Fishery Management Report No. 21-20

2018 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**

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF APPENDICES (Continued)

LIST OF APPENDICES (Continued)

ABSTRACT

The 2018 Prince William Sound (PWS) management area commercial common property salmon harvest was 25.00 million fish. The harvest included 8,400 Chinook *Oncorhynchus tshawytscha,* 1.31 million sockeye *O. nerka,* 513,200 coho *O. kisutch*, 20.17 million pink *O. gorbuscha*, and 3.00 million chum salmon *O. keta*. An additional 4.34 million salmon were sold for hatchery cost recovery. The estimated value, including hatchery sales, was approximately $94.43 million. During the 2018 season, 509 drift gillnet, 26 set gillnet, and 234 purse seine permit holders recorded at least 1 landing. Drift gillnet exvessel value was an estimated $37.22 million; set gillnet exvessel value was an estimated $2.40 million; purse seine exvessel value was an estimated $38.49 million. Revenue generated from hatchery cost recovery and raceway sales was approximately $16.31 million. The PWS management area personal use and subsistence salmon fisheries (including state and federal upper Copper River personal use and subsistence fisheries) harvested a total of 152,000 fish. Approximately 2,980 subsistence and 4,980 personal use permits were issued. The commercial Pacific herring *Clupea pallasii* fishery in the PWS management area was closed in 2018 for the 18th consecutive year because age structure and available surplus in the spawning biomass did not support a fishery.

Key words: Pacific salmon *Oncorhynchus* spp., Pacific herring *Clupea pallasii*, harvest, hatchery, 2018, annual management report AMR, Copper River, Prince William Sound

INTRODUCTION

OVERVIEW OF MANAGEMENT AREA AND COMMERCIAL SALMON AND HERRING FISHERIES

The Prince William Sound (PWS) management area, salmon net registration Area E, encompasses all coastal waters and inland drainages entering the north central Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). Area E is divided into 11 districts that correspond to the local geography and distribution of the 5 species of salmon harvested in the commercial fishery (Figure 2). The management goal for all districts is to achieve salmon spawning escapement goals while allowing for the orderly harvest of fish surplus to spawning requirements. The Alaska Department of Fish and Game (ADF&G) follows regulatory plans to manage fisheries and allows private nonprofit (PNP) hatcheries to achieve cost-recovery and broodstock objectives.

Six hatcheries contribute to the area's fisheries. Gulkana, Cannery Creek, Armin F. Koernig, Wally Noerenberg, and Main Bay hatcheries are operated by Prince William Sound Aquaculture Corporation (PWSAC). Gulkana Hatchery (GH) in Paxson augments production of sockeye salmon *Oncorhynchus nerka* to the Copper River. Cannery Creek Hatchery (CCH), located on the north shore of PWS, and Armin F. Koernig Hatchery (AFK) in the southwestern sound produce pink salmon *O. gorbuscha*; Wally Noerenberg Hatchery (WNH) in the northwestern sound produces pink, chum *O. keta*, and coho *O. kisutch* salmon; and Main Bay Hatchery (MBH) in the western sound produces sockeye salmon. Valdez Fisheries Development Association (VFDA) produces pink and coho salmon at the Solomon Gulch Hatchery (SGH) in Port Valdez.

ADF&G forecasts PWS wild salmon runs, but hatchery run projections are provided by PWSAC and VFDA and are summarized in the hatchery's annual management plan (e.g., VFDA 2018a). A hatchery annual management plan provides guidance about production goals, broodstock development, and harvest management of PWS hatchery returns (PWSAC 2018a and VFDA 2018a). PWS hatchery permit holders 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 2018b and VFDA 2018b) and are summarized by Stopha (2019).

Salmon may be harvested using purse seine, drift gillnet, and set gillnet; however, not all gear types are allowed in all districts. Drift gillnets are the most numerous gear used and are allowed in

the Bering River, Copper River, Coghill, Unakwik, and Eshamy Districts. Set gillnet gear is allowed only in the Eshamy District. Purse seine gear is allowed in the Eastern, Northern, Unakwik, Coghill, Northwestern, Southwestern, Montague, and Southeastern Districts.

The *Prince William Sound Management and Allocation Plan* (5 AAC 24.370) aims to provide a fair and reasonable allocation of harvest of enhanced salmon across gear types and thereby ease conflict between user groups. ADF&G calculated the exvessel value percentages for each gear group using the Commercial Operators Annual Report (e.g., COAR 2018) area--specific prices and weights and ADF&G harvest estimates of PWSAC enhanced fish by species and gear type. If the set gillnet gear group exceeds 5% of the 5-year average value of PWSAC enhanced stocks, then they are limited to no more than 36 hours of fishing time per week beginning July 10 in the year following this calculation. If the drift gillnet gear group harvest value is 45% or less, then in the year following the calculation, the drift gillnet gear group shall have exclusive access to the Port Chalmers Subdistrict to harvest enhanced salmon returns from June 1 through July 30, during fishing periods established by emergency order (EO). If the purse seine gear group harvest value is 45% or less, then in the year following the current calculations, the purse seine gear group shall have exclusive access to the Esther Subdistrict to harvest enhanced salmon returns from June 1 through July 30, during fishing periods established by EO.

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 while maintaining 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.

OVERVIEW OF 2018 SALMON AND HERRING FISHERIES

The 2018 PWS management area commercial salmon harvest was 25.00 million fish. The harvest included 8,400 Chinook *O. tshawytscha,* 1.31 million sockeye, 513,200 coho, 20.17 million pink, and 3.00 million chum salmon (Table 1; Figure 3). An additional 4.34 million fish were harvested in the hatchery cost-recovery fishery (Table 1). Preliminary exvessel values from the commercial common property fishery (CCPF) are $38.49 million (49.3%) for purse seine, $37.23 million (47.6%) for drift gillnet, and $2.40 million (3.1%) for set gillnet (Table 2; Figure 4). The average price per pound paid to fishermen was above the 10-year (2008–2017) average for all species of salmon harvested in PWS (Table 3). The purse seine exvessel value was the fourth lowest in the last 10 years and below the 10-year average (Table 4). Drift gillnet exvessel value was below the 10-year average, and set gillnet was above average (Table 4).

No commercial herring fisheries occurred in 2018 because the projected spawning biomass for spring 2018 was well below the regulatory minimum spawning biomass of 22,000 short tons. Aerial surveys resulted in the lowest estimate of annual mile-days of spawn since 1974 (Appendices G1 and G2).

SALMON SEASON SUMMARY BY DISTRICT

COPPER RIVER DISTRICT

The Copper River District includes all waters of the Gulf of Alaska between Hook Point and Point Martin (Figure 1). The average 10-year commercial harvest from the Copper River District was 12,900 Chinook, 1.29 million sockeye, and 225,000 coho salmon (Appendix A4). The 25-year average was 32,300 Chinook, 1.42 million sockeye, and 273,000 coho salmon Appendix A4). The 2018 harvest was 7,600 Chinook, 46,500 sockeye, and 304,000 coho salmon (Appendix A4).

ADF&G, with direction from the Alaska Board of Fisheries (BOF), manages salmon runs to the Copper River District to assure sustained yield and meet all user group allocations, as outlined in 5 AAC 24.360, *Copper River District Salmon Management Plan*. 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 BOF 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 the entire 2-week period to increase the probability of meeting the Chinook salmon escapement goal.

Management tools such as inriver sonar, aerial surveys, Chinook salmon mark–recapture estimates, and harvest data provide fishery managers with indices of abundance used to manage Copper River fisheries. ADF&G relies primarily on the inriver passage index provided by dual-frequency identification sonar (ARIS) units at Miles Lake (e.g., Malherek et al. 2015) to manage the commercial fishery and provide upriver escapement and fishery allocations. Additionally, ADF&G uses data from upper river aerial surveys, thermal and strontium chloride marked otoliths, weirs, and towers to help prosecute the *Copper River District Salmon Management Plan*.

The Copper River District commercial fishing season opens in mid-May, and commercial fishing periods are established inseason by EO. Fishing time has steadily been reduced over the years in response to increased efficiency of the commercial fleet and reallocations by the BOF.

The current sustainable escapement goal (SEG) is a range of 360,000–750,000 wild sockeye salmon for the upper Copper River (Moffitt et al. 2014).

The components of the 2018 inriver goal from 5 AAC 24.360 were as follows:

- Spawning escapement: 360,000–750,000
- Other salmon: 17,500 salmon
- Subsistence harvest: 77,000 salmon
- Personal use harvest: 130,500 salmon
- Sport fishery: 15,000 salmon
- Gulkana Hatchery broodstock: 20,000 sockeye salmon (estimated annually)
- Gulkana Hatchery surplus: 24,300 sockeye salmon (estimated annually)
- Total: 644,000–1.03 million

The daily inriver goal is the number of salmon needed to pass the Miles Lake sonar to meet the overall inriver goal. For 6 of the 7 inriver goal components, the daily inriver goal is calculated using wild and enhanced salmon run timing. The subsistence harvest component, however, is calculated using only wild stock run timing. This is required by AS 16.05.940(34), which states that "subsistence uses means the noncommercial, customary and traditional uses of *wild*, renewable resources...".

Preseason Outlook and Harvest Strategy

The 2018 commercial harvest forecast for the Copper River District was 13,000 Chinook, 942,000 sockeye, and 226,000 coho salmon (Appendix A9). The GH enhanced sockeye salmon run was forecast by ADF&G to be 148,000 fish (Haught and Vega 2018). The 2018 inriver goal for the entire season equated to a sonar goal of 601,000 salmon by July 28, which was the season ending date for sonar counting at Miles Lake in 2017 (Appendix A6).

During years when Miles Lake sonar is not operational prior to the first commercial opening, early season management of the Copper River District is based on harvest. Environmental conditions, fishing effort, and harvest consistency throughout the period are also considered. In late May, sonar counts, and commercial harvest information become the primary factors governing 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 sockeye and coho salmon systems is compared to a historical weekly escapement index. The SEG range for Copper River Delta sockeye salmon stocks is 55,000–130,000 fish (Table 5; Bue et al. 2002).

Typically, coho salmon management begins in the third week of August. The historical precedent is to provide an initial single 24-hour period 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 during the early portion of the coho salmon run probably underestimate salmon abundance due to other species of salmon remaining in tributaries, which makes accurate species identification problematic. Additionally, stormy fall weather makes weekly survey flights difficult. The SEG range 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 2018 Copper River sockeye salmon total run was 819,000 fish: 46,500 fish (5.7%) were commercially harvested and sold, 137,000 fish (16.7%) were harvested by upriver subsistence and personal use fishers, and an estimated 2,943 (0.3%) were harvested by upriver sport fishers (Appendix A1). Other harvest categories in total represented less than 1% of the total run and were lower than the 10-year average in their respective categories except for Copper River District subsistence harvest, which was nearly double the 10-year average. Upriver wild sockeye salmon escapement was 479,000 (58.4%), the Copper River Delta escapement was 117,000 (14.3%), and 30,300 (3.7%) fish returned to the GH release sites (Appendix A1). Overall, 629,000 (76.8%) of the sockeye salmon originated from upriver wild stock systems, 127,000 (15.5%) from Copper River Delta wild stock systems, and 63,600 (7.8%) from the GH (Appendix A2).

The 2018 Chinook salmon total run was 61,700 fish, of which 7,620 (12.4%) were commercially harvested and sold, 1,400 (2.3%) were harvested through educational and subsistence permits in the Copper River District, and 85 (<1%) were retained by commercial permit holders as homepack (Appendix A3). Homepack fish are defined in 5 AAC 39.010 as finfish retained from lawfully taken commercial catch for that fisher's use. A total of 9,040 (14.7%) were harvested by upriver personal use and subsistence users, an estimated 1,320 (2.1%) were harvested by sport anglers, and the remaining 42,200 (68.4%) represent spawning escapement (Appendix A3). Spawning escapement was 75.8% above the lower bound SEG of 24,000 for Copper River Chinook salmon.

The Copper River commercial common property sockeye salmon harvest of 46,500 was 94.3% below the 10-year average of 1.29 million sockeye salmon (Appendices A1 and A4). The commercial harvest of 7,620 Chinook salmon was 40.7% below the 10-year average of 12,900 fish. The overall commercial harvest of Chinook salmon was the lowest harvest in 60 years (Appendix A4). The overall commercial sockeye salmon harvest from the Copper River District was the second lowest harvest in the last 100 years. When the fishery occurred, run entry was thinly distributed across the district. Fishing and harvest efforts concentrated nearshore and sockeye salmon harvest was poor throughout the entire district.

A total of 484 of 532 drift gillnet permit holders were active in the Copper River District in 2018 (Appendix A5). Fishing effort and harvest peaked during the third fishing period that began May 28 when 431 permits harvested approximately 3,100 Chinook and 21,100 sockeye salmon (Appendix A5).

The 2018 cumulative Miles Lake sonar count on July 28 (last day of operation) was 701,600 salmon, which was within the inriver goal range and approximately 48,200 fish below the long-term average (1978–2017; Appendices A6–A8).

The final escapement index count for the Copper River Delta systems was 58,500 sockeye salmon and was within the SEG range of 55,000–130,000 fish (Table 5; Appendix A10). Since 2008, the escapement index has ranged from 51,600 in 2016 to 82,835 in 2010 (Appendix A11). In 2018, 2 aerial surveys of upper Copper River index streams were conducted to evaluate the distribution of sockeye salmon (Appendix A12).

Based on otolith mark analysis, an estimated 6,409 GH sockeye salmon were harvested in the Copper River District commercial fishery in 2018, which was the lowest harvest in the last 30 years (Appendix E2) and well below the 10-year average commercial harvest of 195,000 GH sockeye salmon (Appendix E3). Additionally, there were no MBH sockeye salmon estimated in the Copper River District commercial harvest (Appendix E2).

In 2018, the sockeye salmon run produced by the Gulkana hatcheries totaled 63,000 fish (Appendix E3). This was 76.6% below the PWSAC total run forecast of 278,000 fish (PWSAC 2018a). A total of 30,300 sockeye salmon were reported as collected for broodstock or escaped into the watershed (Appendix E3). Of these fish, 12,600 were harvested for broodstock, and an estimated 17,700 sockeye salmon returned to release locations and were not harvested (PWSAC 2018b).

Miles Lake sonar began operations on May 13, with the north bank sonar being operated daily for short periods. The first observed salmon were counted on May 18, when 27 fish passed the north bank sonar. The Miles Lake sonar became fully operational on May 23 (Appendices A6 and A7).

The *Copper River King Salmon Management Plan* (5 AAC 24.361) states that ADF&G will manage all Copper River fisheries (commercial, sport, personal use, and subsistence) to achieve an SEG of 24,000 or more Chinook salmon. The 2018 Copper River Chinook salmon total run forecast was 43,000 fish (range 19,000–66,000 fish; Haught and Vega 2018). Due to this poor Chinook salmon forecast, closed waters described in 5 AAC 24.350(1)(B) were expanded to include inside waters east of Kokinhenik Bar, essentially closing most waters inside barrier islands east of Copper Sands. The reduction in channelized shallow water fishing area was intended to reduce Chinook salmon harvest potential while allowing a more aggressive sockeye salmon fishery in outside waters. These closures were continued through May 28 and affected the first 3 fishing

periods prior to the extended fishery closure. The season start day was delayed from May 14 to May 17, the fishing period frequency was limited to a maximum of 2 per week, and the duration was maintained at 12 hours per period through mid-August. Through this timeframe, the commercial fishery was open 96 hours, which was the lowest number of hours fishing in the history of the fishery (Appendix A5). Upriver sport, personal use, and subsistence fisheries were also restricted in 2018. Chinook salmon harvest in the commercial fishery was above semi-weekly harvest projections for the 3 commercial fishing periods that occurred prior to the month-long fishery closure. Upriver harvest was also higher than projected for time fished.

The first Copper River District commercial fishing period on Thursday, May 17, was for 12 hours, and 339 commercial drift gillnet permit holders fished. Harvest from this period was 2,000 sockeye salmon and 3,000 Chinook salmon (Appendix A5). The sockeye salmon harvest for this fishing period was 94.8% below the anticipated harvest of 38,600 fish (Appendices A5 and A9). Processors reported paying a grounds base price of up to $16.00 per pound for Chinook and $12.00 per pound for sockeye salmon. Spring tides with a tidal exchange of nearly 18 feet occurred during the first fishing period. Normally, these large tidal cycles contribute to salmon movement and passage, often correlating to high levels of harvest and inriver passage. These tides helped corroborate the low abundance of sockeye in the district through below anticipated counts at Miles Lake, 5 to 10 days after the fishing period, during a time when a strong passage would have been expected (Appendices A6 and A7).

Harvest increased during the following 12-hour period when 267 permit holders landed and sold 4,100 sockeye and 1,500 Chinook salmon (Appendix A5). Like the first fishing period, this increased sockeye salmon harvest was still approximately 95% below the projected harvest (Appendices A5 and A9). Due to continued low harvest, the commercial fishery remained closed Thursday, May 24.

The third period was announced Saturday, May 26, and Miles Lake sonar had been fully operational for 3 days. With a cumulative count of approximately 5,900 salmon (actual plus projected for the current day) compared to a minimum escapement objective of 24,211 salmon, it was clear that the odds for an exceptionally small run were rising (Appendices A6 and A7). In response, fishing time for the third period was maintained at 12 hours. Sockeye salmon harvest of 21,100 fish from this fishing period was 78.4% less than the expected harvest. Chinook salmon harvest of 3,100 fish was roughly one and a half times expected (Appendices A5 and A9). The mix of sonar counts continuing well below anticipated daily counts and below-average sockeye salmon harvests indicated that a more conservative management approach was still warranted, despite the above-average Chinook salmon harvest. Low inriver sockeye salmon passage at Miles Lake resulted in the continued commercial fishery closure into the second week of July, adding up to 40 days of continuous closure.

Aerial surveys became an increasingly important sockeye salmon management tool during late June and throughout much of July. The Copper River Delta aerial survey index was below the lower end of the escapement index range during mid-to-late-June (Appendices A10 and A11). The low aerial survey escapement indices provided confirmation that the commercial fishery should remain closed. Without commercial exploitation, delta sockeye salmon escapement was exceptionally low and necessitated continued conservative management.

A once-a-week test fishery began June 25 to sample sockeye salmon for age, sex, and size, hatchery contributions (strontium-marked otoliths), and genetic stock group composition. The test

fishery sample size was set at 300 salmon as a minimum number of fish for a representative sample and enough fish to cover the contractor's time and effort. The GH contribution estimates and genetic stock group composition estimates were a critical management tool during late June and early July and allowed tracking of hatchery run strength relative to wild stock run strength. The GH otolith contributions were 36.0% during the June 25 test fishery and 48.0% during the July 3 test fishery, which indicated that the hatchery sockeye salmon run was consistent with recent historical proportions for this time period (Appendix E2). During the first and second sampling events, the Copper River Delta sockeye salmon stock group proportions averaged near 20% of these samples and were lower than anticipated considering the proximity to peak timing in the district for this stock group (Appendix A13).

The aerial survey index for the week of July 7 was 43,000 sockeye salmon and near the average target for the week (Appendices A10 and A11). On July 4, the Miles Lake cumulative sonar count exceeded the minimum cumulative projected count for the first time since the start of the season; this continued for the rest of the season (Appendix A6). Due to improving sonar and aerial survey counts, the commercial fishery reopened on July 9 for a 12-hour fishing period. Harvest from this period was 5,000 sockeye salmon and 8 Chinook salmon compared to a projected harvest of 42,500 fish (Appendices A5 and A9). Genetic sampling during the fishing period resulted in an increase to 25.3% in the delta sockeye salmon stock group contribution (Appendix A13). The decision to close the commercial fishery for another 10 days after the July 9 fishing period was tied to low numbers of delta sockeye salmon in the harvest (genetic sampling) and the minimal building trend in Copper River Delta sockeye salmon escapement indices through the third week of July (Appendices A10 and A13). This strategy was supported by historical run timing of wild and enhanced stocks, both being past peak and by low numbers of delta sockeye salmon harvested in the commercial fishery. Based on genetic sampling during the test fishery, Gulkana sockeye salmon were near peak abundance (55.1%) in the commercial district during the first week of July and began to decline (44.5%) starting with the July 9 fishing period (Appendix A13). For comparison, GH otolith contribution estimates for these 2 sampling periods were 48.0% and 47.9%, respectively. The historical average time period of peak GH abundance, which is consistent with most wild stocks in the Gulkana River drainage, is during the last week of June and first week of July.

During the fishing period that started on July 19, the GH sockeye salmon proportion declined to 33.3% and continued to show a general declining trend over the next 2 weeks. Sockeye salmon harvest during the July 19 fishing period was 7,600 fish. With daily sonar passage above projected daily objectives and aerial survey indices within the lower end of the escapement index range, one 12-hour fishing period per week was provided through the start of coho salmon season in mid-August. The average harvest during these fishing periods was 1,100 sockeye salmon (Appendices A6, A7, A10, and E2).

Participation in the sockeye salmon commercial fishery never rebounded after the extended closure that started in late May. Participation declined from over 400 permits at the end of May to a range of 28–118 permits per period from the middle of July to the middle of August (Appendix A5). The large decline in participation was due to consistently weak sockeye salmon harvest, extended closures, and opportunities in fisheries on the western side of PWS.

Historically, 5-year-old sockeye salmon make up 70–85% of the Copper River run, and 5-year-old Chinook salmon make up 50–80% of the run. Most of the sockeye salmon harvested commercially (58.9%) were 5-year-old fish from brood year 2013, followed by 4-year-old fish (36.8%) and

6-year-old fish (3.2%; Appendix A14). Most commercially harvested Chinook salmon (75.8%) were 5-year-old fish from brood year 2013, followed by 4-year-old fish (16.1%) and 6-year-old fish (8.1%) (Appendix A14).

Coho Salmon Fishery Season Summary

The 2018 coho salmon run was estimated to be 428,000 fish (Appendix A16). The total run size for coho salmon in the Copper River 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 304,000 coho salmon were harvested and sold commercially, 2,600 were reported retained as homepack, 200 fish were harvested from the Copper River District in the subsistence gillnet fishery, and an estimated 11,700 were harvested by sport anglers on the Copper River Delta near Cordova (Appendix A16). In the upper Copper River fisheries, 1,500 fish were harvested by personal use and subsistence dip net fishers in the Chitina Subdistrict, 150 fish were harvested in the Glennallen Subdistrict dip net and fish wheel subsistence fisheries, and 8 fish were also harvested by upriver sport anglers. Finally, 260 coho salmon were harvested in the federally managed Copper River Delta subsistence fishery (Appendices A16 and F6). The Copper River Delta spawning escapement index of 53,800 coho salmon was within the SEG index range of 32,000–67,000 (Table 5; Appendix A17). This index value was slightly higher than the low index values from 2009 to 2015 (Appendix A18).

The coho salmon commercial harvest of 304,000 was above the harvest projection of 226,000 fish (Appendix A9). Peak fishing effort for the coho salmon season occurred on August 30 when 343 permit holders delivered 28,300 coho salmon. Peak harvest occurred over 3 periods between August 20 and August 27, when harvests ranged between 41,250 and 57,870 coho salmon in each of these periods (Appendix A5). Rough seas and inclement weather probably had a consistently negative effect on harvest levels of coho salmon through a reduction in fishing effort and harvest efficiency.

Coho salmon harvest first exceeded sockeye salmon harvest on August 9, which signaled a shift to coho salmon management the following week (Appendix A5). This shift in species harvest was 1 week earlier than the previous year and a sign of early coho salmon run timing. Harvest from the August 16 fishing period was 34,700 coho salmon, and 191 permit holders reported deliveries. This period yielded a harvest that was 27.6% above the projected weekly harvest of 27,200 coho salmon and prompted a move to 2 periods per week starting the following week (Appendices A5 and A9). The 24-hour fishing periods that started on August 20 and August 23 resulted in a combined harvest of 99,100 coho salmon delivered through 713 total landings (Appendix A5). An aerial survey flown during the week ending September 1, under good conditions, produced a count of 33,000 coho salmon in index streams, which was within the escapement target range for this week (Appendix A17). Coho salmon harvest decreased during the August 27 (43,500 fish) and August 30 (28,300 fish) fishing periods.

During the next fishing period on Monday, September 3, effort declined, and harvest increased slightly when 224 permit holders harvested 32,600 coho salmon. Although the following period increased participation to 233 permit holders, the harvest declined to 21,300 coho salmon. The actual harvest for this week totaled 53,900 compared to an expected harvest of 41,000 fish. An aerial survey flown during the week ending September 8, under poor conditions, documented 46,600 coho salmon in index streams, which was just above the upper end of the index for the date (Appendix A17). The escapement index remained just above the escapement index range for the

following survey and allowed the fishery to remain on a schedule of 48 hours per week until the season closed October 12 (Appendices A5, A9, and A17).

Harvest averaged 7,900 coho salmon per period, and effort averaged 113 permit holders per period during the following 5 fishing periods (September 10-25) and was on par with historical weekly harvest averages for this time frame. All major processors stopped buying fish prior to the September 27 fishing period in which 240 coho salmon were harvested by 5 permit holders. Because the major processors were done buying, effort and harvest remained minimal over the last weeks of the season, and commercial fishing in the Cooper River District concluded on October 12 (Appendices A5 and A9).

Inclement weather in the fishing district and Copper River Delta hampered the aerial survey program throughout coho salmon season. Escapements observed during the completed surveys, combined with effort and harvest data, provided enough information to continue a regular fishing schedule throughout most of the season (Appendices A9 and A17).

The majority of coho salmon harvested commercially (52.9%) were 3-year-old fish, and 4-year-old (46.2%) and 5-year-old (0.9%) fish contributed most of the remaining harvest (Appendix A19).

BERING RIVER DISTRICT

Preseason Outlook and Harvest Strategy

Historically, the Bering River District has opened to sockeye salmon harvest in early June and is managed concurrently with the Copper River District. In recent years, ADF&G has identified a limited harvestable surplus of Bering River sockeye salmon and announced preseason that the district would probably not open until escapement levels were within the weekly escapement index range.

Sockeye Salmon Season Summary

In an effort to reduce enforcement concerns associated with the line fishery on the eastern edge of the Copper River District, the western edge of the Bering River District was opened concurrently with the start of Copper River District periods beginning May 17. When possible, commercial fishing periods in the Bering River District are concurrent with openings in the Copper River District. Due to limited early season escapement data, a precautionary approach was warranted in 2018 (Appendix A21). The first aerial survey of the Bering River District was flown during the week ending June 16. No sockeye salmon were observed during this survey and, because the anticipated escapement index range was 4,000–8,900 sockeye salmon for this week, the likelihood of an independent fishing period during the extended Copper River District closure became improbable. The following survey was flown under poor observational conditions during the week ending June 30 and resulted in an escapement count of 550, which was far below the escapement index range of 11,000–24,200 sockeye salmon for the week (Appendix A21).

The third aerial survey flown under good observational conditions was conducted the week ending July 7. The escapement index of 11,400 sockeye salmon was between the lower anticipated index (11,000) and average index (17,700) for the week. Sockeye salmon escapement was again low during the fourth survey. The index count during the fourth survey was only 900 sockeye salmon due to high turbidity in Bering Lake and Shepherd Creek drainages. The fifth survey observed 8,200 fish, and the sixth survey observed 5,100 fish; observational conditions were good for both surveys. These late-July surveys were well outside of historical peak timing for Bering Lake

sockeye salmon and probably indicated that the peak counts for the run were during the first 2 weeks of July when observational conditions were poor (Appendix A21).

During a typical season in the Bering River District, due to inaccurate reporting, it is often difficult to estimate Bering River District harvest inseason. Often, a fisher will deliver catch from the Bering River District to a tender in the Copper River District, but the harvest will be reported as the Copper River District. This error is often resolved when fish tickets are entered.

The final sockeye salmon escapement index was 13,300 fish, which was1,700 fish below the SEG lower bound of 15,000 fish and probably represented an underestimate of escapement due to poor observational conditions during peak run timing. The total sockeye salmon harvest in the district was 33 fish (Appendices A21 and A22).

Coho Salmon Season Summary

Late-season weather conditions prohibited several aerial surveys in the Bering River District. The Bering River District coho salmon run was on time, and the final escapement was within the SEG range for the district (Appendix A23). Commercial harvest of 119,900 was the second largest since 1995 and was well above the 10-year average (Appendix A20).

Harvest from the period that began August 20 was 5,100 coho salmon, and 8 permit holders participated in the fishery. Low effort is not unusual during this period because most effort is focused on earlier-timed coho salmon stocks in the Copper River District during mid-to-late-August. Harvest and effort picked up the following week (August 27 and August 30 fishing periods) with harvests of 19,590 and 12,550 coho salmon (Appendix A21). Harvest remained elevated during the first half of September and ranged between 13,900 and 26,680 coho salmon per period. The number of fish harvested was nearly 4,000 fish more per period than the last week of August and effort was 37.9% greater during these 3 early September fishing periods, which indicated that run entry had peaked (Appendix A21). Due to weather, a comprehensive survey of Bering River District index systems was not possible until late August. When a survey was finally flown during the week ending September 1, 14,400 coho salmon were observed compared to a projected range of 8,700–22,200 fish (Appendix A23). This survey corroborated the pattern of continued strong run entry that was apparent in the commercial fishery.

The aerial survey flown the week ending September 8 yielded an index of 26,500 coho salmon, which was above the upper end of the range of 8,800–22,300 for the week (Appendix A23). This was the peak for observed escapement in 2018. Aerial survey indices in some index systems would probably continue 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 26,500 coho salmon and within the SEG range of 13,000–33,000 (Appendix A23).

The coho salmon fishing opportunity in the Bering River District followed the schedule implemented in the Copper River District. Harvest and effort followed a similar pattern to aerial survey observations and peaked about the same time as the highest escapement observation. The Bering River District experienced high fishing pressure during the 2018 season. A total of 159 permit holders fished during the season, and a peak effort of 113 permit holders fished during the 24-hour period that began September 10, when the peak harvest of 26,700 coho salmon occurred. Harvest and effort declined rapidly after the September 17 fishing period, and 1,900 coho salmon were harvested after this date (Appendix A21).

COGHILL DISTRICT

Preseason Outlook and Harvest Strategy

The 2018 Coghill Lake sockeye salmon total run forecast was 95,000–407,000 (point estimate of 183,000 fish; Haught and Vega 2018). Meeting the median historical escapement estimate of 30,000 sockeye salmon (SEG range of 20,000–60,000; Table 5) would leave 153,000 fish (forecast range 65,000–377,000) available for harvest (Haught and Vega 2018). The enhanced chum salmon run to WNH was forecast to be 3.12 million fish (PWSAC 2018a). PWSAC's projection for cost-recovery and broodstock requirements was 656,000 fish, leaving 2.47 million chum salmon for the CCPF. An estimated run of 87,000 coho salmon was projected to return to WNH of which, 2,700 were anticipated to be harvested for broodstock, leaving 84,300 fish available to the CCPF (PWSAC 2018a).

Season Summary

Early season management of the Coghill District is largely based on Coghill Lake sockeye salmon escapement past the Coghill River weir. Escapement assessment began on June 9, 2018. On June 17, an extreme high-water event blew out most of the weir panels, and counts were suspended. The cumulative passage to date at that point was 1,600 sockeye salmon (Appendices B1 and B2). After a resupply of equipment to repair tripods and panel stringers and a complete re-installation of the weir, normal operations resumed on June 30. Peak daily sockeye salmon passage occurred July 3, when 7,350 fish passed the weir (Appendices B1 and B2). A second high-water event caused the weir to wash out a second time on July 9. Due to the actual count of sockeye salmon (30,954 fish) being within the SEG bounds of 20,000–60,000 fish, the weir was not replaced for the final 2 weeks of the season (Table 5; Appendices B1 and B3). This number is lower than the actual escapement into the lake because many days went uncounted. However, during high-water events, fish passage is assumed to be low, and total season passage was either within or higher than the upper SEG bound. No pink salmon were counted passing the Coghill River weir in 2018 (Appendix B1); however, escapement goals were met for chum and pink salmon in the Coghill District (Appendix D1).

The total Coghill District commercial drift gillnet harvest was 187,000 sockeye, 4,300 coho, 286,400 pink, and 1.80 million chum salmon, by 447 permit holders in 2018 (Table 1; Appendices B4 and B6). The total combined CCPF purse seine and drift gillnet salmon harvest for the Coghill District was 189,300 sockeye (98.8% drift gillnet), 10,700 coho salmon (40.4% drift gillnet), 973,500 pink salmon (29.4% drift gillnet), and 1.81 million chum salmon (99.8% drift gillnet; Table 1; Appendix B6).

In 2018, PWSAC reported a WNH chum salmon purse seine cost-recovery harvest of 304,700 fish, raceway sales of 29,028 fish, and broodstock carcass sales of 134,500 fish (Appendix E5; PWSAC 2018b). The broodstock goal for chum salmon was 201,000 fish (PWSAC 2018a). Of the fish collected for broodstock, 134,500 were viable. PWSAC reported harvesting 1,900 viable coho salmon as part of broodstock collection, which was short of the 2,700 fish goal (PWSAC 2018 a-b).

Based on otolith thermal mark data, enhanced salmon made up an estimated 44.3% of the sockeye salmon, 76.8% of the pink salmon, and 98.1% of the chum salmon harvested by the CCPF in the Coghill District (Appendices E6–E8). An estimated 83,900 (44.3%) MBH and 105,400 (55.7%) wild sockeye salmon were harvested in the Coghill District commercial fishery for a total of

189,300 sockeye salmon (Appendix E6). Of the 973,000 pink salmon harvested in this district by the CCPF, 553,500 (56.9%) were released at WNH, 186,500 (19.2%) were released at CCH, 5,100 (0.5%) were released at SGH, and 2,400 (0.2%) were released at AFK (Appendix E7). Of the 1.81 million chum salmon harvested in the Coghill District in the CCPF, approximately 1.8 million (98.1%) originated from WNH, AFK, and the Port Chalmers remote release site (Appendix E8).

The Coghill District drift gillnet fishery began May 31 with 2 weekly openings concurrent with the Eshamy District (Appendix B4). Initially, a single 36-hour period was opened in the Coghill District, and there were 2 subsequent 36-hour periods that excluded the WNH special harvest area (SHA) and terminal harvest area (THA). Beginning June 11, fishing time was reduced to 24 hours, and the area was also restricted to limit wild sockeye salmon harvest and focus fishing effort on enhanced chum salmon in portions of the Granite Bay and Esther Subdistricts. From June 21 through June 29, the fishing area was liberalized to include the WNH THA due to the increasing strength of hatchery chum salmon and wild sockeye salmon abundance indices.

By July 9, when counting operations ended due to the second weir washout, 31,000 sockeye salmon had passed the Coghill weir, which was within the SEG (Appendices B1 and B2). Commercial fishing was liberalized in the Granite Bay Subdistrict and Port Wells north to the mouth of the Coghill River in order to harvest surplus Coghill Lake sockeye salmon. From July 9 through September 5, 470 hours of commercial fishing opportunity was provided in the Coghill District, excluding the WNH THA and SHA and, at times, portions of hatchery subdistricts, because there were no concerns for meeting escapement objectives in other areas of the district. The district closed to commercial fishing on September 5 (Appendix B4).

Peak drift gillnet fishing effort occurred during the 36-hour period beginning June 25 when 338 permit holders harvested 20,000 sockeye salmon and 434,500 chum salmon (Appendix B4). This period was also the peak drift gillnet chum salmon harvest (Appendix B4). Overall, 187,000 sockeye salmon and 1.80 million chum salmon were harvested by 447 drift gillnet permit holders during the 2018 season. This was 128.7% of the 10-year average sockeye salmon harvest and 107.6% of the 10-year average chum salmon harvest. The 2018 harvest of 4,300 coho salmon by the drift gillnet fleet was 10.1% of the 10-year average of 42,700 fish (Appendix B6).

UNAKWIK DISTRICT

Preseason Outlook and Harvest Strategy

The Unakwik District, located in the northern portion of Unakwik Inlet, is the smallest district in the PWS management area, and both drift gillnet and purse seine gear were allowed during all fishing periods. This district was established to manage Cowpen and Miners Lakes sockeye salmon runs. CCH, a pink salmon hatchery, borders the southern boundary of the district. Escapement enumeration is by aerial survey; however, the water is quite turbid in Miners Lake. The management strategy in this district has been adjusted in recent years to reduce period duration, which allows for uncertainty in sockeye salmon stock assessment.

Season Summary

Unakwik District opened for the 2018 fishing season on June 21 and followed a schedule concurrent with other districts in PWS until the district was closed for the season on July 20 (Appendix B8). The total 2018 Unakwik District drift gillnet CCPF harvest was 3,505 sockeye, 36 pink, and 16 chum salmon. Harvest of sockeye salmon was above the 10-year average, but harvests

of pink and chum salmon were below the 10-year averages (Appendix B9). There was no purse seine effort in the district during the 2018 season (Appendix B8).

