 2023. A total of 444 drift gillnet permit holders sold 11,100 Chinook, 1.49 million sockeye, 168,000 coho, 396,000 pink, and 2.90 million chum salmon, for a combined total of 4.97 million salmon. A total of 22 set gillnet permit holders sold 10 Chinook, 175,000 sockeye, 121 coho, 37,000 pink, and 26,900 chum salmon, for a combined total of 239,000 salmon (Table 1).

The gillnet fishery exvessel values in 2023 were at or below the 10-year (2013–2022) average. The drift gillnet exvessel value of \$27.56 million was 23% below the 10-year (2013–2022) average of \$35.87 million (Table 4), and comparable to levels seen in the early 2000s. Drift gillnet average permit earnings were \$62,100 compared to a 10-year (2013–2022) average of \$70,700. The set gillnet exvessel value of \$1.97 million was 2% below the 10-year (2013–2022) average of \$2.02 million, and average permit earnings were \$89,400 compared to a 10-year (2013–2022) average of \$72,900. Set gillnet average permit earnings in 2023 were slightly higher than 2022 and more than double the values from 2020 and 2021 (Table 4, Figure 3).

Copper River District

The Copper River District is defined as all waters of the Gulf of Alaska between Hook Point and Point Martin with a seaward boundary defined by a line between a point 3 miles south of Hook Point, and another point 3 miles south of Pinnacle Rock (Figure 1).

ADF&G, with direction from the BOF, manages salmon runs to the Copper River District to assure a sustained yield and meet all user group allocations, as outlined in the *Copper River District Salmon Management Plan* (5 AAC 24.360). In 2011, the BOF amended the *Copper River King Salmon Management Plan* (5 AAC 24.361) to limit the number of commercial openings inside of the barrier islands in statistical weeks 20 and 21 to no more than one 12-hour fishing period during this 2-week period. In 2021, the Chinook salmon escapement goal was updated to a range of 21,000–31,000 fish based on ADF&G’s most recent escapement goal analysis (Joy et al. 2021).

The Copper River District is managed using 3 primary assessment tools: (1) fish counts at the Miles Lake sonar site, (2) aerial escapement surveys of lower Copper River Delta systems, and, to a lesser extent, (3) weekly anticipated harvest estimates (forecasts) with environmental conditions such as river height considered. ADF&G relies primarily on the inriver passage index provided by Adaptive Resolution Imaging Sonar (ARIS) units at Miles Lake to manage the commercial fishery and provide upriver escapement and fishery allocations. Aerial surveys in the upper river, hatchery otolith markings (marked thermally or with strontium chloride), weirs, and salmon counting towers provide additional information useful for meeting the escapement objectives of the *Copper River District Salmon Management Plan*.

The current sustainable escapement goal (SEG) range for wild sockeye salmon to the upper Copper River is 360,000–750,000 (Table 5; Moffitt et al. 2014). By regulation (5 AAC 24.360), ADF&G must also provide for an inriver run goal (IRRG) of salmon to the Copper River. ADF&G manages for a daily inriver objective that is the apportioned number of salmon that need to pass the Miles Lake sonar to meet the overall IRRG based on historical run timing. This IRRG consists of 7 components and can vary each year because 4 of the components are variable. These components are listed below, along with the number of salmon in 2023:

- The lower bound of the spawning escapement goal (fixed): 360,000 sockeye salmon
- Other salmon (fixed): 17,500 salmon
- Subsistence harvest (variable): 64,000 salmon
- Personal use harvest (variable): 131,400 salmon
- Sport fishery (fixed): 15,000 salmon
- Gulkana Hatchery broodstock (variable): 22,200 sockeye salmon
- Gulkana Hatchery surplus (variable): 0 sockeye salmon
- Total: 610,100–1,000,100 salmon

Annual harvests of Chinook and sockeye salmon in the Copper River District have been variable over the last 25 years (1998–2022; Appendix A4). Average Chinook salmon commercial harvest dropped from an average of 44,000 per year (1998–2007) to 12,700 per year (2008–2022; (ADF&G *unpublished*). Weak Chinook salmon runs in 2014, 2016, 2020, and 2021 (Appendix A3) resulted in missed escapement goals and commercial catches that all ranked in the lowest 15 years since 1975 (Appendix A4).

Annual sockeye salmon harvest averages over the last 25 years (1998–2022) and last 10 years (2013–2022) are similar, demonstrating that the fishery has remained stable over recent decades,

but the fishery has experienced increased variability with historical low harvests within the past 5 years. The second smallest annual commercial sockeye salmon harvest since 1978 was in 2018, and the fourth smallest was in 2020 (Appendix A4). These recent, weak runs prompted emergency disaster relief fund requests from the gillnet fleet in 2020, with results pending.

The coho salmon commercial harvest has varied widely over the last 25 years, from 44,500 in 2022 to 504,400 fish in 2002 (Appendix A4). In the most recent 10 years, however, the coho salmon fishery has helped to stabilize the economic impacts of low Chinook and sockeye salmon harvests. For instance, during the 2018 and 2020 seasons, when drift gillnet Chinook and sockeye salmon harvest values were near all-time lows, coho salmon drift gillnet harvests areawide added \$6.10 million (2018) and \$2.77 million (2020) of exvessel value into the economy (Table 4, Appendix A4).

2023 Preseason Outlook and Harvest Strategy

In January 2023, ADF&G forecasted above-average harvests of Chinook salmon and below-average harvests of sockeye salmon in the Copper River District (Morella 2023). Due to the above-average Chinook salmon forecast, closed waters described in 5 AAC 24.350(1)(B) were not anticipated to be implemented beyond statistical weeks 20 (May 15–21) and 21 (May 22–28). The 2023 inriver goal (minimum inriver passage objective) was 581,174 salmon by July 28, which was the season-ending date for sonar counting at Miles Lake (Appendix A6).

The Copper River District management objective is to have a fishing schedule of 2 evenly spaced periods per week, starting on the first Monday or Thursday nearest May 15. Fishing schedules are adjusted in season to account for variations in river flow, run timing, run strength, fishing effort, and other factors. During years when Miles Lake sonar is not operational before the first commercial fishing period, early season management of the Copper River District is based on actual and anticipated harvest data. The anticipated catch is based on the current year midpoint harvest forecast and the 1998–2007 harvest timing (the most recent years of harvest timing analysis). Once Miles Lake sonar is operational, sonar counts and commercial harvest information become the primary factors governing the management of the fishery. By mid-June, aerial indices of sockeye salmon escapement in Copper River Delta systems are also considered when scheduling commercial fishing periods. Due to the many spawning systems in the Copper River Delta, an actual weekly escapement index of selected systems is compared to a weekly escapement index based on historical run timing. The SEG range for Copper River Delta sockeye salmon stocks is 55,000–130,000 fish (Table 5; Bue et al. 2002). On August 15, ADF&G’s management priority switches to coho salmon management.

Coho salmon fishery management typically begins the third week of August, and the historical precedent is to provide an initial 24-hour period once per week. If harvest or aerial survey numbers warrant, the duration of this fishing period may be increased to 36, 48, or 60 hours, or a second fishing period may be added during the week. Aerial escapement indices for the early portion of the coho salmon run probably underestimate salmon abundance because of other species of salmon remaining in tributaries, fish moving into or out of survey index areas, and limited visibility due to poor water conditions. Additionally, inclement fall weather often prevents regular weekly survey flights. The SEG for the Copper River Delta coho salmon is 32,000–50,000 fish (Table 5).

Sockeye and Chinook Salmon Fishery Season Summary

The 2023 sockeye salmon run to the Copper River appeared low until the middle of the season when the run began to improve, resulting in an above-average run overall (Appendix A1). Conservative management during the early season was necessary to ensure escapement allocation objectives would be met. The 2023 Copper River sockeye salmon total run was 1.95 million fish, of which 83% were wild Upper Copper River fish, 4% were hatchery Upper Copper River fish, and 13% were Copper River Delta fish (Appendix A2). Of these 1.95 million sockeye salmon, 862,000 (44%) were commercially harvested, 6,160 (<1%) were retained as homepack, 6,360 (<1%) were harvested in the Copper River District subsistence and educational fisheries, and 244,000 (12%) were harvested in state and federal freshwater subsistence fisheries. Copper River District subsistence, Chitina Subdistrict state and federal subsistence harvest, and Copper River Delta sport harvest were above their respective 10-year (2013–2022) averages. Upper Copper River sockeye salmon spawning escapement was 689,000 fish, which is above the 360,000-fish lower bound of the SEG and the recent 10-year (2013–2022) average. The Copper River Delta sockeye salmon escapement was 131,550 fish and was 4% above the recent 10-year (2013–2022) average (Appendix A1).

In 2023, the sockeye salmon run produced by GH totaled 72,200 fish, and was 47% above the total run forecast of 49,000 fish (ADF&G *unpublished*; Appendices A2 and E3). A total of 10,900 sockeye salmon were reported as collected for broodstock or escaped into the watershed (Appendices A1 and E3). Of those fish, 6,910 were harvested for broodstock and an estimated 3,970 sockeye salmon returned to release locations but were not harvested (ADF&G *unpublished*).

The 2023 Copper River Chinook salmon run was above average, and escapement was above the upper end of the SEG. The total run was 61,500 Chinook salmon, of which 10,700 (17%) were commercially harvested, 675 (2%) were harvested through educational and subsistence permits in the Copper River District, and 581 (1%) were retained by commercial permit holders as homepack. A total of 8,440 (14%) were harvested in inriver fisheries, and the remaining 40,900 (66%) represent spawning escapement (Appendix A3). Spawning escapement was 9,900 fish above the 31,000 fish upper bound of the Copper River Chinook salmon SEG (Table 5).

The Miles Lake sonar project became operational on May 22, with the north bank sonar counting fish for 3 hours. South bank sonar deployment was later than recent years due to shore ice. The first salmon were counted on May 25, when the north bank passed 626 fish. On May 26, the Miles Lake north bank sonar began counting 24 hours a day, and on May 30, the south bank sonar began counting 24 hours a day. The last day of operation was July 28, and the 2023 cumulative Miles Lake sonar count was 991,740 salmon, which was above the upper end of the inriver passage objective for the date (Figure 4, Appendices A6 and A7).

Sockeye salmon aerial surveys for the Copper River and the Copper River Delta extend from mid-June to late September and serve as important metrics of escapement abundance and distribution. The Copper River Delta weekly aerial escapement survey indices were above the lower end of the sockeye salmon objective range for all surveys in June, July, and August (Appendix A9). The final escapement index count for the Copper River Delta systems was 65,775 sockeye salmon, which was within the SEG range of 55,000–130,000 fish (Table 5, Appendix A9). Since 2013, the escapement index has ranged from a low of 51,600 in 2016 to a high of 87,100 in 2021 (Appendix A10). In 2023, two aerial surveys of upper Copper River index streams were

conducted to evaluate distribution of sockeye salmon escapement, resulting in the seventh lowest total peak count index since 2008 (Appendix A11).

Commercial fishing time through May (the first month of the 2023 season) was reduced because of weak early run abundances of sockeye salmon and uncertainty in Chinook salmon run strength. Sockeye and Chinook salmon harvest was well below anticipated levels for the first four 12-hour fishing periods (May 15, 18, 22, and 25), necessitating the continuation of a conservative fishing schedule (2 short-duration fishing periods or less per week; Appendix A8). Large spring tidal events of around 15 feet coincided with the second and third opening. These large tide cycles increase salmon movement and frequently lead to above-average commercial harvests and counts at the Miles Lake sonar. Harvest levels fluctuated above and below anticipated harvest levels during this time. A persistent cumulative inriver count deficit, cool weather, and late ice out in the river increased harvest risk of expanding fishing time through late-June, a period likely to be the peak of sockeye and Chinook salmon runs through the district. These factors justified continuing conservative management with no more than 2 short-duration fishing periods every week for the first month of the fishery.

Despite the shore fishing periods, increased fishing opportunity for Chinook salmon in inside waters (5 AAC 24.350(1)(B)) was not warranted due to the high potential of a small run based on below anticipated early season commercial harvest and poor returns in recent years. As an additional step to bolster Chinook salmon conservation efforts, the inside closure area was expanded from the start of the season through mid-June to include inside waters east of Kokinhenik Bar, essentially closing most waters inside barrier islands east of Copper Sands (between Egg Island and Pete Dahl channels). The further reduction in the channelized shallow water fishing area reduced Chinook salmon harvest potential. Those inside waters were opened in late June due to increased confidence in achieving Chinook salmon inriver abundance targets (Appendix A5).

Early season Miles Lake sonar passage remained below the cumulative minimum inriver passage objective into the last week of June. Deployment of the south bank sonar was delayed due to late river ice-out. Even when considering potential passage along the south bank during the first 8 days of counts, by June 1, cumulative counts were nearly 123,000 fish below minimum objectives. Sonar counts began to improve at this point, averaging above the daily passage objective for just over a week. However, counts then fell off again, sustaining the cumulative count deficit above 100,000 salmon through June 17 (Figure 4, Appendix A6). Maintaining conservative management and steadily improving upon the cumulative minimum inriver passage deficit into late June meant that the early segments of the sockeye and Chinook salmon runs were likely well represented in overall inriver passage. To achieve this level of inriver passage, the commercial fishery was restricted to 96 hours through the first month of the season with an extended closure timed to coincide with historical late-run peak harvest timing in early-to-mid June (Appendix A5).

A pattern of above anticipated declining to below anticipated commercial harvest levels through the second week of June led to progressively less fishing opportunity. Chinook and sockeye salmon harvests from the fifth fishing period (May 29) were 1,000 Chinook and 141,000 sockeye salmon, and during the sixth fishing period (June 1), Chinook salmon harvest improved to 1,300 fish, and sockeye salmon harvest declined to 125,000 fish. Fishing effort averaged 366 permits between these 2 periods (Appendix A5), signifying that high harvest potential needed to remain a strong management consideration through early June.

The fifth and sixth fishing periods were during the historical peak harvest period and resulted in above-anticipated sockeye salmon harvests, indicating that inriver passage was likely to improve. During the seventh fishing period (June 5), sockeye salmon harvest dropped off precipitously to 45,900 fish, almost 30,000 fish below the anticipated for the fishing period (Appendices A5 and A8). This drop in harvest resulted in the second fishing period of the week being pulled. Below anticipated harvest of 508 Chinook and 21,600 sockeye salmon the next fishing period (June 12) triggered a closure of 2 potential fishing periods in a row.

Early season daily passage peaked at 22,175 salmon on June 7, approximately a week after the commercial harvest peak, and declined rapidly to below daily passage targets through the end of the second week of June (Appendix A6). These declining daily passage counts provided additional support for reducing fishing time to less than 2 fishing periods per week through the second and third weeks of June (Appendices A5 and A6).

Inriver passage and aerial survey abundance indices were above anticipated levels from the middle to the end of the sockeye salmon commercial fishing season. From mid-June through the end of sonar operations on July 28, Miles Lake sonar passage stayed consistently above the daily objective range. Sonar passage averaged 20,000 salmon a day over a 35-day period from June 16 through July 20 with a peak daily passage of 37,653 salmon on July 7. The cumulative passage at the sonar exceeded the minimum passage objective on June 25 and the maximum passage objective was exceeded on July 18 (Appendix A6). The Copper River Delta sockeye salmon aerial survey escapement index became an increasingly strong management driver as the fishery moved later into the season. Aerial survey counts progressed from the lower to near the upper weekly target between early and mid-July then remained above weekly targets through early September (Appendix A9).

Sonar passage and aerial survey counts remaining above inseason targets prompted a shift to longer-duration fishing periods. Fishing opportunity increased from 24-hour periods to an alternating schedule of 48-hour and 60-hour periods by early July, which translated to 708 hours of fishing from the fourth week of June through the start of the coho salmon fishery in mid-August (Appendix A5). A total of 411,000 sockeye salmon were harvested during this period, or nearly 50% of the total sockeye salmon harvest for the season (Appendix A5). The average (2013–2022) total harvest percent for this portion of the season (June 22 to August 15) is 31% (ADF&G, Division of Commercial Fisheries, Cordova, unpublished data, 2024).

Strontium chloride-marked GH sockeye salmon harvested in the commercial fishery represented about 9% of the harvest through the historical average period of peak abundance (last week of June through first week of July). Gulkana Hatchery sockeye salmon increased in abundance 2 weeks later, representing about 19% of the harvest during the July 20–22 fishing period (Appendix E2). The GH contribution to the sockeye salmon commercial fishery harvest was 42,100 fish, or 5% of the Copper River District harvest (Appendix E2), which was about 60% below the recent 10-year (2013–2022) average of 106,000 fish (Appendix E3). This low harvest was of fish that came from fry releases in 2019 and 2020 that were both below the 10-year (2013–2022) average releases (Appendix E4). Main Bay Hatchery contributed 9,440 fish, or 1% of the Copper River District harvest (Appendix E2). The number of wild sockeye salmon in the Copper River District commercial harvest was 810,000, or 94% of the total sockeye salmon catch (Appendix E2).

Sockeye salmon harvest was above semiweekly harvest projections during 9 commercial fishing periods after mid-June in 2023 (Appendix A8). From the first fishing period on May 16 until the

start of the coho salmon fishery on August 15, the commercial fishery schedule ranged from 1 short-duration (12-hour) period over 2 weeks to 2 extended-duration (48–60 hours) periods a week. This varied schedule amounted to a total of 804 hours fished for the entirety of the Chinook and sockeye salmon season. The Chinook and sockeye salmon fishery had a preliminary exvessel value of \$12.47 million (ADF&G, Division of Commercial Fisheries, Cordova, unpublished data, 2024). In a year with average size runs, like 2019, this fishery can be worth \$22.74 million (Morella et al. 2021).

A total of 426 drift gillnet permits were active in the Copper River District in 2023 (Appendix A5), a continuation of the steady decline in effort seen over the last 4 years (Botz et al. 2021; Morella et al. 2021; Scannell et al. 2023). Fishing effort in 2023 peaked on June 1 when 381 permits fished during a 12-hour opening, and decreased to a low of 3 permits fished during the August 10–11 fishing period. This drop in participation was likely from a combination of limited fishing opportunity in June, low sockeye salmon abundance starting in late July (Appendix A5), and drift gillnetters leaving the Copper River District to participate in fisheries on the western side of PWS (primarily near MBH and WNH).

Harvests of Chinook and sockeye salmon were near average in 2023. The total commercial harvest of 11,300 Chinook salmon was 11% below the previous 10-year (2013–2022) average harvest of 12,600 fish (Appendices A3–A5, and A8). Peak Chinook salmon harvest occurred on May 22 when 1,680 Chinook salmon were harvested during a 12-hour fishing period (Appendix A5). The total Copper River District sockeye salmon commercial fishery harvest of 868,000 fish was 10% less than the previous 10-year (2013–2022) average harvest of 968,000 sockeye salmon (Appendix A4). Peak sockeye salmon harvest occurred during the May 29 fishing period when 141,000 sockeye salmon were harvested over 12 hours (Appendix A5).

In 2023, most of the sockeye salmon commercial harvest was age-5 fish (62%), followed by age-4 (30%) and age-6 (8%) fish (Table 6). In 2023, most of the Chinook salmon commercial harvest was also age-5 fish (75%), followed by lower numbers of age-4 (13%) and age-6 (11%) fish (Table 7). Historically, 5-year-old sockeye salmon make up 70–85%, and 5-year-old Chinook salmon make up 50–80% of their respective returns in the Copper River (ADF&G, Division of Commercial Fisheries, Cordova, unpublished data, 2024). Five-year-old Chinook salmon were at the upper end of the expected proportion range and 5-year-old sockeye salmon were 8% below the expected range. The large (30%) 4-year-old sockeye salmon harvest composition may portend a large 5-year-old proportion in 2024. Over the last 40 years, a decline in average length-at-age has been observed in Chinook and sockeye salmon harvested in the Copper River District commercial fishery (Figures 5 and 6).

Coho Salmon Fishery Season Summary

The total coho return was estimated to be 236,000 fish, which includes all documented harvest and Copper River Delta escapement. This number does not include upriver spawning escapement because the number of coho salmon migrating upriver is not assessed. This run was the third lowest in the last 10 years; the poor survival rate was possibly driven by extreme drought conditions when brood year 2019 returned to spawn. In the Copper River District, a total of 134,000 (57%) coho salmon were harvested commercially, 1,330 (<1%) were reported retained as homepack in the commercial fishery, 431 (<1%) fish were harvested in the subsistence gillnet fishery, and an estimated 11,600 (5%) were harvested in state and federal freshwater fisheries (Appendix A12). The Copper River Delta spawning escapement index of 44,440 coho salmon was within the SEG

index range of 32,000–50,000 (Table 5, Appendix A13). This index value is from peak aerial surveys, with poor survey conditions, and was on par with the recent 10-year (2013–2022) average of 44,603 fish (Appendix A14).

The 2023 coho salmon commercial harvest of 134,000 was 37% less than the harvest projection of 213,000 fish (Table 8, Appendix A8). The coho salmon fishery provided 9% of the Copper River District exvessel value in 2023, which was up significantly from 3% in 2022 (ADF&G, Division of Commercial Fisheries, Cordova, unpublished data, 2024). With an average price of \$1.19/pound (Table 3) and an average fish weight of 7.64 pounds (Appendix A5), the preliminary exvessel value of this fishery was \$1.23 million.

Daily coho salmon harvest did not exceed daily sockeye salmon harvest until the August 14–15 fishing period, when 1,900 coho and 559 sockeye salmon were harvested by 23 permit holders (Appendix A5). Harvest from the August 15–16 fishing period was less than the forecasted weekly harvest of 18,600 coho salmon (Appendices A5 and A8). Low harvest numbers for the fishing period supported a continued conservative management approach, especially when considering the high fishery participation potential due to poor ground prices for sockeye and chum salmon this season. An aerial escapement survey was not flown until late August due to poor survey conditions (Appendix A13). This is about 2 weeks later than the typical first aerial survey is flown. Over the past decade, the first round of coho salmon aerial surveys in mid-August have often been well below the weekly target, and considering the poor harvest in August, coho salmon were likely well below weekly escapement targets throughout August.

Harvest and effort peaked during the September 4–5 fishing period when 149 permit holders delivered 33,100 coho salmon (Appendix A5). Effort remained high from late August through mid-September, averaging 106 permit holders per fishing period. Harvest averaged 27,400 coho salmon over 3 fishing periods from the last week of August into the second week of September before declining rapidly for the remainder of the season (Appendices A5 and A8). The harvest for this late August to mid-September period (11,600 coho salmon) tracked well below anticipated (174,000 coho salmon; Appendix A8). An aerial survey flown during the week ending August 26, under good observational conditions, documented 2,960 coho salmon in index streams, which was below the lower weekly index target (Appendix A13).

The combination of weak harvest and escapement indices signified that the fishery should remain conservatively managed pending improved escapement counts and reduced fishing effort (Appendices A8 and A13). The aerial survey for the week ending September 9 resulted in a count of 17,300 coho salmon, a significant improvement over the previous survey, but still below the lower target for the week. This indicated that escapement was improving enough to assure that the SEG would likely be achieved (Appendix A13). High precipitation through August and September led to high turbidity in Eyak Lake aerial survey reaches and made for poor observational conditions. An aerial survey flown during the week ending September 30, resulted in a count of 41,740 coho salmon, including 5,000 within Eyak Lake index reaches. This was above the upper target for the week, indicating a continued improvement in escapement, and a total escapement that would be well within the range of the escapement goal (Appendix A13). The total peak count index of 44,440 coho salmon was above the midpoint of the escapement goal range of 32,000–50,000 fish. The 2023 Copper River Delta peak count index was <1% below the 10-year (2013–2023) average of 44,603 fish (Appendices A13 and A14).

Coho salmon scale sampling occurred in 2023, but the age data from these scales was not available prior to publication. This historical age composition for the Copper River District coho salmon harvest has typically been near a 50:50 split of age-3 and age-4 fish.

Bering River District

The Bering River District includes the waters of the Gulf of Alaska between the eastern edge of the Copper River District and Cape Suckling (Figure 1).

Preseason Outlook and Harvest Strategy

The Bering River District is generally managed concurrently with the Copper River District when Bering River District sockeye and coho salmon aerial escapement surveys indicate that commercial fishing is warranted. Historically, this district has opened to sockeye salmon harvest in early June. However, there has been little sockeye salmon surplus to escapement needs in recent years. ADF&G announced preseason that the district would probably not open to a targeted sockeye salmon fishery until escapement levels were within the weekly escapement index range.

During a typical season in the Bering River District, it is often difficult to estimate the harvest in season due to inaccurate reporting from the fishing grounds. This is due to fishing vessels delivering their catch from the Bering River District to a tender in the Copper River District, and the harvest being reported in the Copper River District. This error is usually, but not always, resolved when fish tickets are entered.

Sockeye Salmon Season Summary

The 2023 Bering River District sockeye salmon fishery was similar to recent seasons. Inseason aerial survey escapement estimates trended below to within the anticipated inseason weekly index from early to late season, and the fishery remained closed or restricted to the western edge of the district throughout the sockeye salmon season. To reduce enforcement concerns associated with the line fishery on the eastern edge of the Copper River District, a small western section of the Bering River District was opened concurrently with Copper River District fishing periods from May 15 to August 10 (Appendix A16). Bering Lake escapement, with minimal fishing effort over the last 10 years, has indicated minimal salmon surplus to escapement needs. The first aerial survey of the Bering River District was flown during the week ending July 8 (Appendix A17). Only 2,600 sockeye salmon were observed during this survey. The weekly escapement index range was 11,015–24,232 sockeye salmon, warranting continued closure of the district to commercial fishing. The next survey was flown during the week ending July 15 and resulted in an escapement count of 17,400 fish, which was near the average objective of the weekly escapement index range of 11,051–24,313 sockeye salmon (Appendix A17). Considering the amount of fishing effort that could have shifted from Copper River District and the continued weakness of the sockeye salmon run, no directed fishery occurred for the remainder of the sockeye season.

Sockeye salmon escapement peaked from mid to late July, and inclement weather hampered additional surveys during the sockeye and coho salmon run overlap. The escapement indices peaked at 17,400 sockeye salmon the week ending July 15 (near the average objective for the week; Appendix A17). The final sockeye salmon escapement index for the Bering River was 19,125 fish, which was between the lower bound and midpoint of the 15,000–33,000 SEG (Appendix A17). Total sockeye salmon harvest in the district was 11,500 fish compared to the 25-year (1998–2022) average harvest of 9,660 fish (Appendices A15 and A16). Most of this

harvest occurred during the early season, prior to typical Bering River District run timing, when the western edge of the district was opened to target Copper River-bound sockeye salmon.

Coho Salmon Season Summary

Late-season weather conditions prevented several aerial surveys in the Bering River District from being conducted. Run timing of Bering River District coho salmon was average, and the final escapement was within the SEG range for the district (Appendix A18). A total of 50 permit holders fished during the season (Appendix A16). The commercial fishery harvest of 24,800 coho salmon was 59% below the 10-year (2013–2022) average of 60,100 fish (Appendix A15).

Coho salmon fishing opportunity in the Bering River District followed the same schedule as the Copper River District. Fishing time was restricted to a single 24-hour fishing period per week from mid-August to mid-September due to weak harvest indices. No harvest was reported for the fishing periods that began on August 15 and 22. Harvest from the fishing period that began August 28 was 3,020 coho salmon with only 7 permit holders participating in the fishery. This fishing effort was exceptionally low for this period of the season. Harvest and effort picked up quickly by early September when a peak of 26 permit holders delivered 9,390 coho salmon. Fishing effort was low but steady for 2 fishing periods in mid-September before effort ceased for the remainder of the season (Appendix A16). The harvest potential and the availability of commercial markets for coho salmon declined quickly after mid-September, strongly influencing fishery participation.

Inclement weather prevented a comprehensive survey of Bering River District index systems until late August. A survey under good observational conditions was flown during the week ending August 26, when 800 coho salmon were observed compared to a projected range of 8,732–22,165 fish (Appendix A18). This survey was less than a tenth of the lower weekly objective. When the next survey was flown during the week ending September 9, 12,200 coho salmon were observed compared to a projected range of 6,969–17,691 fish (Appendix A18). This survey showed escapement within the weekly objective and suggested total escapement was likely to end up within the SEG range. This survey confirmed the pattern of improving run entry that was apparent in the commercial fishery at the beginning of the month and signified that fishing time could be expanded through the end of the season. The peak observed escapement index in 2023 occurred during the week ending September 23 when 20,600 coho salmon were observed. Aerial survey indices in some index systems would probably have been higher in late September, but poor weather and high turbidity prevented several surveys from taking place. The total drainage escapement index for the season was 20,950 coho salmon, within the SEG range of 13,000–33,000 and 3% above the 10-year (2013–2022) average of 20,415 fish (Appendices A14 and 18).

Coghill District

The Coghill District is in northwestern PWS and encompasses waters north and west of Perry and Culross Islands, including waters surrounding Esther Island and waters of southern Port Wells north to Harriman and College Fiords. Most commercial fishing in the Coghill District targets wild sockeye salmon returning to Coghill Lake (located in eastern College Fiord) and hatchery salmon from WNH (located on Lake Bay on the southern end of Esther Island; Figure 1).

Preseason Outlook and Harvest Strategy

The 2023 Coghill Lake sockeye salmon total run forecast was 357,000–549,000 fish (453,000 fish point estimate; Morella 2023). Meeting the median historical escapement estimate of 34,000 sockeye salmon (SEG range of 20,000–75,000; Table 5) would leave 419,000 fish, based on the

total run point estimate, available for commercial harvest (Table 8). The WNH enhanced chum salmon run was forecast to be 2.21 million fish. PWSAC's cost-recovery and broodstock requirements were projected to be 969,000 chum salmon, leaving 1.24 million fish for commercial harvest. An estimated 122,000 coho salmon were expected to return to WNH, of which 2,700 fish were anticipated to be harvested for broodstock, leaving the remaining 119,000 fish available for commercial harvest.

Early to midseason management of the Coghill District is driven by Coghill Lake sockeye salmon escapement and WNH chum salmon run strength. Coghill District chum, sockeye, pink, and coho salmon fisheries are open to drift gillnet permit holders during all fishing periods and to purse seine permit holders beginning July 21 when the harvest is predominately pink salmon. The drift gillnet chum and sockeye salmon fisheries are generally prosecuted in moderate duration (36–48 hours) fishing periods, with 2 fishing periods per week concurrent with other gillnet fisheries. The pink salmon purse seine and drift gillnet fishery generally consists of short (12–14 hour) fishing periods prosecuted as frequently as every day. PWSAC, in consultation with ADF&G, typically elects to complete a high percentage (80–90%) of their pink and chum salmon cost-recovery harvest goals before recommending commercial harvest openings in terminal areas.

Season Summary

The Coghill River weir escapement counts are critical to early season management of Coghill District. The Coghill weir was operated from June 13 through July 26 (Appendix B1). Daily sockeye salmon passage peaked from July 9 to July 11, when 10,947 fish passed the weir (Figure 7, Appendix B1). A total of 64,212 sockeye salmon were counted, within the SEG range of 20,000–75,000 fish (Table 5, Appendices B1 and B2). The Coghill River sockeye escapement goal has been achieved every year since 2017 (Appendix B2). The 2018 parent year was 70% of the 2023 run (age-1.3, -2.2, and -3.1 fish; Table 9). The 2019 and 2017 brood years made up 17% and 8% of the escapement past the weir, respectively, while the 2020 and 2016 brood years combined made up the remaining 5% of escapement. In addition to sockeye salmon, a total of 36,274 pink salmon passed the Coghill River weir in 2023 (Appendix B1). However, the weir is not used to assess pink salmon escapement because much of the pink salmon escapement occurs after the weir is removed and significant spawning occurs below the weir site. Aerial surveys are used to assess pink and chum salmon escapements.

The 2023 Coghill District commercial drift gillnet harvest was 187 Chinook, 234,000 sockeye, 8,123 coho, 213,000 pink, and 1.49 million chum salmon. A total of 288 permit holders participated in the Coghill drift gillnet fishery (Table 1, Appendices B3 and B5). The combined purse seine and drift gillnet salmon harvest for Coghill District was 241,000 sockeye (97% drift gillnet), 8,201 coho (99% drift gillnet), 1.40 million pink (85% seine), and 1.38 million chum salmon (95% drift gillnet; Appendices B3–B5).

In 2023, PWSAC reported a WNH chum salmon purse seine cost-recovery harvest of 1.22 million fish, raceway sales of 60,100 fish, and broodstock carcass sales of 155,000 fish (Appendix E5). The broodstock goal for chum salmon was 228,000 fish. Of the chum salmon collected for broodstock, 155,000 were viable. PWSAC reported harvesting 528 viable coho salmon as part of broodstock collection, which was significantly short of the 2,700 fish goal (Appendix E5).

Based on otolith thermal marking data, hatchery-origin salmon made up an estimated 17% of the sockeye, 59% of the pink, and 96% of the commercial chum salmon harvests in the Coghill District (Appendices E6–E8). An estimated 40,400 (17%) MBH and 199,000 (83%) wild sockeye salmon

were harvested in the Coghill District commercial fishery for a total of 240,000 sockeye salmon (Appendix E6). Of the 1.4 million pink salmon harvested in this district in the commercial fishery, 503,000 (36%) were of WNH origin, 287,000 (21%) were of CCH origin, 32,500 (2%) were of SGH origin, and 7,680 (<1%) were of AFK origin (Appendix E7). Of the 1.58 million chum salmon harvested in the Coghill District commercial fishery, 1.50 million (95%) were of WNH origin, 7,200 (<1%) were of AFK origin, and 13,100 (<1%) were of PC origin (Appendix E8).

The Coghill District drift gillnet fishery began on June 1 with semiweekly openings, concurrent with the Eshamy District, following a consistent schedule of two 60- to 84-hour commercial fishing periods per week through July 19 (Appendix B3). Fishing time north of Esther Pass followed this liberalized fishing schedule to moderate sockeye salmon escapement into Coghill Lake. The remaining open area during these fishing periods followed a reduced fishing schedule consisting of two 24- to 36-hour fishing periods per week, but limited restrictions and expansions of time occurred based on hatchery and wild stock harvest levels. The Esther Subdistrict, WNH Special Harvest Area (SHA), and WNH Terminal Harvest Area (THA) remained closed through the first 10 periods to facilitate chum salmon cost recovery and broodstock collection. Additionally, portions of the Granite Bay Subdistrict were closed from June 27 to July 8. Starting July 13, and continuing while pink salmon were the predominate species of harvest, fishing periods were open to purse seine as well as drift gillnet. Starting July 23, the Coghill district was managed conservatively to facilitate pink salmon cost recovery and broodstock collection at WNH (Appendix B3). On August 31, the fishery shifted to drift gillnet only based on the assumption that the harvest would no longer be predominately pink salmon. The fishery followed a liberalized schedule until the district was closed for the season on October 4 (Appendix B3).

Peak effort by the drift gillnet fleet occurred during the 84-hour fishing period that started on June 29 when 216 permit holders harvested 58,500 sockeye and 389,000 chum salmon (Appendix B3). Both sockeye and chum salmon peak harvest occurred during this fishing period (Appendix B3). The 2023 drift gillnet sockeye salmon harvest in the Coghill District was 45% above the 10-year average (2013–2022) of 161,000 fish (Appendix B5). The drift gillnet fleet's 2023 chum and coho salmon harvests were 18% above and 80% below their respective 10-year averages (2013–2022) of 1.27 million and 40,300 fish (Appendix B5).

Unakwik District

The Unakwik District, located in the northern portion of Unakwik Inlet, is the smallest district in the PWS management area (Figure 1). Both drift gillnet and purse seine gear are allowed during all fishing periods. This district was established for management of sockeye salmon runs to Cowpen and Miners Lakes. Cannery Creek Hatchery, a pink salmon hatchery, sits near the glacial moraine that spans the inlet at the southern boundary of the district. Escapement is counted by aerial surveys; however, water is quite turbid in Miners Lake.

Preseason Outlook and Harvest Strategy

The Unakwik District is managed conservatively to allow for uncertainty in sockeye salmon stock assessment. The management strategy in this district has been to provide 2 periods per week from mid-June through mid- to late July, concurrent with other districts. Fishing opportunity is largely based on abundance indices, such as harvest data, escapement aerial surveys, and the amount of fishing effort in the district.

Season Summary

The Unakwik District opened to drift gillnet and purse seine commercial salmon harvest for the 2023 fishing season on June 15 and closed on July 21 (Appendix B6). The total 2023 Unakwik District drift gillnet harvest was 5,500 sockeye, 37 pink, and 2 chum salmon, which was above the 10-year (2013–2022) averages for sockeye but below for pink and chum salmon (Appendix B7).

Eshamy District

The Eshamy District, located in western PWS, is approximately 15 miles in length and 1 mile wide along its length (Figure 1). The Eshamy District is open to all Area E drift and set gillnet permits and is the only district in PWS where set gillnet gear is allowed. The Main Bay Subdistrict was established to allow permit holders to harvest enhanced sockeye salmon while minimizing the harvest of salmon bound for other areas in PWS and wild sockeye salmon returning to Eshamy Lake. From 1967 to 2011, ADF&G maintained a weir in the Eshamy River but it was discontinued after the 2011 season due to budget cuts. From 2012 to 2017, an uncrewed video weir was deployed at the outlet of Eshamy Lake, but it was discontinued due to inconsistent maintenance and incomplete escapement counts. The Eshamy weir project was again fully operational in 2021 and 2022. In 2023, the Native Village of Eyak joined in a cooperative agreement with ADF&G to fund and operate the project.

Preseason Outlook and Harvest Strategy

A preseason forecast of the sockeye salmon run to Eshamy Lake was not developed in 2023. PWSAC projected the total run of enhanced sockeye salmon to MBH to be 934,000 fish, of which 8,940 fish were required for broodstock, 123,400 fish were required for cost recovery, and the remaining 801,700 fish were available for harvest in the commercial fishery (Table 8). This MBH run was from smolt releases in 2018 and 2019 (Appendix E14).

During years in which the set gillnet gear group catches 5.0% or more of the previous 5-year average exvessel value of enhanced salmon, the set gillnet gear group is limited to no more than 36 hours per week beginning on July 10. In 2023, the set gillnet group was below the 5.0% allocation trigger.

Season Summary

The 2023 total commercial fishery harvest in the Eshamy District was 58 Chinook, 528,400 sockeye, 1,280 coho, 140,500 pink, and 115,400 chum salmon (Appendix C5). A total of 253 drift gillnet permit holders and 22 set gillnet permit holders participated in this fishery (Table 1, Appendices C3 and C4). Of the 3 most numerous species, the drift gillnet gear group accounted for 67% of sockeye, 77% of chum, and 74% of pink salmon harvested in the Eshamy District (Appendix C5). Sockeye salmon harvest was below the 10-year (2013–2022) average for both the drift gillnet and set gillnet gear groups (Appendix C5). Chum salmon harvest was below the 10-year average for the drift gillnet gear group while the set gillnet gear group was 40% above the 10-year average. Pink salmon harvests were 52% below average for the drift gillnet gear group and 9% above average set gillnet gear groups (Appendix C5).

MBH harvested 227,000 sockeye salmon for cost recovery and 9,400 sockeye salmon for broodstock (of which 6,470 were viable; Appendix E12). The majority of sockeye (85%) and chum (88%) salmon harvested in the Eshamy District were hatchery fish (Appendices E9 and E11). Based on otolith thermal marks, all hatchery sockeye salmon were of MBH origin (Appendix E9).

Hatchery chum salmon were primarily of WNH (64%) and AFK (15%) origin (Appendix E11). The 2023 sockeye salmon run was 15% below the MBH run forecast and 12% below the 10-year (2013–2022) average of 908,000 fish (Table 8, Appendix E13).

Sockeye salmon began arriving in the Eshamy District in late May, and commercial fishing periods followed a consistent schedule. From June 1 through June 20, the fishing schedule was two 36-hour periods per week. Ordinarily, another 36-hour period would have started on June 22, but the district was closed to increase run entry and accelerate cost-recovery efforts at MBH. This effort was successful and PWSAC was able to complete cost-recovery operations sooner than expected. After a 24-hour period on June 26, the district went back to a two 36-hour periods per week schedule until July 24 when fishing time was reduced to two 24-hour periods per week. Starting August 7, a schedule of one 24-hour commercial fishing period per week was followed until the district closed for the season on September 6 (Appendices C3 and C4).

Peak periods of participation in the Eshamy District closely coincided with peak periods of harvest for sockeye, chum, and pink salmon in 2023. Peak effort for the drift gillnet gear group occurred during the 36-hour period from June 19 to 20 with 176 drift gillnet permit holders participating (Appendix C3). For the set gillnet gear group, effort peaked at 22 permits fished during consecutive 24-hour and 36-hour periods starting June 26 and June 29 (Appendix C4). Peak sockeye salmon harvest occurred from June 19–20 when 176 drift gillnet permit holders and 21 set gillnet permit holders harvested 96,400 sockeye salmon (Appendices C3 and C4). For the drift gillnet gear group, peak pink salmon harvest was 31,900 fish during the 24-hour period from August 7 to 8, and peak chum salmon harvest was 15,800 fish during the 36-hour period from June 15 to 16 (Appendix C3). For the set gillnet gear group, peak pink salmon harvest was 10,700 fish during the 36-hour period from July 13 to 14, and peak chum salmon harvest was 4,200 fish during the 36-hour period from July 6–7 (Appendix C4).

The Eshamy weir was operated from July 3 through August 31. Peak sockeye salmon escapement occurred on August 12 when 1,112 fish passed the weir, representing 10% of the total escapement in 2023 (Figure 8, Appendix C1). Total escapement by August 31 was 11,194 sockeye salmon (Appendix C1), below the lower end of the escapement goal (BEG 13,000–28,000) and was 57% below the previous long-term average (2002–2011; Appendix C2). Additionally, 1 Chinook, 71 coho, 3,688 pink, and 327 chum salmon passed the Eshamy weir in 2023 (Appendix C2).

Wild sockeye salmon harvest ranged from 1% to 34% in mid-June to early July during sampled periods (Appendix E9). The overall proportion of wild sockeye salmon harvested in the Eshamy District in 2023 was 15% (Appendix E9). Pink salmon harvested in the Eshamy District were 100% wild origin during sampled periods (Appendix E10).

Port Chalmers Subdistrict

Preseason Outlook and Harvest Strategy

The 2023 PWSAC chum salmon forecast for Port Chalmers Subdistrict was 650,000 fish. The 5-year rolling average allocation calculation used to guide 2023 fisheries management was 55.6% purse seine, 44.4% drift gillnet, and 4.0% set gillnet. Based on the *Prince William Sound Management and Allocation Plan* (5 AAC 24.370), the drift gillnet fleet had exclusive access to the Port Chalmers Subdistrict from June 1 to July 30 in 2023.

Season Summary

Port Chalmers Subdistrict was open 2 periods per week for the duration of the drift gillnet fishery from June 1 until July 30. Drift gillnet harvest peaked during the July 6–9 period when 181,200 chum salmon were harvested by 46 permit holders (Appendix B8). The total 2023 Port Chalmers Subdistrict drift gillnet harvest was 187 Chinook, 25,500 sockeye, 1 coho, 60,800 pink, and 1.30 million chum salmon (Appendix B9). A total of 239 drift gillnet permit holders reported deliveries (Appendix B9). The 2023 chum salmon harvest was 100.0% above forecast and 81.4% above the 5-year average of 717,000 fish (Appendix B9). Out of a total Montague District commercial common property fishery (CCPF) harvest of 1.31 million chum salmon, thermal mark contributions estimated 1.13 million (85.8%) were released at Port Chalmers, 119,800 (9.1%) were released at WNH, and 8,000 (0.6%) were released at AFK (Appendix E20). Wild chum salmon harvest made up 4.5% (59,100 fish) of the total harvest (Appendix E20).

2023 PURSE SEINE SALMON SEASON SUMMARY

The general purse seine districts are managed to achieve wild pink and chum salmon escapement goals by district and allow for the orderly harvest of surplus wild and enhanced stocks. Preseason forecasts are the basis for early inseason management of all districts. Escapement of pink and chum salmon is monitored throughout the season by weekly aerial surveys of 134 index streams. Pink and chum salmon escapement trends, of both wild and enhanced stocks, determine the area and duration of fishing periods within districts. Inseason modifications to harvest projections, season opening dates, and strategies for weekly fishing periods occur as fisheries develop and escapement goals are achieved.

2023 Preseason Outlook and Harvest Strategy

The 2023 pink salmon total run forecast for PWS was 64.81 million fish, composed of 20.38 million VFDA hatchery fish, 24.20 million PWSAC hatchery fish, and 20.32 million wild fish. Approximately 3.74 million (18%) of VFDA's pink salmon preseason forecast was projected for cost recovery and broodstock, with the remaining 16.65 million VFDA fish expected to be available for commercial harvest. Approximately 3.92 million (16%) of PWSAC's pink salmon preseason forecast was projected for cost recovery and broodstock, with the remaining 20.28 million PWSAC fish expected to be available for commercial harvest. ADF&G manages for each district's aerial index escapement goal for a cumulative SEG of 575,000–992,000 pink salmon. Using the overall midpoint of the SEG, 783,500 fish, an estimated 18.30 million wild fish were anticipated to be available for commercial harvest. Taking into consideration all these factors, 55.31 million pink salmon were expected to be available for commercial harvest (ADF&G *unpublished*).

The 2023 chum salmon total run forecast was 3.44 million fish, with an estimated commercial harvest forecast of 2.30 million fish. Most of the chum salmon from the total run, 3.05 million (89%), were from PWSAC hatchery production, with 190,000 fish returning to the AFK hatchery purse seine fishery. Based on ADF&G's wild chum salmon forecast of 389,000 fish and subtracting the 10-year average escapement, 169,000 fish, there was a potential harvestable surplus of 220,000 wild chum salmon (ADF&G *unpublished*).

Pink and Chum Salmon Fishery Season Summary

The salmon market in 2023 directly impacted PWS purse seine fisheries. In early August, multiple processors issued communications to members of their respective fleets citing poor market

conditions. As pink salmon quality deteriorated throughout August, ground prices began to drop and processors stopped buying purse seine harvested salmon on August 26, which was approximately 7–10 days earlier than was expected. Despite ample area being provided to harvest surplus salmon, processing companies implemented company-specific area restrictions to keep fishing efforts focused solely on run entry through the Southwestern District corridor. An aggressive fishing schedule was prosecuted to harvest as much surplus PWSAC hatchery pink salmon as possible before companies stopped buying fish. However, based on postseason annual reporting, there was little surplus pink salmon at PWSAC facilities. Specific hatchery narratives are provided below in district summaries.

The 2023 PWS purse seine commercial harvest totaled 47.50 million fish. Specific harvest estimates are as follows: 420 Chinook, 88,300 sockeye, 17,700 coho, 46.41 million pink, and 980,000 chum salmon (Tables 1). There were 209 primary purse seine permit holders, and an additional 27 dual permit holders (1 vessel had 2 different dual permits associated with it) operating in PWS in 2023. In total, 236 out of 267 available purse seine permits were accounted for on at least one fish ticket (Tables 1 and 4). A comparison of average harvest by district between single and dual permit operations found that dual permit operations harvested approximately 18% more pink and 30% more chum salmon than single permit holders (Figure 9).

Aerial escapement surveys targeting early-season wild chum salmon in the Eastern and Northern Districts began the last week in June. To ensure that a broad range in pink and chum salmon run timing was represented in the escapement index, surveys were flown into mid-September. The 2023 wild pink and chum salmon runs were on time and steady. Wild pink salmon escapement indices in 2023 supported openings outside of hatchery subdistricts starting in mid-July and running through the remainder of the season. The PWS pink salmon escapement aerial index was 1.94 million fish. The Southwestern District did not meet the lower end of its SEG; the other 7 districts were within or above their respective SEG ranges (Table 5). Wild chum salmon escapement was not met in 3 out of 5 districts (Table 5). Poor weather and flying conditions negatively impacted aerial surveys this season. Some streams, particularly in the western portion of PWS, were not surveyed during peak times of chum salmon stream abundance.

Overall, the total pink salmon run in 2023 was 60.8 million fish (harvest, broodstock, and escapement), 9% below the forecast of 64.8 million fish (Table 8, Appendix D1). Based on otolith contributions and hatchery operator annual reports, the total VFDA run of 21.6 million fish was 6% above the forecast of 20.4 million fish and 5% above the 5-year odd-year average (2013–2021) of 20.6 million fish (Table 8, Appendix D1). In total, 15% (3.25 million) of the VFDA run was collected for cost recovery and broodstock (Appendix E22). The total run of 26.9 million PWSAC pink salmon was 11% above the forecast of 24.2 million fish and 11% below the 5-year odd-year (2013–2021) average of 30.1 million fish (Table 8, Appendix D1). In total, 33% (8.65 million) of the PWSAC run was collected for cost recovery and broodstock (Appendix E22). The total run of 12.2 million wild pink salmon was 59% below the 5-year odd-year (2013–2021) average of 24.0 million fish (Appendix D1). Based on pink salmon thermal marked otolith contribution estimates, the commercial harvest (all gear types) was 39% SGH, 39% PWSAC, and 22% wild stock fish (Appendix E17).

