Fishery Management Report No. 21-18

2020 Prince William Sound Area Finfish Management Report

by

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

FISHERY MANAGEMENT REPORT NO. 21-18

2020 PRINCE WILLIAM SOUND AREA FINFISH MANAGEMENT REPORT

by

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ABSTRACT

This is the 2020 edition of the annual management report describing commercial fishery management and results each year for salmon and herring in the Prince William Sound management area. This report also describes subsistence and personal use salmon fisheries. In 2020, approximately 20.99 million salmon were harvested in the Prince William Sound commercial salmon fishery: 7,320 Chinook *Oncorhynchus tshawytscha*, 709,000 sockeye *O. nerka*, 268,000 coho *O. kisutch*, 18.81 million pink *O. gorbuscha*, and 1.20 million chum salmon *O. keta*. An additional 5.26 million salmon were sold for hatchery cost recovery. During 2020, 489 drift gillnet, 26 set gillnet, and 221 purse seine permit holders harvested salmon. The estimated value, including hatchery sales, was approximately $50.57 million. Exvessel values were $10.32 million from drift gillnets, $889,000 from set gillnets, and $22.94 million from purse seines. Revenue from hatchery cost recovery and raceway sales was $16.43 million. Approximately 3,070 subsistence and 6,770 personal use permits were issued, and 154,000 salmon were then harvested in these 2 fisheries combined. The commercial fishery for Pacific herring *Clupea pallasii* was closed in 2020 for the 20th consecutive year because age structure and projected available surplus in the spawning biomass did not support a fishery.

Key words: Pacific salmon *Oncorhynchus* spp., Pacific herring *Clupea pallasii*, harvest, hatchery, 2020, annual 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, salmon net gear 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 2).

Six private nonprofit (PNP) hatcheries contribute to the area's fisheries (Figure 1). Five are operated by the regional aquaculture association, 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.* 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. Main Bay Hatchery (MBH; located in western PWS at the head of Main Bay) produces sockeye salmon. The sixth hatchery is the Solomon Gulch Hatchery (SGH), operated by the Valdez Fisheries Development Association (VFDA); it is located on the south shore of Port Valdez and produces pink and coho salmon.

COMMERCIAL SALMON FISHERIES

The management objective for all districts is achieving escapement goals, where established, and allowing for the orderly harvest of all 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 (PWSAC 2020a; VFDA 2020a). 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 (PWSAC 2020b; VFDA 2020b) and these reports are summarized in Wilson (2021).

Legal gear for commercial salmon fishing is purse seine, drift gillnet, and set gillnet. Numbers of commercial limited entry permits in Area E is defined in 20 AAC 05.320. Drift gillnet permits are the most numerous (536) and are allowed in the Bering River, Copper River, Unakwik, Coghill, and Eshamy Districts, and Port Chalmers Subdistrict when allowed through the allocation plan. Set gillnet gear (28 permits) is allowed only 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 board modified the *Prince William Sound Management and Salmon Enhancement Allocation Plan (*5 AAC 24.370). The modifications allocated only fish produced by PWSAC and removed wild stocks and fish produced by VFDA. Additionally, a 5-year rolling-average exvessel value is now used rather than 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 in the year following the calculation, the drift gillnet gear group shall have exclusive access to the Port Chalmers Subdistrict from June 1 through July 30. If the purse seine gear group harvest value is calculated to be 45% or less, then in the year following the calculation, the purse seine gear group shall have exclusive access to the Esther Subdistrict from June 1 through July 20.

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, except 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)). Moreover, 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 chum salmon to be harvested prior to July 21 within the Esther Subdistrict of the Coghill District when the available surplus is not being adequately harvested by the drift gillnet fleet.

2020 SALMON SEASON HARVEST SUMMARY

The commercial salmon harvest in the Prince William Sound management area was low in 2020, continuing recent years of variable and often low salmon runs in the management area. The overall

commercial harvest was 20.99 million fish (Figure 3). The harvest included 7,320 Chinook *O. tshawytscha*, 709,000 sockeye, 268,000 coho, 18.81 million pink, and 1.20 million chum salmon. An additional 5.26 million fish were harvested in the hatchery cost-recovery fisheries (Table 1). Exvessel values from the 2020 commercial fisheries were $23.12 million (67%) for purse seine, $10.32 million (30%) for drift gillnet, and $889,000 (3%) for set gillnet (Table 2; Figure 4). The gillnet subarea and overall purse seine average price per pound paid for Chinook ($1.86–$5.94) and chum ($0.15–$0.46) salmon were below the 10-year (2010–2019) average (Table 3). The average price per pound paid for sockeye ($1.43–$3.00), coho ($0.89–$1.40), and pink ($0.27–$0.30) salmon fluctuated above and below the 10-year (2010–2019) average, depending on gear and reporting area (Table 3). The purse seine average earnings per permit was $105,000, the second lowest in the last 10 years and less than half of the 10-year (2010–2019) average (Table 4). Drift gillnet ($21,100) and set gillnet ($34,200) earnings per permit were the lowest in the past 10 years; drift gillnet earnings were 25% of the 10-year (2010–2019) average; and set gillnet earnings were 38% of the 10-year (2010–2019) average (Table 4).

2020 GILLNET SALMON SEASON SUMMARY

Overview

The Copper River had historically weak salmon harvests that were only somewhat buoyed by a strong coho salmon run at the end of the season. Early on, the sockeye and Chinook salmon runs were some of the weakest on record, with little fishing opportunity and the third-smallest commercial harvest in the past 50 years. This was followed by hatchery chum and sockeye salmon runs in western PWS that were close to 60% below forecast (PWSAC 2020a); 73% of the chum run and 34% of the sockeye run were harvested for hatchery cost recovery and broodstock (PWSAC 2020b). The season ended with coho salmon fisheries in the Copper River and Bering River districts that were closer to average and with strong grounds prices, providing more than a quarter of the season total exvessel value for the drift gillnet fleet (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021).

Fishery participation was low in 2020. A total of 489 drift gillnet permit holders sold 6,400 Chinook, 573,000 sockeye, 237,000 coho, 969,000 pink, and 301,000 chum salmon, for a combined total of 2.09 million salmon. A total of 26 set gillnet permit holders sold 7 Chinook, 91,800 sockeye, 23 coho, 35,100 pink, and 4,100 chum salmon, for a combined total of 131,000 salmon (Table 1).

The gillnet fishery harvest and exvessel value in 2020 were historically low. The drift gillnet exvessel harvest value of $10.32 million was 76% below the 10-year (2010–2019) average, and the lowest since 1980 (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021). Drift gillnet average permit earnings were $21,100 compared to a 10-year (2010–2019) average of $84,400 (Table 4; Figure 4). The set gillnet exvessel harvest value of $889,000 was 65% below the 10-year (2010–2019) average, and average permit earnings were $34,200 compared to a 10-year (2010–2019) average of $89,500; Table 4).

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 Alaska Board of Fisheries, 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 2003, the Chinook salmon spawning escapement goal was changed to 24,000 or more fish (Table 5; Bue et al. 2002). At the December 2011 Alaska Board of Fisheries meeting, the *Copper River King Salmon Management Plan* (5 AAC 24.361) was amended to limit the number of commercial openings inside of the barrier islands in statistical weeks 20 and 21 to no more than 1 during this 2-week period to increase the likelihood of achieving the Chinook salmon escapement goal.

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

The current sustainable escapement goal (SEG) range is 360,000–750,000 wild sockeye salmon for the upper Copper River (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. This IRRG consists of 7 components and can vary each year because 3 components are variable. These components are listed below, along with the number of salmon in 2020:

- The lower bound of the spawning escapement goal (fixed): 360,000 sockeye salmon
- Other salmon (fixed): 17,500 salmon
- Subsistence harvest (variable): 70,100 salmon
- Personal use harvest (variable): 133,200 salmon
- Sport fishery (fixed): 15,000 salmon
- Gulkana Hatchery broodstock (variable): 20,000 sockeye salmon
- Gulkana Hatchery surplus (variable): 45,200 sockeye salmon
- Total: 661,000–1.05 million salmon

ADF&G manages for a daily inriver objective that is the apportioned number of salmon (based on historical run timing) that need to pass the Miles Lake sonar to meet the overall IRRG. For 6 of the 7 IRRG components, the daily inriver objective is calculated using run timing of both wild and hatchery salmon. The subsistence harvest component is calculated using only wild stock run timing. This is required by AS 16.05.940(34), which states: "subsistence uses means the noncommercial, customary and traditional uses of wild, renewable resources..."

In the past 10 years, annual harvests of Chinook and salmon in the Copper River District have been much more variable than in the 15 previous years. Average Chinook salmon commercial harvest dropped from an average of 42,700 per year (1995–2009) to 14,200 per year (2010–2019; Appendix A4). Historically small Chinook salmon runs in 2010, 2014, 2016, and 2020 (Appendix A3) resulted in commercial catches that all ranked in the lowest 10 years since 1975 (Appendix A4).

Annual sockeye salmon harvests have been more stable over the 25-year period since 1995 but dropped to historic lows in the past 3 years. The third smallest annual commercial sockeye salmon harvest since 1889 was in 2018, and the fifth smallest was in 2020 (Appendix A4). These recent, historically weak runs were the impetus for emergency disaster relief fund requests from the gillnet fleet in 2020, with results pending as of this writing (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021).

The coho salmon commercial harvest has also varied widely over the last 25 years, from 18,700 to 543,000 fish, but in the most recent 10 years has helped to stabilize the economic impacts of low sockeye and Chinook salmon harvests (Appendix A4). During the 2018 and 2020 seasons, when drift gillnet Chinook and sockeye salmon harvest values were near all-time lows, coho salmon harvests provided an infusion of $6.10 million (2018) and $2.77 million (2020) exvessel value into the local economy (Table 4; Appendix A4).

2020 Preseason Outlook and Harvest Strategy

For 2020, ADF&G forecasted above-average harvests of Chinook salmon (36,000 fish) and below-average harvests of sockeye salmon (771,000 fish) in the Copper River District (Haught 2020; Appendices A1, A3, A4). Due to the above average Chinook salmon forecast, closed waters described in 5 AAC 24.350(1)(B) were only anticipated to be utilized during statistical weeks 20 (May 10–16) and 21 (May 17–23). The 2020 inriver goal was 624,705 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 around May 15. Fishing schedules are adjusted inseason 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 opening, 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). Environmental conditions, fishing effort, and both temporal and spatial salmon distribution are also considered during early season management. By late May, Miles Lake sonar is operational and 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. Because of 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, the 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 likely underestimates salmon abundance because other species of salmon remain in tributaries, salmon distribute or redistribute outside of survey index areas, and water conditions create poor visibility. Additionally, stormy fall weather often makes regular weekly survey flights challenging. The SEG for the Copper River Delta coho salmon is 32,000–67,000 fish (Table 5; Bue et al. 2002).

Sockeye and Chinook Salmon Fishery Season Summary

The 2020 season was noteworthy for historically low sockeye salmon runs to the Copper River that necessitated conservative management, resulting in low commercial and inriver harvest, with escapement within and below sockeye salmon escapement goals. The 2020 Copper River sockeye salmon total run was 726,000 fish, of which 77% were wild Upper Copper River fish, 4% were hatchery Upper Copper River fish, and 19% were Copper River Delta fish. Of these 726,000 fish, 104,000 (14%) were commercially harvested and sold, 1,460 (<1%) were commercially harvested and retained as homepack, 7,090 (1%) were harvested in the Copper River District subsistence fishery, and 145,000 (20%) were harvested in state and federal freshwater fisheries. Only Copper River District subsistence and Chitina Subdistrict federal subsistence harvest were above the 10-year (2010–2019) average. Upper Copper River sockeye salmon spawning escapement was 364,000 fish, which was 1% above the 360,000-fish lower bound of the SEG; and Copper River Delta sockeye salmon escapement was 111,000, which was 16% below the recent 10-year (2010–2019) average (Appendix A1). Additionally, 10,800 fish returned to the GH release sites.

In 2020, the sockeye salmon run produced by the GH totaled 29,100 fish (Appendices A2 and E3). This was 71% below the PWSAC total run forecast of 105,000 fish (PWSAC 2020a). A total of 10,800 sockeye salmon were reported as collected for broodstock or escaped into the watershed (Appendix E3). Of these fish, 6,780 were harvested for broodstock and an estimated 4,010 sockeye salmon returned to release locations and were not harvested (PWSAC 2020b).

The 2020 Copper River Chinook salmon run was weak and the lower bound SEG was not achieved. The total run was 33,100 Chinook salmon, of which 5,880 (18%) were commercially harvested and sold, 671 (2%) were harvested through educational and subsistence permits in the Copper River District, and 225 (1%) were retained by commercial permit holders as homepack. A total of 4,240 (13%) were harvested in inriver fisheries, and the remaining 22,054 (67%) represent spawning escapement (Appendix A3). Spawning escapement was 8% below the lower bound SEG of 24,000 for Copper River Chinook salmon.

Miles Lake sonar became operational on May 19, starting with both sonars enumerating for approximately half a day. This deployment date was later than recent years due to COVID-19 quarantine requirements and late presence of shore ice. The first salmon were counted on May 19, when the north and south banks passed a combined 763 fish. On May 20, the Miles Lake sonar became fully operational, with both sonar sites counting 24 hours a day. On July 28, the last day of operation, the 2020 cumulative Miles Lake sonar count was 530,000 salmon, which was 15% below the lower end of the inriver goal range for the date and the ninth-lowest count since 1978 (Appendices A6–A8).

Aerial surveys for the Copper River and the Copper River Delta extend from mid-June to mid-October and serve as important metrics of escapement abundance and distribution. Aerial surveys were an increasingly important sockeye salmon management tool during late June and throughout most of July. The Copper River Delta aerial escapement survey weekly index was below the lower end of the objective range during the first 2 weeks of coverage and near or above for the remainder of the season (Appendix A10). The final escapement index count for the Copper River Delta systems was 55,600 sockeye salmon, which was within the SEG range of 55,000–130,000 fish (Table 5; Appendix A10). Since 2010, the escapement index has ranged from a low of 51,600 in 2016 to a high of 82,800 in 2010 (Appendix A11). In 2020, 2 aerial surveys of upper Copper River

index streams were conducted to evaluate the distribution of sockeye salmon and observed the second lowest (2018 was the lowest) total peak count index since 2004 (Appendix A12).

Commercial fishing time in 2020 was greatly reduced because of weak runs of both Chinook and sockeye salmon. Sockeye salmon harvest was well below anticipated levels for the first 2 fishing periods (May 14 and 18) and signified that a shift to a conservative (once a week or less) fishing schedule was in order, even though Chinook salmon harvest was near the semiweekly anticipated harvest point estimate on the second fishing period (May 18; Appendix A9). Large spring tidal exchanges of nearly 16 feet peaked around May 22, which was the day of a potential third opening. These large tidal cycles typically contribute to salmon movement and passage and frequently correlate to above-average commercial harvests and counts at the Miles Lake sonar station. These large tides, along with warm weather and early ice out in the river, contributed to the increased harvest risk of continuing 2 fishing periods a week through a period that was likely to be the peak of the sockeye and Chinook salmon runs through the district. This provided a 2-pronged justification for keeping the commercial fishery on a conservative footing—short-duration fishing periods and no more than 1 fishing period every week or 2 for most of the season (Appendix A5).

Due to reduced overall exploitation potential for Chinook salmon earlier in the season, short fishing periods, and skipping a fishing period that would have normally been fished, additional fishing opportunity for Chinook salmon was warranted and inside waters were open during the third fishing period, May 25 (Appendix A5). Poor Chinook salmon harvest during the third fishing period resulted in the inside closures being implemented again with an expansion of the closure area 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; Figure 2). The further reduction in the channelized shallow water fishing area reduced Chinook salmon harvest potential and was in keeping with the need for elevated conservation measures based on the harvest pattern to date. These expanded closures were maintained into the first week of July (Appendix A5), accounting for any remaining Chinook salmon run overlap.

The trend of significantly-below-expected sockeye and Chinook salmon harvest continued through mid-June, so the commercial fishery had further closures. The fourth fishing period on June 1 compared to the fifth fishing period on June 18 resulted in drastic declines in harvest and participation. Chinook and sockeye salmon harvests from the fourth fishing period (June 1) were 953 Chinook salmon and 32,900 sockeye salmon, but during the fifth fishing period (June 18) Chinook salmon harvest declined to 102 fish and sockeye salmon harvest declined to 10,800 fish. Fishing effort also declined by nearly 295 permits from June 1 to June 18 (Appendix A5). This declining harvest pattern, combined with Miles Lake sonar passage that stayed consistently below the daily objective range through the middle of June, prompted an extended closure from mid-June through early July—a period that would typically have allowed for 4 fishing periods (Appendices A5–A7). The sockeye salmon aerial survey escapement index fluctuated around the minimum objective from late June through July, which only supported minimal commercial fishing time during this period (Appendices A5 and A10). This translated to 2 fishing periods in the first half of July, then an extended closure through the start of the coho salmon fishery in mid-August (Appendix A5).

Commercial fishery decision making is also driven to varying degrees by numbers of SrCl2-marked GH fish harvested in the commercial fishery. Through the historical average period of peak abundance (last week of June through first week of July), GH sockeye salmon represented about 33% of the harvest. GH sockeye salmon were elevated in abundance in the fishery 1.5 weeks

later, representing an average of 21% of the harvest on July 16. The small hatchery and wild sockeye salmon runs meant that the number of GH fish in the harvest remained low even with this high proportional representation (Appendices A1, A6, A7, A10, and E2). The GH contribution to the sockeye salmon commercial harvest was 9,810 fish, or 9% of the Copper River District harvest (Appendix E2), which was the second-lowest harvest in the last 30 years (Appendix E3). This low harvest was on fish that came from fry releases in 2016 and 2017 that were both below the 10-year (2010–2019) average (Appendix E4). MBH contributed 5,490 fish, or 5% of the Copper River District harvest (Appendix E2). The number of wild sockeye salmon in the Copper River District commercial harvest was 88,400, or 85% of the total sockeye salmon catch (Appendix E2).

Sockeye salmon harvest was below semiweekly harvest projections during all commercial fishing periods in 2020 (Appendix A9). From the May 18 fishing period until the start of the coho salmon fishery on August 17, the commercial fishery was prosecuted on a schedule of 1 period a week or less. This restricted schedule amounted to a total of 84 hours fished for the entirety of the Chinook and sockeye salmon season—a huge reduction from the recent 5-year (2015–2019) average of 515 hours (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021). The Chinook and sockeye salmon fishery had a preliminary exvessel value of $1.97 million (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021). In an average year, like 2019, this fishery can be worth $22.74 million (Morella et al. in press).

A total of 465 drift gillnet permits were active in the Copper River District in 2020 (Appendix A5), a continuation of the steady decline in effort seen over the last 3 years (Morella et al. *In prep*; Russell et al. *In prep*). Fishing effort in 2020 peaked May 25 with 434 permits fished during a 12-hour opening. Participation in the fishery fluctuated from this peak to a low of 53 permits fished on the July 16 fishing period. This drop in participation was from a combination of low Chinook and sockeye salmon abundance during the first 2 months of the fishery and the related minimal fishing time (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 low in 2020. The total commercial harvest of 6,100 Chinook salmon was 57% below the previous 10-year (2010–2019) average harvest of 14,200 fish (Appendices A3–A5 and A9). Peak Chinook salmon harvest occurred on May 18 when 1,880 Chinook salmon were harvested during a 12-hour fishing period (Appendix A5). The total Copper River District sockeye salmon commercial harvest of 104,000 fish was 92% less than the previous 10-year (2010–2019) average harvest of 1.31 million sockeye salmon (Appendices A1, A4, A5, and A9). Peak sockeye salmon harvest occurred May 25 when 34,700 sockeye salmon were harvested during a 12-hour fishing period (Appendix A5).

The age structure of both Chinook and sockeye salmon in 2020 was similar to prior years. In 2020, most of the commercially harvested Chinook salmon were age-5 fish (42%), followed by lower numbers of age-4 (35%) and age-6 (22%) fish (Appendix A14). In 2020, most of the commercially harvested sockeye salmon were also age-5 fish (68%), also followed by age-4 (17%) and age-6 (14%) fish (Appendix A13). Historically, 5-year-old sockeye salmon make up 70–85% and 5-year-old Chinook salmon make up 50–80% of their respective runs in the Copper River.

Coho Salmon Fishery Season Summary

The 2020 coho salmon run was estimated to be 256,000 fish, which includes all documented harvest and Copper River Delta escapement but does not include upriver spawning escapement because the number of coho salmon migrating upriver is not assessed. In the Copper River District,

a total of 169,000 (66%) coho salmon were harvested and sold commercially; 1,590 (1%) were reported retained as homepack; 326 (<1%) fish were harvested from the Copper River District in the subsistence gillnet fishery, and an estimated 12,900 (5%) were harvested in state and federal freshwater fisheries (Appendix A15). The Copper River Delta spawning escapement index of 36,400 coho salmon was within the SEG index range of 32,000–67,000 (Table 5; Appendix A16). This index value is from peak aerial surveys and was the lowest in the last 10 years (2010–2019; Appendix A17).

The 2020 coho salmon run substantially increased exvessel value for the commercial fishery, highlighting the importance of this late-season fishery. The coho salmon commercial harvest of 170,000 was approximately three-quarters of the harvest projection of 223,000 fish (Appendix A9). The coho salmon fishery provided 50% of the Copper River District exvessel value in 2020. With average grounds price of $1.40/pound (Table 3) and an average fish weight of 8.42 pounds/fish (Appendix A5), the total preliminary exvessel value of this fishery was $2.00 million.

Coho salmon harvest did not exceed sockeye salmon harvest until the August 17 fishing period, when 21,000 coho and 3,600 sockeye salmon were harvested by 165 permit holders (Appendix A5). Coho salmon abundance likely exceeded sockeye salmon abundance in the Copper River District earlier in August due to the comparative run strengths (weak sockeye and near average coho salmon runs), but because of the extended fishery closure there were no harvest composition data for the early August period. The August 17 fishing period yielded a harvest that was approximately half of the forecasted semiweekly weekly harvest of 42,900 coho salmon (Appendices A5 and A9). The below forecasted semiweekly harvest numbers for the fishing period supported a continued conservative management approach, especially when considering the increased fishery participation potential due to a poor Chinook and sockeye salmon season. An aerial escapement survey flown under good survey conditions, during the week ending August 15, yielded a total index count of 4,150 fish, versus the lower weekly index target of 5,850 fish (Appendix A16). Over the past decade, the first round of coho salmon aerial surveys have often been well below the weekly target and the relative closeness of the observed versus expected was taken as a sign of good early run strength (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021).

Harvest effort for coho salmon peaked in the August 24–25 fishing period when 262 permit holders delivered 43,000 coho salmon. Catch then peaked during the next fishing period, August 31–September 1, when 220 permit holders delivered an average of 44,900 coho salmon (Appendix A5). Effort remained high from mid-August through mid-September, averaging 188 permit holders per fishing period. Harvest averaged 39,900 coho salmon per fishing period during the last week of August through the first week of September before declining rapidly for the remainder of the season (Appendices A5 and A9). The average historical harvest for this late August/early September period (59,800 coho salmon) indicated that 2020 harvest was still tracking below historical averages (Appendix A9). An aerial survey flown during the week ending August 31, under good observational conditions, documented 21,500 coho salmon in index streams, which was 33.3% above the lower index target for the week (Appendix A16).

The combination of below forecasted semiweekly harvest and above target escapement prompted the switch to 2 fishing periods per week but did not support extending fishing time beyond the historical 24-hour norm (J. Botz, PWS Area Management Biologist, ADF&G, Cordova, unpublished data, 2021). A steep decline in harvest between the fishing periods starting

September 3 and 7 prompted a reduction in time to 12 hours for the September 10 fishing period to decrease harvest potential (Appendix A5). The management concern was that fishing effort remained high and that the run could be tailing off early, so it was crucial to build additional escapement from this segment of the run. The aerial survey for the week ending September 12 resulted in a count of 35,000 coho salmon, which fell between the average and upper target for the week and provided assurance that the total peak count for the season was going be within the SEG. The combination of increased escapement and declining fishing effort supported expanded fishing time for the remainder of the season (Appendices A5, A9, and A16). Inclement weather prevented any further aerial surveys. Total peak count index to 36,400 coho salmon was near the lower end of the escapement goal range of 32,000–67,000 fish. The 2020 Copper River Delta peak count index was 19% below the 10-year (2010–2019) average of 45,000 fish (Appendices A16 and A17).

The majority of the coho salmon harvested commercially (48%) were 3-year-old and 4-year-old (48%) fish, and 5-year-old (5%) fish made up the rest of the harvest (Appendix A18). This age structure was similar to historical harvests from the Copper River District fishery.

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 escapement aerial surveys indicate that commercial fishing is warranted. Historically, this district has opened to sockeye salmon harvest in early June. Given there has been little available 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 inseason due to inaccurate reporting from the fishing grounds. Often, a gillnetter will deliver catch from the Bering River District to a tender in the Copper River District, and the harvest will be reported in the Copper River District. This error is often, but not always, resolved when fish tickets are entered.

Sockeye Salmon Season Summary

The 2020 Bering River District sockeye salmon fishery was prosecuted in a similar manner to the 2018 and 2019 fisheries. Inseason aerial survey escapement estimates trended near or below the anticipated inseason weekly index 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 between May 14 and June 1 (Appendix A20). Between June 2 and August 16, the Bering River District was closed to commercial fishing due to an increase in Bering Lake sockeye salmon harvest potential and insufficient escapement to support a targeted fishery. 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 June 27. Only 100 sockeye salmon were observed during this survey. The weekly escapement index range was 4,050–8,910 sockeye salmon, warranting continued closure of the

district to commercial fishing. The next survey was flown during the week ending July 4 and resulted in an escapement count of 10,000 fish, which was near the upper end of the weekly escapement index range of 6,090–13,400 sockeye salmon (Appendix A21). Although the escapement index was within the target range, directing a fishery on the tail end of the run with the escapement goal not yet achieved posed too much risk considering the amount of fishing effort that could have shifted from Copper River District openers.

Sockeye salmon escapement peaked in mid-July and declined rapidly through August. The escapement indices peaked at 14,050 fish the week ending July 11 (near the average objective for the week) and declined to 11,500 sockeye salmon the next week (near the lower objective for the week; Appendix A21); survey conditions were good both weeks. The late July through August surveys were flown under mixed observational conditions and survey counts followed a general declining trend. During the weeks of August 15 and August 29, the counts appeared to increase over the previous week due to improved observational conditions—not because of increased abundance.

The final sockeye salmon escapement index for the Bering River was 15,800 fish, which was 800 fish above the lower bound SEG of 15,000 fish (Appendix A21). Total sockeye salmon harvest in the district was 9 fish compared to the 10-year (2010–2019) average harvest of 3,900 fish (Appendix A19 and A20).

Coho Salmon Season Summary

Late-season weather conditions prohibited several aerial surveys in the Bering River District. Run timing of the Bering River District coho salmon run was average, and final escapement was within the SEG range for the district (Appendix A22). Commercial harvest of 64,700 coho salmon was on par with the 10-year (2010–2019) average of 63,076 (Appendix A19).

Coho salmon fishing opportunity in the Bering River District followed same schedule as the Copper River District. Fishing time was progressively expanded moving into the end of the season as escapement improved and fishing effort declined. Harvest from the period that began August 17 was 3,040 coho salmon, with 15 permit holders participating in the fishery. This fishing effort was high for this time of the season but only about one-fifth of the peak effort in early September. This low level of effort in mid- to late August relative to early September is not unusual because most effort is focused on earlier-timed coho salmon stocks in the Copper River District. Harvest and effort picked up quickly over the next 2 weeks when an average of 37 permit holders delivered an average total of 12,600 coho salmon per fishing period (Appendix A20). Harvest remained elevated during the first week of September when an average of 14,000 coho salmon were harvested per fishing period by an average of 65 permit holders. The number of fish harvested was 1,400 fish more per period than the last week of August and effort was 75.7% greater during these 2 early September fishing periods. This increase in effort with a relatively small increase in harvest indicated that run entry was probably just past peak (Appendix A20).

Inclement weather prevented a comprehensive survey of Bering River District index systems until late August. When a survey under good observational conditions was finally flown during the week ending August 29, 13,200 coho salmon were observed compared to a projected range of 8,700–22,200 fish (Appendix A22). This survey corroborated the pattern of continued strong run entry that was apparent in the commercial fishery. The peak observed escapement in 2020 occurred during the week ending September 12 when 24,300 coho salmon were observed in index systems. Aerial survey indices in some index systems would have probably continued to rise through the

end of the season, but poor weather and high turbidity prevented several surveys from taking place. The total drainage escapement index for the season was 25,800 coho salmon and was near the upper end of the SEG range of 13,000–33,000 (Appendix A22).

Commercial fishing effort in the Bering River District coho salmon fisheries was high due to productive fishing in the adjoining eastern portion of the Copper River District. Harvest and effort followed a similar pattern to aerial survey observations but peaked 1–2 weeks before the peak observations. A total of 105 permit holders fished during the season, and peak coho salmon fishing effort of 76 permits occurred during the 24-hour period that began September 7. Peak harvest occurred 2 fishing periods prior (August 31–September 1) when 38 permit holders harvested 16,500 coho salmon. Effort declined to 10 permits fished and 2,410 coho salmon were harvested during the fishing period that started on September 17 (Appendix A20).

Coghill District

The Coghill District is in northwestern PWS and is approximately 45 miles in length. Most commercial fishing in the Coghill District targets hatchery salmon from WNH and wild sockeye salmon returning to Coghill Lake. The hatchery is located on Lake Bay at the southern end of Esther Island (Figure 1) and has annual production goals of approximately 250,000 coho, 9.50 million pink, and 3.00 million chum salmon.

Preseason Outlook and Harvest Strategy

The 2020 Coghill Lake sockeye salmon total run forecast was 81,000–268,000 fish (175,000 fish point estimate). Meeting the median historical escapement estimate of 30,000 sockeye salmon (SEG range of 20,000–60,000; Table 5) would leave 145,000 fish (forecast range 51,000–238,000) available for commercial harvest (Haught 2020). The WNH enhanced chum salmon run was forecast to be 2.55 million fish. PWSAC's projection for cost-recovery and broodstock requirements was approximately 1.30 million chum salmon, leaving 1.25 million chum salmon for commercial harvest. An estimated run of 115,000 coho salmon was expected to return to WNH, of which 2,700 were anticipated to be harvested for broodstock, leaving the remaining 112,000 fish available for commercial harvest (PWSAC 2020a).

Early-season management of the Coghill District is largely based on Coghill Lake sockeye salmon escapement and WNH chum salmon run strength. The Coghill District is open for the harvest of chum, sockeye, pink, and coho salmon to drift gillnet permit holders during all fishing periods and to purse seine permit holders beginning July 21. The seine fisheries end when the harvestable surplus is no longer predominantly pink salmon. The drift gillnet chum and sockeye salmon fisheries are generally prosecuted on a medium duration (36–48 hour) 2-fishing-period-per-week schedule concurrent with other gillnet fisheries. The pink salmon fishery, both purse seine and drift gillnet, generally consists of short duration (12 hour) fishing periods prosecuted as frequently as every day. PWSAC, in consultation with ADF&G, generally 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 the early season management of the Coghill District. The picket weir was replaced with a resistance board weir in 2019 because of washouts in prior years. Escapement assessment began on June 5. Daily sockeye salmon passage peaked on June 28, when 3,570 fish passed the weir (Appendices B1 and B2). Weir counts stopped

July 27. A total of 53,900 sockeye salmon were counted and the sockeye salmon escapement goal for Coghill River was met (SEG range of 20,000–60,000; Table 5; Appendix B3). The Coghill River sockeye escapement goal has been achieved since 2017, following poor returns from 2013 through 2016 in which the goal was not met. The 2016 escapement was the second lowest since 1972 and the parent year of 50% of the 2020 run (age-1.2 fish; Appendix B7). Additionally, 40,700 pink salmon were counted passing the Coghill River weir in 2020 (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. Aerial surveys are used to assess pink and chum salmon escapements. Escapement goals were met for pink salmon in the Coghill District but were not met for chum salmon (Appendix D1).

The 2020 total Coghill District commercial drift gillnet harvest was 111,000 sockeye, 2,500 coho, 651,000 pink, and 229,000 chum salmon, by 365 permit holders (Table 1; Appendices B4 and B6). The total combined purse seine and drift gillnet salmon harvest for Coghill District was 113,000 sockeye (99% drift gillnet), 2,900 coho (86% drift gillnet), 1.76 million pink (37% drift gillnet), and 236,000 chum salmon (97% drift gillnet; Table 1; Appendix B6).

In 2020, PWSAC reported a WNH chum salmon purse seine cost-recovery harvest of 620,000 fish, raceway sales of 19,600 fish, and broodstock carcass sales of 184,000 fish (Appendix E5). The broodstock goal for chum salmon was 283,000 fish (PWSAC 2020a). Of the fish collected for broodstock, 160,000 were viable. PWSAC reported harvesting 144 viable coho salmon as part of broodstock collection, which was short of the 2,700 fish goal (PWSAC 2020a, 2020b).

Hatchery-origin salmon made up an estimated 54% of the sockeye, 78% of the pink, and 95% of the commercial chum salmon harvest in the Coghill District, based on otolith thermal mark data (Appendices E6–E8). An estimated 60,800 (54%) MBH and 52,100 (46%) wild sockeye salmon were harvested in the Coghill District commercial fishery for a total of 112,800 sockeye salmon (Appendix E6). Of the 1.76 million pink salmon harvested in this district by the CCPF, 1.13 million (64%) were released at WNH, 129,000 (7%) were released at CCH, 110,000 (6%) were released at SGH, and 2,800 (<1%) were released at AFK (Appendix E7). Of the 236,000 chum salmon harvested in the Coghill District, 223,000 (94%) were of hatchery origin (Appendix E8).

The Coghill District drift gillnet fishery began on June 1 with weekly openings concurrent with the Eshamy District. The first 2 fishing periods were 36 hours and excluded the Esther Subdistrict, WNH special harvest area and terminal harvest area. Twice weekly 36-hour fishing periods were maintained through June 19, but hatchery subdistricts were managed conservatively to allow for hatchery run entry for cost recovery and brood stock acquisition. Period 7 was 24 hours. Subsequent fishing periods allowed for liberal fishing time in College Fjord to increase Coghill Lake sockeye salmon harvest potential because escapement remained well above the projected minimums and near the upper end of the daily passage goals for Coghill Lake. However, fleet participation remained low due to minimal fishing opportunity on hatchery chum salmon.

Peak drift gillnet fishing effort occurred during the 48-hour period beginning on June 29 when 270 permit holders harvested 15,900 sockeye and 10,600 chum salmon (Appendix B4). Peak drift gillnet chum and sockeye salmon harvest occurred during the 48-hour period beginning on June 25 (Appendix B4). The 2020 sockeye salmon harvest was 64% of the 10-year (2010–2019) average harvest of 175,000 fish, and the 2020 chum salmon harvest was 14% of the 10-year (2010–2019) average harvest of 1.60 million fish. The 2020 coho salmon harvest by the drift gillnet fleet was 6% of the 10-year (2010–2019) average of 45,200 fish (Appendix B6).

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, borders 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, harvest data and 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 2020 fishing season on June 18 and followed a fishing schedule concurrent with other gillnet districts in PWS until the district was closed for the season on July 21 (Appendix B8). The total 2020 Unakwik District drift gillnet harvest was 764 sockeye, 2 pink, and 4 chum salmon, which was below the 10-year (2010–2019) averages for all species (Appendix B9).

Eshamy District

The Eshamy District, in western PWS, is 15 miles in length and open to all drift and set gillnet permits in Area E. It 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 and minimize both the harvest of salmon bound for other areas in PWS, and the harvest of wild sockeye salmon returning to Eshamy Lake. Preseason forecasts of the sockeye salmon run to Eshamy Lake have not been developed since 2015. The Eshamy River weir has not been fully operated since 2011. An unmanned video weir was set up on the Eshamy River from 2012 through 2017, but this only provided partial escapement counts due to inability to keep the weir fish tight without staff on site.

Preseason Outlook and Harvest Strategy

No preseason forecast of the sockeye salmon run to Eshamy Lake was developed in 2020 and there has been no escapement monitoring since 2017 due to budget cuts. PWSAC projected the total run of enhanced sockeye salmon to MBH would be 1.06 million fish, of which 8,900 fish were required for broodstock and the remaining 989,000 fish would be available for harvest in the commercial fishery (Table 6; PWSAC 2020a). This MBH run was from fry releases in 2017 and 2018 (Appendix E14).

During years when 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 2020, the set gillnet group was above the 5.0% allocation and was limited to 36 hours per week.

Season Summary

The total commercial fishery harvest in the Eshamy District in 2020 was 195 Chinook, 450,000 sockeye, 953 coho, 352,000 pink, and 74,700 chum salmon (Table 1; Appendix C3). A total of 385 drift gillnet permit holders and 26 set gillnet permit holders participated (Appendices C1 and C2). For the 3 most valuable species, drift gillnets accounted for 80% of the sockeye salmon, 95% of the chum salmon, and 90% of the pink salmon harvests. Harvests were well below average for sockeye salmon (down 48% for drift gillnets, down 62% for set gillnets) and chum salmon (down 57% for drift gillnets, down 86% for set gillnets), but well above average for pink salmon (up 91% for drift gillnets, up 36% for set gillnets). All averages are using the 10-year period 2010–2019; harvest data are detailed in Appendix C3. Even though the overall PWS pink salmon run was below average (Appendix D4), the above-average pink salmon harvest for both gear groups in the Eshamy District can be attributed to sustained fishing effort from mid-July to mid-August when fishing effort normally wanes rapidly. Poor sockeye and chum salmon fishery performance earlier in the season is the most likely reason for the sustained interest in the pink salmon fishery.