ESHAMY DISTRICT

Preseason Outlook and Harvest Strategy

No preseason forecast of the sockeye salmon run to Eshamy Lake was developed in 2018, and this was the first full fishing season without escapement monitoring due to budget cuts. PWSAC projected the total MBH run of enhanced sockeye salmon would be 763,000 fish, of which 8,900 fish were required for broodstock, and the remaining 754,100 fish would be available for harvest in the CCPF (Table 6; PWSAC 2018a). According to the *Prince William Sound Management and Salmon Enhancement Allocation Plan* (5 AAC 24.370), fishing time for the set gillnet group was limited to 36 hours per week beginning July 10.

Season Summary

The 2018 total Eshamy District CCPF harvest was 140 Chinook, 1.00 million sockeye, 3,500 coho, 326,400 pink, and 141,200 chum salmon (Table 1 and Appendix C3). A total of 336 drift gillnet permit holders and 27 set gillnet permit holders participated in the Eshamy District fishery in 2018 (Appendices C1 and C2). Drift gillnet harvests of 823,300 sockeye and 303,600 pink salmon were well above the 10-year averages of 675,600 sockeye and 127,00 pink salmon (Appendix C3). Chum salmon drift gillnet harvest was below the 10-year average of 193,900 fish. Set gillnet harvests of 180,900 sockeye and 9,900 chum salmon were all below the 10-year averages of 233,300 sockeye and 33,700 chum salmon (Appendix C3). The 22,800 pink salmon harvest by the set gillnet gear group was above the 10-year average of 20,600 fish (Appendix C3). PWSAC harvested 10,300 sockeye salmon for broodstock, of which 6,500 were viable (Appendix E12; PWSAC 2018b).

Thermal marked otolith contributions estimated that 91.1% (915,300 fish) of the sockeye salmon commercially harvested in the Eshamy District in 2018 were of MBH origin (Appendix E9). Although returning hatchery fish were from release years of average size, the 2018 return was well above the MBH run forecast and close to the 10-year average (Appendices E13 and E14). Only 9.3% of chum salmon harvested in the Eshamy District in 2018 were from wild stocks, and the remaining chum salmon harvest was attributed to AFK (13.4%), WNH (76.0%), and Port Chalmers (1.3%; Appendix E11). Pink salmon harvested in the Eshamy District were predominantly wild stocks (60.4%), and most fish were assumed to be returning to streams outside of the district (Appendix E10).

Sockeye salmon began arriving at the MBH in late May, and a schedule of 2 commercial fishing periods per week began May 31 (Appendix C1). The entire Eshamy District was initially opened to commercial fishing for 36 hours to allow the fleet to focus on the enhanced run to MBH, and run timing overlap with Eshamy River wild sockeye salmon was minimal. Fishing time was reduced to 24 hours in the Eshamy District during the fourth period (June 11) and fifth period (June 14) but returned to 36 hours on June 18 (Appendix C1). The alternating gear zone (AGZ) was closed to commercial fishing on June 21 to allow entry of hatchery sockeye salmon into Main Bay. The AGZ reopened the following period (June 25) until the close of the season. Coghill Lake sockeye salmon escapement objectives were being met, so fishing time was kept at 36 hours until July 9, except one 24-hour period on June 21. After July 9, fishing in the Eshamy District, excluding the Main Bay Subdistrict, was decreased to reduce pink salmon harvests and promote

sockeye salmon entry into Main Bay. From July 19 until August 7, the Eshamy District was limited to 2 weekly periods of 24 hours. During this time, the Eshamy District, except the Main Bay Subdistrict, alternated between being open and closed. Beginning August 10, periods alternated between 24 hours in Main Bay and 12 hours or 14 hours in the rest of the district. This continued until the district closed for the season on September 4 (Appendix C1).

Peak sockeye salmon harvest occurred during 36 hours beginning June 25 when 27 set gillnet permit holders harvested 32,300 fish and 194 drift gillnet permit holders harvested 150,000 sockeye salmon (Appendices C1 and C2). Chum salmon harvest peaked during this period, and the total CCPF harvest for the Eshamy District was 141,200 fish. Peak pink salmon harvest occurred during the 24-hour period beginning July 23 when 96 drift gillnet and 8 set gillnet permit holders caught a total of 52,700 pink salmon (Appendices C1 and C2). Peak effort in the district's drift gillnet fleet occurred during the 24 hours beginning June 14, when 202 permit holders participated. The set gillnet group had a peak effort of 27 permit holders during the 36 hours beginning June 25.

Wild sockeye salmon stock harvest proportions fluctuated throughout the season, beginning at low proportions during the large harvests in June. As harvests of sockeye salmon began to decrease, wild sockeye salmon proportions increased to 13.7% on June 28 before dropping again (Appendix E9). In mid-July, wild sockeye salmon proportions increased to a peak of 52.5% on July 30, and then harvest decreased substantially through August (Appendix E9). After August 13, all harvested sockeye salmon in the Eshamy District are apportioned to wild stocks.

GENERAL PURSE SEINE DISTRICTS

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

The 2018 pink salmon total run forecast for PWS was 34.93 million fish made up of 16.93 million VFDA fish, 15.40 million PWSAC fish, and 2.60 million wild stock fish (VFDA 2018a; PWSAC 2018a; Haught and Vega 2018). Assuming cost-recovery and broodstock needs for VFDA (3.03 million) and PWSAC (3.01 million) and a cumulative SEG of 575,000–992,000, approximately 28.31 million pink salmon were expected to be available for harvest in the CCPF.

The 2018 chum salmon forecast total run in PWS was 3.45 million fish, of which 3.06 million (88.7%) were from PWSAC hatchery production, 450,000 fish returned to AFK, and 150,000 fish returned to Port Chalmers Subdistrict (PWSAC 2018a). The purse seine gear group had access to the Port Chalmers Subdistrict in 2018 under the *Prince William Sound Management and Salmon Enhancement Allocation Plan*. Based on ADF&G's wild chum salmon forecast of 391,000 fish, there was a potential common property harvest of 191,000 wild chum salmon. ADF&G managed each district's escapement goal, aiming for each district's long-term average, for a combined total of 200,000 chum salmon to all districts (Table 5).

2018 SEASON SUMMARY

The 2018 commercial harvest of 22.67 million pink salmon in PWS was the seventh lowest even-year harvest since 2000 and was 20.0% below the 28.31 million preseason forecast (Appendices D3 and D4). Purse seine CCPF salmon harvest was 20.75 million fish, made up of 300 Chinook, 70,300 sockeye, 80,600 coho, 19.55 million pink, and 1.05 million chum salmon (Table 1; Appendix D2). PWS purse seine CCPF fishery participation was 234 permit holders (Table 4). The total PWS pink salmon CCPF harvest was 24.03 million fish, including 3.86 million fish for hatchery cost recovery (2.26 million for PWSAC and 1.59 million for VFDA). Pink salmon thermal marked otolith contribution estimates from CCPF harvests were 41.6% SGH fish, 34.8% PWSAC fish, and 24.1% wild stock fish (Appendix E17).

Aerial surveys in PWS were flown into mid-September to ensure that the broad range in pink and chum salmon run timing was represented in the escapement index. Wild stock pink salmon escapement indices in 2018 supported openings outside of hatchery subdistricts starting in late July and for the rest of the season. The 2018 PWS pink salmon escapement aerial index was 1.13 million (Appendix D1). Chum salmon escapements were below average across PWS, and the Northern and Southeastern Districts did not achieve the lower end of their escapement goals (Appendix D1).

Hatchery pink salmon represented 76.2% of the total run of 25.18 million fish (harvest, broodstock, and escapement); VFDA contributed 39.3%, and PWSAC contributed 36.7% (Table 1 and Appendix E17). Wild stock pink salmon harvest of 4.78 million fish combined with an escapement index of 1.13 million fish resulted in an estimated wild pink salmon return of 5.91 million fish (Appendix D1 and E17). Cost-recovery and broodstock harvest of 1.58 million fish was 15.9% of the total pink salmon run of 9.91 million fish to SGH (VFDA 2018b). PWSAC cost-recovery and broodstock harvest of 2.25 million fish was 24.2% of the total PWSAC pink salmon run of 9.26 million PWSAC hatchery fish (PWSAC 2018b).

EASTERN DISTRICT

Eastern District pink salmon escapement indices were less than the even-year average (1998–2016) for most of the 2018 season but were within the expected range (Appendices D6 and D7). The Eastern District pink salmon escapement index of 309,000 fish was above the lower bound of the district's even-year SEG index range of 203,000–328,000 fish. The Eastern District chum salmon escapement index of 109,598 fish was above the district's lower-bound SEG of 79,000 fish (Appendix D1 and D7).

VFDA pink salmon cost-recovery harvest began on July 2 and was conducted throughout Port Valdez in 2018. Initial VFDA cost-recovery progress was slow, but pink salmon run entry and cost-recovery progress steadily increased from July 4 through July 9. On July 9, 42% of VFDA's cost-recovery goal harvest was complete. The VFDA recommended a 14-hour period on July 10 in Port Valdez and Valdez Arm to target SGH enhanced pink salmon. The Eastern District CCPF targeting VFDA pink salmon began July 10 and a harvested 1.07 million fish. Run entry of VFDA pink salmon was slow between July 9 and July 12 but increased rapidly on July 13, and cost recovery was completed on July 14. Aerial surveys conducted on July 12 indicated wild stock escapements were below the projected ranges in the eastern PWS Area; subsequently, fisheries were focused in Port Valdez and Valdez Arm through July 20 to target SGH enhanced pink salmon (Appendix E15). Starting on July 21, VFDA recommended that commercial fishing within Port

Valdez be closed to aid SGH broodstock collection. The Eastern District was closed to commercial fishing from July 23 through July 25 and July 27 through July 31 to ensure SGH's broodstock goal and wild stock escapement goals would be met. From August 1 through the end of the season, CCPF periods were 2 to 3 times a week to allow adequate wild stock escapement. The total Eastern District pink salmon CCPF harvest was 10.30 million fish. VFDA pink salmon contributed 75.1% or 7.74 million of the total Eastern District CCPF harvest (Appendix E15). The PWS total VFDA return (CCPF, cost recovery, and broodstock) was 9.98 million fish, which was 41.4% below the forecast of 16.93 million fish (VFDA 2018b; Table 1 and 6; Appendix E17).

The VFDA harvested a total of 1.08 million pink salmon for cost recovery and another 144,300 fish via the SGH fishway, for a total cost-recovery harvest of 1.22 million pink salmon. VFDA reported that 376,206 pink salmon were used at SGH for broodstock, and an additional 13,000 fish were unharvested (VFDA 2018b). Pink salmon egg-take operations at SGH were successful in 2018. The VFDA reached its 2018 pink salmon egg-take goal at SGH on August 21, which was comparable to the 10-year average end date of August 21 (VFDA 2018a).

The 2018 SGH coho salmon run was also below forecast, and few surplus fish were available for CCPF harvest. Enhanced coho salmon runs are experiencing declining survival rates and have been less than the SGH preseason forecast 7 out of the past 10 years (Appendix E1). The VFDA reached its 2018 coho salmon egg-take goal at SGH on October 16. VFDA harvested 8,500 coho salmon for cost-recovery from the SGH fishway and used an additional 1,300 fish for broodstock (VFDA 2018b).

There were 41 Eastern District CCPF periods in 2018, and 230 purse seine permit holders reported deliveries (Table 1; Appendix E15). Eastern District CCPF was 50 Chinook, 5,700 sockeye, 23,800 coho, 10.30 million pink, and 197,500 chum salmon (Table 1). Eastern District CCPF pink salmon harvest included 75.1% VFDA fish, 23.5% wild fish, and 1.4% PWSAC fish (Appendix E15).

NORTHERN DISTRICT

The 2018 CCH pink salmon forecast was 5.50 million fish, and 357,000 pink salmon were needed for broodstock and 723,000 for cost recovery, which left 4.42 million pink salmon for CCPF harvest (PWSAC 2018a; Table 6).

The Northern District pink salmon escapement indices were below the even-year average (1998–2016) for the 2018 season, and the escapement index of 113,400 fish was above the even-year SEG of 111,500 fish (range: 96,000–127,000 fish; Appendices D1 and D6). The Northern District chum salmon escapement indices were below the expected range for the 2018 season, and the escapement index of 18,400 fish was below the district's lower-bound SEG of 28,000 fish (Appendices D1 and D7).

The Northern District CCPF began with one 14-hour period on July 22 to provide additional area and opportunity on SGH pink salmon. Aerial surveys indicated below average wild stocks returning to northern PWS for most of the season. Northern District pink salmon harvest opportunities were limited most of July due to the inadequate wild stock escapement but increased during the first week of August when pink salmon started arriving at CCH. Peak pink salmon harvest occurred during the period beginning August 4, and the harvest was 888,100 fish, which were 92.7% CCH stock (Appendix E16). During August, CCPF periods occurred 2 to 3 times a week to allow adequate wild stock escapement.

During 2018, PWSAC harvested 183,800 CCH pink salmon for cost recovery and another 213,700 pink salmon via the CCH fishway. PWSAC utilized 244,000 fish at CCH for broodstock, and an additional 15,000 fish went unharvested (PWSAC 2018b). Pink salmon egg-take operations at CCH were successful, and the egg-take goal was achieved on September 11 (PWSAC 2018b). The 2018 CCH pink salmon run of 3.70 million fish was 33% less than PWSAC's preseason projection of 5.50 million fish (PWSAC 2018b).

There were 34 Northern District CCPF periods in 2018, and 146 purse seine permit holders reported deliveries (Table 1; Appendix E16). The Northern District CCPF harvest was 4 Chinook, 2,800 sockeye, 3,500 coho, 2.63 million pink, and 8,600 chum salmon (Table 1). The Northern District pink salmon harvest included 75.1% CCH fish, 10.8% wild fish, 10.7% SGH fish, 2.6% WNH fish, and 0.9% AFK fish (Appendix E16). The 2018 CCH pink salmon CCPF harvest of 3.31 million fish was below the PWSAC's total preseason projection of 4.42 million fish (PWSAC 2018a).

COGHILL DISTRICT

The 2018 WNH pink salmon forecast was 4.60 million fish, and 283,000 pink salmon were needed for broodstock and 888,000 for cost recovery, which left 3.71 million pink salmon for CCPF harvest (PWSAC 2018a).

Coghill District chum and pink salmon escapement indices were less than the even-year average (1998-2016) for most of the 2018 season but were within the expected range (Appendices D6 and D7). The Coghill District pink salmon escapement index of 70,900 fish was within the district's even-year SEG index range of 37,000–110,000 fish (Appendix D1). The Coghill District chum salmon escapement index of 13,600 fish was above the district's lower-bound SEG of 10,000 fish (Appendices D1).

Purse seine fishing in the Coghill District began on July 22 with a 14-hour period (Appendix B5). Aerial surveys indicated that below-average wild stocks were returning to northern PWS most of the season. Coghill District pink salmon harvest opportunities were limited during July due to cost recovery at WNH and low wild stock escapement. Fishing opportunities increased during the first week of August when pink salmon started arriving at WNH. Pink salmon harvest peaked on August 6 when 355,100 fish were harvested, of which 82.3% were WNH stock (Appendices B5 and E7). During August, CCPF periods occurred 2 to 3 times a week to allow adequate wild stock escapement.

During 2018, PWSAC harvested 752,700 pink salmon for cost recovery and another 301,100 fish via the WNH fishway, for a total cost-recovery harvest of 1.05 million pink salmon. PWSAC reported that 191,100 pink salmon were utilized at WNH for broodstock, and an additional 1,500 fish went unharvested (PWSAC 2018b). Pink salmon egg-take operations at WNH were successful in 2018, and PWSAC reached its 2018 pink salmon egg-take goal at WNH on September 8. The 2018 WNH pink salmon run of 2.3 million fish was 50% less than PWSAC's preseason projection of 4.60 million fish (PWSAC 2018b).

The Coghill District purse seine CCPF harvest by 67 permit holders was 0 Chinook, 2,300 sockeye, 6,300 coho, 687,100 pink, and 4,100 chum salmon (Table 1; Appendix B5). Coghill District pink salmon harvest included 56.9% WNH fish, 23.2% wild fish, 19.2% CCH fish, 0.5% SGH fish, and 0.2% AFK fish (Appendix E7).

NORTHWESTERN DISTRICT

The Northwestern District pink salmon escapement indices were in line with the even-year average (1998–2016) for the 2018 season, and the pink salmon escapement index of 111,200 fish was above the even-year SEG range of 52,000–93,000 fish. (Appendices D1 and D6). Northwestern District chum salmon escapement indices were within the expected range for the 2018 season, and chum salmon escapement index of 15,600 fish was greater than the district's lower-bound SEG of 7,000 fish (Appendices D1 and D7).

Northwestern District purse seine CCPF harvest by 29 permit holders was 5 Chinook, 4,300 sockeye, 1,100 coho, 184,100 pink, and 7,600 chum salmon (Table 1). Northwestern District pink salmon harvest included 87.4% wild fish, 11.0% WNH fish, 0.9% AFK fish, and 0.3% CCH fish (Appendix E17).

SOUTHWESTERN DISTRICT

The 2018 AFK pink salmon forecast was 5.30 million fish, and 341,000 pink salmon were needed for broodstock and 697,000 for cost recovery, which left 4.26 million pink salmon for CCPF harvest (PWSAC 2018a). PWSAC's 2018 preseason forecast for chum salmon returning to AFK was 450,000 fish, all of which were projected to be available for CCPF harvest (PWSAC 2018a).

Southwestern District pink salmon escapement indices were less than the even-year average (1998–2016) for most of the 2018 season but were within the expected range. The Southwestern District pink salmon escapement index of 81,000 fish was within the district's even-year SEG range of 62,000–105,000 fish (Appendix D1). There is no chum salmon escapement goal for the Southwestern District.

Fishing to target enhanced chum salmon at AFK THA and SHA started June 1 with a weekly schedule of 2 48-hour purse seine fishing periods, which continued until June 13 (Appendix E20). From June 13 through July 2, fishing periods were gradually restricted from two 48-hour periods to two 12-hour periods a week to limit incidental catch of wild salmon destined for other areas of PWS. The AFK THA and SHA harvest from June 1 through July 21 was 340,500 chum salmon, including 6,400 wild stock chum salmon, and 32,800 sockeye salmon, including 3,500 wild stock sockeye salmon that were assumed to be Coghill origin based on run timing (Appendices E18 and E20).

The Southwestern District CCPF total pink salmon harvest was 4.91 million fish. This mixed stock harvest was made up of 49.7% AFK, 19.6% CCH, 18.5% wild, 9.9% WNH, and 2.3% SGH fish (Appendix E19). This distribution of stocks is the result of conducting the fishery in the Southwestern District, which is the primary migration corridor for pink salmon traveling to other areas of PWS.

Purse seine fishing targeting pink salmon in the Southwestern District began on July 26 with 8 hours to gauge hatchery and wild pink salmon run entry into the Southwestern District. PWSAC began cost recovery at AFK on July 25 and finished on August 5. During August, the Southwestern District pink salmon CCPF periods occurred 2 to 3 times a week to allow adequate wild stock escapement and brood stock acquisition. (Appendix E19). Peak harvest occurred on August 16 when 750,000 fish were harvested, of which 58.3% were AFK pink salmon.

PWSAC harvested 465,500 pink salmon for cost recovery and another 329,000 fish via the AFK fishway, for a total cost-recovery harvest of 795,100 pink salmon. PWSAC reported that 222,200

pink salmon were utilized at AFK for broodstock, and an additional 5,000 fish went unharvested (PWSAC 2018b). Pink salmon egg-take operations at AFK were successful in 2018 and PWSAC reached its 2018 pink salmon egg-take goal at AFK on September 5. The 2018 AFK pink salmon run of 3.26 million fish was 38% less than PWSAC's preseason projection of 5.30 million fish.

There were 50 Southwestern District CCPF periods in 2018, and 201 purse seine permit holders reported deliveries (Table 1; Appendix E19). The 2018 Southwestern District CCPF harvest was 87 Chinook, 48,900 sockeye, 43,600 coho, 4.91 million pink, and 355,600 chum salmon (Table 1). The 2018 Southwestern District chum salmon CCPF harvest included 81.4% AFK fish, 2.8% WNH fish, 11.0% Port Chalmers, and 4.7% wild fish (Appendix E20). Southwestern District sockeye salmon CCPF harvest in 2018 included 62.5% MBH fish and 37.5% wild fish (Appendix E18). The total CCPF harvest estimate of 289,500 AFK enhanced chum salmon was less than the preseason forecast harvest of 450,000 fish. Hatchery chum salmon returns to AFK have been less than the preseason forecast 8 of the past 10 years (PWSAC 2018b).

MONTAGUE DISTRICT

The 2018 preseason forecast for chum salmon returning to Port Chalmers Subdistrict was 150,000 fish, all of which were projected to be available for CCPF harvest (PWSAC 2018a). The 5-year rolling average allocation calculation used to guide 2018 fisheries management was 53.3% purse seine, 46.7% drift gillnet, and 5.2% set gillnet. Based on the *Prince William Sound Management and Allocation Plan* (5 AAC 24.370), the purse seine fleet had exclusive access to the Port Chalmers Subdistrict in 2018.

The Montague District pink salmon escapement indices were below the even-year average (1998–2016) for most of the 2018 season, and the pink salmon escapement index of 135,200 fish was above the district's even-year SEG range of 36,000–72,000 fish (Appendices D1 and D6). There is no chum salmon escapement goal for the Montague District.

Fishing to target enhanced chum salmon at Port Chalmers started June 1 with a weekly schedule of 48-hour purse seine fishing periods, which continued until June 13 (Appendix B10). Due to the increased harvest of chum salmon destined for other areas of PWS, from June 14 through July 17, fishing periods were reduced to 36 hours, and the area was reduced to focus harvest on chum salmon returning to Port Chalmers (Appendices B10 and E21). The 2018 chum salmon harvest during peak historical run timing for Port Chalmers chum salmon (June 1–July 30) was 452,800 fish, which was 300% above forecast and above the 5-year average of 271,700 fish (Appendix E21). Out of a total Montague District CCPF harvest of 452,800 chum salmon, thermal mark contributions estimated 361,500 (79.8%) were released at Port Chalmers, 27,400 (6.1%) were released at AFK, and 48,300 (10.7%) were released at WNH. Wild chum salmon harvest made up 3.4% (15,500 fish) of the total harvest (Appendix E21).

Purse seine fishing targeting pink salmon in the Montague District began on August 10. The Montague District pink salmon CCPF consisted of daily periods spaced 1 to 3 days apart from July 28 through the end of the season. Peak harvest occurred on July 19 when 115,600 fish were harvested, of which 58.3% were SGH pink salmon (Appendix E22).

There were 46 Montague District CCPF periods in 2018, and 139 purse seine permit holders reported deliveries (Table 1; Appendix E22). The 2018 Montague District CCPF harvest was 140 Chinook, 6,200 sockeye, 1,600 coho, 395,500 pink, and 452,800 chum salmon (Table 1).

Montague District's 2018 pink salmon CCPF harvest included 54.3% SGH, 36.3% wild, 4.7% CCH, 3.0% AFK and 1.6% WNH fish (Appendix E22).

SOUTHEASTERN DISTRICT

Southeastern District pink salmon escapement indices were above the even-year average (1998–2016), and chum salmon escapement indices were below the 10-year average for most of the 2018 season (Appendices D6 and D7). The Southeastern District pink salmon escapement index of 293,300 fish was above the district's even-year SEG range of 88,000–153,000 fish. The Southeastern District chum salmon escapement index of 10,200 fish was slightly below the district's lower-bound SEG of 11,000 fish (Appendix D1).

The 2018 Southeastern District commercial harvest by 44 permit holders was 7 Chinook, 200 sockeye, 700 coho, 443,100 pink, and 27,700 chum salmon (Table 1). The Southeastern District pink salmon harvest included 97.0% wild fish, 2.7% SGH fish, and 0.3% CCH fish (Appendix E17).

PRINCE WILLIAM SOUND AND COPPER RIVER SUBSISTENCE, PERSONAL USE, AND HOMEPACK FISHERIES

The PWS Subsistence Management Area includes all waters of Alaska between the longitude of Cape Fairfield and the longitude of Cape Suckling. State of Alaska subsistence fishing permits are not required for marine finfish other than salmon. Lingcod *Ophiodon elongatus* may be taken for subsistence purposes only from July 1 through December 31. Herring, smelt *Osmeridae*, rockfish *Sebastes* spp., and other groundfish may also be harvested for subsistence purposes in the PWS Area. Herring spawn-on-kelp may be taken for subsistence purposes as described in 5 AAC 01.610(d)(1)(2); therein, herring spawn-on-kelp may be taken above water from March 15 through June 15 or harvested using dive gear only during fishing periods open for the wild herring spawn-on-kelp commercial fishery. For a detailed history of regulation governing the subsistence fisheries within the Copper River and Prince William Sound, see Botz and Somerville (2011).

LOWER COPPER RIVER AND PRINCE WILLIAM SOUND

Subsistence 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 (5 AAC 01.610(g)). 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 Saturdays from 6:00 AM to 10:00 PM (new in 2018) and during commercial fishing periods. The 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 gear, and nets may have a maximum length of 50 fathoms with a maximum mesh size of 6 inches before July 15. Within PWS general subsistence districts, 50 fathom gillnet or seine may be used depending on the legal commercial gear standard within a commercial fishing district.

In 2018, 684 subsistence permits were issued for the Copper River District, of which 54 (7.9%) were not returned, and 193 permit holders reported not fishing. A harvest of 1,400 Chinook, 5,200

sockeye, and 200 coho salmon were reported by 437 permit holders that reported fishing (Appendix F2). In addition, 26 subsistence permits were issued for the general PWS subsistence district, of which 24 were returned, 16 permit holders reported not fishing, and 8 permit holders reported a harvest of 100 sockeye, 20 coho, 10 pink, and 20 chum salmon (Appendix F3). Overall, 722 Alaskan households in 35 communities received permits for the PWS saltwater subsistence fisheries, and there was a total harvest of 7,100 fish (Appendix F4).

During the 2018 commercial fishing season in the Copper River District, 1,500 sockeye, 100 Chinook, and 2,600 coho salmon were reported as homepack by 216 commercial permit holders (Appendices A1, A3, A15, and F5). In PWS districts, 350 commercial permit holders reported retaining 100 Chinook, 4,800 sockeye, 3,000 coho, 1,100 pink, and 300 chum salmon as homepack from their commercial harvests (Appendix F5). Overall, in Area E, 406 commercial permit holders from 22 Alaska communities and the other 49 states reported retaining 11,900 salmon for homepack from their commercial catches (Appendix F4).

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 2018, an estimated 97 federal permits were issued, and 40 permit holders fished for an estimated harvest of 100 sockeye and 260 coho salmon (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 7 days per week from May 15 until 2 days before the initial commercial fishing period in the associated commercial fishing districts. Once the commercial fishing season is established, area and time within the subsistence areas is defined by the area and time in the associated commercial fishing district. Starting in 2018, subsistence fishing was also allowed during the commercial fishing season on Saturdays from 6:00 AM to 10:00 PM following a 2-day wait after the closure of the commercial fishing season in the associated commercial fishing district, and subsistence fisheries were open 7 days per week until October 31.

In 2018, 22 permits were issued for the Chenega subsistence area, of which 1 was returned. The single returned permit reported fishing and harvested 10 sockeye, 2 coho, and 40 chum salmon. In the Tatitlek Area, 24 permits were issued, of which 6 were returned. Of those returned permits, 2 reported fishing and 4 reported not fishing, for a total harvest of 140 sockeye and 4 chum salmon (Appendix F7).

UPPER COPPER RIVER

In 2018, combined upriver subsistence and personal use sockeye salmon harvest (federal and state) totaled 137,000 fish, almost 200,000 fish less than the 2015 record harvest. From 2007 to 2016, the combined upriver subsistence and personal use sockeye salmon harvest (federal and state) ranged from 137,000 fish (in 2008) to 334,000 fish (in 2015), for a 10-year average of 222,000

sockeye salmon (Appendix A1). A general steady increasing trend in subsistence and personal use harvest is reflected annually through additions to the inriver goal within the allocated ranges for each fishery.

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. In 2018, for the first time in the history of state subsistence fishery, there were inseason restrictions on fishing time. During the last week of June and first week of July, the subsistence fishery was restricted to 48 hours per week due to sockeye salmon conservation concerns during this period. 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, if additional salmon were requested by the permit holder, cannot exceed 200 salmon for a household of 1 and 500 salmon for a household of 2 or more. No more than 5 Chinook salmon may be taken by each dip net permit holder (5AAC 01.645(a)). 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 2018, 1,312 dip net permits and 347 fish wheel permits were issued to subsistence users in the Glennallen Subdistrict. Of these, 303 (18.6%) permits were not returned. A combined total estimate of 4,500 Chinook, 39,400 sockeye, and 150 coho salmon were harvested in the Glennallen Subdistrict. Comparatively, the 10-year average was 3,100 Chinook and 62,600 sockeye, and 200 coho salmon for this subdistrict. Fish wheel effort has remained somewhat constant over the last 10 years, and an average of 570 permits were issued (Appendix F11). The number of dip net permits issued has increased over the past few years. The 10-year average of 876 dip net permits is 33.2% less than the number of permits issued in 2018 (Appendix F11). Historically, sockeye salmon dominate the harvest and represent 94.9% of the estimated harvest in the Glennallen Subdistrict subsistence fishery, followed by Chinook and coho salmon (Appendices A1, A3, A16, and F11). Harvest from the Glennallen Subdistrict subsistence fisheries was 27.7% GH sockeye salmon (Appendix E4).

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 2018, a total of 335 federal permits were issued for the Glennallen Subdistrict. Of these, 300 permits were returned. A total of 2,400 Chinook, a new record harvest and nearly 7 times the 5-year average, were reported harvested. The harvest of 14,100 sockeye salmon was below the 5-year 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, as established by EO, 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 2018, and 470 sockeye salmon were 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 BOF changed annual bag limits from 15 salmon for a household of 1 and 30 salmon for a household of 2 or more individuals to 25 salmon for the head of a household and 10 salmon for each dependent of the permit holder. In addition, the BOF removed the allowance of supplemental permits for 10 additional fish that were given to permit holders that already achieved their annual limit when ADF&G determined a weekly harvestable surplus of 50,000 salmon were in the Chitina Subdistrict. Inseason adjustments to the fishery, as needed by fluctuations in salmon escapement, were made by EO.

In 2018, there were 9 EOs issued to adjust the dip net fishery. The first period started on Saturday, June 9, and was limited to 24 hours based on low inriver sockeye salmon abundance as measured at the Miles Lake sonar. The historical precedent for personal use fishing periods is 7 days per week once the season opens. With the continuation of weak inriver sockeye salmon abundance, the personal use fishery was limited to 96 hours the following week, June 14–17. Both the personal use and sport fisheries were closed until further notice on June 18 due to the Miles Lake sonar inriver passage lagging 100,000 salmon below minimum projected inriver needs. The personal use fishery remained closed through July 11 and the sport fishery through July 12 because inriver passage remained below the levels needed to sustain these fisheries. Continued improvements in inriver passage at the Miles Lake sonar eventually supported the reopening of the personal use fishery on Thursday, July 12, for an 84-hour fishing period. The sport fishery reopened to sockeye salmon retention on July 13 for the remainder of the season. The personal use fishery was open for weekly fishing periods through the end of August, and period duration ranged from 84 to 168 hours, dependent on inriver abundance indices. The fishery was open continuously from September 1 to September 30. Based on the preseason Chinook salmon forecast and higher than anticipated early season commercial harvest rates, the personal use fishery was open to Chinook salmon retention at the beginning of the season. The decision to allow retention of Chinook salmon in the personal use fishery through the remainder of the season was supported by the lack of commercial harvest, continued high Chinook salmon captures at Native Village of Eyak's mark–recapture project, and reports of strong early season personal use and subsistence harvests the. There were 4,982 permits issued for the Chitina personal use fishery in 2018. Of these, 956 (7.6%) were not returned. The number of permits issued was close to half the 10-year average of 10,100 permits issued (Appendix F11). The expanded harvest for the Chitina Subdistrict personal use fishery in 2018 was 1,300 Chinook, 77,100 sockeye, and 1,400 coho salmon. The 10-year average expanded harvests were 1,000 Chinook, 141,000 sockeye, and 1,400 coho salmon (Appendices A1, A3, A16, and F11). Harvest from the Chitina Subdistrict personal use fishery was 27.7% GH sockeye salmon (Appendix E4).

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 2018, an estimated total of 131 federal permits were issued, of which 117 were returned. The reported harvest was 80 Chinook, 2,900 sockeye, and 30 coho salmon (Appendix F6).

2018 PRINCE WILLIAM SOUND 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 59° N latitude. 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).

SEASON SUMMARY

Based on herring stock assessment information, all Pacific herring fisheries were closed in 2018. An age-structured assessment model estimated the 2018 median pre-fishery biomass to be 9,430 tons, below the regulatory threshold of 22,000 tons (data on file with ADF&G, Division of Commercial Fisheries, Cordova Management Area). Aerial survey estimates of mile-days of spawn and biomass also indicated the population was below the regulatory threshold (Appendices G1 and G2).

Net sampling and aerial surveys were used in 2018 to assess herring biomass, disease prevalence, age composition, and growth. In April 2018, the ADF&G vessel R/V *Solstice* searched for herring to sample for age, sex, size, and disease assessment. Broad scale surveys were conducted in eastern PWS, including Cedar Bay, Sheep Bay, Port Gravina, Port Fidalgo, Rocky Bay, and Zaikoff Bay. The Prince William Sound Science Center collected acoustics data, resulting in a 2018 PWS herring biomass estimate of 3,646 tons (Appendix G1). Age composition of samples collected with purse seine and cast net was dominated by 3- and 4-year-old fish (Appendix G3), with an overall observed spawning age composition of 28.0% age 3, 44.0% age 4, 17.0% age 5, and 9.0% age 6.

Herring disease assessment has been included as part of the annual age, sex, and size assessment completed each spring since 1993, as part of research funded by the Exxon Valdez Trustee Council. In adult herring, the prevalence of *Ichthyophonus hoferi* and viral erythrocytic necrosis virus (VENV) were within the normal range, approximately 13.5% and 0%, respectively, in Southeast PWS.

ADF&G conducted 12 aerial surveys between March 24 and April 19, 2018. PWS herring schools observed in 2018 were less aggregated and smaller than observed in recent years. Spawn was documented in eastern PWS near Red Head (April 7–8), on the north shore of Hawkins Island near Canoe Passage (April 16–17); and near Kayak and Wingham Island (April 13). Preliminary mile-days of spawn were estimated at 4.5 mile-days in the Southeast Area (Appendix G1). No spawn was documented in other areas of PWS (Appendix G4). This is the fewest mile-days of spawn on record (1973–2018), and no spawn was documented in Port Fidalgo, Fairmont Bay, Naked Island, Green Island, or Montague Island.

2018–2019 HERRING SEASON OUTLOOK

Given the PWS herring spawning population, current fish size, and age structure, a commercial harvest will not occur in 2019. Consecutive years of low recruitment will further delay the recovery of the herring population to a biomass large enough to support a sustainable commercial harvest.

Funding was provided by the *Exxon Valdez* Trustee Council for 2016, 2017, and 2018. ADF&G will continue to monitor the PWS herring biomass to assess growth and recruitment as funding is available. An ongoing disease study funded by the *Exxon Valdez* Trustee Council will continue to examine the incidence of VENV and *I. hoferi* in the PWS herring population.

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TABLES AND FIGURES

Table 1.–Prince William Sound Area commercial salmon harvest by gear type and district, 2018.

District	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Eastern	230	53	5,657	23,820	10,296,388	197,452	10,523,370
Northern	146	4	2,774	3,488	2,626,622	8,603	2,641,491
Coghill	67	0	2,315	6,347	687,095	4,148	699,905
Northwestern	29	5	4,331	1,048	184,091	7,576	197,051
Southwestern	201	87	48,848	43,566	4,912,287	355,623	5,360,411
Montague	139	137	6,165	1,640	395,459	452,489	855,890
Southeastern	44	7	214	701	443,118	27,717	471,757
Unakwik	0	0	0	0	0	0	0
Purse seine total		293	70,296	80,610	19,545,060	1,053,907	20,749,875
Bering River	159	5	33	120,774	11	121	120,944
Copper River	484	7,618	46,524	303,957	10,569	3,171	371,839
Coghill	447	310	186,978	4,306	286,356	1,802,402	2,280,352
Eshamy	341	131	823,344	3,407	303,572	131,246	1,261,700
Unakwik	7	0	3,505	1	36	16	3,558
Drift gillnet total		8,090	1,060,384	432,445	600,544	1,936,956	4,038,419
Eshamy	26	7	180,945	103	22,784	9,948	213,787
Set gillnet total		7	180,945	103	22,784	9,948	213,787
Solomon Gulch	1	0	0	9,632	1,595,590	0	1,605,222
Cannery Creek	1	0	0	0	395,238	0	395,238
Wally Noerenberg	1	0	0	0	1,063,332	467,385	1,530,717
Main Bay	1	0	0	0	0	0	0
Armin F. Koernig	1	0	0	0	804,475	0	804,475
Hatchery total [a]		0	0	9,632	3,858,635	467,385	4,335,652
Test fishery	0	0	865	0	0	0	865
Homepack	413	183	6,293	3,970	1,411	335	12,192
Confiscated fish	0	0	0	0	0	0	0
Donated fish	0	0	0	0	0	0	0
Misc. total		183	7,158	3,970	1,411	335	13,061
Prince William Sound total		8,573	1,318,791	526,760	24,028,434	3,468,531	29,349,927

[a] Hatchery sales for hatchery operating costs.