Purse seine chum salmon harvest, particularly wild chum, exceeded preseason expectations and was driven by strong returns to the Eastern and Northern Districts (Appendices D2 and D5). The overall wild chum salmon harvest of 807,000 chum salmon was well above the preseason forecast of 220,000 fish, and the 10-year (2013–2022) average of 376,000 fish (Appendix D2).

Eastern District

The 2023 commercial fishery in the Eastern District was driven by a strong return of SGH pink salmon and wild Eastern District chum salmon, and an average to weak wild pink salmon return. From July 5 through August 23, there were 20 fishing periods with 208 permit holders reporting deliveries (Table 1, Appendix E15). Commercial harvest in the district was 325 Chinook, 16,800 sockeye, 4,710 coho, 20.64 million pink, and 612,000 chum salmon (Table 1). Commercial pink salmon harvest included 79% SGH, 19% wild, and 2% PWSAC fish (Appendix E15).

Early season Eastern District management focused on early wild chum salmon escapement to the district and the SGH pink salmon return. On June 28, VFDA began test fishing for cost recovery which was used as a metric of run entry and strength into Port Valdez. On July 3, there was a strong enough run entry to warrant harvesting and processing. Unlike previous years, cost recovery in 2023 was contracted out to 2 processors rather than one, this resulted in more effort and competition. The increased effort, strong run entry, and sufficient wild stock escapement trends triggered the first 12-hour fishing period on July 5. During this first period, only waters south of Bidarka Point were opened to ensure that there would be adequate fish available in Valdez Arm to continue cost-recovery fishing the following day. Harvest from that first period was dominated by wild pink salmon and a greater than expected amount of wild chum salmon (Appendix E15). To accommodate cost-recovery fishing, the fishing schedule was a 12-hour fishing period followed by 2 days off. Despite common property fishing opportunities, cost-recovery boats continued to fish which reduced the amount of time needed to achieve the VFDA cost recovery goal. By July 11, run entry into Port Valdez increased to the point that VFDA recommended fishing only in Valdez Arm, despite being only 45% complete with cost recovery; harvest from that period was over 3 million pink salmon, of which 97% were from SGH (Appendix E15). From that point on, common property and cost-recovery fishing worked in tandem, with area adjustments in Valdez Arm until cost recovery was completed on July 21.

Fishing in Valdez Arm remained strong through the remainder of July, and despite additional area being provided to target wild stocks, most of the fleet remained in Valdez Arm and Port Valdez to target SGH pink salmon. Based on harvest and aerial surveys, it was apparent that Eastern District wild chum salmon were performing well and above the preseason forecast, whereas wild pink salmon were average to weak. To conserve wild pink salmon, area was adjusted each period to keep the fleet focused on the SGH return. Additionally, salmon harvest task force markers (SHTF) were used to provide a level of protection to any fish that were staging in mouths and bays. By early August, the SGH run slowed, and harvest became dominated by wild stocks. Given the change in harvest composition, average escapement levels, and the onset of the PWSAC pink salmon return, the fishing schedule was again adjusted to a 2- to 3-day off schedule, followed by a 12-hour fishing period. That fishing schedule, and the fact that other areas of PWS were being opened to target the PWSAC return, led to an overall reduction of fishing effort in the Eastern District. Effort did not increase again until mid-August when wild chum salmon harvest in Port Fidalgo increased. Port Fidalgo supports a late-season wild chum run, and like other wild chum stocks in the Eastern District, the Port Fidalgo return was strong. By late August, market conditions, a decrease in ground prices, fish quality, and processor participation resulted in a significant decrease in fishing effort. The last reported Eastern District delivery was on August 23, approximately 2 weeks earlier than anticipated.

The Eastern District commercial fishing season ended after Labor Day weekend in Port Valdez when VFDA recommended a fishing period on September 5 targeting SGH coho salmon. There

was no fishing effort during the fishing period. The SGH coho salmon run is primarily managed as a sport fishery, but the commercial fleet inadvertently harvests them throughout PWS. Of the estimated 192,000 coho salmon harvested in commercial fisheries (all gear types), an estimated 8,740 were SGH coho salmon (Table 1, Appendix E1).

The 2023 SGH pink salmon run forecast was 20.4 million fish, of which 3.74 million were needed for broodstock and cost recovery (Table 8; ADF&G *unpublished*). The actual SGH pink salmon total return was 21.6 million fish (Appendix D1). An estimated 2.73 million SGH pink salmon were harvested for VFDA cost recovery by purse seine, and an additional 521,000 fish were harvested for cost recovery via the SGH raceway, for a total cost-recovery harvest of 3.25 million pink salmon (Appendix E22). Of the 521,000 raceway fish, 474,000 pink salmon were sacrificed as broodstock, and 47,400 fish were sold as roe-recovery fish; an additional 16,800 fish were reported as “watershed escapement” (ADF&G *unpublished*). The total broodstock number was less than a preseason anticipated goal of 409,000 fish and resulted in 18.39 million fish commercially harvested (Appendix E17; ADF&G *unpublished*).

The 2023 SGH coho salmon run was above the projected forecast of 35,000 fish with an estimated total return of 43,200 fish (Appendix E1; ADF&G *unpublished*). VFDA harvested 663 coho salmon for cost recovery from the SGH raceway and utilized an additional 9,350 fish for broodstock (Appendix E1).

In the Eastern District, escapement goals were reached for pink and chum salmon. The Eastern District pink salmon escapement index of 650,740 fish was within the odd-year SEG index range of 346,000–863,000 fish (Table 5, Appendix D3). The wild chum salmon escapement index of 157,274 fish was well above the district’s lower bound SEG of 79,000 (Table 5, Appendix D4).

Northern District

Management of the Northern District in 2023 initially focused effort on SGH pink salmon traveling through the northeastern portion of the district and then transitioned to a strong return of CCH pink salmon. Like the Eastern District, harvest was supplemented by a strong wild chum salmon return and an average wild pink salmon return. There were 18 Northern District commercial fishing periods in 2023, with 176 purse seine permit holders reporting deliveries (Table 1, Appendix E16). Commercial harvest in the district consisted of 40 Chinook, 8,690 sockeye, 2,680 coho, 7.79 million pink, and 48,700 chum salmon (Table 1). Northern District pink salmon harvest included 27% CCH, 25% wild, 42% SGH, 6% WNH, and 0% AFK fish (Appendix E16).

Portions of the Northern District were opened to commercial fishing concurrently with the Eastern District starting on July 16 to target SGH pink salmon and disperse the fleet (Appendices E15 and E16). By July 20, escapement trends for wild chum and pink salmon supported limited fishing opportunity throughout the district; however, due to the strength of the SGH pink salmon run, there was little effort focused on targeting Northern District wild stocks. By early August, CCH pink salmon began making up a larger portion of the harvest (Appendix E16), so management shifted to the PWSAC return and their large cost-recovery goal. The plan going into PWSAC cost recovery was to start with 2 days off followed by a 14-hour fishing period, which then turned into 3 days off, followed by a 16-hour fishing period. In early August, it was realized that the WNH pink salmon return was weak and most of the cost-recovery fish would have to be harvested at CCH and AFK. To expedite cost recovery while also allowing fishing opportunity to the rest of the fleet, an Emergency Order (EO 2-F-E-052-23) was issued to PWSAC on August 7, expanding the CCH SHA to the entire CCH Subdistrict. From the issuance of that EO, the cost-recovery fleet harvested

1.44 million CCH fish in 7 days (August 8–16), while the rest of the fleet harvested 2.75 million pink salmon over three 12-hour fishing periods during that same timeframe (Appendix E16). Upon completion of cost recovery on August 16, there were 2 fishing periods on August 17 and 18 to clean up surplus fish in the CCH Subdistrict and CCH SHA and THA. During those periods, 1.26 million pink salmon were harvested, processors reported poor quality fish and dropped the ground price; and they also stopped purchasing fish from the CCH Subdistrict. Fishing continued in the general district for 3 more periods and the last reported delivery was on August 25 when most major processors stopped buying pink salmon for the season (Peter Pan Seafoods stopped buying fish on August 26). Harvest from that last period was predominantly CCH-origin fish, indicating continued strong run entry into CCH (Appendix E16). An aerial survey conducted on September 2 noted 500,000–550,000 pink salmon in the CCH SHA/THA, 250,000 carcasses, and 150,000 fish in the subdistrict.

The 2023 CCH pink salmon forecast was for 11.3 million fish, of which 1.74 million would be needed for cost recovery and broodstock (Table 8; ADF&G *unpublished*). The actual CCH pink salmon return was 10.61 million fish (Appendices D1 and E22). An estimated 2.02 million pink salmon were harvested for PWSAC cost recovery by purse seine, and an additional 410,000 fish were harvested for cost recovery via the CCH fishway, for a total cost-recovery harvest of 2.43 million pink salmon. Of the 410,000 raceway fish, 377,000 were sacrificed for broodstock, and an extra 32,500 were sold as roe-recovery fish. An additional 200,000 fish were reported as “other escapement”, an estimate that was lower than what was observed from the last aerial survey on September 2. The total broodstock number was well below the preseason anticipated goal of 584,000 fish, meaning that 8.18 million CCH fish were commercially harvested without meeting this objective (Appendices E17 and E22).

In the Northern District, escapement goals were reached for pink and chum salmon. The Northern District pink salmon escapement index of 299,845 fish was above the upper end of the odd-year SEG index range of 111,000–208,000 fish (Table 5, Appendix D3). The wild chum salmon escapement index of 55,482 fish was above the district’s lower bound SEG of 28,000 (Table 5, Appendix D4).

Coghill District

The Coghill District shifted to purse seine management on July 21, when the WNH chum run was over, and the harvestable surplus was predominantly pink salmon (5 AAC 24.370(e)(5)(B)). There were 20 commercial fishing periods in 2023 with 60 purse seine permit holders reporting deliveries (Table 1, Appendix B4). Purse seine commercial harvest in the district consisted of 5 Chinook, 6,900 sockeye, 80 coho, 1.19 million pink, and 83,100 chum salmon (Table 1, Appendix B4). Coghill District pink salmon harvest included 41% wild, 36% WNH, 21% CCH, 2% SGH, and <1% AFK fish (Appendix E7).

The purse seine fishery began earlier than anticipated due to a strong Coghill River sockeye run, and surplus WNH chum salmon. Two provisions defined in regulation allow the purse seine fleet to fish in the Coghill District before the July 21 management shift; in 2023 both of those provisions were triggered. On July 13, consistent with 5 AAC 24.370(i), the purse seine fleet was provided an opportunity in College Fiord to target surplus Coghill Lake sockeye salmon. Through July 11, the Coghill River weir had passed 30,412 sockeye, and passage rates were trending towards reaching the lower end of the SEG before peak passage typically occurs (Appendix B1). To slow down the sockeye salmon run, the purse seine fleet was provided opportunity in College Fiord,

with an area restriction to the terminal area near the mouth of the Coghill River to keep purse seiners focused on sockeye salmon and minimize the interception of other wild stocks and WNH chum salmon. The purse seine fleet were given 3 periods to target Coghill Lake sockeye salmon, with effort and sockeye salmon harvest being minimal during all 3 periods (Appendix B4). Furthermore, on July 18, the WNH THA and SHA were opened to the purse seine fleet “for the purpose of preventing deterioration of fish quality of the harvestable surplus of chum salmon that is not being adequately harvested by the drift gillnet fleet” (5 AAC 24.368(f)). Approximately 67,400 chum salmon were harvested by the purse seine fleet in the WNH THA and SHA before July 21 (Appendix B4).

The first fishing period where purse seine gear was allowed to target both wild and enhanced salmon stocks within the Coghill District occurred on July 21. During this period, the general district, excluding the Bettles Bay Subdistrict and WNH SHA, was opened for a 20-hour period. On July 22, the entire district was again opened, excluding the WNH SHA, and this time SHTF markers were used to manage the Bettles Bay Subdistrict. Following that period, PWSAC recommended closing the WNH THA and SHA, as well as the Esther Subdistrict to protect WNH chum salmon broodstock and allow pink salmon to start building for cost recovery. Through July 27, 14-hour fishing periods occurred north of Pakenham Point to provide opportunity on Coghill Lake sockeye salmon (Appendix B4). General district waters were managed conservatively during this time to allow limited harvest opportunity for wild pink salmon and to gauge the run strength of WNH pink salmon. By early August, PWSAC began cost-recovery operations at WNH, and hatchery subdistricts remained closed. Given the large cost-recovery goal, the Coghill District was managed like the rest of PWS, on a schedule consisting of multiple days off followed by a 12- to 16-hour fishing period. Based on contribution estimates and cost-recovery progress in early August, it became apparent that WNH pink salmon were not performing as well as AFK and CCH, and wild stocks were making up most of the harvest (Appendix E7). From August 2 through August 17, there were 6 fishing periods, 2 of which had no harvest reported. Due to higher harvest rates elsewhere in PWS, particularly in the Northern and Southwestern Districts, there was minimal effort and harvest in all but 2 fishing periods in August (Appendix B4). The last reported purse seine harvest in the Coghill District occurred on August 17, the day following the completion of cost recovery. After this, ground prices dropped, and processors began limiting area based on fish quality concerns. The district remained open through August 30; however, most pink salmon buyers quit for the season on August 25. The district shifted to gillnet coho salmon management for the remainder of the season on August 31.

The 2023 WNH pink salmon forecast was for 6.10 million fish, and of those fish, 1.08 million would be needed for cost recovery and broodstock (Table 8; ADF&G *unpublished*). The actual WNH pink salmon run was 4.81 million fish (Appendices D1 and E22). An estimated 1.46 million pink salmon were harvested for PWSAC cost recovery by purse seine and an additional 444,000 fish were harvested for cost recovery via the WNH raceway, for a total cost-recovery harvest of 1.90 million pink salmon (Appendix E22). Of the 444,000 raceway fish, PWSAC reported that 425,000 pink salmon were sacrificed at WNH for broodstock, and 18,300 were sold for roe recovery (ADF&G *unpublished*). This total broodstock number was below the preseason estimate of 457,000 fish, meaning that 2.91 million fish were commercially harvested without meeting this objective (Appendices E17 and E22; ADF&G *unpublished*).

In the Coghill District, escapement goals were reached for pink salmon but not for chum salmon. The pink salmon escapement index of 169,737 fish was within the odd-year SEG index range of

54,000–233,000 fish (Table 5, Appendix D3). The chum salmon escapement index of 6,250 fish was below the district’s lower bound SEG of 10,000 fish and below the 10-year (2013-2022) average of 8,977 fish (Table 5, Appendix D4).

Northwestern District

Commercial harvest in the Northwestern District consisted of 0 Chinook, 2,050 sockeye, 20 coho, 329,000 pink, and 4,340 chum salmon (Table 1). There were 4 Northwestern District commercial fishing periods in 2023, with 21 purse seine permit holders reporting deliveries (Table 1; ADF&G *unpublished data*). Northwestern District pink salmon harvest included 67% wild, 24% WNH, 7% CCH, 1% AFK, and 1% SGH (Appendix E17).

The overall wild chum and pink salmon return to the Northwestern District was like previous years with inconsistent run entry to the district. At times throughout the season, some index streams had escapement trending above anticipated for that date while other nearby streams were trending below. To provide opportunity for escapement given this sporadic run entry, harvest area was adjusted, and SHTF markers were used to keep fishing effort focused on those portions of the district that had surplus fish available.

In the Northwestern District, escapement goals were reached for pink salmon but not for chum salmon. The pink salmon escapement index of 312,060 fish was above the odd-year SEG index range of 64,000–144,000 fish (Table 5, Appendix D3). The chum salmon escapement index of 738 fish was well below the district’s lower bound SEG of 7,000 fish (Table 5, Appendix D4). Due to poor weather conditions, there were only 4 aerial surveys flown in the Northwestern District, some of which were not completed due to weather. Aerial surveys in this district are often impacted by unpredictable wind patterns, particularly in August, when peak stream counts would be expected.

Southwestern District

The Southwestern District is closed to commercial fishing before July 18 except for the AFK THA and SHA, which may be opened to target enhanced chum salmon returning to that facility (5 AAC 24.370(e)(2)(A)). On or after July 18, based on the strength of the pink salmon run, the district may be opened to the purse seine fleet (5 AAC 24.370(e)(2)(B)). There were 37 Southwestern District commercial fishing periods in 2023, 21 for the AFK chum salmon fishery, and 16 for the pink salmon fishery, with 193 purse seine permit holders reporting deliveries (Table 1, Appendix E18). Commercial harvest in the district was 30 Chinook, 39,000 sockeye, 8,560 coho, 14.36 million pink, and 200,000 chum salmon (Table 1). The Southwestern District pink salmon harvest included 44% AFK, 21% CCH, 19% wild, 11% WNH, and 5% SGH fish (Appendices E17 and E18).

The 2023 commercial harvest of 200,000 chum salmon in the Southwestern District was below the 2013–2022 average harvest of 279,000 fish (Appendix D6). Southwestern District chum salmon harvest included 63% AFK, 16% Port Chalmers, 11% wild, and 10% WNH (Appendix E19). The AFK chum salmon harvest of 126,000 fish was below the preseason forecast of 190,000 fish (Table 8; ADF&G *unpublished*). Additionally, a total of 32,300 sockeye salmon were harvested in the AFK chum salmon fishery (June 1–July 18; ADF&G *unpublished data*).

The 2023 AFK pink salmon forecast was for 6.80 million fish, of which 1.10 million would be needed for cost recovery and broodstock (Table 8; ADF&G *unpublished*). The actual AFK pink salmon run was 11.47 million fish (Appendices D1 and E22). An estimated 3.94 million pink

salmon were harvested for PWSAC cost recovery, and an additional 383,000 fish were harvested for cost recovery via the AFK raceway, for a total cost-recovery harvest of 4.32 million pink salmon. Of the 383,000 raceway fish, PWSAC reported that 320,000 pink salmon were sacrificed at WNH for broodstock, and 62,600 fish were sold for roe recovery (ADF&G *unpublished*). An additional 75,000 fish were reported as “other escapement”, an estimate consistent with the 60,000–75,000 fish observed on a September 2 aerial survey. This total broodstock number was below the preseason estimate of 398,000 fish, meaning that 7.14 million fish were commercially harvested without meeting this objective (Appendices E17 and E22; ADF&G *unpublished*).

Southwestern District pink salmon escapement was met in 2023. The observed escapement index of 134,089 fish was within the odd-year SEG range of 112,000–231,000 fish (Table 5, Appendix D3).

Montague District

The 2023 Montague District commercial purse seine harvest was 15 Chinook, 1,230 sockeye, 1,460 coho, 1.56 million pink, and 13,100 chum salmon (Table 1). There were 26 Montague District commercial fishing periods in 2023, with 60 purse seine permit holders reporting deliveries (Table 1, Appendices E20 and E21). The Montague District pink salmon commercial harvest was 42% wild, 21% AFK, 18% CCH, 11% SGH, and 7% WNH fish (Appendix E21).

There were only 2 fishing periods targeting pink salmon returning to the Montague District. The first period was on July 28, and the second one was on August 1. Pink salmon harvest from these periods was 33,400, and 54,500 fish, respectively. Following these 2 periods, the district was closed for the remainder of the season (ADF&G *unpublished*).

Montague District pink salmon escapement was met in 2023. The observed escapement index of 177,472 fish was within the odd-year SEG range of 143,000–330,000 fish (Table 5, Appendix D3).

Southeastern District

The 2023 Southeastern District commercial harvest was 4 Chinook, 300 sockeye, 170 coho, 557,000 pink, and 18,500 chum salmon (Table 1). There were 10 commercial fishing periods, with 32 purse seine permit holders reporting deliveries (Table 1). The Southeastern District’s pink salmon commercial harvest was 90% wild, 6% SGH, 3% AFK, 1% WNH, and <1% CCH fish (Appendix E17).

Most of the fishing periods were districtwide with regulatory closed waters in effect. However, the waters of Orca Inlet were opened for a 16-hour period on August 2 to target surplus pink and chum salmon near Hartney and Humpback Creeks. The opening of Orca Inlet, which is entirely in regulatory closed waters, was a result of a conversation at the 2021 BOF meeting between Cordova District Fishermen United and ADF&G to provide opportunity in times of surplus; it is unknown when the last time this area was opened to commercial fishing. Harvest during that period was 89,800 pink and 2,180 chum salmon (ADF&G *unpublished*).

In the Southeastern District, escapement goals were not reached for either pink or chum salmon. The observed escapement index of 183,087 pink salmon was below the odd-year SEG range of 286,000–515,000 fish (Table 5, Appendix D3). The chum salmon escapement index of 7,791 fish was below the lower bound SEG of 11,000 fish (Table 5, Appendix D4). Like other districts, aerial surveys of the Southeastern District were impacted by poor weather. The last survey of the district was conducted on August 3 and peak counts in many of the streams do not occur until mid-August.

Preferably, aerial surveys are conducted into mid-September to capture the entire run of both pink and chum salmon.

SUBSISTENCE, PERSONAL USE, AND COMMERCIAL HOMEPACK FISHERIES

The Prince William Sound management area includes all waters of Alaska between the longitudes of Cape Fairfield and Cape Suckling (Figure 1). State of Alaska subsistence fishing requires permits for targeting salmon and all freshwater finfish species in the PWS area. For a detailed history of regulations governing the subsistence fisheries within the Copper River and Prince William Sound, see Botz and Somerville (2011).

State and federal salmon fisheries occur throughout the management area. State saltwater salmon subsistence and commercial homepack harvest are permitted in every commercial fishing district. State freshwater subsistence, personal use, and federal freshwater subsistence fisheries are focused around the Copper River. State subsistence salmon fisheries are open to all Alaska residents, but federal subsistence salmon fisheries are only open to qualified rural residents. Personal use salmon fishing is open to all Alaska residents only in the Chitina Subdistrict. Commercial fishery participants may withhold a portion of their catch as homepack. This is defined in 5 AAC 39.010: “A person engaged in commercial fishing may retain fish from lawfully taken commercial catch for that person’s own use...” All commercially caught finfish not sold must be reported on a fish ticket.

LOWER COPPER RIVER AND PRINCE WILLIAM SOUND

Subsistence salmon fishing is allowed 7 days per week in the Copper River District and general PWS subsistence districts from May 15 until 2 days before the opening of the commercial fishery. Boundary lines for the Copper River District and general PWS District subsistence fishing are the same as those in the commercial fishery (Figure 10). When the commercial season has commenced, subsistence fishing is allowed on Saturday from 6:00 AM to 10:00 PM, and during commercial fishing periods. Regulation stipulates that 2 days following the closure of the Copper River District and general PWS districts to commercial salmon fishing for the season, subsistence fishing is allowed 7 days a week until October 31. Within the Copper River District, drift gillnets are the only legal subsistence gear; nets may have a maximum length of 50 fathoms with a maximum mesh size of 6 inches prior to July 15. Within general PWS subsistence districts, 50 fathom gillnets or purse seine may be used for subsistence fishing depending on the legal commercial gear standard within a commercial fishing district.

In PWS saltwater salmon subsistence fisheries, 893 subsistence permits were issued. The total harvest in these subsistence fisheries was 10,200 salmon (ADF&G, Division of Commercial Fisheries, Cordova, unpublished data, 2024). In the Copper River District, a harvest of 948 Chinook, 6,330 sockeye, and 431 coho salmon were reported from the 336 permit holders that reported fishing. The Copper River District total subsistence harvest of 7,710 salmon was nearly 55% above the 10-year (2013–2022) average (Appendix F1). This larger-than-average harvest in a year with poor Chinook and sockeye salmon abundance indices early in the season and related conservative commercial fishery management was probably due to minimal homepack harvest opportunity—necessitating more subsistence fishery participation by commercial fishery participants to meet subsistence needs. In addition, in the PWS general subsistence fishing area, the 97 permit holders that fished reported a harvest of 3 Chinook, 2,380 sockeye, 52 coho, 31 pink,

and 35 chum salmon. Notably, the sockeye salmon subsistence harvest continued its upward annual trend in the PWS general subsistence area, a nearly 1,000 fish increase over the previous year's subsistence harvest and more than 5 times the 2013–2022 average (Appendix F2).

Since 2010, commercial fishery participants retained more Chinook and sockeye salmon from their commercial harvest as homepack during seasons of average to larger runs, whereas seasons with weak returns, such as 2018, 2020, and 2021, homepack retention declined. For example, due to a poor Copper River sockeye salmon run in 2018, the commercial fishery was closed for 41 days, and Chinook and sockeye salmon homepack harvest dropped 80–90% below average. In 2020, poor Copper River sockeye and Chinook salmon runs led to a more than 2-week closure, and homepack harvest for these species again dropped to 65–85% below average (Appendix A1 and A3). In 2023 Area E commercial fisheries, 361 permit holders reported retaining 13,600 salmon for homepack (Appendix F3). On a homepack harvest-per-permit basis in 2023, the most Chinook, pink, and chum salmon were harvested by drift gillnetters; the most coho salmon were harvested by purse seiners; and the most sockeye salmon were harvested by set gillnetters. For homepack, drift gillnetters retained an average of 38 salmon per permit reporting harvest, set gillnetters retained an average of 48 salmon per permit reporting harvest, and purse seiners retained an average of 27 salmon per permit reporting harvest. The 2023 overall homepack harvest was 4% above the 10-year (2013–2022) average (Appendix F3), in keeping with the regular fishing opportunity provided in commercial fisheries across the board.

The federal subsistence salmon fishery in the Copper River Delta is administered by the United States Forest Service. In 2005, the federal government began issuing permits allowing subsistence harvests on federal lands in PWS and the lower Copper River area. Legal gear types are dip net, rod and reel, and spear. In 2022, the federal subsistence fishery was expanded to include waters of the Copper River within a ½ mile of the Copper River Highway between miles posts 27 and 38. In 2023, an estimated total of 173 federal permits were issued; 48 permits were fished, and an estimated 2 Chinook, 134 sockeye and 540 coho salmon were harvested (Appendix F4).

TATITLEK AND CHENEGA AREA SUBSISTENCE FISHERIES

Two subsistence areas were established in 1988 to provide opportunities for customary and traditional use of salmon by residents of the Tatitlek and Chenega villages. The Chenega area includes the entirety of the Southwestern District, as described in 5 AAC 24.200(i), as well as a portion of the Montague District along the northwestern shore of Green Island from the westernmost tip to the northernmost tip of the island (5 AAC 01.648(a)). The Tatitlek subsistence area is located south of the Valdez Nonsubsistence Area described in 5 AAC 99.015(a)(5) and encompasses portions of the Northern and Eastern Districts (5 AAC 01.648(b); Figure 10).

Permit holders can fish in these areas 7 days per week beginning May 15 until 2 days before the initial commercial fishing period in the associated commercial fishing districts. When the commercial fishing season is established, area and time within the subsistence areas is defined by the area and time in the associated commercial fishing district. Starting in 2018, subsistence fishing was also allowed during the commercial fishing season on Saturdays from 6:00 AM to 10:00 PM. Following a 2-day wait after the closure of the commercial fishing season in the associated commercial fishing district, subsistence fisheries are open 7 days per week until October 31.

In 2023, 13 permits were issued for the Chenega subsistence area, of which 10 were returned by users after the season to report harvest information. Three permit holders reported fishing, and no

salmon were harvested. In the Tatitlek area, 10 permits were issued, of which 8 were returned. Of those returned permits, 1 reported fishing, and no harvest was reported (Appendix F5).

UPPER COPPER RIVER

The upper Copper River state subsistence salmon fisheries occur in the Glennallen Subdistrict and near the mouth of the Tanada River close to the old Batzulnetas village site (Figure 11). Federal subsistence salmon fisheries occur in the Chitina and Glennallen Subdistricts and are administered by the National Park Service (Appendix F4). In 2023, the combined upriver subsistence and personal use sockeye salmon harvest (federal and state) totaled 238,000 fish, which was 13,900 more fish than the 2013–2022 average. In contrast to 2020, 2021, and 2022, increased inriver abundance of sockeye salmon in 2023 and less conservative upriver fisheries management resulted in increased harvest. From 2013 to 2022, the combined upriver subsistence and personal use sockeye salmon harvest (federal and state) ranged from 127,000 fish in 2020 to 334,000 fish in 2015, for a 10-year (2013–2022) average of 224,000 sockeye salmon (Appendix A1). Even with the low sockeye salmon harvests in 2018 and 2020, the 2013–2022 average harvests in the subsistence and personal use fisheries are within the inriver goal ranges for these fisheries.

Glennallen Subdistrict Subsistence Fishery

The Glennallen Subdistrict is that portion of the mainstem Copper River upstream of the McCarthy Bridge to the mouth of the Slana River (Figure 11). This subdistrict is historically open June 1 through September 30 for continuous fishing. Fish wheels and dip nets are legal gear. Participants must be Alaska residents and are allowed 1 permit per household per year, and the permit identifies the single gear type to be used. Total annual harvest per permit is 30 salmon for a household of 1, 60 salmon for a household of 2, and 10 additional salmon for each additional household member. If additional salmon were requested by the permit holder, the permitted limit cannot exceed 200 salmon for a household of 1, or 500 salmon for a household of 2 or more (5 AAC 01.645). No more than 5 Chinook salmon may be taken by each dip net permit holder. Both tips of the caudal fin must be clipped on all harvested salmon. Subsistence permits with completed harvest information must be returned to ADF&G by October 31 of each year.

In 2023, a total of 1,001 dip net permits and 407 fish wheel permits were issued to subsistence users in the Glennallen Subdistrict. Of these, 64 (4%) permits were not returned. A combined total estimate of 3,250 Chinook, 48,100 sockeye, and 193 coho salmon were harvested in the Glennallen Subdistrict. Comparatively, the 10-year (2013–2022) average was 2,560 Chinook, 55,700 sockeye, and 137 coho salmon for this subdistrict. Fish wheel effort has been declining over the last 10 years (2013–2022), with an average number of 407 permits issued. The number of dip net permits declined this year relative to the past few years. The number of permits issued in 2023 is 15% less than the 10-year (2013–2022) average of 1,174 dip net permits (Appendix F6). Historically, sockeye salmon dominate the harvest, representing 95% of the estimated harvest in the Glennallen Subdistrict subsistence fishery over the previous 10 years (2013–2022), followed by Chinook and coho salmon (Appendices A1, A3, A12, and F6). Harvest from the Glennallen Subdistrict subsistence fisheries was 8% GH sockeye salmon (ADF&G, Division of Sport Fish, Cordova, unpublished data, 2024).

In 2002, the federal government began issuing permits allowing subsistence harvests on federal lands in the Glennallen Subdistrict. Legal types of fishing gear are dip net, fish wheel, rod and reel, and spear. In 2023, a total of 290 federal permits were issued for the Glennallen Subdistrict, of which 231 permits were returned. A total of 536 Chinook, 46% below the 2018–2022 average,

were reported harvested. The 11,700-fish sockeye salmon harvest was 11% below the 2018–2022 average (Appendix F4)

Batzulnetas Subsistence Fishery

The Batzulnetas fishery, as described in 5 AAC 01.647(i), encompasses all waters from the regulatory markers near the mouth of Tanada Creek and approximately ½ mile downstream from that mouth, and in Tanada Creek between ADF&G regulatory markers identifying the open waters of the creek. Salmon may be taken by emergency order starting June 1 when fishing periods are limited to one 48-hour period per week; beginning in July, fishing time is increased to one 84-hour period each week until September 1 when the fishery closes. There were 2 permits issued in 2023, and 211 sockeye salmon reported as harvested (Appendix A1).

Chitina Subdistrict Personal Use Fishery

The Chitina Subdistrict is the portion of the mainstem Copper River from the downstream edge of the McCarthy Road Bridge to a marker 200 yards above Haley Creek (Figure 11). Regulations for the Chitina Subdistrict personal use fishery are similar to the Glennallen subsistence fishery regulations, with 3 exceptions: (1) permit holders are required to possess a sport fishing license, (2) permit holders are only allowed to take salmon using a dip net, and (3) permit holders are limited to 1 Chinook salmon per household. In December 2014, the BOF changed annual bag limits from 15 salmon for a household of 1 and 30 salmon for a household of 2 or more individuals to 25 salmon for the head of a household and 10 salmon for each dependent of the permit holder. In addition, the BOF removed the allowance for supplemental permits. Previously, when ADF&G had determined that there was a weekly harvestable surplus of at least 50,000 salmon in the Chitina Subdistrict (based on Miles Lake sonar counts, followed by an assumed 2-week travel time), 10 additional fish were given to permit holders who had already achieved their annual limit. Now, if inseason adjustments to the fishery are needed due to fluctuations in salmon escapement, an emergency order is issued.

In 2023, there were 8 emergency orders issued to adjust the dip net fishery. The first period started on June 15, and the last period closed on August 31. The fishery was then open continuously from September 1 to September 30, per regulation. Early season lower-than-projected inriver passage indices from the Miles Lake Sonar Project led to a delayed start of the fishery—the latest start in the last 20 years (M. Somerville, ADF&G, Division of Sport Fish, Area Management Biologist, Glennallen, unpublished data, 2023). There were 7,577 permits issued for the Chitina personal use fishery in 2023. Of these, 442 (6%) were not returned. The number of permits issued was 16% below the 2013–2022 average of 8,975 permits issued (Appendix F6). The below average but relatively consistent participation in the fishery over the last 3 years is probably due to 2 strongly influential fishery participation drivers: (1) decreased participation related to the COVID-19 pandemic altering household traditional fishing practices, and (2) inriver passage targets being consistently achieved resulting in regular harvest potential throughout the season. Expanded harvest for the Chitina Subdistrict personal use fishery in 2023 was 3,520 Chinook, 169,000 sockeye, and 776 coho salmon. The 10-year (2013–2022) average expanded harvests were 1,340 Chinook, 147,000 sockeye, and 900 coho salmon (Appendices A1, A3, A12, and F6). The sockeye salmon harvest in 2023 was above the 10-year (2013–2022) average and was largely the result of increased participation and inriver fish abundance being just over 400,000 fish above the inriver goal passage objective (Appendices A6 and F7). Harvest from the Chitina Subdistrict personal use

fishery was 8% GH sockeye salmon (ADF&G, Division of Sport Fish, Cordova, unpublished data, 2024).

In 2002, the federal government began issuing permits allowing subsistence harvests on federal lands in the Chitina Subdistrict. Federal subsistence users can use either a dip net or fish wheel in the Chitina Subdistrict. In 2023, an estimated total of 196 federal permits were issued, of which 165 were returned. The reported harvest was 130 Chinook and 5,100 sockeye salmon (Appendix F4).

COMMERCIAL HERRING FISHERIES

The PWS herring management area encompasses all coastal waters of the Gulf of Alaska between Cape Suckling and Cape Fairfield, extending offshore to latitude 59°N. The PWS herring management year goes from late summer one year through early summer the next year. A total of 5 herring fisheries may occur annually. During the spring season, 2 fisheries target herring for sac roe using either purse seine or gillnet gear, and 2 spawn-on-kelp fisheries harvest either naturally occurring spawn-on-kelp or spawn on kelp suspended in pounds. In the fall, a food/bait fishery may occur. Of the 5 herring fisheries, only the wild spawn on kelp and the food/bait fishery are open entry fisheries. Each of these fisheries is managed depending on observed herring population size and age structure. For additional background, including a review of historical and recent PWS herring management, harvest strategies, and harvest by fishery and gear, see Botz et al. (2013).

The Prince William Sound Herring Management Plan (5 AAC 27.365) is intended to provide an optimum sustained yield and an equitable allocation for all user groups in PWS. The management objective for PWS herring is to target fisheries on high-quality herring and to maintain a threshold spawning biomass. When Pacific herring *Clupea pallasii* spawning biomass allows for a commercial fishery, an annual harvest level is determined for each of the 5 commercial fisheries. There has not been a commercial herring fishery in PWS since 1999.

2023 SEASON SUMMARY

Based on herring stock assessment information, all commercial PWS Pacific herring fisheries remained closed in 2023. An age structured assessment model estimated that the 2023 median prefishery biomass was 29,253 tons^{1,2} (the regulatory threshold is 22,000 tons). Aerial surveys showed 26.1 mile-days of spawn in PWS, 29.2% above the 10-year average (2013–2022; Figure 12, Appendices G1 and G2), and 32.7 mile-days of milt near Kayak and Wingham Islands (J. Morella, ADF&G, Division of Commercial Fisheries, PWS Area Research Biologist, Cordova, unpublished data, 2024).

Net sampling and aerial surveys were used in 2023 to assess herring biomass, disease prevalence, age composition, and growth. Sampling was conducted aboard the R/V *Solstice*. Samples were collected from 7 locations: Red Head, Cedar Bay, Rocky Bay, Canoe Pass, Port Etches, and Kayak Island. Age sex, and length were processed and summarized from over 2,000 herring collected during 2023 spring sampling (Figure 12; J. Morella, ADF&G, Division of Commercial Fisheries, PWS Area Research Biologist, Cordova, unpublished data, 2023). The Prince William Sound Science Center acoustics data collection ended following the 2021 field season; therefore, acoustic

¹ The Alaska Board of Fisheries requires that inseason catch and aerial survey biomass estimates be calculated and reported in short tons. The English short ton = 2,000 lb or 907.2 kg.

² The metric tonne (1,000 kg or 2,205 lb) = tons/1.1023.

biomass estimates are no longer available. Overall, spawning age composition of PWS samples collected were 38% age-3, 33% age-4, 6% age-5, 7% age-6, 14% age-7, and 1% age-8 or older fish (Appendix G3).

ADF&G conducted 50 hours of spring aerial surveys during 21 flights from March 20 to May 5, 2023, in PWS and 10.5 hours of aerial surveys during 5 flights of Kayak and Wingham Islands. Spawn was documented at Tatitlek (April 3–9, and April 30), Hells Hole (April 7–13), Red Head (April 8–10), Virgin Bay (April 8–9), Knowles Bay (April 10), Kayak and Wingham Islands area (April 17–21), Landlocked Bay (April 21–23), Snug Corner Cove (April 23–30), Graveyard Point (April 23–26), Hawkins Island Cutoff/ Middleground Shoal (April 23–24), Port Etches (April 21–24), Western Montague shoreline (April 24), Port Chalmers (April 26), Blish Island (April 30), and Mummy and Boswell Bay (April 30) (Figure 12; J. Morella, ADF&G, Division of Commercial Fisheries, PWS Area Research Biologist, Cordova, unpublished data, 2023).

2024 HERRING SEASON OUTLOOK

Given the PWS herring spawning population, current fish size, and age structure, a commercial harvest will not occur in spring 2024. Funding was provided by the *Exxon Valdez* Trustee Council for 2016 through 2023. ADF&G will continue to monitor the PWS herring biomass to assess growth and recruitment as funding is available.

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TABLES AND FIGURES

Table 1.—Prince William Sound Area commercial fishery salmon harvest by gear type and district, 2023.

District	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Eastern	208	325	16,812	4,708	20,637,651	612,141	21,271,637
Northern	176	38	8,684	2,681	7,789,283	48,704	7,849,390
Coghill	60	5	6,902	78	1,185,005	83,078	1,275,068
Northwestern	21	0	2,055	21	329,377	4,342	335,795
Southwestern	193	29	38,989	8,558	14,356,825	199,572	14,603,973
Montague	60	15	1,229	1,464	1,558,280	13,140	1,574,128
Southeastern	32	4	317	169	556,579	18,528	575,597
Unakwik	15	7	13,312	0	694	271	14,284
Purse seine total	209 ^a	423	88,300	17,679	46,413,694	979,776	47,499,872
Bering River	50	43	11,383	24,495	0	134	36,055
Copper River	422	10,682	862,002	134,030	15,058	19,148	1,040,920
Coghill	288	168	232,744	8,074	212,583	1,493,929	1,947,498
Eshamy	253	32	351,959	1144	103,338	88,405	544,878
Montague	238	162	25,489	12	64,882	1,299,909	1,390,454
Unakwik	13	0	5,535	0	37	2	5,574
Drift gillnet total	444	11,087	1,489,112	167,755	395,898	2,901,527	4,965,379
Eshamy	22	10	175,364	121	37,036	26,940	239,471
Set gillnet total	22	10	175,364	121	37,036	26,940	239,471
Commercial fishery total (sold)		11,520	1,752,776	185,555	46,846,628	3,908,243	52,704,722
Solomon Gulch		44	633	4,424	3,269,127	4248	3,278,476
Cannery Creek		0	28	0	2,430,003	9	2,430,040
Wally Noerenberg		0	0	0	1,903,711	1,439,433	3,343,144
Main Bay		0	226,956	0	0	31	226,987
Armin F. Koernig		0	14	0	4,360,742	1	4,360,757
Port Chalmers		0	0	0	0	0	0
Hatchery total ^b		44	227,631	4,424	11,963,583	1,443,722	13,639,404
Test fishery		0	0	0	0	0	0
Home pack		676	9,517	1583	1,299	516	13,591
Confiscated fish		0	0	0	0	0	0
Donated fish		0	0	0	0	0	0
Miscellaneous harvest total		676	9,517	1583	1,299	516	13,591
Prince William Sound total		12,240	1,989,924	191,562	58,811,510	5,352,481	66,357,717

^a 27 Dual permit purse seine boats participated in 2023.

^b Hatchery sales for hatchery operating costs.

Table 2.—Weight, price, and estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound Area, 2023.

Fishery	Species	Number	Pounds	Average weight	Average price	Exvessel value
Purse seine	Chinook	423	4,584	10.84	\$0.70	\$3,209
	Sockeye	88,300	475,999	5.39	\$0.99	\$471,239
	Coho	17,679	117,504	6.65	\$0.28	\$32,901
	Pink	46,413,694	143,322,547	3.09	\$0.22	\$31,530,960
	Chum	979,776	6,494,531	6.63	\$0.33	\$2,143,195
	Total	47,499,872	150,415,165			\$34,181,505
Drift gillnet	Chinook	11,087	172,310	15.54	\$11.36	\$1,957,442
	Sockeye	1,489,112	8,107,463	5.44	\$1.91	\$15,485,255
	Coho	167,755	1,295,151	7.72	\$1.16	\$1,502,375
	Pink	395,898	1,272,838	3.22	\$0.23	\$292,753
	Chum	2,901,527	18,495,422	6.37	\$0.45	\$8,322,940
	Total	4,965,379	29,343,183			\$27,560,763
Set gillnet	Chinook	10	106	10.60	\$3.18	\$337
	Sockeye	175,364	1,003,428	5.72	\$1.85	\$1,856,342
	Coho	121	800	6.61	\$0.70	\$560
	Pink	37,036	114,197	3.08	\$0.24	\$27,407
	Chum	26,940	173,480	6.44	\$0.47	\$81,536
	Total	239,471	1,292,011			\$1,966,182
Hatchery sales	Chinook	44	259	5.89	\$0.60	\$155
	Sockeye	227,631	993,647	4.37	\$1.55	\$1,540,153
	Coho	4,424	23,500	5.31	\$0.05	\$1,058
	Pink	11,963,583	32,016,556	2.68	\$0.47	\$15,047,781
	Chum	1,443,722	8,116,595	5.62	\$0.68	\$5,519,285
	Total	13,639,404	41,150,557			\$22,108,432
Combined	Chinook	11,564	177,259	15.33		\$1,961,143
	Sockeye	1,980,407	10,580,537	5.34		\$19,352,988
	Coho	189,979	1,436,955	7.56		\$1,536,893
	Pink	58,810,211	176,726,138	3.01		\$46,898,902
	Chum	5,351,965	33,280,028	6.22		\$16,066,955
	Total	66,344,126	222,200,917			\$85,816,881

-continued-

Table 2.—Page 2 of 2.

Gear type	Value of catch	No. of permits	Average earnings
Purse seine	\$34,181,505	209	\$163,548
Drift gillnet	\$27,560,763	444	\$62,074
Set gillnet	\$1,966,182	22	\$89,372
Subtotal (value of CPF catch)	\$63,708,450		
Hatchery	\$22,108,432		
Grand total	\$85,816,882		

Note: CPF = common property fishery. Number and pounds from fish ticket data. Value from statewide season summary. Personal use/homepack not included.

Table 3.—Average price paid to permit holders for salmon, Prince William Sound Area, 1996–2023.

Year	Chinook salmon		Sockeye salmon			Coho salmon			Pink salmon			Chum salmon		
	Gillnet		Gillnet		Purse seine	Gillnet		Purse seine	Gillnet		Purse seine	Gillnet		Purse seine
	Copper and Bering	PWS	Copper and Bering	PWS		Copper and Bering	PWS		Copper and Bering	PWS		Copper and Bering	PWS	
1996	\$1.96	\$0.68	\$1.38	\$0.85	\$0.73	\$0.53	\$0.24	\$0.36	NA	\$0.04	\$0.07	NA	\$0.14	\$0.13
1997	\$2.00	\$1.00	\$0.88	\$0.85	\$0.85	\$0.30	\$0.25	\$0.30	NA	\$0.07	\$0.12	NA	\$0.25	\$0.30
1998	\$2.07	\$1.25	\$1.49	\$1.11	\$1.01	\$0.46	\$0.41	\$0.31	NA	\$0.14	\$0.12	NA	\$0.21	\$0.27
1999	\$3.44	\$0.50	\$1.84	\$0.89	\$0.98	\$0.58	\$0.23	\$0.49	NA	\$0.06	\$0.10	NA	\$0.15	\$0.27
2000	\$4.02	\$4.04	\$1.72	\$1.38	\$0.90	\$0.57	\$0.56	\$0.42	NA	\$0.11	\$0.15	NA	\$0.26	\$0.28
2001	\$3.30	\$1.94	\$1.35	\$0.77	\$0.74	\$0.32	\$0.20	\$0.26	NA	\$0.05	\$0.13	NA	\$0.38	\$0.37
2002	\$3.34	\$1.26	\$1.29	\$1.14	\$0.57	\$0.35	\$0.09	\$0.25	NA	\$0.05	\$0.09	NA	\$0.15	\$0.15
2003	\$3.48	\$0.00	\$1.16	\$0.80	\$0.71	\$0.48	\$0.48	\$0.42	NA	\$0.06	\$0.07	NA	\$0.17	\$0.17
2004	\$4.69	\$1.38	\$1.81	\$0.85	\$0.55	\$0.69	\$0.28	\$0.42	NA	\$0.04	\$0.10	NA	\$0.23	\$0.18
2005	\$4.70	\$0.00	\$1.79	\$0.92	\$0.54	\$0.83	\$0.69	\$0.10	NA	\$0.05	\$0.08	NA	\$0.28	\$0.18
2006	\$5.03	\$1.20	\$1.83	\$1.15	\$1.05	\$0.92	\$0.67	\$0.60	NA	\$0.11	\$0.16	NA	\$0.37	\$0.33
2007	\$4.50	\$2.70	\$1.81	\$1.04	\$0.82	\$0.90	\$0.30	\$0.59	NA	\$0.11	\$0.17	NA	\$0.33	\$0.37
2008	\$5.96	\$1.04	\$3.12	\$1.24	\$1.17	\$1.23	\$1.24	\$1.12	\$0.27	\$0.33	\$0.34	\$0.21	\$0.55	\$0.57
2009	\$5.29	\$2.06	\$2.09	\$1.42	\$1.32	\$1.30	\$1.13	\$0.42	\$0.22	\$0.27	\$0.24	\$0.28	\$0.52	\$0.53
2010	\$5.50	\$2.13	\$2.58	\$1.72	\$1.79	\$1.27	\$0.58	\$0.70	\$0.29	\$0.34	\$0.35	\$0.36	\$0.80	\$0.78
2011	\$5.66	\$3.97	\$2.08	\$1.56	\$1.43	\$1.24	\$1.09	\$1.04	\$0.31	\$0.40	\$0.45	\$0.38	\$0.90	\$0.86
2012	\$5.39	\$1.44	\$1.94	\$1.40	\$1.42	\$1.10	\$1.04	\$0.69	\$0.29	\$0.38	\$0.42	\$0.28	\$0.66	\$0.68
2013	\$5.79	\$2.83	\$2.47	\$1.86	\$1.69	\$1.39	\$1.29	\$0.95	\$0.27	\$0.35	\$0.42	\$0.11	\$0.57	\$0.59
2014	\$6.43	\$2.94	\$2.44	\$1.97	\$1.90	\$1.17	\$1.00	\$0.81	\$0.13	\$0.30	\$0.29	\$0.22	\$0.68	\$0.65
2015	\$5.76	\$1.33	\$2.42	\$1.40	\$1.38	\$0.74	\$0.19	\$0.29	\$0.10	\$0.17	\$0.20	\$0.19	\$0.53	\$0.49
2016	\$6.06	\$3.93	\$2.57	\$1.82	\$1.54	\$1.47	\$0.97	\$0.79	\$0.16	\$0.19	\$0.28	\$0.41	\$0.56	\$0.60
2017	\$7.29	\$3.06	\$3.71	\$1.85	\$1.61	\$1.41	\$1.14	\$0.94	\$0.29	\$0.28	\$0.35	\$0.21	\$0.70	\$0.70
2018	\$12.09	\$8.98	\$2.85	\$2.74	\$1.97	\$1.62	\$1.51	\$0.99	\$0.37	\$0.40	\$0.40	\$0.89	\$0.91	\$0.91
2019	\$8.72	\$1.82	\$2.90	\$2.01	\$1.81	\$1.40	\$1.37	\$1.06	\$0.25	\$0.28	\$0.30	\$0.11	\$0.44	\$0.52
2020	\$5.94	\$1.86	\$3.00	\$1.73	\$1.43	\$1.40	\$0.92	\$0.89	\$0.27	\$0.29	\$0.30	\$0.15	\$0.46	\$0.45
2021	\$13.54	\$3.41	\$3.46	\$1.88	\$1.59	\$1.84	\$1.41	\$0.67	\$0.35	\$0.34	\$0.35	\$0.67	\$0.83	\$0.81
2022	\$13.09	\$3.32	\$2.99	\$1.85	\$1.65	\$1.26	\$1.30	\$1.07	\$0.44	\$0.43	\$0.40	\$0.67	\$1.10	\$1.21
2023	\$11.53	\$1.98	\$2.25	\$1.37	\$0.99	\$1.19	\$0.69	\$0.28	\$0.23	\$0.24	\$0.22	\$0.29	\$0.46	\$0.33
Average 2013–2022	\$8.47	\$3.35	\$2.88	\$1.91	\$1.66	\$1.37	\$1.11	\$0.85	\$0.26	\$0.30	\$0.33	\$0.36	\$0.68	\$0.69

Note: These prices are based on weighted average prices given voluntarily by processors and hatchery operators and do not represent prices reported in the Commercial Operators Annual Report (COAR). These prices are estimates and do not reflect postseason adjustments and bonuses. Caution should be used when estimating values from these prices. NA = not available.