MBH harvested an additional 232,000 sockeye salmon for cost recovery and 9,740 sockeye salmon for broodstock (of which 6,500 were viable; Appendix E12; PWSAC 2020b). The cost-recovery harvest was the largest since 2007 (Appendix E13).

The majority of sockeye (95%) and chum (92%) salmon harvested in the Eshamy District were hatchery fish, whereas the majority of pink salmon (70%) were wild. Based on otolith marks, sockeye salmon were mainly from MBH (95%) and chum salmon were mainly from WNH (72%). Wild pink salmon were thought to be returning to streams outside the district (Appendix E10). The 2020 sockeye salmon run was 30% below the MBH run forecast and 32% below the 10-year (2010–2019) average (Appendices E13).

Sockeye salmon began arriving at MBH in late May and a schedule of 2 commercial fishing periods per week began on June 1. The entire Eshamy District was initially opened to commercial fishing for 36-hour periods to allow the fleet to focus on the hatchery run to MBH, although the run timing overlap with Eshamy River wild sockeye salmon was minimal. PWSAC implemented an aggregate cost-recovery strategy midseason (that included sockeye salmon returning to MBH) because they did not anticipate meeting their gillnet fisheries cost-recovery goals with WNH chum salmon. Therefore, hatchery subdistricts were managed conservatively from June 18 to July 9 to facilitate hatchery cost recovery and broodstock acquisition. Fishing area was expanded to the entire district once cost recovery was completed. There was minimal concern of harvesting sockeye salmon bound for Coghill Lake in the Eshamy district because daily escapement counts at Coghill Lake were strong. Per the *Prince William Sound Management and Salmon Enhancement Allocation Plan* (5 AAC 24.370(f)), the set gillnet fleet was limited to 36 hours per week starting July 10 because they were above their allocation. Twice weekly fishing periods of the entire district, alternating between 36 and 24 hours continued through July 23 until openings were restricted to 24 hours and occasional area restrictions were implemented due uncertainty in escapement at Eshamy River.

The Eshamy District had a record high level of participation in 2020. This was during a year with reduced fleet participation throughout PWS—largely due to extensive closures in the Copper River fishery and reduced fishing area in the Coghill District. Sockeye salmon harvest peaked during a 24-hour period beginning June 22, when 24 set gillnet permit holders harvested 11,500 sockeye salmon and 285 drift gillnet permit holders harvested 64,000 sockeye salmon (Appendices C1 and

C2). Chum salmon harvest peaked during a 24-hour period beginning on June 25, when 21 set gillnet permit holders harvested 648 chum salmon and 258 drift gillnet permit holders harvested 13,900 chum salmon (Appendices C1 and C2). Pink salmon harvest peaked during the 36-hour period beginning July 23 when 61 drift gillnet and 16 set gillnet permit holders caught a total of 81,800 pink salmon (Appendices C1 and C2). Drift gillnet effort peaked at 285 permit holders fishing during the 24-hour period beginning June 22. Set gillnet effort peaked with 26 permit holders fishing the 36-hour periods beginning July 9.

Wild sockeye salmon harvest proportions fluctuated throughout the season but remained relatively low. Wild sockeye salmon proportions peaked at 18% both at the beginning of the season on June 4 and in the middle of the season on July 9 (Appendix E9). After August 10, all harvested sockeye salmon in the Eshamy District were apportioned to wild stocks. The overall proportion of wild sockeye salmon harvest in the Eshamy District was 5%.

The estimated age composition of sockeye salmon commercially harvested in the Eshamy District was 82% 4-year-old, 18% 5-year-old, and 1% 6-year-old fish (Appendix C4). This 4-year-old dominance of the age composition in the run was consistent with historical predominance of this age class in the catch, but proportion was 16% higher than standard age composition assumptions in PWSAC's MBH annual management plan. The low overall wild stock harvest composition in the Eshamy District commercial fishery probably had little influence on these age composition proportions.

2020 Purse Seine Salmon Season Summary

Overview

The general purse seine districts are managed to achieve wild pink and chum salmon escapement goals by district and allow the orderly harvest of surplus wild and enhanced stocks. Run projections 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 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 wild salmon escapement goals are achieved.

The 2020 chum salmon total run forecast in PWS was 4.46 million fish, of which 3.86 million (87%) were from PWSAC hatchery production. PWSAC's hatchery chum salmon forecast meant there was potential for a commercial seine harvest of 500,000 fish at AFK and 810,000 fish at Port Chalmers (PWSAC 2020a). Based on ADF&G's wild chum salmon forecast of 604,000 fish, there was potential for a commercial seine harvest of 404,000 wild chum salmon. ADF&G managed for each district's escapement goal—aiming for each district's long-term average—for a combined total escapement of 200,000 fish (Haught 2020).

The 2020 pink salmon total run forecast for PWS was 33.64 million fish and was made up of 4.42 million wild stock, 14.60 million PWSAC hatchery fish, and 14.62 million VFDA fish. Assuming cost recovery and broodstock needs for VFDA (3.46 million) and PWSAC (3.39 million) and a cumulative SEG of 575,000–992,000 fish, then 25.99 million pink salmon were expected to be available for commercial harvest (Table 5; PWSAC 2020a; VFDA 2020a; and Haught 2020).

The 2020 PWS purse seine harvest was 18.77 million fish, which was 38% below the even-year (2010–2018) average of 30.20 million fish (Russell et al. *In prep*). Harvest was composed of

452 Chinook, 40,500 sockeye, 29,500 coho, 17.80 million pink, and 895,000 chum salmon (Table 1; Appendix D2). The purse seine harvest of pink salmon ranked sixth overall for even-year commercial seine harvests since 2002. The PWS purse seine fishery participation was 221 permit holders (Table 4). The total PWS pink salmon harvest was 23.00 million fish, including 4.19 million fish for hatchery cost recovery (2.61 million for PWSAC and 1.58 million for VFDA) (Table 1; Appendix D3). Pink salmon thermal marked otolith contribution estimates from commercial harvests were 38% SGH, 31% PWSAC, and 30% wild stock fish (Appendix E17).

Aerial escapement surveys in PWS start the last week in June and are flown into mid-September to ensure that the broad range in pink and chum salmon run timing was represented in the escapement index. The 2020 wild pink and chum salmon runs were on time and consistent. Wild pink salmon escapement indices in 2020 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 772,000, with all districts above the lower end of their escapement goals (Appendix D1). Wild chum salmon escapements and harvests were below the 10-year (2010–2019) average across PWS, with the Northern District not achieving the lower end of its escapement goal (Appendix D1).

Subsequently, the total observed pink salmon run in 2020 was 23.69 million fish (harvest, broodstock, and escapement), which was 30% lower than forecast (Table 6; Appendix D4). The hatchery runs were below forecast and wild runs were above forecast, resulting in an observed run composition, based on otolith contributions, of 36% VDFA, 36% PWSAC, and 28% wild pink salmon (Appendix D4). The total run of 6.53 million wild pink salmon was above the even-year (2010–2018) average of 4.13 million (Appendix D4) and was the largest even-year return since 2000. The total run of 8.54 million PWSAC pink salmon was 42% below the forecast, and 54% below the even-year (2010–2018) average of 18.52 million fish (Table 6; Appendix D4). In total, 31% (2.65 million) of the PWSAC run was collected for cost recovery and broodstock (PWSAC 2020b). The total run of 8.62 million VDFA pink salmon was 41% below forecast and 41% below the even-year (2010–2018) average of 14.7 million fish (Table 6; Appendix D4). In total, 18% (1.55 million) of the VDFA run was collected for cost recovery and broodstock (VFDA 2020b).

Eastern District

Eastern District pink and chum salmon 2020 escapement goals were achieved. The Eastern District pink salmon escapement index of 206,000 fish was below the even-year (2000–2018) average but within the even-year SEG index range of 203,000–328,000 fish (Appendices D1 and D5). The Eastern District chum salmon escapement indices were above the projected range for the 2020 season, and the escapement index of 104,000 fish was above the district's escapement goal of 79,000 fish (Appendices D1 and D6).

The 2020 VFDA pink salmon run was late developing, and cost-recovery harvest did not start until July 6. The 2020 VFDA pink salmon forecast was 14.62 million fish, of which 408,000 pink salmon were needed for broodstock and 3.05 million were needed for cost recovery, leaving 11.16 million pink salmon for commercial harvest. Pink salmon run entry quickly increased and by July 10, 75% of VFDA's cost-recovery goal had been harvested (VFDA 2020a). VFDA recommended a commercial fishery period for July 11 in Port Valdez and Valdez Arm to target SGH enhanced pink salmon, resulting in a harvest of 2.15 million fish, of which 96% were SGH stock (Appendix E15). VFDA cost recovery resumed on July 12 and was completed on July 14 (VFDA 2020a). VFDA recommended a commercial fishing period for July 15 and July 16 in Port

Valdez and Valdez Arm to target SGH enhanced pink salmon, which resulted in a harvest of 2.07 million fish on July 15, and 527,000 fish on July 16 (Appendix E15). Fishery data from July 16 indicated that the SGH return was 48% female and starting on July 17, VFDA recommended a closure of Port Valdez and Valdez Arm to aid SGH broodstock collection. VFDA broodstock goals were close to being met on July 22, and VFDA was able to recommend fishing opportunities within the Valdez Arm and portions of Port Valdez through the end of the season (VFDA 2020a). Aerial escapement surveys throughout July and August indicated a steady wild stock return and escapements were within projected ranges for eastern PWS, allowing a consistent schedule of 2 fishing periods per week in general district waters starting on July 15 and continuing through August 8. From August 11 through the end of the season, fishing periods were open 2–3 times a week to allow for adequate wild stock escapement. The total Eastern District pink salmon commercial harvest was 8.95 million fish. VFDA pink salmon contributed nearly 74% (6.59 million) of the total Eastern District commercial harvest (Appendix E15).

A total of 1.04 million pink salmon were harvested for VFDA cost recovery, and an additional 145,000 fish were also harvested for cost recovery via the SGH fishway, for a total cost-recovery harvest of 1.19 million pink salmon. VFDA reported that 386,000 pink salmon were utilized at SGH for broodstock, and an additional 20,000 fish went unharvested (VFDA 2020b). Pink salmon egg-take operations at SGH were successful in 2020. VFDA reached the 2020 pink salmon egg-take goal at SGH on August 24, which was comparable to the 10-year (2010–2019) average end date of August 21 (VFDA 2020a).

The 2020 SGH coho salmon run was also below the projected forecast of 87,000 fish with an estimated total return of 54,000, and few surplus fish were available for commercial harvest. VFDA reached its 2020 coho salmon egg-take goal at SGH on October 20. VFDA harvested 18,500 coho salmon for cost recovery from the SGH fishway and utilized an additional 5,770 fish for broodstock (Appendix E1; VFDA 2020b).

There were 26 Eastern District commercial fishing periods in 2020 and 217 purse seine permit holders reported deliveries (Table 1; Appendix E15). Eastern District commercial harvest was 71 Chinook, 3,200 sockeye, 17,800 coho, 8.96 million pink, and 54,700 chum salmon (Table 1). Eastern District commercial pink salmon harvest included 74% VFDA fish, 26% wild fish, and <1% PWSAC fish (Appendix E15).

Northern District

Northern District pink and chum salmon escapements were low in 2020. The Northern District pink salmon escapement indices were less than the even-year mean index (2000–2018) for most of the 2020 season, but the observed escapement index of 105,000 fish was within the district's even-year SEG index range of 96,000–127,000 fish (Appendices D1 and D5). The Northern District chum salmon escapement indices were below the projected range for the 2020 season despite early season fishing restrictions, and the escapement index of 23,500 fish was below the district's lower bound SEG of 28,000 fish (Appendices D1 and D6).

The first Northern District commercial fishing period began on July 23 and was opened concurrently with the Eastern District to provide additional opportunity on surplus SGH pink salmon. The 2020 CCH pink salmon forecast was 4.20 million fish, of which 357,000 fish were needed for broodstock, and 668,000 fish were needed for cost recovery, leaving 3.17 million pink salmon for commercial harvest (PWSAC 2020a). As with many areas in PWS, aerial escapement surveys indicated a strong and steady wild pink salmon return for most of the season, allowing a

consistent schedule of at least 2 fishing periods per week in general district waters starting July 23. Peak pink salmon harvest occurred during the period beginning August 11 and 639,000 fish were harvested, of which 42% were CCH stock (Appendix E16).

During 2020, PWSAC harvested 218,000 CCH pink salmon for cost recovery and an additional 17,700 pink salmon were harvested for cost recovery via the CCH fishway. PWSAC utilized 400,000 fish at CCH for broodstock and an additional 60,000 fish went unharvested. Pink salmon egg-take operations at CCH finished on September 16. However, despite having adequate broodstock numbers, PWSAC did not achieve its egg-take goal due to low female percentages. The 2020 CCH pink salmon run of 3.12 million fish was below PWSAC's preseason projection of 4.20 million fish (PWSAC 2020a; PWSAC 2020b).

There were 15 Northern District commercial fishing periods in 2020, and 176 purse seine permit holders reported deliveries (Appendix E16; Table 1). Northern District commercial harvest was 11 Chinook, 2,400 sockeye, 3,000 coho, 3.43 million pink, and 5,760 chum salmon (Table 1). Northern District pink salmon harvest included 48% CCH fish, 22% wild fish, 19% WNH fish, 11% SGH fish, and 1% AFK fish (Appendix E16). The 2020 CCH pink salmon commercial harvest of 2.42 million fish was below the PWSAC's total preseason harvest projection of 3.17 million fish (Appendix E17; PWSAC 2020a).

Coghill District

Coghill District pink salmon escapement in 2020 was strong, but chum salmon escapement fell below the desired escapement goal level. The Coghill District pink salmon escapement indices were less than the even-year mean index (2000–2018), but the observed escapement index of 88,400 fish was within the district's even-year SEG index range of 37,000–110,000 fish (Appendices D1 and D5). The Coghill District chum salmon escapement index of 9,000 fish was below the district's lower bound SEG of 10,000 fish (Appendices D1 and D6).

The purse seine fishery targeting pink salmon in the Coghill District began on July 28. The 2020 WNH pink salmon forecast was 4.60 million fish, of which 283,000 pink salmon were needed for broodstock and 731,000 fish were needed for cost recovery, leaving 3.58 million pink salmon for commercial harvest (PWSAC 2020a). As with many areas in PWS, aerial surveys indicated a strong and steady wild pink salmon return for most of the season, allowing a consistent schedule of at least 2 commercial periods per week in general district waters starting July 28. Pink salmon seine harvest peaked on August 11 (Appendix B5). The commercial common property fishery harvested 590,000 pink salmon, of which 94% were WNH fish (Appendix E7). Starting August 16, PWSAC recommended that all hatchery subdistricts within the Coghill District remain closed through the end of the season to build additional broodstock due to anticipated shortfalls at both AFK and WNH.

During 2020, PWSAC harvested a total of 1.28 million pink salmon for cost recovery, and an additional 15,200 fish were harvested via the WNH fishway, for a total cost-recovery harvest of 1.29 million pink salmon. PWSAC reported that 225,000 pink salmon were utilized at WNH for broodstock, and an additional 70,000 fish went unharvested (PWSAC 2020b). Pink salmon egg-take operations at WNH finished on September 7. However, PWSAC did not achieve its egg-take goal due to low female percentages (PWSAC 2020b). The 2020 WNH pink salmon run of 4.19 million fish was less than PWSAC's preseason projection of 4.60 million fish (Tables 1 and 6; Appendix E17).

Coghill District purse seine commercial harvest by 128 permit holders was 12 Chinook, 1,450 sockeye, 407 coho, 1.11 million pink, and 6,720 chum salmon (Table 1). Coghill District pink salmon harvest were 64% WNH fish, 22% wild fish, 7% CCH fish, 6% SGH fish, and <1% AFK fish (Appendix E7).

Northwestern District

In the Northwestern District, escapement goals were reached for pink salmon but not for chum salmon in 2020. The Northwestern District pink salmon observed escapement index of 77,900 fish was less than the even-year mean index (2000–2018) but was within the even-year SEG range of 52,000–93,000 fish. (Appendices D1 and D5). Northwestern District chum salmon escapement indices were below the expected ranges for the 2020 season, and the chum salmon escapement index of 7,400 fish was above the district's lower bound SEG of 7,000 fish (Appendices D1 and D6).

Northwestern District purse seine harvest by 67 permit holders was 4 Chinook, 12,400 sockeye, 390 coho, 921,000 pink, and 12,100 chum salmon (Table 1). Northwestern District pink salmon harvest was 74% wild fish, 23% WNH fish, 1% SGH fish, 1% CCH fish, and 1% AFK fish (Appendix E17).

Southwestern District

Southwestern District pink salmon escapement in 2020 was at the lower end of the escapement goal range. Pink salmon escapement indices were below the even-year mean index (2000–2018) for the 2020 season, and the observed escapement index was 64,500 fish (even-year SEG range of 62,000–105,000 fish; Appendices D1 and D5).

Approximately 169,000 AFK chum salmon were harvested within the Southwestern District, 66% below the preseason forecast of 500,000 fish, continuing a pattern of poor performance for this program (Appendix E19). The AFK chum salmon program has produced fewer returns than the preseason forecast in 8 of the past 10 years (2010–2019). Additionally, a total of 14,500 sockeye salmon were harvested in the commercial chum salmon fishery (June 1–July 18). Due to the COVID-19, pandemic staff were unable to sample sockeye salmon otolith contributions from this fishery to determine origin. The 2020 commercial harvest of 222,000 chum salmon in the Southwestern District was below the 2010–2019 average harvest of 247,000 fish (Appendix D8). The 2020 Southwestern District chum salmon harvest were 76% AFK, 9% WNH, 8% Port Chalmers, and 7% wild fish (Appendix E19).

The 2020 AFK pink salmon run came in under forecast. The pink salmon forecast was 5.8 million fish, of which 363,000 pink salmon were needed for broodstock and 923,000 fish were needed for cost recovery, leaving 4.52 million pink salmon for commercial harvest. The 2020 AFK pink salmon run of 1.34 million fish was 77% less than PWSAC's preseason projection (Tables 1 and 6; Appendix E17).

PWSAC began cost-recovery harvests at AFK and WNH on July 24 and finished on August 10. However, PWSAC discontinued cost-recovery harvests at AFK on August 4 to build broodstock due to poor run entry and advanced female ratio for the date. The purse seine fishery targeting pink salmon in the Southwestern District began on August 11, once PWSAC had adequately secured broodstock at AFK. On August 14, PWSAC conducted a survey of the AFK special harvest area/terminal harvest area, realized a significant amount of broodstock had been lost to the commercial fishery, and recommended that all hatchery subdistricts within the Southwestern

District remain closed starting on August 16 through the end of the season due to the shortfall. Peak harvest occurred on August 11 when 1.15 million fish were harvested, of which 31% were AFK pink salmon (Appendix E18).

PWSAC harvested a total of 244,000 pink salmon for cost recovery and an additional 12,900 fish were harvested for cost recovery via the AFK fishway, for a total cost-recovery harvest of 257,000 pink salmon. PWSAC reported that 280,000 pink salmon were utilized at AFK for broodstock, and an additional 23,000 fish went unharvested (PWSAC 2020b). Pink salmon egg-take operations at AFK finished on September 11; however, PWSAC did not have adequate broodstock to achieve its egg-take goal and was unable to get surplus eggs from WNH (PWSAC 2020b).

Fishing opportunity was frequent, and a high percentage of the active purse seine fleet participated in the Southwestern pink salmon fishery despite lower-than-projected pink salmon harvest levels. There were 22 Southwestern District commercial periods in 2020 and 170 purse seine permit holders reported deliveries (Appendix E18; Table 1). The 2020 Southwestern District commercial harvest was 65 Chinook, 18,100 sockeye, 7,000 coho, 2.74 million pink, and 222,000 chum salmon (Table 1). The Southwestern District pink salmon harvest included 29% wild fish, 27% AFK fish, 22% WNH fish, 21% CCH fish, and 1% SGH fish (Appendix E17). This distribution of stocks is the result of conducting the fishery in the primary migration corridor for pink salmon traveling to other areas of PWS.

Montague District

Based on the *Prince William Sound Management and Allocation Plan* (5 AAC 24.370), the purse seine fleet regained exclusive access to the Port Chalmers Subdistrict remote release chum salmon fishery in 2020. The 5-year rolling average allocation calculation specified in the allocation plan was 52% drift gillnet and 48% purse seine, meaning that these 2 gear groups were close to parity and no allocative correction action would be required for either gear group. In 2019, the drift gillnet gear group allocation percentage for the season was below the 45% allocation trigger that grants exclusive access to the Port Chalmers remote release chum salmon fishery and the purse seine fleet did not have access to the area until the start of the pink salmon fishery. The 2020 preseason forecast for chum salmon returning to Port Chalmers Subdistrict was 810,000 fish, all of which were projected to be available for commercial harvest (PWSAC 2020a).

Fishing to target enhanced chum salmon at Port Chalmers started June 1 with a weekly schedule of 2–3 purse seine fishing periods, which continued until July 22 (Appendix B10 and E21). The 2020 chum salmon harvest during peak historical run timing for Port Chalmers chum salmon (June 1–July 30) was 563,000 fish; 31% below forecast and below the 5-year (2015–2019) average of 583,000 fish (Appendix B11). Out of a total Montague District commercial harvest of 592,000 chum salmon, thermal mark contributions estimated 556,000 (94%) were released at Port Chalmers, 13,800 (2%) were released at WNH, and 8,500 (1.4%) were released at AFK. Wild chum salmon harvest composed 2% (13,800 fish) of the total harvest (Appendix E20).

The purse seine fishery targeting pink salmon in the Montague District began on July 28. Montague District pink salmon escapement indices were below the even-year mean index (2000–2018) for the 2020 season, but the observed escapement index of 84,200 fish was above the district's even-year SEG range of 36,000–72,000 fish (Appendices D1 and D5). Peak harvest occurred on August 1 when 64,600 fish were harvested, of which 52.6% were wild pink salmon (Appendix E21). There were 38 Montague District seine fishing periods in 2020 and 139 purse

seine permit holders reported deliveries (Table 1; Appendix E21). The 2020 Montague District commercial seine harvest was 288 Chinook, 2,400 sockeye, 800 coho, 268,000 pink, and 592,000 chum salmon (Table 1). The Montague District's 2020 pink salmon commercial harvest was 52% wild, 19% CCH, 14% WNH, 8% AFK, and 8% SGH fish (Appendix E21).

Southeastern District

Escapement of both pink and chum salmon were within escapement goal ranges in 2020. The Southeastern District pink salmon observed escapement index of 138,300 fish was less than the even-year mean index (2000–2018) but was within the even-year SEG range of 88,000–153,000 fish. (Appendices D1 and D5). The Southeastern District chum salmon escapement index of 26,900 fish was above the district's lower bound SEG of 11,000 fish (Appendix D1).

The purse seine fishery in the Southeastern District was opened concurrently with Eastern District general district fisheries throughout the season targeting wild and hatchery stocks. The 2020 Southeastern District commercial harvest by 25 permit holders was 1 Chinook, 516 sockeye, 151 coho, 374,000 pink, and 1,200 chum salmon (Table 1). The Southeastern District pink salmon harvest included 98% wild fish, 2% SGH fish, and <1% AFK fish (Appendix E17).

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, whereas marine finfish, excluding salmon, do not require a permit to be taken under subsistence regulations. Lingcod *Ophiodon elongatus* may be taken for subsistence purposes only from July 1 through December 31. Herring, smelt (*Hypomesus*, *Mallotus*, and *Thaleichthys* spp.), rockfish *Sebastes* spp., and other groundfishes may also be harvested for subsistence purposes in PWS. For a detailed history of regulation 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, with state saltwater salmon subsistence and commercial homepack harvest permitted in every commercial fishing district, and state freshwater subsistence and personal use and federal freshwater subsistence fisheries 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 Copper River District and General PWS District subsistence fishing are the same as those in the commercial fishery (Appendix F1). 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 PWS general subsistence districts, 50 fathom gillnet or 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, 724 Alaska residences in 30 Alaska communities were issued subsistence permits. The total harvest in these subsistence fisheries was 9,900 salmon (Appendix F2). In the Copper River District, a harvest of 657 Chinook, 7,090 sockeye, and 326 coho salmon were reported from the 344 permit holders that reported harvest. The Copper River District total subsistence harvest of 8,070 salmon was more than double the 10-year (2010–2019) average (Appendix F3). This larger-than-average harvest in a year with poor Chinook and sockeye salmon runs to the Copper River was 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, 41 permit holders reported a harvest of 1,180 sockeye, 1 coho, 20 pink, and 12 chum salmon. Notably, the sockeye salmon subsistence harvest continued its upward annual trend in the PWS general subsistence area, almost triple the previous year's subsistence harvest and almost 16 times the 2010–2019 average (Appendix F4).

Since 2010, commercial fishery participants retained more Chinook and sockeye salmon from their commercial harvest as homepack during seasons of larger runs, whereas seasons with weak returns, such as 2018 and 2020, 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 (Appendix A1 and A3). Overall, in Area E commercial salmon fisheries in 2020, 369 permit holders from 23 Alaska communities and the other 49 states reported retaining 8,220 salmon for homepack from their commercial catches (Appendix F2). On a homepack harvest-per-permit basis in 2020, the most coho, pink, and chum salmon were harvested by drift gillnetters; the most Chinook salmon were harvested by purse seiners; and the most sockeye salmon were harvested by set gillnetters. Drift gillnetters retained for homepack an average of 22 salmon per permit, set gillnetters 55 salmon per permit, and purse seiners 25 salmon per permit. The 2020 commercial homepack was low due to a weak run and conservative management, and overall homepack harvest was 58% below the 10-year (2010–2019) average (Appendix F5). Homepack harvest has been severely reduced under low harvest conditions due to the increased likelihood that fish are sold to meet financial needs instead of being kept for homepack, and historically low fishing time that further reduces the number of opportunities to keep homepack.

The federal subsistence salmon fishery in the western portion of 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 2020, an estimated total of 101 federal permits were issued; 47 permits were fished, and an estimated 98 sockeye and 416 coho salmon were harvested (Appendix F6).

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); Appendix F1).

Permit holders can fish in these areas from May 15, 7 days per week, 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 Saturday 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 2020, 12 permits were issued for the Chenega subsistence area, of which 10 were returned by users after the season to report harvest information. One permit holder reported fishing and the harvest is confidential. In the Tatitlek area, 6 permits were issued, of which 4 were returned. Of those returned permits, 4 reported fishing for a total harvest of 2 Chinook, 43 sockeye, 27 coho, 37 pink, and 7 chum salmon (Appendix F7).

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 (Appendix F8). Federal subsistence salmon fisheries occur in the Chitina and Glennallen subdistricts and are administered by the United States Park Service (Appendices F8 and F10). In 2020, the combined upriver subsistence and personal use sockeye salmon harvest (federal and state) totaled 138,000 fish, which was almost identical to the 2018 10-year low harvest and almost 100,000 fewer fish than the 2010–2019 average. From 2010 to 2019, the combined upriver subsistence and personal use sockeye salmon harvest (federal and state) ranged from 137,000 fish (in 2018) to 334,000 fish (in 2015), for a 10-year (2010–2019) average of 233,000 sockeye salmon (Appendix A1). Even with the low sockeye salmon harvests in 2018 and 2020, a steadily increasing trend in subsistence and personal use harvest is reflected in the 2010–2019 average.

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 (Appendix F8). 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. 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 2020, a total of 1,290 dip net permits and 375 fish wheel permits were issued to subsistence users in the Glennallen Subdistrict. Of these, 301 (18.1%) permits were not returned. A combined total estimate of 2,220 Chinook, 34,600 sockeye, and 67 coho salmon were harvested in the Glennallen Subdistrict. Comparatively, the 10-year (2010–2019) average was 3,450 Chinook, 63,600 sockeye, and 186 coho salmon for this subdistrict. Fish wheel effort has been declining over the last 10 years (2010–2019), with an average number of 514 permits issued. The number of dip net permits issued has increased over the past few years. The number of permits issued in 2020 is 23.8% more than the 10-year (2010–2019) average of 1,042 dip net permits (Appendix F11). Historically, sockeye salmon dominate the harvest, representing 95% of the estimated harvest in the Glennallen Subdistrict subsistence fishery over the previous 10 years (2010–2019), followed by Chinook and coho salmon (Appendices A1, A3, A15, and F11). Harvest from the Glennallen Subdistrict subsistence fisheries was 10.2% GH sockeye salmon (S. Haught, PWS Area Research Biologist, ADF&G, Cordova, unpublished data, 2021).

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 2020, a total of 376 federal permits were issued for the Glennallen Subdistrict. Of these, 330 permits were returned. A total of 623 Chinook, 30% below the 2015–2019 average, were reported harvested. The 10,900-fish sockeye salmon harvest was 38% below the 2015–2019 average (Appendix F6)

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 one-half 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 was 1 permit issued in 2020 and 67 sockeye salmon reported as harvested (Appendices A1 and F9).

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 (Appendix F10). Regulations for the Chitina Subdistrict personal use fishery remain 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 dip net, and (3) permit holders are limited to 1 Chinook salmon per household. In December 2014, the Alaska Board of Fisheries 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 Alaska Board of Fisheries 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. If inseason adjustments to the fishery are needed due to fluctuations in salmon escapement, an emergency order is issued.

In 2020, there were 10 emergency orders issued to adjust the dip net fishery. The first period started on Sunday, June 7, and the last period closed on Sunday, July 26. From Monday, July 27, through Monday, August 31, the dip net fishery was closed due to sockeye salmon conservation concerns. The fishery was then open continuously from Tuesday, September 1, to Wednesday, September 30, per regulatory mandate. Lower-than-projected Chinook salmon commercial harvest rates and escapement indices from the Native Village of Eyak's fish wheel mark–recapture program led to the fishery being closed to the retention of Chinook salmon starting Monday, June 22. There were 6,810 permits issued for the Chitina personal use fishery in 2020. Of these, 740 (11%) were not returned. The number of permits issued was 30% below the 2010–2019 average of 9,782 permits issued (Appendix F11). This marked drop in participation is probably due to 2 strongly influential fishery participation drivers in 2020: (1) the COVID-19 pandemic reducing participation through elevated safety protocols for social interactions, and (2) near-record low Chinook and sockeye salmon abundance resulting in reduced weekly fishing time, extended closures, and reduced harvest potential. Expanded harvest for the Chitina Subdistrict personal use fishery in 2020 was 751 Chinook, 78,000 sockeye, and 815 coho salmon. The 10-year (2010–2019) average expanded harvests were 1,190 Chinook, 148,000 sockeye, and 1,230 coho salmon (Appendices A1, A3, A15, and F11). The sockeye salmon harvest in 2020 was 47% below the 10-year (2010–2019) average and was largely the result of reduced participation, fishing time, and fish abundance relative to the majority of years represented in this average. Harvest from the Chitina Subdistrict personal use fishery was 4.6% GH sockeye salmon (S. Haught, PWS Area Research Biologist, ADF&G, Cordova, unpublished data, 2021).

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 2020, an estimated total of 215 federal permits were issued, of which 187 were returned. The reported harvest was 76 Chinook and 3,230 sockeye salmon (Appendix F6).

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 lat 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: purse seine sac roe, gillnet sac roe, spawn-on-kelp not in pounds, spawn-on-kelp in pounds, and herring food/bait fishery.

2020 SEASON SUMMARY

Based on herring stock assessment information, all Pacific herring fisheries were closed in 2020. An age structured assessment model estimated that the 2020 median prefishery biomass was 16,210 tons[1,2] (the regulatory threshold is 22,000 tons). Aerial surveys showed 23.68 mile-days of spawn, the highest estimate since 2014 (Appendices G1 and G2).

Net sampling, aerial surveys, and acoustic data were used in 2020 to assess herring biomass, disease prevalence, age composition, and growth. No R/V *Solstice*-based herring sampling surveys were conducted in 2020 due to the COVID-19 pandemic. Instead, community members and staff opportunistically collected herring samples with cast net near Hells Hole and Red Head (April 3–4), Double Bay (April 10, April 17), and Canoe Pass (April 8, April 23–25). Age sex, and length were processed and summarized from over 1,700 herring collected during 2020 spring sampling (Appendix G4). The Prince William Sound Science Center collected acoustics data, resulting in a 2020 PWS herring acoustic biomass estimate of 20,112 tons. PWS herring, as well as other herring stocks statewide, saw a large component of age-4 fish in 2020. Overall spawning age composition of PWS samples collected were 11% age-3, 79% age-4, 4% age-5, 3% age-6, 2% age-7, and <1% age-8 or older fish (Appendix G3).

ADF&G conducted 57 hours of spring aerial surveys during 20 flights from March 19 to May 10, 2020. PWS herring schools observed in 2020 were more widespread and numerous than in recent years. Spawn was documented at Red Head (April 2–4), Hells Hole and Knowles Bay (April 9–24), Canoe Pass (April 23–26), Double Bay (April 24–27), Zaikof Bay (April 23–27), Rocky Bay and Stockdale Harbor (April 28–29), and near Kayak Island (April 10). Total 2020 PWS herring mile-days of spawn were estimated at 23.7 mile-days (Appendices G1 and G4).

2021 HERRING SEASON OUTLOOK

Given the PWS herring spawning population, current fish size, and age structure, a commercial harvest will not occur in 2021. Funding was provided by the *Exxon Valdez* Trustee Council for 2016 through 2020. ADF&G will continue to monitor the PWS herring biomass to assess growth and recruitment as funding is available.

[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.

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TABLES AND FIGURES

Table 1.–Prince William Sound Area commercial salmon harvest by gear type and district, 2020.

District	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Eastern	217	71	3,242	17,800	8,963,990	54,680	9,039,783
Northern	176	11	2,377	3,032	3,425,004	5,758	3,436,182
Coghill	128	12	1,445	407	1,108,848	6,721	1,117,433
Northwestern	67	4	12,350	390	921,426	12,051	946,221
Southwestern	170	65	18,079	6,951	2,739,176	222,231	2,986,502
Montague	139	288	2,447	810	268,006	592,049	863,600
Southeastern	25	1	516	151	373,859	1,161	375,688
Unakwik	0	0	0	0	0	0	0
Purse seine total	221	452	40,456	29,541	17,800,309	894,651	18,765,409
Bering River	105	8	9	64,712	10	0	64,739
Copper River	461	5,880	102,269	168,524	685	1,335	278,693
Coghill	365	334	111,403	2,475	651,099	229,406	994,717
Eshamy	385	188	358,068	930	316,963	70,666	746,815
Unakwik	12	9	764	0	2	22	797
Drift gillnet total	489	6,419	572,513	236,641	968,759	301,429	2,085,761
Eshamy	26	7	91,810	23	35,135	4,070	131,045
Set gillnet total		7	91,810	23	35,135	4,070	131,045
Commercial fishery total		6,878	704,779	266,205	18,804,203	1,200,150	20,982,215
Solomon Gulch		0	0	22,412	1,584,557	0	1,606,969
Cannery Creek		0	0	0	570,371	0	570,371
Wally Noerenberg		0	30	0	1,510,625	816,627	2,327,282
Main Bay		0	236,982	0	0	0	236,982
Armin F. Koernig		0	0	0	533,502	0	533,502
Port Chalmers		0	0	0	0	0	0
Hatchery total[a]		0	237,012	22,412	4,199,055	816,627	5,275,106
Test fishery		0	0	0	0	0	0
Home pack		444	4,252	2,183	1,155	189	8,223
Confiscated fish		0	0	0	0	0	0
Donated fish		0	0	0	0	0	0
Misc. total		444	4,252	2,183	1,155	189	8,223
Prince William Sound total		7,322	946,043	290,800	23,004,413	2,016,966	26,265,544

[a] 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, 2020.

Fishery	Species	Fish ticket number	Fish ticket pounds	Average weight	Average price	Value
Purse seine	Chinook	452	5,508	12.19	$2.00	$11,016
	Sockeye	40,456	192,846	4.77	$1.43	$275,770
	Coho	29,541	226,750	7.68	$0.89	$201,808
	Pink	17,800,309	65,015,435	3.65	$0.30	$19,504,631
	Chum	894,651	6,952,975	7.77	$0.45	$3,128,839
	Total	18,765,409	72,189,439			$23,122,063
Drift gillnet	Chinook	6,419	85,455	13.31	$5.69	$486,239
	Sockeye	572,513	2,721,568	4.75	$1.95	$5,307,058
	Coho	236,641	1,995,365	8.43	$1.39	$2,773,557
	Pink	968,759	3,544,705	3.66	$0.29	$1,027,964
	Chum	301,429	2,333,523	7.74	$0.31	$723,392
	Total	2,085,761	10,680,616			$10,318,210
Set gillnet	Chinook	7	116	16.57	$1.56	$181
	Sockeye	91,826	455,035	4.96	$1.84	$837,264
	Coho	23	152	6.61	$0.30	$46
	Pink	35,136	128,633	3.66	$0.29	$37,304
	Chum	4,069	29,608	7.28	$0.47	$13,916
	Total	237,381	1,209,501			$888,710
Hatchery sales	Chinook	0	0	0	$0.00	$0
	Sockeye	237,012	942,061	3.97	$1.39	$1,309,465
	Coho	22,412	152,417	6.80	$0.30	$45,725
	Pink	4,199,055	14,070,899	3.35	$0.84	$11,819,555
	Chum	816,627	5,607,205	6.87	$0.58	$3,252,179
	Total	5,275,106	20,772,582			$16,426,756
Combined	Chinook	6,878	91,079	13.24	$5.46	$497,436
	Sockeye	941,807	4,311,510	4.58	$1.79	$7,729,556
	Coho	288,617	2,374,684	8.23	$1.29	$3,021,136
	Pink	23,003,259	82,759,672	3.60	$0.39	$32,389,455
	Chum	2,016,776	14,923,311	7.40	$0.48	$7,118,326
	Total	26,363,657	104,852,138			$50,755,909

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Table 2.–Page 2 of 2.