Table 2.–Mean price and estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound Area, 2018.

Purse seine [a]						
	Species	Fish ticket number	Fish ticket pounds	Average weight	Price	Value
	Chinook	293	3,297	11.25	$1.37	$4,517
	Sockeye	70,304	316,407	4.50	$1.97	$623,322
	Coho	80,610	619,300	7.68	$0.99	$613,107
	Pink	19,545,060	74,614,511	3.82	$0.40	$29,845,804
	Chum	1,053,907	8,138,452	7.72	$0.91	$7,405,991
		20,750,332	83,691,967			$38,492,741
Drift gillnet [a]						
	Species	Number	Pounds	Average weight	Price	Value
	Chinook	8,090	130,609	16.21	$11.96	$1,562,084
	Sockeye	1,060,384	4,810,554	4.54	$2.85	$13,710,079
	Coho	432,445	3,786,695	8.76	$1.61	$6,096,579
	Pink	600,544	2,240,729	3.73	$0.40	$896,292
	Chum	1,936,956	16,443,689	8.49	$0.91	$14,963,757
		4,038,419	27,412,276			$37,228,790
Set gillnet [a]						
	Species	Number	Pounds	Average weight	Price	Value
	Chinook	7	109	15.57	$10.22	$1,114
	Sockeye	180,945	833,866	4.61	$2.74	$2,284,793
	Coho	103	794	7.72	$0.72	$572
	Pink	22,784	89,795	3.94	$0.40	$35,918
	Chum	9,948	84,131	8.46	$0.89	$74,877
		213,787	1,008,695			$2,397,273
Hatchery sales [a]						
	Species	Number	Pounds	Average weight	Price	Value
	Chinook	0	0	0	$0.00	$0
	Sockeye	0	0	0	$0.00	$0
	Coho	9,632	107,427	11.15	$1.15	$123,541
	Pink	3,858,635	14,033,260	3.64	$0.85	$11,928,271
	Chum	467,385	4,096,585	8.76	$1.04	$4,260,448
		4,335,652	18,237,272			$16,312,260

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Table 2.–Page 2 of 2.

Combined

Species	Number	Pounds	Average weight	Price	Value
Chinook	8,097	134,015	16.04	$11.70	$1,567,715
Sockeye	1,311,633	5,960,827	4.54	$2.79	$16,618,194
Coho	522,790	4,514,216	8.63	$1.51	$6,833,799
Pink	24,027,023	90,978,295	3.79	$0.47	$42,706,285
Chum	3,468,354	28,762,857	8.29	$0.93	$26,705,073
	29,337,897	130,350,210			$94,431,065

Gear type	Value of catch	No. of permits	Average earnings
Purse seine	$38,492,741	234	$164,499
Drift gillnet	$37,228,790	509	$73,141
Set gillnet	$2,397,273	26	$92,203
Subtotal Value of CPF catch	$78,118,805		
Hatchery	$16,312,260		
Grand total	$94,431,065		

[a] 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, 1994–2018.

	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
1994	$1.43	$0.84	$1.27	$1.16	$0.89	$0.74	$0.67	$0.54	NA	$0.11	$0.16	NA	$0.32	$0.24
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
Average 2008–2017	$5.91	$2.47	$2.54	$1.62	$1.53	$1.23	$0.97	$0.78	$0.23	$0.30	$0.33	$0.27	$0.65	$0.65

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 10-year average, Prince William Sound Area, 2008–2018.

Purse seine Species	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Chinook	$2,487	$985	$634	$6,120	$3,279	$15,444	$11,317	$6,990	$879	$4,872	$4,517	$5,301
Sockeye	$540,113	$584,595	$705,231	$560,497	$1,449,007	$796,220	$646,931	$1,766,313	$551,225	$1,113,442	$623,322	$871,357
Coho	$2,056,932	$22,522	$48,476	$633,076	$117,259	$1,608,923	$192,659	$83,371	$194,322	$529,613	$613,107	$548,715
Pink	$39,059,344	$7,890,237	$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	$46,257,221
Chum	$8,002,952	$1,123,335	$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	$3,226,770
	$49,661,828	$9,621,674	$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	$50,909,364
Drift gillnet Species												
Chinook	$1,511,402	$956,053	$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	$1,482,507
Sockeye	$11,533,354	$17,386,798	$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	$26,008,275
Coho	$3,937,198	$3,197,336	$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	$3,536,448
Pink	$1,195,812	$363,373	$3,446,356	$1,025,474	$1,659,983	$2,465,469	$1,361,065	$569,851	$76,420	$1,093,388	$896,292	$1,325,719
Chum	$10,853,908	$9,227,837	$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	$9,206,097
	$29,031,674	$31,131,396	$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	$41,559,047
Set gillnet Species												
Chinook	$533	$1,302	$756	$1,832	$230	$3,015	$769	$1,239	$2,695	$428	$1,114	$1,280
Sockeye	$1,238,739	$1,451,897	$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	$2,172,377
Coho	$1,414	$241	$250	$2,297	$509	$2,556	$451	$1,015	$54	$1,013	$572	$980
Pink	$20,966	$3,419	$20,573	$21,931	$28,480	$17,062	$35,588	$14,827	$5,826	$42,543	$35,918	$21,122
Chum	$231,785	$197,332	$450,989	$163,884	$121,995	$188,004	$106,662	$69,027	$99,124	$85,157	$74,877	$171,396
	$1,493,437	$1,654,191	$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	$2,367,154
Hatchery sales Species												
Chinook	$0	$0	$0	$0	$59	$0	$0	$0	$0	$0	$0	$6
Sockeye	$0	$1,088,363	$0	$0	$7,749	$110	$0	$1,160,000	$300	$0	$0	$622,085
Coho	$67,879	$145,267	$44,808	$280,215	$217	$214,752	$19,035	$30,000	$15,987	$312,040	$123,541	$106,696
Pink	$7,574,535	$5,208,870	$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	$8,917,405
Chum	$2,465,426	$1,816,012	$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	$2,638,663
	$10,107,840	$8,258,512	$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	$12,284,854

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Table 4.–Page 2 of 2.

Other Species	2008	2009	2010	2011[a]	2012[a]	2013[a]	2014	2015	2016	2017	2018	Average 2008–2017
Chinook	$0	$0	$0	$0	$0	$0	$0	$0	0	0	$0	$0
Sockeye	$0	$0	$0	$16	$159	$0	$0	$0	241	0	$0	$42
Coho	$0	$0	$0	$0	$0	$0	$0	$0	0	0	$0	$0
Pink	$0	$0	$0	$11,123	$27	$0	$0	$0	0	0	$0	$1,115
Chum	$0	$0	$0	$1,169	$1,090	$243	$0	$0	2,979	0	$0	$548
	$0	$0	$0	$12,308	$1,275	$243	$0	$0	$3,220	$0	$0	$1,705
Average Earnings												
Purse seine	$352,212	$518,423	$216,813	$206,151	$186,391	$497,214	$176,335	$289,143	$54,982	$311,264	$164,499	$280,893
Drift gillnet	$57,262	$75,255	$96,784	$97,916	$105,889	$92,853	$99,753	$71,293	$67,266	$74,863	$73,141	$83,913
Set gillnet	$59,737	$132,431	$109,768	$109,768	$89,852	$88,900	$104,532	$63,713	$72,466	$53,864	$92,203	$88,503
Number of permits fished												
Purse seine	141	154	174	183	224	211	222	220	210	229	234	197
Drift gillnet	507	511	519	513	522	522	525	520	517	518	509	517
Set gillnet	25	27	29	29	29	28	29	31	29	29	26	29

[a] Confiscated fish.

Table 5.–Spawning escapement goals for Prince William Sound Area salmon stocks, 2018.

Species/stock	Goal Lower	Goal Upper	Long-term target [a]	Type [b]	Year implemented [c]	Evaluation method
Chinook salmon						
Copper River	24,000 and up		27,000	SEG [d]	2003	Mark–recapture
Coho salmon						
Bering River	13,000 –	33,000	Not used	SEG	2003	Aerial surveys
Copper River Delta	32,000 –	67,000	Not used	SEG	2003	Aerial surveys
Sockeye salmon						
Bering River	15,000 –	33,000	Not used	SEG	2012	Aerial surveys
Upper Copper River [e]	360,000 –	750,000	450,000	SEG	2012	DIDSON sonar
Copper River Delta [f]	55,000 –	130,000	84,500	SEG	2003	Aerial surveys
Coghill Lake	20,000 –	60,000	Not used	SEG	2012	Weir
Eshamy Lake	13,000 –	28,000	Not used	BEG	2009	Video
Pink Salmon [g]						
Even-year broodline						
Eastern District	250,000 –	580,000	390,000	SEG	2017	Aerial surveys
Northern/Unakwik Districts	140,000 –	210,000	160,000	SEG	2017	Aerial surveys
Coghill District	60,000 –	150,000	100,000	SEG	2017	Aerial surveys
Northwestern District	70,000 –	140,000	100,000	SEG	2017	Aerial surveys
Eshamy District	3,000 –	11,000	6,000	SEG	2017	Aerial surveys
Southwestern District	70,000 –	160,000	130,000	SEG	2017	Aerial surveys
Montague District	50,000 –	140,000	70,000	SEG	2017	Aerial surveys
Southeastern District	150,000 –	310,000	200,000	SEG	2017	Aerial surveys
Odd–year broodline						
Eastern District	310,000 –	640,000	410,000	SEG	2017	Aerial surveys
Northern/Unakwik Districts	90,000 –	180,000	130,000	SEG	2017	Aerial surveys
Coghill District	60,000 –	250,000	130,000	SEG	2017	Aerial surveys
Northwestern District	50,000 –	110,000	80,000	SEG	2017	Aerial surveys
Eshamy District	4,000 –	11,000	9,000	SEG	2017	Aerial surveys
Southwestern District	70,000 –	190,000	120,000	SEG	2017	Aerial surveys
Montague District	140,000 –	280,000	210,000	SEG	2017	Aerial surveys
Southeastern District	270,000 –	620,000	360,000	SEG	2017	Aerial surveys

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Table 5.–Page 2 of 2.

Species/stock	Goal Lower	Goal Upper	Long-term target [a]	Type [b]	Year implemented [c]	Evaluation method
Chum salmon [h]						
Eastern District	79,000	and up	103,100	SEG [d]	2017	Aerial surveys
Northern District	28,000	and up	40,100	SEG [d]	2017	Aerial surveys
Coghill District	10,000	and up	18,750	SEG [d]	2017	Aerial surveys
Northwestern District	7,000	and up	13,000	SEG [d]	2017	Aerial surveys
Southeastern District	11,000	and up	25,000	SEG [d]	2017	Aerial surveys

Note: DIDSON is dual-frequency identification sonar.

[a] Managed for escapements that on average match the historical average escapement listed. However, long-term targets for pink salmon are the median escapement values.

[b] Goal types include biological escapement goal (BEG) and sustainable escapement goal (SEG) as defined in 5 AAC 39.222 *Policy for the management of sustainable salmon fisheries*.

[c] Goals are generally adopted the year before they are implemented.

[d] Goals are lower bound SEG goals (5 AAC 39.222).

[e] The Upper Copper River is managed for an inriver goal evaluated by the Miles Lake sonar. Upriver harvests and hatchery contributions are subtracted to estimate the spawning escapement.

[f] Copper River Delta sockeye salmon goal is managed for escapements that, on average, match the long-term escapement index of 84,500.

[g] Pink and chum salmon escapements are indexed by the area under the curve (AUC) of weekly aerial surveys adjusted for stream life.

[h] There are no chum salmon goals for Unakwik, Eshamy, Southwestern, or Montague Districts, but streams are surveyed.

Table 6.–Preseason projections for the 2018 common property salmon fishery by district and species, Prince William Sound Area.

		Chinook		Sockeye		Coho [c]		Pink		Chum	
District/facility [a]	Forecast type [b]	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range
Copper River [d]	CPF harvest	19	0 - 42	1,220	815 - 1,626	207	170 - 244				
Bering River [e]	CPF harvest			4	2 - 7	48	35 - 61				
Coghill [f]	CPF harvest			153	65 - 377						
Eshamy [f]	No forecast			NA	NA - NA						
Unakwik [g]	CPF harvest			3	1 - 5						
General Districts	CPF harvest							2,020		391	
Total wild stock		19	0 - 42	1,380	883 - 2,015	255	205 - 305	2,020		391	
SGH	Total run					85		16,932	8,466 – 25,398		
AFK	Total run							5,300	1,400 – 9,300	450	350 – 550
WNH [h]	Total run					87	46 – 131	4,600	3,100 – 15,300	3,120	2,720 – 3,510
CCH	Total run							5,500	1,800 – 9,200		
MBH [i]	Total run			763	687 - 839						
GH	Total run			96	75 - 101						
Total hatchery				859	762 - 940	172		32,332	14,766 - 59,198	3,720	3,180 - 4,240
Total hatchery and wild				2,239		427		34,352		4,111	

Note: All values are in thousands. NA is 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] 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.

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

[c] ADF&G provides commercial common property (CCPF) harvest forecasts for Copper River and Bering River Districts coho salmon runs.

[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 for Chinook and 10-year 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's 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.

[I] Main Bay Hatchery sockeye salmon harvest estimate includes all on-site and remote release runs.

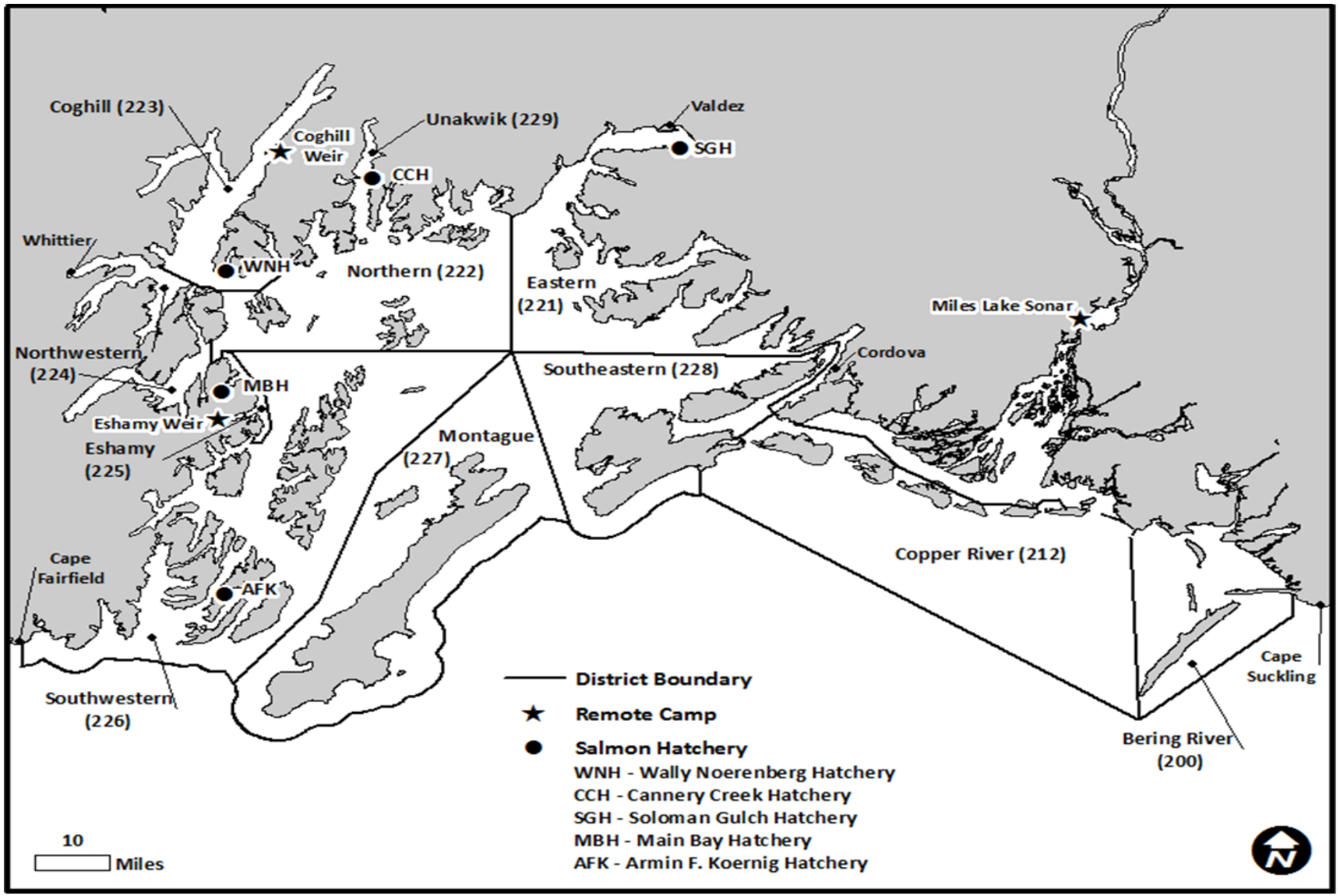

Figure 1.–Prince William Sound Area showing commercial fishing districts, salmon hatcheries, weir locations, and Miles Lake sonar camp.

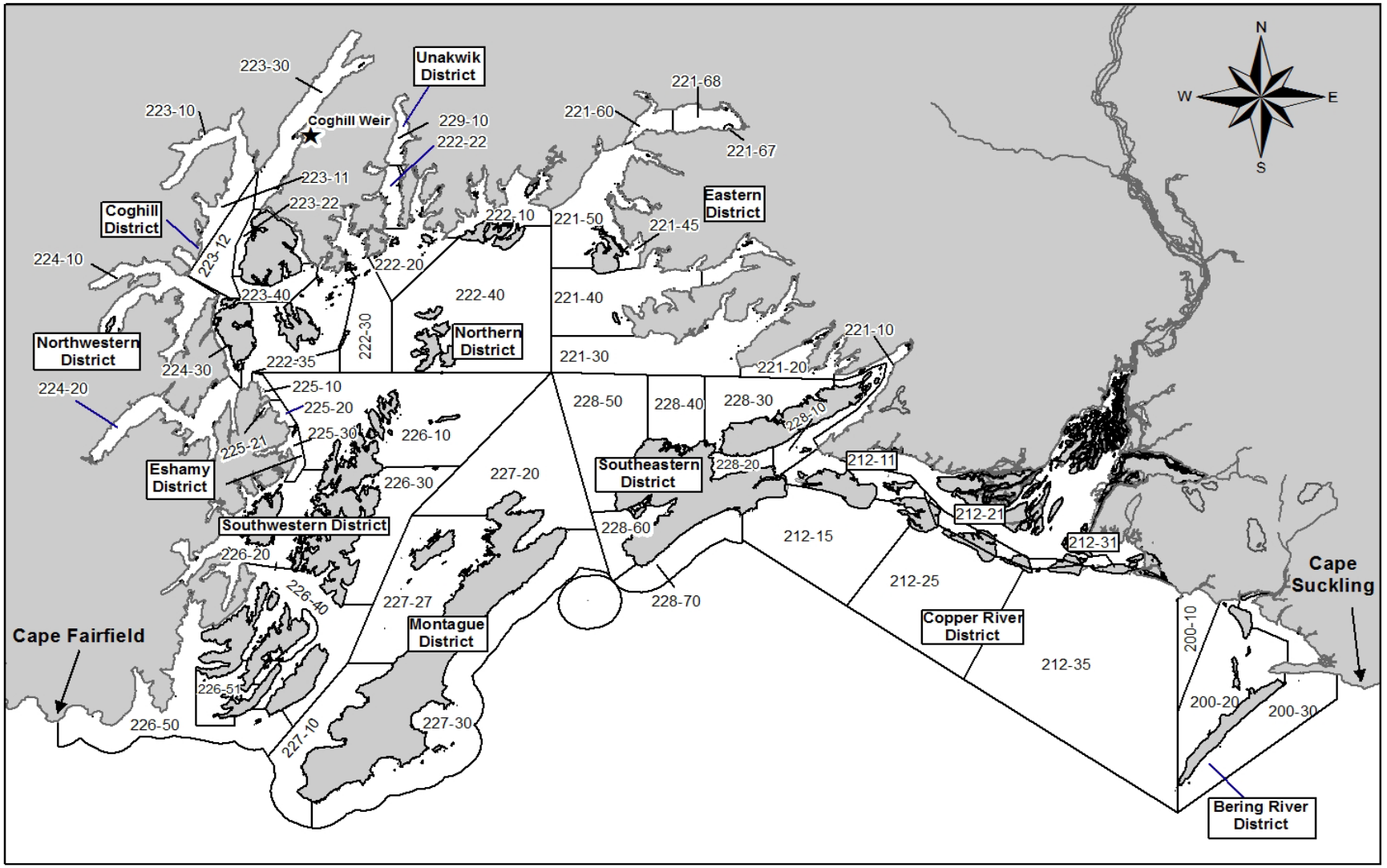

Figure 2.–Prince William Sound Area showing commercial fishing districts and statistical reporting areas.

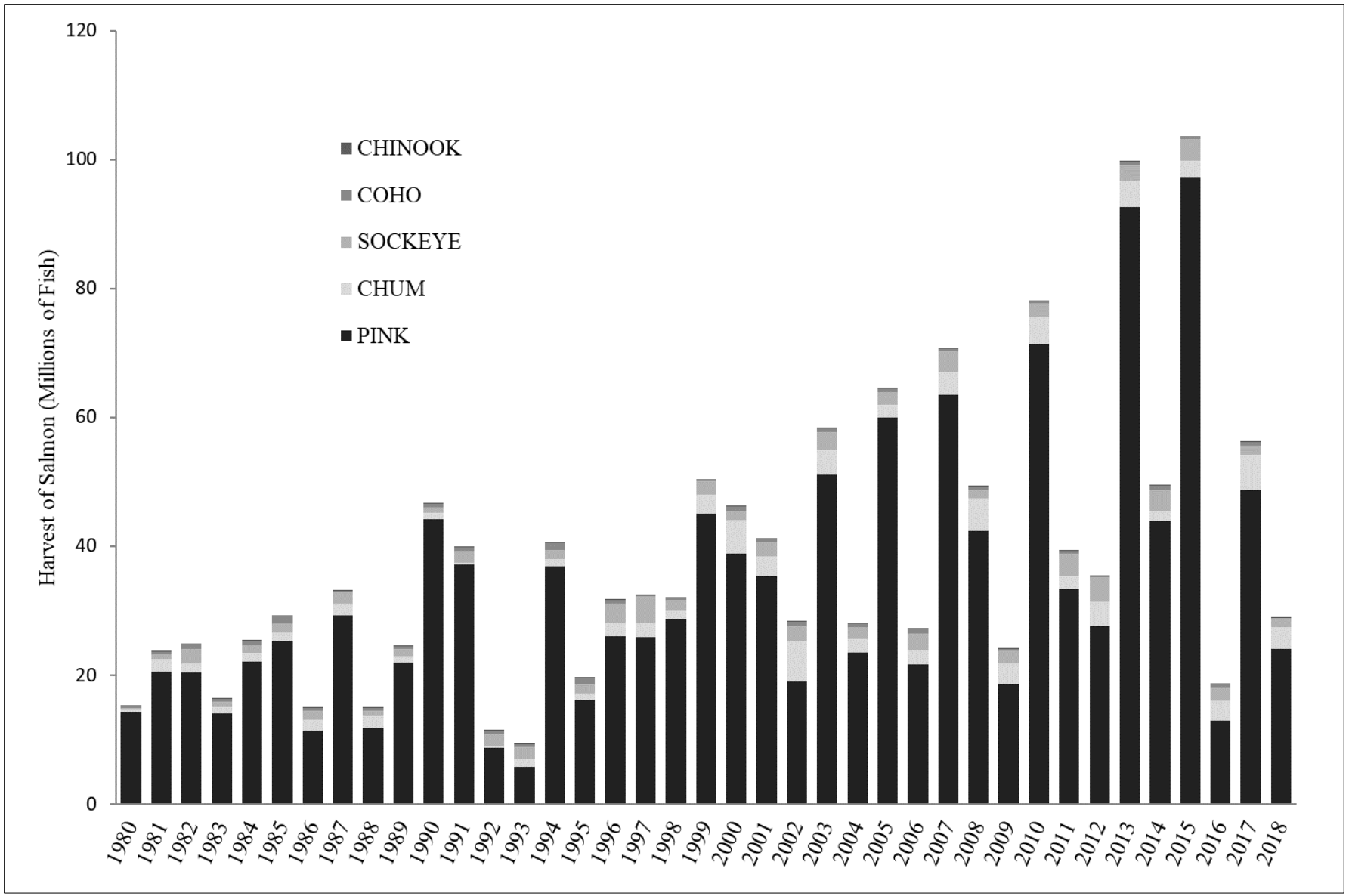

Figure 3.–Commercial salmon harvests in Prince William Sound Area, 1980–2018.

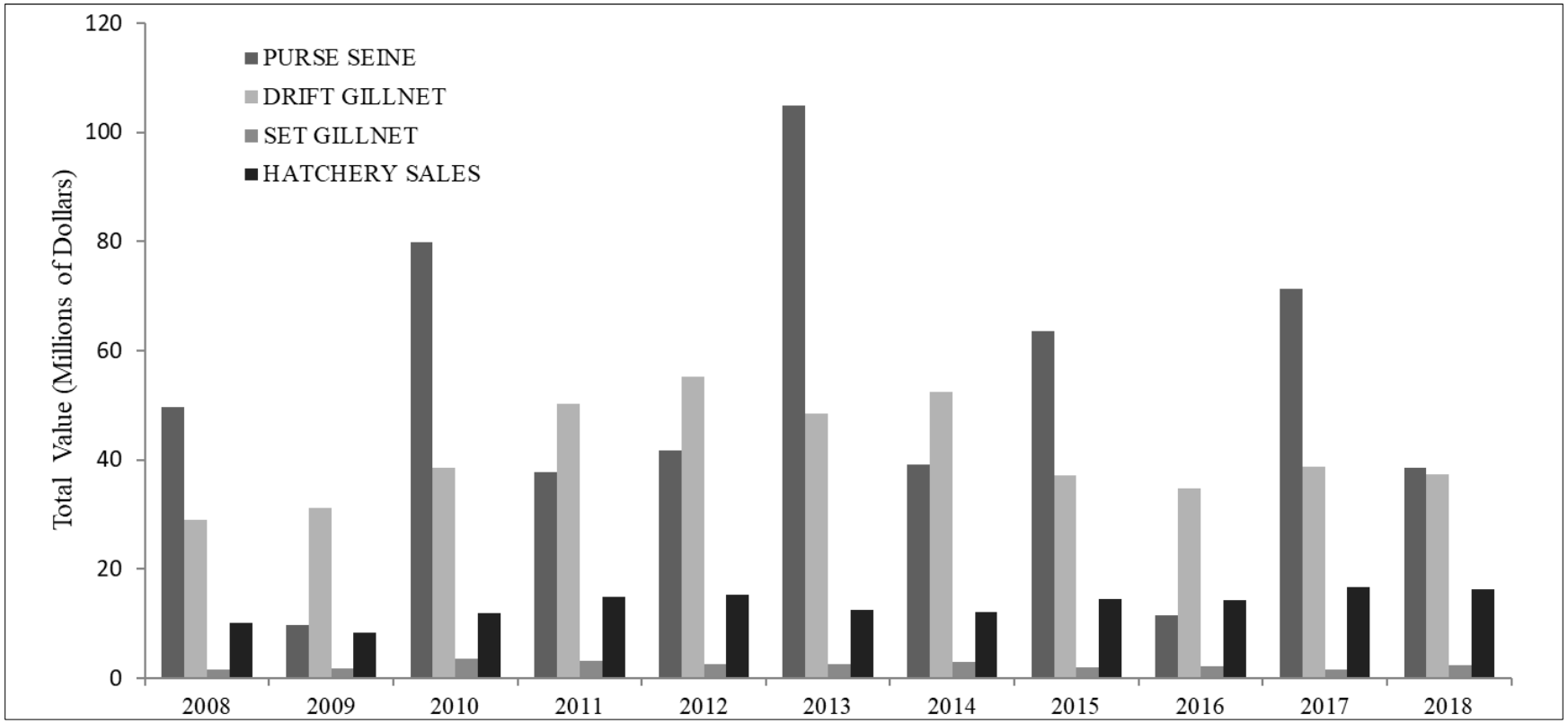

Figure 4.–Exvessel value of the commercial salmon harvest in the Prince William Sound Area by gear type, 2008–2018.

APPENDIX A: COPPER RIVER

Appendix A1.–Total estimated sockeye salmon runs to the Copper River by end user or destination and the 10-year average, 2008–2018.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Commercial harvest[a]	320,815	896,621	636,214	2,052,432	1,866,541	1,608,117	2,050,007	1,750,762	1,175,100	586,079	46,524	1,294,269
Commercial, homepack[a]	2,172	6,528	7,064	9,070	7,985	9,448	12,072	10,590	9,598	8,289	1,545	8,282
Commercial, donated[a]	80	47	0	0	0	0	0	0	0	0	0	13
Educational drift gillnet permit[a]	29	8	61	23	200	152	186	91	203	217	6	117
Subsistence (Cordova, drift gillnet)[b]	3,969	1,764	1,980	1,783	4,270	5,639	1,675	1,403	1,075	2,448	5,189	2,601
Federal Subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel)[b]	32	46	36	35	64	102	76	152	234	127	96	90
Subsistence (Batzulnetas, dip net, fish wheel or spear)[b]	1	0	106	9	101	867	116	0	0	0	468	120
Subsistence (Glennallen Subdistrict, dip net, fish wheel or spear)[c]	43,157	46,849	70,719	59,622	76,305	73,728	75,501	81,800	62,474	41,570	39,359	63,173
Federal Subsistence (Glennallen subdistrict, dip net, fish wheel or spear)[d]	11,347	11,822	12,835	13,774	16,487	17,060	23,034	26,897	19,365	16,251	16,734	16,887
Personal Use Reported (Chitina Subdistrict, dip net)[c]	81,359	90,035	138,487	128,052	127,143	180,663	157,215	223,080	148,982	132,694	77,051	140,771
Federal Subsistence (Chitina subdistrict, dip net)[d]	789	817	2,061	1,693	915	2,252	1,664	2,345	1,321	1,600	3,491	1,546
Upriver sport harvest[e]	11,431	13,415	14,743	7,727	23,404	26,611	18,005	9,489	7,555	9,589	2,943	14,197
Delta sport harvest[e]	1,225	959	1,342	838	764	386	87	130	246	200	58	618
Upriver spawning escapement[f]	480,597	468,724	502,995	607,657	953,245	860,929	864,988	930,060	513,546	463,914	478,701	664,665
Delta spawning escapement[g]	135,900	138,584	167,810	153,014	133,700	151,410	128,410	132,390	103,100	113,900	116,940	135,822

-continued-

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Hatchery broodstock/excess[h]	45,022	43,409	157,980	59,589	65,348	72,369	53,737	40,123	32,341	17,083	30,306	58,700
Total sockeye salmon run size	1,137,925	1,719,628	1,714,433	3,095,318	3,276,472	3,009,733	3,386,773	3,209,312	2,075,140	1,393,961	819,411	2,401,870

[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 (2005–2014) 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 onsite hatchery surplus. Prior to 1999, upriver spawning escapement was based on the Miles Lake sonar passage (sockeye salmon only) minus upriver subsistence, personal use, sport, hatchery broodstock, and onsite hatchery surplus. The number of sockeye salmon past the Miles Lake sonar was determined by multiplying the total number of fish past the sonar by the percentage of sockeye salmon in the total upriver subsistence/personal use fisheries.

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

[h] Hatchery broodstock and onsite excess are from the PWSAC (e.g., PWSAC 2018a-b).

Appendix A2.–Total estimated sockeye salmon runs to the Copper River by origin and the 10-year average, 2008–2018.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Upriver wild contribution[a]	852,316	1,260,717	991,791	2,004,078	2,503,278	2,224,817	2,633,272	2,679,815	1,608,098	1,115,220	629,071	1,787,340
Delta wild contribution[b]	202,811	324,744	289,313	512,515	333,445	351,004	350,493	310,313	259,227	213,834	126,691	314,770
Gulkana contribution[c]	86,095	136,443	434,891	580,944	439,749	433,912	403,008	219,184	207,815	64,906	63,649	300,695
Total estimated sockeye salmon run size	1,141,223	1,721,904	1,715,995	3,097,537	3,276,472	3,009,733	3,386,773	3,209,312	2,075,140	1,393,961	819,411	2,402,805

[a] Beginning in 1999, the upriver wild sockeye 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 (CR) commercial and subsistence fisheries, CR Delta wild stock, and CR Delta sport harvests. Prior to 1999, 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 multiplied by the percent of sockeye salmon harvested in upriver subsistence fisheries) and sockeye salmon captured in the CR commercial and subsistence harvests minus Gulkana Hatchery contributions to the CR commercial and subsistence fisheries, delta wild stock, and delta sport harvests.

[b] Delta wild sockeye salmon contribution was estimated as the total CR district harvest multiplied by proportion CR Delta sockeye salmon (delta escapement divided by the total number of sockeye salmon past the Miles Lake sonar plus CR Delta escapement) plus CR Delta escapement and CR 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, and 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 10-year average, 2008–2018.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Commercial harvest[a]	11,437	9,457	9,645	18,500	11,764	8,826	10,207	22,506	12,348	13,834	7,618	12,852
Commercial, homepack[a]	537	876	906	1,282	853	564	768	1,145	727	744	85	840
Commercial, donated[a]	4	0	0	0	0	0	0	0	0	0	0	0
Educational drift gillnet permit[a]	47	50	31	6	6	55	36	50	86	50	40	42
Subsistence (Cordova, drift gillnet)[b]	470	212	276	212	237	854	153	167	73	778	1,356	343
Subsistence (Batzulnetas, dip net, fish wheel or spear)[b]	0	0	0	0	0	0	0	0	0	0	0	0
Subsistence (Glennallen Subdistrict, dip net, fish wheel or spear)[c]	2,381	2,493	2,099	2,319	2,095	2,148	1,365	2,212	2,075	2,906	4,531	2,209
Federal subsistence (Glennallen subdistrict, dip net, fish wheel or spear)[d]	837	549	326	744	415	374	420	402	396	431	3,137	489
Personal use harvests (Chitina Subdistrict, dip net)[c]	1,999	214	700	1,067	567	744	719	1,570	711	1,961	1,273	1,025
Federal subsistence (Chitina subdistrict, dip net)[d]	23	9	18	13	5	18	14	15	15	12	101	14
Sport harvest[e]	3,618	1,355	2,409	1,753	459	285	931	1,343	327	1,731	1,320	1,421
Upriver spawning escapement[f]	32,485	27,781	16,771	27,993	27,911	29,012	20,709	26,764	12,485	33,684	42,202	25,559
Total estimated Chinook salmon run size	53,838	42,996	33,181	53,889	44,312	42,880	35,322	56,174	29,243	56,131	61,663	44,797

[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 common property salmon harvest by species in the Copper River District, 1973–2018.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1973	19,947	332,816	132,164	8,964	10,173	504,064
1974	18,980	607,766	46,625	9,839	664	683,874
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	47,061	1,152,220	677,633	12,079	19,055	1,908,048
1995	65,675	1,271,822	542,658	19,809	56,100	1,956,064
1996	55,646	2,356,365	193,042	6,372	25,533	2,636,958
1997	51,273	2,955,431	18,656	8,483	2,465	3,036,308
1998	68,827	1,341,692	108,232	20,829	5,022	1,544,602
1999	62,337	1,682,559	153,061	10,205	25,321	1,933,483
2000	31,259	880,334	304,944	9,804	5,363	1,231,704
2001	39,524	1,323,577	251,473	9,387	2,789	1,626,750
2002	38,734	1,248,503	504,223	3,677	31,627	1,826,764
2003	47,721	1,188,052	363,489	12,934	10,110	1,622,306
2004	38,191	1,048,004	467,859	5,175	3,386	1,562,615
2005	34,624	1,331,664	263,465	34,987	3,515	1,668,255
2006	30,278	1,496,754	318,285	30,844	17,203	1,893,364
2007	39,095	1,901,773	117,182	80,715	9,657	2,148,422
2008	11,437	320,815	202,621	1,437	1,279	537,589
2009	9,457	896,621	207,776	16,759	8,629	1,139,242
2010	9,645	636,214	210,621	21,149	15,694	893,323
2011	18,500	2,052,432	127,511	24,050	13,231	2,235,724
2012	11,764	1,866,541	130,261	6,011	2,733	2,017,310
2013	8,826	1,608,117	244,985	65,366	10,169	1,937,463
2014	10,207	2,050,007	315,776	43,534	11,703	2,431,227
2015	22,506	1,750,762	136,981	84,692	15,650	2,010,591
2016	12,348	1,175,100	367,630	34,430	5,476	1,594,984
2017	13,834	586,079	306,287	69,213	12,871	988,284
2018	7,618	46,524	303,957	10,569	3,171	371,839
Averages						
2008–2017	12,852	1,294,269	225,045	36,664	9,744	1,578,574
1993–2017	32,340	1,420,787	272,645	25,661	13,103	1,764,536

Appendix A5.–Copper River District commercial common property drift gillnet salmon harvest by period, 2018.