Table 4.—Estimated exvessel value of the total commercial salmon harvest by gear type and previous 10-year average, Prince William Sound Area, 2013–2023.

Purse seine												Average
Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2013–2022
Chinook	\$15,444	\$11,317	\$6,990	\$879	\$4,872	\$4,517	\$3,145	\$11,016	\$14,533	\$8,678	\$3,209	\$8,139
Sockeye	\$796,220	\$646,931	\$1,766,313	\$551,225	\$1,113,442	\$623,322	\$1,599,774	\$275,770	\$865,321	\$606,857	\$471,239	\$884,517
Coho	\$1,608,923	\$192,659	\$83,371	\$194,322	\$529,613	\$613,107	\$2,466,094	\$201,808	\$306,897	\$56,222	\$32,901	\$625,302
Pink	\$100,334,069	\$36,393,753	\$60,318,284	\$9,196,452	\$57,750,324	\$29,845,804	\$44,112,963	\$19,504,631	\$66,127,273	\$33,683,354	\$31,530,960	\$45,726,691
Chum	\$2,157,525	\$1,901,811	\$1,436,478	\$1,603,442	\$11,881,118	\$7,405,991	\$3,773,440	\$3,128,839	\$3,902,774	\$9,282,636	\$2,143,195	\$4,647,405
	\$104,912,182	\$39,146,471	\$63,611,435	\$11,546,319	\$71,279,369	\$38,492,741	\$51,955,416	\$23,122,063	\$71,216,798	\$43,637,747	\$34,181,505	\$51,892,054
Drift gillnet												
Species												
Chinook	\$973,720	\$1,175,457	\$2,250,068	\$1,344,847	\$2,087,540	\$1,562,084	\$3,086,883	\$486,239	\$1,405,878	\$2,344,162	\$1,957,442	\$1,671,688
Sockeye	\$29,389,403	\$40,966,814	\$29,962,566	\$20,497,184	\$18,059,297	\$13,710,079	\$30,115,053	\$5,307,058	\$12,725,695	\$16,520,757	\$15,485,255	\$21,725,391
Coho	\$3,986,567	\$5,138,204	\$862,745	\$5,955,839	\$5,085,403	\$6,096,579	\$2,489,766	\$2,773,557	\$2,653,670	\$887,464	\$1,502,375	\$3,592,979
Pink	\$2,465,469	\$1,361,065	\$569,851	\$76,420	\$1,093,388	\$896,292	\$803,665	\$1,027,964	\$1,197,558	\$967,686	\$292,753	\$1,045,936
Chum	\$11,654,134	\$3,728,785	\$3,426,951	\$6,902,037	\$12,453,314	\$14,963,757	\$7,681,028	\$723,392	\$7,861,657	\$8,917,438	\$8,322,940	\$7,831,249
	\$48,469,293	\$52,370,325	\$37,072,182	\$34,776,326	\$38,778,942	\$37,228,790	\$44,176,395	\$10,318,210	\$25,844,458	\$29,637,507	\$27,560,763	\$35,867,243
Set gillnet												
Species												
Chinook	\$3,015	\$769	\$1,239	\$2,695	\$428	\$1,114	\$528	\$181	\$447	\$1,309	\$337	\$1,172
Sockeye	\$2,278,575	\$2,887,961	\$1,888,979	\$1,993,811	\$1,432,904	\$2,284,793	\$2,435,437	\$837,264	\$861,038	\$1,848,119	\$1,856,342	\$1,874,888
Coho	\$2,556	\$451	\$1,015	\$54	\$1,013	\$572	\$1,159	\$46	\$561	\$271	\$560	\$770
Pink	\$17,062	\$35,588	\$14,827	\$5,826	\$42,543	\$35,918	\$51,771	\$37,304	\$32,246	\$93,343	\$27,407	\$36,643
Chum	\$188,004	\$106,662	\$69,027	\$99,124	\$85,157	\$74,877	\$108,410	\$13,916	\$72,552	\$206,051	\$81,536	\$102,378
	\$2,489,211	\$3,031,431	\$1,975,088	\$2,101,510	\$1,562,046	\$2,397,273	\$2,597,305	\$888,710	\$966,844	\$2,149,093	\$1,966,182	\$2,015,851
Hatchery sales												
Species												
Chinook	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$155	\$0
Sockeye	\$110	\$0	\$1,160,000	\$300	\$0	\$0	\$75,500	\$1,309,465	\$3,525,962	\$1,476,960	\$1,540,153	\$754,830
Coho	\$214,752	\$19,035	\$30,000	\$15,987	\$312,040	\$123,541	\$139,416	\$45,557	\$3,460	\$541	\$1,058	\$90,433
Pink	\$8,765,309	\$10,482,055	\$9,873,200	\$8,456,683	\$11,634,771	\$11,928,271	\$12,833,172	\$11,819,555	\$15,452,965	\$17,313,812	\$15,047,781	\$11,855,979
Chum	\$3,424,927	\$1,573,976	\$3,457,442	\$5,740,327	\$4,651,425	\$4,260,448	\$6,667,469	\$3,252,179	\$3,644,699	\$5,150,210	\$5,519,285	\$4,182,310
	\$12,405,098	\$12,075,066	\$14,520,642	\$14,213,297	\$16,598,236	\$16,312,260	\$19,640,057	\$16,426,756	\$22,627,086	\$23,941,523	\$22,108,432	\$16,876,002

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Confiscated												Average
Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2013–2022
Chinook	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sockeye	\$0	\$0	\$241	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27
Coho	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pink	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Chum	\$0	\$0	\$2,979	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$331
	\$0	\$0	\$3,220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$358

Combined value												
Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Chinook	\$992,179	\$1,187,543	\$2,258,297	\$1,348,421	\$2,092,841	\$1,567,715	\$3,090,556	\$497,436	\$1,420,858	\$2,354,149	\$1,961,143	\$1,680,999
Sockeye	\$32,464,308	\$44,501,706	\$34,778,099	\$23,042,520	\$20,605,642	\$16,618,194	\$34,225,764	\$7,729,557	\$17,978,016	\$20,452,692	\$19,352,988	\$25,239,650
Coho	\$5,812,798	\$5,350,349	\$977,131	\$6,166,202	\$5,928,068	\$6,833,799	\$5,096,435	\$3,020,968	\$2,964,588	\$944,498	\$1,536,893	\$4,309,484
Pink	\$111,581,909	\$48,272,461	\$70,776,162	\$17,735,381	\$70,521,027	\$42,706,285	\$57,801,571	\$32,389,454	\$82,810,042	\$52,058,194	\$46,898,902	\$58,665,249
Chum	\$17,424,590	\$7,311,234	\$8,392,877	\$14,344,930	\$29,071,014	\$26,705,073	\$18,230,347	\$7,118,326	\$15,481,682	\$23,556,336	\$16,066,955	\$16,763,641
	\$168,275,784	\$106,623,293	\$117,182,566	\$62,637,454	\$128,218,593	\$94,431,065	\$118,444,673	\$50,755,741	\$120,655,186	\$99,365,870	\$85,816,881	\$106,659,022

Average earnings												
Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Purse seine	\$497,214	\$176,335	\$289,143	\$54,982	\$311,264	\$164,499	\$218,300	\$104,625	\$335,928	\$211,834	\$163,548	\$236,412
Drift gillnet	\$92,853	\$99,753	\$71,293	\$67,266	\$74,863	\$73,141	\$86,791	\$21,101	\$54,181	\$65,281	\$62,074	\$70,652
Set gillnet	\$88,900	\$104,532	\$63,713	\$72,466	\$53,864	\$92,203	\$96,196	\$34,181	\$40,285	\$82,657	\$89,372	\$72,900

Number of permits fished												
Species	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average
Purse seine	211	222	220	210	229	234	238	221	212	206	209	220
Drift gillnet	522	525	520	517	518	509	509	489	477	454	444	504
Set gillnet	28	29	31	29	29	26	27	26	24	26	22	28

Table 5.—Escapement goals and escapements for Prince William Sound Area salmon stocks, 2014–2023.

System	2023 Goal range		Type	Initial Year	Escapement									
	Lower	Upper			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
CHINOOK SALMON														
<i>Prince William Sound</i>														
Copper River	21,000	31,000	SEG	2022	20,689	26,751	12,430	33,644	42,678	35,138	22,054	18,431	29,347	40,872
CHUM SALMON														
<i>Prince William Sound^{a,b}</i>														
Eastern District	79,000		LB SEG	2018	90,445	104,437	116,685	76,836	109,598	56,846	103,849	58,965	64,365	157,274
Northern District	28,000		LB SEG	2018	27,385	41,253	10,410	33,437	18,407	11,690	23,542	20,404	26,014	55,482
Coghill District	10,000		LB SEG	2018	9,491	14,929	976	13,210	13,617	3,437	8,998	2,395	8,629	6,250
Northwestern District	7,000		LB SEG	2018	5,041	7,060	3,954	7,118	15,563	3,258	7,405	6,979	13,372	738
Southeastern District	11,000		LB SEG	2018	29,362	44,095	13,919	26,330	10,164	19,451	26,909	46,391	12,944	7,791
COHO SALMON														
<i>Prince William Sound</i>														
Copper River Delta	32,000	50,000	SEG	2022	44,040	42,065	76,200	43,760	53,800	36,420	36,425	45,485	30,340	43,940
Bering River	13,000	25,000	SEG	2022	26,475	15,550	26,150	30,650	26,525	10,015	25,825	19,450	4,685	20,950
PINK SALMON														
<i>Prince William Sound^{a,c}</i>														
All districts combined (even year)	eliminated			2012										
All districts combined (odd year)	eliminated			2012										
Eastern District (even year)	203,000	328,000	SEG	2018	250,381		594,778		309,325		206,152		353,187	
Eastern District (odd year)	346,000	863,000	SEG	2018		1,440,254		557,545		445,075		729,369		650,740
Northern District (even year)	96,000	127,000	SEG	2018	95,134		133,460		111,174		105,226		163,498	
Northern District (odd year)	111,000	208,000	SEG	2018		708,920		395,437		195,169		464,350		299,845
Coghill District (even year)	37,000	110,000	SEG	2018	60,921		63,986		70,881		88,401		73,971	
Coghill District (odd year)	54,000	233,000	SEG	2018		775,488		181,153		153,129		300,227		169,737
Northwestern District (even year)	52,000	93,000	SEG	2018	66,350		168,272		111,194		77,828		292,892	
Northwestern District (odd year)	64,000	144,000	SEG	2018		438,944		250,989		91,267		368,406		312,060
Eshamy District (even year)	1,000	4,000	SEG	2018	12,167		NA ^d		16,594		7,250		14,937	
Eshamy District (odd year)	5,000	31,000	SEG	2018		68,988		2,836		1,402		17,925		12,756
Southwestern District (even year)	62,000	105,000	SEG	2018	73,104		NA ^d		81,100		64,470		200,057	
Southwestern District (odd year)	112,000	231,000	SEG	2018		644,158		172,930		33,340		339,920		134,089
Montague District (even year)	36,000	72,000	SEG	2018	23,136		NA ^d		135,208		84,238		143,917	
Montague District (odd year)	143,000	330,000	SEG	2018		559,994		205,252		25,385		242,151		177,472
Southeastern District (even year)	88,000	153,000	SEG	2018	141,845		107,769		293,275		138,330		137,692	
Southeastern District (odd year)	286,000	515,000	SEG	2018		1,529,543		372,960		290,452		544,906		183,087

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Table 5.–Page 2 of 2.

System	2023 Goal range		Type	Initial year	Escapement									
	Lower	Upper			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
SOCKEYE SALMON														
Prince William Sound														
Upper Copper River	360,000	750,000	SEG	2012	864,169	930,145	513,143	460,295	495,779	719,526	348,000	508,715	519,586	689,457
Copper River Delta	55,000	130,000	SEG	2003	64,205	66,665	51,550	56,950	58,470	61,825	55,620	87,075	55,075	65,775
Bering River	15,000	24,000	SEG	2022	14,885	22,705	16,390	19,115	13,300	17,630	15,795	13,774	6,720	17,100
Coghill Lake	20,000	75,000	SEG	2022	21,836	13,684	8,708	50,462	62,295	32,247	53,901	101,083	34,092	64,212
Eshamy Lake ^e	13,000	28,000	BEG	2009	NA	NA	NA	NA	NA	NA	NA	7,001	19,325	11,194

Note: NA = data not available; SEG = sustainable escapement goal; LB SEG = lower-bound SEG.

- ^a All PWS chum and pink salmon goals were revised in 2017 using a different index approach than previously used. Escapement values presented here use the new index based on a reduced set of survey streams. Prior to 2012, the pink salmon escapement goals for PWS combined all districts for both even and odd years.
- ^b No estimates for chum salmon escapements are included for the Unakwik, Eshamy, Southwestern, or Montague Districts because there are no escapement goals for those districts.
- ^c The estimates for pink salmon (odd year) do not include Unakwik District escapements, due to absence of an escapement goal and an average escapement estimate of a few thousand fish.
- ^d Fewer than 3 surveys were flown for almost all the index streams in the Eshamy, Southwestern, and Montague districts in 2016, so they were not used in calculating the area-under-the-curve index.
- ^e Eshamy River weir was not operated in 2012–2020.

Table 6.—Estimated age and sex composition of sockeye salmon harvested in the Copper River District drift gillnet fishery, 2023.

		Brood year and age class								Total	
		2020		2019		2018			2017		
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4		2.3
	Sample size ^a	29	5	291	856	6	2,324	73	32	264	3,880
Total	Percentage of sample	0.7%	0.1%	7.5%	22.1%	0.2%	59.9%	1.9%	0.8%	6.8%	100%
	Number in harvest	6,408	1,096	65,294	190,260	1,354	520,271	16,693	7,234	59,555	868,164
	Standard error	3,321	790	15,632	92,979	635	178,756	3,263	2,053	4,195	

Note: Strata combined: 5/15–9/15. Sampling dates: 5/15–7/18.

^a Sample sizes listed are unweighted. Weighted proportions are used to calculate number of fish by age in harvest.

Table 7.—Estimated age and sex composition of Chinook salmon harvested in the Copper River District commercial fishery, 2023.

		Brood year and age class									Total	
		2020		2019		2018			2017			2016
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3		2.4
	Sample size	4	1	14	110	1	706	9	81	24	1	951
Total	Percentage of sample	0.4%	0.1%	1.5%	11.6%	0.1%	74.2%	0.9%	8.5%	2.5%	0.1%	100%
	Number in harvest	47	12	166	1,303	12	8,366	107	960	284	12	11,269
	Standard error	44	28	37	170	8	200	51	102	64	8	

Note: Strata combined: 5/15–8/28. Sampling dates: 5/15–6/12.

Table 8.—Preseason projections for the 2023 commercial salmon fisheries by district and species in thousands of fish, Prince William Sound Area.

District/facility ^b	Forecast type ^c	Chinook		Sockeye		Coho ^a		Pink		Chum	
		Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point Estimate	Range
Copper River ^d	Commercial harvest	53	–	1,646	1,017–2,275	213	–	–	–	–	–
Bering River ^e	Commercial harvest	–	–	4	–	60	–	–	–	–	–
Coghill ^f	Commercial harvest	–	–	453	357–549	–	–	–	–	–	–
Eshamy ^f	No Forecast	–	–	NA	NA–NA	–	–	–	–	–	–
Unakwik ^g	Commercial harvest	–	–	3	–	–	–	–	–	–	–
General districts	Commercial harvest	–	–	–	–	–	–	20,230	–	389	–
Total wild stock		53	–	2,106	1,374–2,824	273	–	20,230	–	389	–
SGH	Total run	–	–	–	–	80	–	20,381	10,190–30,571	–	–
AFK	Total run	–	–	–	–	–	–	6,800	4,100–9,500	190	150–240
WNH ^h	Total run	–	–	–	–	122	75–170	6,100	1,900–10,200	2,210	1,950–2,460
CCH	Total run	–	–	–	–	–	–	11,300	8,100–14,500	–	–
MBH	Total run	–	–	934	826–1,043	–	–	–	–	–	–
GH	Total run	–	–	55	46–65	–	–	–	–	–	–
Total hatchery				989	872–1,108	202	75–170	44,581	24,290–64,771	2,400	2,100–2,700
Total hatchery and wild		53		3,095		475		64,811		2,789	

Note: All values are in thousands. NA = not available. Harvest estimates are made only for areas and species that constitute a significant portion of the catch. Prince William Sound Area hatchery facility abbreviations include SGH (Solomon Gulch Hatchery), AFK (Armin F. Koernig Hatchery), WNH (Wally Noerenberg Hatchery), CCH (Cannery Creek Hatchery), MBH (Main Bay Hatchery), and GH (Gulkana Hatchery).

^a ADF&G provides harvest forecasts for Copper River and Bering River Districts coho salmon runs.

^b ADF&G produces forecasts for wild stock pink and chum salmon in PWS. PWS Hatchery stock forecasts are produced by PWSAC.

^c ADF&G provides common property fishery (CPF) harvest forecasts for all wild stocks and Gulkana Hatchery sockeye salmon. Hatchery operators provide commercial harvest forecasts for PWS hatchery runs and Gulkana Hatchery sockeye salmon. Harvest projections do not include salmon harvested by hatcheries for cost recovery.

^d Formalized sibling model forecast procedures are used for Copper River sockeye salmon runs. Copper River Chinook and coho salmon harvest estimates are based on the mean annual harvest (5-year mean for Chinook and 10-year mean for coho salmon).

^e Bering River coho and sockeye salmon harvest estimates are based on 10-year mean annual harvest.

^f Formalized sibling model forecast procedures are used for Coghill and Eshamy Districts sockeye salmon runs. Coghill District wild pink and chum salmon harvests are included in the “General districts” projection.

^g Unakwik District sockeye salmon harvest estimate is based on the 10-year mean annual harvest.

^h Wally Noerenberg Hatchery chum and coho salmon harvest estimates include all on-site and remote release runs.

Table 9.—Estimated age composition of sockeye salmon escaped through Coghill Weir, 2023.

		Brood year and age class									Total
		2020	2019		2018			2017		2016	
		1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	3.3	
	Sample size	39	111	20	504	37	3	54	4	1	773
Total	Percentage of sample	5.0%	14.4%	2.6%	65.2%	4.8%	0.4%	7.0%	0.5%	0.1%	100%
	Number in escapement	3,432	9,215	1,732	41,548	3,057	228	4,575	364	61	64,212
	Standard error	546	832	392	1136	505	137	616	186	61	

Note: Strata combined: 6/13–7/25. Sampling dates: 6/13–7/25.

Table 10.—Prince William Sound purse seine commercial fishery salmon harvest by day, 2023.

Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
06/01	5	5	1	19	26	154	0	0	101	403	532	4,069
06/03	4	4	0	0	28	142	0	0	54	215	232	1,769
06/05	6	6	0	0	21	106	0	0	74	372	713	5,050
06/06 ^a	2	2	a	a	a	a	a	a	a	a	a	a
06/08 ^a	2	2	a	a	a	a	a	a	a	a	a	a
06/09 ^a	2	2	a	a	a	a	a	a	a	a	a	a
06/10	12	12	1	10	190	1,250	0	0	27	131	3,244	25,519
06/12	14	14	0	0	692	3,936	0	0	170	687	4,758	37,785
06/14 ^a	1	1	a	a	a	a	a	a	a	a	a	a
06/15	13	13	0	0	1,011	5,543	0	0	227	839	5,817	44,688
06/16 ^a	1	1	a	a	a	a	a	a	a	a	a	a
06/17	25	25	0	0	1,907	10,784	0	0	772	3,328	13,104	103,652
06/18 ^a	1	1	a	a	a	a	a	a	a	a	a	a
06/19	21	21	0	0	1,268	6,980	0	0	298	1,104	5,964	45,869
06/20	7	7	0	0	307	1,836	0	0	17	66	3,126	18,743
06/21	5	5	0	0	273	1,640	16	94	33	133	4,538	27,227
06/22	12	12	0	0	543	2,769	0	0	22	89	3,176	21,328
06/23	22	22	0	0	847	4,692	9	36	11	51	5,202	36,083
06/24	34	34	0	0	2,434	12,451	0	0	113	404	8,773	60,128
06/25	3	3	0	0	157	939	0	0	43	171	862	5,221
06/26	8	8	0	0	2,300	12,376	0	0	306	1,280	2,997	22,105
06/27	29	29	4	26	7,536	39,794	0	0	694	3,125	12,203	82,606
06/29	34	36	0	0	2,936	16,226	0	0	85	267	8,284	52,123
06/30	6	6	0	0	5,788	32,482	0	0	4	12	0	0
07/01	25	26	0	0	1,575	8,624	0	0	52	163	12,382	77,456
07/02	9	9	0	0	425	2,395	0	0	28	102	3,639	22,689
07/03	40	40	3	29	7,296	41,280	0	0	78	266	8,786	56,841
07/05	132	133	76	665	3,494	18,712	67	370	122,015	424,982	36,413	250,615
07/06	6	7	4	29	620	3,448	0	0	985	3,628	2,371	15,549
07/07 ^a	1	1	a	a	a	a	a	a	a	a	a	a
07/08	145	146	104	1195	3,021	16,241	273	1992	548,758	1,837,411	57,585	381,084
07/09 ^a	2	2	a	a	a	a	a	a	a	a	a	a
07/10 ^a	2	2	a	a	a	a	a	a	a	a	a	a
07/11	189	294	15	165	1,477	7,733	28	247	3,048,381	10,110,879	5,115	36,122
07/13	4	4	0	0	1,068	5,087	0	0	1,419	5042	6,817	54,515
07/14	197	300	31	235	1,588	8,197	17	117	3,417,471	11,284,289	11,278	80,628
07/15	3	3	0	0	406	1,844	0	0	8,808	28,069	3,597	23,973

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Table 10.—Page 2 of 2.

Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/16	199	277	11	102	1,710	9,514	285	1,671	2,567,453	8,266,489	11,441	77,790
07/17 ^a	2	2	a	a	a	a	a	a	a	a	a	a
07/18	193	217	7	119	3,060	15,212	263	1,432	1,629,365	5,507,717	69,744	459,144
07/19 ^a	2	2	a	a	a	a	a	a	a	a	a	a
07/20	201	258	13	217	4,588	25,117	786	4,955	2,479,479	8,184,054	49,042	311,985
07/21	5	5	0	0	419	2,236			38,598	137,813	8,246	53,057
07/22	197	253	36	616	3,577	18,872	511	3,546	2,511,371	8,135,986	49,035	329,094
07/23	3	3	0	0	375	1,879			36,864	123,452	132	789
07/24	200	228	41	441	5,677	30,634	1,575	10,634	1,875,188	6,134,177	38,979	262,108
07/25	8	8	0	0	376	1,920			24,183	87,575	70	454
07/27	196	232	45	489	5,318	27,471	1,752	11,153	2,071,906	6,677,533	42,967	270,215
07/30	197	213	34	325	3,730	19,689	1,302	8,825	1,537,897	4,849,506	78,448	541,919
08/02	196	226	13	137	3,136	17,423	1,393	9,136	1,994,310	5,809,233	63,961	420,554
08/05	198	225	8	65	2,042	11,801	840	5,843	2,058,496	6,119,722	47,273	317,512
08/09	196	273	3	22	1,676	8,764	875	6,279	3,068,092	9,020,957	22,869	156,145
08/13	191	232	1	16	614	3,185	199	1,380	2,135,962	6,272,335	56,521	391,735
08/15	193	299	0	0	731	3,851	965	5,851	3,750,448	10,935,641	72,041	462,444
08/17	189	286	0	0	395	2,207	721	4,943	3,439,003	9,865,383	45,517	277,314
08/18	105	106	0	0	29	146	37	253	594,506	1,856,039	232	1,535
08/19	186	236	0	0	401	2,095	418	2,988	2,550,311	7,450,585	1,206	8,534
08/21	161	204	1	3	304	1,394	795	5,195	2,144,455	6,296,493	34,862	219,312
08/22 ^a	1	1	a	a	a	a	a	a	a	a	a	a
08/23	104	133	0	0	352	1,920	2,724	17,107	1,373,498	4,060,674	35,030	210,879
08/24	55	68	0	0	60	346	1,081	7,859	804,052	2,179,007	422	2,792
08/25	42	46	0	0	76	514	891	6,435	469,519	1,302,227	125	975
08/26	5	5	0	0	0	0	0	0	79,552	246,611	0	0
Total	209	5,276	452	4,925	88,717	478,224	17,823	118,341	46,413,709	143,322,547	979,798	6,494,681
Average weight				10.90		5.39		6.64		3.09		6.63

Note: commercial, confiscated, donated, and personal use (homepack) delivery code categories are included in harvest totals.

^a Fewer than 3 permits were fished. Period results are confidential.

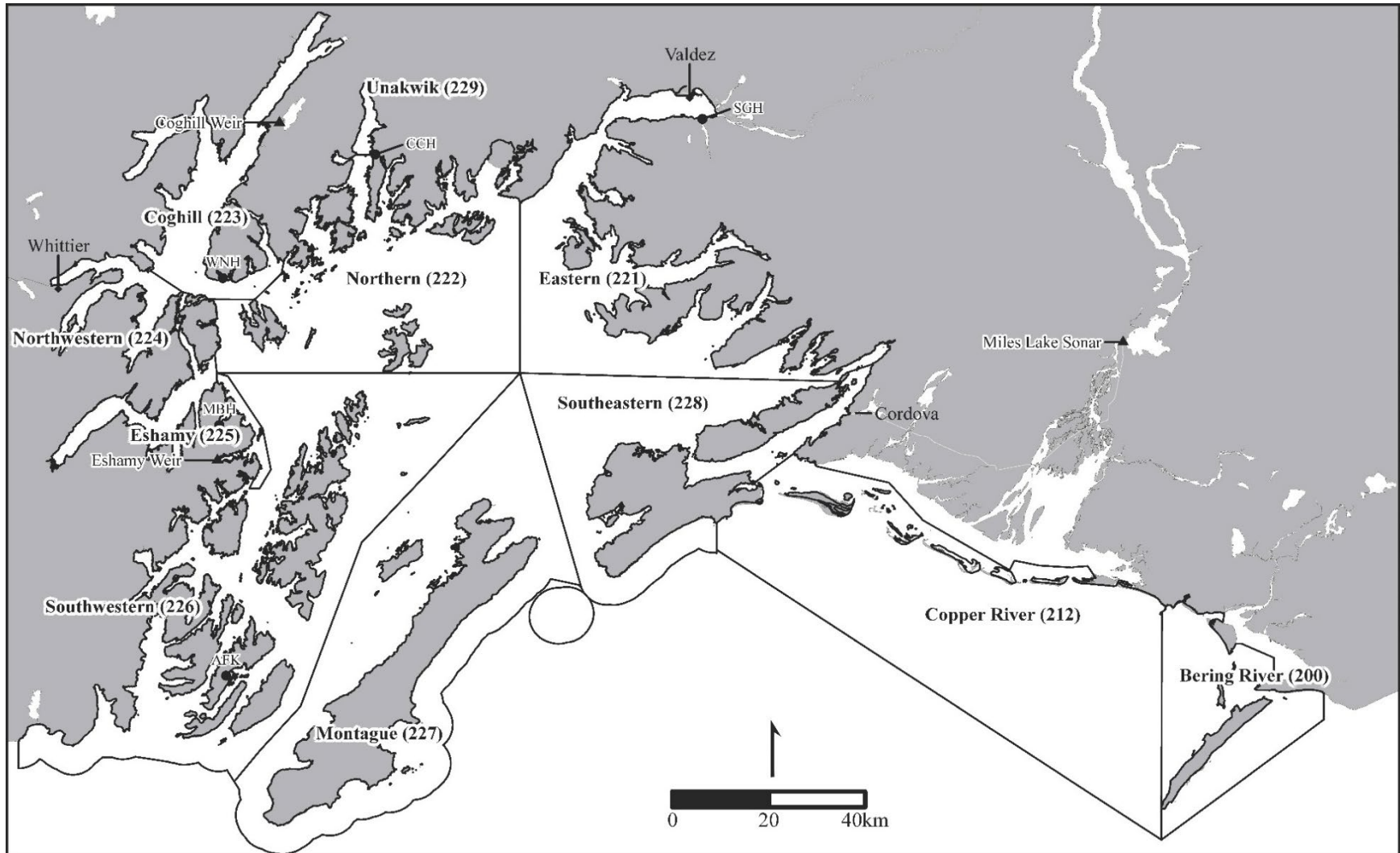


Figure 1.—Prince William Sound Area showing commercial fishing districts, salmon hatcheries (Wally Noerenberg Hatchery [WNH], Cannery Creek Hatchery [CCH], Solomon Gulch Hatchery [SGH], Main Bay Hatchery [MBH], Armin F. Koernig Hatchery [AFK]), weir locations, and Miles Lake sonar camp.

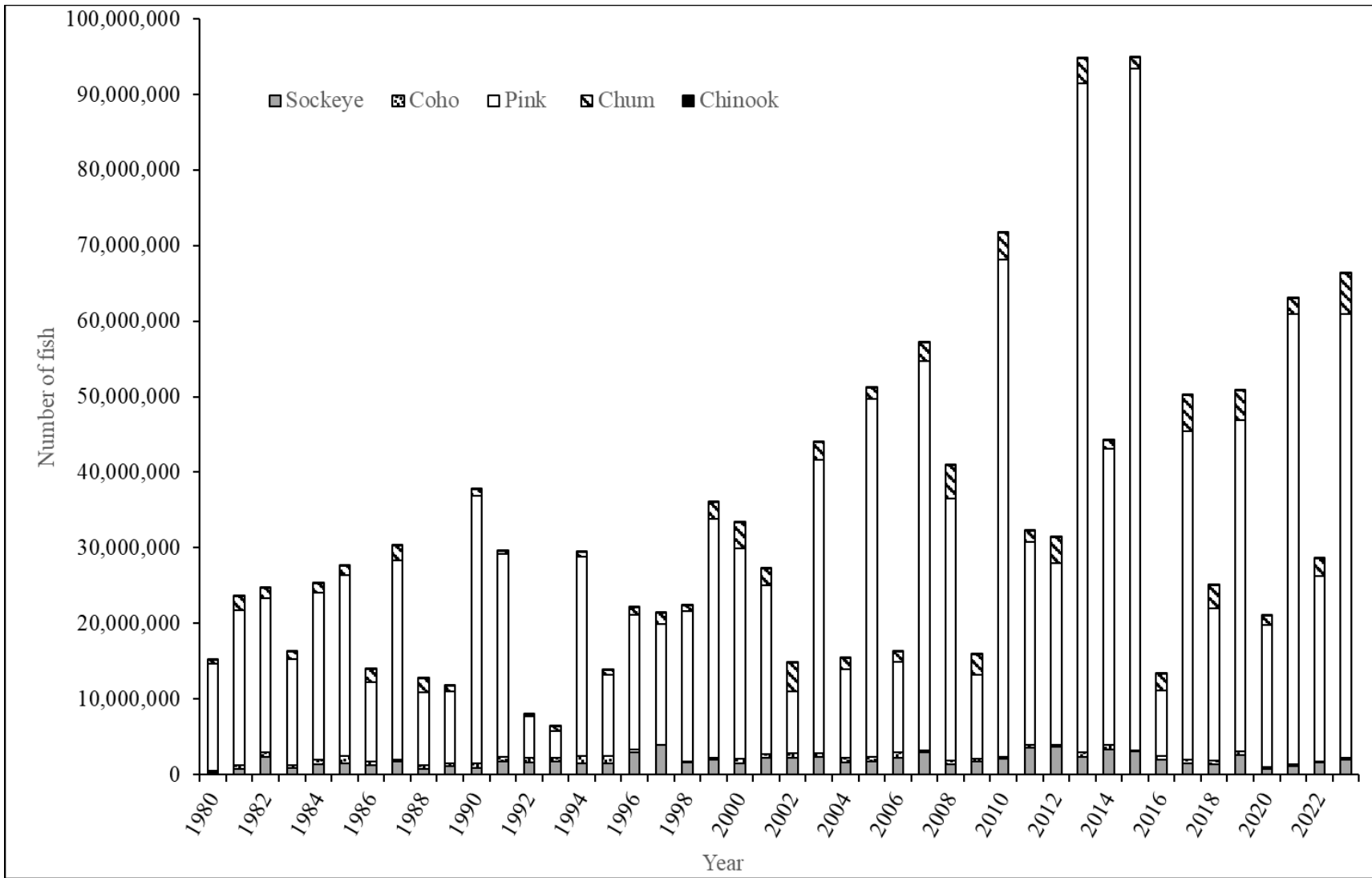


Figure 2.—Commercial salmon harvest (sold) in Prince William Sound Area, 1980–2023.

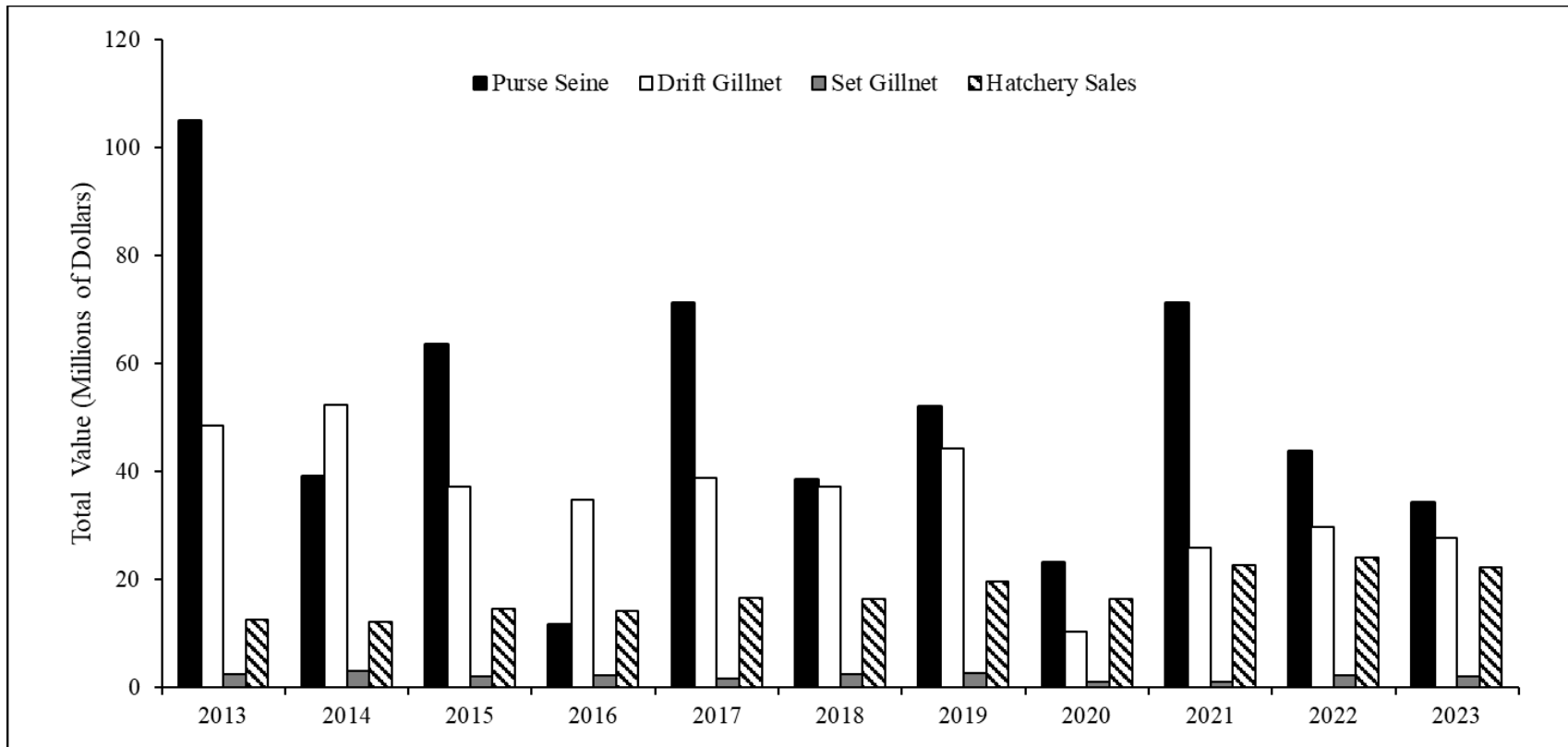


Figure 3.—Exvessel value of the commercial salmon harvest in the Prince William Sound Area by permit type, 2013–2023.

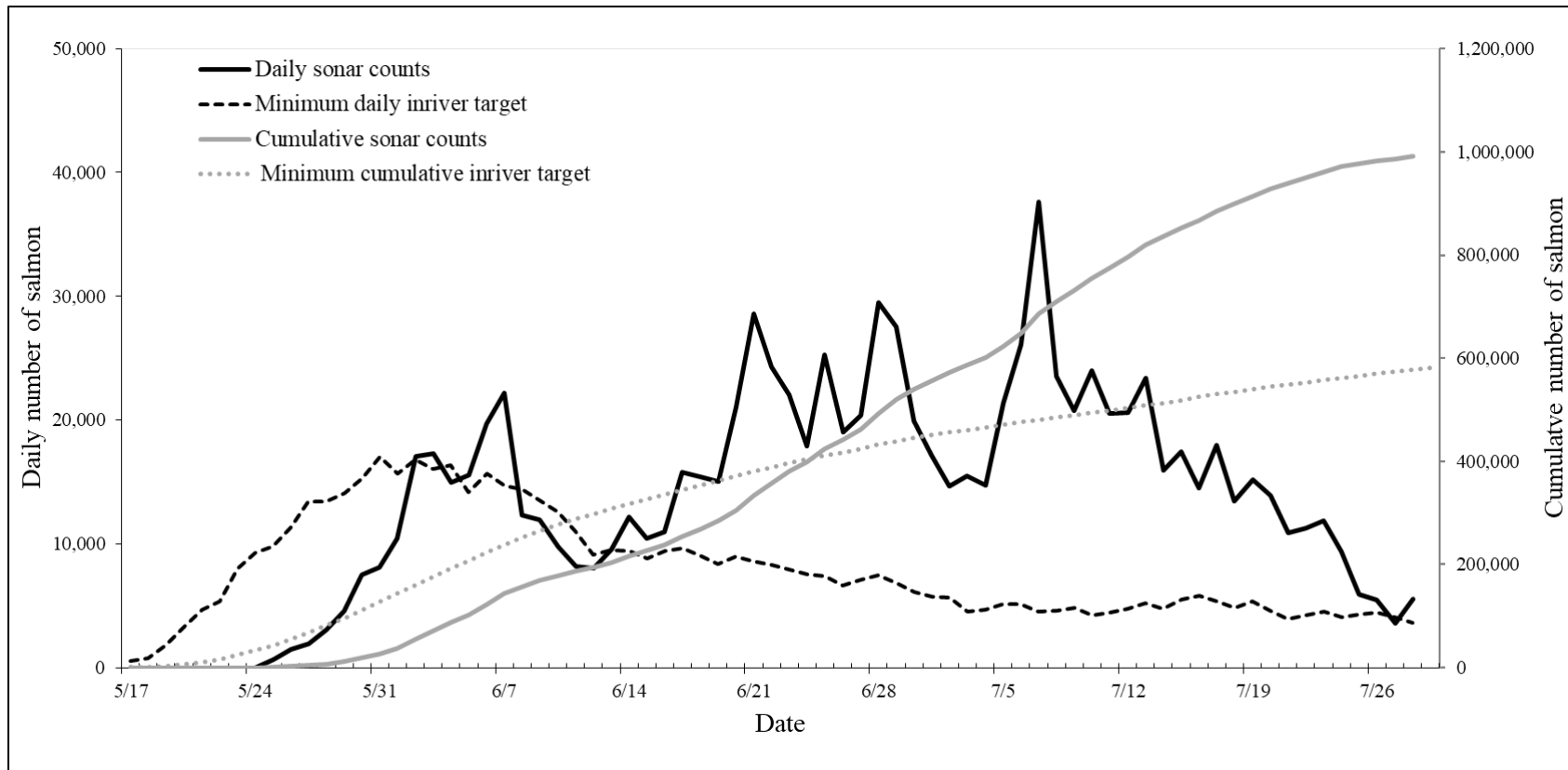


Figure 4.—Minimum daily and cumulative sonar target versus actual daily and cumulative salmon passage, Miles Lake Sonar, 2023.



Figure 5.—Length at age (1.3) Copper River drift gillnet Chinook salmon, 1976–2023.

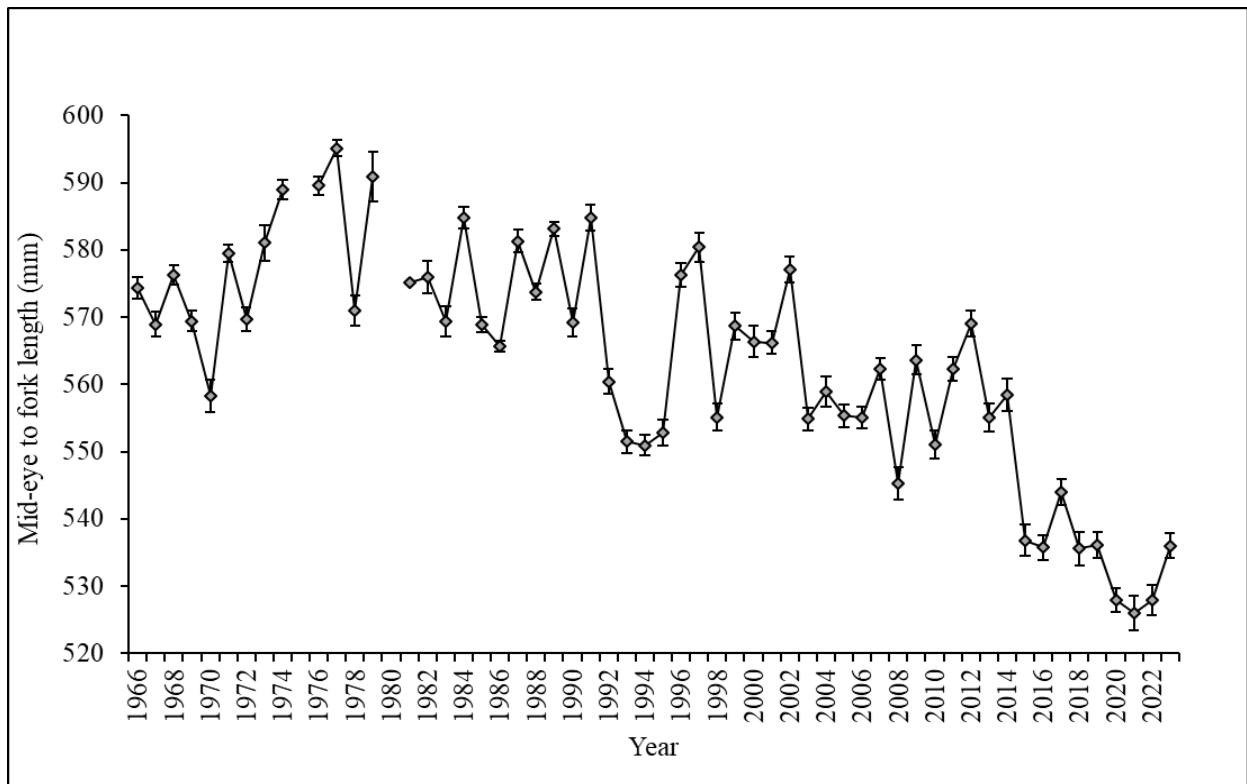


Figure 6.—Length at age (1.3) Copper River drift gillnet sockeye salmon, 1966–2023.

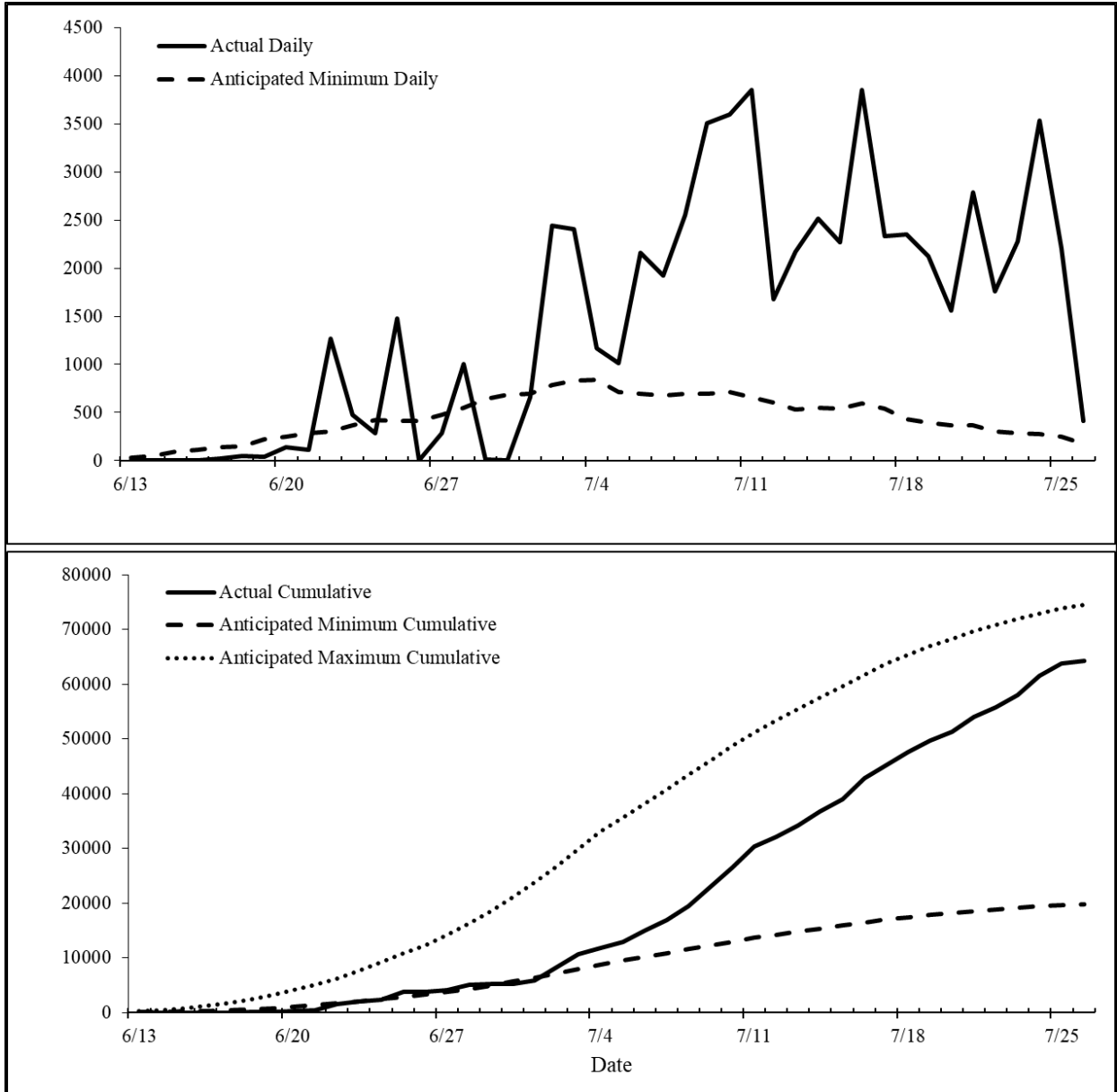


Figure 7.—Anticipated daily and cumulative sockeye salmon escapement based on 3-day running averages compared to actual escapement through Coghil River weir, 2023.