Gear type	Value of catch	No. of permits	Average earnings
Purse seine	$23,122,063	221	$104,625
Drift gillnet	$10,318,210	489	$21,101
Set gillnet	$888,710	26	$34,181
Subtotal (value of commercial harvest)	$34,328,984		
Hatchery	$16,426,924		
Grand Total	$50,755,909		

Note: 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, 1995–2020.

	Chinook salmon		Sockeye salmon			Coho salmon			Pink salmon			Chum salmon		
	Gillnet		Gillnet			Gillnet			Gillnet			Gillnet		
Year	Copper and Bering	PWS	Copper and Bering	PWS	Purse seine	Copper and Bering	PWS	Purse seine	Copper and Bering	PWS	Purse seine	Copper and Bering	PWS	Purse seine
1995	$2.19	$0.79	$1.67	$1.07	$0.86	$0.52	$0.37	$0.39	NA	$0.18	$0.18	NA	$0.39	$0.28
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
Average (2010–2019)	$6.87	$3.24	$2.60	$1.83	$1.65	$1.28	$1.02	$0.83	$0.25	$0.31	$0.35	$0.32	$0.68	$0.68

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.

Table 4.–Estimated exvessel value of the total commercial salmon harvest by gear type and previous 10-year average, Prince William Sound Area, 2010–2020.

Purse seine Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average 2010–2019
Chinook	$634	$6,120	$3,279	$15,444	$11,317	$6,990	$879	$4,872	$4,517	$3,145	$11,016	$5,720
Sockeye	$705,231	$560,497	$1,449,007	$796,220	$646,931	$1,766,313	$551,225	$1,113,442	$623,322	$1,599,774	$275,770	$981,196
Coho	$48,476	$633,076	$117,259	$1,608,923	$192,659	$83,371	$194,322	$529,613	$613,107	$2,466,094	$201,808	$648,690
Pink	$78,063,374	$35,834,331	$37,732,043	$100,334,069	$36,393,753	$60,318,284	$9,196,452	$57,750,324	$29,845,804	$44,112,963	$19,504,631	$48,958,140
Chum	$1,019,498	$691,520	$2,450,017	$2,157,525	$1,901,811	$1,436,478	$1,603,442	$11,881,118	$7,405,991	$3,773,440	$3,128,839	$3,432,084
	$79,837,212	$37,725,543	$41,751,606	$104,912,182	$39,146,471	$63,611,435	$11,546,319	$71,279,369	$38,492,741	$51,955,416	$23,122,063	$54,025,829
Drift gillnet Species												
Chinook	$1,025,380	$2,148,066	$1,352,540	$973,720	$1,175,457	$2,250,068	$1,344,847	$2,087,540	$1,562,084	$3,086,883	$486,239	$1,700,659
Sockeye	$18,486,735	$36,356,087	$37,444,516	$29,389,403	$40,966,814	$29,962,566	$20,497,184	$18,059,297	$13,710,079	$30,115,053	$5,307,058	$27,498,773
Coho	$3,523,008	$2,031,963	$1,646,222	$3,986,567	$5,138,204	$862,745	$5,955,839	$5,085,403	$6,096,579	$2,489,766	$2,773,557	$3,681,630
Pink	$3,446,356	$1,025,474	$1,659,983	$2,465,469	$1,361,065	$569,851	$76,420	$1,093,388	$896,292	$803,665	$1,027,964	$1,339,796
Chum	$11,973,968	$8,669,206	$13,170,829	$11,654,134	$3,728,785	$3,426,951	$6,902,037	$12,453,314	$14,963,757	$7,681,028	$723,392	$9,462,401
	$38,455,447	$50,230,797	$55,274,091	$48,469,293	$52,370,325	$37,072,182	$34,776,326	$38,778,942	$37,228,790	$44,176,395	$10,318,210	$43,683,259
Set gillnet Species												
Chinook	$756	$1,832	$230	$3,015	$769	$1,239	$2,695	$428	$1,114	$528	$181	$1,261
Sockeye	$3,103,081	$2,993,318	$2,454,505	$2,278,575	$2,887,961	$1,888,979	$1,993,811	$1,432,904	$2,284,793	$2,435,437	$837,264	$2,375,336
Coho	$250	$2,297	$509	$2,556	$451	$1,015	$54	$1,013	$572	$1,159	$46	$988
Pink	$20,573	$21,931	$28,480	$17,062	$35,588	$14,827	$5,826	$42,543	$35,918	$51,771	$37,304	$27,452
Chum	$450,989	$163,884	$121,995	$188,004	$106,662	$69,027	$99,124	$85,157	$74,877	$108,410	$13,916	$146,813
	$3,575,649	$3,183,261	$2,605,720	$2,489,211	$3,031,431	$1,975,088	$2,101,510	$1,562,046	$2,397,273	$2,597,305	$888,710	$2,551,849
Hatchery sales Species												
Chinook	$0	$0	$59	$0	$0	$0	$0	$0	$0	$0	$0	$6
Sockeye	$0	$0	$7,749	$110	$0	$1,160,000	$300	$0	$0	$75,500	$1,309,465	$124,366
Coho	$44,808	$280,215	$217	$214,752	$19,035	$30,000	$15,987	$312,040	$123,541	$139,416	$45,725	$118,001
Pink	$8,911,203	$11,867,472	$12,381,620	$8,765,309	$10,482,055	$9,873,200	$8,456,683	$11,634,771	$11,928,271	$12,833,172	$11,819,555	$10,713,376
Chum	$2,894,835	$2,802,681	$2,952,252	$3,424,927	$1,573,976	$3,457,442	$5,740,327	$4,651,425	$4,260,448	$6,667,469	$3,252,179	$3,842,578
	$11,850,846	$14,950,368	$15,341,896	$12,405,098	$12,075,066	$14,520,642	$14,213,297	$16,598,236	$16,312,260	$19,640,057	$16,426,924	$14,790,777

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Table 4.–Page 2 of 2.

Other[a] Species	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average 2010–2019
Chinook	$0	$0	$0	$0	$0	$0	0	0	$0	$0	$0	$0
Sockeye	$16	$159	$0	$0	$0	$241	0	0	$0	$0	$0	$42
Coho	$0	$0	$0	$0	$0	$0	0	0	$0	$0	$0	$0
Pink	$11,123	$27	$0	$0	$0	$0	0	0	$0	$0	$0	$1,115
Chum	$1,169	$1,090	$243	$0	$0	$2,979	0	0	$0	$0	$0	$548
	$12,308	$1,275	$243	$0	$0	$3,220	$0	$0	$0	$0	$0	$1,705
Combined value Species												
Chinook	$1,026,770	$2,156,018	$1,356,108	$992,179	$1,187,543	$2,258,297	$1,348,421	$2,092,841	$1,567,715	$3,090,556	$497,436	$1,736,707
Sockeye	$22,295,063	$39,910,061	$41,355,777	$32,464,308	$44,501,706	$34,778,099	$23,042,520	$20,605,642	$16,618,194	$34,225,764	$7,729,556	$30,979,713
Coho	$3,616,542	$2,947,551	$1,764,207	$5,812,798	$5,350,349	$977,131	$6,166,202	$5,928,068	$6,833,799	$5,096,435	$3,021,136	$4,449,308
Pink	$90,452,629	$48,749,235	$51,802,126	$111,581,909	$48,272,461	$70,776,162	$17,735,381	$70,521,027	$42,706,285	$57,801,571	$32,389,455	$61,039,879
Chum	$16,340,459	$12,328,381	$18,695,336	$17,424,590	$7,311,234	$8,392,877	$14,344,930	$29,071,014	$26,705,073	$18,230,347	$7,118,326	$16,884,424
	$133,731,463	$106,091,246	$114,973,554	$168,275,784	$106,623,293	$117,182,566	$62,637,454	$128,218,593	$94,431,065	$118,444,673	$50,755,909	$115,060,969
Average earnings												
Purse seine	$518,423	$216,813	$206,151	$186,391	$497,214	$176,335	$289,143	$54,982	$311,264	$222,032	$104,625	$256,311
Drift gillnet	$75,255	$96,784	$97,916	$105,889	$92,853	$99,753	$71,293	$67,266	$74,863	$86,791	$21,101	$84,386
Set gillnet	$132,431	$109,768	$109,768	$89,852	$88,900	$104,532	$63,713	$72,466	$53,864	$99,896	$34,181	$89,479
No. permits fished												
Purse seine	174	183	224	211	222	220	210	229	234	238	221	215
Drift gillnet	519	513	522	522	525	520	517	518	509	509	489	515
Set gillnet	29	29	29	28	29	31	29	29	26	27	26	28

[a] Confiscated fish.

Table 5.–Escapement goals and escapements for Prince William Sound Area salmon stocks, 2011–2020.

System	2020 Goal range Lower	Upper	Type	Initial year	Escapement 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
CHINOOK SALMON														
Prince William Sound														
Copper River	24,000		LB SEG	2003	27,936	27,846	29,013	20,689	26,751	12,430	33,644	42,678	35,138	22,054
CHUM SALMON														
Prince William Sound[a,b]														
Eastern District	79,000		LB SEG	2018	237,372	94,986	146,349	90,445	104,437	116,685	76,836	109,598	56,846	103,849
Northern District	28,000		LB SEG	2018	63,876	23,273	40,475	27,385	41,253	10,410	33,437	18,407	11,690	23,542
Coghill District	10,000		LB SEG	2018	19,614	13,896	14,086	9,491	14,929	976	13,210	13,617	3,437	8,998
Northwestern District	7,000		LB SEG	2018	11,951	9,360	4,995	5,041	7,060	3,954	7,118	15,563	3,258	7,405
Southeastern District	11,000		LB SEG	2018	107,857	28,374	33,678	29,362	44,095	13,919	26,330	10,164	19,451	26,909
COHO SALMON														
Prince William Sound														
Copper River Delta	32,000	67,000	SEG	2003	38,145	36,735	34,630	44,040	42,065	76,200	43,760	53,800	36,420	36,425
Bering River	13,000	33,000	SEG	2003	18,890	15,605	18,820	26,475	15,550	26,150	30,650	26,525	10,015	25,825
PINK SALMON														
Prince William Sound[a,c]														
All districts combined (even year)	eliminated			2012										
All districts combined (odd year)	eliminated			2012	3,826,378									
Eastern District (even year)	203,000	328,000	SEG	2018		268,432		250,381		594,778		309,325		206,152
Eastern District (odd year)	346,000	863,000	SEG	2018			1,266,630		1,440,254		557,545		445,075	
Northern District (even year)	96,000	127,000	SEG	2018		91,187		95,134		133,460		111,174		105,226
Northern District (odd year)	111,000	208,000	SEG	2018			299,054		708,920		395,437		195,169	
Coghill District (even year)	37,000	110,000	SEG	2018		170,752		60,921		63,986		70,881		88,401
Coghill District (odd year)	54,000	233,000	SEG	2018			625,991		775,488		181,153		153,129	
Northwestern District (even year)	52,000	93,000	SEG	2018		114,518		66,350		168,272		111,194		77,828
Northwestern District (odd year)	64,000	144,000	SEG	2018			201,836		438,944		250,989		91,267	
Eshamy District (even year)	1,000	4,000	SEG	2018		1,052		12,167		NA[d]		16,594		7,250
Eshamy District (odd year)	5,000	31,000	SEG	2018			12,145		68,988		2,836		1,402	
Southwestern District (even year)	62,000	105,000	SEG	2018		79,774		73,104		NA[d]		81,100		64,470
Southwestern District (odd year)	112,000	231,000	SEG	2018			337,952		644,158		172,930		33,340	
Montague District (even year)	36,000	72,000	SEG	2018		70,695		23,136		NA[d]		135,208		84,238
Montague District (odd year)	143,000	330,000	SEG	2018			365,807		559,994		205,252		25,385	
Southeastern District (even year)	88,000	153,000	SEG	2018		213,071		141,845		107,769		293,275		138,330
Southeastern District (odd year)	286,000	515,000	SEG	2018			1,137,736		1,529,543		372,960		290,452	

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Table 5.–Page 2 of 2.

System	2020 Goal Range Lower	2020 Goal Range Upper	Type	Initial Year	Escapement 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SOCKEYE SALMON														
Prince William Sound														
Upper Copper River	360,000	750,000	SEG	2012	607,140	954,010	860,253	864,169	930,145	513,143	460,295	495,779	719,526	348,000
Copper River Delta	55,000	130,000	SEG	2003	72,367	66,850	75,705	64,205	66,665	51,550	56,950	58,470	61,825	55,620
Bering River	15,000	33,000	SEG	2012	28,530	18,290	23,900	14,885	22,705	16,390	19,115	13,300	17,630	15,795
Coghill Lake	20,000	60,000	SEG	2012	102,359	74,978	17,231	21,836	13,684	8,708	50,462	62,295	32,247	53,901
Eshamy Lake[e]	13,000	28,000	BEG	2009	24,129	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA = data not available; 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. A pilot project to assess the use of video for monitoring in 2013–2016 did not provide a comparable total escapement estimate.

Table 6.–Preseason projections for the 2020 commercial salmon fisheries by district and species, Prince William Sound Area.

		Chinook		Sockeye		Coho[a]		Pink		Chum	
District/facility[b]	Forecast type[c]	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range
Copper River[d]	Commercial harvest	36	15–58	771	355–1,187	233					
Bering River[e]	Commercial harvest			4		63					
Coghill[f]	Commercial harvest			145	51–238						
Eshamy[f]	No Forecast			NA	NA–NA						
Unakwik[g]	Commercial harvest			3							
General districts	Commercial harvest							3,630		404	
Total wild stock		36	15–58	1,122	605–1,624	296		3,630		404	
SGH	Total run					87		14,622	7,311–21,933		
AFK	Total run							5,800	1,200–10,400	500	410–590
WNH[h]	Total run					68	115–163	4,600	2,100–7,100	3,360	2,920–3,810
CCH	Total run							4,200	2,200–6,300		
MBH	Total run			1,061	935–1,186						
GH	Total run			151	135–167						
Total hatchery				1,212	1,070–1,353	155	115–163	29,222	12,811–45,733	3,860	3,330–2,890
Total hatchery and wild		36		2,334		451		32,852		4,264	

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] Formal forecast procedures are used for estimating wild stock runs of pink and chum salmon in PWS. Hatchery contributions are based on known fry releases and average marine survival rates.

[c] Alaska Department of Fish and Game (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 (PWS) 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.

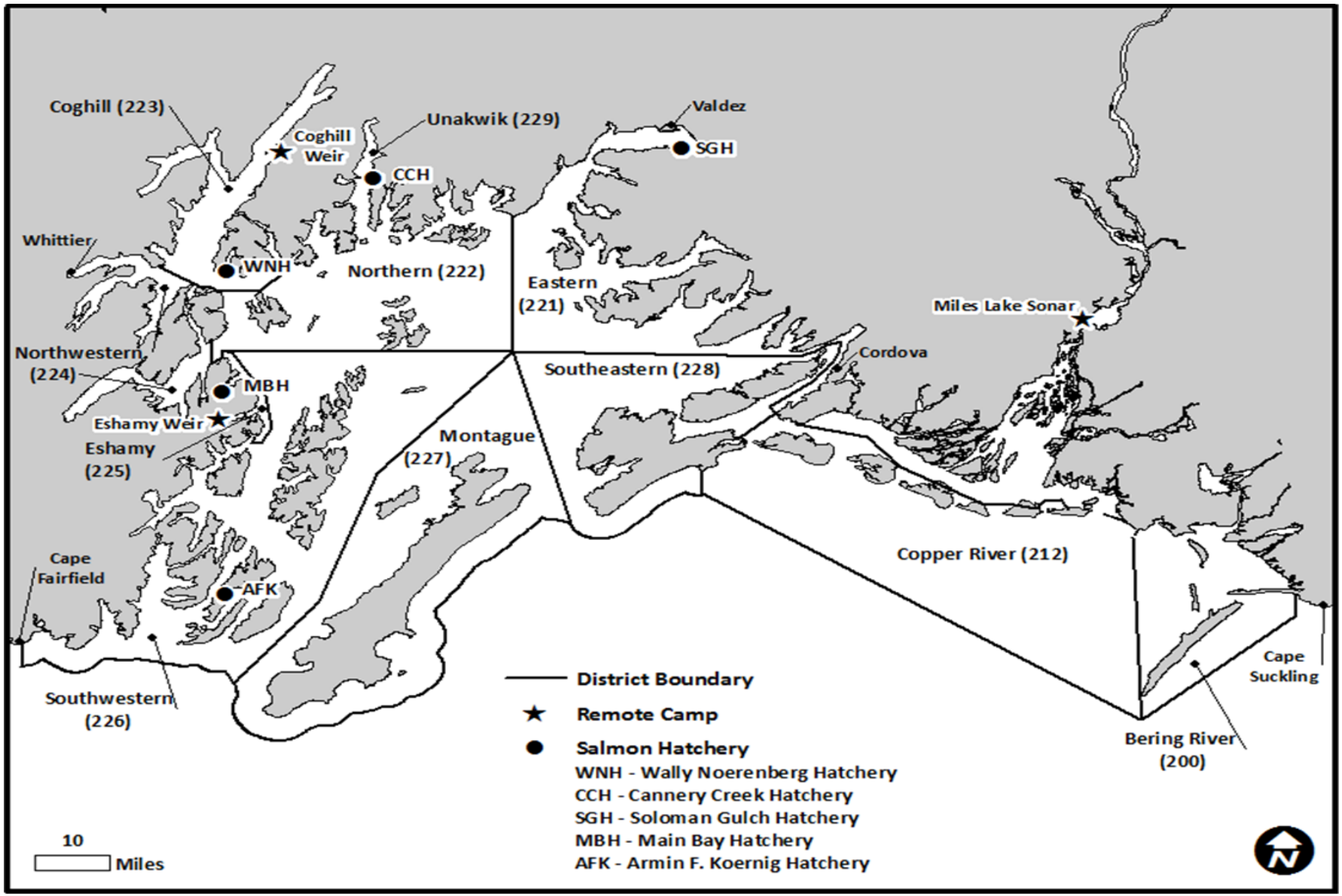

Figure 1.–Prince William Sound Area showing commercial fishing districts, salmon hatcheries, weir locations, and Miles Lake sonar camp.

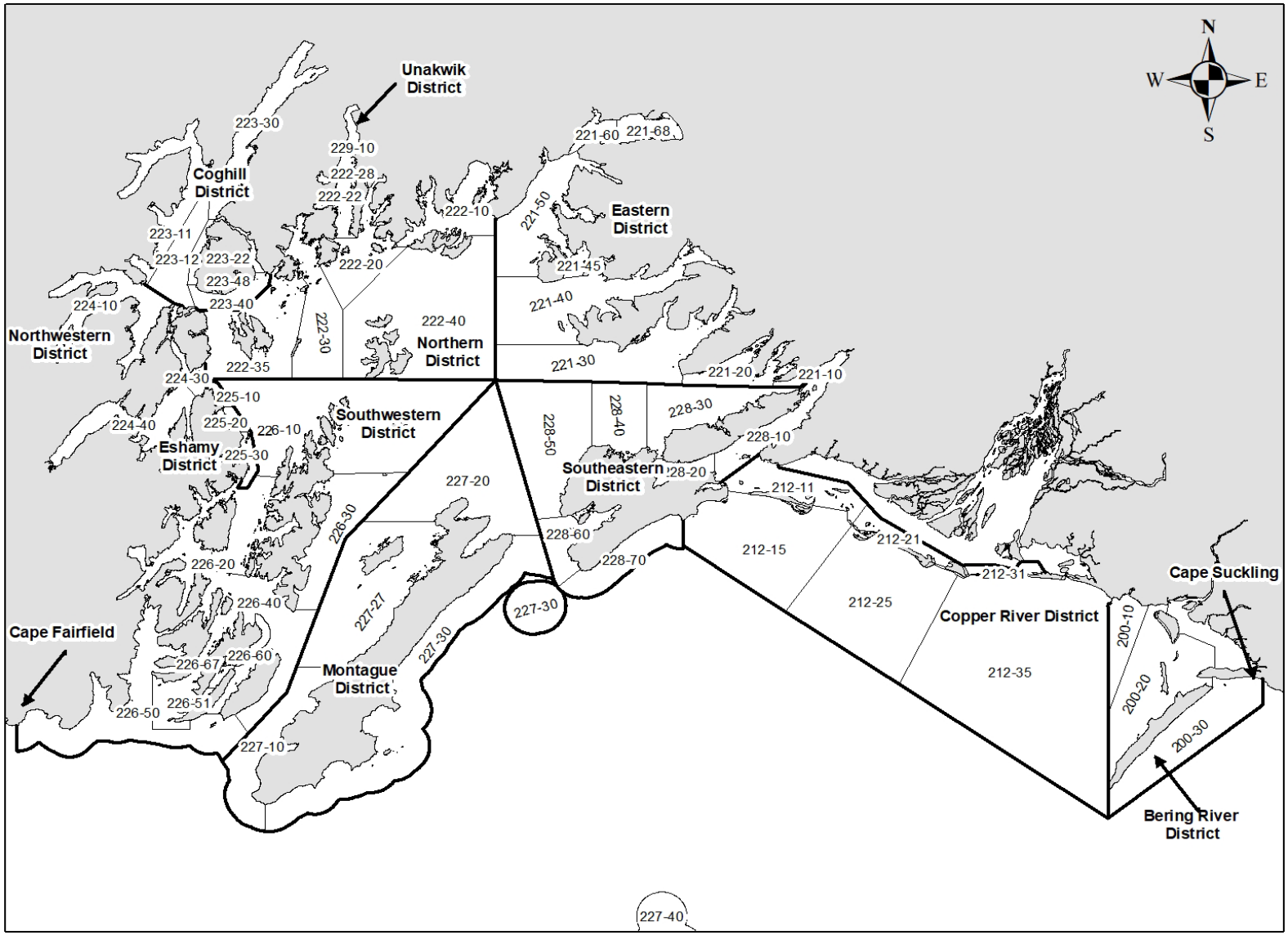

Figure 2.–Prince William Sound Area showing commercial fishing districts and statistical reporting areas.

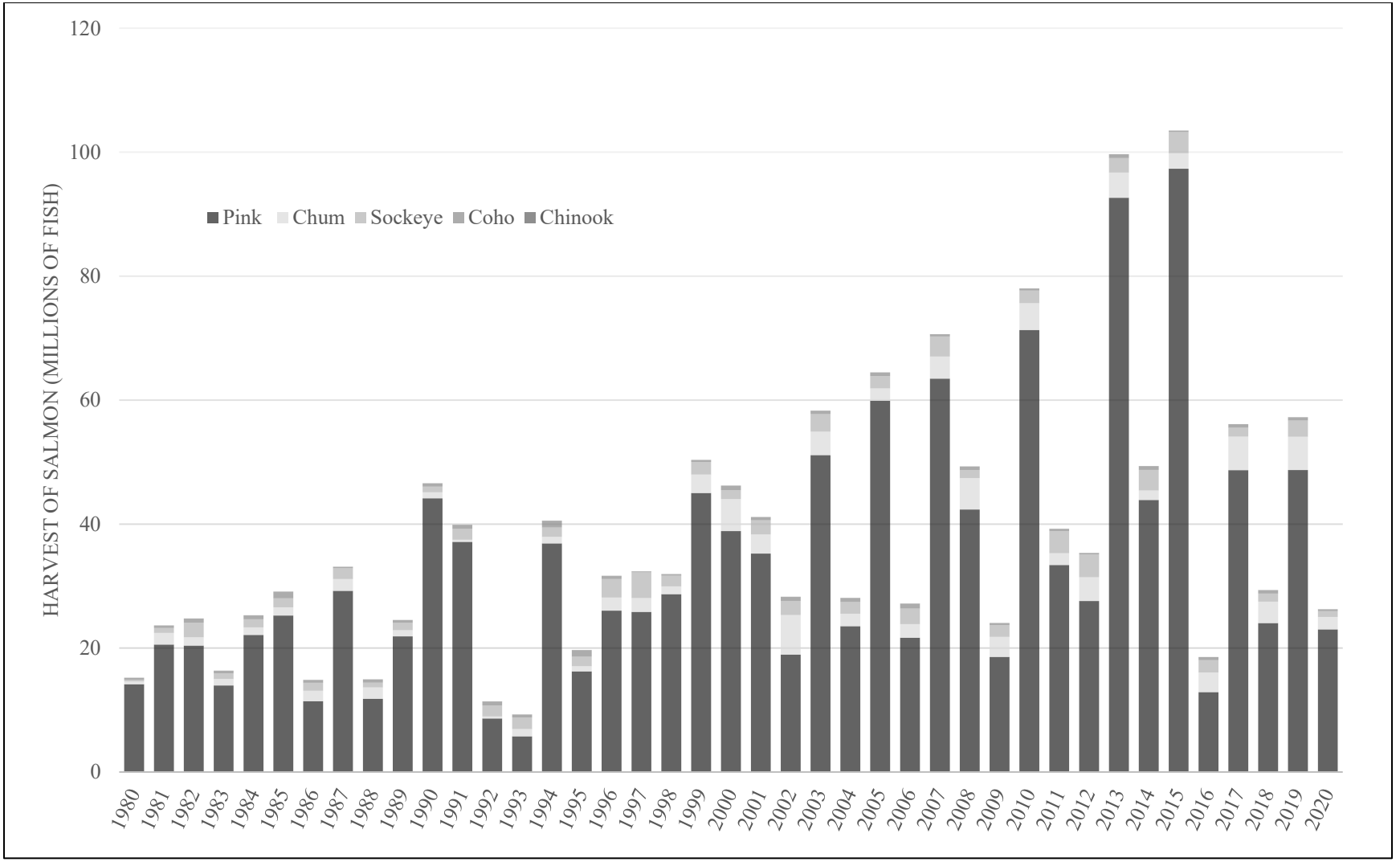

Figure 3.–Commercial salmon harvests in Prince William Sound Area, 1980–2020.

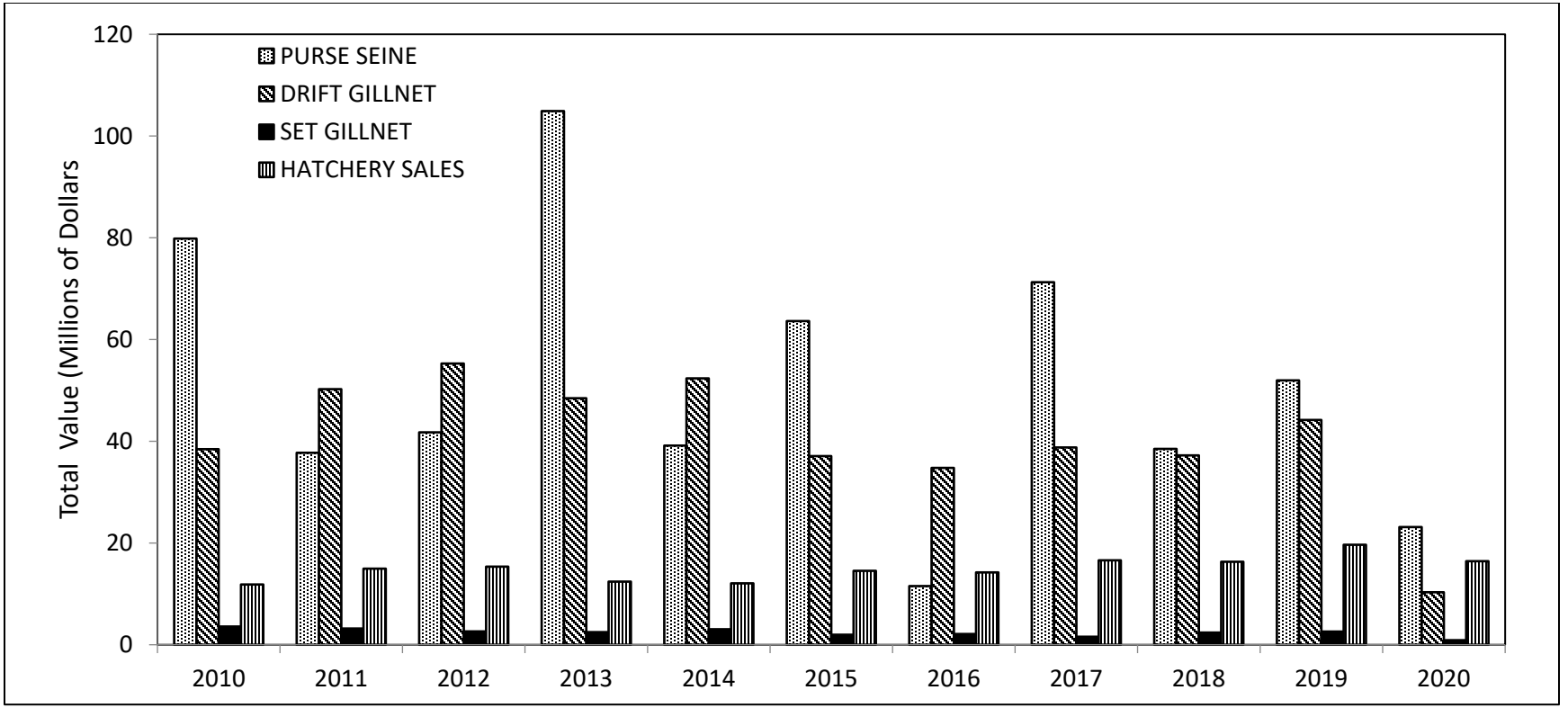

Figure 4.–Exvessel value of the commercial salmon harvest in the Prince William Sound Area by permit type, 2010–2020.

APPENDIX A: COPPER RIVER AND BERING RIVER DISTRICTS

Appendix A1.–Total estimated sockeye salmon runs to the Copper River by end user or destination and the 10-year average, 2010–2020.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2019)
Commercial harvest[a]	636,214	2,052,432	1,866,541	1,608,117	2,050,007	1,750,762	1,175,100	586,079	46,524	1,283,736	102,269	1,305,551
Commercial, homepack[a]	7,064	9,070	7,985	9,448	12,072	10,590	9,598	8,289	1,545	8,016	1,455	8,368
Commercial, donated[a]	0	0	0	0	0	0	0	0	0	0	0	0
Educational drift gillnet permit[a]	61	23	200	152	186	91	203	217	6	18	7	116
Subsistence (Cordova, drift gillnet)[b]	1,980	1,783	4,270	5,639	1,675	1,403	1,075	2,448	5,189	6,163	7,091	3,163
Federal subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel)[b]	36	35	64	102	76	152	234	127	96	70	98	99
Subsistence (Batzulnetas, dip net, fish wheel or spear)[b]	106	9	101	862	146	0	0	254	468	209	67	216
Subsistence (Glennallen Subdistrict, dip net, fish wheel or spear)[c]	70,719	59,622	76,305	73,728	75,501	81,800	62,474	41,570	39,359	60,257	34,577	64,134
Federal subsistence (Glennallen Subdistrict, dip net, fish wheel or spear)[d]	12,849	14,163	14,461	15,834	23,889	26,753	19,181	18,415	16,736	17,718	11,234	18,000
Personal use reported (Chitina Subdistrict, dip net)[c]	138,487	128,052	127,143	180,663	157,215	223,080	148,982	132,694	77,051	171,203	78,022	148,457
Federal subsistence (Chitina Subdistrict, dip net)[d]	2,061	1,766	1,332	1,999	1,636	2,404	1,925	1,828	3,430	4,479	3,406	2,286
Upriver sport harvest[e]	14,743	7,727	23,404	26,611	18,005	9,489	7,555	9,589	2,943	7,346	1,000	12,741
Delta sport harvest[e]	1,342	838	764	386	87	130	246	200	58	168	142	422
Upriver spawning escapement[f]	502,403	607,142	953,502	860,258	864,131	930,145	513,126	461,268	478,760	718,876	364,928	688,961
Delta spawning escapement[g]	167,810	153,014	133,700	151,410	128,410	132,390	103,100	113,900	116,940	122,930	111,240	132,360
Hatchery broodstock/excess[h]	157,980	59,589	65,348	72,369	53,737	40,123	32,341	17,083	30,306	15,552	10,786	54,443
Total sockeye salmon run size	1,713,855	3,095,265	3,275,120	3,007,578	3,386,773	3,209,312	2,075,140	1,393,961	819,411	2,416,741	726,322	2,439,316

[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] Data are reported harvest (2002–2004) and expanded harvest (2005–2014) from returned state and federal subsistence permits.

[e] Upriver and Copper River Delta sport harvest data are from statewide sport fish harvest surveys.

[f] 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.

[g] Delta spawning escapement estimated by doubling the peak aerial survey index.

[h] Hatchery broodstock and on-site excess are from the PWSAC annual reports (PWSAC 2020b).

Appendix A2.–Total estimated sockeye salmon runs to the Copper River by origin and the previous 10-year average, 2010–2020.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2020)
Upriver wild contribution[a]	1,515,325	3,707,267	4,179,360	3,643,986	4,473,631	4,263,677	2,637,316	1,610,241	668,480	3,200,176	642,129	2,989,946
Delta wild contribution[b]	409,057	870,828	531,889	549,400	572,213	487,803	414,707	312,997	135,351	442,912	158,831	472,716
Gulkana contribution[c]	434,891	580,944	439,749	433,912	403,008	219,184	207,815	65,090	63,649	65,405	29,085	291,365
Total estimated sockeye salmon run size	2,359,273	5,159,039	5,150,998	4,627,298	5,448,852	4,970,664	3,259,838	1,988,329	867,480	3,708,493	830,045	3,754,026

[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 2011 are based on strontium 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 reported harvest.

Appendix A3.–Total estimated Chinook salmon run to the Copper River by end user or destination and the previous 10-year average, 2010–2020.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2019)
Commercial harvest[a]	9,645	18,500	11,764	8,826	10,207	22,506	12,348	13,834	7,618	19,148	5,880	13,440
Commercial, homepack[a]	906	1,282	853	564	768	1,145	727	744	85	742	225	782
Commercial, donated[a]	0	0	0	0	0	0	0	0	0	0	0	0
Educational drift gillnet permit[a]	31	6	6	55	36	50	86	50	40	31	14	39
Subsistence (Cordova, drift gillnet)[b]	276	212	237	854	153	167	73	778	1,356	808	657	491
Subsistence (Batzulnetas, dip net, fish wheel, or spear)[b]	0	0	0	5	0	0	0	2	0	0	0	1
Subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear)[c]	2,099	2,319	2,095	2,148	1,365	2,212	2,075	2,906	4,531	3,429	2,222	2,518
Federal subsistence (Glennallen Subdistrict, dip net, fish wheel, or spear)[d]	342	799	403	372	439	416	446	468	2,662	946	670	729
Personal use harvests (Chitina Subdistrict, dip net)[c]	700	1,067	567	744	719	1,570	711	1,961	1,273	2,611	751	1,192
Federal subsistence (Chitina Subdistrict, dip net)[d]	20	15	6	19	15	14	20	15	100	83	96	31
Sport harvest[e]	2,409	1,753	459	285	931	1,343	327	1,731	1,320	1,565	500	1,212
Upriver spawning escapement[f]	16,753	27,936	27,922	29,013	20,689	26,751	12,430	33,644	42,678	35,080	22,054	27,290
Total estimated Chinook salmon run size	33,181	53,889	44,312	42,885	35,322	56,174	29,243	56,133	61,663	64,443	33,069	47,725

[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 reported harvest (2002–2004) and expanded harvest (2005–2011) from returned state and federal subsistence permits.

[e] 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.

[f] 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 commercial salmon harvest by species in the Copper River District, 1975–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1975	19,644	335,384	53,805	236	807	409,876
1976	31,479	865,195	111,900	3,392	178	1,012,144
1977	21,722	602,737	131,356	23,185	335	779,335
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	11,761	43,705	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
Average (2010–2019)	14,221	1,313,919	223,446	54,477	17,088	1,623,151
Average (1995–2019)	31,279	1,376,386	250,351	32,655	15,167	1,705,837

Appendix A5.–Drift gillnet harvest by species and period in the Copper River District commercial fishery in 2020.

						Chinook		Sockeye		Coho		Pink		Chum	
Period[a]	Date	NR dates[b]	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
01[c]	05/14	05/04	12	368	386	1,659	25,104	1,561	7,953	0	0	0	0	37	266
02[c]	05/18	05/15	12	406	433	1,875	23,613	4,718	23,892	0	0	0	0	116	850
03	05/25	05/22	12	434	487	1,469	22,480	34,736	181,671	0	0	4	0	634	4,769
04[d]	06/01	05/30	12	398	436	953	11,972	32,899	170,806	0	0	0	0	302	2,099
05[d]	06/18	06/17	12	103	116	102	1,584	10,751	53,725	6	28	0	0	238	1,615
06	07/06	07/04	12	205	236	35	505	15,033	71,481	307	1,849	71	170	51	390
07	07/16	07/15	12	53	62	3	54	3,061	14,868	7	46	336	1,166	5	40
08	08/17–08/18	08/12	24	165	237	2	2	783	3,596	20,965	170,355	299	1,066	0	0
09	08/24–08/25	08/21	24	262	376	4	35	141	659	43,042	356,840	4	15	0	0
10	08/31–09/01	08/28	24	220	327	2	25	13	54	44,914	388,324	0	0	0	0
11	09/03–09/04	09/01	24	244	328	0	0	23	107	31,650	272,023	1	3	0	0
12	09/07–09/08	09/04	24	145	177	0	0	1	3	12,312	103,376	0	0	0	0
13	09/10	09/08	12	150	158	0	0	3	12	8,733	70,234	0	0	0	0
14	09/14–09/15	09/11	24	109	129	1	1	1	3	5,353	44,393	1	4	0	0
15	09/17–09/18	09/15	36	25	26	0	0	0	0	2,247	19,726	0	0	0	0
16	09/21–09/22	09/18	36	13	13	0	0	0	0	463	4,250	0	0	0	0
17	09/24–09/25	09/23	36	2	2	e	e	e	e	e	e	e	e	e	e
18	09/28–09/29	09/25	36	0	0	0	0	0	0	0	0	0	0	0	0
19	10/01–10/09	09/30	204	0	0	0	0	0	0	0	0	0	0	0	0
Total			588	465	3,929	6,105	85,375	103,724	528,830	170,114	1,432,386	716	2,424	1,383	10,029
Average weights							13.98		5.10		8.42		3.39		7.25

[a] Unless otherwise noted, all waters available to commercial salmon fishing were open in the Copper River District.