Period [a]	Date	News release dates[b]	Hours	Permits fished	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
01[c]	05/17–05/17	05/03	12	339	403	2,971	50,400	2,012	10,017	0	0	0	0	122	1,073
02[c]	05/21–05/21	05/18	12	267	305	1,488	25,136	4,054	20,702	1	3	0	0	269	1,914
03[c]	05/28–05/28	05/26	12	431	518	3,077	48,961	21,087	105,078	1	14	0	0	2,602	19,071
04	07/09–07/09	07/07	12	71	79	8	161	4,961	26,380	41	318	19	57	2	19
05	07/19–07/19	07/18	12	118	124	56	1,105	7,638	40,388	207	1,502	3,005	11,490	100	761
06	07/26–07/26	07/25	12	65	72	0	0	2,788	13,734	520	3,700	3,073	10,817	38	269
07	08/02–08/02	08/01	12	28	30	1	13	628	3,131	408	3,034	3,989	14,179	20	146
08	08/09–08/09	08/08	12	52	56	3	63	1,127	5,533	3,308	26,443	448	1,703	5	36
09	08/16–08/17	08/11	24	191	266	2	27	1,244	6,074	34,689	278,262	20	75	3	20
10	08/20–08/21	08/18	24	217	306	3	39	435	2,340	57,868	486,567	2	8	0	0
11	08/23–08/24	08/22	24	285	407	7	90	273	1,260	41,250	348,755	2	8	3	19
12	08/27–08/28	08/25	24	282	368	0	0	48	234	43,536	368,291	4	18	2	11
13	08/30–08/31	08/29	24	288	343	2	22	94	463	28,319	243,343	0	0	3	25
14	09/03–09/04	09/01	24	224	282	0	0	68	297	32,559	284,048	5	15	1	5
15	09/06–09/06	09/04	12	233	256	0	0	21	95	21,325	204,942	0	0	0	0
16	09/10–09/11	09/07	24	206	271	0	0	31	170	19,998	196,098	0	0	0	0
17	09/13–09/13	09/12	12	169	180	0	0	6	27	7,460	74,548	0	0	0	0
18	09/17–09/18	09/14	24	111	128	0	0	4	25	7,728	76,626	1	3	1	4
19	09/20–09/21	09/18	24	50	59	0	0	5	25	2,364	24,012	1	4	0	0
20	09/24–09/25	09/21	24	30	40	0	0	0	0	2,121	22,574	0	0	0	0
21	09/27–09/28	09/25	24	5	5	0	0	0	0	239	2,303	0	0	0	0
22	10/01–10/02	09/28	24	0	0	0	0	0	0	0	0	0	0	0	0
23	10/04–10/05	10/03	24	0	0	0	0	0	0	0	0	0	0	0	0
24	10/08–10/09	10/03	24	1	1					Confidential					
25	10/11–10/12	10/03	24	0	0	0	0	0	0	0	0	0	0	0	0
Total				484	4,499	7,618	126,017	46,524	235,973	303,942	2,645,383	10,569	38,377	3,171	23,373
Average weights							16.54		5.07		8.70		3.63		7.37

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main. Required parameters to search the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2015; Species Group = Salmon; Management Area = Prince William Sound.

[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 Fishing News Release System 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 or a portion of the fishing period; see corresponding news release for more detail.

Appendix A6.–Daily salmon counts at Miles Lake sonar, 2018.

Date		Water level (meters)	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
05/10		39.56	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0
05/11		39.84	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0
05/12		40.47	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0
05/13	a	40.28	0	N/A	0	0	N/A	0	0	0	0	0
05/14	b	39.96	0	N/A	0	0	N/A	0	0	0	0	0
05/15	c	39.80	0	N/A	0	0	N/A	0	0	0	0	0
05/16	d	39.61	0	N/A	0	0	N/A	0	0	0	0	0
05/17	e	39.56	0	N/A	0	0	N/A	0	0	0	0	0
05/18	f	39.54	27	N/A	27	27	N/A	0	77	77	124	124
05/19	g	39.58	158	N/A	158	185	0	0	498	575	799	923
05/20	h	39.77	314	N/A	314	499	0	0	739	1,314	1,187	2,110
05/21	i	39.96	532	N/A	532	1,031	162	648	1,762	3,076	2,830	4,939
05/22	j	40.07	516	72	588	1,619	66	264	3,211	6,287	5,155	10,095
05/23		40.06	709	192	901	2,520	156	624	4,611	10,898	7,403	17,498
05/24		40.15	1,206	224	1,430	3,950	216	864	5,357	16,255	8,601	26,099
05/25		40.18	1,129	786	1,915	5,865	432	1,728	7,956	24,211	12,774	38,873
05/26		40.17	1,842	1,248	3,090	8,955	474	1,896	9,174	33,385	14,730	53,603
05/27		40.11	1,536	2,075	3,611	12,566	923	3,692	9,734	43,119	15,628	69,231
05/28		40.10	1,560	3,216	4,776	17,342	882	3,528	11,263	54,381	18,083	87,314
05/29		40.09	2,046	4,344	6,390	23,732	1,134	4,536	13,327	67,708	21,397	108,711
05/30		40.12	3,006	5,178	8,184	31,916	1,470	5,880	13,378	81,086	21,479	130,191
05/31		40.18	2,586	4,620	7,206	39,122	1,656	6,624	14,059	95,145	22,573	152,763
06/01		40.22	2,712	4,050	6,762	45,884	1,446	5,784	15,160	110,304	24,340	177,103
06/02		40.25	2,960	6,996	9,956	55,840	2,148	8,592	16,876	127,180	27,096	204,200
06/03		40.38	4,686	6,780	11,466	67,306	2,280	9,120	15,595	142,775	25,038	229,238
06/04		40.54	6,933	7,529	14,462	81,768	2,910	11,640	16,750	159,525	26,893	256,131
06/05		40.72	4,645	9,102	13,747	95,515	3,168	12,672	16,034	175,559	25,745	281,876
06/06		40.94	2,988	7,863	10,851	106,366	2,484	9,936	16,391	191,950	26,317	308,193
06/07		41.07	2,712	8,772	11,484	117,850	2,466	9,864	14,233	206,183	22,852	331,045
06/08		41.32	3,521	8,490	12,011	129,861	3,306	13,224	15,675	221,857	25,167	356,212
06/09		41.42	3,036	8,739	11,775	141,636	2,280	9,120	14,620	236,478	23,474	379,686
06/10		41.58	3,612	9,618	13,230	154,866	2,928	11,712	14,408	250,885	23,133	402,819
06/11		41.77	3,546	9,360	12,906	167,772	3,186	12,744	13,457	264,343	21,607	424,426

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Appendix A6.–Page 2 of 3.

Date	Water level (meters)	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
06/12	42.28	1,783	9,138	10,921	178,693	2,466	9,864	12,554	276,897	20,157	444,583
06/13	42.49	1,776	6,594	8,370	187,063	1,980	7,920	10,975	287,872	17,622	462,205
06/14	42.40	2,136	8,094	10,230	197,293	2,004	8,016	9,101	296,973	14,612	476,817
06/15	42.32	3,528	8,466	11,994	209,287	2,550	10,200	9,431	306,404	15,142	491,959
06/16	42.28	4,560	7,710	12,270	221,557	3,012	12,048	9,311	315,715	14,950	506,908
06/17	42.50	1,726	8,521	10,247	231,804	2,129	8,516	8,779	324,494	14,096	521,004
06/18	43.00	1,266	7,212	8,478	240,282	1,908	7,632	9,402	333,896	15,096	536,100
06/19	43.83	342	2,760	3,102	243,384	1,020	4,080	9,583	343,479	15,386	551,486
06/20	44.39	438	1,608	2,046	245,430	534	2,136	8,999	352,478	14,449	565,935
06/21	44.45	792	4,284	5,076	250,506	876	3,504	8,411	360,889	13,505	579,439
06/22	44.35	690	7,050	7,740	258,246	1,962	7,848	9,026	369,914	14,491	593,931
06/23	44.21	1,157	7,338	8,495	266,741	1,998	7,992	8,614	378,529	13,831	607,762
06/24	43.93	2,193	10,002	12,195	278,936	2,358	9,432	8,311	386,840	13,344	621,107
06/25	43.55	2,781	9,378	12,159	291,095	2,338	9,352	8,014	394,854	12,868	633,974
06/26	43.38	4,127	10,224	14,351	305,446	3,149	12,596	7,626	402,480	12,244	646,218
06/27	43.22	3,263	11,436	14,699	320,145	3,060	12,240	7,449	409,930	11,961	658,179
06/28	43.12	4,186	13,430	17,616	337,761	2,898	11,592	6,722	416,652	10,793	668,972
06/29	42.88	8,130	13,002	21,132	358,893	4,212	16,848	7,258	423,910	11,654	680,625
06/30	42.76	8,586	14,070	22,656	381,549	4,320	17,280	7,588	431,498	12,184	692,809
07/01	42.76	7,950	15,000	22,950	404,499	4,638	18,552	7,326	438,825	11,763	704,572
07/02	42.96	4,952	16,483	21,435	425,934	4,896	19,584	6,671	445,496	10,712	715,284
07/03	43.16	3,714	14,226	17,940	443,874	3,900	15,600	6,390	451,886	10,259	725,543
07/04	43.50	3,053	15,572	18,625	462,499	4,764	19,056	6,273	458,158	10,071	735,614
07/05	43.84	2,910	13,014	15,924	478,423	4,326	17,304	5,505	463,663	8,839	744,453
07/06	44.06	3,108	11,094	14,202	492,625	3,252	13,008	5,412	469,075	8,689	753,142
07/07	44.33	2,544	10,818	13,362	505,987	3,216	12,864	6,104	475,179	9,801	762,943
07/08	44.34	1,605	12,180	13,785	519,772	2,640	10,560	6,053	481,232	9,719	772,661
07/09	44.10	1,492	9,612	11,104	530,876	3,396	13,584	5,627	486,859	9,035	781,696
07/10	44.20	936	5,356	6,292	537,168	1,522	6,088	5,783	492,641	9,284	790,980
07/11	44.35	613	1,890	2,503	539,671	649	2,596	6,142	498,784	9,862	800,842
07/12	43.91	1,386	4,434	5,820	545,491	594	2,376	5,899	504,682	9,471	810,313
07/13	43.33	4,486	12,258	16,744	562,235	2,772	11,088	6,005	510,688	9,642	819,955
07/14	42.84	6,734	14,802	21,536	583,771	4,560	18,240	6,464	517,151	10,378	830,333
07/15	42.78	5,595	9,167	14,762	598,533	4,500	18,000	6,736	523,887	10,816	841,148

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Appendix A6.–Page 3 of 3.

Date	Water level (meters)	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
07/16	42.70	5,975	10,185	16,160	614,693	3,384	13,536	6,307	530,194	10,126	851,274
07/17	42.46	6,026	7,800	13,826	628,519	2,616	10,464	6,408	536,602	10,289	861,563
07/18	42.36	5,220	8,310	13,530	642,049	2,982	11,928	7,180	543,782	11,528	873,091
07/19	42.43	4,923	6,777	11,700	653,749	1,986	7,944	6,619	550,401	10,627	883,719
07/20	42.59	4,902	5,598	10,500	664,249	1,854	7,416	6,201	556,602	9,956	893,674
07/21	42.58	4,146	6,065	10,211	674,460	2,154	8,616	6,574	563,176	10,555	904,230
07/22	42.72	1,921	5,328	7,249	681,709	1,878	7,512	6,028	569,204	9,679	913,909
07/23	43.06	1,990	3,416	5,406	687,115	1,253	5,012	5,145	574,349	8,260	922,169
07/24	43.24	1,657	2,706	4,363	691,478	912	3,648	5,416	579,764	8,695	930,864
07/25	43.40	1,014	2,118	3,132	694,610	696	2,784	5,445	585,209	8,742	939,606
07/26	43.56	1,374	1,326	2,700	697,310	432	1,728	5,302	590,511	8,512	948,118
07/27	43.75	612	1,681	2,293	699,603	288	1,152	5,315	595,826	8,534	956,653
07/28	43.88	678	1,296	1,974	701,577	570	2,280	5,267	601,093	8,456	965,108

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

[a] North bank was deployed for 9 hours.

[b] North bank was deployed for 2 hours.

[c] North bank was deployed for 8 hours.

[d] North bank was deployed for 3 hours.

[e] North bank was deployed for 4 hours.

[f] North bank was deployed for 7 hours with 1 additional hour interpolated.

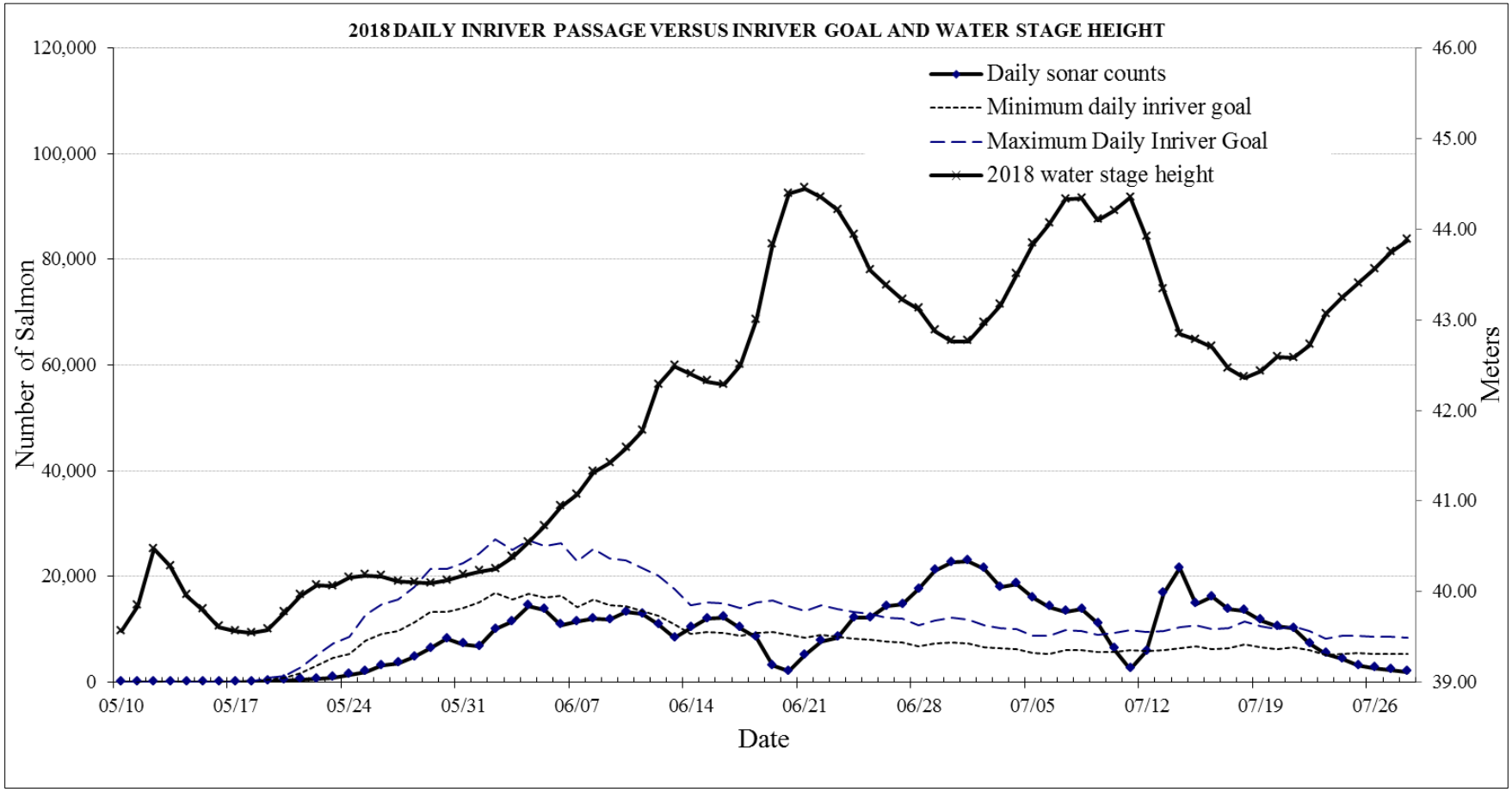
[g] North bank was deployed for 14 hours with 2 additional hours interpolated.

[h] North bank was deployed for 14 hours with 8 additional hours interpolated.

[i] North bank was deployed for 6 hours with 18 additional hours interpolated.

[j] North bank was deployed for 24 hours and south bank was deployed for 11 hours.

Appendix A7.–Minimum and maximum inriver sonar goal and water stage height compared to actual daily salmon passage, Miles Lake sonar, 2018.



Appendix A8.–Inriver salmon passage at the Miles Lake sonar, 1978–2018.

Year	Total	Rank
1978	107,011	41
1979	328,090	40
1980	374,091	39
1981	576,681	33
1982	517,885	36
1983	592,563	32
1984	618,732	29
1985	466,190	38
1986	481,628	37
1987	523,022	35
1988	528,940	34
1989	643,367	25
1990	624,922	28
1991	593,185	31
1992	604,898	30
1993	819,700	16
1994	738,011	19
1995	637,293	26
1996	907,267	10
1997	1,164,791	5
1998	865,896	12
1999	850,597	14
2000	636,837	27
2001	878,205	11
2002	830,263	15
2003	747,091	18
2004	684,103	24
2005	855,125	13
2006	959,706	6
2007	919,601	8
2008	718,344	21
2009	709,748	22
2010	923,811	7
2011	914,231	9
2012	1,294,400	2
2013	1,267,060	3
2014	1,218,418	4
2015	1,346,100	1
2016	801,593	17
2017	723,426	20
2018	701,577	23
Average		
2008–2017	991,713	

Appendix A9.–Projected and actual semi-weekly sockeye and Chinook salmon harvest and weekly coho salmon harvest in the Copper River District drift gillnet fishery, 2018.

Semi-weekly date		Fishing time (hours)	Projected sockeye salmon harvest [a]	Actual sockeye salmon harvest	Projected Chinook salmon harvest [b]	Actual Chinook salmon harvest	Projected coho salmon harvest [c]	Actual coho salmon harvest
5/12	Sat	0	0	0	0	0	0	0
5/16	Wed	0	5,409	0	990	0	–	–
5/19	Sat	12	38,603	2,012	1,457	2,971	1	0
5/23	Wed	12	79,389	4,054	1,834	1,488	–	–
5/26	Sat	0	62,053	0	1,301	0	10	1
5/30	Wed	12	97,575	21,087	1,925	3,077	–	–
6/02	Sat	0	45,196	0	1,309	0	27	1
6/06	Wed	0	65,789	0	1,076	0	–	–
6/09	Sat	0	32,046	0	783	0	44	0
6/13	Wed	0	57,466	0	785	0	–	–
6/16	Sat	0	34,618	0	496	0	52	0
6/20	Wed	0	59,016	0	403	0	–	–
6/23	Sat	0	33,120	0	188	0	197	0
6/27	Wed	0	55,472	0	142	0	–	–
6/30	Sat	0	41,289	0	97	0	289	0
7/04	Wed	0	48,124	0	66	0	–	–
7/07	Sat	0	39,634	0	35	0	449	0
7/11	Wed	12	42,497	4,961	27	8	–	–
7/14	Sat	0	21,327	0	15	0	988	41
7/18	Wed	0	32,879	0	12	0	–	–
7/21	Sat	12	14,003	7,638	9	56	1,472	207
7/25	Wed	0	14,012	0	5	0	–	–
7/28	Sat	12	4,426	2,788	3	0	1,972	520
8/01	Wed	0	8,720	0	9	0	–	–
8/04	Sat	12	1,875	628	3	1	4,609	408
8/08	Wed	0	3,532	0	11	0	–	–

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Appendix A9.–Page 2 of 2.

Semi-weekly Date		Fishing time (hours)	Projected sockeye salmon harvest [a]	Actual sockeye salmon harvest	Projected Chinook salmon harvest [b]	Actual Chinook salmon harvest	Projected coho salmon harvest [c]	Actual coho salmon harvest
8/11	Sat	12	1,080	1,127	5	3	11,947	3,308
8/15	Wed	0	1,505	0	5	0	–	–
8/18	Sat	24	443	1,244	3	2	27,239	34,689
8/22	Wed	0	192	435	2	0	–	–
8/25	Sat	24	283	273	1	3	43,496	99,118
8/29	Wed	24	197	48	0	7	–	–
9/01	Sat	24	51	94	1	0	50,735	71,855
9/05	Wed	24	78	68	0	2	–	–
9/08	Sat	12	38	21	0	0	40,977	53,884
9/12	Wed	24	30	31	0	0	–	–
9/15	Sat	12	4	6	0	0	28,504	27,458
9/19	Wed	24	24	4	0	0	–	–
9/22	Sat	24	4	5	0	0	9,975	10,092
9/26	Wed	24	0	0	0	0	–	–
9/29	Sat	24	0	0	0	0	2,511	2,360
10/03	Wed	24	0	0	0	0	–	–
10/06	Sat	24	0	0	0	0	477	0
10/10	Wed	24	0	0	0	0	–	–
10/13	Sat	24	0	0	0	0	31	15
Total		456	942,000	46,524	13,000	7,618	226,000	303,957

[a] Sockeye salmon projected harvest was based on the midpoint preseason forecast (942,000) and the 1998–2007 harvest timing.

[b] Chinook salmon projected harvest was based on the preseason harvest forecast (13,000) 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 (226,000) 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, 2018.

System [a]	Weekly escapement indices (statistical week ending date listed)[b] 06/16	06/30	07/07	07/14	07/21	07/28	08/04	08/18	09/01	Site[c]	System[d]	Anticipated (by drainage)		
Eyak River														
Eyak River	50	0	200	NS	20	20	250	0	0	250	7,550	9,972	to	23,571
West Shore Beaches	0	50	800	200	500	4,200	1,100	300	200	1,100				
East Shore Beaches	100	200	3,700	100	2,500	600	2,500	450	750	2,500				
Middle Arm Beaches [e]	NS	150	350	200	300	400	1,200	2,500	1,600	1,200				
North Shore Beaches	0	400	0	0	150	700	2,500	350	300	2,500				
Hatchery Creek Delta	0	0	0	0	0	0	300	0	0	300	500			
Hatchery Creek	0	100	10	20	0	0	200	0	0	200				
Power Creek Delta	0	0	0	0	1,200	1,500	200	3,500	0	200	1,000			
Power Creek	NS	20	10	0	200	450	800	50	200	800				
Ibeck Creek														
Ibeck Creek	NS	NS	NS	NS	NS	NS	NS	50	100		0			
Alaganik Slough														
Alaganik Slough	0	200	100	0	20	0	0	0	0	20	3,270	8,359	to	19,758
McKinley Lake	0	20	2,500	0	3,000	150	250	500	900	3,000				
Salmon Creek West Fork	0	50	0	100	50	1,000	1,200	0	0	50				
Salmon Creek East Fork	0	0	50	200	0	0	700	200	0	200				
26/27 Mile Creek														
26/27 Mile Creek	0	20	0	1,275	1,300	1,000	750	300	450	1,300	1,300	2,182	to	5,157
39 Mile Creek														
39 Mile Creek	0	0	50	2,900	3,000	3,600	2,600	1,000	500	3,600	3,600	5,772	to	13,642
Goat Mountain														
Goat Mountain Creek	0	0	300	80	475	150	100	0	50	475	475	549	to	1,298
Pleasant Creek														
Pleasant Creek	750	3,700	3,800	2,990	1,500	850	620	0	0	3,800	3,800	1,075	to	2,542
Martin River														
Martin River - Lower	NS	NS	NS	NS	NS	NS	NS	0	NS	0	0			
Ragged Point River	20	150	50	550	300	0	125	0	0	300	2,800			
Ragged Point Lake Outlet	0	0	0	10	0	50	30	50	400	0				
Ragged Point Lake	0	0	0	250	2,500	NS	2,200	2,700	1,200	2,500				
Martin River - Upper [e]	350	250	3,500	50	50	250	90	0	0	3,500	3,500			
Martin Lake Outlet	4,100	3,500	1,100	750	600	150	0	0	0	1,100	10,425	17,598	to	41,596
Martin Lake	1,500	4,000	8,400	1,300	7,500	2,300	900	0	100	8,400				

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Appendix A10.–Page 2 of 2.

System [a]	Weekly escapement indices (statistical week ending date listed) 06/16	06/30	07/07	07/14	07/21	07/28	08/04	08/18	09/01	Site[c]	System[d]	Anticipated (by drainage)		
Martin Lakefeeders	0	200	900	4,700	5,000	6,500	4,050	500	0	900				
Pothole River	NS	NS	NS	15	100	200	100	0	20	15				
Pothole Lake	NS	NS	NS	10	75	0	50	1,600	1,000	10				
Little Martin River	0	0	0	0	0	0	0	0	0	0	2,850			
Little Martin Lake	0	0	600	2,400	0	550	1,900	2,100	2,850	2,850				
Tokun														
Tokun Springs	0	300	400	450	500	500	300	50	200	500	15,100	5,352	to	12,649
Tokun River	490	250	600	400	200	250	130	850	400	600				
Tokun Lake Outlet	2,000	1,000	4,000	1,500	2,000	0	200	300	200	4,000				
Tokun Lake	250	200	10,000	4,500	5,500	0	1,600	5,200	5,100	10,000				
Martin River Slough														
Martin River Slough	1,500	2,300	1,570	800	2,050	250	NS	75	0	2,300	2,300	4,141	to	9,787
Total	11,110	17,060	42,990	25,750	40,590	25,620	26,945	22,625	16,520	58,470	58,470			
Lower SEG	14,273	28,229	30,055	31,424	32,059	32,568	24,976	24,382	17,446					55,000
Average SEG (avg. antic. esc.)	21,902	43,318	46,121	48,222	49,196	49,977	38,326	37,415	26,772					84,400
Upper SEG	33,736	66,722	71,040	74,276	75,775	76,979	59,034	57,630	41,236					130,000

Note: NS = no survey.

[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 that minimizes possible duplication 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 1 day may be used in the escapement index if the surveyor indicated these counts represented different fish.

Appendix A11.–Copper River and Bering River area sockeye salmon escapement indices, 2008–2018.

Stream/Lake [a]	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Eyak Lake	9,290	11,980	25,000	22,775	23,350	19,205	20,400	14,400	12,700	10,800	7,550	16,990
Hatchery Creek	560	680	870	100	1,000	300	300	1,400	500	1,800	500	751
Power Creek	220	260	1,853	2,600	3,300	1,000	750	1,450	3,200	800	1,000	1,543
Ibeck Creek	41	100	10	475	870	200	400	800	50	0	0	295
McKinley Lake	3,510	3,520	2,980	3,950	7,750	5,700	5,575	1,800	700	2,200	3,020	3,769
Salmon Creek	820	500	1,370	1,910	75	2,200	75	5,500	3,800	5,100	250	2,135
26/27 Mile Creek	8	0	0	870	350	950	750	920	900	700	1,300	545
39 Mile Creek	2,950	160	620	1,500	3,000	2,000	1,075	2,400	2,500	2,200	3,600	1,841
Goat Mountain	100	30	140	50	1,925	300	900	950	200	300	475	490
Pleasant Creek	4,920	2,610	3,460	7,600	2,300	5,900	4,700	8,300	2,020	8,050	3,800	4,986
Martin River	6,440	2,610	2,992	2,300	0	150	500	0	1,000	300	3,500	1,629
Ragged Pt. River/Lake	3,430	610	1,010	2,700	2,500	3,500	1,700	3,000	3,200	2,100	2,800	2,375
Martin Lake	8,970	19,071	19,660	10,200	3,850	22,000	16,085	100	10,100	6,050	10,400	11,609
Pothole Lake	5,800	2,540	4,440	0	6,900	900	250	15,420	0	900	25	3,715
Little Martin Lake	1,060	421	680	3,700	3,510	5,800	2,050	6,000	1,530	1,900	2,850	2,665
Tokun Lake/River	18,321	22,680	15,480	9,637	5,500	4,000	5,825	2,650	5,550	8,800	15,100	9,844
Martin River Slough	900	1,520	2,270	2,000	670	1,600	2,870	1,575	3,600	4,500	2,300	2,151
Copper River Delta total	67,340	69,292	82,835	72,367	66,850	75,705	64,205	66,665	51,550	56,500	58,470	67,331
Upper Copper River [b]	491,516	477,327	524,692	621,545	970,622	889,939	885,024	930,095	513,546	463,914	478,701	676,822
Copper River District total	558,856	546,619	607,527	693,912	1,037,472	965,644	949,229	996,760	565,096	520,414	537,171	744,153
Bering River/Lake	17,545	11,250	3,280	15,060	15,950	19,100	13,600	20,400	15,300	15,750	11,400	14,724
Shepherd Creek	180	91	46	4,800	1,400	750	750	625	700	2,075	100	1,142
Stillwater Creek	111	190	81	175	170	1,200	100	500	100	900	650	353
Kushtaka Lake	100	90	140	530	370	850	35	180	190	90	700	258
Katalla River	260	1,850	820	7,965	400	2,000	400	1,000	100	300	450	1,510
Bering River Area total	18,196	13,471	4,367	28,530	18,290	23,900	14,885	22,705	16,390	19,115	13,300	17,985
Copper/Bering River total	577,052	560,090	611,894	722,442	1,055,762	989,544	963,714	1,018,465	581,486	539,529	550,471	761,998

[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, 2003–2018.

Location	Yearly survey indices [a]																Expected indices [b]
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
Mentasta Lake	4,800	6,000	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	3,277
Fish Creek–Mentasta	NS	NS	3,330	3,700	323	1,440	680	400	91	300	900	350	800	175	600	125	963
Bad Crossing 1 & 2	90	30	5,120	620	1,683	520	1,691	1,390	742	261	4,100	470	4,650	5	2,625	12	2,604
Suslota Lake	2,750	1,975	1,230	1,300	30	86	320	6	350	55	500	2,500	5,500	2,300	200	0	1,416
Tanada Lake	0	3,950	683	30	563	986	1,290	NS	800	1,715	2,600	1,000	1,100	1,300	1,150	51	3,849
Dickey Lake	0	10	55	185	71	37	20	3	59	26	30	251	300	80	5	30	115
Keg Creek	38	0	7	190	0	1	423	0	0	15	15	10	5	0	20	25	725
Swede Lake	325	225	7	2,570	731	343	109	320	137	400	60	175	160	85	30	12	531
Mahlo Creek	6,850	500	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	2,648
Mendeltna Creek	1,200	50	318	700	473	727	1,945	1,550	760	1,085	850	300	1,050	335	166	200	2,470
St. Anne Creek	3,750	970	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	4,888
Tonsina Lake	NS	0	NS	20	20	3	0	NS	0	15	0	0	0	0	10	0	1,080
Long Lake	NS	NS	NS	1,400	505	382	14	10	290	375	5	10	20	0	1	0	1,577
Tana River	250	NS	NS	1,392	312	434	19	100	40	410	65	145	83	97	50	0	1,345
Salmon Creek (Bremner)	300	NS	217	790	750	3,500	530	340	276	1,000	1,500	610	400	400	300	300	825
Fish Lake	1,300	0	281	7,250	1,066	158	0	89	1,008	35	20	4	6	60	0	0	6,418
Mud Creek. – Summit Lake	3,900	40	NS	1,800	2,705	11,410	0	2,759	211	870	600	320	225	100	90	150	7,445
Paxson Inlet–Mud Creek	2,800	2,200	363	2,470	9,317	4,665	2,720	2,301	1,520	7,900	9,900	3,100	850	500	3,500	300	6,560
Mud Creek and Lake	75	5	145	310	2	10	0	20	2	10	11	100	30	6	0	20	172
Paxson Lake Outlet	NS	5	155	270	324	596	0	560	1,700	350	2,000	350	125	100	50	400	2,661
Totals	28,428	15,960	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	51,569

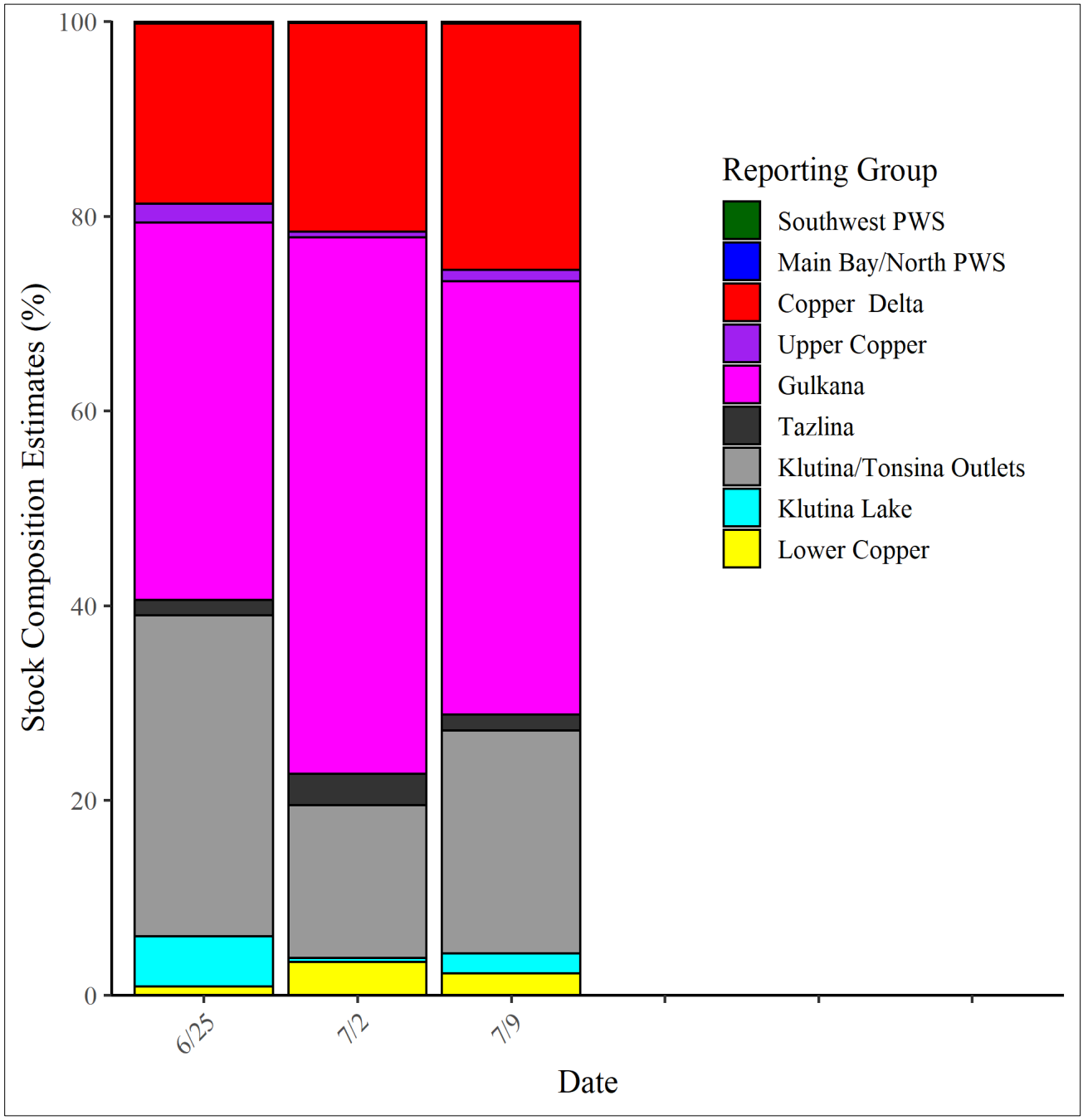
Note: NS = no survey.

[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.–Prince William Sound Area sockeye salmon genetic reporting groups and Copper River District sampling stock composition (%) results, 2018. (Proportions <0.5% are not shown.)

Week	Southwest PWS	Main Bay North PWS	Copper Delta	Upper Delta	Gulkana	Tazlina	Klutina and Tonsina outlets	Klutina Lake	Lower Copper
June 25	0.1	0.2	18.5	2	38.8	1.6	33	5.1	0.9
July 2	0	0.1	21.5	0.6	55.1	3.2	15.7	0.4	3.4
July 7	0.1	0.1	25.3	1.2	44.5	1.6	22.9	2	2.2



Appendix A14.–Estimated age and sex composition of sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2018.

		Brood year and age class									
		2015		2014		2013			2012		
		0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	Total
Strata combined:	5/17 – 10/12	Commercial harvest									
Sampling dates:	5/17 – 7/28										
Sample size:	2,412										
Total	Percentage of sample	1.0	0.1	1.4	35.4	0.1	56.8	2.0	1.2	2.0	100
	Number in harvest	465	47	651	16,469	47	26,426	930	558	930	46,524
	Standard error	107	47	181	597	47	628	166	167	162	
Strata combined:	6/23 – 7/18	Test fishery									
Sampling dates:	6/23 – 7/18										
Sample size:	628										
Total	Percentage of sample	2.6	0.0	0.8	29.3	0.0	62.0	0.6	0.9	3.8	100
	Number in harvest	16	0	5	184	0	389	4	6	24	628
	Standard error	16	0	5	133	0	153	4	6	24	

Appendix A15.–Estimated age composition of Chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2018.