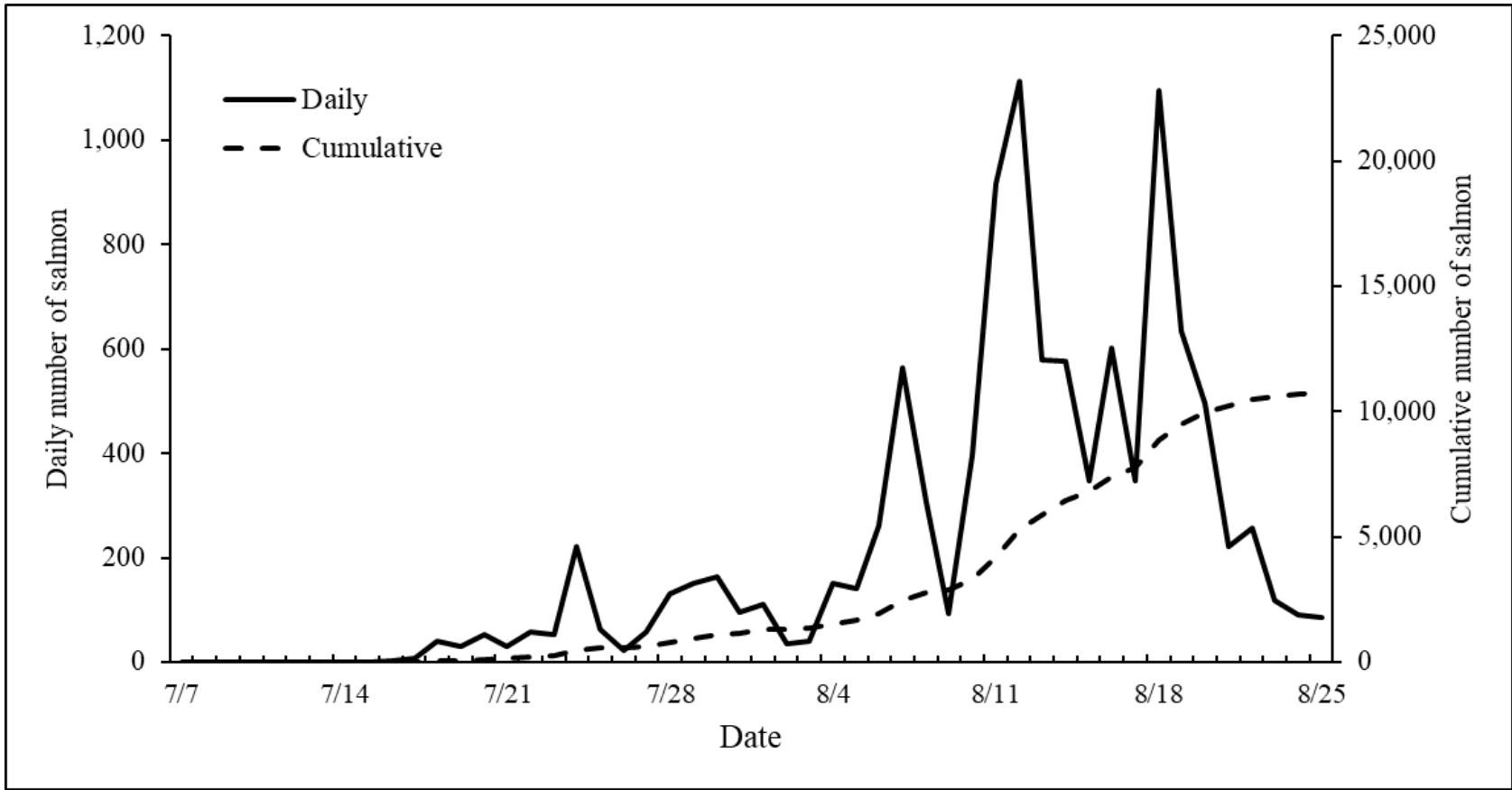


Figure 8.—Daily and cumulative sockeye salmon escapement versus actual escapement through the Eshamy River weir, 2023.

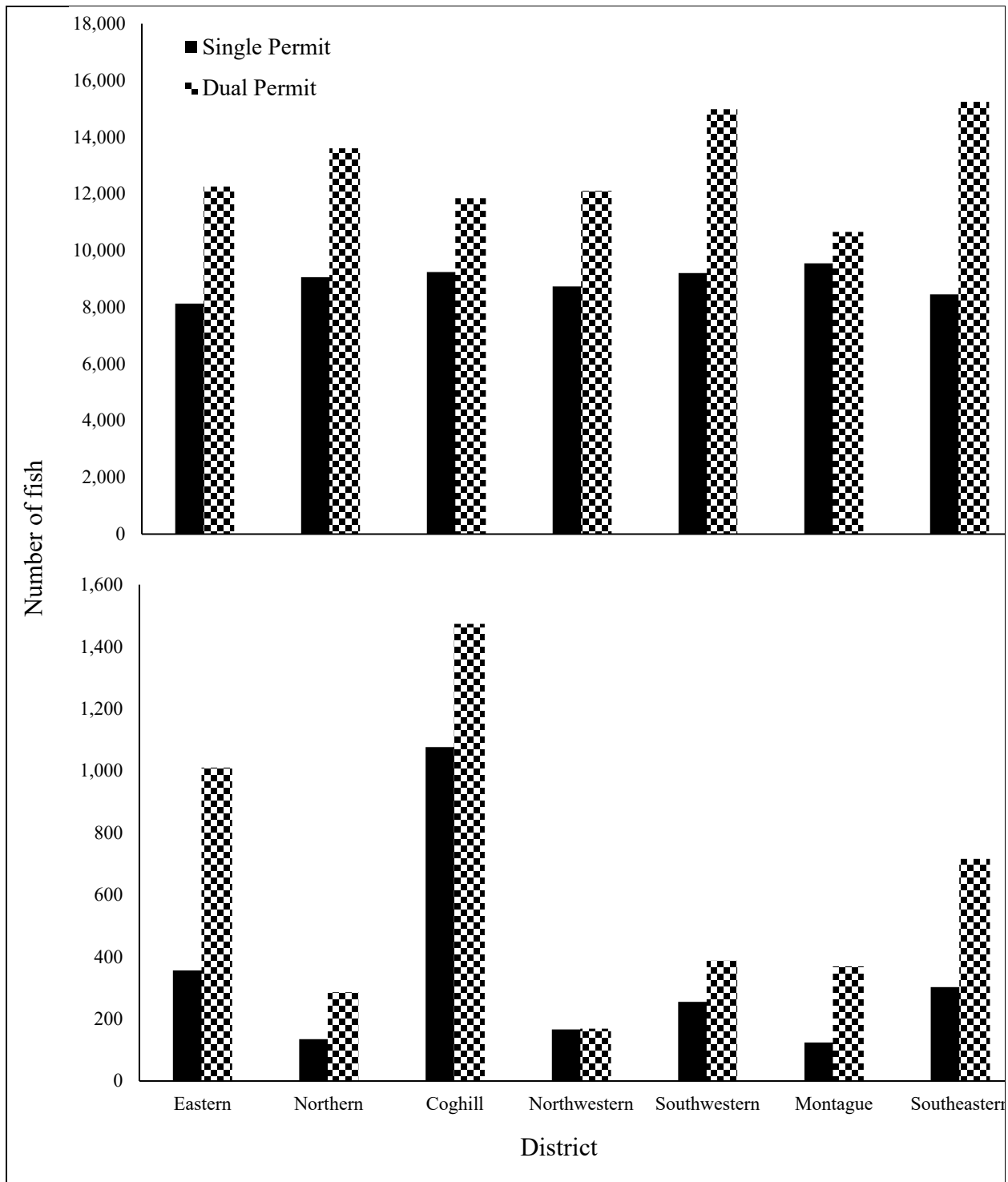
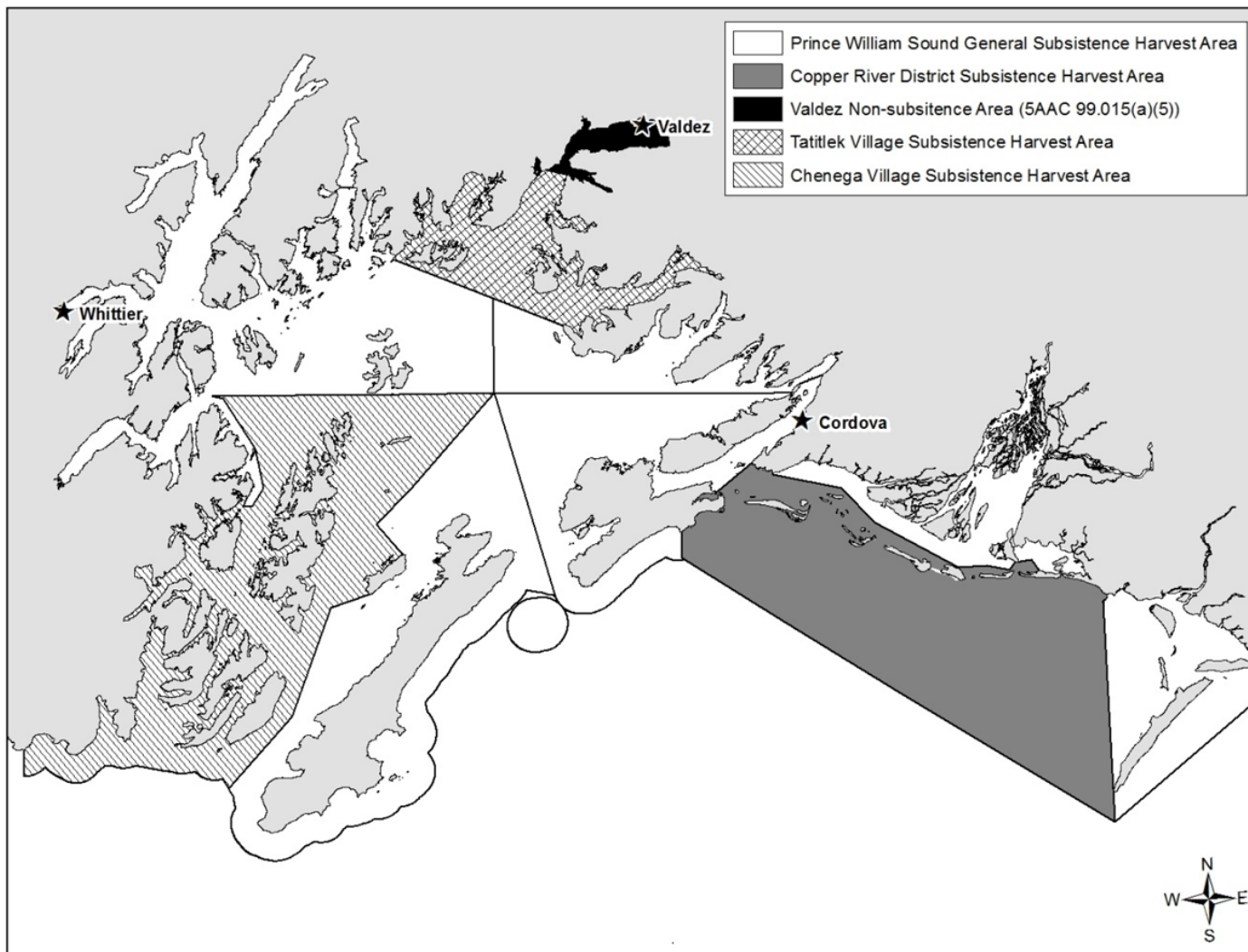


Figure 9.—Average harvest by district pink (top panel) and chum (bottom panel) salmon by single and dual permit holders in 2023.



For illustration only and not to be used for navigational purposes

Figure 10.—Map of Prince William Sound Subsistence Areas.

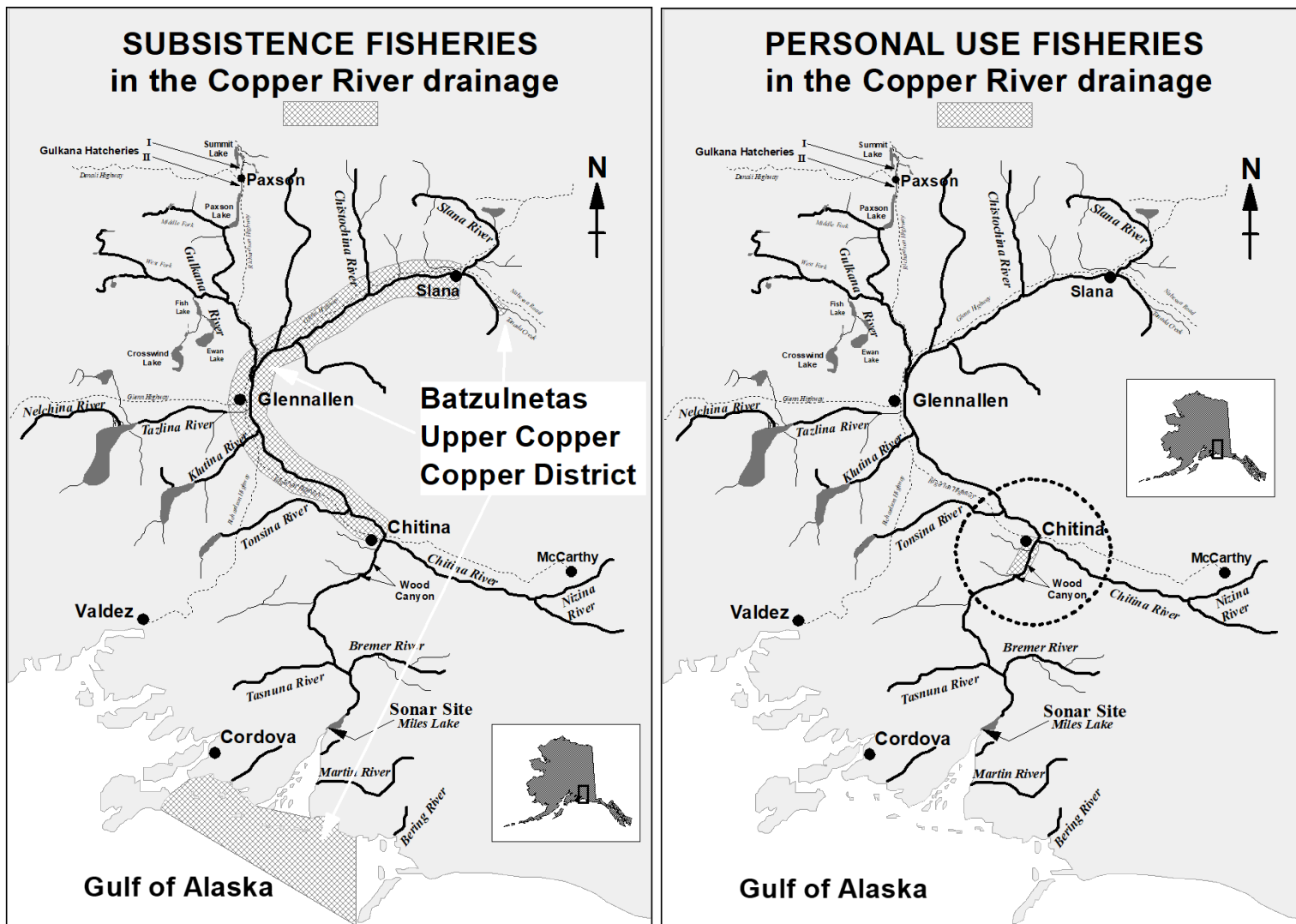


Figure 11.—Maps of the subsistence and personal use salmon fisheries on the Copper River.

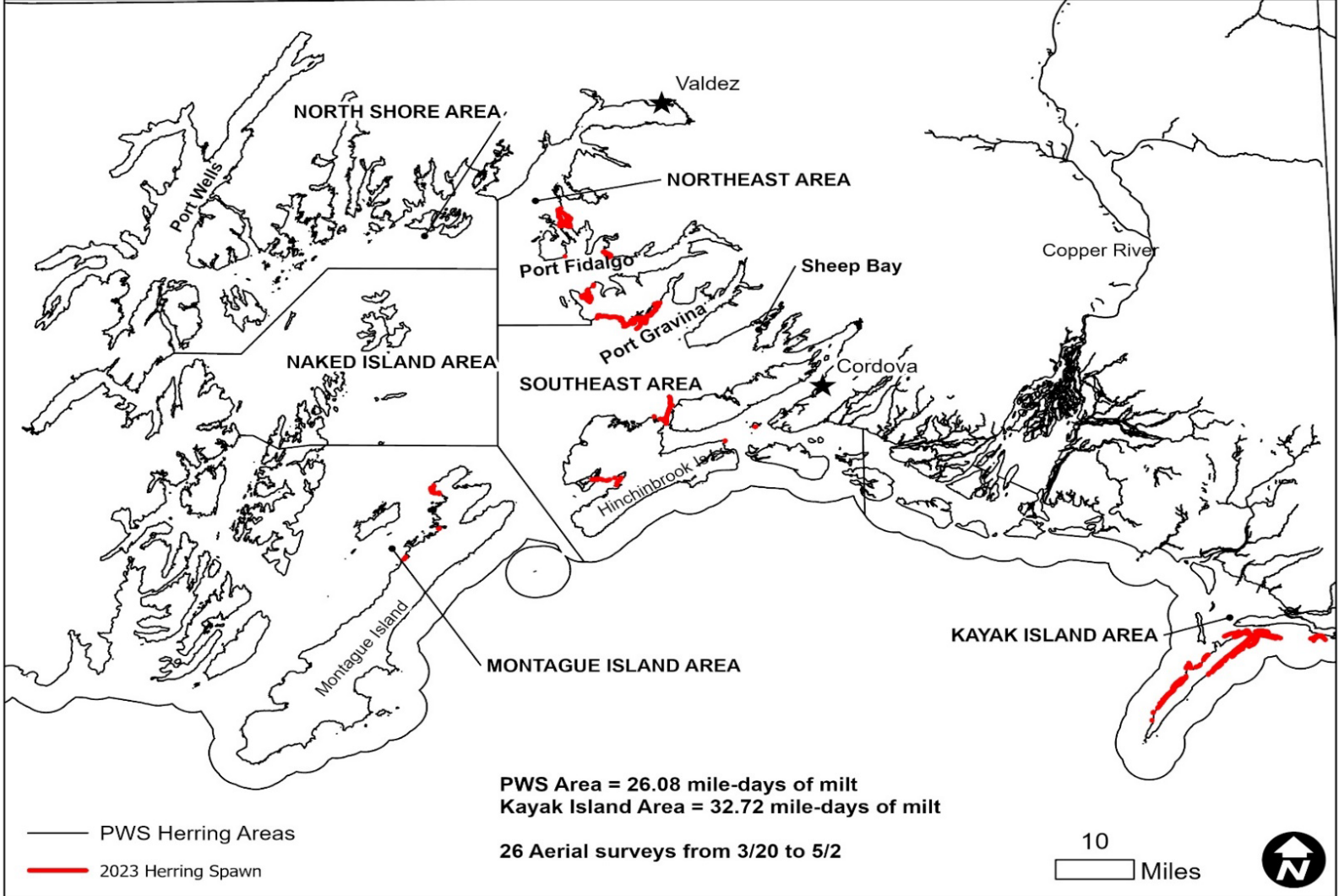


Figure 12.—Prince William Sound area showing commercial herring areas and locations of spawning herring observed during aerial surveys in 2023.

**APPENDIX A: COPPER RIVER AND BERING RIVER
DISTRICTS**

Appendix A1.—Total estimated sockeye salmon runs to the Copper River by end user or destination, 2013–2023.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average (2013–2023)
Commercial harvest ^a	1,608,117	2,050,007	1,750,762	1,175,100	586,079	46,524	1,283,736	102,269	404,638	601,009	862,002	960,824
Commercial, homepack ^a	9,448	12,072	10,590	9,598	8,289	1,545	8,016	1,455	3,625	4,172	6,162	6,881
Commercial, donated ^a	0	0	0	0	0	0	0	0	15	0	0	2
Educational drift gillnet permit ^a	152	186	91	203	217	6	18	7	6	2	34	89
Subsistence (Cordova, drift gillnet) ^b	5,639	1,675	1,403	1,075	2,448	5,189	6,163	7,091	5,338	5,828	6,326	4,185
Federal subsistence (PWS/Chugach National Forest, dip net, spear, rod and reel) ^b	102	76	152	234	127	96	116	41	19	59	134	102
Subsistence (Batzulnetas, dip net, fish wheel, or spear) ^b	862	146	0	0	254	468	209	67	120	41	211	217
Subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear) ^c	73,728	75,501	81,800	62,474	39,859	39,359	60,257	34,577	42,638	46,343	48,106	55,654
Federal subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear) ^c	17,789	23,889	26,753	19,181	18,415	16,736	17,718	11,234	14,847	14,174	14,696	18,074
Personal use reported (Chitina Subdistrict, dip net) ^c	180,663	157,215	223,080	148,982	132,694	77,051	171,203	78,022	143,301	154,996	168,501	146,721
Federal subsistence (Chitina Subdistrict, dip net) ^c	2,199	1,636	2,404	1,925	1,828	3,430	4,479	3,406	5,415	2,948	6,031	2,967
Upriver sport harvest ^d	26,611	18,005	9,489	7,555	9,589	2,943	7,346	3,483	5,008	3,971	4,550	9,400
Delta sport harvest ^d	386	174	130	246	200	22	2,033	413	1,899	2,370	1,347	787
Upriver spawning escapement ^e	860,258	864,131	930,145	513,126	462,979	478,760	718,876	362,445	508,715	519,552	689,457	621,899
Delta spawning escapement ^f	151,410	128,410	133,330	103,100	113,000	116,940	123,650	111,240	174,150	110,150	131,550	126,538
Hatchery broodstock/excess ^g	72,369	53,737	40,123	32,341	17,083	30,306	15,552	10,786	9,562	5,004	10,880	28,686
Total sockeye salmon run size	3,009,733	3,386,860	3,210,252	2,075,140	1,393,061	819,375	2,419,372	726,536	1,319,296	1,470,619	1,949,987	1,983,024

^a Numbers are from fish ticket data. Homepack numbers for sockeye salmon are voluntarily reported but are legally required.

^b Data are reported harvest from returned state and federal subsistence permits.

^c Data are expanded harvest from returned state and federal subsistence permits.

^d Upriver and Copper River Delta sport harvest data are from statewide sport fish harvest surveys.

^e Beginning in 1999, sockeye salmon spawning escapement was based on the total number of fish past the Miles Lake sonar minus the Chinook salmon inriver midpoint abundance estimate, upriver subsistence, personal use, sport, hatchery broodstock, and on-site hatchery surplus.

^f Delta spawning escapement estimated by doubling the peak aerial survey index.

^g Hatchery broodstock and on-site excess are from the Prince William Sound Aquaculture Corporation (PWSAC) annual reports (ADF&G unpublished).

Appendix A2.—Total estimated sockeye salmon runs to the Copper River by origin, 2013–2023.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average (2013–2022)
Upriver wild contribution ^a	2,224,817	2,633,272	2,678,554	1,608,098	1,115,955	629,071	2,066,086	553,904	970,099	1,242,395	1,622,667	1,572,225
Delta wild contribution ^b	351,004	350,580	312,514	259,227	212,147	126,655	286,991	136,153	274,796	202,811	255,102	251,288
Gulkana contribution ^c	433,912	403,008	219,184	207,815	64,959	63,649	66,295	36,479	74,402	25,551	72,218	159,525
Total sockeye salmon run size	3,009,733	3,386,860	3,210,252	2,075,140	1,393,061	819,375	2,419,372	726,536	1,319,296	1,470,757	1,949,987	1,983,038

^a Beginning in 1999, the upriver wild sockeye salmon contribution was estimated as the sum of the total number of sockeye salmon past the Miles Lake sonar (total number of fish past the Miles Lake sonar minus the Chinook salmon inriver abundance estimate) and sockeye salmon captured in the Copper River commercial and subsistence harvests minus Gulkana Hatchery contributions to the Copper River commercial and subsistence fisheries, Copper River Delta wild stock, and Copper River Delta sport harvests.

^b Delta wild sockeye salmon contribution was estimated as the total Copper River District harvest multiplied by proportion Copper River Delta sockeye salmon (delta escapement divided by the total number of sockeye salmon passed the Miles Lake sonar plus Copper River Delta escapement) plus the Copper River Delta escapement and Copper River Delta sport harvest.

^c Gulkana Hatchery sockeye salmon contributions from 1995 to 2003 are based on coded wire tag recovery; contributions from 2004 to 2021 are based on strontium chloride marks from commercial, personal use, subsistence samples applied to reported harvest, and the historical average of mainstem and upper Copper River sport harvest multiplied by Gulkana Hatchery percent in personal use and subsistence fisheries. Gulkana Hatchery personal use and subsistence contribution estimates were calculated with expanded harvest.

Appendix A3.—Total estimated Chinook salmon run to the Copper River by end user or destination, 2013–2023.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average (2013–2022)
Commercial harvest ^a	8,826	10,207	22,506	12,348	13,834	7,618	19,148	5,880	7,512	12,262	10,682	12,014
Commercial, homepack ^a	564	768	1,145	727	744	85	742	225	278	534	587	581
Commercial, donated ^a	0	0	0	0	0	0	0	0	0	0	0	0
Educational drift gillnet permit ^a	55	36	50	86	50	40	31	14	17	13	9	39
Subsistence (Cordova, drift gillnet) ^b	854	153	167	73	778	1,356	808	657	624	887	948	636
Subsistence (Batzulnetas, dip net, fish wheel, or spear) ^b	5	0	0	0	2	0	0	0	0	0	0	1
Subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear) ^c	2,148	1,365	2,212	2,075	2,935	4,531	3,429	2,222	1,685	2,968	3,246	2,557
Federal subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear) ^c	372	420	402	396	431	3,137	886	670	505	852	673	807
Personal use harvests (Chitina Subdistrict, dip net) ^c	744	719	1,570	711	1,961	1,273	2,611	751	832	2,214	3,515	1,339
Federal subsistence (Chitina Subdistrict, dip net) ^c	19	14	15	15	12	101	78	96	113	99	154	56
Sport harvest ^d	285	931	1,343	327	1,731	1,280	1,565	967	90	340	848	886
Upriver spawning escapement ^e	29,013	20,709	26,764	12,485	33,655	42,242	35,145	21,587	18,431	32,007	40,872	27,204
Total estimated Chinook salmon run size	42,885	35,322	56,174	29,243	56,133	61,663	64,443	33,069	30,087	52,176	61,534	46,120

^a Numbers are from fish ticket data.

^b Data are reported harvest from returned state and federal subsistence permits.

^c Data are expanded harvest from returned state and federal subsistence permits.

^d Upriver Chinook salmon sport harvest only; there is no Copper River Delta Chinook salmon sport harvest. The sport harvest numbers are generated from the statewide sport fish harvest survey.

^e Upriver Chinook salmon spawning escapement was estimated using the inriver abundance estimate and subtracting subsistence, personal use, and sport Chinook salmon harvests. Beginning in 1999, inriver abundance estimates were calculated using mark–recapture studies; prior to 1999 inriver abundance estimates were calculated using aerial and foot surveys.

Appendix A4.—Total salmon harvest by species in the Copper River District commercial fishery, 1978–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1978	29,062	249,872	220,338	3,512	2,233	505,017
1979	17,678	80,528	194,885	1,295	107	294,493
1980	8,454	18,908	225,299	3,966	198	256,825
1981	20,178	477,662	310,154	23,952	1,799	833,745
1982	47,362	1,177,632	454,763	7,154	1,177	1,688,088
1983	50,022	626,735	234,243	7,345	2,217	920,562
1984	38,957	900,043	382,432	32,194	6,935	1,360,561
1985	42,214	927,553	587,990	19,061	5,966	1,582,784
1986	40,670	780,808	295,980	3,016	17,614	1,138,088
1987	41,001	1,180,782	111,599	31,635	14,796	1,379,813
1988	30,741	576,950	315,568	2,775	11,022	937,056
1989	30,863	1,025,923	194,454	25,877	5,845	1,282,962
1990	21,702	844,778	246,797	1,596	7,545	1,122,418
1991	34,787	1,206,811	385,086	1,246	20,220	1,648,150
1992	39,810	970,938	291,627	1,664	5,807	1,309,846
1993	29,727	1,398,234	281,469	9,579	13,002	1,732,011
1994	47,812	1,153,167	677,654	12,079	19,069	1,909,781
1995	67,363	1,271,822	542,658	19,809	56,100	1,957,752
1996	57,815	2,356,365	193,042	6,372	25,533	2,639,127
1997	52,516	2,955,431	18,656	8,483	2,465	3,037,551
1998	70,238	1,343,127	108,246	20,833	5,024	1,547,468
1999	63,452	1,683,892	153,097	10,206	25,389	1,936,036
2000	32,005	881,419	304,944	9,804	5,366	1,233,538
2001	40,459	1,325,690	256,638	9,387	2,789	1,634,963
2002	39,511	1,249,769	504,410	3,677	31,653	1,829,020
2003	48,797	1,192,164	363,489	12,934	10,110	1,627,494
2004	38,735	1,048,603	467,861	5,175	3,386	1,563,760
2005	35,395	1,333,532	263,584	35,008	3,522	1,671,041
2006	31,060	1,498,407	318,422	30,847	17,206	1,895,942
2007	40,114	1,903,976	117,522	80,751	9,758	2,152,121
2008	11,978	323,067	203,198	1,490	1,293	541,026
2009	10,333	903,196	208,543	16,820	8,696	1,147,588
2010	10,551	643,278	211,647	21,167	15,776	902,419
2011	19,782	2,061,502	128,054	24,064	13,394	2,246,796
2012	12,617	1,874,526	131,298	6,062	27,376	2,051,879
2013	9,390	1,617,565	245,234	65,495	10,222	1,947,906
2014	10,975	2,062,079	316,922	11,874	43,592	2,445,442
2015	23,651	1,761,352	138,404	84,858	15,724	2,023,989
2016	13,075	1,184,698	368,983	35,116	5,523	1,607,395
2017	14,578	594,368	308,232	69,675	13,019	999,872
2018	7,703	48,069	306,538	10,857	3,185	376,352
2019	19,890	1,291,752	79,147	215,599	23,070	1,629,458
2020	6,105	103,724	170,114	716	1,383	282,042
2021	7,790	408,278	147,018	34,468	8,580	606,134
2022	12,796	605,181	44,533	66,891	13,586	742,987
2023	11,269	868,164	135,361	15,944	19,427	1,050,165
Average (2013–2022)	12,595	967,707	212,513	59,555	13,788	1,266,158
Average (1998–2022)	25,239	1,157,729	234,643	35,351	12,745	1,465,707

Appendix A5.—Drift gillnet harvest by species and period in the Copper River District commercial fishery in 2023.

Period	Date	AA Dates ^a	Hours	Permits fished	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 ^b	5/15	5/5	12	346	372	1,037	15,768	11,210	61,874	0	0	1	3	443	2,949
2 ^b	5/18	5/17	12	369	412	1,473	20,855	16,830	91,190	0	0	0	0	385	2,399
3 ^b	5/22	5/19	12	356	398	1,682	24,356	50,643	271,028	0	0	0	0	3,069	18,698
4 ^b	5/25	5/24	12	252	286	836	12,549	42,480	227,063	0	0	1	5	1,891	11,321
5 ^b	5/29	5/26	12	351	397	1,002	15,922	140,583	752,375	0	0	1	3	5,420	31,346
6 ^b	6/1	5/31	12	381	518	1,307	19,923	125,229	674,992	0	0	8	49	607	3,554
7 ^b	06/05	6/3	12	314	352	1,409	20,226	45,941	250,011	0	0	1	4	1,141	7,169
8 ^b	06/12–06/12	6/10	12	154	170	508	8,823	21,560	116,303	1	6	12	41	2,886	16,779
9	6/22–6/23	6/21	24	180	256	496	8,942	51,036	271,505	51	259	88	279	852	4,900
10	6/26–6/27	6/24	36	179	264	592	10,772	46,157	248,581	799	5,035	391	1,357	1,748	10,427
11	6/29–6/30	6/28	36	93	149	423	6,934	37,466	201,324	65	448	96	353	495	3,042
12	7/3–7/5	7/1	48	84	164	140	2,594	43,594	235,496	106	760	195	682	86	481
13	7/6–7/8	7/5	60	124	246	121	1,962	53,917	289,370	76	417	354	1,212	109	601
14	7/10–7/12	7/7	48	90	167	97	1,135	31,935	173,840	72	448	738	2,472	57	412
15	7/13–7/15	7/12	60	81	209	56	774	52,542	278,270	91	674	1,110	3,763	10	54
16	7/17–7/19	7/15	48	110	249	33	490	41,736	220,256	543	3,965	1,442	4,687	43	297
17	7/20–7/22	7/19	60	88	203	22	377	29,660	158,177	391	2,762	1,227	3,876	73	475
18	7/24–7/26	7/21	48	44	94	14	167	11,561	61,113	153	1,133	1,271	4,348	28	171
19	7/27–7/29	7/26	60	29	65	7	57	7,126	37,988	892	5,740	3,512	12,264	30	200
20	7/31–8/2	7/29	48	16	23	1	8	2,276	12,628	239	1,465	2,212	8,041	25	171
21	8/3–8/5	8/2	60	9	17	4	63	1,693	9,436	245	1,473	2,428	9,195	19	105
22	8/7–8/8	8/4	36	7	7	2	12	662	3,819	388	2,357	707	1,007	4	24 ^c
23	8/10–8/11	8/9	36	3	3	0	0	65	329	54	350	12	49	0	0
24	8/14–8/15	8/9	24	23	28	0	0	559	2,840	1,901	12,859	19	63	2	11
25	8/21–8/22	8/16	24	123	157	1	7	1,177	6,416	15,131	106,130	106	243	1	7
26	8/28–8/29	8/23	24	96	157	1	6	113	606	24,331	180,388	1	4	2	11
27	9/4–9/5	8/30	24	149	225	0	0	56	295	33,136	251,080	9	25	1	5
28	9/11–9/12	9/6	24	89	144	0	0	4	22	24,798	199,265	2	6	0	0
29	9/14–9/15	9/13	24	73	83	0	0	1	6	14,195	113,850	0	0	0	0
30	9/18–9/19	9/13	24	58	76	0	0	0	0	12,702	103,969	0	0	0	0
31	9/21–9/22	9/20	24	25	31	0	0	0	0	4,843	38,850	0	0	0	0
32	9/25–9/26	9/20	24	1	1	0	0	0	0	58	0	0	0	0	0

-continued-

Appendix A5.–Page 2 of 2.

Period	Date	AA Dates ^a	Hours	Permits		Chinook		Sockeye		Coho		Pink		Chum	
				fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
33	9/28–9/29	9/27	36	1	1	0	0	0	0	100	0	0	0	0	0
34	10/2–10/3	9/27	36	0	0	0	0	0	0	0	0	0	0	0	0
35	10/5–10/6	10/4	36	0	0	0	0	0	0	0	0	0	0	0	0
36	10/9–10/10	10/4	36	0	0	0	0	0	0	0	0	0	0	0	0
Total				426	5,924	11,264	172,722	867,812	4,657,153	135,361	1,033,683	15,944	54,031	19,427	115,609
Average weights								15.33		5.37		7.64		3.39	

^a Queries for Advisory Announcements (AA) made through the ADF&G Commercial Fishery Announcements (<http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>) will provide results sorted by publication date.

^b Waters of the inside closure area described in 5 AAC 24.350(1)(A) were expanded and closed for the entire fishing period, see corresponding advisory announcement for more detail.

Appendix A6.–Daily salmon counts at Miles Lake sonar, 2023.

Date	Daily sonar counts						Minimum inriver passage objective		Maximum inriver passage objective	
	North bank	South bank	Daily	Cumulative	0600 Count	Projected daily	Daily	Cumulative	Daily	Cumulative
05/16	NA	NA	NA	NA	NA	NA	506	584	847	978
05/17 ^a	NA	NA	NA	NA	NA	NA	751	1,335	1,259	2,237
05/18	NA	NA	NA	NA	NA	NA	1,791	3,126	3,000	5,237
05/19	NA	NA	NA	NA	NA	NA	3,246	6,372	5,438	10,675
05/20	NA	NA	NA	NA	NA	NA	4,656	11,028	7,799	18,474
05/21	NA	NA	NA	NA	NA	NA	5,378	16,406	9,009	27,483
05/22 ^a	0	NA	0	0	NA	0	8,013	24,419	13,419	40,902
05/23 ^b	0	NA	0	0	NA	0	9,258	33,677	15,501	56,403
05/24 ^c	0	NA	0	0	NA	0	9,768	43,445	16,346	72,748
05/25 ^c	626	NA	626	626	NA	0	11,299	54,744	18,907	91,656
05/26	1,476	NA	1,476	2,102	NA	0	13,387	68,131	22,406	114,061
05/27	1,927	NA	1,927	4,029	211	844	13,426	81,557	22,452	136,513
05/28	3,053	NA	3,053	7,082	674	2,696	14,098	95,656	23,570	160,084
05/29	4,581	NA	4,581	11,663	722	2,888	15,273	110,928	25,535	185,619
05/30	6,556	945	7,501	19,164	1,288	5,152	17,038	127,966	28,481	214,100
05/31	6,409	1,714	8,123	27,287	2,042	8,168	15,702	143,668	26,235	240,335
06/01	7,066	3,337	10,403	37,690	2,202	8,808	16,782	160,450	28,059	268,394
06/02	10,592	6,475	17,067	54,757	3,317	13,268	16,082	176,532	26,888	295,281
06/03	9,202	8,094	17,296	72,053	3,411	13,644	16,380	192,912	27,375	322,656
06/04	8,501	6,427	14,928	86,981	3,100	12,400	14,199	207,111	23,701	346,358
06/05	10,845	4,714	15,559	102,540	3,305	13,220	15,682	222,793	26,193	372,550
06/06	9,892	9,836	19,728	122,268	4,060	16,240	14,697	237,490	24,522	397,072
06/07	4,401	17,774	22,175	144,443	5,466	21,864	14,426	251,916	24,063	421,135
06/08	6,239	6,069	12,308	156,751	2,859	11,436	13,477	265,392	22,480	443,615
06/09	7,712	4,245	11,957	168,708	2,455	9,820	12,560	277,953	20,960	464,575
06/10	6,996	2,766	9,762	178,470	2,081	8,324	10,993	288,946	18,319	482,893
06/11	4,978	3,187	8,165	186,635	1,431	5,724	9,110	298,056	15,170	498,063
06/12	5,319	2,736	8,055	194,690	1,534	6,136	9,467	307,523	15,776	513,839
06/13	5,687	3,860	9,547	204,237	1,685	6,740	9,411	316,934	15,685	529,524
06/14	7,188	4,950	12,138	216,375	2,051	8,204	8,820	325,754	14,703	544,227

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Date	Daily sonar counts						Minimum inriver passage objective		Maximum inriver passage objective	
	North bank	South bank	Daily	Cumulative	0600 Count	Projected daily	Daily	Cumulative	Daily	Cumulative
06/15	4,501	5,943	10,444	226,819	2,848	11,392	9,440	335,194	15,751	559,977
06/16	4,048	6,951	10,999	237,818	1,606	6,424	9,616	344,811	16,064	576,042
06/17	5,041	10,732	15,773	253,591	2,208	8,832	9,047	353,858	15,101	591,143
06/18	6,589	8,838	15,427	269,018	3,025	12,100	8,393	362,251	14,005	605,147
06/19	6,941	8,100	15,041	284,059	3,057	12,228	9,008	371,259	15,039	620,187
06/20	10,621	10,443	21,064	305,123	3,548	14,192	8,607	379,866	14,371	634,558
06/21	12,506	16,088	28,594	333,717	4,215	16,860	8,273	388,139	13,796	648,355
06/22	5,803	18,478	24,281	357,998	4,333	17,332	7,947	396,086	13,249	661,604
06/23	5,688	16,335	22,023	380,021	4,707	18,828	7,560	403,646	12,607	674,211
06/24	5,448	12,456	17,904	397,925	4,145	16,580	7,388	411,034	12,306	686,517
06/25	3,482	21,803	25,285	423,210	3,870	15,480	6,611	417,645	10,998	697,515
06/26	4,072	14,955	19,027	442,237	7,117	28,468	7,112	424,757	11,841	709,357
06/27	4,739	15,615	20,354	462,591	3,775	15,100	7,464	432,221	12,427	721,784
06/28	6,315	23,187	29,502	492,093	6,601	26,404	6,836	439,057	11,363	733,147
06/29	4,384	23,160	27,544	519,637	6,176	24,704	6,126	445,183	10,163	743,310
06/30	2,586	17,343	19,929	539,566	4,647	18,588	5,725	450,908	9,495	752,806
07/01	3,272	13,877	17,149	556,715	3,717	14,868	5,648	456,556	9,266	762,072
07/02	3,975	10,685	14,660	571,375	2,594	10,376	4,538	461,094	7,389	769,461
07/03	4,433	11,053	15,486	586,861	3,437	13,748	4,668	465,761	7,579	777,040
07/04	4,042	10,661	14,703	601,564	3,020	12,080	5,149	470,911	8,357	785,397
07/05	3,561	17,822	21,383	622,947	2,973	11,892	5,130	476,041	8,231	793,628
07/06	8,912	17,191	26,103	649,050	4,993	19,972	4,557	480,598	7,319	800,948
07/07	10,984	26,669	37,653	686,703	6,921	27,684	4,567	485,166	7,266	808,214
07/08	7,152	16,358	23,510	710,213	5,438	21,752	4,793	489,959	7,617	815,831
07/09	7,709	13,020	20,729	730,942	2,949	11,796	4,235	494,194	6,664	822,494
07/10	8,683	15,318	24,001	754,943	4,509	18,036	4,447	498,641	6,951	829,446
07/11	7,721	12,780	20,501	775,444	4,767	19,068	4,755	503,395	7,420	836,865
07/12	10,614	10,005	20,619	796,063	2,816	11,264	5,235	508,631	8,135	845,000
07/13	8,937	14,463	23,400	819,463	4,641	18,564	4,765	513,396	7,349	852,349
07/14	4,811	11,089	15,900	835,363	2,976	11,904	5,480	518,875	8,485	860,834

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Date	Daily sonar counts				0600 Count		Minimum inriver passage objective		Maximum inriver passage objective	
	North bank	South bank	Daily	Cumulative	Projected daily	Daily	Cumulative	Daily	Cumulative	
07/15	5,847	11,603	17,450	852,813	2,087	8,348	5,806	524,681	9,050	869,884
07/16	4,547	9,963	14,510	867,323	3,722	14,888	5,331	530,013	8,247	878,131
07/17	5,881	12,057	17,938	885,261	4,960	19,840	4,800	534,813	7,495	885,626
07/18	4,743	8,713	13,456	898,717	3,482	13,928	5,379	540,192	8,352	893,978
07/19	5,103	10,065	15,168	913,885	2,832	11,328	4,576	544,768	7,028	901,006
07/20	3,849	10,029	13,878	927,763	2,624	10,496	3,951	548,719	6,006	907,012
07/21	4,336	6,549	10,885	938,648	2,639	10,556	4,237	552,956	6,494	913,506
07/22	4,672	6,567	11,239	949,887	2,562	10,248	4,494	557,450	6,868	920,375
07/23	6,844	5,039	11,883	961,770	2,940	11,760	4,109	561,559	6,305	926,680
07/24	4,384	5,021	9,405	971,175	2,629	10,516	4,325	565,885	6,673	933,353
07/25	2,711	3,236	5,947	977,122	2,092	8,368	4,454	570,339	6,928	940,281
07/26	2,568	2,892	5,460	982,582	1,750	7,000	4,076	574,415	6,263	946,544
07/27	1,798	1,822	3,620	986,202	872	3,488	3,600	578,015	5,520	952,064
07/28	2,634	2,904	5,538	991,740	1,167	4,668	3,160	581,174	4,845	956,910

Note: Anticipated counts are not available prior to 15 May because the sonar has not been deployed frequently enough prior to this date. NA = not available.

^a North bank was deployed for 3 hours.

^b North bank was deployed for 1 hour.

^c North bank was deployed for 7 hours.

Appendix A7.—Inriver salmon passage at the Miles Lake sonar, 1978–2023.

Year	Total	Rank
1978	107,011	46
1979	328,090	45
1980	374,091	44
1981	576,681	37
1982	517,885	41
1983	592,563	36
1984	618,732	33
1985	466,190	43
1986	481,628	42
1987	523,022	40
1988	528,940	39
1989	643,367	29
1990	624,922	32
1991	593,185	35
1992	604,898	34
1993	819,700	18
1994	738,011	23
1995	637,293	30
1996	907,267	12
1997	1,164,791	5
1998	865,896	14
1999	850,597	16
2000	636,837	31
2001	878,205	13
2002	830,263	17
2003	747,091	22
2004	684,103	28
2005	855,125	15
2006	959,706	8
2007	919,601	10
2008	718,344	25
2009	709,748	26
2010	923,811	9
2011	914,231	11
2012	1,294,400	2
2013	1,267,060	3
2014	1,218,418	4
2015	1,346,100	1
2016	801,593	19
2017	723,426	24
2018	701,577	27
2019	1,039,354	6
2020	530,313	38
2021	751,262	21
2022	785,509	20
2023	991,740	7
2012–2021 Average	967,350	

Appendix A8.—Expected and actual semiweekly sockeye and Chinook salmon harvest and weekly coho salmon harvest in the Copper River District drift gillnet fishery, 2023.

Semiweekly date/day	Fishing time (hours)	Forecasted sockeye salmon harvest ^a	Actual sockeye salmon harvest	Forecasted Chinook salmon harvest ^b	Actual Chinook salmon harvest	Forecasted coho salmon harvest ^c	Actual coho salmon harvest
05/17	Wed	12	17,584	11,210	2,192	1,037	—
05/20	Sat	12	23,520	16,830	3,144	1,473	2
05/24	Wed	12	66,418	50,643	3,008	1,682	—
05/27	Sat	12	48,316	42,480	2,281	836	1
05/31	Wed	12	104,818	140,583	3,344	1,002	—
06/03	Sat	12	52,287	125,229	1,555	1,307	20
06/07	Wed	12	74,293	45,941	1,810	1,409	—
06/10	Sat	0	41,294	0	979	0	45
06/14	Wed	12	80,714	21,560	1,362	508	—
06/17	Sat	0	45,928	0	588	0	138
06/21	Wed	0	81,547	0	742	0	—
06/24	Sat	24	42,231	51,036	280	496	534
06/28	Wed	36	65,430	46,157	261	592	—
07/01	Sat	36	34,850	37,466	127	423	366
07/05	Wed	48	53,090	43,594	130	140	—
07/08	Sat	60	26,608	53,917	46	121	333
07/12	Wed	48	34,552	31,935	56	97	—
07/15	Sat	60	16,784	52,542	18	56	136
07/19	Wed	48	23,319	41,736	17	33	—
07/22	Sat	60	11,944	29,660	13	22	222
07/26	Wed	48	10,526	11,561	7	14	—
07/29	Sat	60	6,693	7,126	3	7	628
08/02	Wed	48	9,182	2,276	8	1	—
08/05	Sat	60	3,534	1,693	2	4	1,912
08/09	Wed	36	5,423	662	4	2	—
08/12	Sat	36	2,100	65	4	0	5,617

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Semiweekly date/day	Fishing time (hours)	Forecasted sockeye salmon harvest ^a	Actual sockeye salmon harvest	Forecasted Chinook salmon harvest ^b	Actual Chinook salmon harvest	Forecasted coho salmon harvest ^c	Actual coho salmon harvest	
08/16	Wed	24	1,976	559	2	0	–	
08/19	Sat	0	745	0	2	0	18,619	
08/23	Wed	24	402	1,177	3	1	–	
08/26	Sat	0	442	0	3	0	49,720	
08/30	Wed	24	169	113	1	1	–	
09/02	Sat	0	122	0	7	0	57,693	
09/06	Wed	24	86	56	1	0	–	
09/09	Sat	0	50	0	0	0	42,147	
09/13	Wed	24	9	4	0	0	–	
09/16	Sat	24	7	1	0	0	24,889	
09/20	Wed	24	7	0	0	0	–	
09/23	Sat	24	1	0	0	0	7,804	
09/27	Wed	24	0	0	0	0	–	
09/30	Sat	36	0	0	0	0	1,462	
10/04	Wed	36	0	0	0	0	–	
10/07	Sat	36	0	0	0	0	213	
10/11	Wed	36	0	0	0	0	–	
10/14	Sat	0	0	0	0	0	12	
Total		1,164	987,000	867,812	21,999	11,264	212,513	135,361

Note: En dashes = not applicable.

^a Sockeye salmon forecasted harvest was based on the midpoint preseason forecast (987,000) and the 2013–2022 harvest timing.

^b Chinook salmon forecasted harvest was based on the preseason harvest forecast (22,000) and the 1998–2007 harvest timing. This harvest forecast is the total run forecast minus the lower bound sustainable escapement goal (SEG) multiplied by the mean commercial exploitation rate. Therefore, the Chinook salmon harvest should be considered a maximum harvest because the escapement goal is a lower bound SEG.

^c Coho salmon projected harvest was based on the midpoint preseason harvest forecast (212,513) and the 2013–2022 harvest timing.

Appendix A9.–Aerial escapement indices by statistical week and location for sockeye salmon returning to the Copper River Delta, 2023.