[b] Queries 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.

[c] Waters of the inside closure area described in 5 AAC 24.350(1)(B) were closed for all of the fishing period; see corresponding news release for more detail.

[d] Waters of the inside closure area described in 5 AAC 24.350(1)(B) were expanded and in effect for the fishing period; see corresponding news release for more detail.

[e] Fewer than 3 permits were fished. Period results are confidential.

Appendix A6.–Daily salmon counts at Miles Lake sonar, 2020.

	Daily sonar counts						Minimum inriver passage objective		Maximum inriver passage objective	
Date	North bank	South bank	Daily	Cumulative	0600 count	Projected daily	Daily	Cumulative	Daily	Cumulative
05/19[a]	384	379	763	763			3,252	6,385	12,784	36,793
05/20	902	721	1,623	2,386	391	1,564	4,665	11,050	14,781	51,574
05/21	1,401	1,131	2,532	4,918	379	1,516	5,388	16,438	15,632	67,206
05/22	1,063	1,076	2,139	7,057	523	2,092	8,040	24,478	18,084	85,290
05/23	1,019	1,612	2,631	9,688	547	2,188	9,296	33,774	21,409	106,699
05/24	2,329	1,671	4,000	13,688	655	2,620	9,831	43,605	21,550	128,248
05/25	2,683	3,433	6,116	19,804	1,341	5,364	11,374	54,979	22,649	150,897
05/26	2,912	4,275	7,187	26,991	1,150	4,600	13,464	68,443	24,529	175,427
05/27	2,955	3,470	6,425	33,416	1,427	5,708	13,553	81,996	27,386	202,812
05/28	3,082	2,559	5,641	39,057	1,505	6,020	14,245	96,241	25,291	228,103
05/29	2,942	3,698	6,640	45,697	1,294	5,176	15,427	111,668	26,955	255,059
05/30	4,598	4,290	8,888	54,585	1,649	6,596	17,223	128,892	25,836	280,895
05/31	7,109	4,035	11,144	65,729	2,400	9,600	15,906	144,798	26,360	307,254
06/01	7,578	6,175	13,753	79,482	2,703	10,812	16,953	161,751	22,963	330,217
06/02	6,631	6,597	13,228	92,710	3,342	13,368	16,249	178,000	25,294	355,510
06/03	6,634	6,110	12,744	105,454	2,426	9,704	16,578	194,578	23,813	379,323
06/04	5,811	9,885	15,696	121,150	3,460	13,840	14,442	209,019	23,400	402,723
06/05	6,498	6,188	12,686	133,836	2,950	11,800	15,908	224,927	21,856	424,579
06/06	5,955	5,466	11,421	145,257	2,234	8,936	14,977	239,904	20,337	444,917
06/07	5,276	5,804	11,080	156,337	2,745	10,980	14,717	254,620	17,908	462,825
06/08	4,115	5,706	9,821	166,158	1,998	7,992	13,746	268,366	14,877	477,702
06/09	4,013	5,298	9,311	175,469	1,547	6,188	12,791	281,157	15,422	493,124
06/10	4,314	4,119	8,433	183,902	1,968	7,872	11,263	292,420	15,318	508,443
06/11	5,240	3,266	8,506	192,408	2,083	8,332	9,357	301,777	14,343	522,785
06/12	5,842	4,883	10,725	203,133	2,082	8,328	9,700	311,476	15,297	538,082
06/13	5,746	6,830	12,576	215,709	2,576	10,304	9,634	321,110	15,502	553,585
06/14	5,258	9,452	14,710	230,419	3,784	15,136	9,020	330,131	14,636	568,221
06/15	5,384	9,842	15,226	245,645	3,881	15,524	9,621	339,751	13,594	581,815

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Appendix A6.–Page 2 of 3.

Date	Daily sonar counts: North bank	South bank	Daily	Cumulative	0600 count	Projected daily	Minimum inriver passage objective: Daily	Minimum inriver passage objective: Cumulative	Maximum inriver passage objective: Daily	Maximum inriver passage objective: Cumulative
06/16	4,560	9,952	14,512	260,157	3,346	13,384	9,750	349,501	14,551	596,367
06/17	4,758	8,426	13,184	273,341	2,661	10,644	9,205	358,706	13,904	610,271
06/18	4,312	6,861	11,173	284,514	2,286	9,144	8,550	367,256	13,432	623,703
06/19	3,212	6,308	9,520	294,034	1,872	7,488	9,152	376,408	12,915	636,618
06/20	3,399	5,454	8,853	302,887	2,034	8,136	8,745	385,152	12,277	648,895
06/21	3,363	5,340	8,703	311,590	1,950	7,800	8,448	393,600	12,054	660,949
06/22	2,805	5,159	7,964	319,554	1,655	6,620	8,123	401,723	10,844	671,794
06/23	3,429	3,920	7,349	326,903	1,505	6,020	7,721	409,444	11,624	683,417
06/24	2,443	4,215	6,658	333,561	1,391	5,564	7,581	417,025	12,197	695,615
06/25	1,979	4,408	6,387	339,948	1,216	4,864	6,820	423,846	11,248	706,862
06/26	2,412	4,011	6,423	346,371	1,089	4,356	7,311	431,156	10,157	717,019
06/27	4,030	5,286	9,316	355,687	1,511	6,044	7,671	438,827	9,506	726,525
06/28	3,327	7,716	11,043	366,730	2,592	10,368	7,074	445,901	9,791	736,316
06/29	3,507	7,821	11,328	378,058	2,411	9,644	6,388	452,289	8,085	744,402
06/30	3,462	5,586	9,048	387,106	1,734	6,936	5,979	458,268	8,410	752,812
07/01	3,594	5,755	9,349	396,455	1,854	7,416	6,158	464,426	9,293	762,105
07/02	3,027	5,436	8,463	404,918	2,317	9,268	5,085	469,511	9,642	771,746
07/03	2,600	6,008	8,608	413,526	2,190	8,760	5,289	474,800	8,533	780,279
07/04	2,262	6,386	8,648	422,174	1,830	7,320	5,844	480,645	8,832	789,111
07/05	1,210	5,054	6,264	428,438	1,822	7,288	6,064	486,708	9,306	798,417
07/06	1,763	5,464	7,227	435,665	1,541	6,164	5,367	492,075	8,491	806,908
07/07	1,293	4,973	6,266	441,931	1,168	4,672	5,555	497,630	9,097	816,005
07/08	961	4,359	5,320	447,251	1,214	4,856	5,853	503,483	9,782	825,788
07/09	1,113	4,714	5,827	453,078	1,142	4,568	5,340	508,822	10,910	836,697
07/10	2,046	4,635	6,681	459,759	1,702	6,808	5,722	514,544	10,155	846,853
07/11	1,900	5,156	7,056	466,815	1,883	7,532	6,152	520,696	11,539	858,391
07/12	1,654	5,953	7,607	474,422	1,492	5,968	6,861	527,558	11,983	870,374
07/13	811	4,600	5,411	479,833	1,390	5,560	6,387	533,945	11,261	881,635

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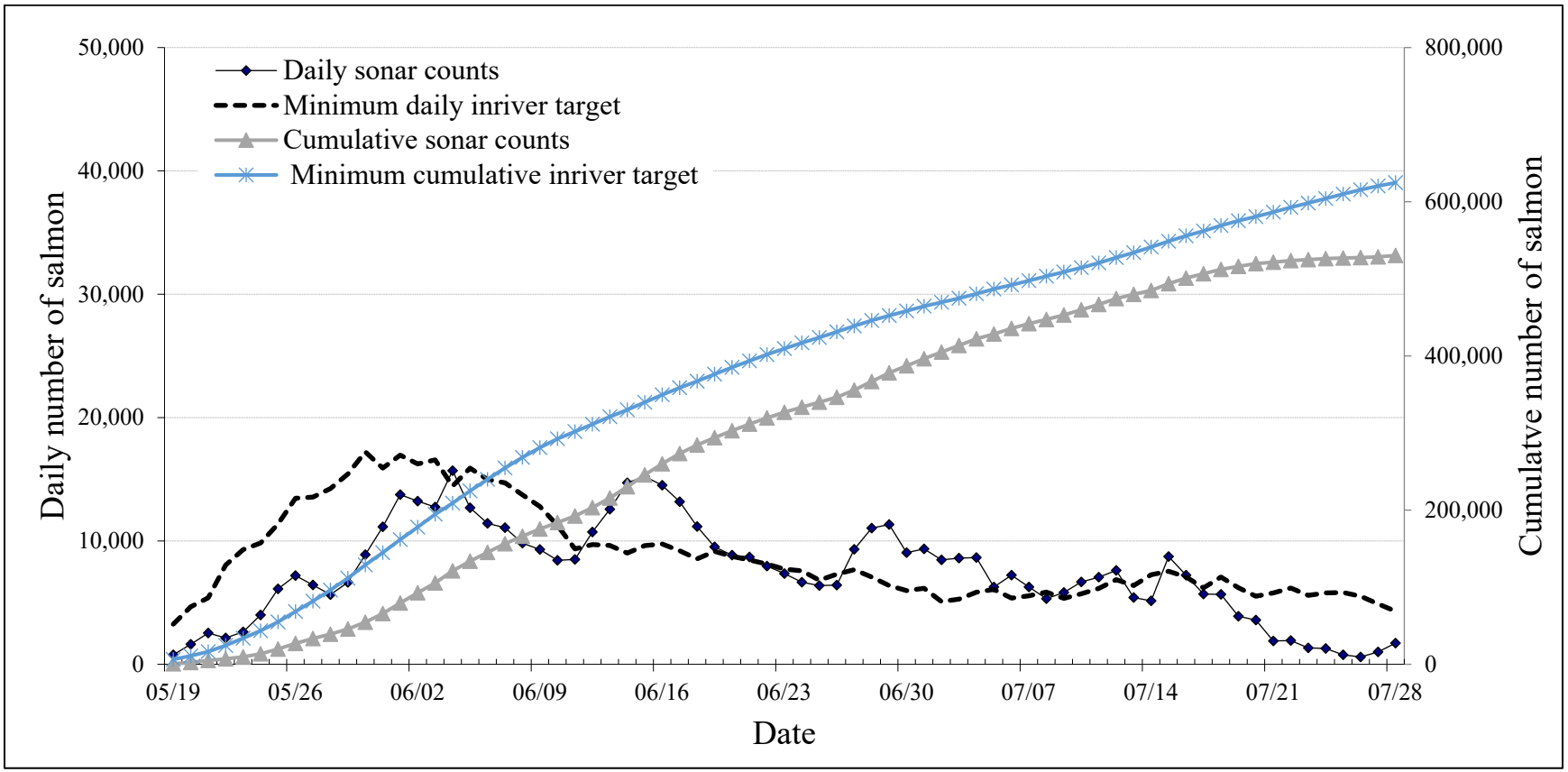
Date	Daily sonar counts						Minimum inriver passage objective		Maximum inriver passage objective	
	North bank	South bank	Daily	Cumulative	0600 count	Projected daily	Daily	Cumulative	Daily	Cumulative
07/14	1,422	3,716	5,138	484,971	1,071	4,284	7,257	541,202	9,855	891,490
07/15	2,366	6,369	8,735	493,706	2,504	10,016	7,536	548,738	11,239	902,729
07/16	2,755	4,475	7,230	500,936	2,028	8,112	7,082	555,820	9,871	912,600
07/17	1,991	3,704	5,695	506,631	1,450	5,800	6,198	562,018	8,769	921,369
07/18	2,099	3,572	5,671	512,302	1,265	5,060	7,068	569,087	9,191	930,561
07/19	1,401	2,496	3,897	516,199	650	2,600	6,208	575,295	9,833	940,393
07/20	999	2,592	3,591	519,790	560	2,240	5,515	580,810	8,886	949,280
07/21	710	1,178	1,888	521,678	572	2,288	5,781	586,591	9,206	958,485
07/22	607	1,323	1,930	523,608	319	1,276	6,184	592,775	9,258	967,743
07/23	661	667	1,328	524,936	325	1,300	5,589	598,363	8,782	976,525
07/24	391	896	1,287	526,223	493	1,972	5,790	604,153	7,796	984,320
07/25	204	565	769	526,992	65	260	5,823	609,976	6,843	991,164
07/26	259	337	596	527,588	234	936	5,523	615,499	6,111	997,275
07/27	325	680	1,005	528,593	102	408	4,903	620,401	5,383	1,002,658
07/28	662	1,058	1,720	530,313	590	2,360	4,304	624,705	4,587	1,007,245

Note: Anticipated counts are not available prior to May 15 because the sonar was deployed prior to this date only during 2003, 2004, 2005.

[a] North bank was deployed for 12 hours and south bank was deployed for 13 hours.

Appendix A7.– Minimum daily and cumulative sonar target versus actual daily and cumulative salmon passage, Miles Lake Sonar, 2020.



Appendix A8.–Inriver salmon passage at the Miles Lake sonar, 1978–2020.

Year	Total	Rank
1978	107,011	1
1979	328,090	2
1980	374,091	3
1981	576,681	10
1982	517,885	6
1983	592,563	11
1984	618,732	14
1985	466,190	4
1986	481,628	5
1987	523,022	7
1988	528,940	8
1989	643,367	18
1990	624,922	15
1991	593,185	12
1992	604,898	13
1993	819,700	27
1994	738,011	24
1995	637,293	17
1996	907,267	33
1997	1,164,791	39
1998	865,896	31
1999	850,597	29
2000	636,837	16
2001	878,205	32
2002	830,263	28
2003	747,091	25
2004	684,103	19
2005	855,125	30
2006	959,706	37
2007	919,601	35
2008	718,344	22
2009	709,748	21
2010	923,811	36
2011	914,231	34
2012	1,294,400	42
2013	1,267,060	41
2014	1,218,418	40
2015	1,346,100	43
2016	801,593	26
2017	723,426	23
2018	701,577	20
2019	1,039,354	38
2020	530,313	9
Average (2010–2019)	1,022,997	

Appendix A9.–Forecasted and actual semiweekly sockeye and Chinook salmon harvest and weekly coho salmon harvest in the Copper River District drift gillnet fishery, 2020.

Semiweekly date		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
05/16	Sat	12	12,434	1,561	1,257	1,659	1	0
05/20	Wed	12	28,591	4,718	2,507	1,875	–	–
05/23	Sat	0	45,470	0	2,095	0	10	0
05/27	Wed	12	60,052	34,736	2,876	1,469	–	–
05/30	Sat	0	61,648	0	2,814	0	26	0
06/03	Wed	12	53,640	32,899	2,618	953	–	–
06/06	Sat	0	35,355	0	1,349	0	44	0
06/10	Wed	0	46,531	0	1,655	0	–	–
06/13	Sat	0	39,050	0	1,109	0	51	0
06/17	Wed	0	42,470	0	1,087	0	–	–
06/20	Sat	12	34,425	10,751	513	102	194	6
06/24	Wed	0	38,074	0	442	0	–	–
06/27	Sat	0	35,568	0	172	0	285	0
07/01	Wed	0	45,489	0	208	0	–	–
07/04	Sat	0	33,392	0	85	0	443	0
07/08	Wed	12	40,252	15,033	75	35	–	–
07/11	Sat	0	26,204	0	31	0	975	307
07/15	Wed	0	23,885	0	34	0	–	–
07/18	Sat	12	18,785	3,061	13	3	1,453	7
07/22	Wed	0	17,748	0	19	0	–	–
07/25	Sat	0	9,206	0	4	0	1,945	0
07/29	Wed	0	6,414	0	5	0	–	–
08/01	Sat	0	5,560	0	4	0	4,548	0
08/05	Wed	0	3,624	0	4	0	–	–
08/08	Sat	0	2,228	0	3	0	11,788	0
08/12	Wed	0	2,291	0	3	0	–	–

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Semiweekly Date		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
08/15	Sat	0	1,305	0	1	0	26,878	0
08/19	Wed	24	507	783	3	2	–	–
08/22	Sat	0	174	0	2	0	42,919	20,965
08/26	Wed	24	243	141	3	4	–	–
08/29	Sat	0	166	0	1	0	50,061	43,042
09/02	Wed	24	72	13	5	2	–	–
09/05	Sat	24	50	23	1	0	40,433	76,564
09/09	Wed	24	47	1	0	0	–	–
09/12	Sat	12	22	3	0	0	28,126	21,045
09/16	Wed	24	4	1	1	1	–	–
09/19	Sat	36	19	0	0	0	9,843	7,600
09/23	Wed	36	4	0	0	0	–	–
09/26	Sat	36	0	0	0	0	2,478	578
09/30	Wed	36	0	0	0	0	–	–
10/03	Sat	65	0	0	0	0	471	0
10/07	Wed	96	0	0	0	0	–	–
10/10	Sat	43	0	0	0	0	30	0
Total		588	771,000	103,724	21,000	6,105	223,000	170,114

[a] Sockeye salmon forecasted harvest was based on the midpoint preseason forecast (771,000) and the 1998–2007 harvest timing.

[b] Chinook salmon forecasted harvest was based on the preseason harvest forecast (21,000) 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 (223,000) and the 1973–2009 harvest timing.

Appendix A10.–Aerial escapement indices by statistical week and location for sockeye salmon returning to the Copper River Delta, 2020.

System[a]	Weekly escapement indices (statistical week ending date listed)[b]										Site[c]	System[d]	Anticipated (by drainage)
	06/20	06/27	07/04	07/11	07/18	08/01	08/15	08/22	08/29	09/12			
Eyak River													
Eyak River	530	150	60	300	100	200	0	0	0	0	200	12,300	9,972–23,571
West Shore Beaches	NS	0	1,500	1,500	1,250	3,900	0	1,000	400	200	3,900		
East Shore Beaches	0	2,000	3,500	4,500	3,000	5,000	0	900	100	400	900		
Middle Arm Beaches[e]	0	150	2,700	2,000	4,500	1,800	6,100	7,000	6,000	5,000	7,000		
North Shore Beaches	NS	0	0	0	0	200	300	300	100	50	300		
Hatchery Creek Delta	NS	0	50	0	0	0	600	200	0	1,500	200	700	
Hatchery Creek	NS	NS	0	0	0	50	190	500	900	1,000	500		
Power Creek Delta	NS	0	800	1,200	500	2,500	400	1,700	0	0	1,700	2,200	
Power Creek	NS	NS	0	0	30	50	100	500	500	800	500		
Ibeck Creek													
Ibeck Creek	NS	NS	NS	NS	NS	NS	1,050	100	10	0	0	0	
Alaganik Slough													
Alaganik Slough	NS	0	1,600	4,700	2,000	100	0	0	0	0	100	5,650	8,359–19,758
McKinley Lake	NS	0	0	0	50	3,300	2,000	250	450	600	3,300		
Salmon Creek West Fork	0	0	0	0	0	2,000	2,100	1,700	0	0	2,000		
Salmon Creek East Fork	0	0	0	0	0	250	0	700	300	100	250		
26/27 Mile Creek													
26/27 Mile Creek	0	0	60	1,500	1,350	1,500	570	260	200	50	1,500	1,500	2,182–5,157
39 Mile Creek													
39 Mile Creek	0	0	0	NS	1,900	4,600	3,900	2,500	2,300	NS	4,600	4,600	5,772–13,642
Goat Mountain													
Goat Mountain Creek	NS	250	NS	900	100	180	100	0	NS	NS	900	900	549–1,298
Pleasant Creek													
Pleasant Creek	0	275	420	700	355	950	6	0	0	0	950	950	1,075–2,542
Martin River													
Martin River - Lower	380	0	NS	NS	NS	NS	NS	0	0	0	NS	NS	
Ragged Point River	NS	0	120	200	650	700	0	100	0	0	700	2,150	
Ragged Point Lake Outlet	NS	NS	0	0	0	100	300	50	50	100	100		
Ragged Point Lake	NS	NS	0	0	100	1,350	2,900	2,800	2,300	1,200	1,350		
Martin River–Upper[e]	113	260	900	1,800	2,200	450	200	0	0	0	2,200	2,200	
Martin Lake Outlet	225	2,100	0	0	0	0		0	0	0	0	12,300	17,598–41,596
Martin Lake	0	2,400	9,000	8,500	6,800	800	50	400	50	100	6,800		

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System[a]	Weekly escapement indices (statistical week ending date listed)[b] 06/20	06/27	07/04	07/11	07/18	08/01	08/15	08/22	08/29	09/12	Site[c]	System[d]	Anticipated (by drainage)
Martin Lake feeders	0	1,300	900	3,800	5,500	6,200	1,500	500	10	0	5,500		
Pothole River	NS	NS	NS	0	50	300	400	50	100	0	50	150	
Pothole Lake	NS	NS	NS	0	100	0	0	0	200	400	100		
Little Martin River	NS	150	0	NS	0	200	0	0	0	0	0	1,500	
Little Martin Lake	NS	0	0	NS	400	1,500	1,100	300	550	500	1,500		
Tokun													
Tokun Springs	50	75	350	NS	1,300	200	280	0	0	20	20	7,220	5,352–12,649
Tokun River	52	75	750	NS	900	300	0	225	375	200	200		
Tokun Lake Outlet	125	2,000	1,000	NS	50	50	0	0	0	0	0		
Tokun Lake	0	1,500	3,500	NS	2,500	4,200	500	1,600	5,560	7,000	7,000		
Martin River Slough													
Martin River Slough	0	350	1,110	1,300	300	500	NS	20	0	0	1,300	1,300	4,141–9,787
Total	1,475	13,035	28,320	32,900	35,985	43,430	24,646	23,655	20,455	19,220	55,620	55,620	
Lower target	14,273	17,627	28,229	30,055	31,424	32,568	26,465	24,382	19,762	12,467			55,000
Avg anticipated escapement	21,902	27,050	43,318	46,121	48,222	49,977	40,611	37,415	30,326	19,131			84,400
Upper target	33,736	41,665	66,722	71,040	74,276	76,979	62,553	57,630	46,711	29,467			130,000

Note: NS signifies that no survey was flown.

[a] The system represents the majority of known sockeye salmon spawning locations within the Copper River Delta.

[b] 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.

[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 system.

[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 A11.–Copper River and Bering River area sockeye salmon escapement indices, 2010–2020.

Stream/Lake[a]	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2019)
Eyak Lake	25,000	22,775	23,350	19,205	20,400	14,400	12,700	10,800	7,550	16,455	12,300	17,264
Hatchery Creek	870	100	1,000	300	300	1,400	500	1,800	500	700	700	747
Power Creek	1,853	2,600	3,300	1,000	750	1,450	3,200	800	1,000	1,000	2,200	1,695
Ibeck Creek	10	475	870	200	400	800	50	0	0	10	0	282
McKinley Lake	2,980	3,950	7,750	5,700	5,575	1,800	700	2,200	3,020	500	3,400	3,418
Salmon Creek	1,370	1,910	75	2,200	75	5,500	3,800	5,100	250	1,750	2,250	2,203
26/27 Mile Creek	0	870	350	950	750	920	900	700	1,300	2,820	1,500	956
39 Mile Creek	620	1,500	3,000	2,000	1,075	2,400	2,500	2,200	3,600	6,500	4,600	2,540
Goat Mountain	140	50	1,925	300	900	950	200	300	475	400	900	564
Pleasant Creek	3,460	7,600	2,300	5,900	4,700	8,300	2,020	8,050	3,800	7,600	950	5,373
Martin River	2,992	2,300	0	150	500	0	1,000	300	3,500	1,800	2,200	1,254
Ragged Pt. River/Lake	1,010	2,700	2,500	3,500	1,700	3,000	3,200	2,100	2,800	3,300	2,150	2,581
Martin Lake	19,660	10,200	3,850	22,000	16,085	100	10,100	6,050	10,400	14,700	12,300	11,315
Pothole Lake	4,440	0	6,900	900	250	15,420	0	900	25	20	150	2,886
Little Martin Lake	680	3,700	3,510	5,800	2,050	6,000	1,530	1,900	2,850	50	1,500	2,807
Tokun Lake/River	15,480	9,637	5,500	4,000	5,825	2,650	5,550	8,800	15,100	2,600	7,220	7,514
Martin River Slough	2,270	2,000	670	1,600	2,870	1,575	3,600	4,500	2,300	1,620	1,300	2,301
Copper River Delta total	82,835	72,367	66,850	75,705	64,205	66,665	51,550	56,500	58,470	61,825	55,620	65,697
Upper Copper River[b]	524,692	621,545	970,622	889,939	885,024	930,095	513,546	463,914	478,701	719,526	348,372	699,760
Copper River District total	607,527	693,912	1,037,472	965,644	949,229	996,760	565,096	520,414	537,171	781,351	403,992	765,458
Bering River/Lake	3,280	15,060	15,950	19,100	13,600	20,400	15,300	15,750	11,400	15,850	14,000	14,569
Shepherd Creek	46	4,800	1,400	750	750	625	700	2,075	100	500	170	1,175
Stillwater Creek	81	175	170	1,200	100	500	100	900	650	300	125	418
Kushtaka Lake	140	530	370	850	35	180	190	90	700	40	1,300	313
Katalla River	820	7,965	400	2,000	400	1,000	100	300	450	940	200	1,438
Bering River Area total	4,367	28,530	18,290	23,900	14,885	22,705	16,390	19,115	13,300	17,630	15,795	17,911
Copper River/Bering River Area total	611,894	722,442	1,055,762	989,544	963,714	1,018,465	581,486	539,529	550,471	798,981	419,787	783,229

[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 A12.–Aerial survey indices of sockeye salmon escapement to the upper Copper River drainage, 2005–2020.

Location	Yearly survey indices[a]																Projected indices[b]
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Mentasta Lake	7,090	7,790	8,507	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	3,277
Fish Creek–Mentasta	3,330	3,700	323	1,440	680	400	91	300	900	350	800	175	600	125	300	55	963
Bad Crossing 1 & 2	5,120	620	1,683	520	1,691	1,390	742	261	4,100	470	4,650	5	2,625	12	3,450	59	2,604
Suslota Lake	1,230	1,300	30	86	320	6	350	55	500	2,500	5,500	2,300	200	0	50	35	1,416
Tanada Lake	683	30	563	986	1,290	NS	800	1,715	2,600	1,000	1,100	1,300	1,150	51	60	100	3,849
Dickey Lake	55	185	71	37	20	3	59	26	30	251	300	80	5	30	200	6	115
Keg Creek	7	190	0	1	423	0	0	15	15	10	5	0	20	25	45	30	725
Swede Lake	7	2,570	731	343	109	320	137	400	60	175	160	85	30	12	200	55	531
Mahlo Creek	1,950	5,000	14,512	10,261	11,735	4,570	292	10,100	3,800	7,600	6,700	650	1,300	1,300	1,700	1,900	2,648
Mendeltna Creek	318	700	473	727	1,945	1,550	760	1,085	850	300	1,050	335	166	200	20	99	2,470
St. Anne Creek	1,692	6,560	11,970	14,000	8,123	2,420	1,751	5,800	3,200	1,650	2,600	515	770	450	985	80	4,888
Tonsina Lake	NS	20	20	3	0	NS	0	15	0	0	0	0	10	0	10	0	1,080
Long Lake	NS	1,400	505	382	14	10	290	375	5	10	20	0	1	0	0	0	1,577
Tana River	NS	1,392	312	434	19	100	40	410	65	145	83	97	50	0	30	5	1,345
Salmon Creek (Bremner)	217	790	750	3,500	530	340	276	1,000	1,500	610	400	400	300	300	400	85	825
Fish Lake	281	7,250	1,066	158	0	89	1,008	35	20	4	6	60	0	0	0	0	6,418
Mud Creek–Summit Lake	NS	1,800	2,705	11,410	0	2,759	211	870	600	320	225	100	90	150	20	77	7,445
Paxson Inlet–Mud Creek	363	2,470	9,317	4,665	2,720	2,301	1,520	7,900	9,900	3,100	850	500	3,500	300	700	392	6,560
Mud Creek and Lake	145	310	2	10	0	20	2	10	11	100	30	6	0	20	5	10	172
Paxson Lake Outlet	155	270	324	596	0	560	1,700	350	2,000	350	125	100	50	400	20	18	2,661
Totals	22,643	44,347	53,864	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	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 A13.–Estimated age and sex composition of sockeye salmon harvested in the Copper River District drift gillnet fishery, 2020.

		Brood year and age class										
		2017		2016		2015			2014		2013	
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Strata combined	5/14–9/14											
Sampling dates	5/18–7/7											
Sample size	1,237											
	Sample size	3	1	14	199	2	831	13	29	142	2	1,237
	Percentage of sample	0.3%	0.1%	1.2%	16.1%	0.2%	67.2%	1.1%	2.3%	11.5%	0.2%	100.0%
	No. in harvest	274	47	1,198	16,450	173	68,702	1,106	2,361	11,768	189	102,269
	Standard error	174	49	730	9,309	159	50,143	821	1,690	9,314	245	

Appendix A14.–Estimated age and sex composition of Chinook salmon harvested in the Copper River District commercial fishery, 2020.

		Brood year and age class								
		2017	2016	2015		2014		2013		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	Total	
Strata combined	5/14–8/31									
Sampling dates	5/14–5/26									
Sample size:	282									
	Sample size	1	98	118	1	56	5	3	282	
	Percentage of sample	0.3%	34.9%	42.0%	0.3%	19.7%	1.8%	1.0%	100.0%	
	No. in harvest	17	2,042	2,457	17	1,154	106	57	5,850	
	Standard error	18	1,519	1,763	18	832	77	43		

Appendix A15.–Total estimated coho salmon run to the Copper River by end user or destination and the previous 10-year average, 2010–2020.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2019)
Commercial harvest[a]	210,621	127,511	130,261	244,985	315,776	136,981	367,630	306,287	303,957	78,292	168,524	222,230
Commercial, homepack[a]	1,026	543	1,037	249	1,146	1,423	1,353	1,945	2,581	855	1,590	1,216
Commercial, donated[a]	0	0	0	0	0	0	0	0	0	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]	27	34	0	1	0	10	2	43	195	330	326	64
Federal subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel)[b]	68	581	392	310	630	878	555	514	255	480	416	466
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]	293	372	335	144	233	77	45	68	151	204	67	192
Federal subsistence (Glennallen Subdistrict, dip net or fish wheel)[d]	NA	53	78	24	25	14	11	1	0	0	1	23
Personal use (Chitina Subdistrict, dip net)[c]	2,013	1,702	1,385	797	1,129	841	1,182	715	1,436	1,064	815	1,226
Federal subsistence (Chitina Subdistrict, dip net)[d]	33	8	8	8	72	15	41	9	31	22	23	25
Delta sport harvest[e]	15,752	14,283	15,230	17,053	16,137	24,515	13,094	9,559	11,730	12,901	11,397	15,025
Upriver sport harvest[e]	114	21	0	0	89	0	0	23	387	0	137	63
Upriver spawning escapement[f]	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown	unknown
Delta spawning escapement[g]	82,154	76,290	74,020	69,360	86,020	83,330	152,400	87,520	107,600	74,040	72,850	89,273
Total estimated coho salmon run size	312,101	221,398	222,746	332,931	421,257	248,084	536,313	406,684	428,323	168,188	256,146	329,802

[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 (2010–2020) 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 unavailable.

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

Appendix A16.–Aerial escapement indices by statistical week and location for the coho salmon run to Copper River Delta, 2020.

Drainage	System[b]	Weekly escapement indices (statistical week ending date)[a] 8/15	8/22	8/29	9/12	Site[c]	System[d]	Projected (by drainage)
Eyak River	Eyak River	750	1,600	2,400	100	100	4,300	6,916
	East Shore Beaches	0	1,600	800	1,200	1,200		
	West Shore Beaches	0	50	200	700	700		
	Middle Arm Beaches	0	0	500	1,000	1,000		
	North Shore Beaches	0	0	0	0	0		
	Hatchery Creek Delta	0	0	0	200	200		
	Hatchery Creek	0	0	0	100	100		
	Power Creek Delta	0	0	0	800	800		
	Power Creek	0	0	0	200	200		
Ibeck Creek	Ibeck Creek	1,550	1,300	4,200	8,800	8,800	8,800	6,227
Scott River	Scott Lake	NS	20	0	NS	20		1,429
	Scott River	NS	0	0	NS	0		
	Elsner Lake [e]	NS	0	50	800	800		
Alaganik Slough	Alaganik Slough	150	100	600	500	600	3,270	2,591
	18/20 Mile Creek	0	5	220	250	220		
	McKinley Lake	0	200	750	150	750		
	Salmon Creek West Fork	0	0	1,500	100	1,500		
	Salmon Creek East Fork	0	0	200	600	200		
26/27 Mile Creek	26/27 Mile Creek	0	75	75	1,200	1,200	1,200	829
39 Mile Creek	39 Mile Creek	200	100	500	NS	500	500	3,831
Goat Mountain Cr.	Goat Mountain Creek	0	75	NS	NS	75	75	1,181
Pleasant Creek	Pleasant Creek	0	75	555	2,300	2,300	2,300	
Martin River	Martin River - Lower	NS	200	30	75	75	11,385	6,522
	Ragged Point River	0	50	50	50	50		849
	Ragged Point Lake Outlet	0	0	0	0	0		
	Ragged Point Lake	0	0	0	800	800		
	Martin River - Upper	1,500	700	800	5,500	5,500		

-continued-

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Drainage	System[b]	Weekly escapement indices (statistical week ending date)[a] 8/15	8/22	8/29	9/12	Site[c]	System[d]	Projected (by drainage)
Martin River (cont.)	Martin Lake Outlet	0	500	1,800	400	400		1,936
	Martin Lake	0	500	50	400	400		
	Martin Lake Feeders	0	2,000	2,900	1,800	1,800		
	Pothole River	0	200	1,000	900	900		1,370
	Pothole Lake	0	0	50	600	600		
	Little Martin River	0	50	300	860	860		5,413
	Little Martin Lake	0	0	0	0	0		
Tokun	Tokun Springs	0	0	150	70	70	370	1,376
	Tokun River	0	0	50	200	200		
	Tokun Lake Outlet	0	0	0	0	0		
	Tokun Lake	0	0	0	100	100		
Martin River Slough	Martin River Slough	NS	400	1,800	4,225	4,225	4,225	9,531
Copper River aerial survey daily total		4,150	9,800	21,530	34,980	36,425	36,425	
Lower SEG		5,846	9,298	16,147	18,286			32,000
Average SEG (average anticipated escapement)		9,134	14,528	25,229	28,571			50,000
Upper SEG		12,239	19,468	33,807	38,285			67,000

Note: NS signifies that no survey was flown. System was flown during the next statistical week on Bering River District survey.

[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 system represents 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 A17.–Copper River Delta and Bering River coho salmon escapement indices, 2010–2020.

Stream/Lake[a,b]	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average (2010–2019)
Eyak Lake	13,360	640	3,950	3,880	4,450	5,075	3,200	900	6,850	1,020	3,000	4,333
Hatchery Creek	640	2,000	100	40	1,300	950	500	550	1,600	3,500	300	1,118
Power Creek	350	2,520	150	50	760	225	4,500	1,050	1,750	6,600	1,000	1,796
Ibeck Creek	3,381	14,200	7,600	9,150	12,500	8,100	31,500	8,100	6,500	3,500	8,800	10,453
Scott & Elsner River[c]	700	380	575	50	360	100	200	200	400	600	820	357
18/20 Mile	144	310	450	120	400	600	250	700	600	1,150	220	472
McKinley Lake	630	75	100	400	450	300	650	200	150	600	1,350	356
Salmon Creek	730	1,620	1,300	850	1,950	1,900	2,500	2,350	1,450	3,400	1,700	1,805
26/27 Mile	0	1,150	475	1,800	1,600	290	4,000	2,700	200	2,500	1,200	1,472
39 Mile	1,340	2,800	2,400	2,300	2,600	1,700	7,500	1,700	3,100	850	500	2,629
Goat Mountain	331	210	400	900	1,200	350	250	700	550	300	75	519
Pleasant Creek	1,700	245	440	1,500	1,110	400	1,850	1,650	6,050	1,700	2,300	1,665
Martin River	5,560	2,100	1,420	350	3,820	4,475	6,000	1,200	8,050	350	5,575	3,333
Ragged Point River/Lake	690	1,100	4,000	2,500	1,050	3,600	1,050	1,160	1,450	510	850	1,711
Martin Lake	3,511	450	2,350	2,750	2,150	3,250	1,100	1,750	1,400	600	2,600	1,931
Pothole Lake	2,000	1,400	2,300	120	550	750	800	2,500	750	2,220	1,500	1,339
Little Martin Lake	460	4,500	4,700	3,800	2,900	4,750	2,300	9,300	5,100	1,900	860	3,971
Tokun River/Lake	1,370	1,350	3,200	620	1,175	1,050	900	1,400	2,350	320	370	1,374
Martin River Slough	4,180	1,475	1,400	3,500	4,075	4,300	7,350	5,850	5,900	5,400	4,225	4,343
Copper River Delta total	41,077	38,525	37,310	34,680	44,400	42,165	76,400	43,960	54,200	37,020	36,425	44,974
Katalla River	4,190	1,430	950	800	1,550	1,000	750	3,300	4,700	800	5,700	1,947
Bering River/Lake	9,820	5,520	5,700	7,750	10,675	4,300	2,300	3,150	11,750	1,740	8,500	6,271
Dick Creek	1,070	2,050	2,000	2,800	1,300	1,750	0	700	500	500	1,000	1,267
Shepherd Creek	1,090	20	150	0	0	0	8,000	NS	0	600	NS	1,096
Nichawak River	901	6,800	3,750	3,800	6,500	5,100	8,500	10,500	2,700	1,000	3,500	4,955
Gandil River	1,200	820	500	1,100	1,500	700	300	1,000	250	550	600	792
Controller Bay	3,040	2,250	2,555	2,570	4,950	2,700	6,300	12,000	6,625	4,825	6,525	4,782
Bering River Area total	21,311	18,890	15,605	18,820	26,475	15,550	26,150	30,650	26,525	10,015	25,825	20,999
Copper River/Bering total	62,388	57,415	52,915	53,500	70,875	57,715	102,550	74,610	80,725	47,035	62,250	65,973

[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 A18.–Estimated age and sex composition of coho salmon harvested in the Copper River District drift gillnet fishery, 2020.