Strata combined:	05/17 – 10/12	Brood year and age class			
Sampling dates:	05/17 – 05/18	2014	2013	2012	
		1.2	1.3	1.4	
Total	Percentage of sample	16.1	75.8	8.1	100
	Number in harvest	1,227	5,777	614	7,618
	Standard error	230	268	170	

Appendix A16.–Total estimated coho salmon run to the Copper River by end user or destination and the 10-year average, 2008–2018.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Commercial harvest[a]	202,621	207,776	210,621	127,511	130,261	244,985	315,776	136,981	367,630	306,287	303,957	225,045
Commercial, homepack[a]	423	767	1,026	543	1,037	249	1,146	1,423	1,353	1,945	2,581	991
Commercial, donated[a]	154	0	0	0	0	0	0	0	0	0	0	15
Educational drift gillnet permit[a]	0	0	0	0	0	0	0	0	0	0	0	0
Subsistence (Cordova, drift gillnet)[b]	53	22	27	34	0	1	0	10	2	43	195	19
Federal subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel)[b]	119	185	68	581	392	310	630	878	555	514	255	423
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]	493	228	293	372	335	144	233	77	45	68	151	229
Federal subsistence (Glennallen Subdistrict, dip net or fish wheel)[d]	NA	34	64	176	173	21	29	78	11	1	0	65
Personal use (Chitina Subdistrict, dip net)[c]	2,711	1,712	2,013	1,702	1,385	797	1,129	841	1,182	715	1,436	1,419
Federal subsistence (Chitina Subdistrict, dip net)[d]	74	11	31	8	8	8	72	15	41	9	34	28
Delta sport harvest[e]	7,706	14,384	15,752	14,283	15,230	17,053	16,137	24,515	13,094	9,559	11,730	14,771
Upriver sport harvest[e]	57	36	114	21	0	0	89	0	0	23	8	34
Upriver spawning escapement[f]	–	–	–	–	–	–	–	–	–	–	–	–
Delta spawning escapement[g]	153,784	82,588	82,154	76,290	74,020	69,360	86,020	83,330	152,400	87,520	107,600	94,747
Total estimated coho salmon run size	368,195	307,743	312,163	221,521	222,841	332,928	421,261	248,148	536,313	406,684	427,947	337,780

[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 (2005–2011) 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 A17.–Aerial escapement indices by statistical week and location for the coho salmon run to Copper River Delta, 2018.

Drainage	System[a]	Weekly escapement indices (statistical week ending date)[b] 8/18	9/1	9/8	9/22	Site[c]	System[d]	Projected (by drainage)
Eyak River	Eyak River	100	100	400	2,950	2,950	10,200	6,916
	East Shore Beaches	0	400	700	3,100	3,100		
	West Shore Beaches	0	300	450	500	500		
	Middle Arm Beaches	0	1,500	700	300	300		
	North Shore Beaches	0	50	0	0	0		
	Hatchery Creek Delta	0	100	1,000	900	900		
	Hatchery Creek	0	1,500	900	700	700		
	Power Creek Delta	0	1,000	650	800	800		
	Power Creek	100	300	400	950	950		
Ibeck Creek	Ibeck Creek	250	5,200	6,500	4,500	6,500	6,500	6,227
Scott River	Scott Lake	0	0	50	400	400	400	1,429
	Scott River	0	0	0	0	0		
	Elsner Lake	NS	0	0	0	0		
Alaganik Slough	Alaganik Slough	0	50	500	300	300	2,200	2,591
	18/20 Mile Creek	0	200	350	300	300		
	McKinley Lake	50	300	300	150	150		
	Salmon Creek West Fork	0	200	400	300	300		
	Salmon Creek East Fork	0	470	600	1,150	1,150		
26/27 Mile Creek	26/27 Mile Creek	0	50	150	200	200	200	829
39 Mile Creek	39 Mile Creek	1,700	2,400	3,100	2,300	3,100	3,100	3,831
Goat Mountain Cr.	Goat Mountain Creek	50	500	550	550	550	550	1,181
Pleasant Creek	Pleasant Creek	25	1,550	6,050	4,050	6,050	6,050	
Martin River	Martin River - Lower	10	NS	NS	NS	0	8,050	6,522
	Ragged Point River	0	450	350	400	400	1,450	849
	Ragged Point Lake Outlet	0	50	100	50	50		
	Ragged Point Lake	0	900	400	1,000	1,000		
	Martin River - Upper	500	3,000	8,050	5,400	8,050		

-continued-

Appendix A17.–Page 2 of 2.

Drainage	System[a]	Weekly escapement indices (statistical week ending date)[b] 8/18	9/1	9/8	9/22	Site[c]	System[d]	Projected (by drainage)
	Martin Lake Outlet	0	700	0	0	0	1,400	1,936
	Martin Lake	0	300	0	300	300		
	Martin Lake Feeders	0	300	1,100	700	1,100		
	Pothole River	0	100	650	400	650	750	1,370
	Pothole Lake	0	3,000	100	0	100		
	Little Martin River	200	5,000	4,100	3,900	5,000	5,100	5,413
	Little Martin Lake	0	100	50	100	100		
Tokun	Tokun Springs	0	750	1,600	700	1,600	2,350	1,376
	Tokun River	0	200	300	450	450		
	Tokun Lake Outlet	0	0	150	100	100		
	Tokun Lake	0	0	0	200	200		
Martin River Slough	Martin River Slough	130	1,975	5,900	3,850[f]	5,900	5,900	9,531
Copper River aerial survey daily total		3,115	32,995	46,600	38,100	53,800	53,800	
Lower SEG		5,846	16,147	21,447	16,908			32,000
Average SEG, (average anticipated escapement)		9,134	25,229	33,510	26,418			55,000
Upper SEG		12,239	33,807	44,904	35,401			67,000

Note: NS = no survey.

[a] The system represents the majority of known coho salmon spawning locations in 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 further sites upstream, the count which 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.

[f] System flown during the next statistical week on Bering River District survey.

Appendix A18.–Copper River Delta and Bering River coho salmon escapement indices, 2008–2018.

Stream/Lake [a,b]	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008–2017
Eyak Lake	17,030	950	13,360	640	3,950	3,880	4,450	5,075	3,200	900	6,850	5,344
Hatchery Creek	370	2,320	640	2,000	100	40	1,300	950	500	550	1,600	877
Power Creek	1,140	990	350	2,520	150	50	760	225	4,500	1,050	1,750	1,174
Ibeck Creek	10,265	9,963	3,381	14,200	7,600	9,150	12,500	8,100	31,500	8,100	6,500	11,476
Scott & Elsner River [c]	3,281	1,170	700	380	575	50	360	100	200	200	400	702
18/20 Mile	161	150	144	310	450	120	400	600	250	700	600	329
McKinley Lake	300	450	630	75	100	400	450	300	650	200	150	356
Salmon Creek	700	1,540	730	1,620	1,300	850	1,950	1,900	2,500	2,350	1,450	1,544
26/27 Mile	10	100	0	1,150	475	1,800	1,600	290	4,000	2,700	200	1,213
39 Mile	5,460	1,570	1,340	2,800	2,400	2,300	2,600	1,700	7,500	1,700	3,100	2,937
Goat Mountain	920	1,220	331	210	400	900	1,200	350	250	700	550	648
Pleasant Creek	2,800	680	1,700	245	440	1,500	1,110	400	1,850	1,650	6,050	1,238
Martin River	9,323	1,651	5,560	2,100	1,420	350	3,820	4,475	6,000	1,200	8,050	3,590
Ragged Point River/Lake	302	590	690	1,100	4,000	2,500	1,050	3,600	1,050	1,160	1,450	1,604
Martin Lake	2,770	1,360	3,511	450	2,350	2,750	2,150	3,250	1,100	1,750	1,400	2,144
Pothole Lake	3,661	2,750	2,000	1,400	2,300	120	550	750	800	2,500	750	1,683
Little Martin Lake	8,760	2,810	460	4,500	4,700	3,800	2,900	4,750	2,300	9,300	5,100	4,428
Tokun River/Lake	3,020	850	1,370	1,350	3,200	620	1,175	1,050	900	1,400	2,350	1,494
Martin River Slough	7,780	10,180	4,180	1,475	1,400	3,500	4,075	4,300	7,350	5,850	5,900	5,009
Copper River Delta Total	78,053	41,294	41,077	38,525	37,310	34,680	44,400	42,165	76,400	43,960	54,200	47,786
Katalla River	5,510	3,340	1,590	1,430	950	800	1,550	1,000	750	3,300	4,700	2,022
Bering River/Lake	4,910	8,491	6,320	5,520	5,700	7,750	10,675	4,300	2,300	3,150	11,750	5,912
Dick Creek	530	1,410	1,210	2,050	2,000	2,800	1,300	1,750	0	700	500	1,375
Shepherd Creek	130	370	10	20	150	0	0	0	8,000	NS	0	964
Nichawak River	11,900	10,120	4,690	6,800	3,750	3,800	6,500	5,100	8,500	10,500	2,700	7,166
Gandil River	2,650	840	1,610	820	500	1,100	1,500	700	300	1,000	250	1,102
Controller Bay	7,332	4,251	6,330	2,250	2,555	2,570	4,950	2,700	6,300	12,000	6,625	5,124
Bering River Area total	32,962	28,822	21,760	18,890	15,605	18,820	26,475	15,550	26,150	30,650	26,525	23,568
Copper/Bering total	111,015	70,116	62,837	57,415	52,915	53,500	70,875	57,715	102,550	74,610	80,725	71,355

[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 A19.–Estimated age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2018.

Strata combined:	05/17 – 10/12	Brood year and age class			
Sampling dates:	08/17 – 09/14	2015	2014	2013	
Sample size:	1,445	1.1	2.1	3.1	Total
Total	Percentage of sample	52.9	46.2	0.9	100
	Number in harvest	53	46	1	303,957
	Standard error	5,214	5,208	1,079	

Appendix A20.–Total commercial common property salmon harvest by species in the Bering River District, 1974–2018.

Year		Chinook	Sockeye	Coho	Pink	Chum	Total
1974		32	4,208	28,615	7	2	32,864
1975		162	21,637	24,162	0	0	45,961
1976		228	30,908	42,423	43	1	73,603
1977		127	14,445	47,218	192	221	62,203
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	65,601
2009	[c]	15	4,157	45,522	1	5	49,700
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	119,927	11	121	120,944
Average 2008–2017		18	2,325	58,847	16	16	63,622

[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 A21.–Bering River District commercial common property drift gillnet salmon harvest by period, 2018.

Period	Date	News release dates	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
01	05/17–05/17	05/03	12	0	0	0	0	0	0	0	0	0	0	0	0
02	05/21–05/21	05/18	12	0	0	0	0	0	0	0	0	0	0	0	0
03	05/28–05/28	05/26	12	0	0	0	0	0	0	0	0	0	0	0	0
04	07/09–07/09	07/07	12	0	0	0	0	0	0	0	0	0	0	0	0
05	07/19–07/19	07/18	12	0	0	0	0	0	0	0	0	0	0	0	0
06	07/26–07/26	07/25	12	0	0	0	0	0	0	0	0	0	0	0	0
07	08/02–08/02	08/01	12	0	0	0	0	0	0	0	0	0	0	0	0
08	08/09–08/09	08/08	12	0	0	0	0	0	0	0	0	0	0	0	0
9[b]	08/16–08/17	08/11	24	2	2	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
10	08/20–08/21	08/18	24	8	14	0	0	0	0	5,127	42,508	0	0	0	0
11	08/23–08/24	08/22	24	47	82	2	25	3	18	11,519	92,073	0	0	0	0
12	08/27–08/28	08/25	24	59	113	0	0	1	6	19,588	165,423	1	4	0	0
13	08/30–08/31	08/29	24	73	116	0	0	1	5	12,550	108,984	8	32	0	0
14	09/03–09/04	09/01	24	83	145	2	20	2	10	19,222	165,347	0	0	0	0
15	09/06–09/06	09/04	12	77	100	0	0	2	12	13,905	133,311	0	0	0	0
16	09/10–09/11	09/07	24	113	234	0	0	12	56	26,679	256,958	0	0	0	0
17	09/13–09/13	09/12	12	83	111	0	0	6	27	4,529	44,272	2	8	0	0
18	09/17–09/18	09/14	24	36	56	1	0	3	17	4,930	48,302	0	0	0	0
19	09/20–09/21	09/18	24	18	27	0	0	3	12	1,601	15,824	0	0	0	0
20	09/24–09/25	09/21	24	5	5	0	0	0	0	277	2,694	0	0	0	0
21	09/27–09/28	09/25	24	0	0	0	0	0	0	0	0	0	0	0	0
22	10/01–10/02	09/28	24	0	0	0	0	0	0	0	0	0	0	0	0
23	10/04–10/05	10/03	24	0	0	0	0	0	0	0	0	0	0	0	0
24	10/08–10/09	10/03	24	0	0	0	0	0	0	0	0	0	0	0	0
25	10/11–10/12	10/03	24	0	0	0	0	0	0	0	0	0	0	0	0
Total			480	159	1,005	5	45	33	163	119,927	1,075,696	11	44	0	0
Average Weights							9.00		4.94		8.97		4.00		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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main. Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound. Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix A22.–Aerial escapement indices by statistical week and location for sockeye salmon returning to the Bering River District, 2018.

		Weekly escapement indices (statistical week ending date listed)[b]										Projected (by
Drainage	System[a]	6/16	6/30	7/7	7/14	7/21	7/28	8/11	9/1	Site[c]	System[d]	drainage)
Bering River	Bering River	0	350	4,200	NS	150	NS	0	0	4,200	11,400	21,903
	Bering Lake	0	200	5,000	NS	5,500	650	250	0	5,000		
	Dick Creek	0	0	2,200	900	2,000	3,500	10	0	2,200		
	Shepherd Creek Lagoon	NS	NS	NS	NS	NS	NS	0	NS	0	100	4,375
	Shepherd Creek	NS	NS	NS	NS	NS	100	20	NS	100		
	Carbon Creek	NS	NS	NS	NS	NS	NS	50	NS	0		
	Clear Creek	NS	NS	NS	NS	50	650	10	NS	650	650	1,197
	Kushtaka Lake	NS	NS	NS	NS	NS	NS	200	NS	200	700	
	Shockum Creek	NS	NS	NS	NS	NS	NS	500	NS	500		1,226
Katalla River	Katalla River [e]	0	0	0	0	450	200	40	0	450	450	
Bering River District weekly index		0	550	11,400	900	8,150	5,100	1,080	0	13,300	13,300	
Lower SEG		4,048	11,015	11,051	11,004	9,401	8,409	2,416	571			15,000
Average SEG (average projected esc.)		6,477	17,623	17,682	17,606	15,042	13,454	3,866	914			24,000
Upper SEG		8,906	24,232	24,313	24,208	20,683	18,499	5,316	1,256			33,000

Note: NS signifies that no survey was flown.

[a] Survey systems represent the majority of known sockeye salmon spawning locations in the Bering River drainage.

[b] 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 estimating method.

[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 that 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 A23.–Aerial escapement indices by statistical week and location for coho salmon returning to the Bering River District, 2018.

Drainage	System[a]	Weekly escapement indices (statistical week ending date listed)[b] 8/18	9/1	9/8	10/6	Site[c]	System[d]	Anticipated (by drainage)
Bering River	Bering River[e]	3,000	550	5,950	NS	5,950	11,750	7,720
	Bering Lake	0	3,000	5,800	1,050	5,800		
	Dick Creek	0	1,000	500	70	500	500	
	Shepherd Creek - Lagoon	0	NS	NS	NS		0	
	Shepherd Creek	0	NS	NS	NS			
	Carbon Creek [f]	0	NS	NS	NS			
Katalla River	Katalla River	100	1,700	4,700	950	4,700	4,700	4,993
Lower Bering River	Gandil River	0	150	250	320	250	250	2,910
	Nichawak River	10	3,750	2,700	750	2,700	2,700	
Controller Bay	Campbell River	500	3,600	5,900	5,250	5,900	6,625	7,378
	Edwardes River	0	400	525	330	525		
	Okalee River	0	200	200	0	200		
	Other Clear Streams [f]	0	0	0	0	0		
Bering River District Weekly Index		3,610	14,350	26,525	8,720	26,525	26,525	
Lower SEG		2,533	8,732	8,803	5,156			13,000
Average SEG (average anticipated escapement)		4,482	15,448	15,574	9,122			23,000
Upper SEG		6,431	22,165	22,345	13,089			33,000

Note: NS signifies that no survey was flown.

[a] Survey systems represent the majority of known coho salmon spawning locations in the Bering River drainage.

[b] 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 estimating method.

[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 delta-wide; it is a non-index stream.

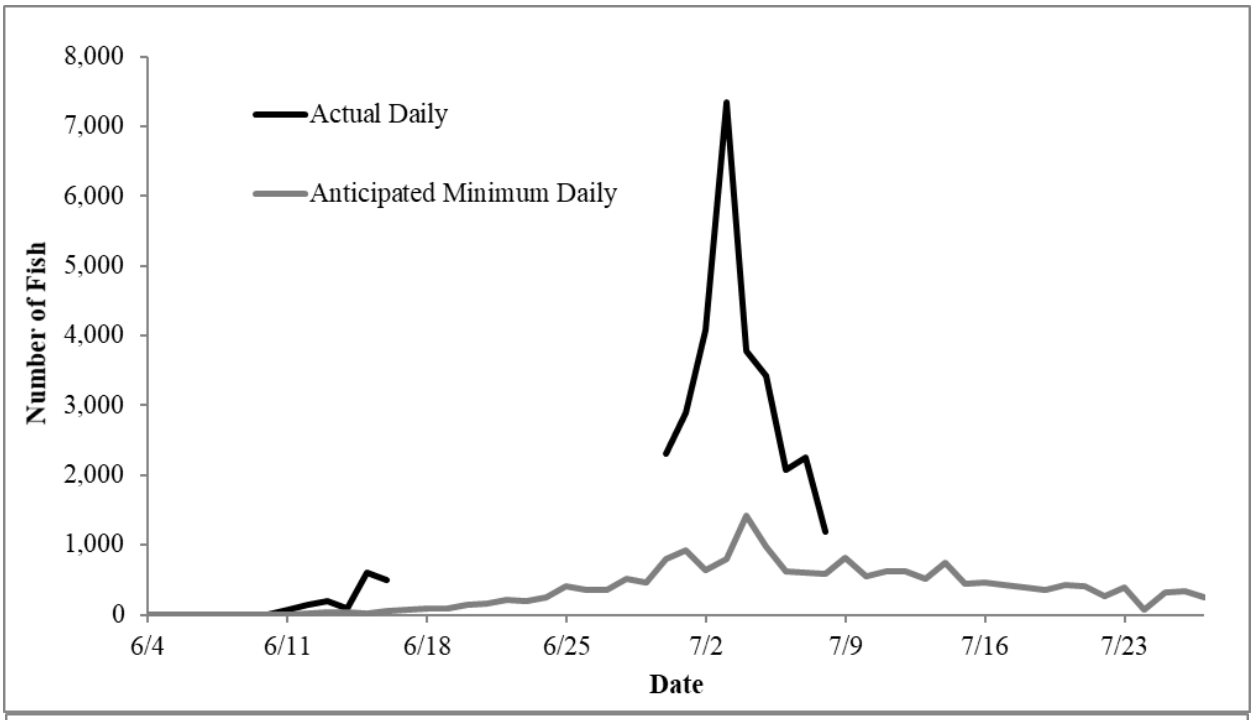
APPENDIX B: COGHILL DISTRICT, UNAKWIK DISTRICT AND PORT CHALMERS SUBDISTRICT

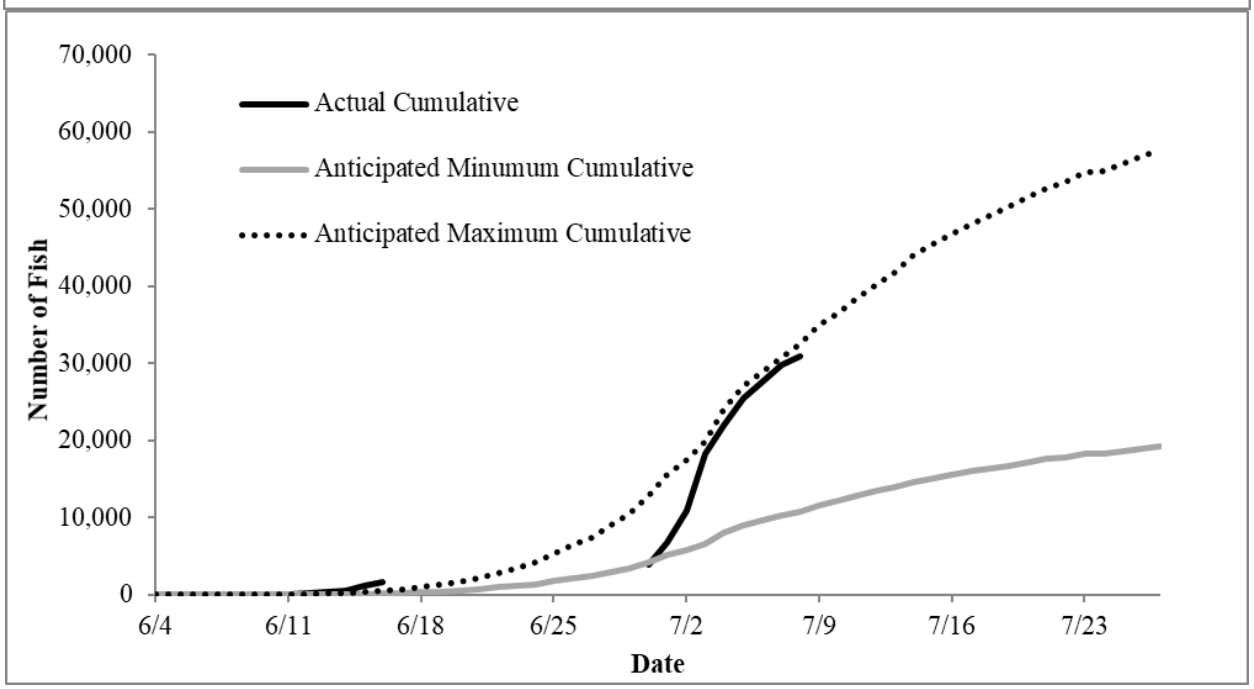
Appendix B1.–Daily and cumulative salmon escapement through the Coghill River weir, 2018.

	Sockeye salmon		Pink salmon			Sockeye salmon		Pink salmon	
Date	Daily	Cumulative	Daily	Cumulative	Date	Daily	Cumulative	Daily	Cumulative
6/9	0	0	0	0	7/3	7,350	18,224	0	0
6/10	7	7	0	0	7/4	3,782	22,006	0	0
6/11	68	75	0	0	7/5	3,430	25,436	0	0
6/12	138	213	0	0	7/6	2,078	27,514	0	0
6/13	195	408	0	0	7/7	2,246	29,760	0	0
6/14	87	495	0	0	7/8	1,194	30,954	0	0
6/15	606	1,101	0	0	7/9	[a]		[a]	0
6/16	498	1,599	0	0	7/10	[a]		[a]	0
6/17	[a]		[a]	0	7/11	[a]		[a]	0
6/18	[a]		[a]	0	7/12	[a]		[a]	0
6/19	[a]		[a]	0	7/13	[a]		[a]	0
6/20	[a]		[a]	0	7/14	[a]		[a]	0
6/21	[a]		[a]	0	7/15	[a]		[a]	0
6/22	[a]		[a]	0	7/16	[a]		[a]	0
6/23	[a]		[a]	0	7/17	[a]		[a]	0
6/24	[a]		[a]	0	7/18	[a]		[a]	0
6/25	[a]		[a]	0	7/19	[a]		[a]	0
6/26	[a]		[a]	0	7/20	[a]		[a]	0
6/27	[a]		[a]	0	7/21	[a]		[a]	0
6/28	[a]		[a]	0	7/22	[a]		[a]	0
6/29	[a]		[a]	0	7/23	[a]		[a]	0
6/30	2,303	3,902	0	0	7/24	[a]		[a]	0
7/1	2,896	6,798	0	0	7/25	[a]		[a]	0
7/2	4,076	10,874	0	0	7/26	[a]		[a]	0

[a] Weir washout. No counts.

Appendix B2.–Anticipated cumulative and daily sockeye salmon escapement based on 3-year running averages compared to actual escapement through Coghill River weir, 2018.





Note: No counts during periods when the weir was not operational.

Appendix B3.–Salmon escapement by species in the Coghill District, 1972–2018.

Year	Sockeye [a]	Pink [b]	Chum [b]	Year	Sockeye [a]	Pink [b]	Chum [b]
1972	51,000	30,960	28,160	1996	38,693	104,781	19,669
1973	55,000	493,780	72,610	1997	35,517	52,961	3,101
1974	22,333	56,940	29,280	1998	28,923	85,968	22,764
1975	34,855	452,430	3,640	1999	59,311	168,816	5,057
1976	9,056	53,908	31,398	2000	28,446	223,646	20,488
1977	31,562	320,680	79,957	2001	38,558	148,665	13,388
1978	42,284	67,084	15,966	2002	28,323	54,882	7,430
1979	48,281	125,544	7,823	2003	75,427	375,147	19,729
1980	142,253	148,066	20,919	2004	30,569	36,717	5,000
1981	156,112	140,436	2,389	2005	30,313	528,264	11,979
1982	180,314	309,202	21,586	2006	23,479	145,511	15,900
1983	38,783	284,164	55,127	2007	70,001	197,405	14,052
1984	63,622	365,226	13,500	2008	29,298	145,177	39,660
1985	163,311	238,728	14,514	2009	23,186	125,907	5,208
1986	71,095	109,798	16,300	2010	24,312	355,108	51,589
1987	187,263	67,761	22,472	2011	102,359	257,020	16,368
1988	72,052	42,985	42,536	2012	72,678	172,611	10,281
1989	37,751	48,802	22,434	2013	17,231	640,414	11,369
1990	8,949	45,558	20,494	2014	21,836	63,290	9,491
1991	9,752	84,790	7,055	2015	13,584	801,201	15,444
1992	29,642	23,122	7,583	2016	8,708	171,362	15,444
1993	9,232	41,666	7,404	2017	50,312	187,159	13,666
1994	7,264	65,648	14,176	2018[c]	30,954	70,881	13,617
1995	30,382	46,029	11,596	Average 2008–2017	36,350	291,925	18,852

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

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

[c] Sockeye salmon escapement total incomplete due to 2 weir washouts and extended periods of non-operation.

Appendix B4.–Coghill District commercial common property drift gillnet salmon harvest by period, 2018.

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	5/31–6/1	5/18	36	113	252	45	464	409	1,683	0	0	0	0	16,815	144,457
2	6/4–6/5	6/2	36	244	543	58	614	956	4,126	0	0	0	0	33,539	298,498
3	6/7–6/8	6/6	36	257	645	64	711	1,725	7,379	0	0	0	0	49,420	458,267
4	6/11–6/12	6/9	24	266	491	19	209	4,332	20,265	0	0	0	0	47,785	410,827
5	6/14–6/15	6/13	24	246	532	13	156	7,765	35,221	0	0	2	6	68,723	588,674
6	6/18–6/19	6/16	36	291	830	14	109	10,553	48,197	0	0	2	5	161,496	1,356,610
7	6/21–6/22	6/20	24	256	705	2	14	5,520	26,135	0	0	0	0	139,752	1,247,769
8	6/25–6/26	6/22	36	338	1,436	7	99	20,031	95,375	0	0	1	3	434,549	3,691,578
9	6/28–6/29	6/27	36	336	1,283	8	64	33,123	159,904	7	57	26	82	261,187	2,226,788
10	7/2–7/3	6/30	36	380	1,411	13	127	40,542	196,996	6	46	147	541	323,142	2,706,163
11	7/5–7/8	7/4	84	343	993	30	322	28,943	146,377	78	518	1,807	6,406	136,196	1,131,051
12	7/9–7/11	7/8	60	221	608	39	354	13,816	68,522	261	1,844	7,436	26,638	75,103	612,327
13	7/12–7/15	7/11	84	198	378	5	43	4,709	23,943	65	516	7,575	26,532	29,320	242,251
14	7/16–7/18	7/14	60	143	266	8	79	5,828	30,984	182	1,310	32,202	122,994	8,070	65,906
15	7/19–7/20	7/18	36	82	169	2	21	4,622	24,960	158	1215	22,040	81,389	8,963	73,113
16	7/22	7/21	14	8	8	0	0	99	564	5	36	600	2,250	285	2,427
17	7/23	7/21	14	5	5	0	0	38	210	1	10	271	1,023	167	1,396
18	7/26	7/25	14	43	59	2	20	895	5,085	80	639	16,957	60,525	2,459	20,131
19	8/1	7/31	14	43	53	2	17	923	4,351	113	864	14,645	56,516	1,024	8,146
20	8/4	8/3	14	42	82	0	0	646	3,526	130	954	33,192	128,246	2,326	18,337
21	8/6	8/5	14	80	154	4	78	404	2,016	127	969	74,643	275,930	694	5,295
22	8/10	8/9	14	22	30	1	18	431	2,182	228	1584	11,199	40,734	528	4,014
23	8/13	8/12	12	18	21	0	0	122	639	245	1,840	10,415	38,711	151	1,150
24	8/16	8/15	12	31	53	0	0	250	1,265	849	5,618	31,069	119,274	454	3,201
25	8/18	8/16	12	49	57	0	0	252	1,395	748	5,362	15,514	59,164	195	1,454
26	8/20	8/18	12	10	12	0	0	25	125	268	1,696	5,161	18,608	48	399
27	8/22	8/22	12	4	4	0	0	10	50	86	659	1,452	5,084	11	70
28–34	8/23–8/29									No harvest reported					
35	8/30–8/31	8/29	24	1	3					Confidential[b]					
36	9/3–9/5	9/1	48	3	3	0	0	0	0	469	4,806	0	0	0	0

-continued-

Period	Date	NR Date[a]	Hours	Permits fished	Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
Total				447	11,084	336	3,519	186,978	911,521	4,306	31,962	286,356	1,070,661	1,802,402	15,320,299
Average Weights							10.47		4.88		7.42		3.74		8.50

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix B5.–Coghill District commercial common property purse seine salmon harvest by period, 2018.

Period	Date	NR Date[a]	Hours	Permits	Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
1–16	7/22									No harvest reported					
17	7/23	7/21	14	2	2					Confidential[b]					
18	7/26	7/25								No harvest reported					
19	8/1	7/31	14	4	4	0	0	161	936	22	189	11,655	43,183	235	1,810
20	8/4	8/3	14	35	36	0	0	1,019	4,952	162	1,063	170,536	701,646	2,440	17,660
21	8/6	8/5	14	35	37	0	0	531	2,570	227	1558	280,481	1,047,580	746	5,385
22	8/10	8/9	14	8	8	0	0	107	512	117	888	49,792	179,981	239	1,846
23	8/13	8/12	12	20	20	0	0	80	387	548	3103	60,164	223,953	129	1,043
24	8/16	8/15	12	18	18	0	0	320	1,319	732	5163	64,269	256,472	218	1,546
25	8/18	8/16	12	14	14	0	0	65	331	737	5189	22,516	81,015	124	881
26	8/20	8/18	12	2	2					Confidential[b]					
27	8/22	8/18	12	2	2					Confidential[b]					
28	8/23	8/22	12	2	2					Confidential[b]					
29	8/24	8/22	12	2	2					Confidential[b]					
30	8/25	8/22	12	2	2					Confidential[b]					
31–34	8/26–8/29									No harvest reported					
Total				67	149	0	0	2,315	11,150	6,347	40,090	687,095	2,630,285	4,148	30,317
Average weight									4.8		6.3		3.8		7.3

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix B6.–Commercial common property salmon harvest by species in the Coghill District, 2008–2018.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
			Drift gillnet			
2008	103	177,974	80,527	854,465	2,308,231	3,421,300
2009	174	103,415	19,168	276,925	1,323,728	1,723,410
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
Average 2008–2017	143	145,268	42,729	1,115,897	1,675,645	2,979,682
			Purse seine			
2008	14	551	36,831	6,585,095	9,358	6,631,849
2009	3	1,337	1,758	1,028,789	12,926	1,044,813
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
Average 2008–2017	7	2,905	8,333	3,781,162	145,956	3,938,362
			Combined purse seine and drift gillnet			
2008	117	178,525	117,358	7,439,560	2,317,589	10,053,149
2009	177	104,752	20,926	1,305,714	1,336,654	2,768,223
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
Average 2008–2017	150	151,857	50,368	4,728,770	1,813,009	6,744,154

Appendix B7.–Estimated age composition of sockeye salmon in the Coghill District commercial common property drift gillnet fishery harvest and escaped through Coghill Weir, 2018.

		Brood year and age class							
		2015		2014	2013		2012		
		0.2	1.1	1.2	1.3	2.2	1.4	2.3	Total
Strata combined:	5/1 – 9/5			Drift gillnet harvest					
Sampling dates:	7/4 – 7/18								
Sample size:	551								
Total	Percentage of sample	0.4	0.2	71.7	20.5	5.4	0.5	1.3	100
	Number in harvest	679	340	134,040	38,345	10,180	1,018	2,376	186,978
	Standard error	359	340	2,997	2,457	1,862	438	805	
Strata combined:	7/4 – 7/5			Coghill weir					
Sampling dates:	7/4 – 7/5								
Sample size:	440								
Total	Percentage of sample	0.0	0.0	87.1	11.1	1.8	0.0	0.0	100
	Number in escapement	0	0	26,945	3,448	563	0	0	30,954
	Standard error	0	0	26,945	3,448	563	0	0	

Appendix B8.–Commercial common property salmon harvest by period in the Unakwik District drift gillnet and purse seine fisheries, 2018.

Period	Date	NR Date [a]	Hours	Permits	Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
								Drift gillnet							
1	6/21–6/22	6/20	24							No harvest reported					
2	6/25–6/26	6/22	24							No harvest reported					
3	6/28–6/29	6/27	24							No harvest reported					
4	7/2–7/3	6/30	24	2	2					Confidential [b]					
5	7/5–7/6	7/4	36	3	3	0	0	1,308	5,889	0	0	0	0	2	18
6	7/9–7/10	7/7	36	1	1					Confidential [b]					
7	7/12–7/13	7/11	36	3	3	0	0	425	2,244	0	0	2	6	6	64
8	7/16–7/17	7/14	36	1	1					Confidential [b]					
9	7/19–7/20	7/18	36	1	1					Confidential [b]					
Total				7	11	0	0	3,505	16,593	1	8	36	135	16	142
								Purse seine							
1–9	6/21–7/20									No harvest reported					
Total				0	0	0	0	0	0	0	0	0	0	0	0

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix B9.–Commercial common property salmon harvest by species in the Unakwik District, 2008–2018.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
			Drift gillnet			
2008	0	389	0	878	58	1,325
2009	1	1,975	0	0	374	2,350
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
Average 2008–2017	0	1,498	0	158	153	1,791
			Purse seine			
2008	0	0	0	0	0	0
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
Average 2008–2017	1	881	0	1,075	104	1,046
			Combined purse seine and drift gillnet			
2008	0	389	0	878	58	1,325
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
Average 2008–2017	1	2,386	1	207	235	2,831

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

Appendix B10.–Port Chalmers subdistrict commercial common property purse seine harvest of salmon by period, 2018.

Period	Date	NR Date [a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/1–6/3	5/30	48	7	7	18	144	6	21	0	0	0	0	9,084	75,538
2	6/4–6/6	6/2	48	15	16	17	175	66	296	0	0	1	4	11,100	94,869
3	6/7–6/9	6/6	48	21	21	47	521	45	187	0	0	0	0	8,070	75,270
4	6/11–6/13	6/9	48	22	25	6	96	164	646	0	0	0	0	9,041	80,157
5	6/14–6/15	6/13	36	18	19	21	261	3	14	0	0	0	0	22,948	164,300
6	6/18–6/19	6/16	36	23	23	1	57	5	34	0	0	0	0	38,669	331,351
7	6/21–6/22	6/20	36	59	64	14	148	583	2,664	4	22	5	17	63,692	500,605
8	6/25–6/26	6/22	36	80	82	2	31	2,843	11,927	53	317	323	982	48,008	363,304
9	6/28–6/29	6/27	36	71	77	2	42	882	3,895	83	576	171	682	78,744	547,050
10	7/2–7/3	6/30	36	75	81	4	57	433	1,971	17	146	9,192	32,286	53,592	380,741
11	7/5–7/6	7/2	36	52	54	4	52	98	419	36	256	3,032	11,517	31,432	207,383
12	7/9–7/10	7/7	36	23	26	1	9	47	280	11	52	3,435	13,801	37,692	253,598
13	7/12–7/13	7/11	36	47	58	0	0	375	1,789	305	1,833	105,950	417,309	26,717	171,761
14	7/16–7/17	7/14	36	8	10	0	0	244	1,104	10	85	84,255	271,722	6,507	58,745
15	7/19	7/18	12	15	15	0	0	144	636	66	455	115,567	376,834	5,555	45,795
16	7/22	7/21	12	7	7	0	0	77	348	0	0	24,889	94,753	1,734	14,540
17	8/10	8/9	14	7	7	0	0	69	313	207	1652	21,483	76,513	16	135
18	8/13	8/12	12	3	3	0	0	5	22	266	1,865	6,549	25,038	52	374
19-46	8/16–9/15									No harvest reported					
Total				139	603	137	1,593	6,089	26,566	1,058	7,259	374,852	1,321,458	452,653	3,365,515
Average weight							11.63		4.36		6.86		3.53		7.44

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix B11.–Total commercial common property harvest by species in the Port Chalmers Subdistrict, June 1–July 30, 2013–2018.