Drainage/Site ^b	Weekly escapement indices (statistical week ending date listed) ^a									Peak site ^c	Peak drainage ^d	Anticipated (by drainage)
	06/17	07/08	07/15	07/29	08/12	08/26	09/09	09/23	09/30			
Eyak River	–	–	–	–	–	–	–	–	–	–	14,055	9,972–23,571
Eyak River	0	500	800	325	0	0	0	NS	NS	0	–	–
West Shore beaches	NS	0	400	200	2,300	1,500	700	NS	50	2,300	–	–
East Shore beaches	500	9,000	12,300	4,500	5,300	1,450	950	NS	100	5,300	–	–
Middle Arm beaches ^e	NS	200	600	1,400	6,000	5,500	5,000	NS	500	6,000	–	–
North Shore beaches	NS	0	75	300	75	700	1,500	NS	200	75	–	–
Hatchery Creek Delta	NS	0	200	NS	10	50	400	NS	0	10	–	–
Hatchery Creek	NS	0	10	NS	20	20	200	NS	0	20	–	–
Power Creek Delta	NS	0	550	500	50	400	0	NS	0	50	–	–
Power Creek	NS	0	0	200	300	200	50	NS	0	300	–	–
Ibeck Creek	–	–	–	–	–	–	–	–	–	–	0	–
Ibeck Creek	NS	NS	NS	NS	NS	0	0	0	0	0	–	–
Alaganik Slough	–	–	–	–	–	–	–	–	–	–	3,000	8,359–19,758
Alaganik Slough	0	0	50	115	0	0	0	0	0	0	–	–
McKinley Lake	0	3,000	1,000	850	700	200	300	1,000	500	3,000	–	–
Salmon Creek West Fork	NS	0	0	0	0	50	0	0	0	0	–	–
Salmon Creek East Fork	NS	0	0	0	0	0	0	0	0	0	–	–
26/27 Mile Creek	–	–	–	–	–	–	–	–	–	–	2,300	2,182–5,157
26/27 Mile Creek	NS	600	2,300	NS	1,100	570	650	50	0	2,300	–	–
39 Mile Creek	–	–	–	–	–	–	–	–	–	–	4,600	5,772–13,642
39 Mile Creek	NS	3,700	4,500	4,500	4,600	4,500	600	0	NS	4,600	–	–
Goat Mountain	–	–	–	–	–	–	–	–	–	–	900	549–1,298
Goat Mountain Creek	NS	700	900	125	0	20	0	50	0	900	–	–
Pleasant Creek	–	–	–	–	–	–	–	–	–	–	8,600	1,075–2,542
Pleasant Creek	3,000	7,500	8,600	3,400	400	0	0	NS	0	8,600	–	–
Martin River	–	–	–	–	–	–	–	–	–	–	12,970	17,598–41,596
Martin River - Lower	0	NS	NS	NS	NS	NS	NS	NS	NS	0	–	–
Ragged Point River	NS	400	900	NS	0	0	0	0	0	0	–	–
Ragged Point Lake Outlet	NS	0	10	NS	75	150	150	20	0	150	–	–
Ragged Point Lake	NS	0	100	NS	1,000	1,400	1,200	200	250	1,400	–	–
Martin River–Upper ^e	0	0	300	NS	0	10	0	NS	0	300	–	–
Martin Lake Outlet	0	0	700	NS	0	0	0	NS	0	700	–	–
Martin Lake	0	1,700	5,600	NS	75	0	0	NS	20	5,600	–	–

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Drainage/Site ^b	Weekly escapement indices (statistical week ending date listed) ^a									Anticipated		
	06/17	07/08	07/15	07/29	08/12	08/26	09/09	09/23	09/30	Peak site ^c	Peak drainage ^d (by drainage)	
Martin Lake tributary streams	0	200	3,000	NS	4,200	400	100	NS	0	3,000	–	–
Pothole River	NS	0	200	NS	20	0	0	NS	0	200	–	–
Pothole Lake	NS	0	0	NS	0	50	0	NS	350	0	–	–
Little Martin River	NS	0	20	NS	220	0	0	NS	0	220	–	–
Little Martin Lake	NS	0	300	NS	1,400	1,550	600	NS	300	1,400	–	–
Tokun	–	–	–	–	–	–	–	–	–	–	18,250	5,352–12,649
Tokun Springs	0	50	300	NS	0	10	0	NS	0	300	–	–
Tokun River	0	300	300	NS	0	450	50	NS	50	450	–	–
Tokun Lake Outlet	500	2,000	500	NS	0	0	0	NS	0	500	–	–
Tokun Lake	NS	5,500	17,000	NS	1,000	900	1,500	NS	1,500	17,000	–	–
Martin River Slough	–	–	–	–	–	–	–	–	–	–	1,100	4,141–9,787
Martin River Slough	0	0	880	1,100	180	200	200	0	0	1,100	–	–
Total	4,000	35,350	62,395	17,515	29,025	20,280	14,150	1,320	3,820	65,775	65,775	
Lower target	14,273	30,055	31,424	32,568	26,465	19,762	12,467	6,776	4,373			55,000
Average anticipated escapement	21,902	46,121	48,222	49,977	40,611	30,326	19,131	10,398	6,711			84,400
Upper target	33,736	71,040	74,276	76,979	62,553	46,711	29,467	16,016	10,337			130,000

Note: NS signifies that no survey was flown. En dashes = not applicable.

- ^a The surveys provide information about the relative strength of escapement among years and within a year, time to spawning sites and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement but have served that purpose in the absence of any other escapement estimating method.
- ^b The survey sites represent the majority of known sockeye salmon spawning locations within the Copper River Delta.
- ^c Where the survey site is a terminal spawning area, the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplicate of counts across dates is selected.
- ^d The sum of the indices by site within a drainage.
- ^e Site typically has a protracted run timing or 2 temporally segregated spawning populations at 1 location. Aerial counts from more than one day may be used in the escapement index if the surveyor indicates these counts represented different fish.

Appendix A10.—Copper River and Bering River area sockeye salmon escapement indices, 2013–2023.

Stream/Lake ^a	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average (2013–2022)
Eyak Lake	19,205	20,400	14,400	12,700	10,800	7,550	16,455	12,300	10,900	11,800	13,675	13,651
Hatchery Creek	300	300	1,400	500	1,800	500	700	700	250	60	30	651
Power Creek	1,000	750	1,450	3,200	800	1,000	1,000	2,200	400	600	350	1,240
Ibeck Creek	200	400	800	50	0	0	10	0	0	0	0	146
McKinley Lake	5,700	5,575	1,800	700	2,200	3,020	500	3,400	320	4,000	3,000	2,722
Salmon Creek	2,200	75	5,500	3,800	5,100	250	1,750	2,250	2,575	1,100	0	2,460
26/27 Mile Creek	950	750	920	900	700	1,300	2,820	1,500	2,700	1,800	2,300	1,434
39 Mile Creek	2,000	1,075	2,400	2,500	2,200	3,600	6,500	4,600	6,100	2,500	4,600	3,348
Goat Mountain	300	900	950	200	300	475	400	900	1,300	800	900	653
Pleasant Creek	5,900	4,700	8,300	2,020	8,050	3,800	7,600	950	8,620	6,300	8,600	5,624
Martin River	150	500	0	1,000	300	3,500	1,800	2,200	320	150	300	992
Ragged Pt. River/Lake	3,500	1,700	3,000	3,200	2,100	2,800	3,300	2,150	5,000	2,220	1,550	2,897
Martin Lake	22,000	16,085	100	10,100	6,050	10,400	14,700	12,300	7,400	13,400	9,300	11,254
Pothole Lake	900	250	15,420	0	900	25	20	150	1,700	110	200	1,948
Little Martin Lake	5,800	2,050	6,000	1,530	1,900	2,850	50	1,500	1,590	835	1,620	2,411
Tokun Lake/River	4,000	5,825	2,650	5,550	8,800	15,100	2,600	7,220	32,800	8,700	18,250	9,325
Martin River Slough	1,600	2,870	1,575	3,600	4,500	2,300	1,620	1,300	5,100	700	1,100	2,517
Copper River Delta total	75,705	64,205	66,665	51,550	56,500	58,470	61,825	55,620	87,075	55,075	65,775	63,269
Upper Copper River^b	860,258	864,131	930,145	513,126	461,268	478,760	718,876	362,445	508,715	518,244	689,457	621,597
Copper River District total	935,963	928,336	996,810	564,676	517,768	537,230	780,701	418,065	595,790	573,319	755,232	684,866
Bering River/Lake	19,100	13,600	20,400	15,300	15,750	11,400	15,850	14,000	10,000	6,720	17,100	14,212
Shepherd Creek	750	750	625	700	2,075	100	500	170	550	250	1,050	647
Stillwater Creek	1,200	100	500	100	900	650	300	125	800	75	200	475
Kushtaka Lake	850	35	180	190	90	700	40	1,300	224	0	475	361
Katalla River	2,000	400	1,000	100	300	450	940	200	2,200	50	300	764
Bering River Area total	23,900	14,885	22,705	16,390	19,115	13,300	17,630	15,795	13,774	7,095	19,125	16,459
Copper River/Bering River Area total	989,544	963,714	1,018,465	581,486	539,529	550,471	798,981	419,787	609,564	580,414	774,357	705,195

^a This table is based on peak aerial survey indices and sonar counts for the majority of known sockeye salmon spawning areas in the Copper and Bering River deltas. These indices are not intended to provide a true estimate of total escapement but rather a comparable index, based upon the best data available, across years.

^b Upriver escapement index from Miles Lake sonar counts minus Chinook salmon inriver abundance estimate, upriver harvests, and hatchery escapement and broodstock.

Appendix A11.—Aerial survey indices of sockeye salmon escapement to the upper Copper River drainage, 2008–2023.

Location	Yearly survey indices ^a																Projected indices ^b
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Mentasta Lake	3,379	3,320	2,870	27,000	9,000	6,000	10,100	4,230	2,700	10,000	320	1,900	3,500	6,600	1,300	7,000	3,277
Fish Creek–Mentasta	1,440	680	400	91	300	900	350	800	175	600	125	300	55	400	50	500	963
Bad Crossing 1 and 2	520	1,691	1,390	742	261	4,100	470	4,650	5	2,625	12	3,450	59	5,350	14	2,430	2,604
Suslota Lake	86	320	6	350	55	500	2,500	5,500	2,300	200	0	50	35	3	57	0	1,416
Tanada Lake	986	1,290	NS	800	1,715	2,600	1,000	1,100	1,300	1,150	51	60	100	570	420	40	3,849
Dickey Lake	37	20	3	59	26	30	251	300	80	5	30	200	6	10	37	15	115
Keg Creek	1	423	0	0	15	15	10	5	0	20	25	45	30	0	0	5	725
Swede Lake	343	109	320	137	400	60	175	160	85	30	12	200	55	16	350	550	531
Mahlo Creek	10,261	11,735	4,570	292	10,100	3,800	7,600	6,700	650	1,300	1,300	1,700	1,900	890	2,500	2,900	2,648
Mendeltna Creek	727	1,945	1,550	760	1,085	850	300	1,050	335	166	200	20	99	300	156	300	2,470
St. Anne Creek	14,000	8,123	2,420	1,751	5,800	3,200	1,650	2,600	515	770	450	985	80	20	455	800	4,888
Tonsina Lake	3	0	–	0	15	0	0	0	0	10	0	10	0	10	0	0	1,080
Long Lake	382	14	10	290	375	5	10	20	0	1	0	0	0	0	0	0	1,577
Tana River	434	19	100	40	410	65	145	83	97	50	0	30	5	4	40	0	1,345
Salmon Creek (Bremner)	3,500	530	340	276	1,000	1,500	610	400	400	300	300	400	85	160	1,000	1,400	825
Fish Lake	158	0	89	1,008	35	20	4	6	60	0	0	0	0	64	0	0	6,418
Mud Creek–Summit Lake	11,410	0	2,759	211	870	600	320	225	100	90	150	20	77	95	265	59	7,445
Paxson Inlet–Mud Creek	4,665	2,720	2,301	1,520	7,900	9,900	3,100	850	500	3,500	300	700	392	950	470	320	6,560
Mud Creek and Lake	10	0	20	2	10	11	100	30	6	0	20	5	10	0	2	0	172
Paxson Lake Outlet	596	0	560	1,700	350	2,000	350	125	100	50	400	20	18	100	1,100	90	2,661
Totals	52,938	32,939	19,708	37,029	39,722	36,156	29,045	28,834	9,408	20,867	3,695	10,095	6,506	15,542	8,216	16,409	51,569

Note: NS = no survey.

^a Escapement numbers are based on peak aerial survey indices and weir counts from the majority of known spawning areas in the upper Copper River drainage. The indices are not intended to provide true estimates of escapement for these stocks but rather a comparable index, based on the best data available, across years. Missing counts are generally a result of bad weather, high water, or other factors that prevented surveys for a given year.

^b Calculated using the 1983–1992 average.

Appendix A12.—Total estimated coho salmon run to the Copper River by end user or destination and the previous 10-year average, 2013–2023.

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average 2013–2022
Commercial harvest ^a	244,985	315,776	136,981	367,630	306,287	303,957	78,292	168,524	145,625	44,128	134,030	211,219
Commercial, homepack ^a	249	1,146	1,423	1,353	1,945	2,581	855	1,590	1,389	405	1,331	1,294
Commercial, donated ^a	0	0	0	0	0	0	0	0	4	0	0	0
Educational drift gillnet permit ^a	0	0	0	0	0	0	0	0	0	0	0	0
Subsistence (Cordova, drift gillnet) ^b	1	0	10	2	43	195	330	326	233	391	431	153
Federal subsistence (PWS/Chugach National Forest, dip net, spear, rod and reel) ^b	329	610	893	555	514	265	671	373	449	498	540	516
Subsistence (Batzulnetas, fish wheel, dip net or spear) ^b	0	NA	NA	0	0	0	0	0	0	0	0	0
Subsistence (Glennallen Subdistrict, dip net or fish wheel) ^c	144	233	77	45	68	151	204	67	166	220	193	137
Federal subsistence (Glennallen Subdistrict, dip net or fish wheel) ^d	NA	23	13	9	1	0	0	1	0	0	0	5
Personal use (Chitina Subdistrict, dip net) ^c	797	1,129	841	1,182	715	1,436	1,064	815	439	564	776	898
Federal subsistence (Chitina Subdistrict, dip net) ^d	8	68	14	33	9	31	22	23	3	43	6	25
Delta sport harvest ^e	16,967	15,859	24,515	13,094	9,559	9,996	12,901	8,443	11,966	6,722	10,006	13,002
Upriver sport harvest ^e	0	89	0	0	23	387	0	0	100	219	106	82
Upriver spawning escapement ^f	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown
Delta spawning escapement ^g	69,360	86,020	83,330	152,400	87,520	107,600	74,040	72,850	90,970	60,680	88,880	88,477
Total estimated coho salmon run size	332,840	420,953	248,097	536,303	406,684	426,599	168,379	253,012	251,344	113,870	236,299	315,808

Note: NA = not available.

^a Numbers are from fish ticket data.

^b Data are reported harvest from returned state and federal subsistence permits.

^c Data are expanded harvest from returned state and federal subsistence permits.

^d Data are expanded harvest (2011–2021) from returned state and federal subsistence permits.

^e Upper Copper River and Copper River Delta sport harvest data are from statewide sport fish harvest surveys.

^f Numbers of upriver coho salmon spawners are not assessed.

^g The Copper River Delta spawning escapement index is calculated by doubling the final peak aerial survey index.

Appendix A13.–Aerial escapement indices by statistical week and location for the coho salmon run to the Copper River Delta, 2023.

Drainage	Sites ^b	Weekly escapement indices (statistical week ending date) ^a				Peak site ^c	Peak drainage ^d	Anticipated (by drainage)
		8/26	9/9	9/23	9/30			
Eyak River	Eyak River	30	0	NS	NS	0	5,600	6,916
	East Shore beaches	0	0	NS	0	0	–	–
	West Shore beaches	0	200	NS	0	0	–	–
	Middle Arm beaches	0	500	NS	500	500	–	–
	North Shore beaches	0	100	NS	0	0	–	–
	Hatchery Creek Delta	0	0	NS	100	100	–	–
	Hatchery Creek	0	0	NS	500	500	–	–
	Power Creek Delta	0	0	NS	2,500	2,500	–	–
	Power Creek	0	0	NS	2,000	2,000	–	–
Ibeck Creek	Ibeck Creek	750	5,050	7,700	9,100	9,100	9,100	6,227
Scott River	Scott Lake	0	500	200	0	500	500	1,429
	Scott River	0	0	0	0	0	–	–
	Elsner Lake ^e	0	0	0	0	0	–	–
Alaganik Slough	Alaganik Slough	0	0	0	0	0	930	2,591
	18/20 Mile Creek	10	100	700	500	700	–	–
	McKinley Lake	0	0	50	70	70	–	–
	Salmon Creek West Fork	50	100	0	0	100	–	–
	Salmon Creek East Fork	0	0	30	60	60	–	–
26/27 Mile Creek	26/27 Mile Creek	300	50	900	800	900	900	829
39 Mile Creek	39 Mile Creek	0	1,500	1,400	NS	1,500	1,500	3,831
Goat Mountain Creek	Goat Mountain Creek	20	400	500	450	500	500	1,181
Pleasant Creek	Pleasant Creek	80	1,600	NS	2,400	2,400	2,400	
Martin River	Martin River – Lower	NS	NS	NS	NS	0	19,110	16,089
	Ragged Point River	0	300	1,300	1,200	1,300	–	–
	Ragged Point Lake Outlet	0	0	0	0	0	–	–
	Ragged Point Lake	0	0	0	0	0	–	–
	Martin River – Upper	400	250	NS	1,500	1,500	–	–

-continued-

Drainage	Sites ^b	Weekly escapement indices (statistical week ending date) ^a				Peak site ^c	Peak drainage ^d	Anticipated (by drainage)
		8/26	9/9	9/23	9/30			
Martin River (continued)	Martin Lake Outlet	0	0	NS	2,000	2,000	–	–
	Martin Lake	500	0	NS	2,760	2,760	–	–
	Martin Lake tributary streams	100	75	NS	550	550	–	–
	Pothole River	0	50	NS	2,900	2,900	–	–
	Pothole Lake	0	0	NS	0	0	–	–
	Little Martin River	100	4,300	NS	8,100	8,100	–	–
	Little Martin Lake	0	0	NS	0	0	–	–
Tokun	Tokun Springs	100	200	NS	50	200	500	1,376
	Tokun River	200	75	NS	300	300	–	–
	Tokun Lake Outlet	0	0	NS	0	0	–	–
	Tokun Lake	0	0	NS	0	0	–	–
Martin River Slough	Martin River Slough	320	1,950	2,900	3,400	3,400	3,400	9,531
Copper River aerial survey daily total		2,960	17,300	15,680	41,740	44,440	44,440	
Lower SEG		9,298	21,447	16,908	15,542			32,000
Average SEG (average anticipated escapement)		14,528	33,510	26,418	24,284			50,000
Upper SEG		19,468	44,904	35,401	32,540			67,000

Note: NS signifies that no survey was flown. System was flown during the next statistical week on Bering River District survey. En dashes = not applicable.

^a The surveys provide information about the relative strength of escapement among years and within a year, time to spawning sites, and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement but have served that purpose in the absence of any other escapement estimation method.

^b The survey sites represent the majority of known coho salmon spawning locations in the Copper River Delta.

^c Where the survey site is a terminal spawning area the peak count is used. However, if the site is a schooling area for migratory fish bound for further sites upstream, the count that minimizes possible duplication of counts across dates is selected.

^d The sum of the index counts by site within the index systems.

^e This stream is not included in the estimated delta-wide escapement; it is a non-index stream.

Appendix A14.–Copper River Delta and Bering River coho salmon escapement indices, 2013–2023.

Stream/Lake ^{a,b}	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Average (2013–2022)
Eyak Lake	3,880	4,450	5,075	3,200	900	6,850	1,020	3,000	1,050	200	500	2,963
Hatchery Creek	40	1,300	950	500	550	1,600	3,500	300	1,100	1,200	600	1,104
Power Creek	50	760	225	4,500	1,050	1,750	6,600	1,000	3,500	9,000	4,500	2,844
Ibeck Creek	9,150	12,500	8,100	31,500	8,100	6,500	3,500	8,800	7,500	4,500	9,100	10,015
Scott & Elsner River ^c	50	360	100	200	200	400	600	820	100	30	500	286
18/20 Mile	120	400	600	250	700	600	1,150	220	800	220	700	506
McKinley Lake	400	450	300	650	200	150	600	1,350	400	20	70	452
Salmon Creek	850	1,950	1,900	2,500	2,350	1,450	3,400	1,700	385	120	160	1,661
26/27 Mile	1,800	1,600	290	4,000	2,700	200	2,500	1,200	800	950	900	1,604
39 Mile	2,300	2,600	1,700	7,500	1,700	3,100	850	500	4,500	2,500	1,500	2,725
Goat Mountain	900	1,200	350	250	700	550	300	75	1,500	900	500	673
Pleasant Creek	1,500	1,110	400	1,850	1,650	6,050	1,700	2,300	3,800	1,350	2,400	2,171
Martin River	350	3,820	4,475	6,000	1,200	8,050	350	5,575	3,000	100	1,500	3,292
Ragged Point River/Lake	2,500	1,050	3,600	1,050	1,160	1,450	510	850	400	1,000	1,300	1,357
Martin Lake	2,750	2,150	3,250	1,100	1,750	1,400	600	2,600	2,700	870	5,310	1,917
Pothole Lake	120	550	750	800	2,500	750	2,220	1,500	3,700	50	2,900	1,294
Little Martin Lake	3,800	2,900	4,750	2,300	9,300	5,100	1,900	860	5,050	4,250	8,100	4,021
Tokun River/Lake	620	1,175	1,050	900	1,400	2,350	320	370	1,000	600	500	979
Martin River Slough	3,500	4,075	4,300	7,350	5,850	5,900	5,400	4,225	4,300	2,510	3,400	4,741
Copper River Delta total	34,680	44,400	42,165	76,400	43,960	54,200	37,020	37,245	45,585	30,370	44,440	44,603
Katalla River	800	1,550	1,000	750	3,300	4,700	800	5,700	1,700	750	500	2,105
Bering River/Lake	7,750	10,675	4,300	2,300	3,150	11,750	1,740	8,500	10,300	385	950	6,085
Dick Creek	2,800	1,300	1,750	0	700	500	500	1,000	1,400	290	1,050	1,024
Shepherd Creek	0	0	0	8,000	NS	0	600	NS	0	0	0	1,075
Nichawak River	3,800	6,500	5,100	8,500	10,500	2,700	1,000	3,500	2,300	1,700	12,000	4,560
Gandil River	1,100	1,500	700	300	1,000	250	550	600	300	600	200	690
Controller Bay	2,570	4,950	2,700	6,300	12,000	6,625	4,825	6,525	3,450	960	6,250	5,091
Bering River Area total	18,820	26,475	15,550	26,150	30,650	26,525	10,015	25,825	19,450	4,685	20,950	20,415
Copper River/Bering total	53,500	70,875	57,715	102,550	74,610	80,725	47,035	62,250	64,935	35,025	65,390	65,017

^a This table is based on peak aerial survey index counts from the majority of known coho salmon spawning areas in the Copper and Bering River deltas. These indices are not intended to provide a true estimate of total escapement but a comparable index, based upon the best data available, across years.

^b The stream/lake in this table represents combined survey sites corresponding to the system designations for the current year survey results.

^c Not an index stream.

Appendix A15.—Total commercial harvest by species in the Bering River District, 1981–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1981	200	55,585	82,626	9,882	8,307	156,600
1982	254	129,667	144,752	47	333	275,053
1983	610	179,273	117,669	851	4,615	303,018
1984 ^a	330	91,784	214,632	309	20,408	327,463
1985 ^a	215	26,561	419,276	214	9,642	455,908
1986 ^b	128	19,038	115,809	15	243	135,233
1987 ^b	34	16,926	15,864	54	7	32,885
1988 ^b	19	7,152	86,539	23	181	93,914
1989 ^b	30	9,225	26,952	7	2	36,216
1990 ^b	14	8,332	42,952	2	1	51,301
1991 ^b	28	19,181	110,951	4	195	130,359
1992 ^b	21	19,721	125,616	4	1	145,363
1993 ^b	130	33,951	115,833	82	22	150,018
1994 ^b	133	27,926	259,003	34	63	287,159
1995 ^b	55	21,585	282,045	26	229	303,940
1996 ^b	142	37,712	93,763	0	30	131,647
1997 ^b	26	9,651	97	2	0	9,776
1998 ^b	77	8,439	12,284	5	2	20,807
1999 ^b	44	13,717	9,954	204	96	24,015
2000 ^b	8	1,279	56,329	0	0	57,616
2001 ^b	78	5,450	2,715	0	0	8,243
2002 ^b	15	235	108,522	0	0	108,772
2003 ^b	157	18,318	59,481	33	0	77,989
2004 ^b	87	13,166	95,605	2	21	108,881
2005 ^b	279	77,464	43,030	9,327	14	130,114
2006 ^b	247	36,873	56,713	54	39	93,926
2007 ^b	90	16,470	9,305	6	1	25,872
2008 ^b	51	1,181	40,380	8	1	41,621
2009 ^b	15	4,157	45,542	1	5	49,720
2010 ^b	0	51	80,642	2	0	80,695
2011 ^b	1	6	19,966	8	0	19,981
2012 ^b	2	0	46,324	1	0	46,327
2013 ^b	20	3,321	46,959	2	16	50,318
2014 ^b	0	50	97,679	4	0	97,733
2015 ^b	13	2,137	12,116	10	1	14,277
2016 ^b	52	9,809	80,094	22	122	90,099
2017 ^b	36	2,578	119,295	105	15	122,029
2018 ^b	5	34	121,341	11	121	121,512
2019 ^b	94	21,099	7,418	262	202	29,075
2020 ^b	9	9	65,113	10	0	65,141
2021 ^b	20	243	42,135	0	443	42,841
2022 ^b	34	5,299	8,660	0	576	14,569
2023 ^b	43	11,463	24,801	40	174	36,259
Average (2013–2022)	28	4,458	60,081	43	150	64,759
Average (1998–2022)	57	9,655	51,504	403	67	61,687

^a A new Kayak Island Subdistrict management plan allowed an earlier opening date (June 10) and set a closure of the subdistrict on July 10 or when a total of 93,000 sockeye salmon were harvested.

^b The Alaska Board of Fisheries closed the Kayak Island Subdistrict due to interception of nonlocal stocks.

Appendix A16.–Drift gillnet harvest by species and period in the Bering River District commercial fishery in 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	5/15	5/5	12	1	1										
2	5/18	5/17	12	0	0										
3	5/22	5/19	12	5	5	16	261	1,006	5,392	0	0	0	0	125	876
4	5/25	5/24	12	0	0										
5	5/29	5/26	12	1	1										
6	6/1	5/31	12	0	0										
7	06/05	6/3	12	2	2										
8	06/12–06/12	6/10	12	0	0										
9	6/22–6/23	6/21	24	1	1										
10	6/26–6/27	6/24	36	0	0										
11	6/29–6/30	6/28	36	0	0										
12	7/3–7/5	7/1	48	0	0										
13	7/6–7/8	7/5	60	1	1										
14	7/10–7/12	7/7	48	1	1										
15	7/13–7/15	7/12	60	12	14	4	39	4,930	25,129	30	232	40	136	40	216
16–25	7/17–8/22	7/15, 7/19, 7/21, 7/26, 7/29, 8/2, 8/4, 8/9, and 8/16	444	0	0										
26	8/28–8/29	8/23	24	7	14					3,017	22,990				
27	9/4–9/5	8/30	24	26	46	0	0	4	20	9,390	75,352	0	0	1	6
28	9/11–9/12	9/6	24	15	34					7,732	62,993				
29	9/14–9/15	9/13	24	2	2										
30	9/18–9/19	9/13	24	14	16	0	0	0	0	3,332	26,879	0	0	0	0
31–36	9/21–10/10	9/20, 9/27, and 10/4	192	0	0										
Total			1,164	50	138	43	597	11,463	61,663	24,801	197,543	40	136	174	928
Average weights							13.88		5.38		7.97		3.40		5.33

Note: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable Advisory Announcement (AA) available through ADF&G's Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Queries made through the ADF&G Commercial Fishery Announcements will provide results sorted by Publication Date.

Appendix A17.—Aerial escapement indices by statistical week and location for sockeye salmon returning to the Bering River District, 2023.

Drainage	Site ^b	Weekly escapement indices (statistical week ending date listed) ^a				Peak site ^c	Peak drainage ^d	Anticipated (by drainage)
		7/8	7/15	8/12	8/26			
Bering River	Bering River	600	0	0	0	0	18,825	28,701
	Bering Lake	2,000	1,900	50	0	1,900		
	Dick Creek	0	15,200	500	200	15,200		
	Shepherd Creek Lagoon	NS	NS	0	0	0		
	Shepherd Creek	NS	NS	700	1,000	1,000		
	Carbon Creek	NS	NS	250	50	50		
	Clear Creek	NS	NS	NS	200	200		
	Kushtaka Lake	NS	NS	5	75	75		
	Shockum Creek	NS	NS	NS	400	400		
Katalla River	Katalla River ^e	0	300	20	0	300	300	
Bering River District weekly index		2,600	17,400	1,525	1,925	19,125	19,125	19,125
Lower objective		11,015	11,051	4,301	1,481			15,000
Average objective		17,623	17,682	6,882	2,370			24,000
Upper objective		24,232	24,313	9,462	3,259			33,000

Note: NS signifies that no survey was flown.

- ^a Surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites, and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement but have served that purpose in the absence of any other escapement estimation method.
- ^b Survey sites represent the majority of known sockeye salmon spawning locations in the Bering River drainage.
- ^c When the survey site is a terminal spawning area, the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the index count which minimizes duplicate counts across dates is selected.
- ^d The sum of the index counts by site within a system.
- ^e This stream is not included in the indexed escapement for the Bering River drainage; it is a non-index stream.

Appendix A18.–Aerial escapement indices by statistical week and location for coho salmon returning to the Bering River District, 2023.

Drainage	Sites ^b	Weekly escapement indices (statistical week ending date listed) ^a			Peak site ^c	Peak drainage ^d	Anticipated, (by drainage)
		8/26	9/9	9/23			
Bering River	Bering River ^e	30	100	500	500	2,000	7,720
	Bering Lake	200	450	350	450		
	Dick Creek	0	250	1,050	1,050		
	Shepherd Creek - Lagoon	0	NS	NS	0		
	Shepherd Creek	0	NS	NS	0		
	Carbon Creek ^f	0	NS	NS	0		
Katalla River	Katalla River	50	100	500	500	500	4,993
Lower Bering River	Gandil River	0	50	200	200	12,200	2,910
	Nichawak River	100	6,300	12,000	12,000		
Controller Bay	Campbell River	400	4,700	6,000	6,000	6,250	7,378
	Edwardes River	0	200	0	200		
	Okalee River	20	50	0	50		
	Other Clear Streams ^f	0	0	0	0		
Bering River District weekly index		800	12,200	20,600	20,950	20,950	
Lower objective		8,732	6,969	4,199			13,000
Average objective		15,448	12,330	7,429			23,000
Upper objective		22,165	17,691	10,659			33,000

Note: NS signifies that no survey was flown.

^a Surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites, and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement but have served that purpose in the absence of any other escapement estimation method.

^b Survey sites represent the majority of known coho salmon spawning locations in the Bering River drainage.

^c When the survey site is a terminal spawning area, the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the index count which minimizes duplicate counts across dates is selected.

^d The sum of peak counts by site within the drainage.

^e Counts include coho salmon observed in the Don Miller Hill tributaries.

^f These streams are not included in the indexed escapement deltawide; these are non-index streams.

**APPENDIX B: COGHILL DISTRICT, UNAKWIK DISTRICT,
AND PORT CHALMERS SUBDISTRICT**

Appendix B1.–Daily and cumulative salmon escapement through the Coghill River weir, 2023.

Date	Sockeye salmon		Pink salmon	
	Daily	Cumulative	Daily	Cumulative
6/13	0	0	0	0
6/14	0	0	0	0
6/15	1	1	0	0
6/16	0	1	0	0
6/17	20	21	0	0
6/18	47	68	0	0
6/19	36	104	0	0
6/20	140	244	0	0
6/21	115	359	0	0
6/22	1264	1,623	0	0
6/23	474	2,097	0	0
6/24	290	2,387	0	0
6/25 ^a	1,477	3,864	0	0
6/26 ^b	0	3,864	0	0
6/27 ^a	282	4,146	0	0
6/28	1,000	5,146	0	0
6/29 ^a	10	5,156	0	0
6/30 ^b	0	5,156	0	0
7/1 ^a	655	5,811	0	0
7/2	2,441	8,252	0	0
7/3	2,403	10,655	0	0
7/4	1167	11,822	0	0
7/5	1012	12,834	0	0
7/6	2159	14,993	0	0
7/7	1923	16,916	1	1
7/8	2549	19,465	2	3
7/9	3503	22,968	5	8
7/10	3596	26,564	4	12
7/11	3848	30,412	6	18
7/12	1,674	32,086	39	57
7/13	2168	34,254	94	151
7/14	2,513	36,767	357	508
7/15	2269	39,036	420	928
7/16	3,848	42,884	1,695	2,623
7/17	2,328	45,212	1,920	4,543
7/18	2347	47,559	1,344	5,887
7/19	2126	49,685	1,767	7,654
7/20	1,562	51,247	1,503	9,157
7/21	2784	54,031	5,100	14,257
7/22	1759	55,790	3,524	17,781
7/23	2276	58,066	6,473	24,254
7/24	3533	61,599	8,683	32,937
7/25	2201	63,800	2,596	35,533
7/26	412	64,212	741	36,274

^a Partial counts due to high water.

^b High water levels prevented weir operation.

Appendix B2.–Salmon escapement by species in the Coghill District, 1981–2023.

Year	Sockeye ^a	Pink ^b	Chum ^b
1981	156,112	140,436	2,389
1982	180,314	309,202	21,586
1983	38,783	284,164	55,127
1984	63,622	365,226	13,500
1985	163,311	238,728	14,514
1986	71,095	109,798	16,300
1987	187,263	67,761	22,472
1988	72,052	42,985	42,536
1989	37,751	48,802	22,434
1990	8,949	45,558	20,494
1991	9,752	84,790	7,055
1992	29,642	23,122	7,583
1993	9,232	41,666	7,404
1994	7,264	65,648	14,176
1995	30,382	46,029	11,596
1996	38,693	104,781	19,669
1997	35,517	52,961	3,101
1998	28,923	85,968	22,764
1999	59,311	168,816	5,057
2000	28,446	223,646	20,488
2001	38,558	148,665	13,388
2002	28,323	54,882	7,430
2003	75,427	375,147	19,729
2004	30,569	36,717	5,000
2005	30,313	528,264	11,979
2006	23,479	145,511	15,900
2007	70,001	197,405	14,052
2008	29,298	145,177	39,660
2009	23,186	125,907	5,208
2010	24,312	355,108	51,589
2011	102,359	257,020	16,368
2012	72,678	172,611	10,281
2013	17,231	640,414	11,369
2014	21,836	63,290	9,491
2015	13,584	801,201	15,444
2016	8,708	171,362	15,444
2017	50,312	187,159	13,666
2018 ^c	30,954	70,881	13,617
2019	32,247	153,129	3,437
2020	53,901	88,401	8,998
2021	101,083	300,227	2,395
2022 ^d	34,092	73,971	8,629
2023	64,212	169,737	6,250
Average (2013–2022)	36,395	255,004	10,249

^a Escapement count of sockeye salmon past the Coghill River weir.

^b Pink and chum escapements indexed for streams by aerial survey. Historical data revised in 1990.

^c Sockeye salmon escapement total likely incomplete due to 2 weir washouts and extended nonoperational periods.

^d Sockeye salmon escapement total likely incomplete due to high water levels during the last 2 weeks of operation.

Appendix B3.–Drift gillnet total harvest by species and period in the Coghill District commercial fishery, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/4	5/24	84	14	22	4	57	8	45	0	0	0	0	811	5,606
2	6/5–6/7	6/3	60	22	52	13	172	107	593	0	0	4	12	8,235	56,822
3	6/8–6/11	6/7	84	95	383	32	295	2,320	11,684	0	0	2	8	95,636	622,779
4	6/12–6/14	6/10	60	97	254	20	195	1,339	7,148	1	5	4	14	38,181	247,395
5	6/15–6/18	6/14	84	73	245	7	80	3,949	22,477	0	0	38	121	33,290	211,847
6	6/19–6/21	6/17	60	86	217	8	77	12,523	69,766	0	0	38	138	23,965	160,704
7	6/22–6/25	6/21	84	100	327	15	129	13,103	77,180	1	6	73	257	41,145	276,921
8	6/26–6/28	6/24	60	98	321	6	86	27,583	157,262	0	0	158	621	59,217	393,608
9	6/29–7/2	6/28	84	216	1144	27	262	58,555	329,315	6	42	871	3,157	389,038	2,488,259
10	7/3–7/5	7/1	60	203	848	9	88	37,301	212,036	4	22	3,379	12,481	271,319	1,680,408
11	7/6–7/9	7/5	84	133	496	8	109	26,426	152,176	32	186	12,169	43,695	133,165	837,052
12	7/10–7/12	7/7	60	156	582	6	62	23,488	133,978	25	177	18,210	61,143	199,209	1,260,656
13	7/13–7/16	7/12	84	134	503	9	72	18,245	103,281	118	679	36,661	121,633	129,042	822,040
14	7/17–7/19	7/15	60	68	216	11	84	4,417	24,944	51	297	22,372	73,359	38,956	253,780
15	7/20–7/21	7/19	36	28	93	7	48	2,743	13,948	55	346	13,971	46,468	19,154	118,735
16	7/22	7/21	14	12	19	0	0	354	2,102	4	22	2,540	8,182	3,047	19,932
17	7/23	7/21	14	5	9	0	0	122	641	13	71	1,642	5,650	980	5,918
18	7/24	7/23	14	7	11	1	5	204	1,063	6	30	3,972	12,798	1441	8,931
19	7/25	7/23	14	4	5	0	0	39	201	2	16	579	1,736	228	1,429
20	7/27	7/25	14	9	11	0	0	187	1,081	36	186	4,230	13,261	2242	13,422
21	7/30	7/29	16	8	10	0	0	51	306	3	16	1,972	6,352	815	4,903
22	8/2	8/1	16	19	30	3	25	368	1,940	19	140	11,112	33,337	1,972	12,019
23	8/5	8/4	16	17	28	1	5	276	1,488	42	285	11,934	35,804	1473	8,529
24	8/9	8/8	12	13	23	0	0	285	1,461	48	352.5	15,622	46,864	863	4,898
25	8/13	8/12	12	8	11	0	0	208	1084	24	180	14,630	43,890	223	1,284
26	8/15	8/14	12	17	28	0	0	156	817	46	340	22,730	68,187	225	1,312
27	8/17	8/16	12	16	18	0	0	55	327	105	794	10,608	32,180	65	424
28	8/26	8/25	12	6	6	0	0	0	0	245	1950	742	2,225	5	38
29	8/27	8/25	12	5	5	0	0	3	17	191	1538	581	1741	14	87
30	8/28	8/25	12	5	5	0	0	1	7	180	1438	560	1681	12	62
31	8/29	8/25	12	11	11	0	0	2	12	254	2,016	279	835	7	39
32	8/30	8/25	12	11	11	0	0	1	4	450	3600	201	604	21	127
33	8/31–9/1	8/30	36	9	15	0	0	1	5	1,112	8,886	207	622	32	179
34	9/4–9/5	8/30	36	13	25	0	0	1	5	2,328	18,602	674	2,023	6	36
35	9/7–9/8	9/6	36	19	36	0	0	4	18	2,722	21,533	52	156	4	24
36	9/11–9/12	9/6	36	0	0					No harvest reported					
Total				288	6,020	187	1,851	234,425	1,328,411	8,123	63,756	212,817	681,235	1,494,038	9,520,205
Average weights							9.9		5.7		7.8		3.2		6.4

Appendix B4.–Purse seine total harvest by species and period in the Coghill District commercial fishery, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
13	7/13–7/16	7/12	84	3	3	0	0	925	4,514	0	0	628	2,669	5	35
14	7/17–7/19	7/15	60	8	15	0	0	2,104	10,174	0	0	22,538	76,699	59,159	389,667
15	7/20–7/21	7/19	36	5	5	0	0	419	2,236	0	0	38,598	137,813	8,246	53,057
16	7/22	7/21	14	4	6	0	0	171	934	0	0	58,670	187,106	10,021	64,421
17	7/23	7/21	14	3	3	0	0	375	1,879	0	0	36,864	123,452	132	789
18	7/24	7/23	14	7	8	0	0	1,490	8,405	0	0	66,829	219,796	2,203	14,447
19	7/25	7/23	14	8	8	0	0	376	1,920	0	0	24,183	87,575	70	454
20	7/27	7/25	14	12	16	0	0	356	1,853	12	60	117,598	381,583	2,463	15,933
21	7/30	7/29	16	6	6	5	37	158	830	0	0	41,241	122,101	487	3,221
22	8/2	8/1	16	0	0					No harvest reported					
23 ^b	8/5	8/4	16	1	1	b	b	b	b	b	b	b	b	b	b
24	8/9	8/8	12	4	4			272	1,143	0	0	56,726	159,828	0	0
25	8/13	8/12	12	16	18			145	711	0	0	265,964	802,745	152	960
26	8/15	8/14	12	33	39			118	653	66	489	448,377	1,308,147	124	860
27	8/17	8/16	12	0	0					No harvest reported					
28–32	8/26–8/30	8/25	60	0	0					No harvest reported					
Total				60	132	5	37	6,909	35,252	78	549	1,185,005	3,629,886	83,078	543,954
Average weight							7.4		5.1		7		3.1		6.5

Source: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable advisory announcement (AA) available through ADF&G’s Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>.

Note: Periods 1–12 were open to drift gillnet only. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Queries made through the ADF&G Commercial Fishery Announcements will provide results sorted by publication date.

^b Fewer than three permits were fished. Period results are confidential.

Appendix B5.—Commercial salmon harvest by species and gear type in the Coghill District, 2013–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift gillnet						
2013	259	93,734	62,968	2,450,108	2,100,394	4,707,463
2014	76	159,167	151,723	1,096,425	642,964	2,050,355
2015	93	74,416	6,094	655,320	778,112	1,816,842
2016	82	63,125	5	8,962	1,530,937	1,603,111
2017	74	111,718	14,165	635,519	2,210,178	2,971,654
2018	336	186,978	4,306	286,356	1,802,402	2,280,378
2019	104	389,051	120,152	301,333	1,049,441	1,860,081
2020	334	111,403	2,475	651,099	229,406	994,717
2021	494	192,461	1,957	666,347	1,192,380	2,055,512
2022	513	230,097	39,376	393,708	1,117,339	1,781,033
2023	187	234,425	8,123	212,817	1,494,038	1,949,590
Average 2013–2022	236.5	161,215	40,322	714,518	1,265,355	2,212,115
Purse seine						
2013	33	1,978	7,573	6,690,850	70,271	6,770,705
2014	0	299	8,536	901,916	325	911,076
2015	0	2,120	1,215	5,601,620	121,213	5,726,168
2016	0	44	6	4,583	100,547	105,180
2017	0	5,043	205	417,327	856,613	1,279,188
2018	0	2,315	6,347	687,095	4,148	699,905
2019	0	1,608	280	43,154	10,523	55,565
2020	12	1,445	407	1,108,848	6,721	1,117,433
2021	2	5,506	917	4,180,861	1,600	4,188,886
2022	3	5,909	218	108,822	5,366	120,318
2023	5	6,909	78	1,185,005	83,078	1,275,075
Average 2013–2022	5	2,627	2,570	1,974,508	117,733	2,097,442
Combined purse seine and drift gillnet						
2013	292	95,712	70,541	9,140,958	2,170,665	11,478,168
2014	76	159,466	160,259	1,998,341	643,289	2,961,431
2015	93	76,536	7,309	6,256,940	899,325	7,240,203
2016	82	63,169	11	13,545	1,631,484	1,708,291
2017	74	116,761	14,370	1,052,846	3,066,791	4,250,842
2018	336	189,293	10,653	973,451	1,806,550	2,980,283
2019	104	390,659	120,432	344,487	1,059,964	1,915,646
2020	346	112,848	2,882	1,759,947	236,127	2,112,150
2021	496	197,967	2,874	4,847,208	1,193,980	6,244,398
2022	516	236,006	39,594	502,530	1,122,705	1,901,351
2023	192	241,334	8,201	1,397,822	1,577,116	3,224,665
Average 2013–2022	241.5	163,842	42,893	2,689,025	1,383,088	4,279,276

Appendix B6.–Commercial salmon harvest by period and gear type in the Unakwik District, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Drift Gillnet															
1	6/15–6/16	6/14	36	0	0					No harvest reported					
2	6/19–6/20	6/17	36	3	3	0	0	1,210	7062	0	0	0	0	2	10
3	6/22–6/23	6/21	36	5	7	0	0	435	2645	0	0	0	0	0	0
4	6/26–6/27	6/24	36	0	0					No harvest reported					
5	6/29–6/30	6/28	36	0	0					No harvest reported					
6	7/3–7/4	7/1	36	3	3	0	0	1585	8388	0	0	0	0	0	0
7	7/6–7/7	7/5	36	4	5	0	0	671	3796	0	0	0	0	0	0
8 ^b	7/10–7/11	7/7	36	2	2	b	b	b	b	b	b	b	b	b	b
9	7/13–7/14	7/12	36	3	3	0	0	580	3300	0	0	37	112	0	0
10	7/17–7/18	7/15	36	0	0					No harvest reported					
11 ^b	7/20–7/21	7/19	36	1	1	b	b	b	b	b	b	b	b	b	b
Total				13	24	0	0	5,535	31,087	0	0	37	112	2	10
Purse Seine															
1	6/15–6/16	6/14	36	0	0					No harvest reported					
2 ^b	6/19–6/20	6/17	36	1	1	b	b	b	b	b	b	b	b	b	b
3	6/22–6/23	6/21	36	0	0					No harvest reported					
4 ^b	6/26–6/27	6/24	36	1	1	b	b	b	b	b	b	b	b	b	b
5	6/29–6/30	6/28	36	7	7	0	0	6057	34098	0	0	4	12	0	0
6	7/3–7/4	7/1	36	10	10	3	29	5460	30819	0	0	42	144	42	261
7	7/6–7/7	7/5	36	3	4	4	29	765	4475	0	0	648	2463	228	1369
8	7/10–7/11	7/7	36	0	0					No harvest reported					
9	7/13–7/14	7/12	36	0	0					No harvest reported					
10	7/17–7/18	7/15	36	0	0					No harvest reported					
11	7/20–7/21	7/19	36	0	0					No harvest reported					
Total				15	23	7	58	13,337	74,818	0	0	694	2619	271	1,637

Source: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable advisory announcement (AA) available through ADF&G’s Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>.

Note: All periods were open to drift gillnet and purse seine; however, no purse seine harvest was reported for any period. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Queries made through the ADF&G Commercial Fishery Announcements will provide results sorted by publication date.

^b Fewer than three permits were fished. Period results are confidential.

Appendix B7.–Commercial salmon harvest by species and gear type in the Unakwik District, 2013–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift gillnet						
2013	1	776	0	203	28	1,008
2014	0	459	0	3	30	492
2015	2	2,968	0	55	23	3,037
2016	0	259	0	0	481	740
2017	0	551	0	196	56	803
2018	0	3,505	1	36	16	3,558
2019	2	7,657	0	2,114	1,015	10,788
2020	9	791	0	2	22	824
2021	4	5,987	0	409	219	6,619
2022	18	26,073	0	458	3,808	30,357
2023	0	5,535	0	37	2	5,574
Average 2013–2022	4	4,903	0	348	570	5,823

Purse seine						
2013	0	2,815	1	81	159	3,056
2014	1	686	0	2	243	932
2015	7	1,994	0	346	245	2,592
2016 ^a	a	a	a	a	a	a
2017 ^a	a	a	a	a	a	a
2018	0	0	0	0	0	0
2019	2	1,900	0	1,946	815	4,663
2020	0	18	0	0	0	18
2021	0	2,489	0	154	35	2,678
2022 ^a	a	a	a	a	a	a
2023	7	13,337	0	694	271	14,309
Average 2013–2022	1	2,323	0	324	202	2,821

Combined purse seine and drift gillnet						
2013	1	3,591	1	284	187	4,064
2014	1	1,145	0	5	273	1,424
2015	9	4,962	0	401	268	5,629
2016 ^a	a	a	a	a	a	a
2017 ^a	a	a	a	a	a	a
2018	0	3,505	1	36	16	3,558
2019	4	9,557	0	4,060	1,830	15,451
2020	9	809	0	2	22	842
2021	4	8,476	0	563	254	9,297
2022 ^a	a	a	a	a	a	a
2023	7	18,872	0	731	273	19,883
Average 2013–2022	5	7,283	0	614	720	8,621

^a Fewer than 3 permits fished; results are confidential.