		Brood year and age class			
		2017	2016	2015	
		1.1	2.1	3.1	Total
Strata combined	06/18–09/24				
Sampling dates	08/18–09/15				
Harvest sampled	170,114				
	Sample size	296	306	24	626
Female	Percentage of sample	23.3%	27.9%	2.8%	54.0%
	Number in harvest	39,589	47,467	4,745	91,801
	Sample size	295	232	16	543
Male	Percentage of sample	24.5%	19.6%	1.9%	46.0%
	Number in harvest	41,743	33,380	3,191	78,313
	Sample size	591	538	40	1,169
Total	Percentage of sample	47.8%	47.5%	4.7%	100.0%
	Number in harvest	81,332	80,847	7,935	170,114
	Standard error	3,205	3,258	1,525	

Appendix A19.–Total commercial harvest by species in the Bering River District, 1978–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1978	331	33,554	91,097	266	2,391	127,639
1979	385	139,015	114,046	6,895	23,094	283,435
1980[a]	0	0	108,872	0	0	108,872
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[b]	330	91,784	214,632	309	20,408	327,463
1985[b]	215	26,561	419,276	214	9,642	455,908
1986[c]	128	19,038	115,809	15	243	135,233
1987[c]	34	16,926	15,864	54	7	32,885
1988[c]	19	7,152	86,539	23	181	93,914
1989[c]	30	9,225	26,952	7	2	36,216
1990[c]	14	8,332	42,952	2	1	51,301
1991[c]	28	19,181	110,951	4	195	130,359
1992[c]	21	19,721	125,616	4	1	145,363
1993[c]	130	33,951	115,833	82	22	150,018
1994[c]	121	27,926	259,003	34	63	287,147
1995[c]	44	21,585	282,045	26	229	303,929
1996[c]	111	37,712	93,763	0	30	131,616
1997[c]	23	9,651	97	2	0	9,773
1998[c]	70	8,439	12,284	5	2	20,800
1999[c]	42	13,697	9,852	204	96	23,891
2000[c]	5	1,279	56,329	0	0	57,613
2001[c]	76	5,450	2,715	0	0	8,241
2002[c]	14	235	108,522	0	0	108,771
2003[c]	151	18,266	59,481	33	0	77,931
2004[c]	87	13,165	95,595	2	21	108,870
2005[c]	277	77,464	43,030	9,327	14	130,112
2006[c]	238	36,867	56,713	54	39	93,911
2007[c]	88	16,470	9,305	6	1	25,870
2008[c]	42	1,175	40,380	8	1	41,606
2009[c]	15	4,157	45,522	1	5	67,682
2010[c]	0	51	80,560	2	0	80,613
2011[c]	1	6	19,956	8	0	19,971
2012[c]	1	0	46,169	1	0	46,171
2013[c]	16	3,286	46,959	2	16	50,279
2014[c]	0	50	97,637	4	0	97,691
2015[c]	13	2,137	12,106	10	1	14,267
2016[c]	52	9,809	80,094	22	122	90,099
2017[c]	36	2,578	119,090	105	15	121,824
2018[c]	5	33	120,774	11	121	120,944
2019[c]	83	21,006	7,418	262	202	28,971
2020[c]	8	9	64,712	10	0	64,739
Average (2010–2019)	21	3,896	63,076	43	48	66,048

[a] In 1980, fishing was prohibited before August 11.

[b] 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.

[c] The Alaska Board of Fisheries closed the Kayak Island Subdistrict due to interceptions of nonlocal stocks.

Appendix A20.–Bering River District drift gillnet salmon harvest by period, 2020.

Period	Date	News release dates	Hrs.	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						No.	Lb	No.	Lb	No.	Lb	No.	Lb	No.	Lb
01	5/14	05/04	12	0	0	0	0	0	0	0	0	0	0	0	0
02	5/18	05/15	12	0	0	0	0	0	0	0	0	0	0	0	0
03	05/25	05/22	12	0	0	0	0	0	0	0	0	0	0	0	0
04	06/01	05/30	12	0	0	0	0	0	0	0	0	0	0	0	0
05	08/17–08/18	08/12	24	15	28	2	18	8	36	3,039	25,701	10	31	0	0
06	08/24–08/25	08/21	24	35	54	0	0	0	0	8,787	74,733	0	0	0	0
07	08/31–09/01	08/28	24	38	81	1	0	0	0	16,497	141,338	0	0	0	0
08	09/03–09/04	09/01	24	53	97	0	0	0	0	14,530	122,976	0	0	0	0
09	09/07–09/08	09/04	24	76	116	0	0	1	3	13,535	113,423	0	0	0	0
10	09/10	09/08	12	46	49	0	0	0	0	3,660	28,827	0	0	0	0
11	09/14–09/15	09/11	24	39	49	6	47	0	0	2,518	20,501	0	0	0	0
12	09/17–09/18	09/15	36	10	12	0	0	0	0	2,414	19,300	0	0	0	0
13	09/21–09/22	09/18	36	1	1	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
14	09/24–09/25	09/23	36	0	0	0	0	0	0	0	0	0	0	0	0
15	09/28–09/29	09/25	36	0	0	0	0	0	0	0	0	0	0	0	0
16	10/01–10/09	09/30	204	0	0	0	0	0	0	0	0	0	0	0	0
Total			552	105	487	9	65	9	39	65,113	547,970	10	31	0	0
Average weights							7.22		4.33		8.42		3.10		0.00

Note: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable news release 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 = 2020; Species Group = Salmon; Management Area = Prince William Sound. Queries made through the ADF&G Commercial Fishery Announcements will provide results sorted by Publication Date.

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

Appendix A21.–Aerial escapement indices by statistical week and location for sockeye salmon returning to the Bering River District, 2020.

Drainage	System[b]	Weekly escapement indices (statistical week ending date listed)[a] 6/27	7/4	7/11	7/18	8/1	8/15	8/22	8/29	9/12	Site[c]	System[d]	Anticipated (by drainage)
Bering River	Bering River	0	0	50	0	50	0	0	0	0	0	14,000	21,903
	Bering Lake	100	2,100	1,000	1,200	2,300	6,100	300	500	200	1,000		
	Dick Creek	0	7,700	13,000	10,250	3,500	2,300	200	1,000	50	13,000		
	Shepherd Cr. Lagoon	NS	NS	NS	NS	0	0	NS	NS	NS	0	170	4,375
	Shepherd Creek	NS	NS	NS	NS	150	0	NS	NS	NS	150		
	Carbon Creek	NS	NS	NS	NS	20	25	NS	NS	NS	20		
	Clear Creek	NS	NS	NS	NS	15	125	NS	NS	NS	125	125	1,197
	Kushtaka Lake	NS	NS	NS	NS	0	1,300	NS	NS	NS	1,300	1,300	1,226
	Shockum Creek	NS	NS	NS	NS	0	0	NS	NS	NS	0		
Katalla River	Katalla River[e]	0	200	0	0	0	0	0	0	0	200	200	
Bering River District weekly index		100	10,000	14,050	11,450	6,035	9,850	500	1,500	250	15,795	15,795	
Lower objective		4,048	6,092	11,015	11,051	9,401	4,301	2,416	1,481	571			15,000
Average objective		6,477	9,747	17,623	17,682	15,042	6,882	3,866	2,370	914			24,000
Upper objective		8,906	13,402	24,232	24,313	20,683	9,462	5,316	3,259	1,256			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 systems 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 A22.–Aerial escapement indices by statistical week and location for coho salmon returning to the Bering River District, 2020.

Drainage	System[b]	Weekly escapement indices (statistical week ending date listed)[a] 8/15	8/22	8/29	9/12	Site[c]	System[d]	Projected (by drainage)
Bering River	Bering River[e]	0	1,350	4,450	1,400	1,400	8,500	7,720
	Bering Lake	2,100	550	1,500	7,100	7,100		
	Dick Creek	0	820	500	1,000	1,000	1,000	
	Shepherd Creek - Lagoon	NS	NS	NS	NS	NS	0	
	Shepherd Creek	NS	NS	NS	NS	NS		
	Carbon Creek[f]	NS	NS	NS	NS	NS		
Katalla River	Katalla River	5,450	2,800	2,800	5,700	5,700	5,700	4,993
Lower Bering River	Gandil River	NS	0	100	600	600	600	2,910
	Nichawak River	NS	100	750	3,500	3,500	3,500	
Controller Bay	Campbell River	NS	300	750	3,900	3,900	6,525	7,378
	Edwardes River	NS	NS	250	525	525		
	Okalee River	NS	NS	2,100	500	2,100		
	Other Clear Streams[f]	NS	NS	0	50	50		
Bering River District weekly index		7,550	5,920	13,200	24,275	25,825	25,825	
Lower objective		2,533	4,002	8,732	6,969			13,000
Average objective		4,482	7,080	15,448	12,330			23,000
Upper objective		6,431	10,158	22,165	17,691			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 systems 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 the index counts by site within a system.

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

[f] This stream is not included in the indexed escapement deltawide; it is a non-index stream.

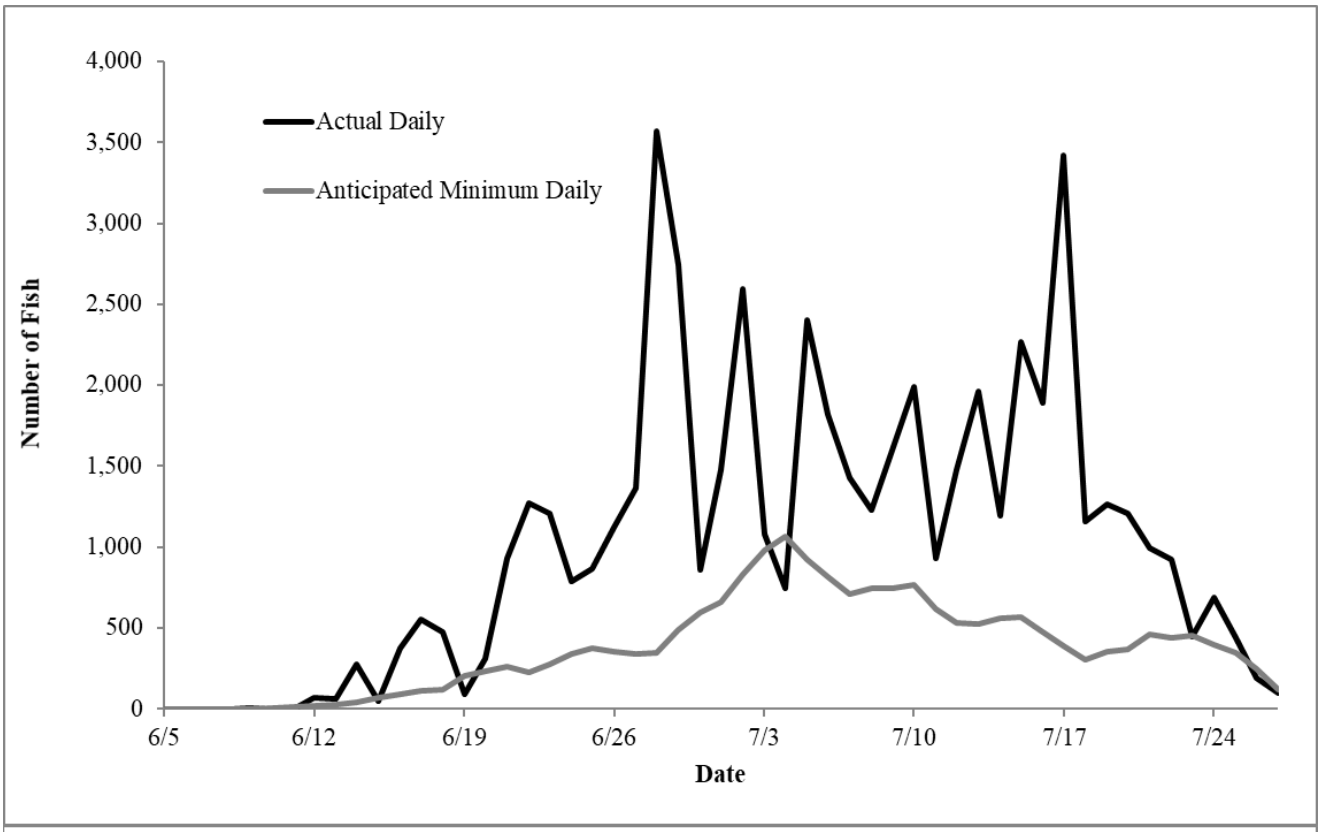
APPENDIX B: COGHILL DISTRICT, UNAKWIK DISTRICT AND PORT CHALMERS SUBDISTRICT

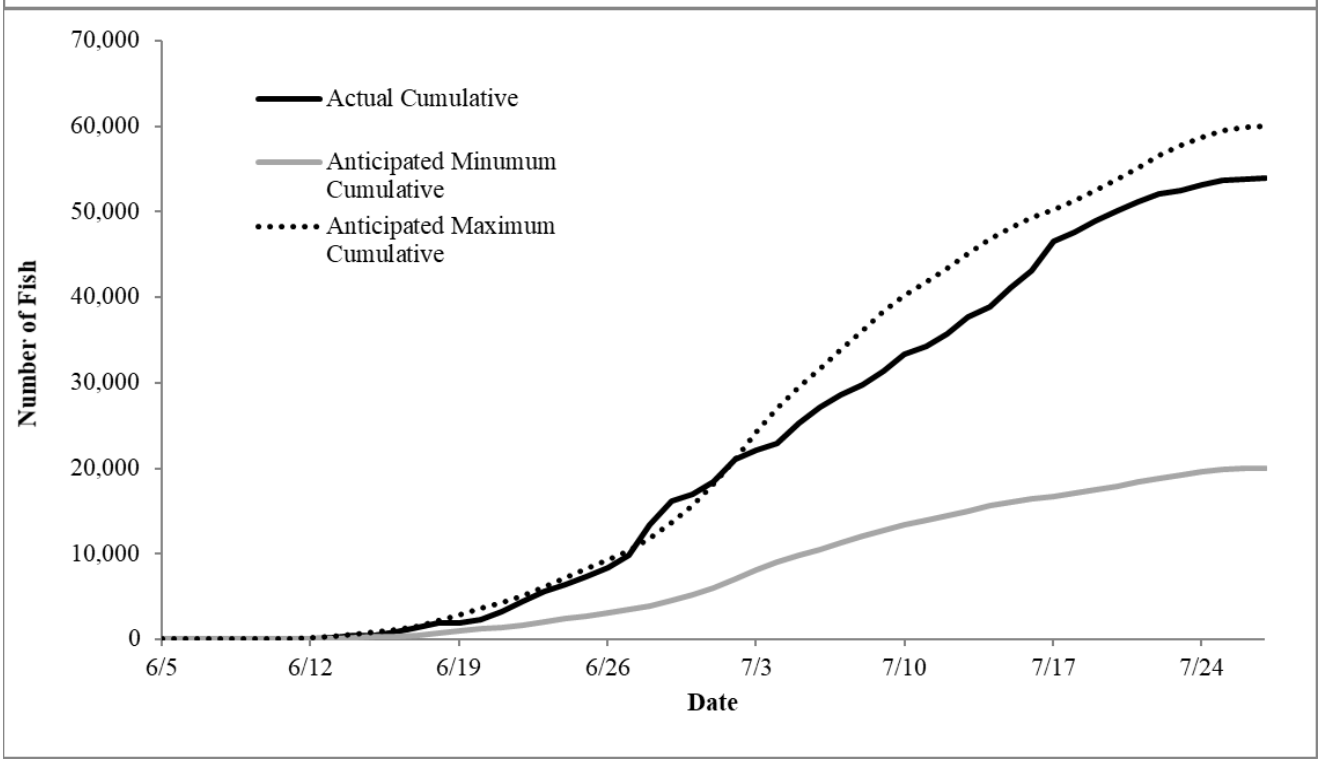
Appendix B1.–Daily and cumulative salmon escapement through the Coghill River weir, 2020.

	Sockeye salmon		Pink salmon	
Date	Daily	Cumulative	Daily	Cumulative
6/9	7	7	0	0
6/10	0	7	0	0
6/11	0	7	0	0
6/12	70	77	0	0
6/13	59	136	0	0
6/14	279	415	0	0
6/15	48	463	0	0
6/16	373	836	0	0
6/17	554	1,390	0	0
6/18	473	1,863	0	0
6/19	94	1,957	0	0
6/20	308	2,265	0	0
6/21	929	3,194	3	3
6/22	1,271	4,465	0	3
6/23	1,206	5,671	4	7
6/24	786	6,457	0	7
6/25	868	7,325	0	7
6/26	1,121	8,446	0	7
6/27	1,366	9,812	2	9
6/28	3,566	13,378	0	9
6/29	2,747	16,125	0	9
6/30	856	16,981	0	9
7/1	1,480	18,461	1	10
7/2	2,594	21,055	4	14
7/3	1,080	22,135	0	14
7/4	746	22,881	0	14
7/5	2,404	25,285	0	14
7/6	1,820	27,105	0	14
7/7	1,428	28,533	4	18
7/8	1,226	29,759	5	23
7/9	1,597	31,356	16	39
7/10	1,990	33,346	0	39
7/11	929	34,275	15	54
7/12	1,478	35,753	41	95
7/13	1,960	37,713	244	339
7/14	1,194	38,907	139	478
7/15	2,268	41,175	325	803
7/16	1,893	43,068	819	1,622
7/17	3,419	46,487	7,439	9,061
7/18	1,160	47,647	3,033	12,094
7/19	1,263	48,910	2,975	15,069
7/20	1,209	50,119	5,018	20,087
7/21	997	51,116	2,694	22,781
7/22	923	52,039	4,671	27,452
7/23	450	52,489	2,013	29,465
7/24	686	53,175	5,683	35,148
7/25	438	53,613	3,545	38,693
7/26	193	53,806	1,344	40,037
7/27	95	53,901	680	40,717

Note: The weir installation was complete June 5 but the first fish did not pass until June 9.

Appendix B2.–Anticipated cumulative and daily sockeye salmon escapement based on 3-year running averages compared to actual escapement through Coghill River weir, 2020.





Appendix B3.–Salmon escapement by species in the Coghill District, 1972–2020.

Year	Sockeye[a]	Pink[b]	Chum[b]
1972	51,000	30,960	28,160
1973	55,000	493,780	72,610
1974	22,333	56,940	29,280
1975	34,855	452,430	3,640
1976	9,056	53,908	31,398
1977	31,562	320,680	79,957
1978	42,284	67,084	15,966
1979	48,281	125,544	7,823
1980	142,253	148,066	20,919
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
Average 2010–2019	37,422	287,218	16,071

[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 periods of nonoperation.

Appendix B4.–Coghill District commercial common property drift gillnet salmon harvest by period, 2020.

Period	Date	NR date[a]	Hours	Permits fished	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/2	5/22	36	34	62	28	308	230	1,093					5,806	45,130
2	6/4–6/5	6/3	36	82	174	24	244	455	2,476					14,656	128,824
3	6/8–6/9	6/6	36	128	277	28	305	1,347	6,632	2	11	2	15	16,694	144,463
4	6/11–6/12	6/10	36	100	184	18	164	2,814	13,347					6,699	55,601
5	6/15–6/16	6/13	36	115	241	21	287	14,822	73,973	1	4			12,624	98,824
6	6/18–6/19	6/17	36	119	246	19	155	8,332	40,247	1	5	1	4	11,674	97,931
7	6/22–6/23	6/20	24	95	166	10	139	8,633	39,491	1	7	2	11	11,005	90,299
8	6/25–6/27	6/24	48	201	465	6	73	17,421	83,601	1	5	16	66	39,133	304,349
9	6/29–7/1	6/27	48	270	477	20	225	15,938	72,711			201	745	10,607	83,645
10	7/2–7/4	7/1	60	202	396	6	49	17,303	85,453			1,412	5,098	16,062	121,633
11	7/6–7/8	7/4	60	142	316	46	326	8,968	42,109	2	18	9,507	34,643	22,286	165,015
12	7/9–7/12	7/8	84	94	231	7	48	4,099	19,473	3	17	16,456	61,560	13,529	98,602
13	7/13–7/15	7/11	60	100	254	19	178	4,461	22,106	16	143	29,907	117,132	20,153	149,248
14	7/16–7/19	7/15	84	89	255	53	409	3,281	16,474	54	445	42,152	158,053	20,235	135,947
15	7/20–7/22	7/18	60	76	190	18	90	1,135	5,984	150	1144	55,655	207,693	4,422	31,810
16	7/23–7/24	7/22	38	23	71	2	16	226	1,196	14	96	33,166	128,921	940	7,129
17	7/28	7/27	14	40	73	0	0	419	1,919	25	190	24,874	90,701	722	4,599
18	8/1	7/31	14	63	104	1	10	318	1,574	53	374	45,090	163,231	537	3,841
19	8/5	8/4	14	71	126	2	15	604	2987	92	640	65242	259146	783	5709
20	8/8	8/7	14	71	94	3	33	141	711	54	409	35,353	126,513	412	2,716
21	8/11	8/10	12	89	159	2	30	108	570	155	1083	118,769	417,109	106	780
22	8/13	8/12	12	92	158	0	0	77	379	232	1484	103,644	355,773	64	448
23	8/15	8/14	12	74	109	0	0	113	593	273	1,960	48,646	180,109	64	422
24	8/17	8/16	12	23	26	1	12	23	108	100	694	4,620	16,280	28	215
25	8/19	8/18	12	13	18	0	0	43	227	77	606	6,161	22,274	34	257
26	8/21	8/20	12	18	22	0	0	32	147	177	1,237	5,943	20,521	27	218
27	8/23	8/21	12	6	7	0	0	18	72	106	657	1,453	5,085	29	204
28	8/24	8/23	12	3	3	0	0	23	95	111	714	986	3,452	23	161
29	8/25	8/23	12	5	5	0	0	6	35	146	1,020	744	2,975	21	160
30	8/26	8/23	12	5	5	0	0	6	30	146	1,060	521	2,080	11	77

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Appendix B4.–Page 2 of 2.

Period	Date	NR date[a]	Hours	Permits fished	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
31	8/27	8/26	12	5	5	0	0	0	25	125	955	453	1,810	9	58
32	8/28	8/26	12	4	4	0	0	0	10	27	205	123	495	9	58
33	8/29	8/26	12							No Harvest Reported					
34	8/30	8/28	12							No Harvest Reported					
35	8/31	8/28	12							No Harvest Reported					
36	9/1	8/28	12							No Harvest Reported					
37	9/2	8/28	12							No Harvest Reported					
38	9/3–9/5	9/1	60	9	14	0	0	0	0	331	2,660	0	0	2	13
39	9/7–9/8	9/4	36							No Harvest Reported					
Total				365	4,937	334	3,116	111,403	535,848	2,475	17,843	651,099	2,381,495	229,406	1,778,386
Average weights							9.3		4.8		7.2		3.7		7.8

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

Note: Blank cells indicate no data. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2020; 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 B5.–Purse seine harvest by species and period in the Coghill District commercial fishery in 2020.

Period	Date	NR date[a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
15	7/20–7/22	7/18	60	70	70	12	63	818	3,851	35	260	100,867	378,935	5,776	39,147
16	7/23–7/24	7/22	38	11	11	0	0	112	486	0	0	51,319	190,242	332	2,074
17	7/28	7/27	14	15	15	0	0	126	577	5	32	78,043	289,529	123	790
18	8/1	7/31	14	15	16	0	0	66	358	0	0	51,462	184,511	89	642
19	8/5	8/4	14	12	12	0	0	33	183	0	0	57,577	227,669	29	185
20	8/8	8/7	14	8	8	0	0	40	221	0	0	33,914	125,698	39	209
21	8/11	8/10	12	46	58	0	0	104	494	115	833	470,795	1,642,761	175	1,093
22	8/13	8/12	12	30	30	0	0	81	428	127	857	197,139	709,422	82	640
23	8/15	8/14	12	13	13	0	0	60	272	110	746	47,556	170,389	74	429
24	8/17	8/16	12	3	3	0	0	0	0	10	73	17,062	60,961	0	0
25	8/19	8/18	12	1	1	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
26–37	8/25–9/2	8/20–8/28	60	70	70	No Harvest Reported									
Total				217	237	12	63	1,445	6,901	407	2,839	1,108,848	3,991,015	6,721	45,221
Average weight							5.25		4.78		7.0		3.6		6.7

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

Note: Periods 1- 14 and 38-39 were open to drift gillnet only. Required parameters for searching the ADF&G Commercial Fishery Announcements include the following: Effective Year = 2020; 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 3 permits were fished. Period results are confidential.

Appendix B6.–Commercial salmon harvest by species in the Coghill District, 2010–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
			Drift gillnet			
2010	206	87,465	5,498	3,333,106	2,512,005	5,938,280
2011	220	198,376	79,419	722,248	1,092,917	2,093,180
2012	147	383,289	7,724	1,125,888	2,256,983	3,774,031
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
Average (2010–2019)	160	174,732	45,205	1,061,527	1,597,633	2,909,538
			Purse seine			
2010	0	779	434	10,919,455	3,207	10,923,875
2011	4	843	16,565	1,674,736	166	1,692,314
2012	15	16,055	10,203	3,987,252	284,931	4,298,457
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
Average (2010–2019)	5	3,108	5,136	3,092,799	145,194	3,246,243
			Combined purse seine and drift gillnet			
2010	206	88,244	5,932	14,252,561	2,515,212	16,862,155
2011	224	199,219	95,984	2,396,984	1,093,083	3,785,494
2012	162	436,182	10,993	3,430,252	2,455,993	6,333,582
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
Average (2010–2019)	165	181,524	49,648	3,986,037	1,734,236	5,951,610

Appendix B7.–Estimated age composition of sockeye salmon escaped through Coghill Weir, 2020.

		Brood year and age class						
		2017	2016	2015		2014		
		1.1	1.2	1.3	2.2	1.4	2.3	Total
Strata combined	6/9–7/27							
Sampling dates	6/17–7/24							
Sample size	1,046							
Total	Percentage of sample	4.7%	49.9%	11.6%	32.0%	0.2%	1.7%	100.0%
	Number in escapement	2,541	26,902	6,244	17,224	97	892	53,901
	Standard error	189	175	178	176	115	144	

Appendix B8.–Commercial salmon harvest by period in the Unakwik District drift gillnet fisheries, 2020.

Period	Date	NR date[a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/18–6/19	6/17	36	0	0					No Harvest Reported					
2	6/22–6/23	6/20	24	3	3	3	28	134	575	0	0	0	0	1	12
3	6/25–6/26	6/24	24	0	0					No Harvest Reported					
4	6/29–6/30	6/27	24	9	10	4	39	276	1,342	0	0	2	6	16	114
5	7/2–7/3	7/1	24	1	1					Confidential[b]					
6	7/6–7/7	7/4	24	3	3	2	14	277	1,237	0	0	0	0	5	41
7	7/13–7/14	7/11	24	0	0					No Harvest Reported					
8	7/20–7/21	7/18	24	0	0					No Harvest Reported					
Total				12	17	9	81	764	3,503	0	0	2	6	22	167

Source: Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable news release (NR) 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 = 2020; 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 3 permits were fished. Period results are confidential.

Appendix B9.–Commercial salmon harvest by species in the Unakwik District, 2010–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
			Drift gillnet			
2010	0	15	0	0	0	15
2011	0	1,390	0	1	30	1,421
2012	0	6,207	4	246	264	6,723
2013	1	776	0	203	217	1,008
2014	0	459	0	3	30	492
2015	1	2,958	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	764	0	2	4	779
Average (2010– 2019)	0	2,378	1	285	213	2,858
			Purse seine			
2009	0	1,153	0	0	10	1,163
2010	1	31	0	34	26	92
2011	0	0	0	0	0	0
2012	0	370	0	18	148	536
2013	0	2,815	1	8,199	159	3,056
2014	1	686	0	2	243	932
2015	7	1,994	0	346	245	2,592
2016			Confidential[a]			
2017			Confidential[a]			
2018	0	0	0	0	0	0
2019	0	1,810	0	1,938	773	4,521
2020	0	0	0	0	0	0
Average (2010– 2019)	1	963	0	1,317	199	1,466
			Combined purse seine and drift gillnet			
2009	1	3,128	0	0	384	3,513
2010	1	46	0	34	26	107
2011	0	1,390	0	1	30	1,421
2012	0	6,577	4	264	412	7,257
2013	1	3,591	1	284	187	4,064
2014	1	1,145	0	5	273	1,424
2015	8	4,952	0	401	268	5,629
2016	0	259	0	0	481	740
2017[a]			Confidential[a]			
2018	0	3,505	1	36	16	3,558
2019	2	9,467	0	4,052	1,788	15,309
2020	9	764	0	2	4	779
Average (2010–2019)	1	3,437	1	564	387	4,390

[a] Fewer than 3 permits fished. Results are confidential.

Appendix B10.–Port Chalmers Subdistrict commercial purse seine harvest of salmon by period, 2020.

		NR				Chinook		Sockeye		Coho		Pink		Chum	
Period	Date	date[a]	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/3	5/22	48	15	15	0	0	0	0	0	0	0	0	5,572	42,229
2	6/4–6/6	6/3	60	24	31	8	152	7	37	0	0			26,140	208,084
3	6/8–6/10	6/6	48	32	35	12	119	2	12	0	0	3	10	33,967	288,194
4	6/11–6/12	6/10	36	29	29	107	1,125			0	0			29,159	251,557
5	6/13–6/14	6/10	36	54	56	54	721	11	48	2	6	1	3	25,398	179,803
6	6/15–6/17	6/13	48	30	33	12	145	74	346	0	0	1	5	12,925	99,343
7	6/18–6/19	6/17	36	56	59	4	38	394	1,746	3	10	8	29	82,066	645,066
8	6/20–6/21	6/17	36	60	65	0	0	53	259	0	0	0	0	34,157	292,683
9	6/22–6/24	6/20	48	59	59	1	15	64	264	0	0	0	0	40,873	312,827
10	6/25–6/26	6/24	36	69	73	2	35	3	15	0	0	1	5	69,482	594,817
11	6/27–6/28	6/24	36	60	66	4	68	114	445	127	1226	8	33	69,688	559,196
12	6/29–7/1	6/27	48	61	70	24	364	133	601	0	0	134	431	40,178	291,155
13	7/2–7/3	7/1	36	57	60	37	478	310	1,265	15	80	868	3,663	31,077	215,646
14	7/4–7/5	7/1	36	34	34	8	168	332	1,526	2	14	452	1,690	16,054	106,173
15	7/6–7/8	7/4	48	30	37	14	293	307	1,411	4	23	14,544	54,558	15,486	105,291
16	7/9–7/10	7/8	36	33	33	0	0	24	116	0	0	1,848	6,637	9,339	58,603
17	7/11–7/12	7/8	36	4	5	0	0	50	223	0	0	346	1,312	3,770	31,260
18	7/13–7/15	7/11	48	5	5	0	0	60	299	2	12	204	715	5,660	41,597
19	7/16–7/17	7/15	36	5	6	1	15	180	808	0	0	2,449	8,865	6,990	48,862
20	7/18–7/19	7/15	36							Confidential[b]					
21	7/20–7/22	7/18	48	7	7	0	0	67	300	0	0	10,365	36,768	3,757	26,596
22	7/28	7/27	14							No Harvest Reported					
23	8/1	7/31	14	5	6	0	0	1	6	0	0	64,608	239,465	2	13
24	8/5	8/4	14	9	9	0	0	25	96	61	516	64,016	227,590	81	681
25	8/8	8/7	14	5	5	0	0	44	262	71	500	56,468	203,580	47	365
26	8/11	8/10	12							No Harvest Reported					
27	8/13	8/12	12							Confidential[b]					
28	8/15	8/14	12	4		0	0	10	60	56	444	16,191	61,527	16	130
29	8/17	8/16	12	9		0	0	47	252	42	333	8,274	29,092	23	173
30	8/19	8/18	12							Confidential[b]					
31–51	8/21–9/11									No harvest reported					
Total				135	816	282	3,701	2,321	10,439	440	3,606	258,795	943,328	562,949	4,408,159
Average weight							12.85		4.50		8.20		3.65		7.83

-continued-

Note: Blank cells indicate no data. Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable news release (NR) 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 = 2020; 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 3 permits were fished. Period results are confidential.

Appendix B11.–Total commercial harvest by species in the Port Chalmers Subdistrict, June 1–July 30, 2015–2020.

			Numbers of fish					
Year	Permits	Gear type	Chinook	Sockeye	Coho	Pink	Chum	Total
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
Average (2015–2019)			89	6,147	368	286,730	583,190	876,524

APPENDIX C: ESHAMY DISTRICT

Appendix C1.–Total drift gillnet commercial salmon harvest by period in the Eshamy District, 2020.

Period	Date	NR 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	5/22	36	10	15	10	72	348	1,748					574	4,713
2	6/4–6/5	6/3	36	43	84	38	265	2,554	11,612					1,147	9,982
3	6/8–6/9	6/6	36	112	218	34	337	10,377	45,412					5,195	39,643
4	6/11–6/12	6/10	36	210	417	43	361	22,504	104,346	1	3			5,411	45,333
5	6/15–6/16	6/13	36	317	652	17	177	54,126	240,389	1	6	1	3	6,298	52,349
6	6/18–6/19	6/17	36	238	551	13	141	48,176	231,572	1	4	1	2	7,188	60,399
7	6/22–6/23	6/20	24	285	539	4	35	63,966	303,389	30	154	7	28	8,015	67,561
8	6/25–6/26	6/24	24	258	508	1	4	58,685	279,015	2	11	54	184	13,857	105,551
9	7/2	7/1	12	196	260	1	6	24,045	110,138			725	2,610	2,508	18,989
10	7/9–7/10	7/8	36	167	356	5	55	20,030	91,919	25	159	30,795	107,935	9,150	62,005
11	7/13–7/14	7/11	24	119	177	4	36	21,855	95,212	23	157	18,735	70,477	3,731	27,841
12	7/16–7/17	7/15	36	62	172	3	24	10,401	48,552	297	2,360	45,689	162,415	4,640	30,383
13	7/20–7/21	7/18	24	72	161	8	50	6,894	32,846	160	1,142	43,940	161,386	1,360	9,131
14	7/23–7/24	7/22	36	61	186	1	6	3,683	15,994	136	911	78,894	301,255	1,079	8,005
15	7/27–7/28	7/25	24	48	71	0	0	3,703	14,318	9	69	12,469	43,412	113	715
16	7/30–7/31	7/28	24	40	85	0	0	2,277	9,171	17	135	23,090	81,808	125	862
17	8/3–8/4	8/1	24	37	72	0	0	2,398	11,151	45	304	22,359	80,465	78	519
18	8/10–8/11	8/7	24	37	60	2	15	1,606	7,660	71	519	26,926	97,274	73	466
19	8/17–8/18	8/12	24	21	34	0	0	372	2,091	91	700	12,410	47,780	7	53
20	8/24–8/25	8/21	24						Confidential[b]						
21	8/31–8/32	8/28	24						No Harvest Reported						
Total				385	4,619	188	1,606	358,068	1,656,816	930	6,752	316,963	1,160,749	70,666	545,073
Average weight						8.54		4.6		7.3		3.7		7.7	

Note: Blank cells indicate no data. Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable news release (NR) 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 = 2020; 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 3 permits were fished. Period results are confidential.

Appendix C2.–Total set gillnet commercial salmon harvest by period in the Eshamy District, 2020.

Period	Date	NR 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	5/22	36	11	18	2	33	391	1,934					134	1,233
2	6/4–6/5	6/3	36	15	40	2	16	1,764	8,198	1	4			64	659
3	6/8–6/9	6/6	36	18	53	1	22	2,876	13,489					100	928
4	6/11–6/12	6/10	36	23	70	1	36	4,389	23,237	1	6			90	789
5	6/15–6/16	6/13	36	23	91			8,551	42,296			1	8	147	1,235
6	6/18–6/19	6/17	36	23	95			8,827	43,882					214	1,827
7	6/22–6/23	6/20	24	24	85			11,525	58,048			1	3	225	1,769
8	6/25–6/26	6/24	24	21	72			12,875	62,610					648	4,055
9	7/2	7/1	12	24	59			10,551	49,295			85	323	327	2,324
10	7/9–7/10	7/8	36	26	107	1	9	14,465	73,884			3,007	10,280	1,033	6,696
11	7/13–7/14	7/11	24	22	50			3,044	15,108			2,483	8,789	303	2,277
12	7/16–7/17	7/15	36	18	38			6,171	32,663	4	30	2,960	10,677	271	2,015
13	7/20–7/21	7/18	24	14	40			1,735	9,398	3	18	5,797	22,679	328	2,454
14	7/23–7/24	7/22	36	16	26			1,913	8,998	2	14	2,883	10,951	79	618
15	7/27–7/28	7/25	24	5	18			635	3,072	2	14	3,247	12,095	55	390
16	7/30–7/31	7/28	24	4	15			1,213	4,774	1	5	4,692	16,858	29	186
17	8/3–8/4	8/1	24	3	11			217	1,027	4	25	2,921	10,941	15	108
18	8/10–8/11	8/7	24	3	11			648	2,944	1	8	4,524	15,706	5	29
19	8/17–8/18	8/12	24					Confidentia[b]							
20	8/24–8/25	8/21	24					Confidential [b]							
21	8/31–9/1	8/28	24					No Harvest Reported							
Total				26	904	7	116	91,826	455,035	23	152	35,136	128,633	4,069	29,608
Average weight							16.57		5.0		6.6		3.7		7.3

Note: Blank cells indicate no data. Additional information relevant to each fishing period, including area opened to fishing, may be found on the applicable news release (NR) 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 = 2020; 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 3 permits were fished. Period results are confidential.