			Numbers of fish					
Year	Permits	Gear type	Chinook	Sockeye	Coho	Pink	Chum	Total
2013	151	Drift gillnet	140	2,077	255	28,097	483,633	514,202
2014	113	Purse seine	247	9,743	7,077	3,025,399	186,600	3,229,066
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
Average 2013–2017	128		130	6,325	1,714	824,411	312,388	1,144,968

APPENDIX C: ESHAMY DISTRICT

Appendix C1.–Total drift gillnet commercial common property salmon harvest by period in the Eshamy District, 2018.

Period	Date	NR Date[a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	5/31–6/1	5/18	36	8	16	17	176	208	995	0	0	0	0	510	4,622
2	6/4–6/5	6/2	36	37	88	28	256	4,651	19,623	0	0	0	0	1,847	15,954
3	6/7–6/8	6/6	36	80	184	19	146	17,203	66,620	1	10	0	0	2,507	21,442
4	6/11–6/12	6/9	24	137	245	16	155	30,252	126,418	0	0	0	0	12,322	103,150
5	6/14–6/15	6/13	24	202	446	5	65	78,153	334,617	0	0	0	0	10,158	82,071
6	6/18–6/19	6/16	36	180	549	5	67	119,372	560,677	0	0	2	11	22,896	196,659
7	6/21–6/22	6/20	24	201	464	1	10	92,025	412,781	0	0	2	6	15,049	132,307
8	6/25–6/26	6/22	36	194	551	2	13	149,261	664,190	0	0	18	72	23,358	197,525
9	6/28–6/29	6/27	36	161	434	4	43	76,695	351,205	7	55	64	247	12,654	102,426
10	7/2–7/3	6/30	36	136	327	0	0	72,569	318,915	24	179	537	1,895	5,039	41,034
11	7/5–7/6	7/4	36	86	212	4	34	31,759	136,533	41	307	2,197	7,045	2,882	24,341
12	7/9–7/10	7/7	36	94	168	2	26	46,574	192,286	55	326	1,675	5,751	4,261	30,583
13	7/12–7/13	7/11	36	74	160	0	0	28,826	127,042	27	201	6,620	23,940	2,617	22,011
14	7/16–7/17	7/14	36	111	195	1	11	25,548	104,102	101	715	21,746	75,653	4,681	40,091
15	7/19–7/20	7/18	24	70	124	1	9	7,460	33,983	100	745	25,474	91,840	2,867	22,915
16	7/23–7/24	7/21	24	96	223	1	5	20,152	85,133	381	2,933	48,819	177,038	2,347	19,000
17	7/26–7/27	7/25	24	22	28	0	0	1,407	6,804	13	100	925	3,530	47	399
18	7/30–7/31	7/28	24	78	177	2	13	8,785	42,309	413	3,189	43,021	160,771	1,945	15,588
19	8/2–8/3	8/1	24	11	21	0	0	1,451	7,123	27	210	6,881	25,743	173	1,510
20	8/6–8/7	8/3	24	45	82	5	66	2,927	14,658	232	1,874	26,739	102,480	904	7,437
21	8/10	8/9	14	64	111	7	82	2,283	11,623	436	3,506	46,205	177,664	953	7,846
22	8/13–8/14	8/11	24	48	112	6	51	3,347	16,362	652	5,262	44,310	169,700	642	5,248
23	8/16	8/15	12	30	53	3	28	1421	7,506	728	5,899	24,108	91,964	365	3,005

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Appendix C1.–Page 2 of 2.

Period	Date	NR Date[a]	Hours	Permits	Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
24	8/20–8/21	8/18	24	6	11	0	0	232	1,311	165	1,269	3,594	13,745	69	557
25–28	8/23–9/4							No harvest reported							
Total				336	4,987	129	1,256	822,561	3,642,816	3,403	26,780	302,937	1,129,095	131,093	1,097,720
Average weight							9.74		4.43		7.87		3.73		8.37

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by publication date.

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

Appendix C2.–Total set gillnet commercial common property salmon harvest by period in the Eshamy District, 2018.

Period	Date	NR Date[a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	5/31–6/1	5/18	36	7	13	0	0	1,062	4,565	0	0	0	0	75	714
2	6/4–6/5	6/2	36	14	41	0	0	2,727	11,211	0	0	0	0	93	833
3	6/7–6/8	6/6	36	20	62	1	10	3,372	13,878	0	0	0	0	250	2,189
4	6/11–6/12	6/9	24	20	50	0	0	9,594	37,782	0	0	0	0	94	826
5	6/14–6/15	6/13	24	22	67	1	14	10,467	48,436	0	0	0	0	626	4,930
6	6/18–6/19	6/16	36	22	84	0	0	14,210	63,350	0	0	0	0	239	2,100
7	6/21–6/22	6/20	24	24	82	0	0	17,347	75,969	0	0	0	0	517	4,626
8	6/25–6/26	6/22	36	27	139	1	34	32,314	147,459	0	0	7	29	2,230	19,706
9	6/28–6/29	6/27	36	24	115	2	15	19,573	91,626	0	0	32	137	1,027	8,773
10	7/2–7/3	6/30	36	23	113	0	0	15,531	75,586	5	34	210	909	889	7,489
11	7/5–7/6	7/4	36	23	105	2	36	14,069	65,161	4	29	477	1,872	607	5,251
12	7/9–7/10	7/7	36	20	59	0	0	5,949	26,265	1	7	765	2,435	1,316	10,612
13	7/12–7/13	7/11	16	20	74	0	0	21,458	105,549	4	37	749	3,871	527	4,713
14	7/16–7/17	7/14	12	16	37	0	0	2,382	12,369	5	34	2,443	8,968	809	6,179
15	7/19–7/20	7/18	24	16	40	0	0	4,538	21,619	4	25	2,671	10,084	289	2,421
16	7/23–7/24	7/21	24	8	22	0	0	1,375	7,103	7	55	3,867	15,590	217	1,710
17	7/26–7/27	7/25	12	5	10	0	0	1,936	8,569	0	0	214	849	32	269
18	7/30–7/31	7/28	24	5	18	0	0	1,027	5,588	23	162	2,417	10,079	114	909
19	8/2–8/3	8/1	12	5	9	0	0	1,582	9,469	0	0	675	2,698	28	249
20	8/6–8/7	8/3	24	2	6					Confidential [b]					
21	8/10	8/9	12	2	5					Confidential [b]					
22	8/13–8/14	8/11	24	3	10	0	0	185	961	19	152	2905	11417	40	293
23	8/16	8/15	12	3	4	0	0	551	2312	13	127	1851	7041	12	98

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Appendix C2.–Page 2 of 2.

Period	Date	NR Date[a]	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
24	8/20–8/21	8/18	24	2	2	Confidential [b]									
25–28	8/23–9/4					No Harvest Reported									
Total				27	1,167	7	109	181,728	837,355	107	826	23,419	92,213	10,101	85,438
Average weight							15.6		4.6		7.7		3.9		8.5

Note: 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 Fishing News Release System at http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main Required parameters for searching the ADF&G Commercial Fishing News Release System include the following: Effective Year = 2018; Species Group = Salmon; Management Area = Prince William Sound.

[a] Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by Publication Date.

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

Appendix C3.–Total commercial common property salmon harvest by species in the Eshamy District, 2008–2018.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
	Drift gillnet					
2008	48	560,869	1,930	103,325	251,493	917,665
2009	67	539,293	1,695	77,539	286,361	904,955
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
Average 2008–2017	69	675,554	2,238	127,009	193,942	998,820
	Set gillnet					
2008	18	162,403	151	20,455	53,627	236,654
2009	47	152,642	49	4,251	50,748	207,737
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
Average 2008–2017	32	233,279	247	20,592	33,655	287,804
	Combined set gillnet and drift gillnet					
2008	66	723,272	2,081	123,780	305,120	1,154,319
2009	114	691,935	1,744	81,790	337,109	1,112,692
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
Average 2008–2017	101	908,833	2,485	147,600	229,765	1,286,624

Appendix C4.–Estimated age composition of sockeye salmon harvested in the Eshamy District commercial common property gillnet fishery, 2018.

Strata combined:	05/31 – 09/04	Brood year and age class							
Sampling dates:	06/27 – 08/08	2015	2014		2013		2012		
Sample size:	2,185	1.1	2.1	1.2	1.3	2.2	1.4	2.3	Total
Total	Percentage of sample	1.6	0.1	85.5	7.3	5.3	0.1	0.2	100
	Number in harvest	15,667	502	858,165	73,514	53,328	1,406	1,808	1,004,289
	Standard error	2,344	1,221	9,761	7,061	6,462	1,335	1,567	

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, 2018.

Pink salmon

District [a]	Escapement midpoint	Even-year escapement goal range			1977–2016 mean index	Observed escapement index [b]	Deviation from midpoint
Eastern	265,500	203,000	–	328,000	315,706	309,325	16.5%
Northern	111,500	96,000	–	127,000	118,288	113,383	1.7%
Coghill	73,500	37,000	–	110,000	92,030	70,881	-3.6%
Northwestern	72,500	52,000	–	93,000	96,188	111,194	53.4%
Eshamy	2,500	1,000	–	4,000	5,305	16,594	563.8%
Southwestern	83,500	62,000	–	105,000	92,593	81,100	-2.9%
Montague	54,000	36,000	–	72,000	58,398	135,208	150.4%
Southeastern	120,500	88,000	–	153,000	137,333	293,275	143.4%
Total	783,500				915,841	1,130,960	44.3%

Chum salmon

District	Escapement range [c]		1976–2017 mean index	Observed escapement index [b]	Deviation from lower range
Eastern	79,000	and up	120,303	109,598	38.7%
Northern	28,000	and up	44,265	18,407	-34.3%
Coghill	10,000	and up	19,761	13,617	36.2%
Northwestern	7,000	and up	15,100	15,563	122.3%
Eshamy [d]	None		194	0	NA
Southwestern [d]	None		3,100	151	NA
Montague [d]	None		5,742	1,135	NA
Southeastern	11,000	and up	10,164	10,164	-7.6%
Total [e]	135,000	and up	232,811	167,349	24.0%

[a] Escapement index total includes indices from Eastern, Northern, Coghill, Northwestern, and Southeastern Districts. Only Eastern, Northern, and Northwestern had reasonable temporal survey coverage. The Coghill and Northwestern Districts had limited temporal coverage, but the indices were within the SEG range, so they are included in the total.

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

[c] Escapement goal changed to a lower range value with no upper end after the 2005 escapement goal review.

[d] Escapement goal removed in 2003 after review.

[e] Totals exclude districts without escapement goals (Eshamy, Southwestern, and Montague Districts). Index total includes indices from Eastern, Northern, Coghill, Northwestern, and Southeastern Districts.

Appendix D2.–Prince William Sound commercial common property purse seine salmon harvest by day, 2018.

			Chinook		Sockeye		Coho		Pink		Chum	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
06/01	10	10	16	89	62	238	0	0	0	0	7,863	63,794
06/02	6	6	3	68	1	4	0	0	0	0	6,380	54,221
06/03	0	0	0	0	0	0	0	0	0	0	0	0
06/04	20	20	13	122	142	668	0	0	1	4	13,539	116,548
06/05	9	9	6	80	28	150	0	0	0	0	1,384	11,115
06/06	1	1					[a]					
06/07	14	14	41	460	261	1,292	0	0	0	0	5,839	49,502
06/08	19	19	12	166	1,748	5,779	0	0	0	0	8,787	85,462
06/09	5	5	0	0	696	2,465	0	0	0	0	3,186	28,677
06/10	0	0	0	0	0	0	0	0	0	0	0	0
06/11	44	46	7	92	1,342	5,259	0	0	1	3	25,350	217,153
06/12	3	3					[a]					
06/13	1	1					[a]					
06/14	52	53	25	302	1,356	6,251	0	0	1	4	47,744	366,375
06/15	3	3	0	0	1	4	0	0	0	0	1567	15,674
06/16	0	0	0	0	0	0	0	0	0	0	0	0
06/17	0	0	0	0	0	0	0	0	0	0	0	0
06/18	49	49	18	198	7,026	30,064	0	0	1	2	86,055	766,910
06/19	11	12	0	0	497	1,987	0	0	0	0	19,887	171,337
06/20	0	0	0	0	0	0	0	0	0	0	0	0
06/21	59	75	10	115	4,844	20,326	0	0	1	3	79,456	625,502
06/22	26	31	4	33	983	4,787	8	42	9	32	26,920	220,907
06/23	0	0	0	0	0	0	0	0	0	0	0	0
06/24	0	0	0	0	0	0	0	0	0	0	0	0
06/25	82	92	3	39	7,847	32,703	17	115	245	740	68,536	541,310
06/26	40	41	0	0	1,396	6,222	38	216	96	306	24,101	183,628
06/27	0	0	0	0	0	0	0	0	0	0	0	0
06/28	78	81	2	14	2,911	13,058	33	239	155	521	61,325	459,794
06/29	34	34	2	42	527	2,366	61	417	73	334	39,406	261,833
06/30	58	59	0	0	2,244	9,661	0	0	64	208	16,998	134987
07/01	0	0	0	0	0	0	0	0	0	0	0	0
07/02	81	87	6	66	901	4,054	10	76	5579	19294	55,035	414,322
07/03	25	25	1	7	139	661	14	129	3,966	14,310	13,706	85,727
07/04	0	0	0	0	0	0	0	0	0	0	0	0
07/05	69	69	4	39	371	1,525	52	331	2554	9555	41,045	273,713
07/06	24	24	3	41	384	1,591	10	70	849	3,223	14,918	107,023
07/07	0	0	0	0	0	0	0	0	0	0	0	0
07/08	0	0	0	0	0	0	0	0	0	0	0	0
07/09	33	35	1	9	527	2,637	280	966	3,366	13,576	46,230	326,173

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Appendix D2.–Page 2 of 3.

			Chinook		Sockeye		Coho		Pink		Chum	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/10	198	213	13	123	896	4,890	68	375	1,065,279	4,022,272	14,392	102,603
07/11	0	0	0	0	0	0	0	0	0	0	0	0
07/12	45	51	0	0	867	3,864	244	1,446	85,315	328,265	35,194	256,499
07/13	15	15	0	0	279	1,384	62	399	23,346	98,897	6,312	40,184
07/14	0	0	0	0	0	0	0	0	0	0	0	0
07/15	0	0	0	0	0	0	0	0	0	0	0	0
07/16	218	269	0	0	780	3,659	89	645	1,969,815	7,649,010	12,605	116,638
07/17	200	205	0	0	601	2,865	59	377	754,933	2,847,221	2,833	24,407
07/18	190	194	0	0	115	580	89	596	583,580	2,348,117	609	4,627
07/19	183	183	0	0	514	2,408	170	1,138	826,770	3,194,783	7,718	64,570
07/20	178	194	3	13	316	1,597	61	456	702,851	2,705,955	2,009	15,785
07/21	0	0	0	0	0	0	0	0	0	0	0	0
07/22	214	276	8	119	1,166	5,774	1,066	8,110	1,956,500	7,604,405	22,707	171,540
07/23	12	13	1	6	284	1,284	60	476	45,500	147,820	2,079	18,255
07/24	0	0	0	0	0	0	0	0	0	0	0	0
07/25	0	0	0	0	0	0	0	0	0	0	0	0
07/26	217	234	33	510	3,568	17,019	2,643	19,453	1,309,639	5,095,503	17,938	143,574
07/27	1	1						[a]				
07/28	0	0	8	129	9,256	54,878	1,613	10,337	1,654,141	6,449,549	44,602	313,065
07/29	0	0	0	0	0	0	0	0	0	0	0	0
07/30	0	0	1	10	8,864	48,518	1,869	13,216	1,747,319	7,017,202	34,346	244,145
07/31	0	0	0	0	0	0	0	0	0	0	0	0
08/01	222	245	13	114	5,875	35,034	2,845	18,370	1,824,575	7,147,375	28,559	216,478
08/02	0	0	0	0	0	0	0	0	0	0	0	0
08/03	0	0	0	0	0	0	0	0	0	0	0	0
08/04	223	277	2	38	2,797	15,501	2,645	17,707	1,751,717	6,917,119	29,262	208,441
08/05	1	1						[a]				
08/06	214	250	3	71	2,304	11,050	4,563	33,519	1,681,855	6,279,988	15,287	125,742
08/07	0	0	0	0	0	0	0	0	0	0	0	0
08/08	0	0	0	0	0	0	0	0	0	0	0	0
08/09	0	0	0	0	0	0	0	0	0	0	0	0
08/10	216	225	4	64	2,283	10,923	5,589	42,750	1,041,575	3,935,298	15,467	117,495
08/11	0	0	0	0	0	0	0	0	0	0	0	0
08/12	0	0	0	0	0	0	0	0	0	0	0	0
08/13	202	204	0	0	1,502	6,949	6,166	45,380	621,469	2,329,341	17,482	128,114
08/14	0	0	0	0	0	0	0	0	0	0	0	0
08/15	0	0	0	0	0	0	0	0	0	0	0	0
08/16	187	193	1	9	2,550	12,288	8,062	61,023	973,506	3,663,428	35,515	250,011

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Appendix D2.–Page 3 of 3.

			Chinook		Sockeye		Coho		Pink		Chum	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
08/17	0	0	0	0	0	0	0	0	0	0	0	0
08/18	172	180	38	219	2,239	10,659	10,121	78,262	596,364	2,237,346	2,399	18,043
08/19	0	0	0	0	0	0	0	0	0	0	0	0
08/20	158	160	0	0	1,290	6,267	7,450	59,272	383,973	1,447,551	36,254	250,254
08/21	0	0	0	0	0	0	0	0	0	0	0	0
08/22	123	125	0	0	1,071	5,246	7,500	54,413	369,651	1,364,304	18,378	121,413
08/23	84	86	0	0	1,014	4,814	6,384	49,369	276,369	1,039,657	747	5,945
08/24	83	88	0	0	816	3,929	2,869	24,843	317,329	1,162,389	497	3,725
08/25	67	70	0	0	536	2,591	2,248	19,343	204,461	749,139	5,359	36,224
08/26	52	54	0	0	501	2,281	2,440	19,573	95,987	346,030	1,415	9,371
08/27	37	37	0	0	321	1,597	1,217	9,721	54,236	206,123	300	1,937
08/28	19	20	0	0	63	331	446	3,877	22,693	97,098	262	1,921
08/29	7	7	0	0	72	344	322	2,761	13,681	50,269	245	1,970
08/30	6	6	0	0	205	912	469	4,492	18,332	70,358	52	416
08/31	1	1						[a]				
09/01	2	2						[a]				
09/02	2	2						[a]				
09/03	0	0	0	0	0	0	0	0	0	0	0	0
09/04	16	16	0	0	2	9	2,304	19,177	1	4	59	432
09/05	0	0	0	0	0	0	0	0	0	0	0	0
09/06	0	0	0	0	0	0	0	0	0	0	0	0
09/07	0	0	0	0	0	0	0	0	0	0	0	0
09/08	0	0	0	0	0	0	0	0	0	0	0	0
09/09	0	0	0	0	0	0	0	0	0	0	0	0
09/10	1	3						[a]				
Total	234	5,004	293	3,297	70,296	316,407	80,610	619,300	19,545,060	74,614,511	1,053,907	8,138,452
Average weight				11.25		4.50		7.68		3.82		7.72

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

Appendix D3.–Area E commercial salmon harvest by species, excluding Copper River and Bering River Districts, 1995–2018.

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	833	1,269,815	89,249	22,672,873	3,301,686	27,334,486
Average 2008–2017	637	1,192,672	142,152	48,909,535	3,265,122	49,945,311

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

Appendix D4.–Prince William Sound commercial common property pink salmon harvest for all gear types, by district, 1995–2018.

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
Average 2008–2017	16,428,971	7,847,391	4,729,040	220,619	147,689	12,269,063	963,593	632,631	43,238,996

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 D5.–Prince William Sound commercial common property chum salmon harvest for all gear types, by district, 1995–2018.

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
Average 2008 –2017	87,866	19,862	1,680,816	4,702	204,455	205,872	445,238	16,731	2,665,541

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 D6.–Prince William Sound pink salmon escapement indices by district, 1995–2018.

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[d]	309,325	113,383	70,881	111,194	16,594	81,100	135,208	293,275	1,130,960
Even-year average 1998–2016									
	398,349	158,107	146,148	111,735	6,604	93,913	119,192	284,188	1,296,092
Odd-year average 1999–2017									
	836,903	320,155	343,000	192,097	15,618	268,031	388,577	1,003,509	3,367,891

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 times) in 2014 to use with the area under the curve (AUC) 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 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 D7.–Prince William Sound chum salmon escapement indices [a] by district, 1995–2018.

Year	Eastern	Northern [b]	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[c]	112,142	43,179	15,444	7,321	52,031
2016[c]	93,491	27,680	9,491	5,831	30,177
2017[c]	85,618	34,516	13,666	7,381	49,421
2018[c]	109,598	18,407	13,617	15,563	10,164
Average, 2008–2017	102,932	33,351	18,351	11,926	52,247

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] This does not represent the total spawning escapement but rather a comparable annual index.

[b] Northern District totals include both Northern and Unakwik district counts combined.

[c] AUC counts adjusted for the average proportion of the 214 index streams represented by the 129 index streams.

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 1990–2015.

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
1990	1993	1,226,044	102	305	12,979	1,658	2,343	17,387	1.4%
1991	1994	461,388	0	143	19,012	11,376	22,091	52,622	11.4%
1992	1995	915,087	78,006	0	37,474	16,045	21,592	153,117	16.7%
1993	1996	1,325,316	87,360	38	43,467	21,772	13,713	166,350	12.6%
1994	1997	1,875,823	47,500	45	36,520	13,605	9,818	107,488	5.7%
1995	1998	1,315,183	23,717	321	37,126	3,880	19,068	84,112	6.4%
1996	1999	1,748,486	67,232	541	36,310	2,541	12,679	119,303	6.8%
1997	2000	1,863,528	342,490	468	68,014	1,625	24,887	437,484	23.5%
1998	2001	1,625,599	147,000	230	60,975	1,778	25,595	235,578	14.5%
1999	2002	1,519,328	25,017	136	31,017	21,323	8,000	85,493	5.6%
2000	2003	1,821,889	63,132	185	78,162	17,379	4,087	162,945	8.9%
2001	2004	1,275,145	26,711	315	59,331	2,585	9,897	98,839	7.8%
2002	2005	1,442,274	129,966	286	67,000	2,102	30,686	230,040	16.0%
2003	2006	1,968,366	210,382	18	61,298	2,455	16,172	290,325	14.8%
2004	2007	1,511,592	58,299	0	74,616	3,564	17,748	154,227	10.2%
2005	2008	1,973,604	154,383	0	59,313	3,101	22,356	239,153	12.1%
2006	2009	1,828,100	914	131	43,651	3,955	17,424	66,075	3.6%
2007	2010	1,525,927	2,918	189	70,531	2,847	43,722	120,207	7.9%
2008	2011	1,915,058	28,412	883	50,801	7,145	38,285	125,526	6.6%
2009	2012	2,111,389	914	75	12,873	2,458	454	16,774	0.8%
2010	2013	1,879,768	153,819	277	55,844	7,071	39,946	256,957	13.7%
2011	2014	1,657,016	1,327	103	6,044	1,804	1,139	10,416	0.6%
2012	2015	1,810,315	32,108	40	24,920	2,722	14,571	74,361	4.1%
2013	2016	1,869,354	7,034	0	31,390	2,722	14,571	55,717	3.0%
2014	2017	1,913,395	6,440	0	10,284	4,623	1,620	22,967	1.2%
2015	2018	1,929,471	5,751	0	26,454	1,319	8,460	9,790	0.51%

-continued-

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
1990	1993	1,831,198	39,658	51	1,608	4,857	1,532	47,706	2.6%
1991	1994	1,303,077	81,396	65	3,061	5,439	13,258	103,220	7.9%
1992	1995	1,483,936	34,680	57	1,690	4,964	5,152	46,543	3.1%
1993	1996	2,063,934	26,245	8	3,851	4,081	39,506	73,690	3.6%
1994	1997	275,406	5,626	26	2,084	5,674	0	13,410	4.9%
1995	1998	203,651	2,800	35	3,327	1,541	0	7,703	3.8%
1996	1999	407,715	338	66	2,658	2,533	0	5,595	1.4%
1997	2000	1,068,338	111,256	197	7,963	2,551	0	121,966	11.4%
1998	2001	375,670	2,488	98	15,490	3,277	0	21,353	5.7%
1999	2002	219,967	3,215	105	21,283	2,389	0	26,991	12.3%
2000	2003	485,834	9,624	133	21,444	1,314	0	32,515	6.7%
2001	2004	920,858	9,333	37	19,852	150	637	30,009	3.3%
2002	2005	989,383	53,257	178	34,587	11,450	19	99,492	10.1%
2003	2006	1,057,922	113,997	20	19,973	17,079	0	151,069	14.3%
2004	2007	1,052,897	84,867	36	31,745	2,129	11,975	130,752	12.4%
2005	2008	1,850,000	116,641	90	19,738	2,609	267	139,345	7.5%
2006	2009	1,930,000	20,209	52	16,751	2,064	0	39,076	2.0%
2007	2010	226,000	5,215	9	20,569	1,399	0	27,192	12.0%
2008	2011	3,490,000	95,267	274	26,062	7,374	678	129,655	3.7%
2009	2012	3,480,000	10,276	123	7,625	558	0	18,582	0.5%
2010	2013	1,018,000	69,824	64	21,185	2,293	0	93,366	9.2%
2011	2014	3,210,000	165,600	292	11,314	6,584	10,877	194,667	6.1%
2012	2015	907,000	6,592	115	17,351	3,084	0	27,142	3.0%
2013	2016	370,000	347	292	100	245	0	984	0.3%
2014	2017	3,090,000	14,406	0	100	3,814	0	18,320	0.6%
2015	2018	2,241,000	NA	0	100	2,380	0	2,480	0.1%

Note: NA means not 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, 2018.

				Origin							
				Gulkana		Main Bay		Hatchery	Wild		
Dates		Period	Hours	Number	Percent	Number	Percent	Total	Number	Percent	Total
05/17 –	05/17	1 [a]	12	0	0.0%	0	0.0%	0	2,012	100.0%	2,012
05/21 –	05/21	2 [a]	12	0	0.0%	0	0.0%	0	4,054	100.0%	4,054
05/28 –	05/28	3 [a]	12	0	0.0%	0	0.0%	0	21,087	100.0%	21,087
06/25 –	06/25	TF	NA	91	36.0%	0	0.0%	91	158	64.0%	249
07/03 –	07/03	TF	NA	144	48.0%	0	0.0%	144	156	52.0%	300
07/09 –	07/09	4	12	2,377	47.9%	0	0.0%	2,377	2,584	52.1%	4,961
07/19 –	07/19	5	12	2,546	33.3%	0	0.0%	2,546	5,092	66.7%	7,638
07/26 –	07/26	6	12	643	23.1%	0	0.0%	643	2,145	76.9%	2,788
08/02 –	08/02	7	12	111	17.7%	0	0.0%	111	517	82.3%	628
08/09 –	08/09	8	12	200	17.7%	0	0.0%	200	927	82.3%	1,127
08/16 –	08/17	9	24	220	17.7%	0	0.0%	220	1,024	82.3%	1,244
08/20 –	08/21	10	24	77	17.7%	0	0.0%	77	358	82.3%	435
08/23 –	08/24	11 [a]	24	0	0.0%	0	0.0%	0	273	100.0%	273
08/27 –	08/28	12 [a]	24	0	0.0%	0	0.0%	0	48	100.0%	48
08/30 –	08/31	13 [a]	24	0	0.0%	0	0.0%	0	94	100.0%	94
09/03 –	09/04	14 [a]	24	0	0.0%	0	0.0%	0	68	100.0%	68
09/06 –	09/06	15 [a]	12	0	0.0%	0	0.0%	0	21	100.0%	21
09/10 –	09/11	16 [a]	24	0	0.0%	0	0.0%	0	31	100.0%	31
09/13 –	09/13	17 [a]	12	0	0.0%	0	0.0%	0	6	100.0%	6
09/17 –	09/18	18 [a]	24	0	0.0%	0	0.0%	0	4	100.0%	4
Total			312	6,409	13.6%	0	0.0%	6,409	40,659	86.4%	47,068

Note: Total harvest data from fish tickets as of February 15, 2018. TF = test fishery; NA = not available.

[a] No samples collected; proportions from Period 8 used to estimate contributions.

Appendix E3.–Gulkana Hatchery sockeye salmon harvests and total contribution, 1978–2018.

	Hatchery contributions				
Year	Commercial[a]	Subsistence/personal use[b]	Sport[c]	Broodstock/escapement[d]	Total hatchery run
1978	720	74	2	1,300	2,095
1979	900	393	9	3,425	4,724
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	60,083
2018	6,174	26,594	263	30,309	62,337
Average 2008–2017	194,998	33,753	354	55,954	285,021

[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, 1974–2018.

	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
1974				79,691				99,620	179,311
1975				785,110				101,446	886,556
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
Average 2008–2017				6,001,000	4,901,818	8,709,091			20,522,182

Appendix E5.–Daily chum and coho salmon sales and sex ratios, sales summary, and broodstock summary at the Wally Noerenberg Hatchery, 2018.

	Chum salmon					Coho salmon	
Date	% Female	Sales harvest[a]	Sales harvest cumulative	Broodstock[f]	Broodstock cumulative	Sales harvest	Sales harvest cumulative
06/10	–	15,442	15,442	0	0	ND	ND
06/11	–	26,505	41,947	0	0	ND	ND
06/12	–	37,655	79,602	0	0	ND	ND
06/13	–	44,551	124,153	0	0	ND	ND
06/14	–	26,102	150,255	0	0	ND	ND
06/15	–	64,264	214,519	0	0	ND	ND
06/16	–	5,518	220,037	0	0	ND	ND
06/17	–	10,805	230,842	0	0	ND	ND
06/18	–	0	230,842	0	0	ND	ND
06/19	–	0	230,842	0	0	ND	ND
06/20	–	36,544	267,386	0	0	ND	ND
06/21	–	0	267,386	0	0	ND	ND
06/22	–	0	267,386	0	0	ND	ND
06/23	–	0	267,386	0	0	ND	ND
06/24	–	0	267,386	0	0	ND	ND
06/25	–	0	267,386	0	0	ND	ND
06/26	–	0	267,386	0	0	ND	ND
06/27	–	0	267,386	0	0	ND	ND
06/28	–	0	267,386	0	0	ND	ND
06/29	–	0	267,386	0	0	ND	ND
06/30	–	0	267,386	0	0	ND	ND
07/01	–	0	267,386	0	0	ND	ND
07/02	–	0	267,386	0	0	ND	ND
07/03	–	0	267,386	0	0	ND	ND
07/04	–	0	267,386	0	0	ND	ND
07/05	–	0	267,386	7,949	7,949	ND	ND
07/06	–	0	267,386	10,523	18,472	ND	ND
07/07	–	0	267,386	10,474	28,946	ND	ND
07/08	–	0	267,386	12,436	41,382	ND	ND
07/09	–	0	267,386	8,094	49,476	ND	ND
07/10	–	0	267,386	15,039	64,515	ND	ND
07/11	–	0	267,386	6,561	71,076	ND	ND
07/12	–	0	267,386	4,974	76,050	ND	ND
07/13	–	0	267,386	5,193	81,243	ND	ND
07/14	–	0	267,386	5,824	87,067	ND	ND
07/15	–	0	267,386	0	87,067	ND	ND
07/16	–	0	267,386	9,214	96,281	ND	ND
07/17	–	0	267,386	0	96,281	ND	ND
07/18	–	0	267,386	10,137	106,418	ND	ND
07/19	–	0	267,386	0	106,418	ND	ND
07/20	–	0	267,386	8,774	115,192	ND	ND
07/21	–	0	267,386	0	115,192	ND	ND
07/22	–	0	267,386	8,761	123,953	ND	ND

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Appendix E5.–Page 2 of 2.

	Chum salmon					Coho salmon	
Date	% Female	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Brood broodstock cumulative	Sales harvest	Sales harvest cumulative
07/23	–	0	267,386	0	123,953	ND	ND
07/24	–	0	267,386	9,463	133,416	ND	ND
07/25	–	6,247	273,633	0	133,416	ND	ND
07/26	–	0	273,633	10,036	143,452	ND	ND
07/27	–	17,467	291,100	0	143,452	ND	ND
07/28	–	6,323	297,423	8,157	151,609	ND	ND
07/29	–	3,135	300,558	0	151,609	ND	ND
07/30	–	998	301,556	5,913	157,522	ND	ND
07/31	–	229	301,785	0	157,522	ND	ND
08/01	–	0	301,785	3,511	161,033	ND	ND
08/02	–	1,855	303,640	0	161,033	ND	ND
08/03	–	736	304,376	0	161,033	ND	ND
08/04	–	0	304,376	0	161,033	ND	ND
08/05	–	318	304,694	2,469	163,502	ND	ND
08/06	–	0	304,694	0	163,502	ND	ND

Hatchery escapement summary[c]	Chum Salmon	Coho Salmon
Purse seine whole fish harvest	304,694	0
Raceway harvest[d]	10,743	0
Viable broodstock (spawned, eggs in incubators)	134,474	1,934
Unviable broodstock (green/over-ripe/bad)	10,716	5
Unspawned fish (e.g.,excess males/females)	7,569	351
Holding mortalities (raceway, pen mortalities)	3,769	90
Estimated unharvested return[e]	2,000	0
Estimated total run to hatchery site	473,965	2,380

Sales summary	Chum salmon	Coho salmon
Purse seine whole fish sales	304,964	0
Raceway sales[f]	29,028	356
Carcass sales[g]	134,474	1,934
Total sales	468,196	2,290

[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 2018b).

[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, 2018.

			Origin					
			Main Bay		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	total	Number	Percent	Total
05/31 – 05/31	1	36 [a]	0	0.0%	0	409	100.0%	409
06/04 – 06/04	2	36 [a]	0	0.0%	0	956	100.0%	956
06/07 – 06/07	3	36 [a]	0	0.0%	0	1,725	100.0%	1,725
06/11 – 06/11	4	24 [a]	0	0.0%	0	4,332	100.0%	4,332
06/14 – 06/15	5	24 [b]	3,965	51.1%	3,965	3,800	48.9%	7,765
06/18 – 06/19	6	36 [b]	5,389	51.1%	5,389	5,164	48.9%	10,553
06/21 – 06/22	7	24 [b]	2,819	51.1%	2,819	2,701	48.9%	5,520
06/25 – 06/26	8	36	10,229	51.1%	10,229	9,802	48.9%	20,031
06/28 – 06/29	9	36 [c]	16,220	49.0%	16,220	16,903	51.0%	33,123
07/02 – 07/03	10	36	19,004	46.9%	19,004	21,538	53.1%	40,542
07/05 – 07/08	11	84	14,472	50.0%	14,472	14,472	50.0%	28,943
07/09 – 07/11	12	60	4,897	35.4%	4,897	8,919	64.6%	13,816
07/12 – 07/15	13	84	1,570	33.3%	1,570	3,139	66.7%	4,709
07/16 – 07/18	14	60 [d]	1,943	33.3%	1,943	3,885	66.7%	5,828
07/19 – 07/20	15	36 [d]	1,541	33.3%	1,541	3,081	66.7%	4,622
07/22 – 07/22	16	14 [d,e]	[e]	33.3%	[e]	[e]	66.7%	[e]
07/23 – 07/23	17	14 [b]	20	30.8%	20	45	69.2%	65
07/26 – 07/26	18	14 [b]	280	31.3%	280	615	68.7%	895
08/01 – 08/01	19	14 [b]	339	31.3%	339	745	68.7%	1,084
08/04 – 08/04	20	14	520	31.2%	520	1,145	68.8%	1,665
08/06 – 08/06	21	14 [c]	263	28.1%	263	672	71.9%	935
08/10 – 08/10	22	14	135	25.1%	135	404	75.1%	538
08/13 – 08/13	23	12 [d]	51	25.2%	51	152	75.2%	202
08/16 – 08/16	24	12 [d]	143	25.1%	143	428	75.1%	570
08/18 – 08/18	25	12 [d]	79	24.9%	79	238	75.1%	317
08/20 – 08/20	26	12 [a]	0	0.0%	0	30	100.0%	30
08/22 – 08/22	27	12 [a]	0	0.0%	0	10	100.0%	10
08/23 – 08/23	28	12 [f]	0	0.0%	0	0	0.0%	0
08/24 – 08/24	29	12 [f]	0	0.0%	0	0	0.0%	0
08/25 – 09/05	30–36	12–48 [a,f]	0	0.0%	0	9	100.0%	9
Total			83,908	44.3%	83,908	105,385	55.7%	189,293

Note: Fish ticket data as of 27 November 2018. Samples were not processed for SrCl mark identification, so the Gulkana Hatchery contribution is unknown.