Appendix B8.–Port Chalmers Subdistrict commercial drift gillnet harvest of salmon by period, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/4	5/24	84	29	64	30	359	102	574	0	0	113	397	5,082	33,107
2	6/5–6/7	5/24	60	40	79	38	335	78	392	0	0	131	491	11,490	77,327
3	6/8–6/11	6/3	84	70	218	27	218	314	1790	0	0	546	2064	46,855	289,116
4	6/12–6/14	6/7	60	141	372	20	178	2673	14208.25	1	4	3307	11024	99,458	626,853
5	6/15–6/18	6/10	84	158	590	22	272	1,412	7,606	0	0	1657	5392	135,836	860,992
6	6/19–6/21	6/14	60	195	661	31	425	6856	36,513	0	0	8700	29993.5	176,757	1,114,662
7	6/22–6/25	6/21	84	125	585	8	107	6541	35,707	0	0	4738	16846.8	164,011	1,056,424
8	6/26–6/28	6/21	60	91	358	6	91	3347	18846	0	0	8178	27368.4	114,837	746,388
9	6/29–7/2	6/24	84	67	321	3	75	3668	19474	0	0	19523	69040	126,925	805,231
10	7/3–7/5	6/28	60	24	102	0	0	53	424	0	0	382	1306	60,613	374,761
11	7/6–7/9	7/1	84	46	318	0	0	189	1106	0	0	4699	15683	181,168	1,113,583
12	7/10–7/12	7/5	60	32	135	1	17	197	1160	0	0	5245	17408	74,656	493,234
13	7/13–7/16	7/7	84	20	81	1	16	70	392	0	0	2318	7082	45,861	309,148
14	7/17–7/19	7/12	60	6	35	0	0	0	0	0	0	32	96	30,889	227,521
15	7/20–7/23	7/15	84	5	26	0	0	0	0	0	0	0	0	23,287	163,813
16	7/24–7/26	7/19	60	0	0	No Harvest Reported									
17 ^a	7/27–7/30	7/21	84	2	6	a	a	a	a	a	a	a	a	a	a
Total				239	3951	187	2,093	25,532	138,352	1	4	60,785	207,839	1,299,840	8,303,795
Average weight							11.2		5.4		4.0		3.4		6.4

Note: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable advisory announcement (AA) available through ADF&G's Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Fewer than 3 permits were fished. Period results are confidential.

Appendix B9.—Total commercial harvest by species in the Port Chalmers Subdistrict, June 1–July 30, 2015–2023.

Year	Permits	Gear type	Number of fish					Total
			Chinook	Sockeye	Coho	Pink	Chum	
2015	102	Drift gillnet	87	9,751	697	58,371	166,949	235,855
2016	132	Drift gillnet	81	3,009	13	19,360	196,377	218,840
2017	143	Purse seine	97	7,045	527	990,829	528,381	1,526,879
2018	139	Purse seine	137	6,015	585	346,820	452,585	806,142
2019	218	Drift gillnet	43	4,913	20	18,270	1,571,659	1,594,905
2020	129	Purse seine	288	2,185	155	32,032	562,744	597,404
2021	131	Purse seine	297	4,182	362	2,126,149	289,800	2,420,790
2022	107	Purse seine	107	5,537	40	142,902	706,260	855,321
2023	239	Drift gillnet	187	25,532	1	60,785	1,299,840	1,386,345
Average 2018–2022	145		174	4,566	232	533,235	716,610	1,254,912

APPENDIX C: ESHAMY DISTRICT

Appendix C1.–Daily and cumulative salmon escapement through the Eshamy River weir, 2023.

Date	Sockeye salmon (BEG: 13,000 to 28,000)		Pink salmon		Chum salmon	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/3	0	0	0	0	0	0
7/4	0	0	0	0	0	0
7/5	0	0	0	0	0	0
7/6	0	0	0	0	0	0
7/7	0	0	0	0	0	0
7/8	0	0	0	0	4	4
7/9	0	0	0	0	8	12
7/10	1	1	0	0	4	16
7/11	0	1	0	0	6	22
7/12	1	2	0	0	12	34
7/13	0	2	0	0	14	48
7/14	0	2	0	0	15	63
7/15	0	2	0	0	5	68
7/16	3	5	0	0	20	88
7/17	7	12	0	0	36	124
7/18	40	52	0	0	19	143
7/19	30	82	0	0	22	165
7/20	52	134	1	1	24	189
7/21	30	164	5	6	17	206
7/22	57	221	17	23	13	219
7/23	53	274	6	29	14	233
7/24	222	496	13	42	20	253
7/25	62	558	23	65	12	265
7/26	22	580	15	80	3	268
7/27	59	639	17	97	6	274
7/28	131	770	29	126	4	278
7/29	152	922	26	152	9	287
7/30	165	1,087	32	184	5	292
7/31	96	1,183	19	203	5	297
8/1	112	1,295	15	218	3	300
8/2	36	1,331	8	226	9	309
8/3	41	1,372	4	230	2	311
8/4	152	1,524	18	248	0	311
8/5	140	1,664	16	264	1	312
8/6	262	1,926	88	352	0	312
8/7	565	2,491	110	462	2	314

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Date	Sockeye salmon (BEG: 13,000 to 28,000)		Pink salmon		Chum salmon	
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
8/8	308	2,799	50	512	0	314
8/9	94	2,893	46	558	1	315
8/10	395	3,288	144	702	10	325
8/11	916	4,204	120	822	1	326
8/12	1112	5,316	275	1,097	0	326
8/13	580	5,896	106	1,203	0	326
8/14	576	6,472	112	1,315	0	326
8/15	348	6,820	90	1,405	0	326
8/16	601	7,421	140	1,545	0	326
8/17	347	7,768	87	1,632	0	326
8/18	1095	8,863	249	1,881	0	326
8/19	634	9,497	139	2,020	0	326
8/20	495	9,992	206	2,226	1	327
8/21	221	10,213	199	2,425	0	327
8/22	256	10,469	355	2,780	0	327
8/23	118	10,587	182	2,962	0	327
8/24	91	10,678	218	3,180	0	327
8/25	85	10,763	86	3,266	0	327
8/26	126	10,889	55	3,321	0	327
8/27	83	10,972	108	3,429	0	327
8/28	102	11,074	64	3,493	0	327
8/29	43	11,117	83	3,576	0	327
8/30	62	11,179	56	3,632	0	327
8/31	15	11,194	56	3,688	0	327

Note: BEG = biological escapement goal.

Appendix C2.—Salmon escapement by species past the Eshamy River weir, 1967–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1967	0	10,821	192	10,433	1	21,447
1968	1	68,048	450	919	1	69,419
1969	0	61,196	96	3,095	2	64,389
1970	0	11,460	25	387	0	11,872
1971 ^a	0	954	97	3,179	0	4,230
1972 ^b	0	28,683	0	0	0	28,683
1973	0	10,202	205	1,698	0	12,105
1974 ^b	0	633	0	0	0	633
1975 ^b	0	1,724	0	0	0	1,724
1976 ^b	0	19,367	0	0	0	19,367
1977	0	11,746	230	32,080	0	44,056
1978	0	12,580	20	552	0	13,152
1979	0	12,169	5	3,654	1	15,829
1980	5	44,263	128	963	2	45,361
1981	1	23,048	249	5,956	13	29,267
1982	0	6,782	79	1,056	79	7,996
1983	0	10,348	40	7,047	4	17,439
1984	2	36,121	881	3,970	0	40,974
1985	0	26,178	96	6,271	0	32,545
1986	2	6,949	55	1,004	31	8,041
1987 ^c	0	0	0	0	0	0
1988	2	31,747	48	1,205	1	33,003
1989	1	57,232	0	7,782	210	65,225
1990	0	14,477	43	2,209	5	16,734
1991	2	46,229	907	31,241	17	78,396
1992	1	36,237	52	3,004	5	39,299
1993	1	42,893	92	3,435	9	46,430
1994	1	64,660	1,184	12,061	87	77,993
1995	7	21,701	1,076	18,601	407	41,792
1996	2	5,271	108	7,959	9	13,349
1997	2	39,015	111	15,142	18	54,288
1998 ^c	0	0	0	0	0	0
1999	1	27,057	194	32,756	3	60,011
2000	2	22,653	151	20,515	381	43,702
2001	0	55,187	335	21,027	176	76,725
2002	0	40,478	14	4,843	1,072	46,407
2003	2	39,845	0	2,440	335	42,622
2004	0	13,443	0	1,518	0	14,961
2005	1	23,523	46	11,024	529	35,123
2006	0	41,823	201	3,585	608	46,217
2007	0	16,646	831	29,409	243	46,673
2008	0	18,494	27	2,060	20	20,601
2009	1	24,025	147	3,849	416	28,438
2010	0	16,291	114	2,268	84	18,757
2011	0	24,129	0	2,879	35	27,043
2012–2020 ^c	0	0	0	0	0	0
2021	30	7,001	39	10,788	212	18,070
2022	4	19,325	24	6,627	339	26,319
2023	1	11,194	71	3,688	327	15,281
Average (2002–2011)	0	25,870	138	6,388	334	32,684

^a Estimate may be low due to holes in the weir; actual escapement is estimated to be greater than 3,000 sockeye salmon.

^b Passage of salmon other than sockeye salmon was not recorded.

^c The Eshamy weir was not in operation.

Appendix C3.—Total drift gillnet commercial salmon harvest by period in the Eshamy District, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/2	5/24	36	3	4	0	0	29	167	0	0	0	0	35	239
2	6/5–6/6	6/3	36	8	12	1	7	822	4,875	0	0	1	4	598	3,716
3	6/8–6/9	6/7	36	19	48	9	98	4,340	23,182	0	0	19	63	6,733	43,312
4	6/12–6/13	6/10	36	48	114	3	32	12,178	65,256	0	0	3	10	9,952	56,804
5	6/15–6/16	6/14	36	116	284	4	45	37,507	203,016	0	0	63	274	15,814	100,401
6	6/19–6/20	6/17	36	176	375	9	85	70,809	378,034	0	0	118	427	10,507	66,413
7	6/26–6/27	6/24	24	108	250	4	39	52,705	297,300	0	0	162	604	9,367	60,518
8	6/29–6/30	6/28	36	100	226	0	0	64,807	349,292	2	13	263	833	7,795	50,973
9	7/3–7/4	7/1	36	67	165	0	0	43,856	248,139	9	63	2,148	7,320	7,548	49,185
10	7/6–7/7	7/5	36	80	149	1	8	24,458	134,375	33	240	5,724	20,016	9,027	56,269
11	7/10–7/11	7/7	36	24	55	0	0	9,479	50,330	129	921	4,731	15,656	2,731	16,755
12	7/13–7/14	7/12	36	22	53	0	0	17,660	88,191	26	182	4,572	15,126	1,817	11,495
13	7/17–7/18	7/15	36	9	27	1	9	3,588	18,757	52	378	6,029	18,083	3,229	19,018
14	7/24–7/25	7/21	24	13	26	0	0	5,640	29,644	272	1,965	6,297	20,653	1,116	6,977
15 ^a	7/27–7/28	7/26	24	1	3	a	a	a	a	a	a	a	a	a	a
16	7/31–8/1	7/29	24	18	37	0	0	1,454	8,438	240	1,507	16,383	49,143	809	5,104
17	8/3–8/4	8/2	24	0	0					No harvest reported					
18	8/7–8/8	8/4	24	23	45	0	0	1,529	8,093	261	1,913	31,879	95,282	1,047	6,212
19	8/14–8/15	8/9	24	14	17	0	0	805	4,295	62	465	13,721	41,164	213	1,345
20	8/21–8/22	8/16	24	8	18	0	0	252	1,351	73	558	11,145	33,660	65	429
21	8/28–8/29	8/23	24	0	0					No harvest reported					
22	9/4–9/5	8/30	24	0	0					No harvest reported					
23	9/11–9/12	9/6	24	0	0					No harvest reported					
Total				253	1,908	32	323	352,580	1,916,046	1159	8,205	103,461	318,929	88,411	555,210
Average weight								10.1	5.4		7.1		3.1		6.3

Note: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable advisory announcement (AA) available through ADF&G's Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Fewer than 3 permits were fished. Period results are confidential.

Appendix C4.–Total set gillnet commercial salmon harvest by period in the Eshamy District, 2023.

Period	Date	AA date ^a	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/2	5/24	36	10	16	6	73	263	1,575	0	0	0	0	58	402
2	6/5–6/6	6/3	36	15	48	12	149	2,498	14,444	0	0	0	0	464	3,116
3	6/8–6/9	6/7	36	16	55	0	0	2,959	16,857	0	0	5	18	1,330	8,081
4	6/12–6/13	6/10	36	18	91	2	12	8,886	51,064	0	0	4	12	1,679	10,775
5	6/15–6/16	6/14	36	19	92	0	0	11,050	62,347	0	0	16	61	2,037	12,919
6	6/19–6/20	6/17	36	21	108	2	19	25,614	144,949	0	0	9	31	1,213	7,613
7	6/26–6/27	6/24	24	22	116	0	0	24,797	141,130	0	0	9	29	2,092	13,446
8	6/29–6/30	6/28	36	22	139	0	0	28,953	166,146	0	0	181	556	3,623	23,006
9	7/3–7/4	7/1	36	21	134	1	5	27,572	159,985	0	0	857	2,573	3,666	23,384
10	7/6–7/7	7/5	36	21	104	2	30	12,925	76,161	0	0	3,479	11,458	4,191	27,816
11	7/10–7/11	7/7	36	21	90	0	0	11,059	63,250	16	100	3,597	11,516	1,620	10,636
12	7/13–7/14	7/12	36	17	68	1	5	7,655	44,165	28	171	10,650	33,104	2,742	17,634
13	7/17–7/18	7/15	36	14	66	0	0	7,726	42,931	19	130	5,630	16,901	1,486	9,867
14	7/24–7/25	7/21	24	8	23	0	0	2,235	12,358	36	255	4,884	14,653	528	3,384
15 ^a	7/27–7/28	7/26	24	2	6	a	a	a	a	a	a	a	a	a	a
16	7/31–8/1	7/29	24	4	15	0	0	407	2,481	4	21	2,467	7,540	139	921
17	8/3–8/4	8/2	24	0	0					No harvest reported					
18 ^a	8/7–8/8	8/4	24	2	9	a	a	a	a	a	a	a	a	a	a
19 ^a	8/14–8/15	8/9	24	1	5	a	a	a	a	a	a	a	a	a	a
20 ^a	8/21–8/22	8/16	24	1	5	a	a	a	a	a	a	a	a	a	a
21	8/28–8/29	8/23	24	0	0					No harvest reported					
22	9/4–9/5	8/30	24	0	0					No harvest reported					
23	9/11–9/12	9/6	24	0	0					No harvest reported					
Total				22	1,190	26	293	175,830	1,006,227	121	800	37,036	114,197	26,940	173,480
Average weight							11.3	5.7	6.6	3.1	6.4				

Note: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable advisory announcement (AA) available through ADF&G's Commercial Fishery Announcements at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2023; Species Group = Salmon; Management Area = Prince William Sound.

^a Fewer than 3 permits were fished. Period results are confidential.

Appendix C5.—Total commercial salmon harvest by species and gear type in the Eshamy District, 2013–2023.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift gillnet						
2013	74	336,061	1,724	62,176	184,334	584,369
2014	35	761,315	607	189,940	77,719	1,029,616
2015	92	860,637	4,611	178,336	85,864	1,129,540
2016	40	443,723	362	51,872	78,409	574,484
2017	63	424,049	3,733	321,935	103,445	853,225
2018	131	823,344	3,407	303,572	131,246	1,261,700
2019	105	469,905	1,083	265,080	125,207	861,380
2020	188	358,068	930	316,963	70,666	746,815
2021	251	293,994	1,875	254,010	133,608	683,738
2022	95	446,717	353	218,209	119,345	784,719
2023	32	352,580	1,159	103,461	88,411	545,643
Average 2013–2022	107	521,781	1,869	216,209	110,984	850,959
Set gillnet						
2013	59	203,019	360	19,114	42,630	265,182
2014	22	259,568	65	35,681	20,921	316,257
2015	61	265,575	839	29,070	22	295,567
2016	33	218,013	13	8,011	20,831	246,901
2017	7	181,949	216	37,633	17,583	237,388
2018	7	180,945	103	22,784	9,948	141,787
2019	14	225,676	182	54,899	38,534	319,305
2020	7	91,826	23	35,136	4,069	131,054
2021	9	79,220	57	24,755	12,413	116,454
2022	50	182,049	33	71,491	25,940	279,563
2023	26	175,830	121	37,036	26,940	239,953
Average 2013–2022	27	188,784	189	33,857	19,289	234,946
Combined set gillnet and drift gillnet						
2013	133	539,080	2,084	81,290	226,964	849,551
2014	57	1,020,883	672	225,621	98,640	1,345,873
2015	153	1,126,212	5,450	207,406	107,560	1,425,107
2016	73	661,736	375	59,883	99,240	821,385
2017	70	605,998	3,949	359,568	121,028	1,090,613
2018	138	1,004,289	3,510	326,356	141,194	1,403,487
2019	119	695,581	1,265	319,979	163,741	1,180,685
2020	195	449,894	953	352,099	74,735	877,869
2021	260	373,214	1,932	278,765	146,021	800,192
2022	145	628,766	386	289,700	145,285	1,064,282
2023	58	528,410	1,280	140,497	115,351	785,596
Average 2013–2022	134	710,565	2,058	250,067	132,441	1,085,904

**APPENDIX D: PURSE SEINE FISHERIES PINK AND CHUM
SALMON ESCAPEMENT**

Appendix D1.–Prince William Sound pink salmon returns by origin, 2000–2023.

Year	Estimated pink salmon returns					
	Hatcheries ^a				Wild ^b	Total
	SGH	AFK	WNH	CCH		
2000	12,113,551	6,904,559	8,856,119	6,573,795	7,360,000	41,808,024
2001	15,932,656	4,865,879	7,126,101	2,108,028	8,800,000	38,832,664
2002	5,149,430	7,929,788	5,616,803	1,588,501	1,230,000	21,514,522
2003	17,784,817	7,065,581	17,843,002	8,349,320	7,389,184	58,431,904
2004	11,296,792	5,230,138	2,704,549	2,761,140	4,900,000	26,892,619
2005	17,833,484	10,121,228	9,221,716	13,595,157	12,540,000	63,311,585
2006	9,021,053	5,216,231	3,977,073	2,969,543	1,794,000	22,977,900
2007	23,967,744	15,760,177	7,519,098	7,430,043	10,333,079	65,010,141
2008	15,617,999	6,112,588	8,701,656	11,013,594	2,232,000	43,677,837
2009	1,222,473	10,703,437	3,223,164	3,258,244	2,825,000	21,232,318
2010	18,399,595	13,768,753	17,309,257	19,768,346	4,320,000	73,565,951
2011	13,830,644	3,199,541	6,647,472	4,743,895	9,230,000	37,651,552
2012	11,330,663	3,763,888	5,687,710	3,478,658	4,320,000	28,580,919
2013	22,183,858	20,222,117	17,479,441	15,959,517	22,250,000	98,094,933
2014	25,445,746	4,476,859	7,609,619	4,537,866	2,500,000	44,570,090
2015	34,751,413	10,854,375	17,537,606	10,183,238	31,680,000	105,006,632
2016	8,057,516	1,471,867	744,035	707,850	3,520,000	14,501,268
2017	14,543,144	4,968,436	2,508,749	6,736,574	22,430,000	51,186,903
2018	10,002,010	3,307,954	2,296,808	3,656,259	5,980,000	25,243,031
2019	11,282,485	6,071,637	4,025,313	10,274,004	18,380,000	50,033,439
2020	8,624,211	1,293,916	4,185,154	3,057,366	6,534,128	23,694,775
2021	20,363,732	4,310,394	9,464,883	10,045,817	25,227,494	69,412,320
2022	19,492,853	1,072,482	1,433,531	1,381,203	6,826,696	30,207,038
2023	21,644,173	11,465,374	4,813,755	10,607,099	12,222,224	60,752,625
Odd-year average (2013–2021)	20,624,926	9,285,392	10,203,198	10,639,830	23,993,499	74,746,845
Even-year average (2014–2022)	14,318,162	2,355,092	3,238,802	2,585,939	5,072,165	27,570,159

Note: SGH = Solomon Gulch Hatchery; AFK = Armin F. Koernig Hatchery; WNH = Wally H. Noerenberg Hatchery; CCH = Cannery Creek Hatchery.

^a Includes CCPF harvest, cost recovery, and broodstock and raceway sales.

^b This total return estimate does not incorporate the total spawning escapement but rather a comparable annual index.

Appendix D2.–Prince William chum salmon returns by origin, 2004–2023. Includes commercial common property fishery (CCPF), cost recovery, broodstock and raceway sales.

Year	WNH	Port Chalmers	AFK	Hatchery total	Wild ^a	Total run
2004	1,597,480	395,978	–	1,993,457	430,939	2,424,396
2005	1,968,212	231,659	–	2,199,870	274,168	2,474,038
2006	1,788,714	435,758	9,163	2,233,635	413,606	2,647,241
2007	1,178,160	59,182	174,263	1,411,605	405,017	1,816,622
2008	3,234,593	1,804,230	–	5,038,823	396,096	5,434,919
2009	2,196,409	951,365	–	3,147,774	86,735	3,422,876
2010	2,469,628	1,722,638	–	4,246,239	416,776	4,663,055
2011	1,121,064	674,484	–	1,795,548	483,455	1,910,561
2012 ^b	2,904,100	351,470	336,515	3,592,085	714,895	5,473,106
2013	3,510,052	499,589	–	4,010,169	503,123	4,513,918
2014	969,732	195,988	94,171	1,259,891	423,187	1,683,495
2015	2,127,037	143,582	183,763	2,455,950	237,430	2,944,336
2016	2,689,637	158,912	249,225	3,097,773	100,950	3,198,723
2017	3,960,674	251,212	492,198	4,704,084	906,800	5,610,884
2018	2,405,201	389,459	350,548	3,145,207	322,958	3,468,165
2019	2,648,844	1,579,488	542,094	4,770,427	625,455	5,395,882
2020	889,707	193,657	578,984	1,662,348	122,925	1,785,273
2021	1,870,568	259,442	416,119	2,546,129	172,563	2,718,692
2022	1,874,060	675,671	217,820	2,767,548	344,536	3,112,084
2023	3,187,090	1,192,635	158,033	4,537,758	806,663	5,341,421
Average (2013–2022)	2,294,551	434,700	347,213	3,041,953	375,993	3,443,145

Note: AFK = Armin F. Koernig Hatchery; WNH = Wally H. Noerenberg Hatchery. En dashes = not applicable.

^a This total return estimate does not incorporate the total spawning escapement but rather a comparable annual index.

^b Includes an additional 7,575 fish that were marked as WNH but released at multiple locations. Also, WNH marked fish returning to the Sawmill Bay remote release site were apportioned to AFK (Sheridan et al. 2013).

Appendix D3.—Prince William Sound pink salmon escapement indices by district, 2000–2023.

Year	Eastern	Northern ^a	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
2000	554,984	168,247	223,646	66,078	4,286	131,648	227,881	282,258	1,659,028
2001	436,585	163,573	148,665	102,294	2,963	176,503	314,323	655,480	2,000,386
2002	226,068	138,204	54,882	50,981	1,397	35,554	71,461	364,630	943,177
2003	975,327	255,059	375,147	103,931	5,206	130,356	320,494	691,769	2,857,289
2004	724,663	158,958	79,010	51,306	2,300	108,192	183,891	687,903	1,996,223
2005	1,025,756	570,079	528,264	401,640	32,396	272,572	566,002	1,330,407	4,727,116
2006	248,592	208,397	145,511	127,836	11,247	118,205	149,798	178,009	1,187,595
2007	374,723	156,063	197,405	68,667	9,461	116,130	142,769	443,914	1,509,133
2008	193,844	141,396	145,177	141,787	579	70,291	56,999	112,347	862,419
2009	454,960	119,747	125,907	127,261	9,790	239,357	263,770	488,831	1,829,623
2010	490,952	287,570	335,108	211,709	9,585	126,489	144,821	310,676	1,916,910
2011	982,837	167,408	257,020	147,128	4,368	232,302	598,918	1,537,438	3,927,419
2012	301,709	106,568	172,611	117,795	1,052	90,156	77,756	258,047	1,125,693
2013	1,266,783	329,434	640,414	203,444	12,145	348,012	411,373	1,472,633	4,684,239
2014 ^b	270,244	105,843	63,290	67,030	12,400	83,581	24,917	185,072	812,376
2015 ^b	1,605,058	779,600	801,201	454,427	70,068	789,725	649,144	2,032,492	7,181,714
2016 ^c	663,113	152,509	171,362	171,633	NA	NA	NA	169,660	1,326,535
2017 ^c	624,502	445,858	187,159	259,842	2,880	212,009	237,927	528,948	2,499,125
2018	309,325	113,383	70,881	111,194	16,594	81,100	135,208	293,275	1,130,960
2019	445,075	195,169	153,129	91,267	1,402	33,340	25,385	290,452	1,235,219
2020	206,152	105,226	88,401	77,828	7,250	64,470	84,238	138,330	771,895
2021	729,369	464,350	300,227	368,406	17,925	339,920	242,151	544,906	3,007,254
2022	353,187	163,498	73,971	292,892	14,937	200,057	143,917	137,692	1,380,152
2023	650,740	302,345	169,737	312,060	12,756	134,089	177,472	183,087	1,942,285
Even-year average (2004–2022)	330,805	130,206	117,302	130,701	7,136	85,244	95,714	178,531	1,067,235
Odd-year average (2001–2021)	816,219	320,415	338,399	214,945	19,289	255,058	320,156	736,937	3,024,803

Note: This does not represent the total spawning escapement but rather a comparable annual index. NA = not available.

^a Northern District totals include both Northern and Unakwik District counts combined.

^b AUC counts adjusted for the average proportion of the 214 index streams represented by the 129 index streams surveyed 3 or more times in 2015.

^c Escapement index total includes indices from Eastern, Northern, Coghill, Northwestern, and Southeastern Districts. Only Eastern, Northern, and Northwestern Districts had reasonable temporal survey coverage. The Coghill and Southeastern Districts had limited temporal coverage, but the indices were within the sustainable escapement goal (SEG) range, so they are included in the total.

Appendix D4.–Prince William Sound chum salmon escapement indices by district, 2001–2023.

Year	Eastern	Northern ^a	Coghill	Northwestern	Southeastern
2001	198,683	75,473	13,388	6,373	37,526
2002	94,046	30,531	7,430	16,194	104,906
2003	198,921	44,272	19,729	12,736	116,131
2004	108,833	42,456	9,685	10,371	42,344
2005	113,135	30,657	11,979	12,696	25,547
2006	109,403	52,069	15,900	25,860	26,739
2007	123,814	49,669	14,052	10,778	60,464
2008	74,740	38,791	39,660	28,051	21,614
2009	100,309	22,063	6,150	12,293	106,284
2010	91,514	38,207	51,589	30,074	85,138
2011	196,933	52,474	16,368	11,447	91,218
2012	61,969	14,680	10,281	7,072	20,467
2013	119,110	34,240	11,369	4,746	35,942
2014	93,491	27,680	9,491	5,041	30,177
2015 ^b	112,142	43,179	15,444	7,321	52,031
2016 ^b	93,491	27,680	9,491	5,831	30,177
2017 ^b	85,618	34,516	13,666	7,381	49,421
2018	109,598	18,407	13,617	15,563	10,164
2019	56,846	11,690	3,437	3,258	19,451
2020	103,849	23,542	8,998	7,405	26,909
2021	58,965	20,404	2,395	6,979	46,391
2022	64,365	26,014	8,629	13,372	12,944
2023	157,274	55,482	6,250	738	7,791
Average (2013–2022)	92,838	25,302	8,977	7,474	7,791

Note: Current goals are district-specific lower-bound sustainable escapement goals: Coghill >10,000; Eastern >79,000; Northern/Unakwik >28,000; Northwestern >7,000; Southeastern >11,000. This does not represent the total spawning escapement but rather a comparable annual index.

^a Northern District totals include both Northern and Unakwik District counts combined.

^b AUC counts adjusted for the average proportion of the 214 index streams represented by 129 index streams.

Appendix D5.—Prince William Sound commercial pink salmon harvest for all gear types, by district, 2000–2023.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
2000	9,819,466	4,093,620	3,359,542	17,223	514,258	9,308,399	87,634	549,763	27,749,905
2001	16,050,235	404,899	957,042	0	495,325	3,072,848	807,010	534,538	22,321,897
2002	355,964	594,245	1,277,637	0	186,786	5,710,938	32,857	1,075	8,159,502
2003	14,945,744	5,911,904	11,484,334	0	90,102	5,789,419	60,287	514,452	38,796,242
2004	9,512,987	45,355	43,690	0	107,487	1,628,219	102,352	260,992	11,701,082
2005	20,516,356	10,259,182	3,318,888	0	236,634	11,381,417	844,658	770,570	47,327,705
2006	5,712,890	1,331,776	1,373,036	0	110,625	3,269,037	144,417	21,805	11,963,586
2007	22,059,138	6,221,016	2,400,004	0	56,618	17,907,847	878,371	1,869,245	51,392,239
2008	10,829,504	8,548,368	7,439,560	0	123,780	7,548,950	216,013	0	34,706,175
2009	95,071	2,064,871	1,305,714	0	81,790	7,481,863	87,952	36,698	11,153,959
2010	16,423,602	17,916,866	14,252,563	0	134,734	16,978,392	15,985	19,293	65,741,435
2011	13,308,509	2,782,875	2,397,044	252,337	96,399	6,807,127	784,603	504,828	26,933,722
2012	10,611,728	3,677,106	3,433,740	87,010	106,269	5,722,240	200,600	225,255	24,063,948
2013	25,566,365	17,062,817	9,141,077	110,432	81,290	33,510,249	441,913	2,570,809	88,484,952
2014	19,853,828	5,024,240	1,998,341	70,684	225,641	8,958,165	3,044,491	19,949	39,195,339
2015	42,432,142	13,559,066	6,256,940	0	207,409	23,763,243	1,589,439	2,235,414	90,043,653
2016	7,536,833	417,218	13,556	172,360	59,894	345,842	19,360	37,970	8,603,033
2017	17,632,123	7,420,481	1,051,864	1,513,365	359,688	11,574,563	3,235,571	676,089	43,463,744
2018	10,296,388	2,626,739	974,408	184,091	326,431	4,912,297	395,459	443,118	20,158,931
2019	20,017,274	8,944,664	344,574	729,579	320,133	10,081,361	315,396	2,815,872	43,568,853
2020	8,964,070	3,425,006	1,760,360	921,426	352,730	2,739,176	268,006	378,859	18,809,633
2021	22,913,848	10,678,944	4,847,275	707,552	279,083	12,460,881	6,879,217	765,176	59,531,976
2022	21,084,417	1,054,168	502,530	317,409	289,700	1,016,253	177,917	38,997	24,481,391
2023	20,637,651	7,790,014	1,397,588	329,377	140,374	14,356,825	1,623,162	556,579	46,831,570
	<u>Even-year average (2004–2022)</u>								
	12,082,625	4,406,684	3,179,178	175,298	183,729	5,311,857	458,460	144,624	25,942,455
	<u>Odd-year average (2001–2021)</u>								
	19,948,657	8,490,526	4,254,771	331,327	180,915	14,075,797	1,511,741	1,275,915	50,069,648

Note: Includes purse seine, drift gillnet, and set gillnet harvests from all Prince William Sound districts; Unakwik harvests are included in the Northern District totals. Does not include hatchery cost recovery, homepack, confiscated, or test fish harvests.

Appendix D6.—Prince William Sound commercial chum salmon harvest for all gear types, by district, 2000–2023.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
2000	240,299	9,894	1,645,145	581	39,828	428,665	992,253	71,565	3,428,230
2001	258,569	9,602	1,146,253	0	28,373	229,670	442,317	44,493	2,159,277
2002	9,811	9,516	2,455,237	0	127,271	54,845	1,071,478	32,776	3,760,934
2003	113,154	12,432	1,478,537	0	22,323	25,624	566,535	13,148	2,231,753
2004	102,067	322	921,002	0	53,609	338	342,968	49,560	1,469,866
2005	32,423	14,895	1,156,770	0	6,945	3,759	238,516	4,329	1,457,637
2006	113,079	51,650	563,802	0	40,724	107,569	445,762	17,171	1,339,757
2007	81,077	10,127	1,474,826	0	106,061	42,445	741,020	13,997	2,469,553
2008	20,808	38,583	2,317,589	0	305,120	517,449	1,233,909	0	4,433,458
2009	4,752	15,618	1,336,662	0	336,928	234,996	672,918	2,887	2,604,761
2010	14,383	2,464	2,515,238	0	610,573	166,464	243,606	0	3,552,728
2011	29,251	2,381	1,092,952	1,083	121,341	62,616	103,678	11,797	1,425,099
2012	102,192	2,152	2,457,115	37	279,149	164,913	325,417	35,560	3,366,535
2013	94,277	6,513	2,170,633	171	226,970	275,290	483,728	40,929	3,298,511
2014	101,443	2,511	643,327	5,884	98,664	66,261	187,016	12,749	1,117,855
2015	143,320	8,099	899,332	0	107,622	176,773	168,721	13,532	1,517,399
2016	56,570	7,386	1,631,485	4,126	99,249	210,600	196,688	325	2,206,429
2017	293,242	90,858	3,066,829	45,126	121,049	445,083	540,388	51,827	4,654,402
2018	197,459	8,619	1,806,642	7,576	141,413	355,623	452,791	27,717	2,997,840
2019	522,862	31,335	1,060,108	9,602	163,838	545,263	1,572,646	38,173	3,943,827
2020	54,688	5,780	236,202	12,051	74,793	222,231	592,049	1,161	1,198,955
2021	100,146	13,217	1,194,305	2,966	146,027	296,653	295,939	9,176	2,058,429
2022	169,071	25,547	1,122,765	15,654	145,285	200,931	706,710	3,222	2,389,185
2023	612,141	48,977	1,577,007	4,342	115,345	199,572	1,313,049	18,528	3,888,961
Average (2013–2022)	173,308	19,961	1,383,163	10,316	132,492	279,471	519,668	19,881	2,538,259

Note: Includes purse seine, drift gillnet, and set gillnet harvests from all Prince William Sound districts. Unakwik harvests are included in the Northern District totals. Does not include hatchery cost recovery, homepack, confiscated, or test fish harvests.

APPENDIX E: SALMON ENHANCEMENT

Appendix E1.—Historical harvest contributions, thermally marked otolith releases, and total returns of coho salmon to Prince William Sound hatcheries, brood years 2000–2020.

Solomon Gulch Hatchery			Hatchery contribution to the CF ^a	Hatchery contribution to subsistence/homepack harvest ^b	Hatchery contribution to sport harvest ^c	Hatchery contribution to broodstock esc ^d	Hatchery contribution to cost recovery ^e	Total hatchery return	Estimated marine survival
Brood year	Return year	Fry release							
2000	2003	1,821,889	63,132	185	78,162	17,379	4,087	162,945	8.94%
2001	2004	1,275,145	26,711	315	59,331	2,585	9,897	98,839	7.75%
2002	2005	1,442,274	129,966	286	67,000	2,102	30,686	230,040	15.95%
2003	2006	1,968,366	210,382	18	61,298	2,455	16,172	290,325	14.75%
2004	2007	1,511,592	58,299	0	74,616	3,564	17,748	154,227	10.20%
2005	2008	1,973,604	154,383	0	59,313	3,101	22,356	239,153	12.12%
2006	2009	1,828,100	914	131	43,651	3,955	17,424	66,075	3.61%
2007	2010	1,525,927	2,918	189	70,531	2,847	43,722	120,207	7.88%
2008	2011	1,915,058	28,412	883	50,801	7,145	38,285	125,526	6.55%
2009	2012	2,111,389	914	75	12,873	2,458	454	16,774	0.79%
2010	2013	1,879,768	153,819	277	55,844	7,071	39,946	256,957	13.67%
2011	2014	1,657,016	1,327	103	6,044	1,804	1,139	10,416	0.63%
2012	2015	1,810,315	32,108	40	24,920	2,722	14,571	74,361	4.11%
2013	2016	1,869,354	7,034	0	31,390	2,722	14,571	55,717	2.98%
2014	2017	1,913,395	6,440	0	10,284	4,623	1,620	22,967	1.20%
2015	2018	1,929,471	5,751	0	26,454	9,790	1,620	43,615	2.26%
2016	2019	1,929,471	67,296	0	38,108	1,018	3,190	109,612	5.68%
2017	2020	1,788,449	10,419	0	17,173	5,765	18,475	51,832	2.90%
2018	2021	1,878,493	40,175	0	29,749	4,010	3,046	76,980	4.10%
2019	2022	1,697,213	2,490	66	26,225	3,136	426	32,343	1.91%
2020	2023	1,987,785	8,742	81	24,382	9,349	663	43,217	2.17%

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Appendix E1.—Page 2 of 2.

Wally Noerenberg Hatchery			Hatchery contribution to the CF ^a	Hatchery contribution to subsistence/homepack harvest ^b	Hatchery contribution to sport harvest ^c	Hatchery contribution to broodstock esc ^d	Hatchery contribution to cost recovery ^e	Total hatchery return	Estimated marine survival
Brood year	Return year	Fry release							
2000	2003	485,834	9,624	133	21,444	1,314	0	32,515	6.69%
2001	2004	920,858	9,333	37	19,852	150	637	30,009	3.26%
2002	2005	989,383	53,257	178	34,587	11,450	19	99,492	10.06%
2003	2006	1,057,922	113,997	20	19,973	17,079	0	151,069	14.28%
2004	2007	1,052,897	84,867	36	31,745	2,129	11,975	130,752	12.42%
2005	2008	1,850,000	116,641	90	19,738	2,609	267	139,345	7.53%
2006	2009	1,930,000	20,209	52	16,751	2,064	0	39,076	2.02%
2007	2010	226,000	5,215	9	20,569	1,399	0	27,192	12.03%
2008	2011	3,490,000	95,267	274	26,062	7,374	678	129,655	3.72%
2009	2012	3,480,000	10,276	123	7,625	558	0	18,582	0.53%
2010	2013	1,018,000	69,824	64	21,185	2,293	0	93,366	9.17%
2011	2014	3,210,000	165,600	292	11,314	6,584	10,877	194,667	6.06%
2012	2015	907,000	6,592	292	14,793	3,084	0	24,761	2.73%
2013	2016	370,000	347	292	1,886	245	0	2,770	0.75%
2014	2017	3,090,000	14,406	0	8,536	3,814	0	26,756	0.87%
2015	2018	2,241,000	NA	0	5,267	2,380	0	7,647	0.34%
2016	2019	2,091,000	194,717	0	9,888	2,226	0	206,831	9.89%
2017	2020	1,886,822	0	0	5,531	5,149	0	10,680	0.57%
2018	2021	2,028,263	113	0	10,587	1,285	5,000	16,985	0.84%
2019	2022	3,167,000	38,874	214	3,317	661	0	43,066	1.36%
2020	2023	2,939,900	9,745	182	6,478	556	0	16,961	0.58%

Note: NA = no estimate available.

^a Commercial fishery (CF)

^b Subsistence and commercial homepack.

^c No hatchery contribution sampling occurs in the sport fishery. These estimates apply a fixed proportion of Solomon Gulch Hatchery or Wally Noerenberg Hatchery production to sport harvest by reporting area.

^d Broodstock escapements include all fish remaining after commercial harvests—i.e., fish used for brood, watershed spawners, predation behind the barrier seine, and fish remaining in front of the hatchery.

^e Hatchery cost recovery is the whole fish purse seine and raceway effort and does not include carcass sales from viable broodstock.

Appendix E2.—Sockeye salmon hatchery and wild stock contributions to the Copper River drift gillnet commercial common property fishery by period, 2023.

Period	Dates	Hours	Origin							Total
			Gulkana		Main Bay		Hatchery total	Wild		
			Number	Percent	Number	Percent		Number	Percent	
1 ^a	5/15	12	0	0.0	0	0.0	0	11,168	100.0	11,168
2 ^a	5/18	12	0	0.0	0	0.0	0	16,781	100.0	16,781
3 ^a	5/22	12	0	0.0	0	0.0	0	50,474	100.0	50,474
4 ^a	5/25	12	0	0.0	0	0.0	0	42,509	100.0	42,509
5 ^a	5/29	12	0	0.0	0	0.0	0	140,072	100.0	140,072
6 ^a	6/1	12	0	0.0	0	0.0	0	124,328	100.0	124,328
7 ^a	6/5	12	0	0.0	0	0.0	0	45,328	100.0	45,328
8 ^a	6/12	12	0	0.0	4,998	23.5	4,998	16,244	76.5	21,242
9	6/22–6/23	24	3,684	7.3	526	1.0	4,210	46,307	91.7	50,517
10	6/26–6/27	36	957	2.1	957	2.1	1,913	44,004	95.8	45,917
11	6/29–6/30	36	1,162	3.1	387	1.0	1,550	35,644	95.8	37,194
12	7/3–7/5	48	5,405	12.5	0	0.0	5,405	37,838	87.5	43,243
13	7/6–7/8	60	9,468	17.7	1,114	2.1	10,582	42,885	80.2	53,467
14	7/10–7/12	48	3,971	12.5	397	1.3	4,368	27,402	86.3	31,770
15	7/13–7/15	60	5,047	9.6	631	1.2	5,678	46,684	89.2	52,362
16	7/17–7/19	48	6,049	14.6	432	1.0	6,481	34,997	84.4	41,478
17	7/20–7/22	60	5,592	19.2	0	0.0	5,592	23,565	80.8	29,157
18	7/24–7/26	48	604	5.3	0	0.0	604	10,877	94.7	11,481
19	7/27–7/29	60	0	0.0	0	0.0	0	6,984	100.0	6,984
20	7/31–8/2	48	63	2.8	0	0.0	63	2,209	97.2	2,272
21	8/3–8/5	60	76	4.5	0	0.0	76	1,587	95.5	1,663
22 ^b	8/7–8/8	36	30	4.5	0	0.0	30	632	95.5	662
23 ^{a,c}	8/10–8/11	36					Confidential			
24 ^a	8/14–8/15	24	0	0.0	0	0.0	0	558	100.0	558
25 ^a	8/21–8/22	24	0	0.0	0	0.0	0	1,145	100.0	1,145
26 ^a	8/28–8/29	24	0	0.0	0	0.0	0	105	100.0	105
27 ^a	9/4–9/5	24	0	0.0	0	0.0	0	55	100.0	55
28 ^a	9/11–9/12	24	0	0.0	0	0.0	0	4	100.0	4
29 ^a	9/14–9/15	24	0	0.0	0	0.0	0	1	100.0	1
30 ^d	9/18–9/19	24	0	0.0	0	0.0	0	0	0.0	0
31 ^d	9/21–9/22	24	0	0.0	0	0.0	0	0	0.0	0
32 ^d	9/25–9/26	24	0	0.0	0	0.0	0	0	0.0	0
33 ^d	9/28–9/29	36	0	0.0	0	0.0	0	0	0.0	0
34 ^d	10/2–10/3	36	0	0.0	0	0.0	0	0	0.0	0
35 ^d	10/5–10/6	36	0	0.0	0	0.0	0	0	0.0	0
36 ^d	10/9–10/10	36	0	0.0	0	0.0	0	0	0.0	0
Total		1,164	42,108	4.9	9,442	1.1	51,550	810,452	94.0	862,002

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a No samples collected; assumed wild origin.

^b No samples collected; proportions are from previous period harvest.

^c Less than 3 permits fished; results are confidential.

^d No harvest reported.

Appendix E3.—Gulkana Hatchery sockeye salmon harvests and total contribution, 1982–2023.

Year	Hatchery contributions			Broodstock/ escapement ^d	Total hatchery run
	Commercial ^a	Subsistence/ personal use ^b	Sport ^c		
1982	3,600	322	6	5,740	9,666
1983	6,600	1,167	23	8,396	16,177
1984	5,318	450	14	4,846	10,623
1985	31,955	2,121	114	24,021	58,170
1986	30,404	2,667	113	25,408	58,592
1987	47,347	3,071	184	25,505	76,105
1988	92,552	9,351	257	94,563	196,726
1989	175,643	13,734	531	120,872	310,781
1990	64,917	7,203	209	55,431	127,760
1991	102,009	9,449	220	63,400	175,078
1992	87,120	11,455	257	84,000	182,832
1993	149,844	14,812	370	17,600	182,625
1994	94,656	9,157	158	40,736	144,707
1995	147,844	15,289	342	45,733	209,208
1996	314,916	16,144	849	151,762	483,671
1997	266,724	8,857	189	92,745	368,515
1998	524,985	31,824	1,038	106,954	664,801
1999	945,287	42,281	868	109,663	1,098,099
2000	366,372	34,113	1,006	75,385	476,876
2001	196,326	35,699	356	75,620	308,001
2002	335,451	28,305	586	62,361	426,665
2003	138,056	19,513	284	45,024	202,845
2004	59,540	27,117	184	6,618	93,438
2005	95,897	28,031	225	92,455	216,583
2006	163,691	26,860	182	97,192	287,906
2007	94,232	9,656	97	28,648	132,625
2008	21,669	19,175	229	44,865	85,916
2009	59,948	29,355	376	43,409	133,047
2010	207,915	68,180	816	157,980	434,608
2011	487,916	33,113	326	59,589	580,917
2012	330,402	43,549	450	65,348	439,688
2013	318,212	45,800	541	72,369	436,788
2014	297,943	44,918	222	53,737	396,990
2015	137,414	48,887	85	40,123	226,509
2016	157,035	18,156	283	32,341	207,815
2017	32,292	10,492	738	17,083	60,605
2018	6,174	25,594	574	29,930	62,272
2019	39,882	11,664	532	15,600	67,678
2020	9,810	8,423	66	10,786	29,085
2021	47,588	29,733	653	9,562	87,536
2022	16,433	3,963	24	5,004	25,424
2023	42,018	18,868	248	10,880	72,014
Average (2013–2022)	106,278	24,763	372	28,654	160,070

^a Commercial contributions are from strontium chloride marks (2004–current); coded wire tags (1995–2003); and fry to adult survival, age composition at return, and exploitation rate (1977–1994).

^b Subsistence and personal use contributions are from strontium chloride marks (2004–current); coded wire tags (1995–2003); and fry to adult survival, age composition at return, and exploitation rate (1977–1994).

^c Sport fishery contributions are the sum of sport harvest from Copper River mainstem and Gulkana River multiplied by Gulkana Hatchery contribution percentage to the Glennallen subsistence and Chitina personal use fisheries for that year.

^d Broodstock and escapement contributions are based on survey of release sites and hatchery reporting.

Appendix E4.—Gulkana Hatchery salmon fry releases, 1978–2023.

Release year	Chinook salmon			Sockeye salmon					Total sockeye salmon released
	Monsoon Lake	Gulkana River (E. Fork)	Total Chinook salmon released	Gulkana I & II (Paxson Lake)	Summit Lake	Crosswind Lake	Harding Lake	Ten Mile Lake	
1978	0	0	0	479,864	0	0	0	104,058	583,922
1979	0	0	0	940,666	0	0	0	99,589	1,040,255
1980	0	0	0	1,105,397	1,340,660	0	0	0	2,446,057
1981	0	0	0	3,388,682	1,860,491	0	0	0	5,249,173
1982	0	0	0	5,985,270	2,047,947	0	0	0	8,033,217
1983	0	0	0	5,470,056	4,312,628	0	0	0	9,782,684
1984	0	0	0	6,079,838	4,739,293	0	0	0	10,819,131
1985	0	0	0	10,130,942	9,296,882	1,419,095	0	0	20,846,919
1986	0	0	0	8,586,509	14,999,085	0	0	0	23,585,594
1987	0	0	0	9,905,907	12,491,826	0	0	0	22,397,733
1988	0	1,388	1,388	6,389,963	12,026,642	2,487,396	503,375	0	21,407,376
1989	15,977	0	15,977	10,870,655	12,004,491	3,130,373	515,046	0	26,520,565
1990	0	0	0	14,127,313	6,445,011	4,906,005	505,305	0	25,983,634
1991	26,209	0	26,209	11,288,721	6,109,833	5,469,759	0	0	22,868,313
1992	30,488	34,842	65,330	11,640,000	7,049,000	8,420,000	0	0	27,109,000
1993	0	0	0	5,866,230	2,661,549	5,627,346	0	0	14,155,125
1994	0	0	0	11,008,964	7,637,009	9,144,382	0	0	27,790,355
1995	0	0	0	12,345,894	7,418,311	9,973,600	0	0	29,737,805
1996	0	0	0	12,241,896	8,400,148	9,732,911	0	0	30,374,955
1997	0	0	0	12,286,366	8,987,213	10,516,107	0	0	31,789,686
1998	0	0	0	11,589,845	10,162,655	10,512,299	0	0	32,264,799
1999	0	0	0	11,551,836	9,191,217	9,984,392	0	0	30,727,445
2000	0	0	0	10,705,795	3,300,504	8,331,080	0	0	22,337,379
2001	0	0	0	7,870,334	493,516	5,585,665	0	0	13,949,515
2002	0	0	0	11,922,685	5,805,231	8,174,754	0	0	25,902,670
2003	0	0	0	11,284,330	6,599,519	8,360,966	0	0	26,244,815
2004	0	0	0	12,408,512	6,574,962	8,359,115	0	0	27,342,589
2005	0	0	0	3,308,065	0	3,703,295	0	0	7,011,360
2006	0	0	0	5,523,920	4,681,325	10,017,211	0	0	20,222,456
2007	0	0	0	6,000,000	6,000,000	10,000,000	0	0	22,000,000
2008	0	0	0	6,000,000	6,000,000	9,980,000	0	0	21,980,000
2009	0	0	0	6,000,000	6,000,000	10,000,000	0	0	22,000,000
2010	0	0	0	6,010,000	6,000,000	10,000,000	0	0	22,010,000
2011	0	0	0	6,000,000	5,980,000	10,000,000	0	0	21,980,000
2012	0	0	0	7,340,000	5,950,000	9,570,000	0	0	22,860,000
2013	0	0	0	6,000,000	6,000,000	6,560,000	0	0	18,560,000
2014	0	0	0	6,000,000	6,000,000	10,000,000	0	0	22,000,000
2015	0	0	0	5,997,000	5,990,000	0	0	0	22,000,000
2016	0	0	0	6,004,000	0	10,000,000	0	0	16,004,000
2017	0	0	0	4,660,000	0	9,690,000	0	0	14,350,000
2018	0	0	0	5,962,463	0	4,252,400	0	0	10,214,863
2019	0	0	0	6,057,999	0	8,427,130	0	0	14,485,129
2020	0	0	0	5,962,155	0	8,912,385	0	0	14,874,540
2021	0	0	0	4,920,706	0	6,306,358	0	0	11,227,064
2022	0	0	0	5,951,221	0	3,740,342	0	0	9,691,563
2023	0	0	0	3,764,325	0	0	0	0	3,764,325
Average (2013–2022)				5,751,554	1,799,000	6,788,862	0	0	15,340,716

Appendix E5.–Daily chum and coho salmon sales and sex ratios, sales summary, and broodstock summary at the Wally Noerenberg Hatchery, 2023.