Appendix C3.–Total commercial salmon harvest by species in the Eshamy District, 2010–2020.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
			Drift gillnet			
2010	91	940,640	1,367	117,249	521,032	1,580,379
2011	129	901,279	6,159	78,762	95,991	1,082,320
2012	52	987,678	192	88,951	254,774	1,331,647
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
Average (2010–2019)	81	694,863	2,325	165,787	165,802	1,028,866
			Set gillnet			
2010	17	282,329	69	16,764	80,469	379,648
2011	37	312,659	612	17,629	25,350	356,287
2012	14	294,632	97	17,311	24,368	336,422
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	21.696	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	213,787
2019	14	225,676	182	54,899	38,534	319,305
2020	7	91,826	23	35,136	4,069	131,054
Average (2010–2019)	27	242,437	256	25,890	28,066	289,474
			Combined set gillnet and drift gillnet			
2010	108	1,222,969	1,436	134,013	601,501	1,960,027
2011	166	1,213,938	6,771	96,391	121,341	1,438,607
2012	66	1,282,310	289	106,262	279,142	1,668,069
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	1,475,487
2019	119	695,581	1,265	319,979	163,741	1,180,685
2020	195	449,894	953	352,099	74,735	877,869
Average (2010–2019)	108	937,300	2,580	191,677	196,035	1,318,340

Appendix C4.–Estimated age composition of sockeye salmon harvested in the Eshamy District commercial gillnet fishery, 2020.

		Brood year and age class				
		2016	2015		2014	
		1.2	1.3	2.2	2.3	Total
Strata combined	6/01–8/25					
Sampling dates	6/27–7/14					
Sample size	319					
Total	Percentage of sample	81.8%	16.2%	1.5%	0.5%	100%
	Number in harvest	369,003	72,875	6,940	2,313	451,131
	Standard error	8,827	8,418	2,815	1,634	

APPENDIX D: PURSE SEINE FISHERIES PINK AND CHUM SALMON ESCAPEMENT

Appendix D1.–Aerial escapement indices for pink and chum salmon by district, Prince William Sound, 2020.

Pink salmon

District	Escapement midpoint	Even-year escapement goal range	2000–2018 Even-year mean index	2020 Escapement index	Deviation from midpoint
Eastern	265,500	203,000–328,000	398,349	206,152	-22.4%
Northern	111,500	96,000–127,000	158,107	105,226	-5.6%
Coghill	73,500	37,000–110,000	146,148	88,401	20.3%
Northwestern	72,500	52,000–93,000	111,735	77,828	7.3%
Eshamy	2,500	1,000–4,000	6,604	7,250	190.0%
Southwestern	83,500	62,000–105,000	93,913	64,470	-22.8%
Montague	54,000	36,000–72,000	119,192	84,238	56.0%
Southeastern	120,500	88,000–153,000	284,188	138,330	14.8%
Total	783,500	575,000–992,000	1,296,092	771,894	-1.5%

Chum salmon

District	Escapement Goal	2010–2019 Mean index	2020 Escapement lower bound	Deviation from lower bound
Eastern	79,000 and up	117,449	103,849	31.5%
Northern	28,000 and up	32,824	23,542	-15.9%
Coghill	10,000 and up	18,801	8,998	-10.0%
Northwestern	7,000 and up	10,243	7,405	5.8%
Southeastern	11,000 and up	39,416	26,909	144.6%
Total	135,000 and up	218,733	170,703	26.4%

Appendix D2.–Prince William Sound commercial purse seine salmon harvest by day, 2020.

			Chinook		Sockeye		Coho		Pink		Chum	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
06/01	27	27	1	19	56	269	0	0	0	0	14,665	119,564
06/03	1	1					Confidential[a]					
06/04	33	34	9	167	130	663	0	0	0	0	25,750	199,396
06/06	7	7	0	0	0	0	0	0	0	0	4,297	42,957
06/08	43	46	12	117	128	607	0	0	3	13	37,103	312,696
06/09	1	1					Confidential[a]					
06/10	2	2					Confidential[a]					
06/11	44	44	100	1,059	354	2,091	0	0	0	0	44,200	370,495
06/12	19	20	7	66	0	0	0	0	0	0	15,967	133,483
06/13	54	56	54	721	11	48	2	6	1	3	25,398	179,803
06/15	36	39	13	172	304	1,296	0	0	0	0	18,754	142,485
06/16	38	38	1	10	182	827	0	0	1	5	20,291	142,930
06/17	3	3					Confidential[a]					
06/18	74	79	4	38	2,405	10,911	3	10	6	24	103,480	780,051
06/19	7	7	0	0	76	262	0	0	2	5	6,543	61,846
06/20	61	61	0	0	53	259	0	0	0	0	32,829	281,347
06/21	5	5	0	0	0	0	0	0	0	0	1,333	11,381
06/22	73	76	53	344	3,414	15,581	0	0	3	11	66,898	564,361
06/23	27	27	0	0	53	214	0	0	0	0	22,018	155,000
06/24	3	3					Confidential[a]					
06/25	78	84	0	0	2,579	11,211	0	0	3	11	77,035	663,773
06/26	20	20	2	35	524	2,687	0	0	1	5	18,265	155,807
06/27	39	39	2	16	424	2,496	127	1,226	163	575	43,804	344,905
06/28	28	32	2	52	67	279	0	0	0	0	28,904	239,142
06/29	74	88	4	80	1,838	8,570	19	132	205	741	56,521	397,418
06/30	19	19	20	284	59	269	0	0	100	325	7,202	60,614
07/01	1	1					Confidential[a]					
07/02	78	82	38	516	792	3,828	24	146	1,088	4,578	42,315	295,021
07/03	4	4	0	0	2	8	0	0	4	12	777	5,684
07/04	47	48	8	168	539	2,819	3	18	1,229	4,082	20,707	126,687
07/05	9	9	0	0	185	867	0	0	196	766	5,855	40,966
07/06	38	41	11	187	731	3,483	1	4	12,266	47,491	15,507	106,898
07/07	14	15	0	0	29	125	4	25	815	3,230	5,154	37,680
07/07	14	15	4	31	19,080	99,845	175	1,188	1,100,527	3,785,367	34,011	210,391
07/08	1	1					Confidential[a]					
07/09	44	46	0	0	523	2,758	0	0	2,820	10,029	14,669	100,532
07/10	3	3					Confidential[a]					
07/11	194	269	0	0	262	1,194	2	16	2,169,207	8,165,608	2,173	18,521
07/12	4	5	0	0	50	223	0	0	346	1,312	3,770	31,260
07/13	9	9	2	15	338	1,697	2	12	466	1,701	8,049	58,319
07/15	196	244	12	195	736	3,463	39	303	2,078,395	7,751,171	1,775	13,230

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			Chinook		Sockeye		Coho		Pink		Chum	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/16	171	179	6	58	6,115	28,438	12	97	623,001	2,311,726	12,517	91,787
07/18	1	2						Confidential[a]				
07/19	201	205	26	501	4,427	22,051	183	1,338	881,494	3,245,861	6,913	48,337
07/20	5	5	0	0	139	625	6	60	4,669	16,459	864	6,261
07/21	72	72	12	63	788	3,777	29	200	107,737	400,865	8,853	61,770
07/22	1	1						Confidential[a]				
07/23	196	206	7	96	1,319	6,066	154	1,179	987,391	3,618,202	6,077	44,497
07/24	100	100	0	0	140	572	30	250	156,751	559,619	1,237	9,689
07/25	98	100	2	10	118	612	75	559	231,951	816,717	1,920	14,089
07/28	204	222	7	66	1,670	7,984	569	4,136	1,523,444	5,594,115	11,190	82,609
08/01	200	222	7	66	1,000	4,811	429	3,044	1,424,172	5,173,533	7,131	54,598
08/02	74	77	0	0	40	204	44	301	81,608	288,209	1,673	11,968
08/03	84	86	3	12	86	400	108	740	105,696	369,019	2,582	18,348
08/05	203	210	4	54	1,231	5,979	822	5,690	1,199,179	4,314,587	12,570	90,302
08/08	202	207	1	20	883	4,282	1,130	8,607	810,822	2,937,752	7,411	54,357
08/11	208	268	0	0	1,416	7,344	2,600	19,742	2,263,698	8,133,025	1,402	9,458
08/13	205	215	1	14	1,155	5,575	2,327	19,326	1,415,450	5,092,574	950	6,597
08/15	197	201	0	0	1,241	6,109	3,385	25,572	896,894	3,272,707	5,331	48,937
08/17	94	94	6	72	319	1,623	4,150	31,942	236,126	840,612	1,113	8,156
08/19	84	86	0	0	176	967	4,147	31,578	120,178	421,109	1,305	9,090
08/21	65	65	5	29	381	1,750	1,392	10,778	143,702	504,928	901	6,954
08/23	53	55	0	0	460	2,245	638	4,957	250,554	868,083	97	594
08/24	7	7	0	0	8	41	1,670	12,806	2,753	10,440	166	1,316
08/25	20	21	1	8	38	225	2,785	16,993	37,465	134,827	120	728
08/26	5	5	0	0	2	12	1,338	12,608	1,438	4,407	104	568
08/27	7	7	0	0	8	45	1,107	7,163	18,542	64,821	159	870
08/28	2	2						Confidential[a]				
Total	221	4,555	452	5,508	40,456	192,846	29,541	222,675	17,800,309	65,015,435	894,651	6,952,975
Average weight				12.19		4.77		7.54		3.65		7.77

[a] Three permits or fewer were fished. Period results are confidential.

Appendix D3.–Prince William Sound Area total salmon harvest by species, excluding Copper River and Bering River districts, 1995–2020.

Year[a]	Chinook	Sockeye	Coho	Pink	Chum	Total
1995	1,365	230,057	140,314	16,045,396	702,216	17,119,348
1996	693	605,910	172,254	26,042,440	2,077,995	28,899,292
1997	1,186	1,167,473	64,363	25,828,078	2,224,728	29,285,828
1998	1,843	328,715	74,150	28,673,859	1,266,924	30,345,491
1999	1,047	309,337	27,325	45,020,990	2,935,337	48,294,036
2000	1,135	548,841	353,015	38,875,724	5,158,403	44,937,118
2001	853	932,120	234,826	35,237,137	3,097,007	39,501,943
2002	938	1,013,057	37,586	18,947,254	6,341,860	26,340,695
2003	278	1,519,582	98,947	51,962,716	3,794,772	57,376,295
2004	319	830,757	56,457	23,526,306	1,998,542	26,412,381
2005	349	577,681	225,157	59,900,319	2,095,957	62,799,463
2006	325	989,210	388,575	21,691,135	2,164,335	25,233,580
2007	873	1,310,694	202,153	63,389,073	3,569,303	68,472,096
2008	365	976,792	307,260	42,352,155	5,074,790	48,711,362
2009	416	1,011,990	46,580	18,984,542	3,213,483	23,257,011
2010	452	1,401,815	42,502	71,288,429	4,307,533	77,040,731
2011	679	1,480,499	223,462	33,379,352	1,901,131	36,985,123
2012	540	1,826,283	32,844	27,231,297	3,791,670	32,882,634
2013	1,426	713,862	327,345	92,416,738	4,060,287	97,519,658
2014	685	1,243,267	201,083	44,647,451	1,473,370	47,565,856
2015	882	1,637,519	74,470	97,258,288	2,496,756	101,467,915
2016	333	794,707	34,598	13,025,307	3,166,099	17,021,044
2017	588	839,989	131,378	48,511,792	3,166,099	52,649,846
2018	863	1,269,815	98,881	24,017,666	3,465,225	28,852,450
2019	605	1,289,442	442,111	48,504,878	5,358,151	28,852,450
2020	1,208	842,326	55,573	23,003,688	2,015,582	25,918,377
Average (2010–2019)	705	1,249,781	160,870	50,028,982	3,539,937	52,306,002

[a] Includes purse seine, drift gillnet, and set gillnet harvests. Also includes hatchery sales harvests, homepack, confiscated fish, donated and discarded fish, and special use educational permit harvests.

Appendix D4.–Prince William Sound pink salmon returns by origin, 2000–2020.

	Estimated pink salmon returns					
	Hatcheries					
Year	SGH	AFK	WNH	CCH	Wild	Total
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
Odd year average (2009–2017)	17,306,306	9,989,581	9,479,286	8,176,294	17,683,000	62,634,468
Even year average (2010–2018)	14,647,106	5,357,864	6,729,486	6,429,796	4,128,000	37,292,252

Appendix D5.–Prince William Sound pink salmon escapement indices by district, 1995–2020.

Year	Eastern	Northern[a]	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1995	396,696	84,447	46,029	50,582	10,182	82,490	183,448	336,310	1,190,184
1996	584,236	218,022	104,781	86,709	3,000	63,337	92,966	330,285	1,483,336
1997	345,725	65,260	52,961	53,740	914	112,010	206,943	585,135	1,422,688
1998	377,700	213,288	85,968	97,485	4,644	280,335	161,275	199,410	1,420,105
1999	622,502	214,732	168,816	52,340	6,900	163,347	381,054	853,180	2,462,871
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[c]	1,605,058	779,600	801,201	454,427	70,068	789,725	649,144	2,032,492	7,181,714
2016[d]	663,113	152,509	171,362	171,633	NA	NA	NA	169,660	1,326,535
2017[d]	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
Even-year average (2000–2018)	398,349	158,107	146,148	111,735	6,604	93,913	119,192	284,188	1,296,092
Odd-year average (2001–2019)	819,161	318,199	341,431	195,990	15,068	255,031	353,011	947,236	3,245,126

Note: 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] Only 17 of 33 index streams in the Montague District were surveyed often enough (≥3) in 2014 to use with the area-under-the-curve methodology.

[c] 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.

[d] 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 SEG range, so they are included in the total.

Appendix D6.–Prince William Sound chum salmon escapement indices by district, 1995–2020. Escapement indices do not represent the total spawning escapement but rather a comparable annual index.

Year	Eastern	Northern[a]	Coghill	Northwestern	Southeastern
1995	75,655	28,899	11,596	4,883	23,200
1996	137,908	55,568	19,669	24,405	47,334
1997	93,146	19,429	3,101	8,387	43,274
1998	86,227	28,867	22,764	7,553	52,103
1999	242,713	36,691	5,057	4,544	36,181
2000	196,253	23,655	20,488	10,150	34,969
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
Average (2010–2019)	105,839	28,582	14,627	9,600	42,014

Note: Current goals are district-specific lower-bound sustainable escapement goals: Coghill >8,000; Eastern >50,000; Northern/Unakwik >20,000; Northwestern >5,000; Southeastern >8,000. 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 the 129 index streams.

Appendix D7.–Prince William Sound commercial pink salmon harvest for all gear types, by district, 1995–2020.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1995	4,235,638	3,656,119	1,078,693	0	88,830	1,707,745	18,239	11,418	10,796,682
1996	6,076,471	5,042,415	1,543,869	0	35,691	5,052,789	0	0	17,751,235
1997	4,534,365	3,162,822	2,030,586	0	222,934	5,929,544	65,107	28,040	15,973,398
1998	2,231,061	5,037,668	3,228,761	0	134,984	8,435,431	430,252	350,081	19,848,238
1999	12,305,629	4,981,085	3,542,130	0	170,525	9,524,043	189,641	914,907	31,627,960
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
Average (2010–2019)	18,367,879	7,943,207	3,986,411	311,986	191,789	12,265,348	1,004,282	954,860	45,025,761

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, confiscated, or test fish harvests.

Appendix D8.–Prince William Sound commercial chum salmon harvest for all gear types, by district, 1995–2020.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1995	52,113	5,812	382,256	0	19,905	8,334	32	40	468,492
1996	340,398	11,432	613,432	0	32,828	13,222	0	0	1,011,312
1997	446,757	5,054	723,116	3	43,243	6,656	185,400	3,252	1,413,481
1998	107,854	57,088	368,921	0	557	4,063	204,536	4,685	747,704
1999	105,981	11,346	1,292,977	0	24,221	11,303	628,952	83,147	2,157,927
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
Average (2010–2019)	155,500	16,232	1,734,366	7,361	196,988	246,889	427,468	23,261	2,808,063

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, 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 1991–2017.

Solomon Gulch Hatchery									
Brood year	Return year	Fry release	Hatchery contribution to the CCPF[a]	Hatchery contribution to subs/CPU 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
1991	1994	461,388	0	143	19,012	11,376	22,091	52,622	11.41%
1992	1995	915,087	78,006	0	37,474	16,045	21,592	153,117	16.73%
1993	1996	1,325,316	87,360	38	43,467	21,772	13,713	166,350	12.55%
1994	1997	1,875,823	47,500	45	36,520	13,605	9,818	107,488	5.73%
1995	1998	1,315,183	23,717	321	37,126	3,880	19,068	84,112	6.40%
1996	1999	1,748,486	67,232	541	36,310	2,541	12,679	119,303	6.82%
1997	2000	1,863,528	342,490	468	68,014	1,625	24,887	437,484	23.48%
1998	2001	1,625,599	147,000	230	60,975	1,778	25,595	235,578	14.49%
1999	2002	1,519,328	25,017	136	31,017	21,323	8,000	85,493	5.63%
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	19,309	5,765	18,475	53,968	3.02%

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Wally Noerenberg Hatchery									
Brood year	Return year	Fry release	Hatchery contribution to the CCPF[a]	Hatchery contribution to subs/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
1991	1994	1,303,077	81,396	65	3,061	5,439	13,258	103,220	7.92%
1992	1995	1,483,936	34,680	57	1,690	4,964	5,152	46,543	3.14%
1993	1996	2,063,934	26,245	8	3,851	4,081	39,506	73,690	3.57%
1994	1997	275,406	5,626	26	2,084	5,674	0	13,410	4.87%
1995	1998	203,651	2,800	35	3,327	1,541	0	7,703	3.78%
1996	1999	407,715	338	66	2,658	2,533	0	5,595	1.37%
1997	2000	1,068,338	111,256	197	7,963	2,551	0	121,966	11.42%
1998	2001	375,670	2,488	98	15,490	3,277	0	21,353	5.68%
1999	2002	219,967	3,215	105	21,283	2,389	0	26,991	12.27%
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	18,438	3,084	0	28,406	3.13%
2013	2016	370,000	347	292	100	245	0	984	0.27%
2014	2017	3,090,000	14,406	0	100	3,814	0	18,320	0.59%
2015	2018	2,241,000	NA	0	100	2,380	0	2,480	0.11%
2016	2019	2,091,000	194,717	0	100	2,226	0	197,043	9.42%
2017	2020	1,886,822	0	0	100	5,149	0	5,249	0.28%

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Note: NA = no estimate available.

[a] Commercial common property fishery (CCPF).

[b] Subsistence and commercial personal use harvest (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, 2020.

			Origin							
			Gulkana		Main Bay		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	total	Number	Percent	Total
05/14–05/14	1[a]	12	0	0.0%	0	0.0%	0	1,561	100.0%	1,561
05/18–05/18	2[a]	12	0	0.0%	0	0.0%	0	4,718	100.0%	4,718
05/25–05/25	3[b]	12	1,930	5.6%	2,432	7.0%	4,361	30,490	87.8%	34,736
06/01–06/01	4[b]	12	1,828	5.6%	2,303	7.0%	4,131	28,878	87.8%	32,899
06/18–06/18	5	12	597	5.6%	753	7.0%	1,350	9,437	87.8%	10,751
07/06–07/06	6	12	4,958	33.0%	0	0.0%	0	10,075	67.0%	15,033
07/16–07/16	7	12	638	20.8%	0	0.0%	0	2,423	79.2%	3,061
08/17–08/18	8[c]	24	163	20.8%	0	0.0%	163	620	79.2%	783
08/24–08/25	9[a]	24	0	0.0%	0	0.0%	0	141	100.0%	141
08/31–09/01	10[a]	24	0	0.0%	0	0.0%	0	13	100.0%	13
09/03–09/04	11[a]	24	0	0.0%	0	0.0%	0	23	100.0%	23
09/07–09/08	12[a]	24	0	0.0%	0	0.0%	0	1	100.0%	1
09/10–09/10	13[a]	12	0	0.0%	0	0.0%	0	3	100.0%	3
09/14–09/15	14[a]	24	0	0.0%	0	0.0%	0	1	100.0%	1
Total		240	10,113	9.8%	5,487	5.3%	10,005	88,385	85.2%	103,724

Note: Total harvest data from fish ticket reporting as of November 25, 2020. MBH14A, MBH14B, MBH14C, MBH14D, MBH14E, MBH17A and MBH17C marks were not seen in 2020.

[a] No samples collected; assumed wild origin.

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

[c] No samples collected; proportions are from the previous period sampled.

Appendix E3.–Gulkana Hatchery sockeye salmon harvests and total contribution, 1980–2020.

Year	Hatchery contributions			Broodstock/ escapement[d]	Total hatchery run
	Commercial[a]	Subsistence/ personal use[b]	Sport[c]		
1980	350	589	34	4,250	5,211
1981	3,600	478	13	4,650	8,736
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	533	32,341	208,065
2017	32,292	10,492	216	17,083	32,292
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
Average (2010–2019)	201,519	35,035	457	54,410	291,387

[a] Commercial contribution are from strontium 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 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, 1976–2020.

	Chinook salmon			Sockeye salmon					
Release year	Monsoon Lake	Gulkana River (E. Fork)	Total Chinook salmon released	Gulkana I & II (Paxson Lake)	Summit Lake	Crosswind Lake	Harding Lake	Ten Mile Lake	Total sockeye salmon released
1976				626,007				101,600	727,607
1977				516,326				112,248	628,574
1978				479,864				104,058	583,922
1979				940,666				99,589	1,040,255
1980				1,105,397	1,340,660				2,446,057
1981				3,388,682	1,860,491				5,249,173
1982				5,985,270	2,047,947				8,033,217
1983				5,470,056	4,312,628				9,782,684
1984				6,079,838	4,739,293				10,819,131
1985				10,130,942	9,296,882	1,419,095			20,846,919
1986				8,586,509	14,999,085				23,585,594
1987				9,905,907	12,491,826				22,397,733
1988		1,388	1,388	6,389,963	12,026,642	2,487,396	503,375		21,407,376
1989	15,977		15,977	10,870,655	12,004,491	3,130,373	515,046		26,520,565
1990				14,127,313	6,445,011	4,906,005	505,305		25,983,634
1991	26,209		26,209	11,288,721	6,109,833	5,469,759			22,868,313
1992	30,488	34,842	65,330	11,640,000	7,049,000	8,420,000			27,109,000
1993				5,866,230	2,661,549	5,627,346			14,155,125
1994				11,008,964	7,637,009	9,144,382			27,790,355
1995				12,345,894	7,418,311	9,973,600			29,737,805
1996				12,241,896	8,400,148	9,732,911			30,374,955
1997				12,286,366	8,987,213	10,516,107			31,789,686
1998				11,589,845	10,162,655	10,512,299			32,264,799
1999				11,551,836	9,191,217	9,984,392			30,727,445
2000				10,705,795	3,300,504	8,331,080			22,337,379
2001				7,870,334	493,516	5,585,665			13,949,515
2002				11,922,685	5,805,231	8,174,754			25,902,670
2003				11,284,330	6,599,519	8,360,966			26,244,815
2004				12,408,512	6,574,962	8,359,115			27,342,589
2005				3,308,065	0	3,703,295			7,011,360
2006				5,523,920	4,681,325	10,017,211			20,222,456
2007				6,000,000	6,000,000	10,000,000			22,000,000
2008				6,000,000	6,000,000	9,980,000			21,980,000
2009				6,000,000	6,000,000	10,000,000			22,000,000
2010				6,010,000	6,000,000	10,000,000			22,010,000
2011				6,000,000	5,980,000	10,000,000			21,980,000
2012				7,340,000	5,950,000	9,570,000			22,860,000
2013				6,000,000	6,000,000	6,560,000			18,560,000
2014				6,000,000	6,000,000	10,000,000			22,000,000
2015				5,997,000	5,990,000	10,000,000			21,987,000
2016				6,004,000	0	10,000,000			16,004,000
2017				4,660,000	0	9,690,000			14,350,000
2018				5,962,463	0	4,252,400			10,214,863
2019				6,057,999	0	8,427,130			14,485,129
2020				5,962,155	0	8,912,385			14,874,540
Average (2010–2019)				6,003,146	3,592,000	7,849,953			18,446,399

Appendix E5.–Daily chum and coho salmon sales and sex ratios, sales summary, and broodstock summary at the Wally Noerenberg Hatchery, 2020.

	Chum salmon				Coho salmon	
Date	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Broodstock cumulative	Sales harvest	Sales harvest cumulative
06/08	15,093	15,093	0	0	ND	ND
06/09		15,093	0	0	ND	ND
06/10	7,502	22,595	0	0	ND	ND
06/11	9,137	31,732	0	0	ND	ND
06/12		31,732	0	0	ND	ND
06/13		31,732	0	0	ND	ND
06/14		31,732	0	0	ND	ND
06/15	5,370	37,102	0	0	ND	ND
06/16		37,102	0	0	ND	ND
06/17		37,102	0	0	ND	ND
06/18		37,102	0	0	ND	ND
06/19		37,102	0	0	ND	ND
06/20		37,102	0	0	ND	ND
06/21	6,376	43,478	0	0	ND	ND
06/22		43,478	0	0	ND	ND
06/23	25,525	69,003	0	0	ND	ND
06/24		69,003	0	0	ND	ND
06/25	26,036	95,039	0	0	ND	ND
06/26	46,505	141,544	0	0	ND	ND
06/27	84,790	226,334	0	0	ND	ND
06/28	80,850	307,184	0	0	ND	ND
06/29	0	307,184	0	0	ND	ND
06/30	82,520	389,704	0	0	ND	ND
07/01	46,099	435,803	0	0	ND	ND
07/02	27,240	463,043	0	0	ND	ND
07/03	0	463,043	0	0	ND	ND
07/04	19,261	482,304	0	0	ND	ND
07/05		482,304	0	0	ND	ND
07/06		482,304	732	732	ND	ND
07/07	7,753	490,057	7,024	7,756	ND	ND
07/08	8,359	498,416	8,405	16,161	ND	ND
07/09	8,754	507,170	8,863	25,024	ND	ND
07/10	9,441	516,611	9,575	34,599	ND	ND
07/11		516,611	0	34,599	ND	ND
07/12	10,822	527,433	11,256	45,855	ND	ND
07/13	11,582	539,015	11,833	57,688	ND	ND
07/14	11,647	550,662	11,873	69,561	ND	ND
07/15		550,662	2,120	71,681	ND	ND
07/16	12,896	563,558	11,305	82,986	ND	ND
07/17	50,163	613,721	12,479	95,465	ND	ND
07/18	12,384	626,105	12,672	108,137	ND	ND
07/19	12,624	638,729	12,906	121,043	ND	ND
07/20	84,166	722,895	10,535	131,578	ND	ND
07/21	34,094	756,989	13,996	145,574	ND	ND
07/22		756,989	12,493	158,067	ND	ND

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	Chum salmon				Coho salmon	
Date	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Broodstock cumulative	Sales harvest	Sales harvest cumulative
07/23	11,648	768,637	14,208	172,275	ND	ND
07/24	18,724	787,361	12,278	184,553	ND	ND
07/25	11,738	799,099	0	184,553	ND	ND
07/26		799,099	0	184,553	ND	ND
07/27	15,661	814,760	15,661	200,214	ND	ND
07/28	1,867	816,627	1,867	202,081	ND	ND

Hatchery escapement summary[c]	Chum salmon	Coho salmon
Purse seine whole fish harvest	620,377	0
Raceway harvest[d]	11,037	0
Viable broodstock (spawned, eggs in incubators)	160,256	144
Unviable broodstock (green/over-ripe/bad)	8,561	5
Unspawned fish (e.g.,excess males/females)	17,629	0
Holding mortalities (raceway, pen mortalities)	5,816	0
Estimated unharvested return[e]	30,000	5,000
Estimated total run to hatchery site	853,676	5,149

Sales summary	Chum salmon	Coho salmon
Purse seine whole fish sales	620,377	0
Raceway sales[f]	19,598	0
Carcass sales[g]	183,701	0
Total sales	823,676	0

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

[b] Broodstock daily totals from PWSAC egg-take log.

[c] Determined by fish tickets, PWSAC egg-take log, and annual report (PWSAC 2020b).

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

[e] Fish remaining in saltwater and freshwater 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, 2020.

			Origin					
			Main Bay		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	total	Number	Percent	Total
06/01–06/01	1	36[a]	0	0.0%	0	230	100.0%	230
06/04–06/04	2	36[b]	429	94.2%	429	26	5.8%	455
06/08–06/08	3	36[b]	1,269	94.2%	1,269	78	5.8%	1,347
06/11–06/11	4	36[b]	2,651	94.2%	2,651	163	5.8%	2,814
06/15–06/16	5	36	13,963	94.2%	13,963	859	5.8%	14,822
06/18–06/19	6	36	8,059	96.7%	8,059	273	3.3%	8,332
06/22–06/23	7	24[c]	8,350	96.7%	8,350	283	3.3%	8,633
06/25–06/27	8	48[b]	7,711	44.3%	7,711	9,710	55.7%	17,421
06/29–07/01	9	48	7,055	44.3%	7,055	8,883	55.7%	15,938
07/02–07/04	10	60	3,622	20.9%	3,622	13,681	79.1%	17,303
07/06–07/08	11	60	3,314	37.0%	3,314	5,654	63.0%	8,968
07/09–07/12	12	84[c]	1,515	37.0%	1,515	2,584	63.0%	4,099
07/13–07/15	13	60[c]	1,649	37.0%	1,649	2,812	63.0%	4,461
07/16–07/19	14	84[c]	1,213	37.0%	1,213	2,068	63.0%	3,281
07/20–07/22	15	60[a]	0	0.0%	0	1,953	100.0%	1,953
07/23–07/24	16	38[a]	0	0.0%	0	338	100.0%	338
07/28–07/28	17	14[a]	0	0.0%	0	545	100.0%	545
08/01–08/01	18	14[a]	0	0.0%	0	384	100.0%	384
08/05–08/05	19	14[a]	0	0.0%	0	637	100.0%	637
08/08–08/08	20	14[a]	0	0.0%	0	181	100.0%	181
08/11–08/11	21	12[a]	0	0.0%	0	212	100.0%	212
08/13–08/13	22	12[a]	0	0.0%	0	158	100.0%	158
08/15–08/15	23	12[a]	0	0.0%	0	173	100.0%	173
08/17–08/17	24	12[a]	0	0.0%	0	23	100.0%	23
08/19–08/19	25	12[a]	0	0.0%	0	48	100.0%	48
08/21–08/21	26	12[a]	0	0.0%	0	32	100.0%	32
08/23–08/23	27	12[a]	0	0.0%	0	18	100.0%	18
08/24–08/24	28	12[a,e]	0	0.0%	0	0	0.0%	0
08/25–08/25	29	12[a]	0	0.0%	0	6	100.0%	6
08/26–08/26	30	12[a]	0	0.0%	0	6	100.0%	6

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			Origin					
			Main Bay		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	total	Number	Percent	Total
08/27–08/27	31	12[a]	0	0.0%	0	5	100.0%	5
08/28–08/28	32	12[a]	0	0.0%	0	2	100.0%	2
08/29–08/29	33	12[d]	0	0.0%	0	0	0.0%	0
Total			60,797	53.9%	60,797	52,051	46.1%	112,848

Note: Total harvest data from fish ticket reporting as of November 25, 2020. Samples were not processed for SrCl mark identification, so the Gulkana Hatchery contribution is unknown. All fish without a thermal mark are assumed to be of wild origin. MBH14A, MBH14B, MBH14C, MBH14D, MBH14E, MBH17A and MBH17C marks were not seen in 2020.

[a] No samples collected; wild origin assumed.

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

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

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

[e] No harvest reported.

[f] Three or fewer deliveries; results are confidential.

Appendix E7.–Pink salmon hatchery and wild stock contributions to the Coghill District commercial common property fishery by period, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/01	1	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04–06/04	2	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/08–06/08	3	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2	0.0%	2
06/11–06/11	4	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/15–06/16	5	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/18–06/19	6	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1	100.0%	1
06/22–06/23	7	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	2	0.0%	2
06/25–06/27	8	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	16	16	100.0%	16
06/29–07/01	9	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	201	201	100.0%	201
07/02–07/04	10	60[c]	202	14.3%	0	0.0%	0	0.0%	0	0.0%	1,210	1,210	85.7%	1,412
07/06–07/08	11	60	1,358	14.3%	0	0.0%	0	0.0%	0	0.0%	8,149	8,149	85.7%	9,507
07/09–07/12	12	84[d]	1,262	7.7%	0	0.0%	433	2.6%	0	0.0%	14,761	14,761	89.7%	16,456
07/13–07/15	13	60	315	1.1%	0	0.0%	1,574	5.3%	0	0.0%	28,018	28,018	93.7%	29,907
07/16–07/19	14	84	1,833	4.3%	458	0.0%	4,124	9.8%	0	0.0%	35,738	35,738	84.8%	42,152
07/20–07/22	15	60	53,360	34.1%	1,779	0.0%	8,893	5.7%	0	0.0%	92,490	92,490	59.1%	156,522
07/23–07/24	16	38	32,015	37.9%	2,668	0.0%	24,901	29.5%	0	0.0%	24,901	24,901	29.5%	84,485
07/28–07/28	17	14	11,027	10.7%	0	0.0%	47,783	46.4%	0	0.0%	44,107	44,107	42.9%	102,917
08/01–08/01	18	14	1,441	1.5%	1,441	1.5%	51,879	53.7%	0	0.0%	41,791	41,791	43.3%	96,552
08/05–08/05	19	14	0	0.0%	8,374	0.0%	94,906	0.0%	0	0.0%	19,539	19,539	0.0%	122,819
08/08–08/08	20	14	0	0.0%	3,149	4.5%	36,733	53.0%	1,050	0.0%	28,337	28,337	40.9%	69,267
08/11–08/11	21	12	0	0.0%	6,141	0.0%	552,716	0.0%	0	0.0%	30,706	30,706	0.0%	589,564
08/13–08/13	22	12	6,995	2.3%	104,924	34.9%	181,869	60.5%	0	0.0%	6,995	6,995	2.3%	300,783
08/15–08/15	23	12	0	0.0%	0	0.0%	91,071	94.7%	1,283	1.3%	3,848	3,848	4.0%	96,202
08/17–08/17	24	12[e]	0	0.0%	0	0.0%	20,526	94.7%	289	1.3%	867	867	4.0%	21,682
08/19–08/19	25	12[e]	0	0.0%	0	0.0%	8,780	94.7%	124	1.3%	371	371	4.0%	9,275
08/21–08/21	26	12[e]	0	0.0%	0	0.0%	5,626	94.7%	79	1.3%	238	238	4.0%	5,943
08/23–08/23	27	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1,453	1,453	100.0%	1,453
08/24–08/24	28	12[b,f]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25–08/25	29	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	744	744	100.0%	744
08/26–08/26	30	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	521	521	100.0%	521

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			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/27–08/27	31	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	453	0.0%	5,512
08/28–08/28	32	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	123	0.0%	21
08/29–08/29	33	12[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Totals			109,807	6.2%	128,934	7.3%	1,131,813	64.2%	2,824	0.2%	385,007	385,583	21.9%	1,763,918

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Total harvest data from fish ticket reporting as of November 25, 2020.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

[c] No samples collected; proportions are from the previous period sampled.

[d] No samples collected; proportions are an average of the previous and following periods sampled.

[e] No samples collected; proportions are from the following period sampled.

[f] Three or fewer deliveries; results are confidential.

Appendix E8.–Chum salmon hatchery and wild stock contributions to the Coghill District commercial common property harvest, 2020.