[a] No samples collected; assumed wild origin.

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

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

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

[e] Fewer than 3 deliveries; results are confidential.

[e] No harvest reported.

Appendix E7.–Pink salmon hatchery and wild stock contributions to the Coghill District commercial common property fishery by period, 2018.

Dates			Period	Hours	Origin											
					Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
					Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
05/31	–	06/01	1	36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04	–	06/05	2	36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/07	–	06/08	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	24 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/14	–	06/15	5	24 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2	0.0%	2
06/18	–	06/19	6	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2	100.0%	2
06/21	–	06/22	7	24	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/25	–	06/26	8	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/28	–	06/29	9	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	26	100.0%	26
07/02	–	07/03	10	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	147	100.0%	147
07/05	–	07/08	11	84 [c]	50	2.8%	0	0.0%	25	1.4%	0	0.0%	74	1,733	95.9%	1,807
07/09	–	07/11	12	60 [c]	204	2.7%	0	0.0%	102	1.4%	0	0.0%	306	7,130	95.9%	7,436
07/12	–	07/15	13	84 [c]	208	2.7%	0	0.0%	104	1.4%	0	0.0%	311	7,264	95.9%	7,575
07/16	–	07/18	14	60	882	2.7%	0	0.0%	441	1.4%	0	0.0%	1,323	30,879	95.9%	32,202
07/19	–	07/20	15	36	0	0.0%	262	0.0%	525	2.4%	0	0.0%	787	21,253	96.4%	22,040
07/22	–	07/22	16	14 [d,e]	5	0.8%	13	0.0%	63	10.5%	0	0.0%	80	520	86.7%	600
07/23	–	07/23	17	14 [d,e]	23	0.8%	64	2.1%	313	10.4%	0	0.0%	401	2,607	86.7%	3,008
07/26	–	07/26	18	14	261	1.5%	522	3.1%	3,131	18.5%	0	0.0%	3,913	13,044	76.9%	16,957
08/01	–	08/01	19	14	0	0.0%	0	0.0%	2,287	8.7%	0	0.0%	2,287	24,013	91.3%	26,300
08/04	–	08/04	20	14	0	0.0%	14,907	7.3%	154,038	75.6%	0	0.0%	168,945	34,783	17.1%	203,728
08/06	–	08/06	21	14	0	0.0%	25,894	7.3%	292,237	82.3%	0	0.0%	318,132	36,992	10.4%	355,124
08/10	–	08/10	22	14	0	0.0%	15,451	25.3%	27,649	45.3%	813	1.3%	43,914	17,077	28.0%	60,991
08/13	–	08/13	23	12	0	0.0%	29,152	41.3%	26,084	37.0%	1,534	2.2%	56,770	13,809	19.6%	70,579
08/16	–	08/16	24	12	0	0.0%	56,336	59.1%	30,335	31.8%	0	0.0%	86,671	8,667	9.1%	95,338
08/18	–	08/18	25	12	0	0.0%	22,818	60.0%	12,677	33.3%	0	0.0%	35,495	2,535	6.7%	38,030
08/20	–	08/20	26	12	992	11.1%	5,954	66.7%	992	11.1%	0	0.0%	7,939	992	11.1%	8,931
08/22	–	08/22	27	12 [f]	1,213	11.1%	7,278	66.7%	1,213	11.1%	0	0.0%	9,704	1,213	11.1%	10,917
08/23	–	08/23	28	12 [d,f]	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0	[d]	0
08/24	–	08/24	29	12 [d,f]	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0	[d]	0
08/25	–	08/25	30	12 [d,f]	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0.0%	[d]	0	[d]	0

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Appendix E7.–Page 2 of 2.

Dates	Period	Hours	Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/26 – 08/26	31	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/27 – 08/27	32	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28 – 08/28	33	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29 – 08/29	34	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/30 – 08/31	35	36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/03 – 09/05	36	48 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Totals			5,138	0.5%	186,459	19.2%	553,516	56.9%	2,348	0.2%	747,460	225,991	23.2%	973,451

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Fish ticket data as of 27 November 2018.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

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

[d] Fewer than 3 deliveries; results are confidential.

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

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

Appendix E8.–Chum salmon hatchery and wild stock contributions to the Coghill District commercial common property harvest, 2018.

Dates			Period	Hours	Origin									
					Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
					Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
05/31	–	06/01	1	36	16,634	98.9%	0	0.0%	0	0.0%	16,634	181	1.1%	16,815
06/04	–	06/05	2	36	30,328	90.4%	357	1.1%	1,427	4.3%	32,112	1,427	4.3%	33,539
06/07	–	06/08	3	36	46,734	94.6%	0	0.0%	537	1.1%	47,271	2,149	4.3%	49,420
06/11	–	06/12	4	24	45,243	94.7%	0	0.0%	508	1.1%	45,752	2,033	4.3%	47,785
06/14	–	06/15	5	24	67,245	97.8%	0	0.0%	1,478	2.2%	68,723	0	0.0%	68,723
06/18	–	06/19	6	36	154,696	95.8%	0	0.0%	5,100	3.2%	159,796	1,700	1.1%	161,496
06/21	–	06/22	7	24	136,747	97.8%	0	0.0%	1,503	1.1%	138,249	1,503	1.1%	139,752
06/25	–	06/26	8	36	429,926	98.9%	0	0.0%	0	0.0%	429,926	4,623	1.1%	434,549
06/28	–	06/29	9	36	244,336	93.5%	5,617	2.2%	0	0.0%	249,953	11,234	4.3%	261,187
07/02	–	07/03	10	36	309,391	95.7%	6,875	2.1%	3,438	1.1%	319,704	3,438	1.1%	323,142
07/05	–	07/08	11	84	133,267	97.8%	0	0.0%	0	0.0%	133,267	2,929	2.2%	136,196
07/09	–	07/11	12	60	72,756	96.9%	1,173	1.6%	0	0.0%	73,930	1,173	1.6%	75,103
07/12	–	07/15	13	84	28,343	96.7%	977	3.3%	0	0.0%	29,320	0	0.0%	29,320
07/16	–	07/18	14	60 [a]	7,801	96.7%	269	3.3%	0	0.0%	8,070	0	0.0%	8,070
07/19	–	07/20	15	36 [a]	8,664	96.7%	299	3.3%	0	0.0%	8,963	0	0.0%	8,963
07/22	–	07/22	16	14 [a,b]	[b]	96.8%	[b]	3.2%	[b]	0.0%	[b]	[b]	0.0%	[b]
07/23	–	07/23	17	14 [a]	173	96.6%	6	3.4%	0	0.0%	179	0	0.0%	179
07/26	–	07/26	18	14 [a]	2,377	96.7%	82	3.3%	0	0.0%	2,459	0	0.0%	2,459
08/01	–	08/01	19	14 [a]	1,217	96.7%	42	3.3%	0	0.0%	1,259	0	0.0%	1,259
08/04	–	08/04	20	14 [a]	4,607	96.7%	159	3.3%	0	0.0%	4,766	0	0.0%	4,766
08/06	–	08/06	21	14 [a]	1,392	96.7%	48	3.3%	0	0.0%	1,440	0	0.0%	1,440
08/10	–	08/10	22	14 [a]	741	96.6%	26	3.4%	0	0.0%	767	0	0.0%	767
08/13	–	08/13	23	12 [a]	271	96.8%	9	3.2%	0	0.0%	280	0	0.0%	280
08/16	–	08/16	24	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	672	100.0%	672
08/18	–	08/18	25	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	319	100.0%	319
08/20	–	08/20	26	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	53	100.0%	53
08/22	–	08/22	27	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	11	100.0%	11
08/23	–	08/23	28	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/24	–	08/24	29	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25	–	08/25	30	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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Dates	Period	Hours	Origin									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/26 - 09/05	31–36	12–48 [d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			1,743,165	96.5%	15,948	0.9%	13,991	0.8%	1,773,105	33,445	1.9%	1,806,550

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 26, 2018.

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

[b] Fewer than 3 deliveries; results are confidential

[c] No samples collected; wild origin assumed.

[d] No harvest reported.

Appendix E9.–Sockeye salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2018.

Dates	Period	Hours	Main Bay		Hatchery	Wild		Total
			Number	Percent	total	Number	Percent	
05/31 – 06/01	1	36 [a]	1,270	100.0%	1,270	0	0.0%	1,270
06/04 – 06/05	2	36 [a]	7,378	100.0%	7,378	0	0.0%	7,378
06/07 – 06/08	3	36	20,575	100.0%	20,575	0	0.0%	20,575
06/11 – 06/12	4	24	39,846	100.0%	39,846	0	0.0%	39,846
06/14 – 06/15	5	24	87,687	98.9%	87,687	933	1.1%	88,620
06/18 – 06/19	6	36	129,319	96.8%	129,319	4,263	3.2%	133,582
06/21 – 06/22	7	24	105,844	96.8%	105,844	3,528	3.2%	109,372
06/25 – 06/26	8	36	172,018	94.7%	172,018	9,557	5.3%	181,575
06/28 – 06/29	9	36	83,094	86.3%	83,094	13,174	13.7%	96,268
07/02 – 07/03	10	36	77,088	87.5%	77,088	11,013	12.5%	88,100
07/05 – 07/06	11	36	43,416	94.7%	43,416	2,412	5.3%	45,828
07/09 – 07/10	12	36	49,240	93.7%	49,240	3,283	6.3%	52,523
07/12 – 07/13	13	36	43,504	86.5%	43,504	6,780	13.5%	50,284
07/16 – 07/17	14	36	21,764	77.9%	21,764	6,166	22.1%	27,930
07/19 – 07/20	15	24	6,856	57.1%	6,856	5,142	42.9%	11,998
07/23 – 07/24	16	24 [b]	15,258	70.9%	15,258	6,269	29.1%	21,527
07/26 – 07/27	17	24	2,829	84.6%	2,829	514	15.4%	3,343
07/30 – 07/31	18	24	4,657	87.0%	4,657	5,155	52.5%	9,812
08/02 – 08/03	19	24	1,517	87.8%	1,517	1,517	50.0%	3,033
08/06 – 08/07	20	24	1532	0.0%	1,532	1,574	50.7%	3,106
08/10 – 08/10	21	14 [b]	630	0.0%	630	1,927	75.4%	2,557
08/13 – 08/14	22	24	0	0.0%	0	3,532	100.0%	3,532
08/16 – 08/16	23	12 [c]	0	0.0%	0	1,972	100.0%	1,972
08/20 – 08/21	24	24 [c]	0	0.0%	0	258	0.0%	258
08/23 – 08/23	25	12 [d]	0	0.0%	0	0	0.0%	0
08/27 – 08/28	26	24 [d]	0	0.0%	0	0	0.0%	0
08/30 – 08/31	27	36 [d]	0	0.0%	0	0	0.0%	0
09/03 – 09/04	28	24 [d]	0	0.0%	0	0	0.0%	0
Total			915,321	91.1%	915,321	88,968	8.9%	1,004,289

Note: Fish ticket data as of 27 November 2018. 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 prior and following sampled period.

[c] No samples collected; wild origin assumed.

[d] No harvest reported.

Appendix E10.–Pink salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2018.

Dates	Period	Hours	Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total	Number	Percent	Total
05/31 – 06/01	1	36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/04 – 06/05	2	36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/07 – 06/08	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	24 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/14 – 06/15	5	24 [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%	0	2	100.0%	2
06/21 – 06/22	7	24 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2	100.0%	2
06/25 – 06/26	8	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	25	100.0%	25
06/28 – 06/29	9	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	96	100.0%	96
07/02 – 07/03	10	36	71	9.5%	0	0.0%	0	0.0%	0	0.0%	71	676	90.5%	747
07/05 – 07/06	11	36 [c]	324	12.1%	0	0.0%	0	0.0%	0	0.0%	324	2,350	87.9%	2,674
07/09 – 07/10	12	36	359	14.7%	0	0.0%	0	0.0%	0	0.0%	359	2,081	85.3%	2,440
07/12 – 07/13	13	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	7,369	100.0%	7,369
07/16 – 07/17	14	36	2,731	11.3%	0	0.0%	390	0.0%	0	0.0%	3,121	21,068	87.1%	24,189
07/19 – 07/20	15	24	6,104	21.7%	0	0.0%	2,374	8.4%	0	0.0%	8,477	19,668	69.9%	28,145
07/23 – 07/24	16	24	8,319	15.8%	555	0.0%	3,328	6.3%	555	0.0%	12,756	39,930	75.8%	52,686
07/26 – 07/27	17	24	46	4.0%	23	2.0%	23	2.0%	163	14.3%	256	883	77.5%	1,139
07/30 – 07/31	18	24	511	1.1%	1,021	2.2%	6,637	14.6%	1,532	3.4%	9,700	35,738	78.7%	45,438
08/02 – 08/03	19	24	0	0.0%	378	5.0%	1,511	20.0%	189	2.5%	2,078	5,478	72.5%	7,556
08/06 – 08/07	20	24	673	2.3%	4,039	14.0%	7,404	25.6%	2,692	9.3%	14,809	14,135	48.8%	28,944
08/10 – 08/10	21	14	645	1.4%	9,030	18.9%	9,030	18.9%	9,675	20.3%	28,380	19,350	40.5%	47,730
08/13 – 08/14	22	24	508	0.0%	6,092	0.0%	18,277	0.0%	5,077	0.0%	29,954	17,261	0.0%	47,215
08/16 – 08/16	23	12 [d]	279	1.1%	3,350	12.9%	10,049	38.7%	2,791	10.8%	16,469	9,490	36.6%	25,959
08/20 – 08/21	24	24 [d]	43	0.0%	516	0.0%	1,548	0.0%	430	0.0%	2,538	1,462	36.6%	4,000
08/23 – 08/23	25	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/27 – 09/04	26–28	24–36 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			20,613	6.3%	25,004	7.7%	60,571	18.6%	23,104	7.1%	129,292	197,064	60.4%	326,356

Note: SGH = Solomon Gulch Hatchery, CCH = Cannery Creek Hatchery, WNH = Wally Noerenberg Hatchery, and AFK = Armin F. Koernig Hatchery. Fish ticket data as of 27 November 2018.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

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

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

Appendix E11.–Chum salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2018.

Dates	Period	Hours	Origin									
			Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
05/31 – 06/01	1	36 [a]	486	83.1%	8	1.4%	68	11.6%	562	23	3.9%	585
06/04 – 06/05	2	36 [a]	1,612	83.1%	25	1.3%	227	11.7%	1,864	76	3.9%	1,940
06/07 – 06/08	3	36 [a]	2,292	83.1%	36	1.3%	322	11.7%	2,650	107	3.9%	2,757
06/11 – 06/12	4	24	10,320	83.1%	161	1.3%	1,451	11.7%	11,932	484	3.9%	12,416
06/14 – 06/15	5	24	9,586	88.9%	0	0.0%	1,198	11.1%	10,784	0	0.0%	10,784
06/18 – 06/19	6	36	16,692	72.2%	879	3.8%	4,978	21.5%	22,549	586	2.5%	23,135
06/21 – 06/22	7	24	15,204	97.7%	0	0.0%	362	2.3%	15,566	0	0.0%	15,566
06/25 – 06/26	8	36	19,902	77.8%	569	2.2%	4,265	16.7%	24,735	853	3.3%	25,588
06/28 – 06/29	9	36 [b]	9,596	70.1%	152	1.1%	2,636	19.3%	12,384	1,297	9.5%	13,681
07/02 – 07/03	10	36	3,705	62.5%	0	0.0%	1,297	21.9%	5,002	926	15.6%	5,928
07/05 – 07/06	11	36 [b]	2,145	61.5%	0	0.0%	503	14.4%	2,648	841	24.1%	3,489
07/09 – 07/10	12	36	3,372	60.5%	0	0.0%	389	7.0%	3,761	1,816	32.6%	5,577
07/12 – 07/13	13	36	1,258	40.0%	0	0.0%	629	20.0%	1,886	1,258	40.0%	3,144
07/16 – 07/17	14	36 [b]	3,157	57.5%	0	0.0%	549	10.0%	3,706	1,784	32.5%	5,490
07/19 – 07/20	15	24	2,367	75.0%	0	0.0%	0	0.0%	2,367	789	25.0%	3,156
07/23 – 07/24	16	24 [c]	1,923	75.0%	0	0.0%	0	0.0%	1,923	641	25.0%	2,564
07/26 – 07/27	17	24 [c]	59	74.7%	0	0.0%	0	0.0%	59	20	25.3%	79
07/30 – 07/31	18	24 [c]	1,544	75.0%	0	0.0%	0	0.0%	1,544	515	25.0%	2,059
08/02 – 08/03	19	24 [c]	151	75.1%	0	0.0%	0	0.0%	151	50	24.9%	201
08/06 – 08/07	20	24 [c]	712	75.0%	0	0.0%	0	0.0%	712	237	25.0%	949
08/10 – 08/10	21	14 [c]	730	75.0%	0	0.0%	0	0.0%	730	243	25.0%	973
08/13 – 08/14	22	24 [c]	512	75.1%	0	0.0%	0	0.0%	512	171	25.1%	682
08/16 – 08/16	23	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	377	100.0%	377
08/20 – 08/21	24	24 [d]	0	0.0%	0	0.0%	0	0.0%	0	74	100.0%	74
08/23 – 08/23	25	12 [e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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Dates	Period	Hours	Origin: Wally Noerenberg Number	Wally Noerenberg Percent	Port Chalmers Number	Port Chalmers Percent	Armin F Koernig Number	Armin F Koernig Percent	Hatchery total	Wild Number	Wild Percent	Total
08/27 – 09/04	26–28	24–36 [e]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			107,325	76.0%	1,830	1.3%	18,874	13.4%	128,027	13,168	9.3%	141,194

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery.

[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.

Appendix E12.–Daily salmon sales and sex ratios, sales summary, and broodstock summary at the Main Bay Hatchery, 2018.

	Sockeye salmon			
Date	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Broodstock cumulative
06/25	0	0	0	0
06/26	0	0	1,838	1,838
06/27	0	0	1,314	3,152
06/28	0	0	1,349	4,501
06/29	0	0	154	4,655
06/30	0	0	0	4,655
07/01	0	0	630	5,285
07/02	0	0	83	5,368
07/03	0	0	534	5,902
07/04	0	0	482	6,384
07/05	0	0	353	6,737
07/06	0	0	677	7,414
07/07	0	0	0	7,414
07/08	0	0	1,526	8,940
07/09	0	0	0	8,940
07/10	0	0	0	8,940
07/11	0	0	0	8,940
07/12	0	0	0	8,940
07/13	0	0	0	8,940
07/14	0	0	0	8,940
07/15	0	0	0	8,940
07/16	0	0	0	8,940
07/17	0	0	0	8,940
07/18	0	0	0	8,940
07/19	0	0	0	8,940
07/20	0	0	0	8,940
07/21	0	0	0	8,940
07/22	0	0	0	8,940
07/23	0	0	0	8,940
07/24	0	0	0	8,940
07/25	0	0	0	8,940
07/26	0	0	0	8,940

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	Sockeye salmon			
Date	Sales harvest[a]	Sales harvest cumulative	Broodstock[b]	Broodstock cumulative
07/27	0	0	0	8,940
07/28	0	0	0	8,940
07/29	0	0	0	8,940
07/30	0	0	0	8,940
07/31	0	0	0	8,940
08/01	0	0	0	8,940
08/02	0	0	0	8,940
08/03	0	0	0	8,940
08/04	0	0	0	8,940
08/05	0	0	0	8,940
08/06	0	0	0	8,940

Hatchery escapement summary[c]	Sockeye salmon
Purse seine whole fish harvest	0
Raceway harvest[d]	0
Viable broodstock (spawned, eggs in incubators)	6,474
Unviable broodstock (green/over-ripe/bad)	239
Unspawned fish (e.g., excess males/females)	2,689
Holding mortalities (raceway, pen mortalities)	878
Estimated unharvested return[e]	1,360
Estimated total run to hatchery site	11,640

Sales summary	
Purse seine whole fish sales	0
Raceway sales[f]	0
Carcass sales[g]	0
Total sales	0

[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 2018b).

[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, 1990–2018.

	Hatchery contributions[a]					Total
Year	Commercial	Subsistence/ homepack	Sport	Broodstock/ escapement	Cost recovery	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	1,500	11,640	0	1,047,347
Average 2008–2017	997,533	1,646	4,822	43,967	31,211	1,078,273

[a] Commercial harvest estimates are from otolith marks. Sport harvest is the 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, 1983–2018.

Release year	Sockeye salmon					Pink salmon	Chum salmon
	Primary return years	Coghill Lake stock	Eshamy Lake stock	Eyak Lake stock	Total released [a]	Total released	Total released
1983						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		
Average 2008–2017		10,091,700			10,091,700		

[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 common property fishery by period, 2018.

					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
07/10	–	07/10	1	14	1,031,821	96.9%	0	0.0%	0	0.0%	0	0.0%	1,025,156	33,285	3.1%	1,065,106
07/16	–	07/16	2	14	1,873,279	95.7%	0	0.0%	20,814	1.1%	0	0.0%	1,894,093	62,443	3.2%	1,956,536
07/17	–	07/17	3	14	652,423	96.9%	0	0.0%	0	0.0%	0	0.0%	652,423	21,046	3.1%	673,469
07/18	–	07/18	4	14	571,422	97.9%	0	0.0%	0	0.0%	0	0.0%	571,422	12,158	2.1%	583,580
07/19	–	07/19	5	14	654,423	92.6%	0	0.0%	0	0.0%	0	0.0%	654,423	52,655	7.4%	707,078
07/20	–	07/20	6	14	693,079	100.0%	0	0.0%	0	0.0%	0	0.0%	693,079	0	0.0%	693,079
07/22	–	07/22	7	14	1,145,376	72.9%	16,363	1.0%	0	0.0%	0	0.0%	1,161,738	409,063	26.0%	1,570,801
07/26	–	07/26	8	14	403,941	46.9%	8,976	1.0%	0	0.0%	0	0.0%	412,918	448,823	52.1%	861,741
08/01	–	08/01	9	14	236,063	21.5%	35,410	3.2%	23,606	2.2%	0	0.0%	295,079	802,616	73.1%	1,097,695
08/04	–	08/04	10	14	92,858	24.2%	4,221	1.1%	0	0.0%	0	0.0%	97,078	287,015	74.7%	384,093
08/06	–	08/06	11	14	80,730	42.1%	6,055	3.2%	0	0.0%	0	0.0%	86,785	104,949	54.7%	191,734
08/10	–	08/10	12	14	32,050	27.4%	13,560	11.6%	1,233	1.1%	0	0.0%	46,842	70,264	60.0%	117,106
08/13	–	08/13	13	12	19,043	19.8%	7,406	7.7%	2,116	2.2%	0	0.0%	28,565	67,710	70.3%	96,275
08/16	–	08/16	14	12	1,373	6.7%	275	1.3%	549	0.0%	0	0.0%	2,197	18,397	89.3%	20,594
08/18	–	08/18	15	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	8,724	100.0%	8,724
08/20	–	08/20	16	12 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	4,573	100.0%	4,573
08/22	–	08/22	17	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1,696	100.0%	1,696
08/23	–	08/23	18	12 [b]	[b]	0.0%	[b]	0.0%	[b]	0.0%	[b]	0.0%	[b]	[b]	100.0%	[b]
08/24	–	08/24	19	12	165,406	100.0%	0	0.0%	0	0.0%	0	0.0%	165,406	0	0.0%	165,406
08/25	–	08/25	20	12	81,889	100.0%	0	0.0%	0	0.0%	0	0.0%	58,492	0	0.0%	81,889
08/26	–	08/26	21	12 [a]	177	100.0%	0	0.0%	0	0.0%	0	0.0%	126	0	0.0%	177
08/27	–	08/27	22	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28	–	08/28	23	12 [a]	0	0.0%	102	57.1%	0	0.0%	26	0.0%	128	51	28.6%	179
08/29	–	08/29	24	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/30	–	08/30	25	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/31	–	08/31	26	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/01	–	09/01	27	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/02	–	09/02	28	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/03	–	09/03	29	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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Appendix E15.–Page 2 of 2.

Dates			Period	Hours	Origin: Solomon Gulch Number	Solomon Gulch Percent	Cannery Creek Number	Cannery Creek Percent	Wally Noerenberg Number	Wally Noerenberg Percent	A.F. Koernig Number	A.F. Koernig Percent	Hatchery total	Wild Number	Wild Percent	Total
09/04	–	09/04	30	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
09/05	–	09/15	31–41	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total					7,735,354	75.1%	92,366	0.9%	48,318	0.5%	26	0.0%	7,845,950	2,420,323	23.5%	10,296,388

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 26, 2018.

[a] No samples collected; proportions are an average of the prior period sampled.

[b] Fewer than 3 permits fished; results are confidential.

[c] No harvest reported.

[d] No samples collected; wild origin assumed.

Appendix E16.–Pink salmon hatchery and wild stock contributions to the Northern District commercial common property fishery by period, 2018.

				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
07/22 – 07/22		1	14	197,592	0.0%	0	0.0%	0	0.0%	0	0.0%	197,592	28,916	0.0%	226,508
07/26 – 07/26		2	14	69,826	46.3%	15,870	10.5%	3,174	0.0%	0	0.0%	88,870	61,891	41.1%	150,761
08/04 – 08/04		3	14	0	0.0%	823,388	92.7%	9,252	1.0%	0	0.0%	832,640	55,509	6.2%	888,149
08/06 – 08/06		4	14	5,116	1.0%	450,176	91.7%	0	0.0%	0	0.0%	455,292	35,809	7.3%	491,101
08/10 – 08/10		5	14	0	0.0%	275,299	77.1%	7,441	2.1%	11,161	0.0%	293,901	63,244	17.7%	357,145
08/13 – 08/13		6	12	4,613	3.1%	135,306	91.7%	1,538	1.0%	0	0.0%	141,457	6,150	4.2%	147,607
08/16 – 08/16		7	12	1,888	1.4%	109,476	78.4%	16,988	12.2%	0	0.0%	128,351	11,325	8.1%	139,676
08/18 – 08/18		8	12	702	1.3%	28,066	50.6%	18,945	34.2%	0	0.0%	47,713	7,718	13.9%	55,431
08/20 – 08/20		9	12	0	0.0%	47,138	76.2%	8,838	14.3%	0	0.0%	55,977	5,892	9.5%	61,869
08/22 – 08/22		10	12	0	0.0%	34,231	100.0%	0	0.0%	0	0.0%	34,231	0	0.0%	34,231
08/23 – 08/23	[a]	11	12	285	1.6%	12,408	71.3%	428	2.5%	3,280	18.9%	16,402	998	5.7%	17,400
08/24 – 08/24		12	12	291	3.3%	3,778	42.6%	436	4.9%	3,342	37.7%	7,846	1,017	11.5%	8,863
08/25 – 08/25		13	12	668	2.1%	24,714	78.7%	0	0.0%	3,340	10.6%	28,722	2,672	8.5%	31,394
08/26 – 08/26	[b]	14	12	295	2.1%	10,924	78.7%	0	0.0%	1,476	10.6%	12,696	1,181	8.5%	13,877
08/27 – 08/27	[b]	15	12	56	2.1%	2,055	78.7%	0	0.0%	278	10.7%	2,388	222	8.5%	2,610
08/28 – 08/28	[c]	16	12	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
08/29 – 09/15	[c]	17–34	12	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
Totals				281,330	10.7%	1,972,830	75.1%	67,038	2.6%	22,877	0.9%	2,344,075	282,547	10.8%	2,626,622

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 27, 2018.

[a] No samples collected; wild origin assumed.

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

[c] Fewer than 3 deliveries; results are confidential.

Appendix E17.–Pink salmon hatchery and wild stock contributions to Prince William Sound, Bering, and Copper River commercial common property fishery, 2018.

		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	3	100.0%	3
Copper River	212 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	10,568	100.0%	10,568
Eastern	221	7,735,354	75.1%	92,366	0.9%	48,318	0.5%	26	0.0%	7,876,065	2,420,323	23.5%	10,296,388
Northern	222	281,330	10.7%	1,972,830	75.1%	67,038	2.6%	22,877	0.9%	2,344,075	282,547	10.8%	2,626,622
Coghill	223	5,138	0.5%	186,459	19.2%	553,516	56.9%	2,348	0.2%	747,460	225,991	23.2%	973,451
Northwestern	224	815	0.0%	815	0.4%	19,926	10.8%	1,663	0.9%	23,219	160,872	87.4%	184,091
Eshamy	225	20,612	6.3%	25,003	7.7%	60,571	18.6%	23,104	7.1%	129,290	197,066	60.4%	326,356
Southwestern	226	111,588	2.3%	961,170	19.6%	487,401	9.9%	2,441,782	49.7%	4,001,942	910,344	18.5%	4,912,287
Montague	227	214,830	54.3%	18,706	4.7%	6,166	1.6%	12,013	3.0%	251,716	143,743	36.3%	395,459
Southeastern	228	11,973	2.7%	1,364	0.3%	0	0.0%	0	0.0%	13,337	429,781	97.0%	443,118
Unakwik	229 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	34	100.0%	34
Total		8,381,642	41.6%	3,258,714	16.2%	1,242,937	6.2%	2,503,812	12.4%	15,387,105	4,781,271	23.7%	20,168,377

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 27, 2018. Personal use (homepack) harvests are excluded.

[a] No samples collected; all harvest allocated to wild stocks.

Appendix E18.–Sockeye salmon hatchery and wild stock contributions to the Southwestern District commercial common property fishery by period, 2018.

			Origin						
			Main Bay		Hatchery		Wild		
Dates	Period	Hours	Number	Percent	Total	Percent	Number	Percent	Total
06/01 – 06/03	1	48 [a]	57	0.0%	57	0.0%	0	0.0%	57
06/04 – 06/06	2	48 [a]	104	100.0%	104	100.0%	0	0.0%	104
06/07 – 06/09	3	48	2,794	100.0%	2,794	100.0%	0	0.0%	2,794
06/11 – 06/13	4	48 [b]	1,177	0.0%	1,177	0.0%	78	0.0%	1,255
06/14 – 06/15	5	36	1,185	87.5%	1,185	87.5%	169	12.5%	1,354
06/18 – 06/19	6	36	6,958	92.6%	6,958	92.6%	560	7.4%	7,518
06/21 – 06/22	7	24	4,953	94.5%	4,953	94.5%	291	5.5%	5,244
06/25 – 06/25	8	12	5,760	90.0%	5,760	90.0%	640	10.0%	6,400
06/28 – 06/28	9	12	2,111	82.6%	2,111	82.6%	445	17.4%	2,556
06/30 – 06/30	10	12	1,571	70.0%	1,571	70.0%	673	30.0%	2,244
07/02 – 07/02	11	12	309	50.0%	309	50.0%	309	50.0%	618
07/05 – 07/06	12	36	583	90.2%	583	90.2%	63	9.8%	646
07/09 – 07/10	13	36 [b]	668	89.2%	668	89.2%	81	10.8%	749
07/12 – 07/13	14	36	678	87.9%	678	87.9%	93	12.1%	771
07/16 – 07/17	15	36 [b]	194	73.8%	194	73.8%	69	26.2%	263
07/19 – 07/20	16	36	138	59.2%	138	59.2%	95	40.8%	233
07/22 – 07/23	17	36 [b]	100	0.0%	100	0.0%	157	0.0%	257
07/26 – 07/26	18	8 [b]	263	0.0%	263	0.0%	417	0.0%	680
08/04 – 08/04	19	14	289	0.0%	289	0.0%	1,302	0.0%	1,591
08/06 – 08/06	20	14 [c]	269	0.0%	269	0.0%	1,212	0.0%	1,481
08/10 – 08/10	21	14 [c]	263	0.0%	263	0.0%	1,184	0.0%	1,447
08/13 – 08/13	22	12 [c]	126	0.0%	126	0.0%	568	0.0%	694
08/16 – 08/16	23	12 [d]	0	0.0%	0	0.0%	1,996	0.0%	1,996
08/18 – 08/18	24	12 [d]	0	0.0%	0	0.0%	2,044	100.0%	2,044
08/20 – 08/20	25	12 [d]	0	0.0%	0	0.0%	1,224	100.0%	1,224
08/22 – 08/22	26	12 [d]	0	0.0%	0	0.0%	1,044	100.0%	1,044
08/23 – 08/23	27	12 [d]	0	0.0%	0	0.0%	1,003	100.0%	1,003
08/24 – 08/24	28	12 [d]	0	0.0%	0	0.0%	803	100.0%	803
08/25 – 08/25	29	12 [d]	0	0.0%	0	0.0%	532	100.0%	532
08/26 – 08/26	30	12 [d]	0	0.0%	0	0.0%	500	100.0%	500
08/27 – 08/27	31	12 [d]	0	0.0%	0	0.0%	321	100.0%	321
08/28 – 08/28	32	12 [d]	0	0.0%	0	0.0%	63	100.0%	63
08/29 – 08/29	33	12 [d]	0	0.0%	0	0.0%	72	100.0%	72
08/30 – 08/30	34	12 [d]	0	0.0%	0	0.0%	205	100.0%	205
08/31 – 09/15	35–50	12 [d,e,f]	0	0.0%	0	0.0%	85	100.0%	85
Total			30,550	62.5%	30,550	62.5%	18,298	37.5%	48,848

Note: Total harvest data from fish tickets as of January 5, 2019. Samples were not processed for SrCl mark identification, so the Gulkana Hatchery contribution is unknown.

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

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

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

[d] No samples collected; wild origin assumed.

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

[f] No harvest reported.

Appendix E19.–Pink salmon hatchery and wild stock contributions to the Southwestern District commercial common property fishery by period, 2018.

					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
06/07	–	06/09	3	48 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	9,448	100.0%	9,448
06/11	–	06/13	4	48 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	0.0%	1
06/14	–	06/15	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	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	100.0%	1
06/21	–	06/22	7	24 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	5	100.0%	5
06/25	–	06/25	8	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	18	0.0%	18
06/28	–	06/28	9	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	57	100.0%	57
06/30	–	06/30	10	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	64	100.0%	64
07/02	–	07/02	11	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	387	100.0%	387
07/05	–	07/06	12	36 [c]	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
07/09	–	07/10	13	36 [c]	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
07/12	–	07/13	14	36 [c]	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
07/16	–	07/17	15	36	545	52.4%	0	0.0%	74	7.1%	149	14.3%	768	272	26.2%	1,040
07/19	–	07/20	16	36	2,665	19.2%	0	0.0%	381	2.7%	7,615	54.8%	10,661	3,236	23.3%	13,897
07/22	–	07/23	17	36	4,065	9.4%	677	1.6%	0	0.0%	29,130	67.2%	33,873	9,484	21.9%	43,357
07/26	–	07/26	18	8	31,665	29.2%	11,309	10.4%	12,440	11.5%	9,047	8.3%	64,460	44,104	40.6%	108,564
08/04	–	08/04	19	14	20,291	3.1%	81,165	12.5%	74,401	11.5%	290,841	44.8%	466,699	182,621	28.1%	649,320
08/06	–	08/06	20	14	7,518	1.0%	75,177	10.4%	90,212	12.5%	405,955	56.3%	578,861	142,836	19.8%	721,697
08/10	–	08/10	21	14	4,885	1.1%	127,012	27.4%	48,851	10.5%	190,518	41.1%	371,266	92,816	20.0%	464,082
08/13	–	08/13	22	12	12,240	4.2%	48,958	16.8%	39,778	13.7%	137,695	47.4%	238,671	52,018	17.9%	290,689
08/16	–	08/16	23	12	15,618	2.1%	109,325	14.6%	54,663	7.3%	437,301	58.3%	616,906	132,752	17.7%	749,658
08/18	–	08/18	24	12	0	0.0%	126,816	25.0%	47,556	9.4%	264,200	52.1%	438,572	68,692	13.5%	507,264
08/20	–	08/20	25	12	0	0.0%	75,172	24.0%	22,878	7.3%	150,344	47.9%	248,394	65,367	20.8%	313,761
08/22	–	08/22	26	12	3,413	1.1%	75,092	23.2%	37,546	11.6%	174,076	53.7%	290,126	34,133	10.5%	324,259
08/23	–	08/23	27	12	0	0.0%	62,850	26.9%	29,928	12.8%	113,728	48.7%	206,506	26,936	11.5%	233,441
08/24	–	08/24	28	12	3,909	2.7%	54,727	38.4%	1,955	1.4%	66,455	46.6%	127,046	15,636	11.0%	142,682
08/25	–	08/25	29	12	1,078	1.2%	35,561	39.3%	7,543	8.3%	37,716	41.7%	81,897	8,621	9.5%	90,518

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Appendix E19.–Page 2 of 2.