Date	Chum salmon				Coho salmon	
	Sales harvest ^a	Sales harvest cumulative	Broodstock ^b	Broodstock cumulative	Sales harvest	Sales harvest cumulative
06/12	22,301	22,301	0	0	ND	ND
06/13	55,672	77,973	0	0	ND	ND
06/14	55,161	133,134	0	0	ND	ND
06/15	39,409	172,543	0	0	ND	ND
06/16	96,049	268,592	0	0	ND	ND
06/17	58,318	326,910	0	0	ND	ND
06/18	111,197	438,107	0	0	ND	ND
06/19	66,967	505,074	0	0	ND	ND
06/20	115,257	620,331	0	0	ND	ND
06/21	53,007	673,338	0	0	ND	ND
06/22	75,623	748,961	0	0	ND	ND
06/23	68,417	817,378	0	0	ND	ND
06/24	77,466	894,844	0	0	ND	ND
06/26	76,474	971,318	0	0	ND	ND
06/27	72,919	1,044,237	0	0	ND	ND
06/28	76,405	1,120,642	0	0	ND	ND
06/29	101,565	1,222,207	0	0	ND	ND
06/30	1,763	1,223,970	0	0	ND	ND
07/07	468	1,224,438	8,218	8,218	ND	ND
07/08	840	1,225,278	11,586	19,804	ND	ND
07/09	943	1,226,221	11,500	31,304	ND	ND
07/10	1,357	1,227,578	12,845	44,149	ND	ND
07/11	1,244	1,228,822	13,833	57,982	ND	ND
07/12	1,095	1,229,917	13,865	71,847	ND	ND
07/13	1,266	1,231,183	12,972	84,819	ND	ND
07/14	1,241	1,232,424	11,615	96,434	ND	ND
07/15	672	1,233,096	11,825	108,259	ND	ND
07/16	882	1,233,978	11,558	119,817	ND	ND
07/17	909	1,234,887	13,143	132,960	ND	ND
07/18	775	1,235,662	12,213	145,173	ND	ND
07/19	852	1,236,514	11,800	156,973	ND	ND
07/20	13,779	1,250,293	63	157,036	ND	ND
07/21	14,354	1,264,647	40	157,076	ND	ND
07/22	10,196	1,274,843	59	157,135	ND	ND
07/23	6,924	1,281,767	32	157,167	ND	ND
07/24	2,347	1,284,114	183	157,350	ND	ND

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Hatchery escapement summary ^c	Chum salmon	Coho salmon
Purse seine whole fish harvest	1,223,970	0
Raceway harvest ^d	26,567	0
Viable broodstock (spawned, eggs in incubators)	155,319	528
Unviable broodstock (green/over-ripe/bad)	10,745	3
Unspawned fish (e.g., excess males/females)	22,832	0
Holding mortalities (raceway, pen mortalities)	2,031	97
Estimated unharvested return ^e	5,000	0
Estimated total run to hatchery site	1,446,464	628

Sales summary	Chum salmon	Coho salmon
Purse seine whole fish sales	1,223,970	0
Raceway sales ^f	60,144	0
Carcass sales ^g	155,319	0
Total sales	1,439,433	0

Note: ND = No data available

^a Daily whole fish from purse seine and raceway harvests as reported inseason and on fish tickets.

^b Broodstock daily totals from Prince William Sound Aquaculture Corporation (PWSAC) egg-take log. Broodstock goals for chum and coho salmon are 228,000 and 2,700 fish, respectively (ADF&G unpublished).

^c Determined by fish tickets, PWSAC egg-take log, and annual report (ADF&G unpublished).

^d Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

^e Fish remaining in salt water and fresh water after all hatchery harvest is complete.

^f Sum of raceway harvest, unviable broodstock, and unspawned fish.

^g Represents the sale of “viable broodstock” carcasses.

Appendix E6.—Sockeye salmon hatchery and wild stock contributions to the Coghill District commercial common property fishery by period, 2023.

Period	Dates	Hours	Origin					Total
			Main Bay		Hatchery total	Wild		
			Number	Percent		Number	Percent	
1 ^a	6/1–6/4	84	0	0.0	0	8	100.0	8
2 ^a	6/5–6/7	60	0	0.0	0	107	100.0	107
3 ^a	6/8–6/11	84	0	0.0	0	2,319	100.0	2,319
4 ^b	6/12–6/14	60	74	5.6	74	1,263	94.4	1,337
5	6/15–6/18	84	216	5.6	216	3,676	94.4	3,892
6	6/19–6/21	60	2,273	18.2	2,273	10,230	81.8	12,503
7	6/22–6/25	84	2,039	15.8	2,039	10,877	84.2	12,916
8	6/26–6/28	60	4,492	16.3	4,492	23,060	83.7	27,552
9	6/29–7/2	84	14,132	24.2	14,132	44,239	75.8	58,371
10	7/3–7/5	60	7,057	18.9	7,057	30,190	81.1	37,247
11	7/6–7/9	84	4,039	15.4	4,039	22,212	84.6	26,251
12	7/10–7/12	60	2,408	10.3	2,408	20,865	89.7	23,273
13 ^c	7/13–7/16	84	1,939	10.3	1,939	16,809	89.7	18,748
14 ^c	7/17–7/19	60	657	10.3	657	5,691	89.7	6,348
15 ^d	7/20–7/21	36	491	15.9	491	2,602	84.1	3,093
16 ^b	7/22	14	113	21.4	113	413	78.6	525
17 ^b	7/23	14	107	21.4	107	391	78.6	497
18	7/24	14	359	21.4	359	1,315	78.6	1,674
19	7/25	14	0	0.0	0	408	100.0	408
20 ^a	7/27	14	0	0.0	0	534	100.0	534
21 ^a	7/30	16	0	0.0	0	209	100.0	209
22 ^a	8/2	16	0	0.0	0	352	100.0	352
23 ^a	8/5	16	0	0.0	0	257	100.0	257
24 ^a	8/9	12	0	0.0	0	548	100.0	548
25 ^a	8/13	12	0	0.0	0	335	100.0	335
26 ^a	8/15	12	0	0.0	0	274	100.0	274
27 ^a	8/17	12	0	0.0	0	55	100.0	55
28 ^c	8/26	12	0	0.0	0	0	0.0	0
29 ^a	8/27	12	0	0.0	0	3	100.0	3
30 ^a	8/28	12	0	0.0	0	1	100.0	1
31 ^a	8/29	12	0	0.0	0	2	100.0	2
32 ^a	8/30	12	0	0.0	0	1	100.0	1
33 ^a	8/31–9/1	36	0	0.0	0	1	100.0	1
34 ^a	9/4–9/5	36	0	0.0	0	1	100.0	1
35 ^a	9/7–9/8	36	0	0.0	0	4	100.0	4
36 ^a	9/11–9/12	60	0	0.0	0	0	0.0	0
Total			40,396	16.9	40,396	199,250	83.1	239,646

Note: Total harvest data from fish ticket reporting as of November 27, 2023. Samples were not processed for strontium chloride mark identification, so the Gulkana Hatchery contribution is unknown.

- ^a No samples collected; wild origin assumed.
- ^b No samples collected; proportions are from the following period sampled.
- ^c No samples collected; proportions are from the previous sampled period.
- ^d No samples collected; proportions are an average of previous and following periods sampled.

Appendix E7.—Pink salmon hatchery and wild stock contributions to the Coghill District commercial drift gillnet and purse seine fisheries by period, 2023.

Period	Dates	Hours	Origin											Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^a	6/1–6/4	84	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
2 ^b	6/5–6/7	60	0	0.0	0	0.0	0	0.0	0	0.0	0	4	0.0	4
3 ^b	6/8–6/11	84	0	0.0	0	0.0	0	0.0	0	0.0	0	2	0.0	2
4 ^b	6/12–6/14	60	0	0.0	0	0.0	0	0.0	0	0.0	0	4	0.0	4
5 ^b	6/15–6/18	84	0	0.0	0	0.0	0	0.0	0	0.0	0	38	0.0	38
6 ^b	6/19–6/21	60	0	0.0	0	0.0	0	0.0	0	0.0	0	38	0.0	38
7 ^b	6/22–6/25	84	0	0.0	0	0.0	0	0.0	0	0.0	0	73	100.0	73
8 ^b	6/26–6/28	60	0	0.0	0	0.0	0	0.0	0	0.0	0	158	100.0	158
9 ^b	6/29–7/2	84	0	0.0	0	0.0	0	0.0	0	0.0	0	871	100.0	871
10 ^b	7/3–7/5	60	0	0.0	0	0.0	0	0.0	0	0.0	0	3,379	100.0	3,379
11 ^b	7/6–7/9	84	0	0.0	0	0.0	0	0.0	0	0.0	0	12,169	100.0	12,169
12 ^b	7/10–7/12	60	0	0.0	0	0.0	0	0.0	0	0.0	0	18,210	100.0	18,210
13 ^c	7/13–7/16	84	388	1.0	388	1.0	1,163	3.1	0	0.0	1,939	35,287	94.8	37,226
14	7/17–7/19	60	468	1.0	468	1.0	1,403	3.1	0	0.0	2,339	42,570	94.8	44,909
15	7/20–7/21	36	797	1.5	3,186	6.1	17,523	33.3	0	0.0	21,506	31,064	59.1	52,569
16 ^d	7/22	14	927	1.5	3,710	6.1	20,403	33.3	0	0.0	25,040	36,170	59.1	61,210
17	7/23	14	0	0.0	0	0.0	0	0.0	1,750	4.5	1,750	36,756	95.5	38,506
18	7/24	14	796	1.1	796	1.1	1,591	2.2	0	0.0	3,182	67,619	95.5	70,801
19 ^d	7/25	14	278	1.1	278	1.1	556	2.2	0	0.0	1,113	23,772	96.0	24,762
20	7/27	14	2,971	2.4	2,971	2.4	23,771	19.5	0	0.0	29,714	92,114	75.6	121,828
21 ^c	7/30	16	527	1.2	3,547	8.2	10,256	23.7	232	0.5	14,563	28,650	66.3	43,213
22 ^c	8/2	16	135	1.2	906	8.2	2,621	23.7	59	0.5	3,721	7,321	66.3	11,042
23	8/5	16	0	0.0	2,617	14.0	5,234	28.0	201	1.1	8,053	10,670	57.0	18,723
24 ^c	8/9	12	0	0.0	18,999	26.3	24,432	33.8	389	0.5	43,820	28,528	39.4	72,348
25	8/13	12	0	0.0	108,146	38.5	111,068	39.6	0	0.0	219,214	61,380	21.9	280,594
26	8/15	12	24,532	5.2	137,377	29.2	274,754	58.3	4,906	1.0	441,569	29,438	6.3	471,007
27 ^d	8/17	12	553	5.2	3,094	29.2	6,188	58.3	111	1.0	9,945	663	6.3	10,608
28 ^d	8/26	12	39	5.2	216	29.2	433	58.3	8	1.0	696	46	6.3	742
29 ^c	8/27	12	30	5.2	169	29.2	339	58.3	6	1.0	545	36	0.0	581
30 ^d	8/28	12	29	5.2	163	29.2	327	58.3	6	1.0	525	35	0.0	560

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Period	Dates	Hours	Origin										Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	
31 ^d	8/29	12	15	5.2	81	29.2	163	58.3	3	1.0	262	17	6.3	279
32 ^d	8/30	12	10	5.2	59	29.2	117	58.3	2	1.0	188	13	0.0	201
33 ^d	9/4–9/5	36	11	5.2	60	29.2	121	58.3	2	1.0	194	13	6.3	207
34 ^d	9/7–9/8	36	35	5.2	197	29.2	393	58.3	7	1.0	632	42	6.3	674
35 ^d	9/3–9/4	36	3	5.2	15	29.2	30	58.3	1	1.0	49	3	6.3	52
Totals			32,542	2.3	287,444	20.6	502,889	36.0	7,683	0.5	830,558	568,143	40.7	1,397,588

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

- ^a No harvest reported.
- ^b No samples collected; wild origin assumed.
- ^c No samples collected; proportions from following period sampled.
- ^d No samples collected; proportions from previous period sampled.
- ^e No samples collected; proportions are an average of previous and following periods sampled.

Appendix E8.—Chum salmon hatchery and wild stock contributions to the Coghill District commercial drift gillnet and purse seine harvest, 2023.

Period	Dates	Hours	Origin									Total
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^a	6/1–6/4	84	769	94.8	14	1.7	0	0.0	783	28	3.4	811
2 ^a	6/5–6/7	60	7,809	94.8	142	1.7	0	0.0	7,951	284	3.4	8,235
3	6/8–6/11	84	90,689	94.8	1,649	1.7	0	0.0	92,338	3,298	3.4	95,636
4	6/12–6/14	60	37,550	98.4	0	0.0	626	1.6	38,176	0	0.0	38,176
5	6/15–6/18	84	31,556	94.8	0	0.0	347	1.0	31,903	1,387	4.2	33,290
6	6/19–6/21	60	23,460	97.9	0	0.0	252	1.1	23,713	252	1.1	23,965
7	6/22–6/25	84	39,002	94.8	429	1.0	429	1.0	39,859	1,286	3.1	41,145
8	6/26–6/28	60	56,750	95.8	2,467	4.2	0	0.0	59,217	0	0.0	59,217
9	6/29–7/2	84	364,467	93.7	4,095	1.1	4,095	1.1	372,657	16,381	4.2	389,038
10	7/3–7/5	60	268,370	98.9	0	0.0	0	0.0	268,370	2,949	1.1	271,319
11	7/6–7/9	84	128,726	96.7	0	0.0	0	0.0	128,726	4,439	3.3	133,165
12	7/10–7/12	60	197,109	98.9	0	0.0	0	0.0	197,109	2,097	1.1	199,206
13	7/13–7/16	84	118,891	92.1	4,350	3.4	1,450	1.1	124,690	4,350	3.4	129,040
14	7/17–7/19	60	98,074	100.0	0	0.0	0	0.0	98,074	0	0.0	98,074
15	7/20–7/21	36	26,683	97.6	0	0.0	0	0.0	26,683	667	2.4	27,350
16	7/22	14	6,878	52.6	0	0.0	0	0.0	6,878	6,190	47.4	13,068
17 ^b	7/23	14	585	52.6	0	0.0	0	0.0	585	527	47.4	1,112
18 ^b	7/24	14	1,918	52.6	0	0.0	0	0.0	1,918	1,726	47.4	3,644
19 ^c	7/25	14	0	0.0	0	0.0	0	0.0	0	298	100.0	298
20 ^c	7/27	14	0	0.0	0	0.0	0	0.0	0	4,705	100.0	4,705
21 ^c	7/30	16	0	0.0	0	0.0	0	0.0	0	1302	100.0	1,302
22 ^c	8/2	16	0	0.0	0	0.0	0	0.0	0	1,969	100.0	1,969
23 ^c	8/5	16	0	0.0	0	0.0	0	0.0	0	1489	100.0	1,489
24 ^c	8/9	12	0	0.0	0	0.0	0	0.0	0	863	100.0	863
25 ^c	8/13	12	0	0.0	0	0.0	0	0.0	0	375	100.0	375
26 ^c	8/15	12	0	0.0	0	0.0	0	0.0	0	349	100.0	349
27 ^c	8/17	12	0	0.0	0	0.0	0	0.0	0	65	100.0	65
28 ^c	8/26	12	0	0.0	0	0.0	0	0.0	0	5	100.0	5
29 ^c	8/27	12	0	0.0	0	0.0	0	0.0	0	14	100.0	14
30 ^c	8/28	12	0	0.0	0	0.0	0	0.0	0	12	100.0	12

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Period	Dates	Hours	Origin									Total	
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
31 ^c	8/29	12	0	0.0	0	0.0	0	0.0	0	0	7	100.0	7
32 ^c	8/30	12	0	0.0	0	0.0	0	0.0	0	0	21	100.0	21
33 ^c	8/31–9/1	36	0	0.0	0	0.0	0	0.0	0	0	32	100.0	32
34 ^c	9/4–9/5	36	0	0.0	0	0.0	0	0.0	0	0	6	100.0	6
35 ^c	9/7–9/8	36	0	0.0	0	0.0	0	0.0	0	0	4	100.0	4
Totals			1,499,287	95.1	13,146	0.8	7,198	0.5	1,519,631		57,376	3.6	1,577,007

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

- ^a No samples collected; proportions from following period sampled.
- ^b No samples collected; proportions from previous period sampled.
- ^c No samples collected; wild origin assumed.

Appendix E9.—Sockeye salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2023.

Period	Dates	Hours	Origin					Total
			Main Bay		Hatchery total	Wild		
			Number	Percent		Number	Percent	
1 ^a	6/1–6/2	36	243	83.3	243	49	16.7	292
2 ^a	6/5–6/6	36	2,767	83.3	2,767	553	16.7	3,320
3 ^a	6/8–6/9	36	6,083	83.3	6,083	1,217	16.7	7,299
4	6/12–6/13	36	17,553	83.3	17,553	3,511	16.7	21,064
5 ^b	6/15–6/16	36	43,476	89.6	43,476	5,055	10.4	48,531
6	6/19–6/20	36	92,393	95.8	92,393	4,017	4.2	96,410
7	6/26–6/27	36	67,702	87.5	67,702	9,672	12.5	77,374
8	6/29–6/30	36	92,571	98.7	92,571	1,187	1.3	93,758
9	7/3–7/4	36	64,607	90.5	64,607	6,801	9.5	71,408
10	7/6–7/7	36	24,653	66.0	24,653	12,679	34.0	37,332
11 ^c	7/10–7/11	24	13,381	66.0	13,381	6,882	34.0	20,263
12 ^c	7/13–7/14	24	16,608	66.0	16,608	8,542	34.0	25,150
13 ^c	7/17–7/18	24	7,405	66.0	7,405	3,808	34.0	11,213
14 ^d	7/24–7/25	24	0	0.0	0	7,784	100.0	7,784
15 ^d	7/27–7/28	24	0	0.0	0	1,496	100.0	1,496
16 ^d	7/31–8/1	24	0	0.0	0	1,861	100.0	1,861
17 ^e	8/3–8/4	24	0	0.0	0	0	0.0	0
18 ^d	8/7–8/8	24	0	0.0	0	1,683	100.0	1,683
19 ^d	8/14–8/15	24	0	0.0	0	831	100.0	831
20 ^d	8/21–8/22	24	0	0.0	0	254	100.0	254
Total			449,443	85.2	449,443	77,880	14.8	527,323

Note: Total harvest data from fish ticket reporting as of November 27, 2023. Samples were not processed for strontium chloride mark identification, so the Gulkana Hatchery contribution is unknown. All fish without a thermal mark are assumed to be of wild origin.

- ^a No samples collected; proportions are from the following sampled period.
- ^b No samples collected; proportions are the average of the prior and following sampling period.
- ^c No samples collected; proportions are from the previous sampled period.
- ^d No samples collected; wild origin assumed.
- ^e No harvest reported.

Appendix E10.–Pink salmon hatchery and wild stock contributions to the Eshamy District commercial fishery by period, 2023.

Period	Date	Hours	Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig		Hatchery total	Origin Wild		Total
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^a	6/1–6/2	36	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
2 ^b	6/5–6/6	36	0	0.0	0	0.0	0	0.0	0	0.0	0	1	100.0	1
3 ^b	6/8–6/9	36	0	0.0	0	0.0	0	0.0	0	0.0	0	24	100.0	24
4 ^b	6/12–6/13	36	0	0.0	0	0.0	0	0.0	0	0.0	0	7	100.0	7
5 ^b	6/15–6/16	36	0	0.0	0	0.0	0	0.0	0	0.0	0	79	100.0	79
6 ^b	6/19–6/20	36	0	0.0	0	0.0	0	0.0	0	0.0	0	127	100.0	127
7 ^a	6/26–6/27	36	0	0.0	0	0.0	0	0.0	0	0.0	0	171	100.0	171
8 ^b	6/29–6/30	36	0	0.0	0	0.0	0	0.0	0	0.0	0	444	100.0	444
9	7/3–7/4	36	0	0.0	0	0.0	0	0.0	0	0.0	0	3,002	100.0	3,002
10	7/6–7/7	36	0	0.0	0	0.0	0	0.0	0	0.0	0	9,203	100.0	9,203
11 ^b	7/10–7/11	36	0	0.0	0	0.0	0	0.0	0	0.0	0	8,328	100.0	8,328
12 ^b	7/13–7/14	36	0	0.0	0	0.0	0	0.0	0	0.0	0	15,222	100.0	15,222
13 ^b	7/17–7/18	36	0	0.0	0	0.0	0	0.0	0	0.0	0	11,659	100.0	11,659
14 ^b	7/24–7/25	24	0	0.0	0	0.0	0	0.0	0	0.0	0	11,181	100.0	11,181
15 ^b	7/27–7/28	24	0	0.0	0	0.0	0	0.0	0	0.0	0	266	100.0	266
16 ^b	7/31–8/1	24	0	0.0	0	0.0	0	0.0	0	0.0	0	18,850	100.0	18,850
17 ^b	8/3–8/4	24	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
18 ^b	8/7–8/8	24	0	0.0	0	0.0	0	0.0	0	0.0	0	34,231	100.0	34,231
19 ^b	8/14–8/15	24	0	0.0	0	0.0	0	0.0	0	0.0	0	15,008	100.0	15,008
20 ^b	8/21–8/22	24	0	0.0	0	0.0	0	0.0	0	0.0	0	12,571	100.0	12,571
Total			0	0.0	0	0.0	0	0.0	0	0.0	0	140,374	100.0	140,374

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a No harvest reported.

^b No samples collected; wild origin assumed.

Appendix E11.–Chum salmon hatchery and wild stock contributions to the Eshamy District commercial fishery by period, 2023.

Period	Date	Hours	Origin									Total
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^a	6/1–6/2	36	66	71.4	3	3.6	13	14.3	83	10	10.7	93
2 ^a	6/5–6/6	36	759	71.4	38	3.6	152	14.3	948	114	10.7	1,062
3 ^a	6/8–6/9	36	5,759	71.4	288	3.6	1,152	14.3	7,199	864	10.7	8,063
4	6/12–6/13	36	8,308	71.4	415	3.6	1,662	14.3	10,385	1,246	10.7	11,631
5	6/15–6/16	36	13,244	74.2	2303	12.9	1,152	6.5	16,699	1,152	6.5	17,851
6	6/19–6/20	36	6,062	51.7	1212	10.3	3,233	27.6	10,508	1,212	10.3	11,720
7	6/26–6/27	36	6,760	59.0	1502	13.1	2,253	19.7	10,515	939	8.2	11,454
8	6/29–6/30	36	7,785	68.2	0	0.0	3,114	27.3	10,899	519	4.5	11,418
9	7/3–7/4	36	8,263	73.7	1180	10.5	1,771	15.8	11,214	0	0.0	11,214
10	7/6–7/7	36	7,986	60.4	2203	16.7	1,102	8.3	11,290	1,928	14.6	13,218
11 ^b	7/10–7/11	36	2,629	60.4	725	16.7	363	8.3	3,716	635	14.6	4,351
12 ^b	7/13–7/14	36	2,754	60.4	760	16.7	380	8.3	3,894	665	14.6	4,559
13 ^b	7/17–7/18	36	2,849	60.4	786	16.7	393	8.3	4,027	688	14.6	4,715
14 ^c	7/24–7/25	24	0	0.0	0	0.0	0	0.0	0	1,644	100.0	1,644
15 ^c	7/27–7/28	24	0	0.0	0	0.0	0	0.0	0	18	100.0	18
16 ^c	7/31–8/1	24	0	0.0	0	0.0	0	0.0	0	948	100.0	948
17 ^d	8/3–8/4	24	0	0.0	0	0.0	0	0.0	0	0	0.0	0
18 ^c	8/7–8/8	24	0	0.0	0	0.0	0	0.0	0	1,095	100.0	1,095
19 ^c	8/14–8/15	24	0	0.0	0	0.0	0	0.0	0	215	100.0	215
20 ^c	8/21–8/22	24	0	0.0	0	0.0	0	0.0	0	76	100.0	76
Total			73,224	63.5	11,417	9.9	16,738	14.5	101,379	13,966	12.1	115,345

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

- ^a No samples collected; proportions from following period sampled.
- ^b No samples collected; proportions are from the previous sampled period.
- ^c No samples collected; wild origin assumed.
- ^d No harvest reported.

Appendix E12.—Daily sockeye salmon sales and sex ratios, sales summary, and broodstock summary at the Main Bay Hatchery, 2023.

Date	Sales harvest ^a	Sales harvest cumulative	Broodstock ^b	Broodstock cumulative
6/16	6,306	6,306	0	0
6/19	7,930	14,236	0	0
6/21	22,196	36,432	0	0
6/22	16,924	53,356	0	0
6/23	16,747	70,103	0	0
6/24	43,341	113,444	0	0
6/26	72,494	185,938	0	0
6/27	14,813	200,751	0	0
6/28	26,205	226,956	0	0
6/30	0	226,956	13	13
7/1	0	226,956	47	60
7/2	0	226,956	35	95
7/3	0	226,956	25	120
7/4	0	226,956	31	151
7/5	0	226,956	65	216
7/6	0	226,956	57	273
7/7	0	226,956	25	298
7/8	0	226,956	9	307
7/9	0	226,956	35	342
7/10	0	226,956	42	384
7/11	0	226,956	35	419
7/12	0	226,956	25	444
7/31	0	226,956	8	452
8/1	0	226,956	224	676
8/2	0	226,956	11	687
8/3	0	226,956	409	1,096
8/4	0	226,956	11	1,107
8/5	0	226,956	411	1,518
8/6	0	226,956	12	1,530
8/7	0	226,956	813	2,343
8/8	0	226,956	14	2,357
8/9	0	226,956	780	3,137
8/10	0	226,956	19	3,156
8/11	0	226,956	1,023	4,179
8/12	0	226,956	10	4,189
8/13	0	226,956	803	4,992
8/14	0	226,956	20	5,012
8/15	0	226,956	600	5,612
8/16	0	226,956	55	5,667
8/17	0	226,956	994	6,661
8/18	0	226,956	73	6,734
8/19	0	226,956	627	7,361
8/20	0	226,956	3	7,364
8/21	0	226,956	410	7,774
8/22	0	226,956	1,610	9,384

-continued-

Sockeye salmon	
Hatchery escapement summary ^c	Broodstock totals
Purse seine whole fish harvest	226,956
Raceway harvest ^d	0
Viable broodstock (spawned, eggs in incubators)	6,471
Unviable broodstock (green/over-ripe/bad)	103
Unspawned fish (e.g., excess males/females)	346
Holding mortalities (raceway, pen mortalities)	2,464
Estimated unharvested return ^e	10,444
Estimated total run to hatchery site	246,784
Sales summary	
Purse seine whole fish sales	226,956
Raceway sales ^f	0
Carcass sales ^g	0
Total sales	124,581

^a Whole fish from purse seine and raceway sales.

^b Broodstock daily harvest numbers include viable broodstock, unviable broodstock, unspawned fish, and holding mortalities.

^c Determined by fish tickets, PWSAC egg-take log, and annual report (ADF&G *unpublished*).

^d Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

^e Fish remaining in salt water and fresh water after all hatchery harvest is complete.

^f Sum of raceway harvest, unviable broodstock, and unspawned fish.

^g Represents the sale of “viable broodstock” carcasses.

Appendix E13.–Main Bay sockeye salmon harvests and total contribution, 1990–2023.

Year	Hatchery contributions ^a					Total hatchery contribution
	Commercial	Subsistence/ homepack	Sport	Broodstock/ escapement	Cost recovery	
1990	9,000	8	0	0	0	9,008
1991	480,200	260	0	4,700	0	485,160
1992	368,427	395	0	6,185	158,893	533,900
1993	208,709	656	0	8,020	97,594	314,979
1994	214,737	181	0	72,335	85,511	372,764
1995	134,778	114	0	11,148	62,782	208,822
1996	406,100	120	935	7,979	83,430	498,564
1997	845,871	147	1,031	16,498	236,031	1,099,578
1998	128,702	133	1,746	10,596	111,026	252,203
1999	143,511	187	2,207	7,104	0	153,008
2000	339,305	75	1,835	5,426	0	346,641
2001	770,884	170	2,861	10,508	50,458	834,881
2002	846,534	17	3,566	7,352	93,794	951,263
2003	1,047,133	229	4,731	6,878	366,768	1,425,739
2004	355,821	506	4,160	17,578	279,139	657,205
2005	233,089	531	2,884	44,366	188,904	469,774
2006	668,780	203	2,568	15,854	350,742	1,038,147
2007	819,244	290	6,290	20,285	321,330	1,167,439
2008	835,241	344	3,482	15,659	0	854,727
2009	756,130	244	5,473	10,815	131,553	903,971
2010	1,347,644	1,013	2,980	18,196	0	1,366,340
2011	1,274,096	983	3,291	12,810	0	1,291,180
2012	1,271,314	1,542	3,033	19,173	40	1,295,103
2013	639,157	1,333	5,420	189,059	0	834,969
2014	1,189,499	3,485	9,361	84,324	0	1,281,347
2015	1,331,675	2,332	5,574	31,255	180,516	1,551,352
2016	778,515	1,777	3,947	9,846	0	794,085
2017	552,059	3,404	5,663	48,535	0	609,661
2018	1,034,159	48	3,158	11,640	0	1,047,347
2019	862,311	2,706	6,162	9,269	8,987	880,567
2020	494,934	3,011	4,901	9,735	232,337	744,918
2021	446,944	4,298	6,721	15,498	255,837	729,298
2022	473,706	2,664	5,397	10,794	118,420	610,981
2023	539,559	3,629	5,673	19,828	226,956	795,645
Average (2013–2022)	780,296	2,779	5,905	41,996	79,610	908,453

^a Commercial harvest estimates are from otolith marks. Sport harvest is the previous 5-year averages from Prince William Sound sport fishing surveys and commercial harvest contribution proportions. Subsistence/homepack estimates are derived from commercial harvest proportions. Broodstock/escapement and hatchery cost recovery are assumed to be 100% Main Bay Hatchery origin.

Appendix E14.–Main Bay Hatchery salmon smolt releases, 1983–2023.

Release year	Sockeye salmon					Pink salmon	Chum salmon
	Primary return years	Coghill Lake stock	Eshamy Lake stock	Eyak Lake stock	Total released ^a	Total released	Total released
1983	0	0	0	0	0	25,751,531	8,644,179
1984	0	0	0	0	0	41,945,403	7,490,291
1985	0	0	0	0	0	29,286,498	11,033,065
1986	1987, 1988	0	0	0	0	32,728,663	5,258,175
1987	1988, 1989	0	0	0	0	2,660,000	76,646,750
1988	1989, 1990	330,025	0	0	330,025	0	0
1989	1991, 1990	3,925,357	0	0	3,925,357	10,200,000	0
1990	1992, 1993	2,616,498	0	0	2,616,498	0	0
1991	1993, 1994	1,960,774	1,843,176		3,803,950	0	0
1992	1994, 1995	1,546,929	2,475,390	47,609	4,069,928	0	0
1993	1995, 1996	3,288,689	966,750	63,822	4,319,261	0	0
1994	1996, 1997	3,289,824	691,633		3,981,457	0	0
1995	1997, 1998	4,049,763	1,546,011	90,348	5,686,122	0	0
1996	1998, 1999	4,194,174	114,475	82,514	4,391,163	0	0
1997	1999, 2000	239,023	845,190	131,503	1,215,716	0	0
1998	2000, 2001	0	2,485,000	181,000	2,666,000	0	0
1999	2001, 2002	0	4,165,786	2,913,460	7,079,246	0	0
2000	2002, 2003	8,401,117	0	0	8,401,117	0	0
2001	2003, 2004	7,612,350	0	0	7,612,350	0	0
2002	2004, 2005	7,858,190	0	0	7,858,190	0	0
2003	2005, 2006	6,576,535	0	0	6,576,535	0	0
2004	2006, 2007	9,057,829	0	0	9,057,829	0	0
2005	2007, 2008	10,868,642	0	0	10,868,642	0	0
2006	2008, 2009	9,516,461	0	0	9,516,461	0	0
2007	2009, 2010	9,393,000	0	0	9,393,000	0	0
2008	2010, 2011	9,384,000	0	0	9,384,000	0	0
2009	2011, 2012	9,419,000	0	0	9,419,000	0	0
2010	2012, 2013	8,160,000	0	0	8,160,000	0	0
2011	2013, 2014	8,680,000	0	0	8,680,000	0	0
2012	2014, 2015	11,040,000	0	0	11,040,000	0	0
2013	2015, 2016	11,500,000	0	0	11,500,000	0	0
2014	2016, 2017	11,460,000	0	0	11,460,000	0	0
2015	2017, 2018	10,730,000	0	0	10,730,000	0	0
2016	2018, 2019	10,040,000	0	0	10,040,000	0	0
2017	2019, 2020	10,504,000	0	0	10,504,000	0	0
2018	2020, 2021	10,240,000	0	0	10,240,000	0	0
2019	2021, 2022	10,240,000	0	0	10,240,000	0	0
2020	2022,2023	11,080,000	0	0	11,080,000	0	0
2021	2023,2024	10,725,328	0	0	10,725,328	0	0
2022	2024, 2025	10,601,034	0	0	10,601,034	0	0
2023	2025, 2026	9,549,706			9,549,706	0	0
Average (2013–2022)		10,712,036			10,712,036	0	0

^a Totals do not include releases at other locations, such as Coghill, Davis, Eshamy, Eyak, Marsha, Pass, Solf, or Esther Pass.

Appendix E15.–Pink salmon hatchery and wild stock contributions to the Eastern District commercial fishery by period, 2023.

Period	Date	Hours	Origin										Hatchery total	Wild		Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig		Number	Percent				
			Number	Percent	Number	Percent	Number	Percent	Number	Percent						
1	7/5	12	27,113	23.2	0	0.0	0	0.0	0	0.0	0	0.0	27,113	89,966	76.8	117,079
2	7/8	12	364,953	68.1	0	0.0	0	0.0	0	0.0	0	0.0	364,953	171,072	31.9	536,025
3	7/11	12	2,953,119	96.9	0	0.0	0	0.0	0	0.0	0	0.0	2,953,119	95,262	3.1	3,048,381
4	7/14	12	2,996,185	88.4	0	0.0	0	0.0	0	0.0	0	0.0	2,996,185	392,358	11.6	3,388,543
5	7/16	14	2,090,120	95.7	0	0.0	0	0.0	0	0.0	0	0.0	2,090,120	92,894	4.3	2,183,014
6	7/18	14	1,495,667	93.7	0	0.0	0	0.0	0	0.0	0	0.0	1,495,667	100,832	6.3	1,596,499
7	7/20	14	1,527,383	82.3	19,334	1.0	0	0.0	0	0.0	0	0.0	1,546,717	309,343	16.7	1,856,060
8	7/22	14	1,732,504	89.4	20,625	1.1	0	0.0	0	0.0	0	0.0	1,753,130	185,625	9.6	1,938,755
9	7/24	14	1,129,677	79.2	29,728	2.1	14,864	1.0	0	0.0	0	0.0	1,174,269	252,691	17.7	1,426,960
10	7/27	14	847,316	82.3	42,902	4.2	0	0.0	0	0.0	0	0.0	890,218	139,432	13.5	1,029,650
11	7/30	16	385,832	50.5	31,496	4.1	0	0.0	7,874	1.0	0	0.0	425,203	338,587	44.3	763,790
12	8/2	16	421,386	50.0	8,779	1.0	0	0.0	0	0.0	0	0.0	430,164	412,607	49.0	842,771
13	8/5	16	259,534	39.6	13,660	2.1	13,660	2.1	6,830	1.0	0	0.0	293,684	361,982	55.2	655,666
14	8/9	12	95,318	14.6	47,659	7.3	6,808	1.0	0	0.0	0	0.0	149,786	503,824	77.1	653,610
15	8/13	12	14,575	5.2	5,830	2.1	5,830	2.1	5,830	2.1	0	0.0	32,066	247,781	88.5	279,847
16	8/15	12	13,983	13.9	50,340	50.0	0	0.0	0	0.0	0	0.0	64,323	36,357	36.1	100,680
17	8/17	12	2,122	2.3	1,061	1.1	0	0.0	0	0.0	0	0.0	3,183	89,124	96.6	92,307
18	8/21	12	1,555	2.1	6,997	9.4	1,555	2.1	0	0.0	0	0.0	10,107	64,527	86.5	74,634
19 ^a	8/22	12	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
20 ^b	8/23	12	1,112	2.1	5,004	9.4	1,112	2.1	0	0.0	0	0.0	7,229	46,151	86.5	53,380
Total			16,359,456	79.3	283,416	1.4	43,829	0.2	20,534	0.1	16,707,235	3,930,416	19.0	20,637,651		

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a No harvest reported.

^b No samples collected; proportions are from the previous period sampled.

Appendix E16.—Pink salmon hatchery and wild stock contributions to the Northern District commercial fishery by period, 2023.

Period	Date	Hours	Origin								Hatchery total	Wild		Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig			Number	Percent	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent				
1 ^a	7/14	12	Confidential											
2	7/16	14	318,299	82.8	8,268	2.2	0	0.0	0	0.0	326,566	57,873	15.1%	384,439
3	7/20	14	98,656	53.1	11,607	6.3	0	0.0	0	0.0	110,262	75,443	40.6%	185,705
4	7/22	14	115,998	88.5	1,365	1.0	0	0.0	1,365	1.0	118,728	12,282	9.4%	131,010
5	7/24	14	77,049	33.3	47,824	20.7	2,657	1.1	0	0.0	127,530	103,618	44.8%	231,148
6	7/27	14	89,901	33.3	75,854	28.1	22,475	8.3	0	0.0	188,230	81,472	30.2%	269,702
7	7/30	16	34,392	7.3	216,181	45.8	83,525	17.7	24,566	5.2	358,664	113,004	24.0%	471,668
8	8/2	16	56,355	8.3	324,040	47.9	56,355	8.3	42,266	6.3	479,016	197,242	29.2%	676,258
9	8/5	16	46,641	6.3	342,032	45.8	46,641	6.3	124,375	16.7	559,688	186,563	25.0%	746,251
10	8/9	12	0	0.0	697,769	55.2	144,820	11.5	144,820	11.5	987,409	276,475	21.9%	1,263,884
11	8/13	12	17,631	2.1	590,629	69.8	52,892	6.3	96,969	11.5	758,121	88,154	10.4%	846,275
12	8/15	12	33,066	5.2	423,247	66.7	92,585	14.6	13,226	2.1	562,125	72,746	11.5%	634,871
13	8/17	12	30,423	3.2	861,971	90.4	0	0.0	0	0.0	892,394	60,845	6.4%	953,239
14	8/18	12	16,126	5.2	216,092	69.8	16,126	5.2	38,703	12.5	287,047	22,577	7.3%	309,624
15 ^b	8/19	12	17,134	4.7	277,948	76.0	19,038	5.2	22,845	6.3	336,964	28,556	7.8%	365,520
16	8/21	12	8,227	4.2	162,481	82.3	10,284	5.2	0	0.0	180,991	16,454	8.3%	197,445
17 ^c	8/24	12	1,306	4.2	25,785	82.3	1,632	5.2	0	0.0	28,723	2,611	8.3%	31,334
18 ^c	8/25	12	2,583	4.2	51,006	82.3	3,228	5.2	0	0.0	56,817	5,165	8.3%	61,982
Totals			444,413	42.2%	280,166	26.6	61,351	5.8	0	0.0	785,930	267,779	25.4	1,053,709

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a Fewer than 3 permits fished; results are confidential.

^b No samples collected; proportions are an average of previous and following periods sampled.

^c No samples collected; proportions from previous period sampled.

Appendix E17.—Pink salmon hatchery and wild stock contributions to Prince William Sound, Bering River, and Copper River commercial fishery, 2023.

District		Origin											Total
		Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F Koernig		Hatchery total	Wild		
		Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent	
Bering River	200 ^a	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
Copper River	212	0	0.0	0	0.0	0	0.0	0	0.0	0	15,058	100.0	15,058
Eastern	221	16,359,456	79.3	283,416	1.4	43,829	0.2	20,534	0.1	16,707,235	3,930,416	19.0	20,637,651
Northern	222	983,981	12.6	4,334,644	55.6	552,257	7.1	509,136	6.5	6,380,017	1,409,266	18.1	7,789,283
Coghill	223	32,542	2.3	287,444	20.6	502,889	36.0	7,683	0.5	830,436	567,152	40.6	1,397,588
Northwestern	224	3,099	0.9	23,000	7.0	79,563	24.2	3,161	1.0	108,823	220,554	67.0	329,377
Eshamy	225	0	0.0	0	0.0	0	0.0	0	0.0	0	140,374	100.0	140,374
Southwestern	226	795,033	5.5	2,945,879	20.5	1,605,853	11.2	6,252,699	43.6	11,599,464	2,757,361	19.2	14,356,825
Montague	227	184,793	11.4	297,756	18.3	120,129	7.4	335,662	20.7	938,340	684,822	42.2	1,623,162
Southeastern	228 ^a	31,211	5.6	4,957	0.9	5,523	1.0	15,536	2.8	57,227	499,352	89.7	556,579
Unakwik	229 ^a	0	0.0	0	0.0	0	0.0	0	0.0	0	731	100.0	731
Total		18,390,115	39.3	8,177,096	17.5	2,910,044	6.2	7,144,411	15.3	36,621,542	10,255,086	21.8	46,846,628

Note: Total harvest data from fish ticket reporting as of November 27, 2023. Homepack harvests are excluded.

^a No samples collected; wild origin assumed.

Appendix E18.—Pink salmon hatchery and wild stock contributions to the Southwestern District commercial fishery by period, 2023.

Period	Date	Hours	Origin								Hatchery total	Wild		Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F Koernig			Number	Percent		
1 ^{a,b}	6/1–6/2	36									Confidential				
2 ^a	6/3–6/4	36	0	0.0	0	0.0	0	0.0	0	0.0	0	0	54	100.0	54
3 ^a	6/5–6/7	48	0	0.0	0	0.0	0	0.0	0	0.0	0	0	74	100.0	74
4 ^{a,b}	6/8–6/9	36									Confidential				
5 ^a	6/10–6/11	36	0	0.0	0	0.0	0	0.0	0	0.0	0	0	27	100.0	27
6 ^a	6/12–6/14	48	0	0.0	0	0.0	0	0.0	0	0.0	0	0	179	100.0	179
7 ^a	6/15–6/16	36	0	0.0	0	0.0	0	0.0	0	0.0	0	0	229	100.0	229
8 ^a	6/17–6/18	36	0	0.0	0	0.0	0	0.0	0	0.0	0	0	777	100.0	777
9 ^a	6/19–6/21	48	0	0.0	0	0.0	0	0.0	0	0.0	0	0	348	100.0	348
10 ^a	6/22–6/23	24	0	0.0	0	0.0	0	0.0	0	0.0	0	0	33	100.0	33
11 ^a	6/24–6/25	24	0	0.0	0	0.0	0	0.0	0	0.0	0	0	156	100.0	156
12 ^c	6/26–6/27	36	323	32.3	0	0.0	0	0.0	0	0.0	323	323	677	67.7	1,000
13 ^c	6/29–6/30	24	27	32.3	0	0.0	0	0.0	0	0.0	27	27	58	67.7	85
14	7/1–7/2	24	26	32.3	0	0.0	0	0.0	0	0.0	26	26	54	67.7	80
15 ^d	7/3–7/4	24	14	39.7	0	0.0	0	0.0	0	0.0	14	14	22	60.3	36
16	7/5–7/6	36	2,481	47.1	0	0.0	0	0.0	0	0.0	2,481	2,481	2,792	52.9	5,273
17	7/8–7/9	36	3,778	39.2	0	0.0	0	0.0	378	4.0	4,155	4,155	5,478	56.9	9,633
18 ^{b,e}	7/10–7/11	36									Confidential				
19 ^{b,c}	7/12–7/13	36									Confidential				
20 ^a	7/15–7/16	36	1,193	13.5	0	0.0	92	1.0	5,138	91.8	6,423	6,423	2,386	27.1	8,808
21	7/17–7/18	36									Confidential				
22	7/20	14	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0
23	7/22	14	159,583	36.5	18,238	4.2	27,357	6.3	104,869	24.0	310,047	310,047	127,667	29.2	437,714
24	7/24	14	105,195	28.1	42,857	11.5	35,065	9.4	70,130	18.8	253,248	253,248	120,780	32.3	374,028
25	7/27	14	18,022	13.5	5,545	4.2	8,318	6.3	38,816	29.2	70,701	70,701	62,383	46.9	133,084
26	8/9	6	56,754	9.4	37,836	6.3	44,142	7.3	302,688	50.0	441,419	441,419	163,956	27.1	605,375
27	8/13	6	7,011	1.0	35,054	5.2	77,119	11.5	441,683	65.6	560,868	560,868	112,174	16.7	673,041
28	8/15	12	3,837	1.0	3,837	1.0	46,038	12.5	218,681	59.4	272,392	272,392	95,913	26.0	368,305
29	8/17	12	105,101	4.2	210,202	8.3	210,202	8.3	1,497,687	59.4	2,023,192	2,023,192	499,229	19.8	2,522,421
30 ^d	8/18	12	24,062	1.0	433,123	18.8	240,624	10.4	1,203,120	52.1	1,900,929	1,900,929	409,061	17.7	2,309,990
31	8/19	12	5,935	2.1	66,769	23.4	38,578	13.5	124,636	43.8	235,918	235,918	48,964	17.2	284,882
32	8/21	12	68,275	3.1	614,472	28.1	364,132	16.7	773,780	35.4	1,820,659	1,820,659	364,132	16.7	2,184,791
33	8/23	12	19,075	1.0	457,807	25.0	209,828	11.5	858,389	46.9	1,545,099	1,545,099	286,130	15.6	1,831,229

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Period	Date	Hours	Origin											Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent	
34	8/24	12	41,544	5.4	348,969	45.2	91,397	11.8	174,485	22.6	656,395	116,323	15.1	772,718
35	8/25	12	26,293	6.5	140,228	34.4	52,585	12.9	131,464	32.3	350,569	56,968	14.0	407,537
36 ^e	8/26	12	5,132	6.5	27,373	34.4	10,265	12.9	25,662	32.3	68,432	11,120	14.0	79,552
37 ^f	8/27	12	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0
Totals			795,033	5.5	2,945,879	20.5	1,605,853	11.2	6,252,699	43.6	11,599,464	2,757,361	19.2	14,356,825

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

- ^a No samples collected, wild origin assumed.
- ^b Fewer than 3 permits fished; results are confidential.
- ^c No samples collected; proportions are from the following period sampled.
- ^d No samples collected; proportions are an average from previous and following periods.
- ^e No samples collected; proportions are from the previous period.
- ^f No harvest reported.

Appendix E19.—Chum salmon hatchery and wild stock contributions to commercial fisheries by period and mark identification, Southwestern District, 2023.