			Origin									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/02	1	36[a]	5,588	96.3%	0	0.0%	218	3.8%	5,806	0	0.0%	5,806
06/04–06/05	2	36	14,106	96.3%	0	0.0%	550	3.8%	14,656	0	0.0%	14,656
06/08–06/09	3	36	16,477	98.7%	0	0.0%	0	0.0%	16,477	217	1.3%	16,694
06/11–06/12	4	36	6,606	98.6%	0	0.0%	0	0.0%	6,606	93	1.4%	6,699
06/15–06/16	5	36	10,744	85.1%	269	2.1%	537	4.3%	11,550	1,074	8.5%	12,624
06/18–06/19	6	36	10,580	90.6%	122	1.0%	243	2.1%	10,944	730	6.3%	11,674
06/22–06/23	7	24	10,632	96.6%	0	0.0%	187	1.7%	10,818	187	1.7%	11,005
06/25–06/27	8	48	37,450	95.7%	421	1.1%	421	1.1%	38,291	842	2.2%	39,133
06/29–07/01	9	48	9,944	93.8%	221	2.1%	221	2.1%	10,386	221	2.1%	10,607
07/02–07/04	10	60	15,815	98.5%	0	0.0%	247	1.5%	16,062	0	0.0%	16,062
07/06–07/08	11	60	19,568	87.8%	0	0.0%	0	0.0%	19,568	2,718	12.2%	22,286
07/09–07/12	12	84	13,336	98.6%	0	0.0%	0	0.0%	13,336	193	1.4%	13,529
07/13–07/15	13	60	18,419	91.4%	217	1.1%	217	1.1%	18,853	1,300	6.5%	20,153
07/16–07/19	14	84[b]	18,494	91.4%	218	1.1%	218	1.1%	18,930	1,305	6.5%	20,235
07/20–07/22	15	60[b]	9,321	91.4%	110	1.1%	110	1.1%	9,540	658	6.5%	10,198
07/23–07/24	16	38[b]	1,163	91.4%	14	1.1%	14	1.1%	1,190	82	6.5%	1,272
07/28–07/28	17	14[c]	0	0.0%	0	0.0%	0	0.0%	0	845	100.0%	845
08/01–08/01	18	14[c]	0	0.0%	0	0.0%	0	0.0%	0	626	100.0%	626
08/05–08/05	19	14[c]	0	0.0%	0	0.0%	0	0.0%	0	812	0.0%	812
08/08–08/08	20	14[c]	0	0.0%	0	0.0%	0	0.0%	0	451	100.0%	451
08/11–08/11	21	12[c]	0	0.0%	0	0.0%	0	0.0%	0	281	0.0%	281
08/13–08/13	22	12[c]	0	0.0%	0	0.0%	0	0.0%	0	146	100.0%	146
08/15–08/15	23	12[c]	0	0.0%	0	0.0%	0	0.0%	0	138	100.0%	138
08/17–08/17	24	12[c]	0	0.0%	0	0.0%	0	0.0%	0	28	100.0%	28
08/19–08/19	25	12[c]	0	0.0%	0	0.0%	0	0.0%	0	36	100.0%	36
08/21–08/21	26	12[c]	0	0.0%	0	0.0%	0	0.0%	0	27	100.0%	27
08/23–08/23	27	12[c]	0	0.0%	0	0.0%	0	0.0%	0	29	100.0%	29
08/24–08/24	28	12[c,e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25–08/25	29	12[c]	0	0.0%	0	0.0%	0	0.0%	0	21	100.0%	21
08/26–08/26	30	12[c]	0	0.0%	0	0.0%	0	0.0%	0	11	100.0%	11

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			Origin									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/27–08/27	31	12[c]	0	0.0%	0	0.0%	0	0.0%	0	9	100.0%	9
08/28–08/28	32	12[c]	0	0.0%	0	0.0%	0	0.0%	0	9	100.0%	9
08/29–08/29	33	12[d]	0	0.0%	0	0.0%	0	0.0%	0	0	100.0%	0
Total			218,243	92.4%	1,590	0.7%	3,181	1.3%	223,013	13,112	5.6%	236,125

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. WNH14C and WNH14B marks were not seen in 2020.

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

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

[c] No samples collected; wild origin assumed.

[d] No harvest reported.

[e] Three or fewer deliveries; results are confidential.

Appendix E9.–Sockeye salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2020.

			Main Bay		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	total	Number	Percent	Total
06/01–06/02	1	36[a]	605	81.8%	605	134	18.2%	739
06/04–06/05	2	36	3,533	81.8%	3,533	785	18.2%	4,318
06/08–06/09	3	36	12,349	93.2%	12,349	904	6.8%	13,253
06/11–06/12	4	36	26,597	98.9%	26,597	296	1.1%	26,893
06/15–06/16	5	36	60,677	96.8%	60,677	2,000	3.2%	62,677
06/18–06/19	6	36	55,164	96.8%	55,164	1,839	3.2%	57,003
06/22–06/23	7	24	75,491	100.0%	75,491	0	0.0%	75,491
06/25–06/26	8	24	69,300	96.8%	69,300	2,260	3.2%	71,560
07/02–07/02	9	12	34,220	98.9%	34,220	376	1.1%	34,596
07/09–07/10	10	36	28,317	82.1%	28,317	6,178	17.9%	34,495
07/13–07/14	11	24	22,896	92.0%	22,896	2,003	8.0%	24,899
07/16–07/17	12	36[b]	15,223	91.5%	15,223	1,417	8.5%	16,640
07/20–07/21	13	24[b]	7,894	91.5%	7,894	735	8.5%	8,629
07/23–07/24	14	36[b]	5,119	91.5%	5,119	477	8.5%	5,596
07/27–07/28	15	24	3,948	91.0%	3,948	390	9.0%	4,338
07/30–07/31	16	24[c]	3,176	91.0%	3,176	314	9.0%	3,490
08/03–08/04	17	24[c]	2,380	91.0%	2,380	235	9.0%	2,615
08/10–08/11	18	24[c]	2,051	87.0%	2,051	203	13.0%	2,254
08/17–08/18	19	24[d]	0	87.8%	0	390	12.2%	390
08/24–08/25	20	24[d,e]	0	0.0%	0	0	0.0%	0
Total			428,941	95.3%	428,941	20,953	4.7%	449,894

Note: Fish ticket data as of November 25, 2020. Samples were not processed for SrCl mark identification, so the Gulkana Hatchery contribution is unknown.

[a] No samples collected; proportions from following period samples.

[b] No samples collected; proportions are the average of the previous and following periods sampled.

[c] No samples collected; proportions are from the previous period sampled.

[d] No samples collected; wild origin assumed.

[e] Three or fewer deliveries; results are confidential.

Appendix E10.–Pink salmon hatchery and wild stock contributions to the Eshamy District commercial fishery by period, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/02	1	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04–06/05	2	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/08–06/09	3	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/11–06/12	4	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/15–06/16	5	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/18–06/19	6	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/22–06/23	7	24[c]	1	11.7%	0	0.0%	0	0.0%	0	0.0%	1	7	88.3%	8
06/25–06/26	8	24[c]	6	11.7%	0	0.0%	0	0.0%	0	0.0%	6	48	88.3%	54
07/02–07/02	9	12[c]	95	11.7%	0	0.0%	0	0.0%	0	0.0%	95	715	88.3%	810
07/09–07/10	10	36	3,956	11.7%	0	0.0%	0	0.0%	0	0.0%	3,956	29,846	88.3%	33,802
07/13–07/14	11	24	447	2.1%	0	0.0%	223	0.0%	0	0.0%	670	20,548	96.8%	21,218
07/16–07/17	12	36	2,396	4.8%	0	0.0%	3,195	0.0%	0	0.0%	5,591	43,926	88.7%	49,517
07/20–07/21	13	24	11,756	23.6%	0	0.0%	904	1.8%	0	0.0%	12,660	37,077	74.5%	49,737
07/23–07/24	14	36	16,727	20.5%	929	0.0%	9,293	11.4%	0	0.0%	26,949	54,828	67.0%	81,777
07/27–07/28	15	24	1,820	11.6%	0	0.0%	4,136	26.3%	0	0.0%	5,956	9,760	62.1%	15,716
07/30–07/31	16	24	1,158	4.2%	1,158	4.2%	11,576	41.7%	0	0.0%	13,891	13,891	50.0%	27,782
08/03–08/04	17	24[d]	1,053	4.2%	1,053	4.2%	10,533	41.7%	0	0.0%	12,640	12,640	50.0%	25,280
08/10–08/11	18	24[d]	1,310	4.2%	1,310	4.2%	13,104	41.7%	0	0.0%	15,725	15,725	50.0%	31,450
08/17–08/18	19	24[d]	557	4.2%	557	4.2%	5,567	41.7%	0	0.0%	6,680	6,680	50.0%	13,360
08/24–08/25	20	24[b,e]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			41,281	11.7%	5,007	1.4%	58,531	16.6%	0	0.0%	104,819	247,279	70.2%	352,098

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 25, 2020.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

[c] No samples collected; proportions are an average of the pervious and following periods sampled.

[d] No samples collected; proportions from the previous sampled period.

[e] Three or fewer deliveries; results are confidential.

Appendix E11.–Chum salmon hatchery and wild stock contributions to the Eshamy District commercial fishery by period, 2020.

			Origin									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/02	1	36[a]	472	66.7%	0	0.0%	177	25.0%	649	59	8.3%	708
06/04–06/05	2	36	807	66.7%	0	0.0%	303	25.0%	1,110	101	8.3%	1,211
06/08–06/09	3	36	4,180	78.9%	836	15.8%	0	0.0%	5,016	279	5.3%	5,295
06/11–06/12	4	36[b]	4,488	81.6%	434	7.9%	434	7.9%	5,356	145	2.6%	5,501
06/15–06/16	5	36[b]	5,259	81.6%	509	7.9%	509	7.9%	6,276	170	2.6%	6,446
06/18–06/19	6	36	6,233	84.2%	0	0.0%	1,169	15.8%	7,402	0	0.0%	7,402
06/22–06/23	7	24[b]	6,102	74.0%	0	0.0%	1,681	20.4%	7,782	458	5.6%	8,240
06/25–06/26	8	24	9,267	63.9%	0	0.0%	3,626	25.0%	12,893	1,612	11.1%	14,505
07/02–07/02	9	12[b]	2,030	71.6%	0	0.0%	428	15.1%	2,458	377	13.3%	2,835
07/09–07/10	10	36	8,076	79.3%	0	0.0%	527	5.2%	8,603	1,580	15.5%	10,183
07/13–07/14	11	24[b]	2,686	66.6%	0	0.0%	958	23.7%	3,643	391	9.7%	4,034
07/16–07/17	12	36	2,707	53.8%	0	0.0%	2,127	42.3%	4,835	193	3.8%	5,028
07/20–07/21	13	24[c]	909	53.8%	0	0.0%	714	42.3%	1,623	65	3.8%	1,688
07/23–07/24	14	36[c]	624	53.8%	0	0.0%	490	42.3%	1,113	45	3.8%	1,158
07/27–07/28	15	24[c]	90	53.8%	0	0.0%	71	42.3%	162	6	3.8%	168
07/30–07/31	16	24[d]	0	0.0%	0	0.0%	0	0.0%	0	154	100.0%	154
08/03–08/04	17	24[d]	0	0.0%	0	0.0%	0	0.0%	0	93	100.0%	93
08/10–08/11	18	24[d]	0	0.0%	0	0.0%	0	0.0%	0	78	100.0%	78
08/17–08/18	19	24[d]	0	0.0%	0	0.0%	0	0.0%	0	9	100.0%	9
08/24–08/25	20	24[e,f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			53,930	72.2%	1,779	2.4%	13,213	17.7%	68,922	5,814	7.8%	74,736

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Total harvest data from fish ticket reporting as of November 25, 2020. WNH14C and WNH14B marks were not seen in 2020.

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

[b] No samples collected; proportions are the average of the previous and following periods sampled.

[c] No samples collected; proportions are from the previous period sampled.

[d] No samples collected; wild origin assumed.

[e] No harvest reported.

[f] Three or fewer deliveries; results are confidential.

Appendix E12.–Daily sockeye salmon sales and sex ratios, sales summary, and broodstock summary at the Main Bay Hatchery, 2020.

Date	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Broodstock cumulative
06/19	4,645	0	0	0
06/21	10,940	10,940	0	0
06/23	3,801	14,741	0	0
06/24	0	14,741	38	38
06/25	25,440	40,181	35	73
06/27	0	40,181	27	100
06/28	30,820	71,001	54	154
06/29	37,608	108,609	191	345
06/30	19,779	128,388	0	345
07/01	32,906	161,294	0	345
07/02	15,936	177,230	0	345
07/03	6,700	183,930	37	382
07/04	0	183,930	54	436
07/05	4,181	188,111	107	543
07/06	12,223	200,334	131	674
07/07	14,979	215,313	121	795
07/08	4,182	219,495	0	795
07/09	12,842	232,337	0	795
08/02	0	232,337	194	989
08/03	0	232,337	9	998
08/04	0	232,337	405	1,403
08/05	0	232,337	57	1,460
08/06	0	232,337	408	1,868
08/07	0	232,337	16	1,884
08/08	0	232,337	771	2,655
08/09	0	232,337	23	2,678
08/10	0	232,337	1,015	3,693
08/11	0	232,337	14	3,707
08/12	0	232,337	978	4,685
08/13	0	232,337	123	4,808
08/14	0	232,337	994	5,802
08/15	0	232,337	114	5,916
08/16	0	232,337	791	6,707
08/17	0	232,337	121	6,828
08/18	0	232,337	602	7,430
08/19	0	232,337	95	7,525
08/20	0	232,337	649	8,174
08/21	0	232,337	1,551	9,725

-continued-

Sockeye salmon	
Hatchery escapement summary[c]	Broodstock totals
Purse seine whole fish harvest	232,337
Raceway harvest[d]	0
Viable broodstock (spawned, eggs in incubators)	6,469
Unviable broodstock (green/over-ripe/bad)	350
Unspawned fish (e.g., excess males/females)	2,301
Holding mortalities (raceway, pen mortalities)	615
Estimated unharvested return[e]	100
Estimated total run to hatchery site	242,172
Sales summary	
Purse seine whole fish sales	232,337
Raceway sales[f]	0
Carcass sales[g]	0
Total sales	232,337

Note: NA = not available

[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 and PWSAC egg-take log and annual report (PWSAC 2020b).

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

[e] Fish remaining in saltwater 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, 1990–2020.

	Hatchery contributions[a]					
Year	Commercial	Subsistence/ homepack	Sport	Broodstock/ escapement	Cost recovery	Total hatchery contribution
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
Average (2010–2019)	1,028,043	1,862	4,859	43,411	18,954	1,095,195

[a] Commercial harvest estimates are from otolith marks. Sport harvest is the previous 5-year averages from PWS sport fishing surveys and commercial harvest contribution proportions. Subsistence/personal use estimates are derived from commercial harvest proportions. Broodstock/escapement and hatchery cost recovery are assumed to be 100% MBH origin.

Appendix E14.–Main Bay Hatchery salmon fry releases, 1983–2020.

	Sockeye salmon					Pink salmon	Chum salmon
Release year	Primary return years	Coghill Lake stock	Eshamy Lake stock	Eyak Lake stock	Total released[a]	Total released	Total released
1983						25,751,531	8,644,179
1984						41,945,403	7,490,291
1985						29,286,498	11,033,065
1986	1987, 1988					32,728,663	5,258,175
1987	1988, 1989					2,660,000	76,646,750
1988	1989, 1990	330,025			330,025		
1989	1991, 1990	3,925,357			3,925,357	10,200,000	
1990	1992, 1993	2,616,498			2,616,498		
1991	1993, 1994	1,960,774	1,843,176		3,803,950		
1992	1994, 1995	1,546,929	2,475,390	47,609	4,069,928		
1993	1995, 1996	3,288,689	966,750	63,822	4,319,261		
1994	1996, 1997	3,289,824	691,633		3,981,457		
1995	1997, 1998	4,049,763	1,546,011	90,348	5,686,122		
1996	1998, 1999	4,194,174	114,475	82,514	4,391,163		
1997	1999, 2000	239,023	845,190	131,503	1,215,716		
1998	2000, 2001		2,485,000	181,000	2,666,000		
1999	2001, 2002		4,165,786	2,913,460	7,079,246		
2000	2002, 2003	8,401,117			8,401,117		
2001	2003, 2004	7,612,350			7,612,350		
2002	2004, 2005	7,858,190			7,858,190		
2003	2005, 2006	6,576,535			6,576,535		
2004	2006, 2007	9,057,829			9,057,829		
2005	2007, 2008	10,868,642			10,868,642		
2006	2008, 2009	9,516,461			9,516,461		
2007	2009, 2010	9,393,000			9,393,000		
2008	2010, 2011	9,384,000			9,384,000		
2009	2011, 2012	9,419,000			9,419,000		
2010	2012, 2013	8,160,000			8,160,000		
2011	2013, 2014	8,680,000			8,680,000		
2012	2014, 2015	11,040,000			11,040,000		
2013	2015, 2016	11,500,000			11,500,000		
2014	2016, 2017	11,460,000			11,460,000		
2015	2017, 2018	10,730,000			10,730,000		
2016	2018, 2019	10,040,000			10,040,000		
2017	2019, 2020	10,504,000			10,504,000		
2018	2020, 2021	10,240,000			10,240,000		
2019	2021, 2022	10,240,000			10,240,000		
2020	2022, 2023	11,080,000			11,080,000		
Average (2010–2019)		10,259,400			10,259,400		

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

Appendix E15.–Pink salmon hatchery and wild stock contributions to the Eastern District commercial fishery by period, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
07/11–07/11	1	14	2,063,993	95.8%	0	0.0%	0	0.0%	0	0.0%	2,063,993	89,739	4.2%	2,153,732
07/15–07/15	2	14	1,923,562	92.7%	0	0.0%	0	0.0%	0	0.0%	1,923,562	151,291	7.3%	2,074,853
07/16–07/16	3	14	515,956	97.9%	0	0.0%	0	0.0%	0	0.0%	515,956	10,978	2.1%	526,934
07/19–07/19	4	14	315,462	43.8%	0	0.0%	0	0.0%	0	0.0%	315,462	405,595	56.3%	721,057
07/23–07/23	5	14	418,721	57.4%	0	0.0%	0	0.0%	0	0.0%	418,721	310,163	42.6%	728,884
07/24–07/24	6	14	94,321	81.1%	0	0.0%	0	0.0%	0	0.0%	94,321	22,049	18.9%	116,370
07/25–07/25	7	14	206,179	88.9%	0	0.0%	0	0.0%	0	0.0%	206,179	25,772	11.1%	231,951
07/28–07/28	8	14	418,728	55.8%	0	0.0%	0	0.0%	0	0.0%	418,728	331,823	44.2%	750,551
08/01–08/01	9	14	389,195	48.4%	16,922	2.1%	0	0.0%	0	0.0%	406,116	397,656	49.5%	803,772
08/02–08/02	10	14	55,581	72.8%	0	0.0%	0	0.0%	0	0.0%	55,581	20,725	27.2%	76,306
08/03–08/03	11	14	81,116	76.7%	0	0.0%	0	0.0%	0	0.0%	81,116	24,580	23.3%	105,696
08/05–08/05	12	14	77,314	20.0%	4,069	1.1%	4,069	1.1%	0	0.0%	85,452	301,116	77.9%	386,568
08/08–08/08	13	14	20,049	12.8%	0	0.0%	1,823	1.2%	0	0.0%	21,872	134,878	86.0%	156,750
08/11–08/11	14	12[a,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/13–08/13	15	12[a]	1,718	6.4%	0	0.0%	156	0.6%	0	0.0%	1,874	24,982	93.0%	26,856
08/15–08/15	16	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	16,036	100.0%	16,036
08/17–08/17	17	12	3,708	9.2%	3,708	9.2%	463	1.1%	0	0.0%	7,879	32,445	80.5%	40,324
08/19–08/19	18	12	1,651	6.7%	0	0.0%	0	0.0%	0	0.0%	1,651	23,120	93.3%	24,771
08/21–08/21	19	12	229	3.6%	0	0.0%	0	0.0%	229	3.6%	457	5,947	92.9%	6,404
08/23–08/23	20	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/24–08/24	21	12	198	9.1%	198	9.1%	0	0.0%	0	0.0%	397	1,786	81.8%	2,183
08/25–08/25	22	12[d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26–08/26	23	12	291	20.3%	106	7.4%	0	0.0%	0	0.0%	398	1,040	72.3%	1,438
08/27–08/27	24	12[d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28–08/28	25	12[c,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29–08/29	26	12[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			6,587,972	73.6%	25,004	0.3%	6,511	0.1%	229	0.0%	6,619,716	2,331,720	26.0%	8,951,436

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK=Armin F. Koernig Hatchery. Fish ticket data as of November 25, 2020.

[a] No samples collected; proportions are an average of the previous and following periods sampled.

[b] No harvest reported.

[c] No samples collected; proportions are from the previous period sampled.

[d] Three or fewer deliveries; results are confidential.

Appendix E16.–Pink salmon hatchery and wild stock contributions to the Northern District commercial fishery by period, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
07/23–07/23	1	14	107,056	60.5%	0	0.0%	4,118	0.0%	0	0.0%	111,173	65,881	37.2%	177,054
07/28–07/28	2	14	142,938	36.5%	110,267	28.1%	24,504	0.0%	0	0.0%	277,708	114,351	29.2%	392,059
08/01–08/01	3	14	39,452	22.0%	41,424	23.1%	1,973	1.1%	0	0.0%	82,848	96,657	53.8%	179,505
08/05–08/05	4	14	29,873	6.3%	189,194	40.0%	74,682	15.8%	4,979	0.0%	298,727	174,258	36.8%	472,985
08/08–08/08	5	14	26,020	5.3%	317,439	64.9%	26,020	5.3%	0	0.0%	369,478	119,690	24.5%	489,168
08/11–08/11	6	12	6,657	1.0%	266,294	41.7%	286,266	44.8%	6,657	1.0%	565,875	73,231	11.5%	639,106
08/13–08/13	7	12	7,105	2.1%	227,361	66.7%	78,155	22.9%	0	0.0%	312,622	28,420	8.3%	341,042
08/15–08/15	8	12	3,569	2.1%	101,724	60.0%	39,262	23.2%	3,569	2.1%	148,124	21,416	12.6%	169,540
08/17–08/17	9	12	3,239	2.1%	98,797	64.2%	30,773	20.0%	1,620	1.1%	134,429	19,435	12.6%	153,864
08/19–08/19	10	12	0	0.0%	72,033	83.7%	3,001	3.5%	2,001	2.3%	77,035	9,004	10.5%	86,039
08/21–08/21	11	12	0	0.0%	106,556	84.4%	11,840	9.4%	0	0.0%	118,395	7,893	6.3%	126,288
08/23–08/23	12	12	1,541	1.1%	69,367	47.4%	57,035	38.9%	1,541	1.1%	129,485	16,956	11.6%	146,441
08/25–08/25	13	12	0	0.0%	30,916	85.3%	2,290	6.3%	382	1.1%	33,587	2,672	7.4%	36,259
08/27–08/27	14	12	0	0.0%	12,443	79.5%	803	5.1%	0	0.0%	13,246	2,408	15.4%	15,654
08/29–08/29	15	12[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Totals			367,450	10.7%	1,643,813	48.0%	640,720	18.7%	20,749	0.6%	2,672,733	752,271	22.0%	3,425,004

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK=Armin F. Koernig Hatchery. Fish ticket data as of November 25, 2020.

[a] No harvest reported.

Appendix E17.–Pink salmon hatchery and wild stock contributions to Prince William Sound, Bering, and Copper River commercial fishery, 2020.

		Origin											
		Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Districts		Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
Bering River	200[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	262	100.0%	262
Copper River	212[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	683	100.0%	683
Eastern	221	6,589,719	73.5%	25,270	0.3%	6,559	0.1%	229	0.0%	6,621,777	2,342,213	26.1%	8,963,990
Northern	222	367,450	10.7%	1,643,813	48.0%	640,720	18.7%	20,749	0.6%	2,672,733	752,271	22.0%	3,425,004
Coghill	223	109,807	6.2%	128,934	7.3%	1,131,813	64.3%	2,824	0.2%	1,373,378	386,569	22.0%	1,759,947
Northwestern	224	11,766	1.3%	7,939	0.9%	208,554	22.6%	7,564	0.8%	235,822	685,604	74.4%	921,426
Eshamy	225	41,281	11.7%	5,007	1.4%	58,531	16.6%	0	0.0%	104,819	247,279	70.2%	352,098
Southwestern	226	30,938	1.1%	561,664	20.5%	595,600	21.7%	750,159	27.4%	1,938,361	800,815	29.2%	2,739,176
Montague	227	21,214	7.9%	49,999	18.7%	37,066	13.8%	21,307	8.0%	129,586	138,420	51.6%	268,006
Southeastern	228	6,930	1.9%	0	0.0%	0	0.0%	1,456	0.4%	8,387	365,472	97.8%	373,859
Unakwik	229[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	4,052	100.0%	4,052
Total		7,179,058	38.2%	2,422,621	12.9%	2,678,786	14.2%	804,288	4.3%	13,084,753	5,722,820	30.4%	18,807,573

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Total harvest data from fish ticket reporting as of November 25, 2020. Personal use (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, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/03	1	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04–06/06	2	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/08–06/10	3	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/11–06/13	4	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/15–06/17	5	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/18–06/20	6	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/22–06/24	7	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	5	100.0%	5
06/25–06/27	8	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	158	100.0%	158
06/29–06/30	9	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	171	100.0%	171
07/02–07/03	10	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	224	100.0%	224
07/04–07/05	11	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	973	100.0%	973
07/06–07/07	12	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1,547	100.0%	1,547
07/09–07/10	13	24[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1,395	100.0%	1,395
07/11–07/12	14	24[b,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/13–07/14	15	24 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	262	100.0%	262
07/16–07/17	16	24[c,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/18–07/19	17	24[c,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/20–07/21	18	24[c,d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/11–08/11	19	12	12,318	1.1%	123,178	10.8%	270,991	23.7%	357,216	31.2%	763,703	381,851	33.3%	1,145,554
08/13–08/13	20	12	17,474	2.1%	200,946	24.2%	157,262	18.9%	209,682	25.3%	585,363	244,630	29.5%	829,993
08/15–08/15	21	12	0	0.0%	222,788	35.1%	155,277	24.5%	121,521	19.1%	499,586	135,023	21.3%	634,609
08/23–08/23	22	12	1,096	1.1%	14,247	13.7%	10,959	10.5%	60,276	57.9%	86,578	17,535	16.8%	104,113
Total			30,938	1.1%	561,664	20.5%	595,600	21.7%	750,159	27.4%	1,938,361	800,815	29.2%	2,739,176

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Total harvest data from fish ticket reporting as of November 25, 2020.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

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

[d] Three or fewer deliveries; results are confidential.

Appendix E19.–Chum salmon hatchery and wild stock contributions to commercial common property fisheries by period and mark identification, Southwestern District, 2020.

			Hatchery marks[a]									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/03	1	48[a]	404	4.4%	1,213	13.3%	7,073	77.8%	8,690	404	4.4%	9,094
06/04–06/06	2	48[a]	174	4.4%	521	13.3%	3,039	77.8%	3,733	174	4.4%	3,907
06/08–06/10	3	48	242	4.4%	725	13.3%	4,230	77.8%	5,197	242	4.4%	5,439
06/11–06/13	4	48[b]	2,723	15.5%	1,582	9.0%	12,729	72.5%	17,035	527	3.0%	17,562
06/15–06/17	5	48	4,979	26.6%	879	4.7%	12,594	67.2%	18,451	293	1.6%	18,744
06/18–06/20	6	48	2,046	7.3%	2,728	9.8%	22,506	80.5%	27,280	682	2.4%	27,962
06/22–06/24	7	48	2,619	5.9%	2,619	5.9%	37,975	85.3%	43,213	1,309	2.9%	44,522
06/25–06/27	8	48	2,049	7.1%	1,707	6.0%	24,584	85.7%	28,340	341	1.2%	28,681
06/29–06/30	9	24	1,820	7.7%	2,730	11.5%	18,200	76.9%	22,750	910	3.8%	23,660
07/02–07/03	10	24[c]	924	7.7%	1,386	11.5%	9,242	76.9%	11,553	462	3.8%	12,015
07/04–07/05	11	24[c]	748	7.7%	1,122	11.5%	7,482	76.9%	9,352	374	3.8%	9,726
07/06–07/07	12	24[c]	454	7.7%	681	11.5%	4,543	76.9%	5,679	227	3.8%	5,906
07/09–07/10	13	24[d]	460	7.7%	689	11.5%	4,595	76.9%	5,744	230	3.8%	5,974
07/11–07/12	14	24[d,e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/13–07/14	15	24[d]	0	0.0%	0	0.0%	0	0.0%	0	2,389	100.0%	2,389
07/16–07/17	16	24[d,e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/18–07/19	17	24[d,e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/20–07/21	18	24[d,e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/11–08/11	19	12[d]	0	0.0%	0	0.0%	0	0.0%	0	702	100.0%	702
08/13–08/13	20	12[d]	0	0.0%	0	0.0%	0	0.0%	0	672	100.0%	672
08/15–08/15	21	12[d]	0	0.0%	0	0.0%	0	0.0%	0	604	100.0%	604
08/23–08/23	22	12[d]	0	0.0%	0	0.0%	0	0.0%	0	66	100.0%	66
Total			19,641	8.8%	18,583	8.4%	168,792	76.0%	207,016	15,215	6.8%	222,231

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 25, 2020. WNH14C and WNH14B marks were not seen in 2020.

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

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

[c] No samples collected; proportions are from the previous period sampled.

[d] No samples collected; wild origin assumed.

[e] Three or fewer deliveries; results are confidential.

Appendix E20.–Chum salmon hatchery and wild stock contributions to commercial common property fisheries by period and mark identification, Montague District, 2020.

			Origin[a]									
			Port Chalmers		Wally Noerenberg		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/03	1	48[a]	5,271	94.6%	0	0.0%	0	0.0%	5,271	301	5.4%	5,572
06/04–06/06	2	60	24,727	94.6%	0	0.0%	0	0.0%	24,727	1,413	5.4%	26,140
06/08–06/10	3	48	30,392	89.5%	2,503	7.4%	358	1.1%	33,252	715	2.1%	33,967
06/11–06/12	4	36	42,605	100.0%	0	0.0%	0	0.0%	42,605	0	0.0%	42,605
06/13–06/14	5	36	23,705	93.3%	1,016	4.0%	0	0.0%	24,721	677	2.7%	25,398
06/15–06/17	6	48	18,910	87.0%	945	4.3%	945	4.3%	20,801	945	4.3%	21,746
06/18–06/19	7	36	78,611	95.8%	2,592	3.2%	864	1.1%	82,066	0	0.0%	82,066
06/20–06/21	8	36	31613	92.6%	2180	6.4%	0	0.0%	33,794	363	1.1%	34,157
06/22–06/24	9	48	45,646	97.7%	0	0.0%	531	1.1%	46,177	531	1.1%	46,708
06/25–06/26	10	36	66,556	95.8%	0	0.0%	731	1.1%	67,288	2,194	3.2%	69,482
06/27–06/28	11	36	60,287	86.3%	2,941	4.2%	2,206	3.2%	65,434	4,411	6.3%	69,845
06/29–07/01	12	48	36,525	90.9%	1,218	3.0%	2,435	6.1%	40,178	0	0.0%	40,178
07/02–07/03	13	36	31,077	100.0%	0	0.0%	0	0.0%	31,077	0	0.0%	31,077
07/04–07/05	14	36[b]	16,135	95.8%	0	0.0%	0	0.0%	16,135	702	4.2%	16,836
07/06–07/08	15	48	14,226	91.7%	0	0.0%	0	0.0%	14,226	1,293	8.3%	15,519
07/09–07/10	16	36	8,837	94.6%	100	1.1%	402	4.3%	9,339	0	0.0%	9,339
07/11–07/12	17	36	3,711	98.4%	59	1.6%	0	0.0%	3,770	0	0.0%	3,770
07/13–07/15	18	48[c]	5,572	98.4%	88	1.6%	0	0.0%	5,660	0	0.0%	5,660
07/16–07/17	19	36[c]	6,881	98.4%	109	1.6%	0	0.0%	6,990	0	0.0%	6,990
07/18–07/19	20	36[c,f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/20–07/22	21	48[c]	3,698	98.4%	59	1.6%	0	0.0%	3,757	0	0.0%	3,757
07/28–07/28	22	14[d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/01–08/01	23	14[e]	0	0.0%	0	0.0%	0	0.0%	0	2	100.0%	2
08/05–08/05	24	14[e]	0	0.0%	0	0.0%	0	0.0%	0	81	100.0%	81
08/08–08/08	25	14[e]	0	0.0%	0	0.0%	0	0.0%	0	47	100.0%	47
08/11–08/11	26	12[d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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			Origin[a]									
			Port Chalmers		Wally Noerenberg		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/13–08/13	27	12[e,f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/15–08/15	28	12[e]	0	0.0%	0	0.0%	0	0.0%	0	16	100.0%	16
08/17–08/17	29	12[e]	0	0.0%	0	0.0%	0	0.0%	0	49	100.0%	49
08/19–08/19	30	12[e,f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/21–08/29	31–38	12[d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			555,974	93.9%	13,826	2.3%	8,471	1.4%	578,272	13,777	2.3%	592,049

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 25, 2020. WNH14C and WNH14B marks were not seen in 2020.

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

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

[c] No samples collected; proportions are from the previous period sampled.

[d] No samples collected; wild origin assumed.

[e] No harvest reported.

[f] Three or fewer deliveries; results are confidential.

Appendix E21.–Pink salmon hatchery and wild stock contributions to commercial fisheries by period and mark identification, Montague District, 2020.

			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01–06/03	1	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04–06/06	2	60[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/08–06/10	3	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	3	100.0%	3
06/11–06/12	4	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/13–06/14	5	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/15–06/17	6	48[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/18–06/19	7	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	8	100.0%	8
06/20–06/21	8	36[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/22–06/24	9	48[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/25–06/26	10	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/27–06/28	11	36[b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	8	100.0%	8
06/29–07/01	12	48[c]	86	64.2%	0	0.0%	0	0.0%	0	0.0%	86	48	35.8%	134
07/02–07/03	13	36	557	64.2%	0	0.0%	0	0.0%	0	0.0%	557	311	35.8%	868
07/04–07/05	14	36[d]	241	53.3%	0	0.0%	0	0.0%	0	0.0%	241	211	46.7%	452
07/06–07/08	15	48	6,303	42.3%	0	0.0%	0	0.0%	0	0.0%	6,303	8,596	57.7%	14,899
07/09–07/10	16	36[e]	782	42.3%	0	0.0%	0	0.0%	0	0.0%	782	1,066	57.7%	1,848
07/11–07/12	17	36[d]	73	21.2%	0	0.0%	0	0.0%	0	0.0%	73	273	78.8%	346
07/13–07/15	18	48[c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	204	100.0%	204
07/16–07/17	19	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2,449	100.0%	2,449
07/18–07/19	20	36[d,f]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/20–07/22	21	48	0	0.0%	0	0.0%	0	0.0%	1,103	10.6%	1,103	9,262	89.4%	10,365
07/28–07/28	22	14[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/01–08/01	23	14	5,441	8.4%	9,521	14.7%	13,602	21.1%	2,040	3.2%	30,604	34,004	52.6%	64,608
08/05–08/05	24	14	6,402	10.0%	13,603	21.3%	11,203	17.5%	4,001	6.3%	35,209	28,807	45.0%	64,016
08/08–08/08	25	14	957	1.7%	9,571	16.9%	5,743	10.2%	8,614	15.3%	24,884	31,584	55.9%	56,468
08/11–08/11	26	12[a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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			Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/13–08/13	27	12[c,f]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/15–08/15	28	12	0	0.0%	6,191	38.2%	1,905	11.8%	1,429	8.8%	9,524	6,667	41.2%	16,191
08/17–08/17	29	12	281	1.6%	4,774	27.9%	2,527	14.8%	2,247	13.1%	9,829	7,301	42.6%	17,130
08/19–08/29	30–38	12[f]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			21,300	7.9%	49,999	18.7%	37,066	13.8%	21,307	8.0%	129,672	138,334	51.6%	268,006

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Total harvest data from fish ticket reporting as of November 25, 2020.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

[c] No samples collected; proportions are from the following period sampled.

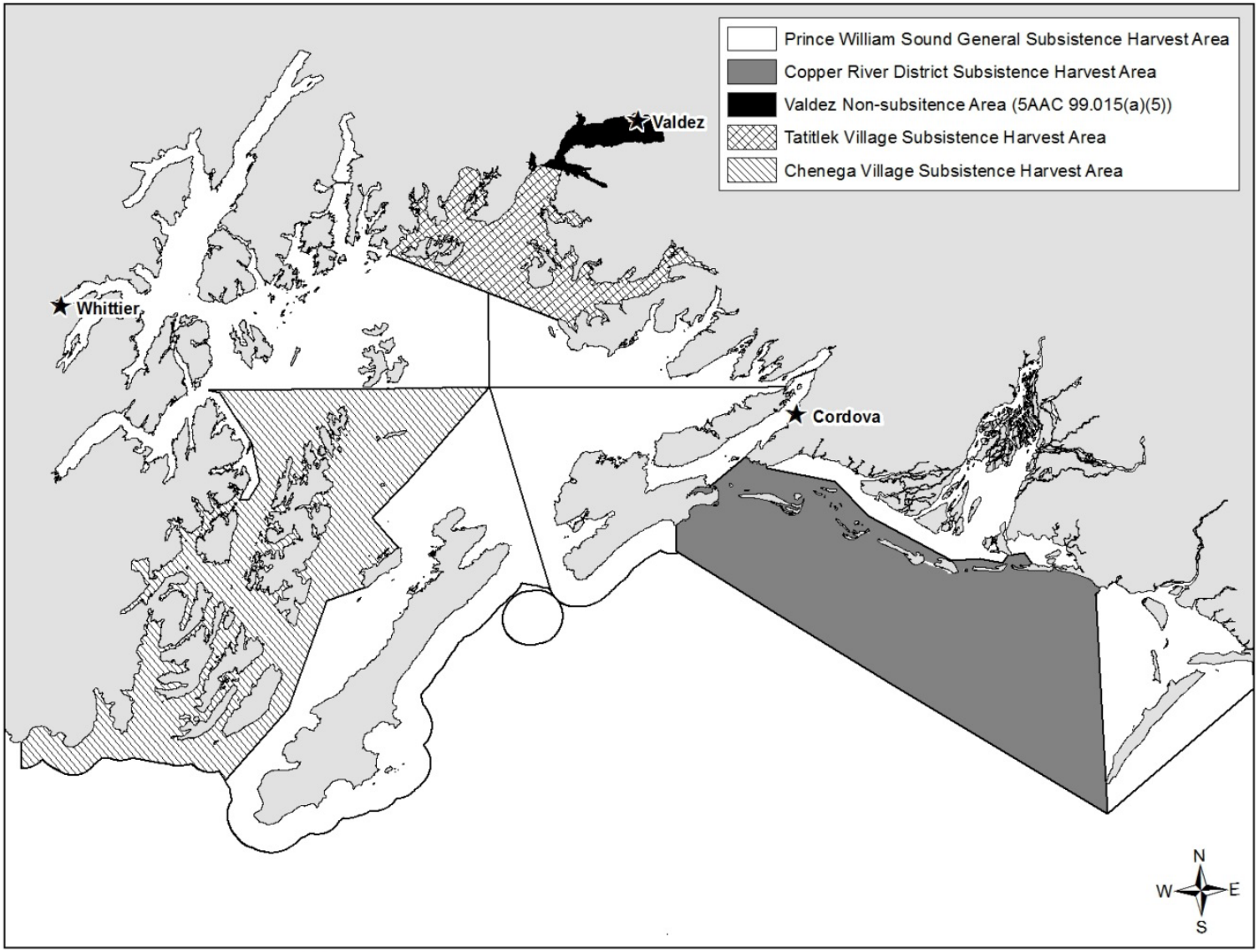
[d] No samples collected; proportions are an average of the previous and following periods sampled.

[e] No samples collected; proportions are from the previous period sampled.

[f] Three or fewer deliveries; results are confidential.

APPENDIX F: SUBSISTENCE AND COMMERCIAL HOMEPACK SALMON HARVEST

Appendix F1.–Map of Prince William Sound subsistence areas.



Appendix F2.–Area E commercial homepack and subsistence harvests by permit holder community of residence, 2020.

	Commercial homepack[a]						
Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchor Point	1	1	15	0	0	0	16
Anchorage	15	54	231	67	21	3	376
Chugiak	1	0	54	0	0	0	54
Cordova	176	170	1,581	896	332	76	3,055
Delta Junction	2	1	34	60	0	39	134
Eagle River	4	1	19	0	0	0	20
Fairbanks	1	0	28	0	0	0	28
Fritz Creek	1	0	0	20	0	0	20
Girdwood	7	3	29	8	0	0	40
Glennallen	1	3	10	22	1	2	38
Homer	29	21	256	123	145	18	563
Kasilof	3	1	35	17	0	0	53
Kenai	2	1	2	0	0	0	3
Moose Pass	1	0	0	8	0	0	8
Palmer	5	13	69	12	0	1	95
Seward	11	4	101	30	7	0	142
Sitka	1	4	12	20	0	0	36
Soldotna	4	0	73	22	0	0	95
Sterling	3	0	5	12	0	0	17
Sutton	1	0	10	0	0	0	10
Valdez	5	24	75	30	24	3	156
Wasilla	23	13	366	427	470	25	1,301
Willow	2	0	25	5	0	0	30
USA Balance	69	130	1,221	404	155	21	1,931
Unknown	1	0	1	0	0	1	2
Total	369	444	4,252	2,183	1,155	189	8,223

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	Area E subsistence[b]					
Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchor Point	1	0	0	0	0	0	0
Anchorage	98	45	1,394	3	1	8	1,451
Chenega	8	0	0	0	0	0	0
Chenega Bay	5	0	0	0	0	0	0
Chitina	1	2	25	0	0	0	27
Chugiak	1	0	0	0	0	0	0
Copper Center	1	0	0	0	0	0	0
Cordova	428	473	4,663	129	0	1	5,266
Delta Junction	5	13	198	0	0	0	211
Dillingham	1	0	15	0	0	0	15
Eagel River	8	5	49	10	0	0	64
Faribanks	3	5	55	0	0	0	60
Girdwood	7	8	140	0	0	0	148
Homer	42	45	572	102	0	0	719
Juneau	4	4	54	0	0	0	58
Kasilof	1	1	7	0	0	0	8
Kenai	2	2	35	0	0	0	37
Moose Pass	1	0	0	0	0	0	0
North Pole	2	0	0	0	0	0	0
Palmer	14	2	121	0	0	0	123
Portage	1	0	27	0	0	0	27
Seward	8	10	120	0	0	0	130
Soldonta	7	6	59	0	0	0	65
Sterling	3	9	144	43	0	0	196
Sutton	1	0	19	0	0	0	19
Talkeetna	1	0	8	0	2	0	10
Tatitlek	8	5	66	27	37	7	142
Valdez	10	0	92	0	0	0	92
Wasilla	47	36	723	40	17	15	831
Willow	5	7	189	0	0	0	196
Total	724	678	8,775	354	57	31	9,895

[a] Homepack fish are defined in 5 AAC 39.010 as finfish retained from lawfully taken commercial catch for that permit owner's own use.

[b] Combined harvests from the Copper River District, Tatitlek, Chenega, and PWS subsistence areas. Includes permit holders who reported not fishing or unsuccessful fishing.

Appendix F3.–Salmon harvest and effort in the Copper River District subsistence drift gillnet fishery, 1961–2020.

	Permits				Reported harvest			
Year	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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	Permits				Reported harvest			
Year	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
Average (2010–2019)	394	372	210	162	491	3,163	64	3,718

[a] As reported on returned permits.

Appendix F4.–Salmon harvest and effort in the Prince William Sound general area subsistence fishery, 1966–2020.

	Permits				Reported harvest[a]						
Year	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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	Permits				Reported harvest[a]						
Year	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	ND	41	ND	0	1,180	1	20	12	0	1,213
Average (2010–2019)	16	15	6	9	4	74	2	2	9	1	92

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

[b] As reported on returned permits.

Appendix F5.–Area E salmon retained from the commercial harvest for personal use (homepack) by species and gear type, 2005–2020.

	Number of permits			Number of Chinook			Number of sockeye			Number of coho			Number of pink			Number of chum		
Year	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	Purse seine	Drift gillnet	Set gillnet
2005	0	226	0	0	767	0	0	1,897	0	0	226	0	0	21	0	0	27	0
2006	1	264	0	2	779	0	0	1,598	0	0	166	0	0	10	0	0	5	0
2007	1	279	0	1	1,028	0	0	2,086	1	0	353	0	0	43	0	0	102	0
2008	2	236	1	3	611	1	0	2,349	72	0	449	0	0	53	0	0	14	0
2009	0	325	3	0	876	0	0	6,474	7	0	767	0	0	61	0	0	67	0
2010	4	351	1	0	957	0	2	8,126	55	51	1,117	0	0	21	0	0	152	0
2011	8	350	2	0	1,344	2	73	9,740	268	350	802	0	0	82	0	0	184	0
2012	20	403	7	11	929	0	143	10,344	318	78	1,220	0	83	3,546	0	55	1,240	0
2013	1	379	7	0	633	24	50	10,532	228	25	288	0	0	248	0	0	81	0
2014	11	405	8	7	806	10	168	13,218	301	17	1,463	0	0	191	0	11	120	0
2015	8	385	9	5	1,179	9	401	11,607	965	23	1,500	0	0	169	0	4	123	20
2016	9	364	8	9	758	10	316	10,507	696	60	1,639	0	13	708	0	7	57	0
2017	29	408	8	37	788	6	218	10,197	1,306	177	2,448	0	287	615	19	28	209	2
2018	32	366	13	24	156	3	556	5,433	304	123	3,829	65	91	1,320	0	10	134	191
2019	33	379	11	45	789	11	867	9,914	763	755	1,260	0	8	1,424	5	42	382	0
2020	29	332	6	164	278	2	341	3,582	329	121	2,062	0	87	1,068	0	8	181	0
Average (2010–2019)	16	379	7	14	834	8	279	9,962	520	166	1,557	7	48	832	2	16	268	21

Appendix F6.–Salmon harvest and effort in the PWS and upper Copper River federal subsistence fisheries, 2010–2020.

	Permits				Reported Harvest[a]			
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Total
				Chitina Subdistrict				
2010	92	79	38	41	17	2,061	33	2,111
2011	84	68	42	26	13	1,766	8	1,787
2012	89	80	33	47	6	1,332	8	1,346
2013	99	85	39	46	17	1,999	8	2,024
2014	113	103	49	54	14	1,549	68	1,631
2015	111	100	52	48	13	2,231	14	2,258
2016	128	95	43	52	16	1,549	33	1,598
2017	132	104	47	57	12	1,454	7	1,473
2018	132	117	58	59	92	3,144	28	3,264
2019	181	161	0	0	74	3,984	20	4,078
2020	215	187	95	92	76	3,229	23	3,328
Average (2015–2019)	137	115	40	43	41	2,472	20	2,534
				Glennallen Subdistrict				
2010	270	236	175	61	300	12,849	64	13,213
2011	280	240	173	67	701	14,163	53	14,917
2012	277	244	169	75	371	14,461	78	14,910
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
Average (2015–2019)	332	284	159	65	884	17,452	5	18,341
				PWS/Chugach Subdistrict				
2010	52	52	35	17	0	36	68	104
2011	69	55	50	5	0	35	581	616
2012	66	53	30	23	0	64	392	456
2013	65	46	29	17	0	102	310	412
2014	89	76	0	0	0	76	630	706
2015	102	68	50	15	0	152	878	1,030
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	255	354
2019	101	89	47	42	0	70	480	550
2020	101	89	47	42	1	98	416	515
Average (2015–2019)	101	85	47	37	1	136	536	673

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						Total federal subsistence harvests		
2010	414	367	248	119	317	14,946	165	15,428
2011	433	363	265	98	714	15,964	642	17,320
2012	432	377	232	145	377	15,857	478	16,712
2013	438	367	228	139	348	17,935	342	18,625
2014	516	458	255	127	411	23,239	721	24,371
2015	538	454	312	139	397	27,078	905	28,380
2016	558	433	270	168	385	17,667	597	18,649
2017	567	470	308	162	411	17,272	522	18,205
2018	564	509	297	212	2,527	18,527	283	21,337
2019	625	554	47	42	912	19,757	500	21,169
2020	692	517	327	237	700	14,211	440	15,351
Average (2015–2019)	570	484	247	145	926	20,060	561	21,548

[a] Reported harvest only.

[b] As reported on returned permits.

Appendix F7.–Salmon harvest and effort in the Tatitlek and Chenega subsistence fisheries, 2000–2020.

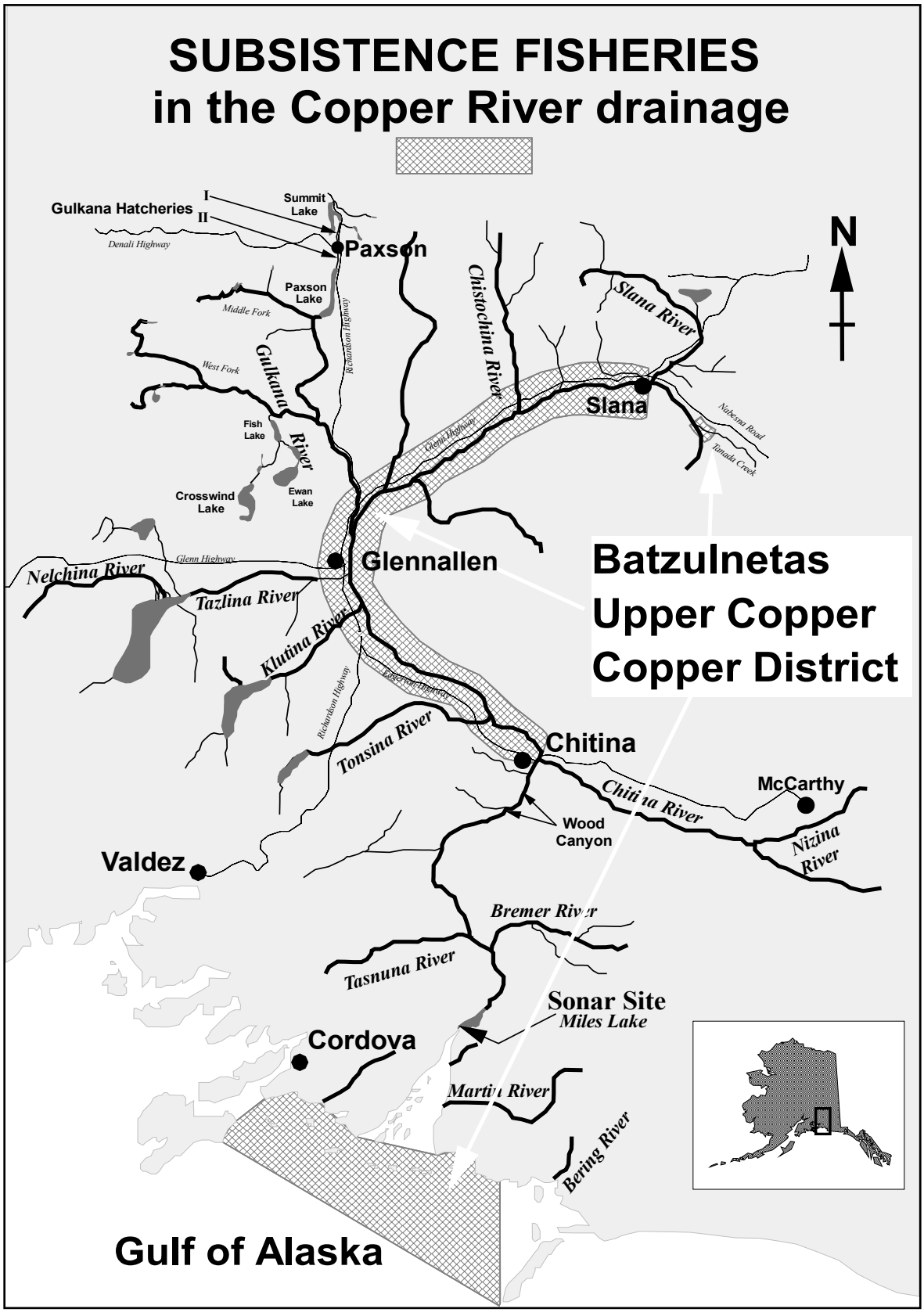
	Permits				Reported harvest[a]						
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Pink	Chum	Unk.	Total
				Tatitlek							
2000	12	3	3	0	0	140	468	40	40	0	688
2001	14	9	8	1	0	114	230	60	12	0	416
2002	19	6	5	1	0	375	136	28	36	0	575
2003	15	8	6	2	0	81	185	20	12	0	298
2004	18	12	9	3	2	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
Average (2010–2019)	14	6	4	2	3	301	136	0	18	1	459
				Chenega							
2000	12	8	6	2	24	39	229	211	143	0	646
2001	16	9	8	1	2	119	92	95	146	0	454
2002	10	5	4	1	10	142	123	83	60	0	418
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
Average (2010–2019)	13	6	3	3	6	101	9	7	35	0	158

Note: NR = no harvest reported.

[a] Reported harvest only.

[b] As reported on returned subsistence permits.

Appendix F8.–Map of the subsistence salmon fisheries on the Copper River.



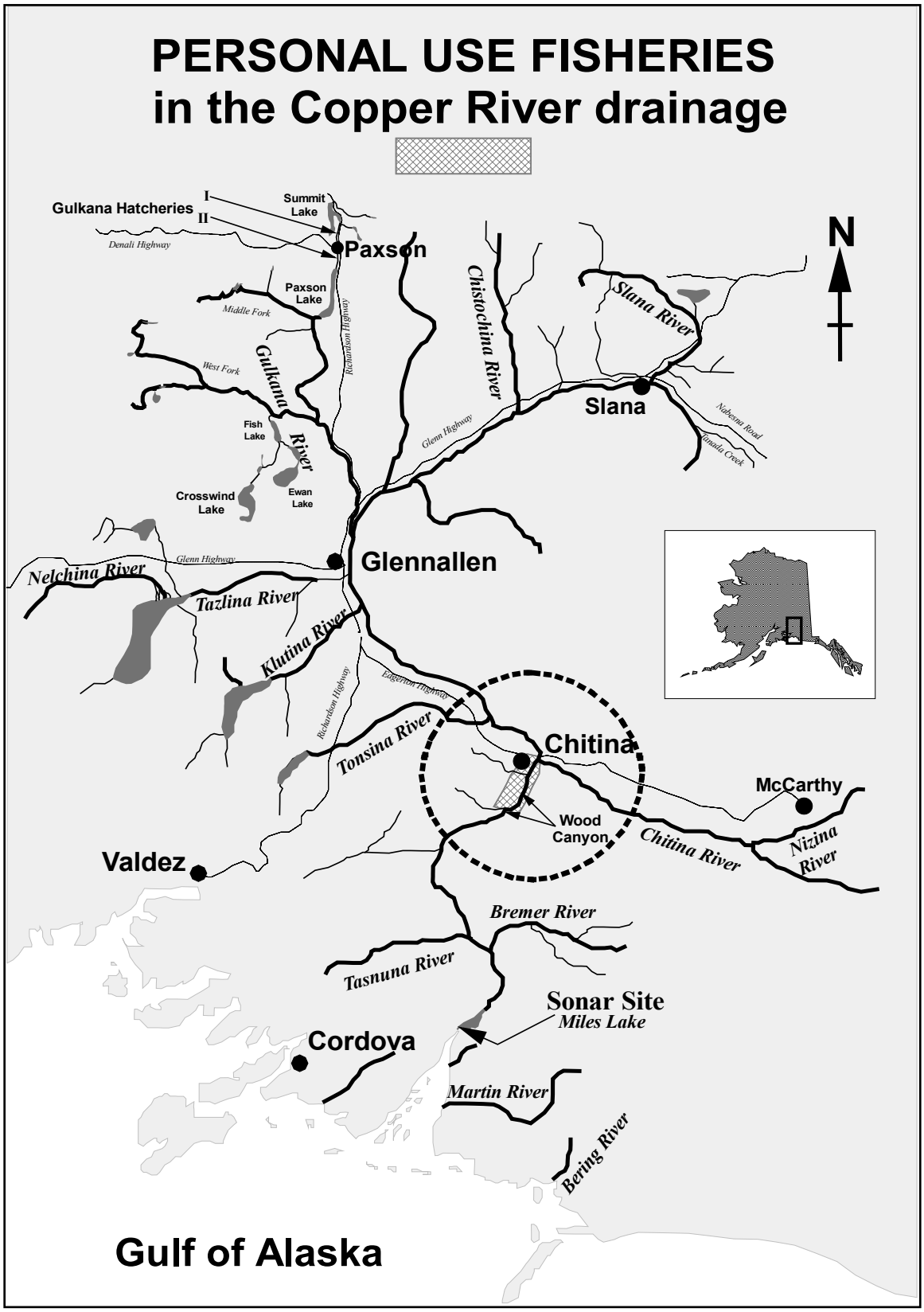
Appendix F9.–Salmon harvest and effort in the Batzulnetas subsistence harvests, 1987–2020.

	Permits				Reported harvest[a]			
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Total
1987	0	0	0	0	0	22	0	22
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0
1993	1	0	0	0	0	160	0	160
1994	5	0	0	0	0	997	0	997
1995	4	0	0	0	0	16	0	16
1996	0	0	0	0	0	0	0	0
1997	3	0	0	0	0	427	0	427
1998	1	0	0	0	0	582	0	582
1999	1	0	0	0	0	55	0	55
2000	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	62	0	62
2002	1	1	1	0	0	208	0	208
2003	1	1	1	0	0	164	0	164
2004	1	1	1	0	0	182	0	182
2005	1	1	0	1	0	0	0	0
2006	0	0	0	0	0	0	0	0
2007	1	1	1	0	0	1	0	1
2008	1	1	1	0	0	1	0	1
2009	0	0	0	0	0	0	0	0
2010	3	3	3	0	0	106	0	106
2011	3	2	2	0	0	9	0	9
2012	3	2	1	1	1	101	1	103
2013	3	3	3	0	2	862	2	866
2014	2	1	1	1	3	146	3	152
2015	4	4	0	4	4	0	4	8
2016	0	0	0	0	5	0	5	10
2017	1	0	0	0	6	254	6	266
2018	1	1	1	0	7	468	7	482
2019	1	1	1	0	0	209	0	209
2020	1	0	0	0	0	0	0	0
Average (2010–2019)	2	2	1	1	3	196	3	201

[a] Harvest reported on subsistence permits.

[b] As reported on returned permits.

Appendix F10.–Map of the personal use salmon fishery on the Copper River.



Appendix F11.–Personal use and subsistence salmon harvests by year, district and gear types for the Upper Copper River subsistence and personal use fisheries, 2004–2020.

					Reported harvest				Expanded harvest					
			Permits		Salmon				Salmon				Other species	
Year	District	Gear	Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
2004	Glennallen	Dip net	330	262	273	4,851	76	5,200	310	5,315	112	5,737	3	0
	Glennallen	Fish wheel	626	594	2,893	47,279	465	50,637	3,036	50,195	465	53,696	61	0
	Chitina	Dip net	8,386	6,855	2,108	93,182	2,304	97,594	2,495	107,312	2,860	112,667	0	509
	Total		9,342	7,711	5,274	145,312	2,845	153,431	5,841	162,822	3,437	172,100	64	509
2005	Glennallen	Dip net	363	303	264	6,305	0	6,569	310	7,486	0	7,796	0	0
	Glennallen	Fish wheel	598	557	1,816	54,661	97	56,574	1,919	56,727	154	58,800	19	0
	Chitina	Dip net	8,230	6,937	1,773	106,797	1,562	110,132	2,043	120,013	1,869	123,925	0	478
	Total		9,191	7,797	3,853	167,763	1,659	173,275	4,272	184,226	2,023	190,521	19	478
2006	Glennallen	Dip net	338	273	266	6,243	10	6,519	335	7,170	10	7,515	0	1
	Glennallen	Fish wheel	646	605	2,178	46,516	200	48,894	2,434	50,540	202	53,176	0	82
	Chitina	Dip net	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	Dip net	467	383	432	8,155	28	8,615	496	9,416	28	9,940	0	1
	Glennallen	Fish wheel	707	654	2,674	53,322	203	56,199	2,780	56,298	210	59,288	0	55
	Chitina	Dip net	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	Dip net	536	447	445	6,517	35	6,997	496	7,177	35	7,708	0	0
	Glennallen	Fish wheel	650	600	1,793	33,687	447	35,927	1,885	35,980	458	38,323	0	75
	Chitina	Dip net	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	Dip net	469	391	342	6,030	8	6,380	394	6,950	19	7,363	0	1
	Glennallen	Fish wheel	621	575	1,988	37,708	186	39,882	2,099	39,899	209	42,207	0	72
	Chitina	Dip net	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

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					Reported harvest				Expanded harvest					
			Permits		Salmon				Salmon				Other species	
Year	District	Gear	Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	other
2010	Glennallen	Dip net	620	510	126	384	0	0	9,970	7,757	0	17,727	0	325
	Glennallen	Fish wheel	701	647	1,360	54,490	228	56,078	1,427	57,717	228	59,372	0	148
	Chitina	Dip net	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	Dip net	617	530	681	13,034	63	13,778	734	14,454	68	15,256	0	0
	Glennallen	Fish wheel	689	625	1,518	41,009	283	42,810	1,585	45,168	304	47,057	0	164
	Chitina	Dip net	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
2012	Glennallen	Dip net	867	699	516	17,860	50	18,426	591	21,198	59	21,848	0	4
	Glennallen	Fish wheel	660	612	1,407	50,269	229	51,905	1,504	55,107	276	56,887	0	112
	Chitina	Dip net	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	Dip net	808	667	794	22,924	55	23,773	902	25,879	79	26,860	4	0
	Glennallen	Fish wheel	531	494	1,169	44,201	63	45,433	1,246	47,849	64	49,159	22	25
	Chitina	Dip net	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	Dip net	1,148	918	551	24,736	169	25,456	675	29,914	174	30,763	0	3
	Glennallen	Fish wheel	508	461	652	42,027	57	42,736	690	45,587	59	46,336	0	29
	Chitina	Dip net	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	Dip net	1,128	909	1,087	29,092	26	30,205	1,297	35,416	32	36,745	0	0
	Glennallen	Fish wheel	503	455	870	43,316	45	44,231	915	46,384	45	47,344	0	234
	Chitina	Dip net	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

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			Permits		Reported harvest				Expanded harvest					
					Salmon				Salmon				Other species	
Year	District	Gear	Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	other
2016	Glennallen	Dip net	1,300	1,030	833	22,525	20	23,378	1,002	26,301	20	27,323	0	0
	Glennallen	Fish wheel	469	413	930	31,703	25	32,658	1,073	36,173	25	37,271	0	424
	Chitina	Dip net	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	Dip net	1,264	1,005	1,695	16,499	51	18,245	2,014	19,599	61	21,674	0	5
	Glennallen	Fish wheel	368	316	751	18,495	6	19,252	892	21,971	7	22,870	7	557
	Chitina	Dip net	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	4,867	174,264	783	179,914	7	1,235
2018	Glennallen	Dip net	1,312	1,045	1,243	14,637	92	15,972	1,459	17,028	117	18,604	3	4
	Glennallen	Fish wheel	347	311	2,747	19,353	33	22,133	3,072	22,331	34	25,437	10	15
	Chitina	Dip net	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	Dip net	1,354	1,062	1,603	29,838	111	31,552	1,913	37,791	186	39,890	0	5
	Glennallen	Fish wheel	359	321	1,474	20,163	18	21,655	1,516	22,466	18	24,000	0	20
	Chitina	Dip net	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	Dip net	1,290	1,046	970	18,042	34	19,046	1,012	19,036	36	20,084	0	1
	Glennallen	Fish wheel	375	320	1,121	14,407	30	15,558	1,210	15,541	31	16,782	0	36
	Chitina	Dip net	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
Average (2010–2019)	Glennallen	Dip net	1,042	838	913	19,153	64	20,079	2,056	23,534	80	25,669	1	35
	Glennallen	Fish wheel	514	466	1,288	36,503	99	37,889	1,392	40,075	106	41,573	4	173
	Chitina	Dip net	9,782	7,931	1,018	126,824	1,033	128,874	1,192	148,457	1,226	150,876	0	571
	Total		11,337	9,234	3,218	182,480	1,195	186,842	4,640	212,066	1,412	218,118	5	778

APPENDIX G: HERRING

Appendix G1.–Annual Pacific herring biomass indices for Prince William Sound Area harvest management years 1974–2020.

Harvest management year	Use and harvest mortality (tons)[a]	Aerial survey estimates			Peak spring acoustic biomass estimate (tons)
		Peak biomass (tons)[b]	Maximum observed biomass (tons)[c]	Mile-days of spawn[d]	
1973–1974	6,375	41,080	102,150	96.0	ND
1974–1975	5,854	ND	ND	54.0	ND
1975–1976	2,584	7,330	25,270	41.2	ND
1976–1977	2,267	16,830	15,150	78.2	ND
1977–1978	1,391	13,410	37,850	50.8	ND
1978–1979	4,138	42,100	101,920	89.0	ND
1979–1980	6,323	62,110	148,270	95.5	ND
1980–1981	14,124	77,810	162,970	144.0	ND
1981–1982	7,861	68,790	85,910	85.5	ND
1982–1983	3,181	41,850	104,145	93.5	ND
1983–1984	6,604	58,870	178,650	104.8	ND
1984–1985	7,679	20,830	65,690	156.7	ND
1985–1986	11,180	15,180	65,030	146.8	ND
1986–1987	6,281	26,530	56,745	186.8	ND
1987–1988	9,871	34,270	81,545	269.8	ND
1988–1989	[e]	56,915	188,928	228.1	ND
1989–1990	10,103	57,900	114,733	164.4	ND
1990–1991	15,196	42,765	143,495	71.5	ND
1991–1992	20,752	53,835	139,729	119.8	ND
1992–1993	2,360	20,725	121,015	50.3	ND
1993–1994	151	19,640	155,199	23.1	ND
1994–1995	0	7,113	21,110	28.2	14,639
1995–1996	0	10,691	40,874	37.3	25,346
1996–1997	5,170	10,858	97,289	64.3	44,083
1997–1998	3,849	13,817	76,966	62.0	19,456
1998–1999	49	6,366	13,430	40.7	22,397
1999–2000	0	1,610	4,446	31.7	8,024
2000–2001	0	587	1,075	14.8	7,035
2001–2002	0	646	1,433	23.6	11,791
2002–2003	0	5,600	8,951	26.1	29,864
2003–2004	0	12,305	17,650	30.4	21,046
2004–2005	0	4,773	5,230	31.7	16,800[f]
2005–2006	0	540	609	21.7	7,600[f]
2006–2007	0	770	1,615	18.3	10,700[f]
2007–2008	0	10,700	13,740	33.2	23,300[f]
2008–2009	0	1,933	2,913	29.8	16,900[f]
2009–2010	0	4,180	15,160	32.7	28,500[f]
2010–2011	0	7,570	14,380	26.2	24,000[f]
2011–2012	0	1,960	7,360	39.3	30,000[f]
2012–2013	0	1,720	5,837	29.3	24,200[f]
2013–2014	0	2,722	9,441	36.6	22,000[f]
2014–2015	0	3,540	11,032	21.6	NA[g]
2015–2016	0	746	2,175	9.89	3,453

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Harvest management year	Use and harvest mortality (tons)[a]	Aerial survey estimates			Peak spring acoustic biomass estimate (tons)
		Peak biomass (tons)[b]	Maximum observed biomass (tons)[c]	Mile-days of spawn[d]	
2016–2017	0	580	1,883	8.12	9,896
2017–2018	0	200	659	4.52	3,646
2018–2019	0	915	4,740	12.68	8,448
2019–2020	0	5,310	22,490	23.68	19,841

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] Largest single day aerial estimate of herring biomass. Does not include Kayak Island estimates.

[c] The sum of all daily aerial biomass estimates for a given year. Does not include Kayak Island estimates.

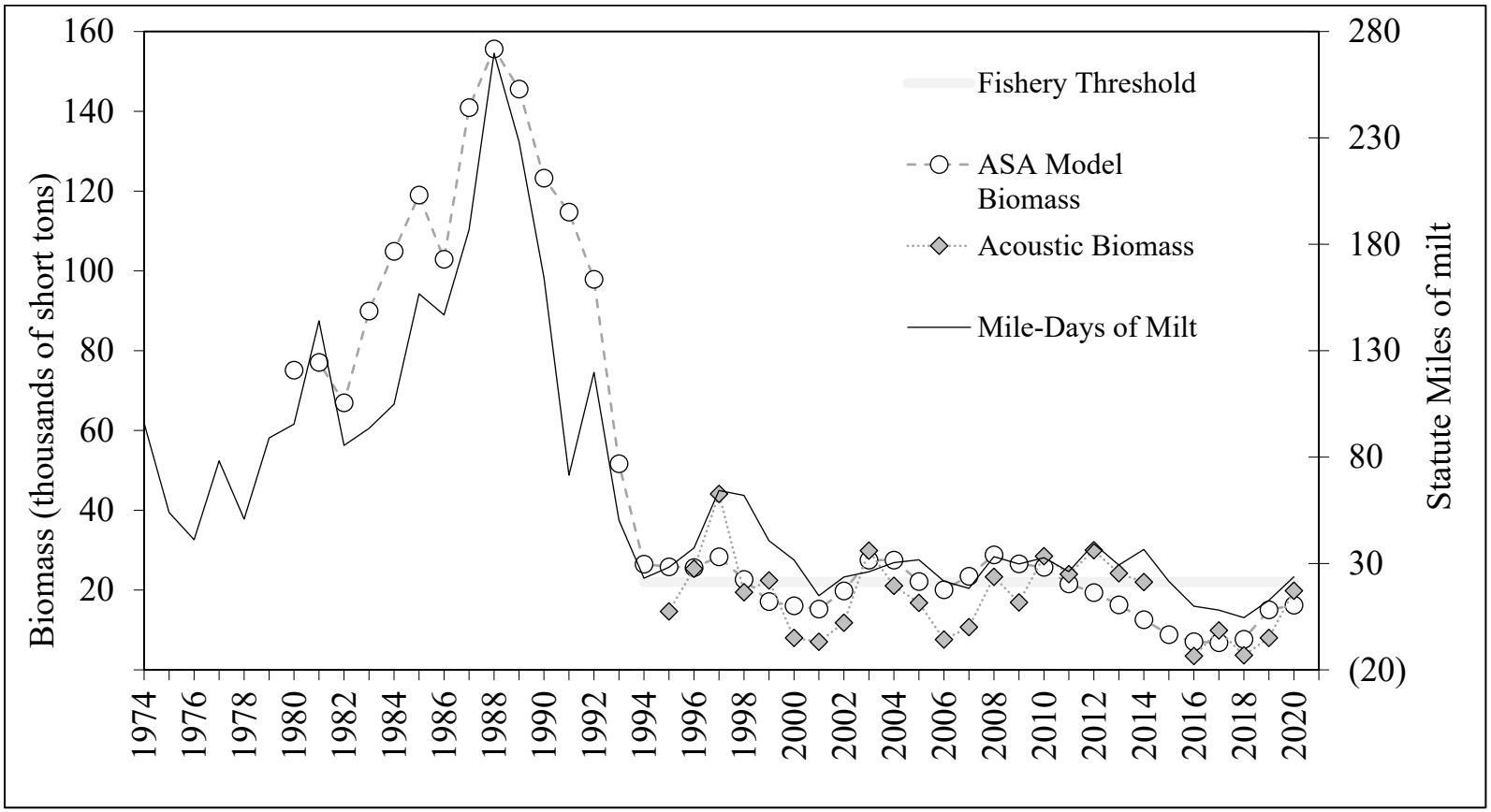
[d] Sum of the daily observed linear miles of herring milt calculated in ArcMap from digitized hand-annotated paper maps and data collected electronically.

[e] All herring commercial fisheries in PWS were closed in the spring of 1989 because of the potential for the contamination of harvests from the T/V *Exxon Valdez* oil spill.

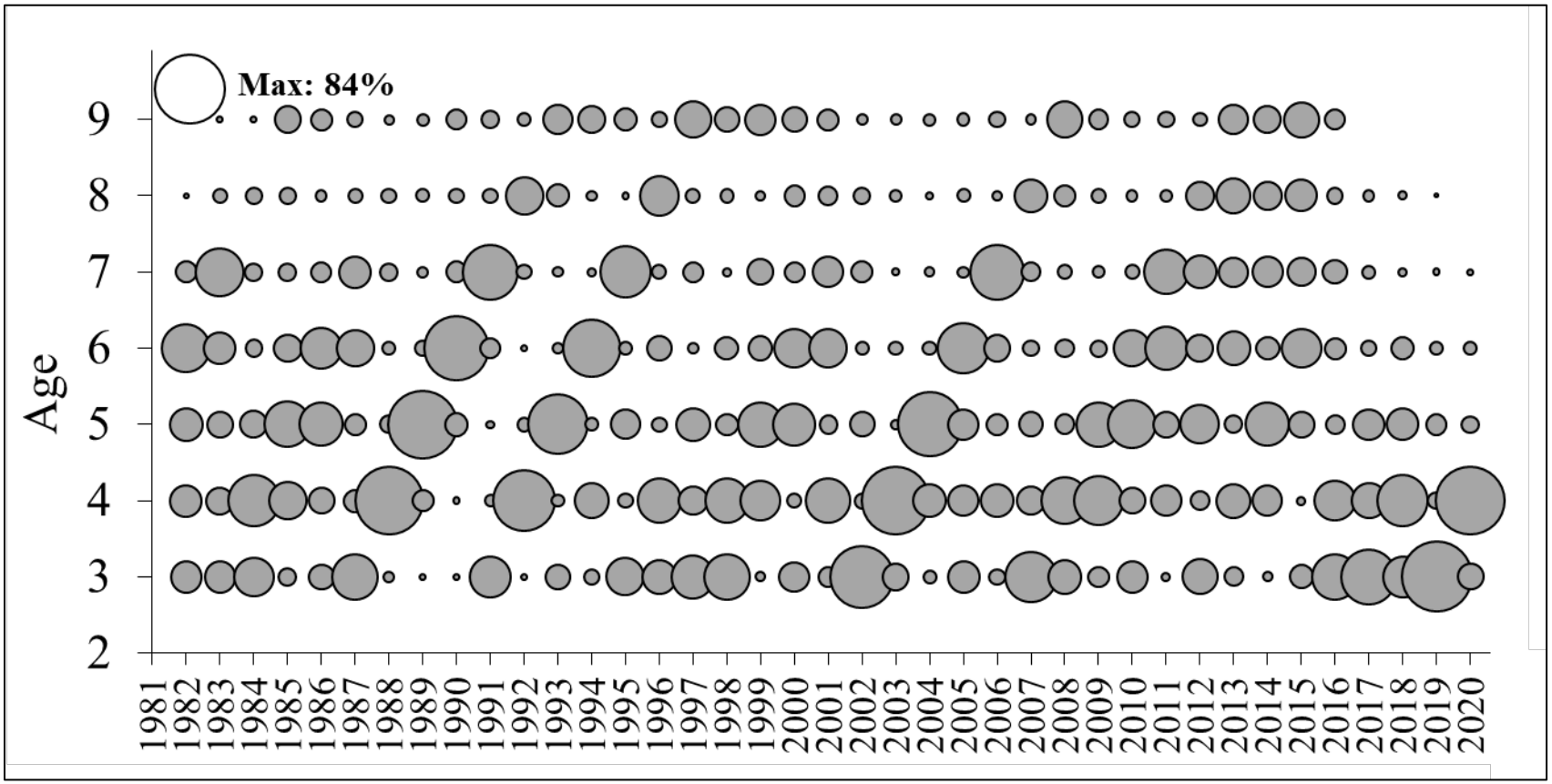
[f] Acoustics estimates for 2005–2014 are from ADF&G surveys only and are not adjusted for maturity or subsequent harvest. Therefore, they represent the total biomass and not the spawning biomass.

[g] Estimates are not available.

Appendix G2.–Prince William Sound Area annual Pacific herring biomass indices by management year, 1974–2020.



Appendix G3.–Spring Prince William Sound Pacific herring age composition by year, 1982–2020.



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

Appendix G4.–Location of spawning herring and mile-days of spawn observed during aerial surveys in the Prince William Sound Area, 2020.