Period	Dates	Hours	Origin									Total
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^{ab}	6/1–6/2	36	Confidential									
2 ^a	6/3–6/4	36	18	7.7	36	15.4	178	76.9	232	0	0.0	232
3 ^a	6/5–6/7	48	64	7.7	128	15.4	641	76.9	833	0	0.0	833
4 ^{ab}	6/8–6/9	36	Confidential									
5 ^a	6/10–6/11	36	250	7.7	499	15.4	2,495	76.9	3,244	0	0.0	3,244
6 ^a	6/12–6/14	48	391	7.7	781	15.4	3,905	76.9	5,077	0	0.0	5,077
7 ^a	6/15–6/16	36	480	7.7	960	15.4	4,801	76.9	6,241	0	0.0	6,241
8	6/17–6/18	36	3,766	28.6	1,883	14.3	7,531	57.1	13,180	0	0.0	13,180
9	6/19–6/21	48	1,185	8.7	0	0.0	12,443	91.3	13,628	0	0.0	13,628
10	6/22–6/23	24	335	4.0	1,340	16.0	6,367	76.0	8,043	335	4.0	8,378
11	6/24–6/25	24	1,204	12.5	1,505	15.6	6,925	71.9	9,635	0	0.0	9,635
12	6/26–6/27	36	1,419	9.3	2,432	16.0	10,133	66.7	13,983	1,216	8.0	15,199
13	6/29–6/30	24	0	0.0	230	2.8	6,903	83.3	7,133	1,151	13.9	8,284
14	7/1–7/2	24	1,282	8.0	3,204	20.0	11,535	72.0	16,021	0	0.0	16,021
15	7/3–7/4	24	833	9.5	416	4.8	7,078	81.0	8,328	416	4.8	8,744
16	7/5–7/6	36	2,677	12.0	4,462	20.0	13,387	60.0	20,526	1,785	8.0	22,311
17	7/8–7/9	36	1,261	6.3	6,304	31.7	10,402	52.4	17,968	1,891	9.5	19,859
18 ^{bc}	7/10–7/11	36	Confidential									
19 ^{bc}	7/12–7/13	36	Confidential									
20	7/15–7/16	36	475	13.2	747	20.8	2,240	62.3	3,461	136	3.8	3,597
21 ^{bd}	7/17–7/18	36	Confidential									
22 ^d	7/20	14	1,316	13.2	2,068	20.8	6,205	62.3	9,589	376	3.8	9,965
23 ^d	7/22	14	696	13.2	1,093	20.8	3,279	62.3	5,067	199	3.8	5,266
24 ^e	7/24	14	0	0.0	0	0.0	0	0.0	0	1,448	100.0	1,448
25 ^e	7/27	14	0	0.0	0	0.0	0	0.0	0	4,555	100.0	4,555
26 ^e	8/9	6	0	0.0	0	0.0	0	0.0	0	405	100.0	405
27 ^e	8/13	6	0	0.0	0	0.0	0	0.0	0	135	100.0	135
28 ^e	8/15	12	0	0.0	0	0.0	0	0.0	0	1,911	100.0	1,911
29 ^e	8/17	12	0	0.0	0	0.0	0	0.0	0	1,087	100.0	1,087
30 ^e	8/18	12	0	0.0	0	0.0	0	0.0	0	48	100.0	48

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Period	Dates	Hours	Origin									Total	
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
31 ^e	8/19	12	0	0.0	0	0.0	0	0.0	0	0	1,052	100.0	1,052
32 ^e	8/21	12	0	0.0	0	0.0	0	0.0	0	0	1,223	100.0	1,223
33 ^e	8/23	12	0	0.0	0	0.0	0	0.0	0	0	1,894	100.0	1,894
34 ^e	8/24	12	0	0.0	0	0.0	0	0.0	0	0	422	100.0	422
35 ^e	8/25	12	0	0.0	0	0.0	0	0.0	0	0	125	100.0	125
36 ^f	8/26	12	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0
Totals			19,337	9.7	31,614	15.8	126,091	63.2	177,042		22,350	11.2	199,572

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

- ^a No samples collected; proportions from following period sampled.
- ^b Three or fewer deliveries; results are confidential.
- ^c No samples collected; proportions are the average of previous and following periods sampled.
- ^d No samples collected; proportions are from previous period sampled.
- ^e No sample collected; wild origin assumed.
- ^f No harvest reported.

Appendix E20.–Chum salmon hatchery and wild stock contributions to commercial fisheries by period and mark identification, Montague District, 2023.

Period	Date	Hours	Origin									Total
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
1 ^a	6/1–6/4	84	741	14.6	4,129	81.3	0	0.0	4,870	212	4.2	5,082
2 ^a	6/5–6/7	60	1,676	14.6	9,336	81.3	0	0.0	11,011	479	4.2	11,490
3 ^a	6/8–6/11	84	6,833	14.6	38,070	81.3	0	0.0	44,903	1,952	4.2	46,855
4	6/12–6/14	60	14,504	14.6	80,810	81.3	0	0.0	95,314	4,144	4.2	99,458
5	6/15–6/18	84	18,399	13.5	113,228	83.3	1,415	1.0	133,042	2,831	2.1	135,873
6	6/19–6/21	60	20,253	11.5	150,980	85.4	0	0.0	171,233	5,524	3.1	176,757
7	6/22–6/25	84	25,893	15.8	124,289	75.8	0	0.0	150,182	13,810	8.4	163,992
8	6/26–6/28	60	10,995	9.6	100,177	87.2	2,443	2.1	113,615	1,222	1.1	114,837
9	6/29–7/2	84	14,610	11.5	106,836	84.2	0	0.0	121,446	5,479	4.3	126,925
10	7/3–7/5	60	1,290	2.1	59,323	97.9	0	0.0	60,613	0	0.0	60,613
11	7/6–7/9	84	4,587	2.5	171,994	94.9	0	0.0	176,580	4,587	2.5	181,167
12	7/10–7/12	60	0	0.0	68,913	92.3	3,829	5.1	72,742	1,914	2.6	74,656
13	7/13–7/16	84	0	0.0	44,896	97.9	0	0.0	44,896	965	2.1	45,861
14	7/17–7/19	60	0	0.0	29,934	96.9	318	1.0	30,252	637	2.1	30,889
15	7/20–7/23	84	0	0.0	23,336	100.0	0	0.0	23,336	0	0.0	23,336
16 ^{b,c}	7/24–7/26	60					Confidential					
17 ^b	7/27–7/30	84	0	0.0	0	0.0	0	0.0	0	5,703	100.0	5,703
18 ^b	8/2	16	0	0.0	0	0.0	0	0.0	0	2,404	100.0	2,404
19 ^b	8/5	16	0	0.0	0	0.0	0	0.0	0	5,219	100.0	5,219
20 ^b	8/9	12	0	0.0	0	0.0	0	0.0	0	1,070	100.0	1,070
21 ^b	8/13	12	0	0.0	0	0.0	0	0.0	0	286	100.0	286
22 ^d	8/15	12	0	0.0	0	0.0	0	0.0	0	0	100.0	0
23 ^{b,c}	8/17	12					Confidential					
24 ^d	8/21	12	0	0.0	0	0.0	0	0.0	0	0	0.0	0
25 ^{b,c}	8/23	12					Confidential					
Total			119,782	9.1	1,126,249	85.8	8,006	0.6	682,802	59,103	4.5	1,313,049

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a No samples collected; proportions are from the following period sampled.

^b No samples collected; wild origin assumed.

^c Fewer than 3 permits fished; results are confidential.

^d No harvest reported.

Appendix E21.—Pink salmon hatchery and wild stock contributions to commercial fisheries by period and mark identification, Montague District, 2023.

Period	Date	Hours	Origin										Total		
			Solomon Gulch		Cannery Creek		Wally Noerenberg		Armin F. Koernig		Wild				
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	Hatchery total	Number		Percent	
1 ^a	6/1–6/4	84	0	0.00	0	0.00	0	0.00	0	0.00	0	0	113	1.00	113
2 ^a	6/5–6/7	60	0	0.00	0	0.00	0	0.00	0	0.00	0	0	131	1.00	131
3 ^a	6/8–6/11	84	0	0.00	0	0.00	0	0.00	0	0.00	0	0	546	1.00	546
4 ^a	6/12–6/14	60	0	0.00	0	0.00	0	0.00	0	0.00	0	0	3,307	1.00	3,307
5 ^b	6/15–6/18	84	476	0.29	0	0.00	0	0.00	45	0.03	522	1,134	0.68	1,656	
6	6/19–6/21	60	2,503	0.29	0	0.00	0	0.00	238	0.03	2,741	5,959	0.68	8,700	
7	6/22–6/25	84	987	0.21	0	0.00	0	0.00	99	0.02	1,086	3,652	0.77	4,738	
8 ^c	6/26–6/28	60	3,188	0.39	0	0.00	0	0.00	138	0.02	3,327	4,851	0.59	8,178	
9	6/29–7/2	84	11,156	0.57	0	0.00	0	0.00	254	0.01	11,410	8,113	0.42	19,523	
10 ^c	7/3–7/5	60	189	0.50	0	0.00	0	0.00	2	0.01	192	190	0.50	382	
11	7/6–7/9	84	1,967	0.42	0	0.00	0	0.00	0	0.00	1,967	2,732	0.58	4,699	
12 ^c	7/10–7/12	60	1,941	0.37	0	0.00	0	0.00	0	0.00	1,941	3,304	0.63	5,245	
13	7/13–7/16	84	745	0.32	0	0.00	0	0.00	0	0.00	745	1,573	0.68	2,318	
14 ^c	7/17–7/19	60	9	0.28	2	0.07	0	0.01	2	0.05	13	19	0.59	32	
15 ^c	7/20–7/23	84	2,450	0.28	594	0.07	127	0.01	467	0.05	3,637	5,271	0.59	8,908	
16 ^{c,d}	7/24–7/26	60							Confidential						
17	7/27–7/30	84	38,197	0.23	22,282	0.13	4,775	0.03	17,507	0.10	82,761	84,352	0.0%	167,113	
18	8/2	16	49,008	0.18	25,945	0.09	17,297	0.06	28,828	0.10	121,078	155,671	56.3%	276,749	
19	8/5	16	35,919	0.10	64,654	0.19	25,143	0.07	43,102	0.13	168,818	176,001	51.0%	344,819	
20	8/9	12	8,774	0.03	65,804	0.23	17,548	0.06	109,674	0.39	201,800	78,965	28.1%	280,765	
21	8/13	12	15,115	0.05	60,460	0.21	30,230	0.10	78,598	0.27	184,404	105,805	36.5%	290,209	
22 ^{c,d}	8/15	12							Confidential						
23 ^d	8/17	12							Confidential						
24 ^c	8/21	12	1,928	4.7	13,496	32.8	5,784	14.1	12,854	31.3	34,062	7,070	17.2	41,132	
25 ^{c,d}	8/23	12							Confidential						
26 ^f	8/24	12	0	0.0	0	0.0	0	0.0	0	0.0	0	0	0.0	0	
Total			184,793	11.4	297,756	18.3	120,129	7.4	335,662	20.7	938,340	684,822	42.2	1,623,162	

Note: Total harvest data from fish ticket reporting as of November 27, 2023.

^a No samples collected; wild origin assumed.

^b No samples collected; proportions are from the following period sampled.

^c No samples collected; proportions are the average of the previous and following periods sampled.

^d No samples collected; proportions are from the previous period sampled.

^e Fewer than 3 permits fished; results are confidential.

^f No harvest reported.

Appendix E22.—Pink salmon hatchery and wild stock contributions to Prince William Sound, Bering River, and Copper River fisheries and broodstocks, 2023.

Harvest type	Hatchery origin				Hatchery total	Wild	Harvest total
	Solomon Gulch	Cannery Creek	W. Noerenberg	A. F. Koernig			
CCPF	18,390,115	8,177,096	2,910,044	7,144,411	36,621,542	10,225,086	46,846,628
Cost recovery ^a	2,732,678	2,020,170	1,460,071	3,938,169	10,151,088	54,853	10,205,941
Broodstock and raceway sales ^b	521,380	409,833	443,640	382,794	1,757,647	0	1,757,647
Totals	21,644,173	10,607,099	4,813,755	11,465,374	48,530,277	10,279,939	58,810,216

Note: Total harvest data from fish ticket reporting as of November 27, 2023. Homepack harvests are excluded. CCPF = commercial common property fishery.

^a Purse seine cost-recovery information as of 27 November 2023.

^b No contribution estimates available; all fish are assumed to originate from the facility where they were counted.

**APPENDIX F: SUBSISTENCE AND COMMERCIAL
HOMEPACK SALMON HARVEST**

Appendix F1.–Salmon harvest and effort in the Copper River District subsistence drift gillnet fishery, 1961–2023.

Year	Permits				Reported harvest			
	Issued	Returned	Fished	Not fished ^a	Chinook	Sockeye	Coho	Total
1961	14	0	0	0	60	137	99	296
1962	14	0	0	0	44	135	3	182
1963	8	0	0	0	3	13	157	173
1964	5	0	0	2	14	0	0	14
1965	31	20	15	5	12	459	85	556
1966	45	31	21	10	47	175	0	222
1967	61	56	37	19	83	153	0	236
1968	17	15	7	8	11	36	0	47
1969	49	33	20	13	16	63	85	164
1970	32	27	24	3	66	179	0	245
1971	29	26	17	9	10	32	4	46
1972	104	80	75	5	149	569	53	771
1973	94	89	89	NA	153	326	180	659
1974	9	5	3	2	5	4	2	11
1975	2	2	2	NA	0	5	0	5
1976	27	14	14	NA	1	10	0	11
1977	23	22	22	NA	10	71	0	81
1978	34	28	9	19	37	18	12	67
1979	49	41	21	20	45	26	17	88
1980	39	35	18	17	19	27	17	63
1981	72	51	30	21	48	145	104	297
1982	108	90	48	42	60	634	106	800
1983	87	73	31	42	79	107	57	243
1984	118	104	57	47	68	324	135	527
1985	94	94	67	27	88	261	83	432
1986	88	85	57	28	86	348	47	481
1987	95	89	39	50	49	359	14	422
1988	114	97	57	40	59	226	42	327
1989	75	64	32	32	56	339	51	446
1990	88	76	40	39	60	469	82	611
1991	129	115	71	44	136	830	38	1,004
1992	126	114	67	47	142	785	42	969
1993	111	93	50	43	120	428	29	577
1994	101	97	60	37	164	474	67	705
1995	126	113	72	41	154	692	31	877
1996	176	158	101	57	276	969	47	1,292
1997	269	243	165	78	200	1,001	1,777	2,978
1998	245	231	144	87	295	850	680	1,825
1999	294	275	175	100	353	1,330	682	2,365
2000	416	400	293	107	689	4,360	44	5,093
2001	468	439	288	151	826	3,072	70	3,968
2002	355	331	199	132	549	3,067	28	3,644
2003	384	365	225	140	710	1,607	36	2,353
2004	511	482	321	161	1,106	1,822	46	2,974
2005	237	224	121	103	260	830	15	1,105

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Year	Permits				Reported harvest			
	Issued	Returned	Fished	Not fished ^a	Chinook	Sockeye	Coho	Total
2006	421	399	300	121	779	4,355	1	5,135
2007	469	440	295	145	1,145	6,148	15	7,308
2008	506	480	248	232	470	3,969	53	4,492
2009	323	293	128	165	212	1,764	22	1,998
2010	325	314	139	175	276	1,980	27	2,283
2011	273	263	113	150	212	1,783	34	2,029
2012	378	357	204	153	237	4,270	0	4,507
2013	531	492	321	171	854	5,639	1	6,494
2014	288	269	101	168	153	1,675	0	1,828
2015	241	231	97	134	167	1,403	10	1,580
2016	195	189	77	112	73	1,075	2	1,150
2017	450	416	265	151	778	2,448	43	3,269
2018	684	630	437	193	1,356	5,189	195	6,740
2019	573	555	347	208	808	6,163	330	7,301
2020	ND	ND	344	ND	657	7,091	326	8,074
2021	ND	ND	278	ND	624	5,338	233	6,195
2022	842	650	351	299	887	5,828	391	7,106
2023	587	514	336	178	948	6,326	431	7,705
Average 2013–2022	476	429	262	180	636	4,185	153	4,974

Note: NA = not available; ND = no data.

^a As reported on returned permits.

Appendix F2.—Salmon harvest and effort in the Prince William Sound general area subsistence fishery, 1966–2023.

Year	Permits				Reported harvest ^a						
	Issued	Returned	Fished	Not fished ^b	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total
1966	3	3	0	0	0	3	19	20	50	0	92
1967	4	3	0	0	0	0	4	4	0	0	8
1968	4	3	0	0	0	0	20	156	0	22	198
1969	7	3	0	0	0	0	16	0	0	0	16
1970	1	1	0	0	0	0	0	0	0	0	0
1971	3	2	0	0	0	0	0	46	0	0	46
1972	0	0	0	0	0	0	0	0	0	0	0
1973	19	16	0	0	0	0	289	0	0	0	289
1974	3	1	0	0	0	0	0	0	0	0	0
1975	2	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0
1977	4	4	0	0	0	0	0	0	0	0	0
1978	3	2	0	0	0	0	0	0	0	0	0
1979	15	2	0	0	0	0	0	0	0	0	0
1980	26	15	0	0	0	7	6	0	0	0	13
1981	12	8	0	0	0	3	29	0	2	0	34
1982	35	27	0	0	0	84	4	31	24	0	143
1983	26	21	0	0	0	22	36	9	79	0	146
1984	8	8	0	0	0	10	0	11	2	0	23
1985	22	16	0	0	1	27	16	14	26	0	84
1986	25	14	0	0	0	5	15	0	0	0	20
1987	18	17	0	0	5	31	6	0	16	0	58
1988	7	7	0	0	2	51	7	10	9	0	79
1989	11	7	0	0	0	0	0	0	3	0	3
1990	8	7	0	0	0	0	7	4	0	0	11
1991	9	5	2	3	0	2	0	0	0	0	2
1992	10	6	1	5	0	20	0	0	0	0	20
1993	6	6	4	2	1	104	10	0	0	0	115
1994	5	4	2	2	0	0	0	0	0	0	0
1995	4	2	0	2	0	0	0	0	0	0	0
1996	10	7	0	7	0	0	0	0	0	0	0
1997	4	3	1	2	0	3	0	0	0	0	3
1998	4	3	0	3	0	0	0	0	0	0	0
1999	3	3	0	3	0	0	0	0	0	0	0
2000	3	3	0	3	0	0	0	0	0	0	0
2001	5	5	0	5	0	0	0	0	0	0	0
2002	11	9	2	7	0	31	0	9	7	0	47
2003	3	3	0	3	0	48	0	0	3	0	51
2004	12	11	5	6	0	8	0	0	3	0	11
2005	14	13	1	12	0	4	0	0	0	0	4
2006	11	9	2	7	0	20	0	30	0	0	50
2007	3	3	1	2	0	30	0	0	0	0	30

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Year	Permits				Reported harvest ^a						
	Issued	Returned	Fished	Not fished ^b	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total
2008	11	10	4	6	1	32	0	0	0	0	33
2009	1	1	0	1	0	0	0	0	0	0	0
2010	2	2	1	1	0	0	0	0	0	0	0
2011	4	4	3	1	29	40	1	5	10	0	85
2012	14	12	6	6	0	40	0	0	22	0	62
2013	8	8	7	1	0	12	0	0	24	5	41
2014	23	21	2	19	0	3	0	0	0	0	3
2015	25	23	10	13	4	115	0	0	3	0	122
2016	5	5	1	4	0	1	0	0	0	0	1
2017	6	5	3	2	0	16	0	0	0	0	16
2018	26	24	8	16	1	103	22	9	19	0	154
2019	44	43	16	27	8	406	0	3	14	0	431
2020	ND	44	41	ND	0	1,180	1	20	12	0	1,213
2021	ND	ND	45	ND	8	1,277	0	33	20	1	1,339
2022	309	234	61	173	5	1,478	0	10	50	1	1,544
2023	283	246	97	149	3	2,381	52	31	35	0	2,502
Average 2013–2022	56	45	19	32	3	459	2	8	14	1	486

^a Reported harvest only and includes harvest from Prince William Sound (PWS), exclusive of the Copper River District and customary and traditional subsistence locations within PWS.

^b As reported on returned permits.

Appendix F3.—Area E salmon retained from the commercial harvest for homepack by species and gear type, 2006–2023.

Year	Number of permits				Number of Chinook			Number of sockeye			Number of coho			Number of pink			Number of chum			All species total
	Purse seine	Drift gillnet	Set gillnet	Total	Purse seine	Drift gillnet	Set gillnet	Purse seine	Drift gillnet	Set gillnet	Purse seine	Drift gillnet	Set gillnet	Purse seine	Drift gillnet	Set gillnet	Purse seine	Drift gillnet	Set gillnet	
2006	1	264	0	265	2	779	0	0	1,598	0	0	166	0	0	10	0	0	5	0	2,560
2007	1	279	0	280	1	1,028	0	0	2,086	1	0	353	0	0	43	0	0	102	0	3,614
2008	2	236	1	239	3	611	1	0	2,349	72	0	449	0	0	53	0	0	14	0	3,552
2009	0	325	3	328	0	876	0	0	6,474	7	0	767	0	0	61	0	0	67	0	8,252
2010	4	351	1	356	0	957	0	2	8,126	55	51	1,117	0	0	21	0	0	152	0	10,481
2011	8	350	2	360	0	1,344	2	73	9,740	268	350	802	0	0	82	0	0	184	0	12,845
2012	20	403	7	430	11	929	0	143	10,344	318	78	1,220	0	83	3,546	0	55	1,240	0	17,967
2013	1	379	7	387	0	633	24	50	10,532	228	25	288	0	0	248	0	0	81	0	12,109
2014	11	405	8	424	7	806	10	168	13,218	301	17	1,463	0	0	191	0	11	120	0	16,312
2015	8	385	9	402	5	1,179	9	401	11,607	965	23	1,500	0	0	169	0	4	123	20	16,005
2016	9	364	8	381	9	758	10	316	10,507	696	60	1,639	0	13	708	0	7	57	0	14,780
2017	29	408	8	445	37	788	6	218	10,197	1,306	177	2,448	0	287	615	19	28	209	2	16,337
2018	32	366	13	411	24	156	3	556	5,433	304	123	3,829	65	91	1,320	0	10	134	191	12,239
2019	33	379	11	423	45	789	11	867	9,914	763	755	1,260	0	8	1,424	5	42	382	0	16,265
2020	29	332	6	367	164	278	2	341	3,582	329	121	2,062	0	87	1,068	0	8	181	0	8,223
2021	52	222	14	288	177	82	8	720	3,844	1,337	246	353	0	327	316	241	57	392	2	8,102
2022	22	286	13	321	79	599	27	202	5,936	462	104	651	0	1,054	470	25	2	119	0	9,730
2023	23	328	10	361	26	631	16	417	8,634	466	144	1,433	0	15	1,284	0	22	494	0	13,582
Average 2013–2022	23	353	10	385	55	607	11	384	8,477	669	165	1,549	7	187	653	29	17	180	22	13,010

Appendix F4.—Salmon harvest and effort in the PWS and upper Copper River federal subsistence fisheries, 2013–2023.

Year	Permits				Reported harvest ^a			
	Issued	Returned	Fished	Not fished ^b	Chinook	Sockeye	Coho	Total
Chitina Subdistrict								
2013	99	85	39	46	17	1,999	8	2,024
2014	113	103	49	54	13	1,549	68	1,630
2015	111	100	52	48	13	2,231	14	2,258
2016	128	95	43	52	15	1,549	33	1,597
2017	132	104	47	57	12	1,454	7	1,473
2018	132	117	58	59	88	3,144	28	3,260
2019	181	161	0	0	74	3,984	20	4,078
2020	215	187	95	92	76	3,229	23	3,328
2021	194	168	102	66	98	5,415	3	5,516
2022	177	153	77	76	86	2,548	37	2,671
2023	196	165	105	60	130	5,077	5	5,212
Average 2018–2022	180	157	66	59	84	3,664	22	3,771
Glennallen Subdistrict								
2013	274	236	160	76	331	15,834	24	16,189
2014	314	279	206	73	397	21,614	23	22,034
2015	325	286	210	76	384	24,695	13	25,092
2016	320	246	176	75	369	15,884	9	16,262
2017	338	283	212	71	399	15,691	1	16,091
2018	335	300	199	101	2,432	15,287	0	17,719
2019	343	304	0	0	838	15,703	0	16,541
2020	376	330	185	145	623	10,884	1	11,508
2021	355	294	173	121	418	12,296	0	12,714
2022	297	238	147	91	683	11,358	0	12,041
2023	290	231	133	98	536	11,706	0	12,242
Average 2018–2022	341	293	141	92	999	13,106	0	14,105
PWS/Chugach Subdistrict								
2013	65	46	23	17	0	102	329	431
2014	88	76	41	0	0	76	610	686
2015	94	68	47	15	0	152	893	1,045
2016	110	92	51	41	0	234	555	789
2017	97	83	49	34	0	127	514	641
2018	97	92	40	52	3	96	265	364
2019	120	89	54	35	0	116	671	787
2020	90	43	25	18	0	41	373	414
2021	74	64	27	37	0	19	449	468
2022 ^c	140	107	49	58	3	197	101	301
2023 ^c	173	112	48	64	2	134	540	676
Average 2018–2022	104	79	39	40	1	94	372	467

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Year	Permits				Reported harvest ^a			
	Issued	Returned	Fished	Not fished ^b	Chinook	Sockeye	Coho	Total
	Total federal subsistence harvests							
2013	438	367	222	139	348	17,935	361	18,644
2014	515	458	296	127	410	23,239	701	24,350
2015	530	454	309	139	397	27,078	920	28,395
2016	558	433	270	168	384	17,667	597	18,648
2017	567	470	308	162	411	17,272	522	18,205
2018	564	509	297	212	2,523	18,527	293	21,343
2019	644	554	54	35	912	19,803	691	21,406
2020	681	560	305	255	699	14,154	397	15,250
2021	623	526	302	224	516	17,730	452	18,698
2022	614	498	273	225	772	14,103	138	15,013
2023	659	508	286	222	668	16,917	545	18,130
Average 2018–2022	625	529	246	190	1,084	16,863	394	18,342

^a Reported harvest only.

^b As reported on returned permits.

^c The federal subsistence fishery was expanded to include waters of the Copper River within a ½ mile of the Copper River Highway between miles posts 27 and 38.

Appendix F5.—Salmon harvest and effort in the Tatitlek and Chenega subsistence fisheries, 2003–2023.

Year	Permits				Reported harvest ^a							
	Issued	Returned	Fished	Not fished ^b	Chinook	Sockeye	Coho	Pink	Chum	Unk.	Total	
Tatitlek												
2003	15	8	6	2	0	81	185	20	12	0	298	
2004	18	12	9	3	2	322	315	46	28	0	713	
2005	16	3	2	1	0	98	286	200	16	0	600	
2006	12	2	1	1	0	3	18	35	25	0	81	
2007	14	0	0	0	NR	NR	NR	NR	NR	NR	0	
2008	2	1	1	0	0	60	0	0	0	0	60	
2009	12	4	3	1	0	170	131	0	0	0	301	
2010	8	5	5	0	0	165	142	50	10	0	367	
2011	10	4	4	0	0	922	536	0	22	0	1,480	
2012	32	7	6	1	15	728	75	0	0	0	818	
2013	22	11	8	3	0	613	277	0	129	0	1,019	
2014	7	5	2	3	0	46	103	0	0	0	149	
2015	16	4	4	0	12	110	143	0	8	0	273	
2016	5	5	0	5	0	0	0	0	0	0	0	
2017	7	5	4	1	0	45	55	0	0	0	100	
2018	24	6	2	4	0	143	0	0	4	10	157	
2019	5	4	3	1	0	100	37	0	2	0	139	
2020	6	4	4	0	2	43	27	37	7	0	116	
2021	17	4	1	3	0	25	0	0	0	0	25	
2022	17	13	1	12	0	18	0	0	2	0	20	
2023	10	8	1	7	0	0	0	0	0	0	0	
Average 2013–2022	13	6	3	3	1	114	64	4	15	1	200	
Chenega												
2003	13	7	5	2	6	219	156	149	147	0	677	
2004	8	5	4	1	3	535	44	56	84	0	722	
2005	13	8	6	2	10	516	84	124	174	0	908	
2006	11	6	4	2	0	159	1	28	111	0	299	
2007	4	3	2	1	2	293	27	4	55	0	381	
2008	15	3	1	2	4	97	75	70	30	0	276	
2009	4	4	3	1	2	168	26	5	84	0	285	
2010	9	5	5	0	0	55	0	6	87	0	148	
2011	17	11	8	3	2	134	26	50	60	0	272	
2012	23	14	6	8	0	603	20	0	77	1	701	
2013	13	4	3	1	0	19	0	0	63	0	82	
2014	10	5	2	3	0	0	0	10	0	0	10	
2015	21	4	1	3	56	0	35	0	12	0	103	
2016	7	6	1	5	0	32	1	0	0	0	33	
2017	6	3	2	1	0	105	0	0	61	0	166	
2018	22	1	1	0	0	13	2	0	40	0	55	
2019	2	2	1	1	0	0	0	0	0	0	0	
2020	12	10	1	8	0	5	0	0	11	0	16	
2021	44	11	3	8	0	1	0	25	0	0	26	
2022	31	18	2	16	0	0	0	0	0	0	0	
2023	13	10	3	7	0	0	0	0	0	0	0	
Average 2013–2022	17	6	2	5	6	18	4	4	19	0	49	

Note: NR = no harvest reported.

^a Reported harvest only.

^b As reported on returned subsistence permits.

Appendix F6.—Personal use and subsistence salmon harvests by year, district and gear types for the Upper Copper River subsistence and personal use fisheries, 2006–2023.

Year	District	Gear	Reported harvest						Expanded harvest					
			Permits		Salmon				Salmon				Other species	
			Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
2006	Glennallen	Dipnet	338	273	266	6,243	10	6,519	335	7,170	10	7,515	0	1
	Glennallen	Fishwheel	646	605	2,178	46,516	200	48,894	2,434	50,540	202	53,176	0	82
	Chitina	Dipnet	8,566	6,762	2,071	102,443	1,886	106,400	2,663	123,261	2,715	128,639	0	464
	total		9,550	7,640	4,515	155,202	2,096	161,813	5,432	180,971	2,927	189,330	0	547
2007	Glennallen	Dipnet	467	383	432	8,155	28	8,615	496	9,416	28	9,940	0	1
	Glennallen	Fishwheel	707	654	2,674	53,322	203	56,199	2,780	56,298	210	59,288	0	55
	Chitina	Dipnet	8,490	7,187	2,388	112,753	1,492	116,633	2,694	125,126	1,742	129,562	0	660
	total		9,664	8,224	5,494	174,230	1,723	181,447	5,970	190,840	1,980	198,790	0	716
2008	Glennallen	Dipnet	536	447	445	6,517	35	6,997	496	7,177	35	7,708	0	0
	Glennallen	Fishwheel	650	600	1,793	33,687	447	35,927	1,885	35,980	458	38,323	0	75
	Chitina	Dipnet	8,258	6,861	1,690	70,597	2,346	74,633	1,999	81,359	2,711	86,069	0	407
	total		9,444	7,908	3,928	110,801	2,828	117,557	4,380	124,516	3,204	132,100	0	482
2009	Glennallen	Dipnet	469	391	342	6,030	8	6,380	394	6,950	19	7,363	0	1
	Glennallen	Fishwheel	621	575	1,988	37,708	186	39,882	2,099	39,899	209	42,207	0	72
	Chitina	Dipnet	7,958	6,908	199	81,432	1,452	83,083	214	90,035	1,712	91,961	0	267
	total		9,048	7,874	2,529	125,170	1,646	129,345	2,707	136,884	1,940	141,531	0	340
2010	Glennallen	Dipnet	620	510	126	384	0	0	9,970	7,757	0	17,727	0	325
	Glennallen	Fishwheel	701	647	1,360	54,490	228	56,078	1,427	57,717	228	59,372	0	148
	Chitina	Dipnet	9,970	7,757	587	116,790	1,592	118,969	700	138,487	2,013	141,200	0	365
	total		11,291	8,914	2,073	171,664	1,820	175,047	12,097	203,961	2,241	218,299	0	838
2011	Glennallen	Dipnet	617	530	681	13,034	63	13,778	734	14,454	68	15,256	0	0
	Glennallen	Fishwheel	689	625	1,518	41,009	283	42,810	1,585	45,168	304	47,057	0	164
	Chitina	Dipnet	9,217	7,566	924	114,164	1,512	116,600	1,067	128,052	1,702	130,821	0	444
	total		10,523	8,721	3,123	168,207	1,858	173,188	3,386	187,674	2,074	193,134	0	608

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Year	District	Gear	Reported harvest						Expanded harvest					
			Permits		Salmon				Salmon				Other species	
			Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	other
2012	Glennallen	Dipnet	867	699	516	17,860	50	18,426	591	21,198	59	21,848	0	4
	Glennallen	Fishwheel	660	612	1,407	50,269	229	51,905	1,504	55,107	276	56,887	0	112
	Chitina	Dipnet	10,016	8,030	496	109,777	1,132	111,405	567	127,143	1,385	129,095	0	267
	total		11,543	9,341	2,419	177,906	1,411	181,736	2,662	203,448	1,720	207,830	0	383
2013	Glennallen	Dipnet	808	667	794	22,924	55	23,773	902	25,879	79	26,860	4	0
	Glennallen	Fishwheel	531	494	1,169	44,201	63	45,433	1,246	47,849	64	49,159	22	25
	Chitina	Dipnet	10,424	8,482	620	151,658	719	152,997	744	180,663	797	182,204	0	700
	total		11,763	9,643	2,583	218,783	837	222,203	2,892	254,391	941	258,224	26	725
2014	Glennallen	Dipnet	1,148	918	551	24,736	169	25,456	675	29,914	174	30,763	0	3
	Glennallen	Fishwheel	508	461	652	42,027	57	42,736	690	45,587	59	46,336	0	29
	Chitina	Dipnet	11,618	9,332	652	137,179	854	138,685	719	157,215	1,129	159,063	0	329
	total		13,274	10,711	1,855	203,942	1,080	206,877	2,084	232,716	1,362	236,162	0	361
2015	Glennallen	Dipnet	1,128	909	1,087	29,092	26	30,205	1,297	35,416	32	36,745	0	0
	Glennallen	Fishwheel	503	455	870	43,316	45	44,231	915	46,384	45	47,344	0	234
	Chitina	Dipnet	12,635	10,509	1,305	186,485	797	188,587	1,570	223,080	841	225,491	0	1,341
	total		14,266	11,873	3,262	258,893	868	263,023	3,782	304,880	918	309,580	0	1,575
2016	Glennallen	Dipnet	1,300	1,030	833	22,525	20	23,378	1,002	26,301	20	27,323	0	0
	Glennallen	Fishwheel	469	413	930	31,703	25	32,658	1,073	36,173	25	37,271	0	424
	Chitina	Dipnet	11,394	9,302	563	126,528	1,027	128,118	711	148,982	1,182	150,875	0	605
	total		13,163	10,745	2,326	180,756	1,072	184,154	2,786	211,456	1,227	215,469	0	1,029
2017	Glennallen	Dipnet	1,264	1,005	1,695	16,499	51	18,245	2,094	19,963	61	22,118	0	5
	Glennallen	Fishwheel	368	316	751	18,495	6	19,252	841	19,896	7	20,744	7	557
	Chitina	Dipnet	9,490	7,665	1,709	113,202	532	115,443	1,961	132,694	715	135,370	0	673
	total		11,122	8,986	4,155	148,196	589	152,940	4,896	172,553	783	178,232	7	1,235

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Year	District	Gear	Reported harvest						Expanded harvest					
			Permits		Salmon				Salmon				Other species	
			Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	other
2018	Glennallen	Dipnet	1,312	1,045	1,243	14,637	92	15,972	1,459	17,028	117	18,604	3	4
	Glennallen	Fishwheel	347	311	2,747	19,353	33	22,133	3,072	22,331	34	25,437	10	15
	Chitina	Dipnet	4,982	4,026	1,069	65,202	1,234	67,505	1,273	77,051	1,436	79,760	0	375
	total		6,641	5,382	5,059	99,192	1,359	105,610	5,804	116,410	1,587	123,801	13	394
2019	Glennallen	Dipnet	1,354	1,062	1,603	29,838	111	31,552	1,913	37,791	186	39,890	0	5
	Glennallen	Fishwheel	359	321	1,474	20,163	18	21,655	1,516	22,466	18	24,000	0	20
	Chitina	Dipnet	8,070	6,639	2,251	147,256	927	150,434	2,611	171,203	1,064	174,878	0	609
	total		9,783	8,022	5,328	197,257	1,056	203,641	6,040	231,460	1,268	238,768	0	634
2020	Glennallen	Dipnet	1,290	1,046	970	18,042	34	19,046	1,012	19,036	36	20,084	0	1
	Glennallen	Fishwheel	375	320	1,121	14,407	30	15,558	1,210	15,541	31	16,782	0	36
	Chitina	Dipnet	6,810	6,070	678	70,755	639	72,072	751	78,022	815	79,588	0	230
	total		8,475	7,436	2,769	103,204	703	106,676	2,973	112,599	882	116,454	0	267
2021	Glennallen	Dipnet	1,205	1,119	969	24,178	148	25,295	1,041	26,292	148	27,481	0	2
	Glennallen	Fishwheel	313	298	554	15,590	18	16,162	644	16,346	18	17,008	0	18
	Chitina	Dipnet	7,222	6,681	794	136,477	404	137,675	832	143,301	439	144,572	0	434
	total		8,740	8,098	2,317	176,245	570	179,132	2,517	185,939	605	189,061	0	454
2022	Glennallen	Dipnet	931	866	1,178	25,127	108	26,413	1,336	28,108	130	29,574	15	221
	Glennallen	Fishwheel	297	281	1,560	16,269	90	17,919	1,632	18,235	90	19,957	6	554
	Chitina	Dipnet	7,100	6,628	2,128	147,677	553	150,358	2,214	154,996	564	157,774	0	464
	total		8,328	7,775	4,866	189,073	751	194,690	5,182	201,339	784	207,305	21	1,239
2023	Glennallen	Dipnet	1,001	952	1,323	26,507	176	28,006	1,397	28,097	189	29,683	0	144
	Glennallen	Fishwheel	314	299	1,759	18,429	4	20,192	1,849	20,009	4	21,862	0	498
	Chitina	Dipnet	7,577	7,135	3,360	161,811	714	165,885	3,515	168,501	776	172,792	0	342
	total		8,892	8,386	6,442	206,747	894	214,083	6,761	216,607	969	224,337	0	984
Average 2013–2022	Glennallen	Dipnet	1,174	967	1,092	22,760	81	23,934	1,273	26,573	98	27,944	2	24
	Glennallen	Fishwheel	407	367	1,183	26,552	39	27,774	1,284	29,081	39	30,404	5	191
	Chitina	Dipnet	8,975	7,533	1,177	128,242	769	130,187	1,339	146,721	898	148,958	0	576
	total		10,556	8,867	3,452	177,554	889	181,895	3,896	202,374	1,036	207,306	7	791

APPENDIX G: HERRING

Appendix G1.—Annual Pacific herring biomass indices for Prince William Sound Area harvest management years, 1985–2023.

Harvest management year	Use and harvest mortality (tons) ^a	Aerial survey estimate (mile-days of spawn) ^b	Peak spring acoustic biomass estimate (tons)
1987–1988	9,871	269.8	ND
1988–1989 ^c	–	228.1	ND
1989–1990	10,103	164.4	ND
1990–1991	15,196	71.5	ND
1991–1992	20,752	119.8	ND
1992–1993	2,360	50.3	ND
1993–1994	151	23.1	ND
1994–1995	0	28.2	14,639
1995–1996	0	37.3	25,346
1996–1997	5,170	64.3	44,083
1997–1998	3,849	62.0	19,456
1998–1999	49	40.7	22,397
1999–2000	0	31.7	8,024
2000–2001	0	14.8	7,035
2001–2002	0	23.6	11,791
2002–2003	0	26.1	29,864
2003–2004	0	30.4	21,046
2004–2005	0	31.7	16,800 ^d
2005–2006	0	21.7	7,600 ^d
2006–2007	0	18.3	10,700 ^d
2007–2008	0	33.2	23,300 ^d
2008–2009	0	29.8	16,900 ^d
2009–2010	0	32.7	28,500 ^d
2010–2011	0	26.2	24,000 ^d
2011–2012	0	39.3	30,000 ^d
2012–2013	0	29.3	24,200 ^d
2013–2014	0	36.6	22,000 ^d
2014–2015	0	21.6	NA ^e
2015–2016	0	9.89	3,453
2016–2017	0	8.12	9,896
2017–2018	0	4.52	3,646
2018–2019	0	12.68	8,448
2019–2020	0	23.68	19,841
2020–2021	0	25.55	6,000
2021–2022	0	32.7	ND
2022–2023	0	26.08	ND

Note: All biomass estimates are in short tons (2,000 lb), and all linear extent of milt estimates are in statute miles. ND = No data.

^a Represents the common property seine and gillnet sac roe harvest, and equivalent use of herring in closed pound spawn-on-kelp fisheries.

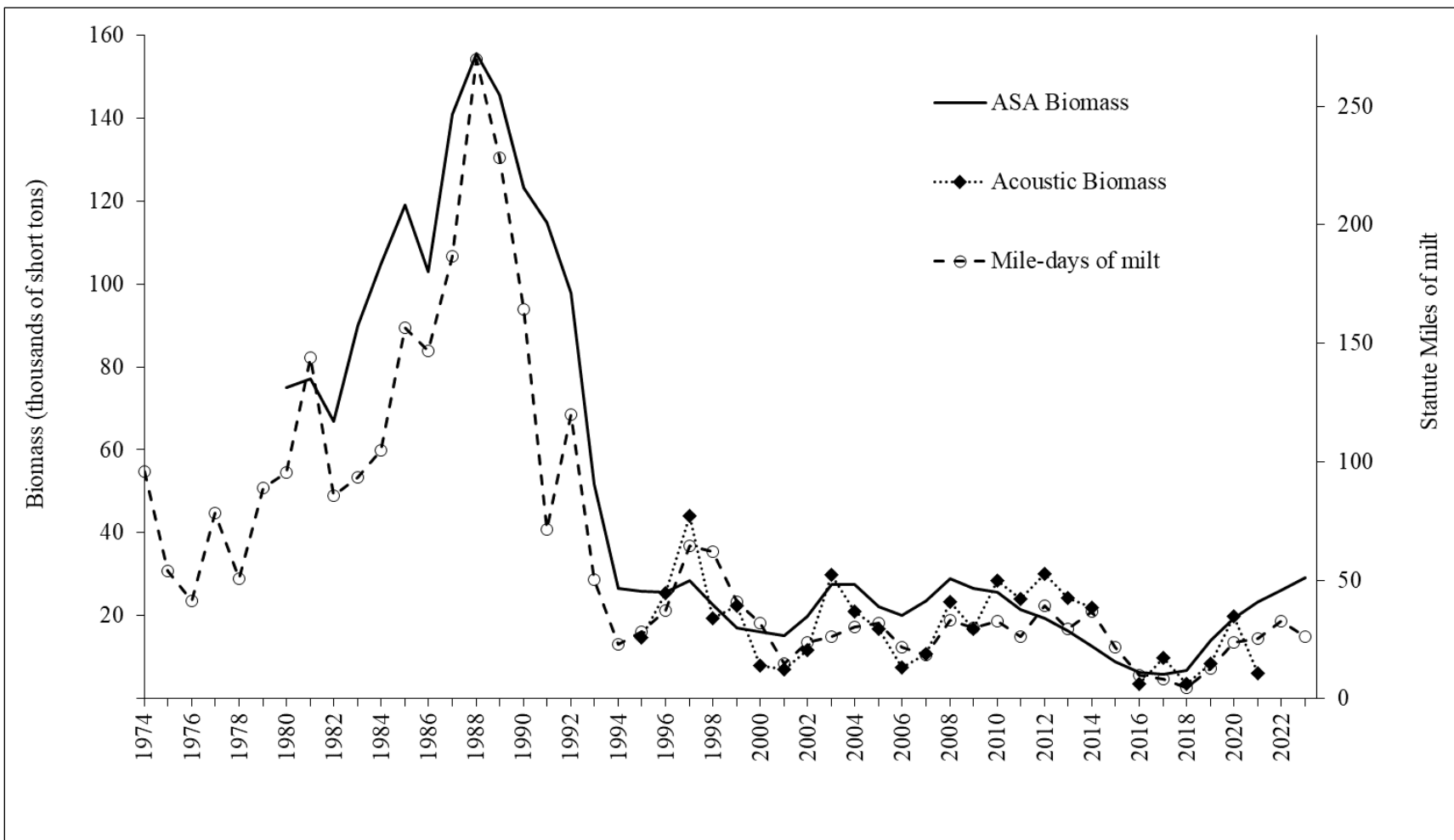
^b Sum of the daily observed linear miles of herring milt calculated in ArcMap from digitized hand-annotated paper maps and data collected electronically.

^c All herring commercial fisheries in Prince William Sound were closed in the spring of 1989 because of the potential for the contamination of harvests from the T/V *Exxon Valdez* oil spill.

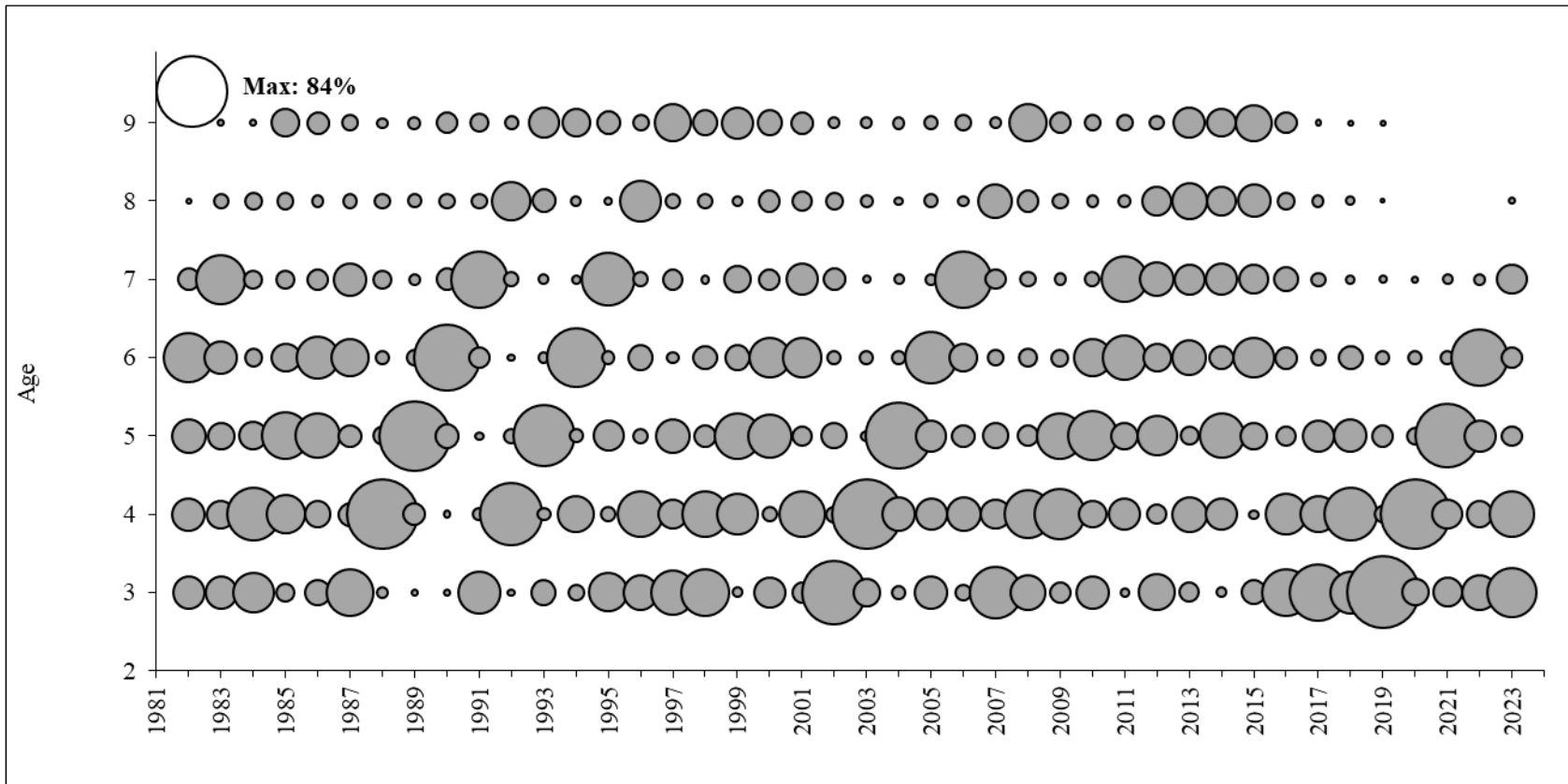
^d Acoustics estimates for 2005–2014 are from ADF&G surveys only and are not adjusted for maturity or subsequent harvest. Therefore, they represent the total biomass and not the spawning biomass.

^e Estimates are not available.

Appendix G2.—Prince William Sound Area annual Pacific herring biomass indices by management year, 1974–2023.



Appendix G3.—Spring Prince William Sound Pacific herring age composition by year, 1982–2023.



Note: Circle size indicates percent contribution of age class to spawning population (see upper left for scale).