Dates			Period	Hours	Origin: Solomon Gulch Number	Solomon Gulch Percent	Cannery Creek Number	Cannery Creek Percent	Wally Noerenberg Number	Wally Noerenberg Percent	A.F. Koernig Number	A.F. Koernig Percent	Hatchery total	Wild Number	Wild Percent	Total
08/26	–	08/26	30	12	0	0.0%	27,311	33.3%	8,403	10.3%	33,614	41.0%	69,328	12,605	15.4%	81,933
08/27	–	08/27	31	12	0	0.0%	18,951	36.7%	5,228	10.1%	21,565	41.8%	45,745	5,881	11.4%	51,626
08/28	–	08/28	32	12	2,047	9.1%	8,187	36.4%	0	0.0%	12,280	54.5%	22,514	0	0.0%	22,514
08/29	–	08/29	33	12	0	0.0%	7,309	53.6%	1,706	12.5%	4,142	30.4%	13,157	487	3.6%	13,644
08/30	–	08/30	34	12 [d]	0	0.0%	9,821	53.6%	2,292	12.5%	5,565	30.4%	17,677	655	3.6%	18,332
08/31	–	08/31	35	12 [d,e]	0	0.0%	3,146	53.6%	734	12.5%	1,783	30.4%	5,662	210	3.6%	5,872
09/01	–	09/01	36	12 [d,e]	0	0.0%	2,040	53.6%	476	12.5%	1,156	30.4%	3,672	136	3.6%	3,808
09/02	–	09/02	37	12 [d]	0	0.0%	565	53.6%	132	12.5%	320	30.3%	1,017	38	3.6%	1,055
09/03	–	09/15	38-50	12 [b,d]	0	0.0%	0	0.0%	0	0.0%	46,140	100.0%	0	0	0.0%	46,140
Totals					111,589	2.3%	961,170	19.6%	487,403	9.9%	2,441,782	49.7%	4,001,944	910,344	18.5%	4,912,288

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 27, 2018.

[a] No harvest reported.

[b] No samples collected; wild origin assumed.

[c] Fewer than 3 permits fished; results are confidential.

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

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

Appendix E20.–Chum salmon hatchery and wild stock contributions to commercial common property fisheries by period and mark identification, Southwestern District, 2018.

			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 – 06/03	1	48	231	4.5%	847	16.4%	3,927	76.1%	5,005	97.0%	154	3.0%	5,159
06/04 – 06/06	2	48	0	0.0%	603	15.4%	3,242	82.7%	3,845	98.1%	75	1.9%	3,920
06/07 – 06/09	3	48	356	3.4%	1,778	16.9%	7,823	74.2%	9,957	94.4%	593	5.6%	10,550
06/11 – 06/13	4	48	384	2.1%	2,110	11.6%	14,576	80.0%	17,070	93.7%	1,151	6.3%	18,221
06/14 – 06/15	5	36	0	0.0%	2,197	8.3%	23,891	90.6%	26,088	99.0%	275	1.0%	26,363
06/18 – 06/19	6	36	708	1.1%	9,914	14.7%	54,527	81.1%	65,149	96.8%	2,124	3.2%	67,273
06/21 – 06/22	7	24	1,348	3.2%	2,247	5.3%	39,090	91.6%	42,685	100.0%	0	0.0%	42,685
06/25 – 06/25	8	12	0	0.0%	5,021	11.3%	39,050	87.5%	44,071	98.7%	558	1.3%	44,629
06/28 – 06/28	9	12	440	2.0%	4,397	20.0%	16,710	76.0%	21,547	98.0%	440	2.0%	21,987
06/30 – 06/30	10	12	2,125	12.5%	3,069	18.1%	10,860	63.9%	16,054	94.4%	944	5.6%	16,998
07/02 – 07/02	11	12	688	4.4%	1,031	6.7%	13,750	88.9%	15,469	100.0%	0	0.0%	15,469
07/05 – 07/06	12	36	757	3.1%	1,891	7.8%	21,563	89.1%	24,211	100.0%	0	0.0%	24,211
07/09 – 07/10	13	36 [a]	1,038	5.1%	1,271	6.3%	17,907	88.6%	20,216	100.0%	0	0.0%	20,216
07/12 – 07/13	14	36	1,056	7.1%	704	4.8%	13,028	88.1%	14,788	100.0%	0	0.0%	14,788
07/16 – 07/17	15	36 [a]	303	5.6%	348	6.4%	4,688	86.6%	5,339	98.7%	73	1.3%	5,412
07/19 – 07/20	16	36 [a]	147	5.6%	169	6.5%	2,269	86.6%	2,585	98.7%	35	1.3%	2,620
07/22 – 07/23	17	36	85	4.0%	171	8.1%	1,790	85.1%	2,046	97.3%	57	2.7%	2,103
07/26 – 07/26	18	8	0	0.0%	47	6.2%	47	6.2%	94	12.4%	664	87.6%	758
08/04 – 08/04	19	14	131	5.9%	525	23.5%	263	11.8%	919	41.2%	1,313	58.8%	2,232
08/06 – 08/06	20	14 [b]	109	5.9%	434	23.5%	217	11.8%	760	41.2%	1,085	58.8%	1,845
08/10 – 08/10	21	14 [b]	58	5.9%	231	23.5%	116	11.8%	405	41.2%	578	58.8%	983
08/13 – 08/13	22	12 [b]	65	5.9%	259	23.5%	130	11.8%	454	41.2%	648	58.8%	1,102
08/16 – 08/16	23	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1,082	100.0%	1,082
08/18 – 08/18	24	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1,135	100.0%	1,135
08/20 – 08/20	25	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	725	100.0%	725
08/22 – 08/22	26	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	696	100.0%	696
08/23 – 08/23	27	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	652	100.0%	652
08/24 – 08/24	28	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	409	100.0%	409
08/25 – 08/25	29	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	403	100.0%	403

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Appendix E20.–Page 2 of 2.

Dates	Period	Hours	Origin: Wally Noerenberg Number	Wally Noerenberg Percent	Port Chalmers Number	Port Chalmers Percent	Armin F Koernig Number	Armin F Koernig Percent	Hatchery total	Wild Number	Wild Percent	Total
08/26 – 08/26	30	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	299	100.0%	299
08/27 – 08/27	31	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	299	100.0%	299
08/28 – 08/28	32	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	262	100.0%	262
08/29 – 08/29	33	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	46	100.0%	46
08/30 – 08/30	34	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	52	100.0%	52
08/31 – 08/31	35	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	18	100.0%	18
09/01 – 09/01	36	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	15	100.0%	15
09/02 – 09/02	37	12 [c]	0	0.0%	0	0.0%	0	0.0%	0	8	100.0%	8
09/03 – 09/15	38-50	12 [d]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			10,029	2.8%	39,264	11.0%	289,464	81.4%	338,757	16,868	4.7%	355,625

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 2, 2018.

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

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

[c] No samples collected; wild origin assumed.

[d] No harvest reported.

Appendix E21.–Chum salmon hatchery and wild stock contributions to commercial common property fisheries by period and mark identification, Montague District, 2018.

			Origin									
			Port Chalmers		Wally Norenberg		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]	6,103	64.9%	2,101	22.3%	400	4.3%	8,604	800	8.5%	9,404
06/04 – 06/06	2	48	7,648	64.9%	2,633	22.3%	502	4.3%	10,783	1,003	8.5%	11,786
06/07 – 06/09	3	48	2,690	33.3%	3,138	38.9%	1,345	16.7%	7,173	897	11.1%	8,070
06/11 – 06/13	4	48	3,118	34.5%	5,612	62.1%	312	3.5%	9,042	0	0.0%	9,042
06/14 – 06/15	5	36	19,276	86.6%	2,172	9.8%	543	2.4%	21,991	271	1.2%	22,262
06/18 – 06/19	6	36	36,521	94.4%	859	2.2%	430	1.1%	37,810	859	2.2%	38,669
06/21 – 06/22	7	36	58,294	91.5%	1,080	1.7%	2,159	3.4%	61,533	2,159	3.4%	63,692
06/25 – 06/26	8	36	31837	71.8%	7959	17.9%	4548	10.3%	44,344	0	0.0%	44,344
06/28 – 06/29	9	36	78,535	95.5%	1,247	1.5%	2,493	3.0%	82,275	0	0.0%	82,275
07/02 – 07/03	10	36	37,217	69.4%	8,188	15.3%	6,699	12.5%	52,104	1,489	2.8%	53,593
07/05 – 07/06	11	36	24,639	83.3%	1,643	5.6%	1,643	5.6%	27,925	1,643	5.6%	29,568
07/09 – 07/10	12	36 [b]	26,818	71.7%	4,781	12.8%	2,910	7.8%	34,509	2,910	7.8%	37,419
07/12 – 07/13	13	36	17,120	60.0%	5,707	20.0%	2,853	10.0%	25,680	2,853	10.0%	28,533
07/16 – 07/17	14	36 [b]	5,311	80.0%	664	10.0%	332	5.0%	6,307	332	5.0%	6,639
07/19 – 07/19	15	12 [b]	4,444	80.0%	556	10.0%	278	5.0%	5,278	278	5.0%	5,556
07/22 – 07/22	16	12	1,734	100.0%	0	0.0%	0	0.0%	1,734	0	0.0%	1,734
08/10 – 08/10	17	14 [c]	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
08/13 – 08/13	18	12 [c]	[c]	0.0%	[c]	0.0%	[c]	0.0%	[c]	[c]	0.0%	[c]
08/16 – 08/16	19	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/18 – 08/18	20	12 [d,e]	0	0.0%	0	0.0%	0	0.0%	0	14	100.0%	14
08/20 – 08/20	21	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/22 – 08/22	22	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/23 – 08/23	23	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/24 – 08/24	24	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25 – 08/25	25	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26 – 08/26	26	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/27 – 08/27	27	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28 – 08/28	28	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29 – 08/29	29	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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			Origin									
			Port Chalmers		Wally Noerenberg		Armin F Koernig		Hatchery	Wild		
Dates	Period	Hours	Number	Percent	Number	Percent	Number	Percent	Total	Number	Percent	Total
08/30 – 09/15	30-46	12 [f]	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			361,494	79.8%	48,340	10.7%	27,447	6.1%	437,281	15,508	3.4%	452,789

Note: WNH = Wally Noerenberg Hatchery, AFK = Armin F. Koernig Hatchery. Fish ticket data as of November 2, 2018.

[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] Fewer than 3 permits fished; results are confidential.

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

[e] No samples collected; wild origin assumed.

[f] No samples collected; wild origin assumed.

Appendix E22.–Pink salmon hatchery and wild stock contributions to commercial common property fisheries by period and mark identification, Montague District, 2018.

Dates			Period	Hours	Origin											
					Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
					Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
06/01	–	07/22	1	48 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2,526	0.0%	2,526
06/04	–	07/26	2	48 [a]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	1	0.0%	1
06/07	–	08/01	3	48 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/11	–	08/04	4	48 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/14	–	08/06	5	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/18	–	08/10	6	36 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/21	–	08/13	7	36 [c]	4	80.0%	0	0.0%	0	0.0%	0	0.0%	4	1	20.0%	5
06/25	–	08/16	8	36 [c]	255	82.3%	0	0.0%	0	0.0%	0	0.0%	255	55	17.7%	310
06/28	–	08/18	9	36 [c]	151	82.1%	0	0.0%	0	0.0%	0	0.0%	151	33	17.9%	184
07/02	–	08/20	10	36	7,555	82.2%	0	0.0%	0	0.0%	0	0.0%	7,555	1,637	17.8%	9,192
07/05	–	08/22	11	36	2,346	78.3%	0	0.0%	0	0.0%	0	0.0%	2,346	652	21.7%	2,998
07/09	–	08/26	12	36 [d]	627	76.0%	0	0.0%	10	1.2%	0	0.0%	637	188	22.8%	825
07/12	–	08/24	13	36	78,225	73.7%	0	0.0%	2,652	2.5%	0	0.0%	80,877	25,191	23.7%	106,068
07/16	–	08/25	14	36	52,327	62.1%	0	0.0%	1,774	2.1%	0	0.0%	54,101	30,154	35.8%	84,255
07/19	–	08/26	15	12	67,414	58.3%	1,204	1.0%	0	0.0%	0	0.0%	68,618	46,949	40.6%	115,567
07/22	–	08/27	16	12	5,926	23.8%	593	2.4%	0	0.0%	0	0.0%	6,519	18,370	73.8%	24,889
08/10	–	08/28	17	14	0	0.0%	10,381	27.3%	1,730	4.5%	10,381	27.3%	22,492	15,572	40.9%	38,064
08/13	–	08/29	18	12 [b]	0	0.0%	6,529	80.0%	0	0.0%	1,632	20.0%	8,161	0	0.0%	8,161
08/16	–	08/30	19	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/18	–	08/31	20	12 [a,e]	[e]	0.0%	[e]	0.0%	[e]	0.0%	[e]	0.0%	[e]	[e]	0.0%	[e]
08/20	–	09/01	21	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/22	–	07/18	22	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/23	–	07/21	23	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/24	–	07/24	24	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25	–	07/28	25	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26	–	07/30	26	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/27	–	08/01	27	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28	–	08/04	28	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29	–	08/06	29	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0

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Dates	Period	Hours	Origin											
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent	total	Number	Percent	Total
08/30 – 09/15	30–46	12 [b]	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Total			214,830	54.3%	18,707	4.7%	6,166	1.6%	12,013	3.0%	251,716	143,743	36.3%	395,459

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 27, 2018.

[a] No samples collected; assumed wild origin.

[b] No harvest reported.

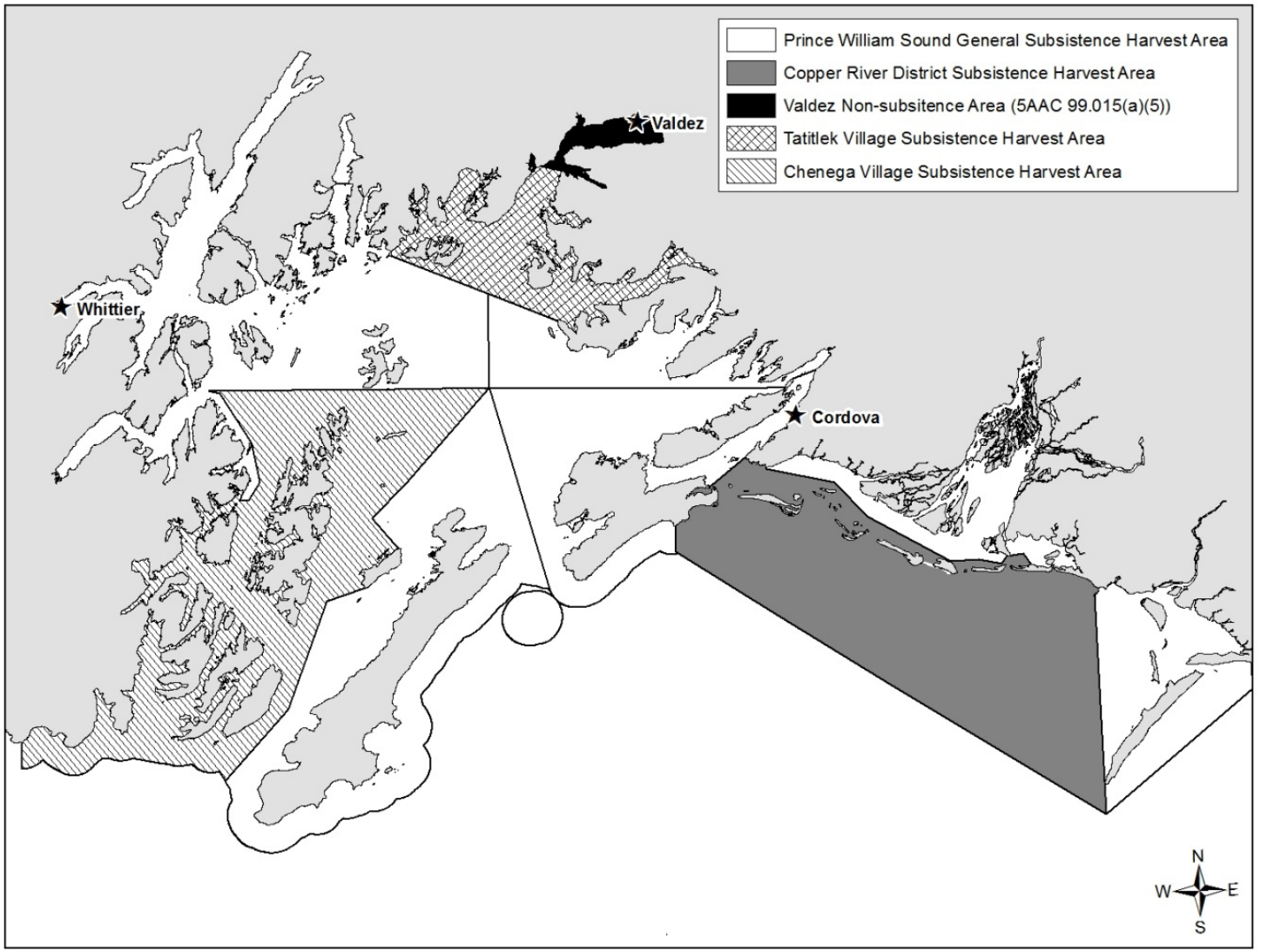
[c] No samples collected; proportions are from the following period.

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

[e] Fewer than 3 deliveries; results are confidential.

APPENDIX F: SUBSISTENCE AND COMMERCIAL HOMEPACK SALMON HARVEST

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



For illustration only and not to be used for navigational purposes

Appendix F2.–Salmon harvest and effort in the Copper River District subsistence drift gillnet fishery, 1961–2018.

	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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Appendix F2.–Page 2 of 2.

	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
Average 2008–2017	351	330	169	161	343	2,601	19	2,963

Note: NA= not applicable.

[a] As reported on returned permits.

Appendix F3.–Salmon harvest and effort in the Prince William Sound general area subsistence fishery, 1966–2018.

	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

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	Permits				Reported harvest[a]						
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total
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
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
Average 2008–2017	10	10	4	6	4	27	0	1	7	1	39

[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 F4.–Area E commercial homepack and subsistence harvests by permit holder community of residence, 2018.

	Commercial homepack[a]						
Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchor Point	2	0	18	0	0	0	18
Anchorage	19	15	292	77	1	178	563
Chugiak	3	0	30	43	0	0	73
Copper Center	1	0	1	0	0	0	1
Cordova	183	79	2,252	1,632	28	65	4,056
Delta Junction	2	0	35	0	0	0	35
Eagle River	5	0	108	24	0	0	132
Fairbanks	1	4	4	0	0	0	8
Girdwood	9	13	208	44	0	0	265
Glennallen	1	0	0	0	1	0	1
Homer	43	8	417	283	323	2	1,033
Juneau	2	0	6	0	1,001	0	1,007
Kasilof	2	0	22	21	0	4	47
Moose Pass	2	6	3	12	0	0	21
Palmer	1	0	49	38	0	0	87
Petersburg	1	0	5	0	0	0	5
Seward	7	1	115	540	20	3	679
Soldotna	3	2	44	0	0	14	60
Sterling	2	0	0	15	0	0	15
Valdez	5	3	142	24	11	1	181
Wasilla	23	10	494	151	8	0	663
Willow	5	1	84	41	8	0	134
USA Balance	82	36	1,924	1,015	10	68	3,053
Unknown	9	5	40	10	0	0	55
Total	413	183	6,293	3,970	1,411	335	12,192

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	Area E subsistence[b]						
Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Atlanta	1	0	0	0	0	0	0
Anchor Point	1	0	0	0	0	0	0
Anchorage	81	113	560	0	4	4	681
Bethel	1	0	0	0	0	0	0
Chenega Bay	2	0	13	2	0	40	55
Chugiak	2	3	2	0	0	0	5
Copper Center	1	0	0	0	0	0	0
Cordova	495	965	3367	66	2	1	4,401
Delta Junction	3	6	2	0	0	0	8
Denali Park	1	0	0	0	0	0	0
Eagle River	4	10	19	0	0	15	44
Fairbanks	4	9	2	0	0	0	11
Girdwood	8	7	59	0	9	4	79
Homer	26	81	462	102	0	0	645
Hope	1	0	0	0	0	0	0
Juneau	2	5	16	0	0	0	21
Kasilof	3	0	0	0	0	0	0
Kodiak	1	0	0	0	0	0	0
Moose Pass	2	9	47	0	0	0	56
Nenana	1	0	0	0	0	0	0
North Pole	1	0	0	0	0	0	0
Palmer	6	5	27	0	0	0	32
Petersburg	1	0	0	0	0	0	0
Port Alsworth	1	0	0	0	0	0	0
Seward	12	36	73	0	0	0	109
Sitka	2	0	0	0	0	0	0
Soldotna	7	17	75	0	0	0	92
Sterling	4	15	147	0	0	0	162
Talkeetna	1	0	0	0	0	0	0
Tatitlek	6	13	146	0	0	4	163
Tok	1	0	15	0	0	0	15
Valdez	7	5	58	0	0	0	63
Wasilla	28	62	320	49	0	0	431
Willow	4	5	65	0	0	0	70
Wrangell	1	1	3	0	0	0	4
Total	722	1,367	5,478	219	15	68	7,147

[a] Homepack fish are defined in 5 AAC 39.010 as finfish retained from lawfully taken commercial catch for that permit holder'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 F5.–Salmon retained from the commercial harvest for personal use (homepack) by district, species, and gear type, in Prince William Sound and the Copper River and Bering River Districts, 1998–2018.

Prince William Sound (drift gillnet, set gillnet, and purse seine)																
		Chinook			Sockeye			Coho			Pink			Chum		
Year	Permits	Seine	Drift gillnet	Set gillnet	Seine	Drift gillnet	Set gillnet	Seine	Drift gillnet	Set gillnet	Seine	Drift gillnet	Set gillnet	Seine	Drift gillnet	Set gillnet
1998	14	0	18	0	19	28	0	18	0	0	0	0	0	0	4	0
1999	6	0	5	1	18	43	0	13	0	0	0	0	0	0	0	0
2000	9	1	1	0	4	47	0	0	2	0	0	0	0	0	6	0
2001	11	1	6	1	0	46	18	0	20	0	0	0	0	0	2	0
2002	8	0	6	5	0	51	5	0	0	0	0	0	0	0	0	0
2003	14	0	24	0	0	23	0	0	0	0	0	0	0	0	1	0
2004	4	0	0	0	0	129	0	0	0	0	0	0	0	0	1	0
2005	5	0	1	0	0	60	0	0	107	0	0	0	0	0	20	0
2006	7	2	0	0	0	58	0	0	19	0	0	7	0	0	2	0
2007	9	1	7	0	0	63	1	0	13	0	0	7	0	0	1	0
2008	18	3	65	1	0	171	72	0	26	0	0	0	0	0	0	0
2009	16	0	4	0	0	104	7	0	30	0	0	0	0	0	8	0
2010	85	0	51	0	2	1,062	55	51	9	0	0	5	0	0	70	0
2011	78	0	62	2	73	670	268	350	249	0	0	68	0	0	21	0
2012	144	11	76	0	143	2,359	318	78	183	0	83	3,495	0	55	1,197	0
2013	111	0	65	24	50	1,049	228	25	39	0	0	119	0	0	28	0
2014	81	7	38	10	168	1,146	301	17	1,500	0	0	20	0	11	62	0
2015	76	5	34	9	401	1,017	965	23	67	0	0	3	0	4	49	20
2016	62	9	25	10	316	878	696	60	1	0	13	22	0	7	10	0
2017	169	37	42	6	218	1,908	1,306	177	298	0	287	153	19	28	61	2
2018	357	24	71	3	556	3,887	304	123	681	18	91	1,032	0	10	120	191
Average 2008–2017	76	3	49	6	105	947	277	68	263	0	10	464	0	9	179	3

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Copper River District (all drift gillnet)				
Year	Permits	Chinook	Sockeye	Coho
1998	309	1,411	1,435	14
1999	297	1,115	1,333	36
2000	245	740	651	0
2001	289	935	2,113	24
2002	247	773	1,138	187
2003	287	1,073	4,077	0
2004	174	539	525	2
2005	228	760	1,785	119
2006	264	779	1,539	137
2007	280	1,019	2,023	340
2008	223	537	2,172	423
2009	328	876	6,528	767
2010	333	906	7,064	1,026
2011	336	1,282	9,070	543
2012	378	853	7,985	1,037
2013	331	564	9,448	249
2014	386	768	12,072	1,146
2015	359	1,145	10,590	1,423
2016	340	727	9,598	1,353
2017	363	744	8,289	1,945
2018	216	85	1,545	2,581
Average 2008–2017	338	840	8,282	991

Bering River District (all drift gillnet)				
Year	Permits	Chinook	Sockeye	Coho
1998	5	7	0	0
1999	2	2	20	102
2000	1	3	0	0
2001	2	2	0	0
2002	1	1	0	0
2003	6	6	52	0
2004	2	0	1	10
2005	2	2	0	0
2006	4	9	6	0
2007	2	2	0	0
2008	4	9	6	0
2009	1	0	0	20
2010	5	0	0	82
2011	1	0	0	10
2012	4	1	0	155
2013	2	4	35	0
2014	3	0	0	42
2015	1	0	0	10
2016	0	0	0	0
2017	16	0	0	205
2018	29	0	1	567
Average 2008–2017	4	1	4	52

Appendix F6.–Salmon harvest and effort in the PWS and upper Copper River Federal subsistence fisheries, 2008–2018.

	Permits				Reported harvest[a]			
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Total
				Chitina Subdistrict				
2008	82	70	38	0	22	789	74	885
2009	68	62	39	23	8	817	11	836
2010	92	79	38	41	17	2,061	31	2,109
2011	84	68	42	26	13	1,693	8	1,714
2012	89	80	33	47	5	865	8	878
2013	99	85	39	46	17	1,946	8	1,971
2014	113	103	49	54	13	1,509	68	1,590
2015	111	100	52	48	13	2,171	14	2,198
2016	128	95	43	52	15	1,321	33	1,369
2017	132	104	47	57	12	1,454	7	1,473
2018	131	117	58	59	83	2,861	28	2,972
Average 2013–2017	117	97	46	51	14	1,680	26	1,720
				Glennallen Subdistrict				
2008	270	219	139	0	705	11,347	156	12,208
2009	277	227	170	57	494	11,822	34	12,350
2010	270	236	175	61	300	12,835	64	13,199
2011	280	240	173	67	698	13,774	176	14,648
2012	277	244	169	75	370	14,425	142	14,937
2013	274	236	160	76	329	15,372	20	15,721
2014	314	279	206	73	370	21,013	23	21,406
2015	325	286	210	76	369	24,058	78	24,505
2016	320	246	176	75	336	15,017	9	15,362
2017	338	283	212	71	399	15,433	1	15,833
2018	335	300	199	101	2,430	14,142	0	16,572
Average 2013–2017	314	266	193	74	361	18,179	26	18,565
				PWS/Chugach Subdistrict				
2008	45	45	23	22	0	32	119	151
2009	39	38	22	16	0	46	185	231
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	NA	40	NA	3	96	255	354
Average 2013–2017	88	70	35	22	0	126	547	672

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Year	Permits				Reported harvest[a]			
	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Total
Total federal subsistence harvests								
2008	397	334	200	NA	727	12,168	349	13,244
2009	384	327	231	NA	502	12,685	230	13,417
2010	414	367	248	119	317	14,932	163	15,412
2011	433	363	265	98	711	15,502	765	16,978
2012	432	377	232	145	375	15,354	542	16,271
2013	438	367	228	139	346	17,420	338	18,104
2014	516	458	255	127	383	22,598	721	23,702
2015	538	454	312	139	382	26,381	970	27,733
2016	558	433	270	168	351	16,572	597	17,520
2017	567	470	308	162	411	17,014	522	17,947
2018	563	417	297	160	2,516	17,099	283	19,898
Average 2013–2017	523	436	275	147	375	19,997	630	21,001

Note: NA = data not available

[a] Reported harvest only.

[b] As reported on returned permits.

Appendix F7.–Salmon harvest and effort in the Tatitlek and Chenega subsistence fisheries, 1998–2018.

	Permits				Reported harvest[a]						
Year	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Pink	Chum	Unk.	Total
					Tatitlek						
1998	11	4	3	1	0	2	321	4	28	0	355
1999	17	10	8	2	0	344	541	31	31	0	947
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
Average 2008–2017	12	5	4	1	3	286	146	5	17	0	457

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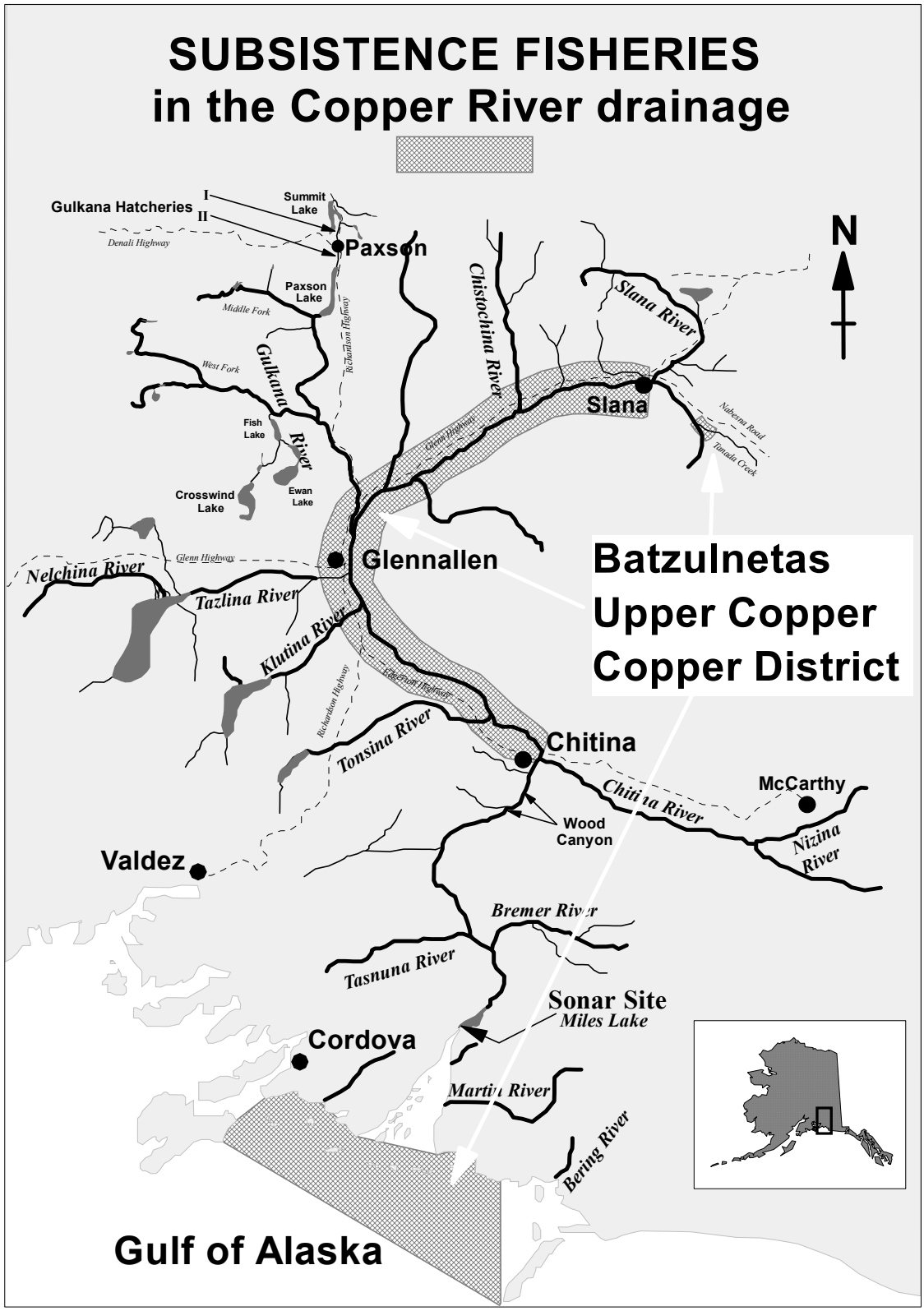
Appendix F7.–Page 2 of 2.

Year	Permits				Reported harvest[a]						
	Issued	Returned	Fished	Not fished[b]	Chinook	Sockeye	Coho	Pink	Chum	Unk.	Total
					Chenega						
1998	4	3	3	0	13	114	20	65	119	0	331
1999	14	10	7	3	57	499	62	168	101	0	887
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
Average 2008–2017	13	6	3	3	6	121	18	14	47	0	208

[a] Reported harvest only.

[b] As reported on returned subsistence permits.

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



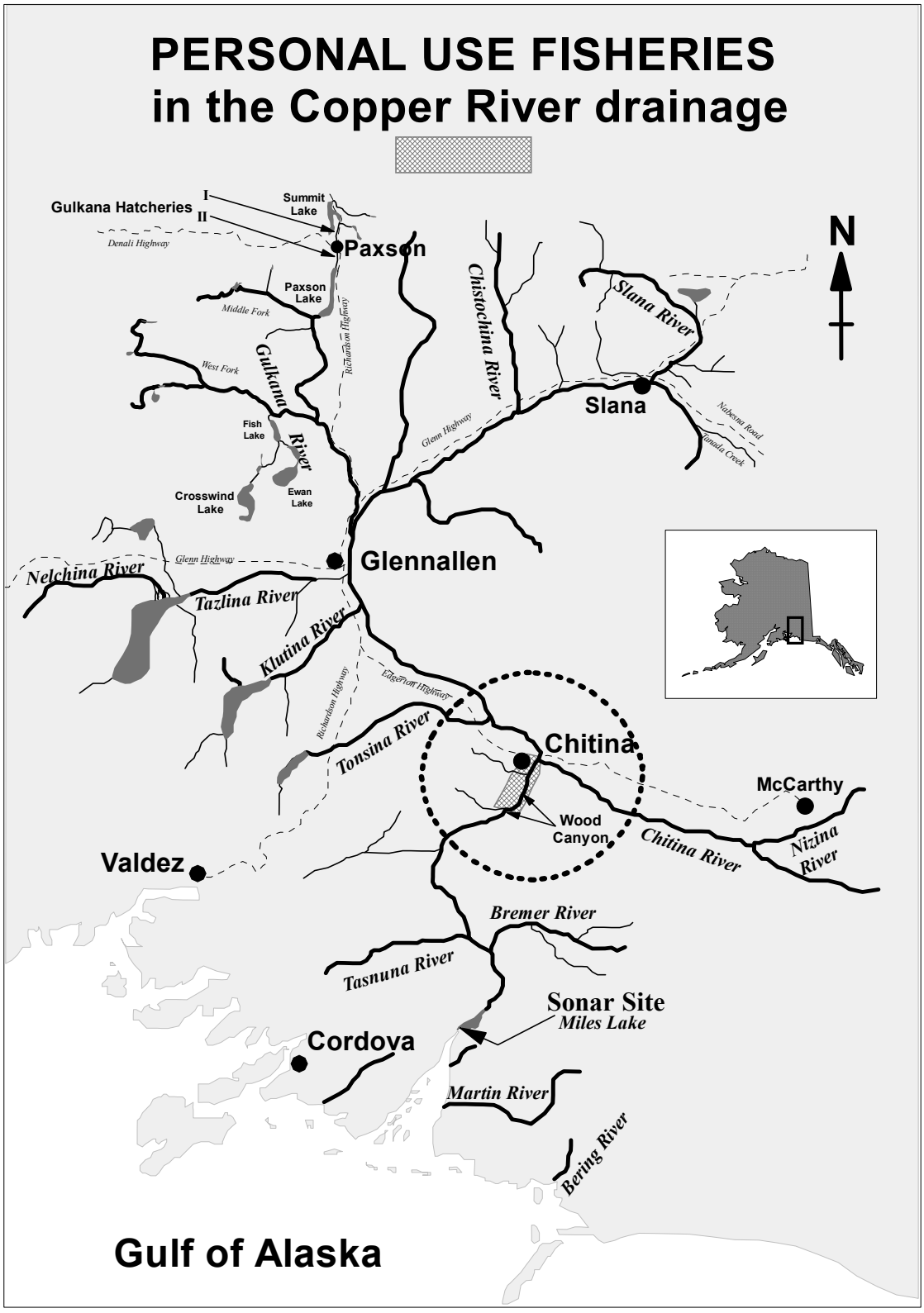
Appendix F9.–Salmon harvest and effort in the Batzulnetas subsistence harvests, 1987–2018.

	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	NA	NA	NA	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	867	2	871
2014	2	1	1	1	3	116	3	122
2015	4	4	0	4	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	1	0	0	0	0	0	0	0
2018	1	1	1	0	0	468	0	468
Average 2008–2017	2	1	1	0	1	120	1	121

[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, 2003–2018.

					Reported harvest				Expanded harvest					
			Permits		Salmon				Salmon				Other species	
Year	District	Gear	Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
2003	Glennallen	Dip net	399	343	318	6,132	58	6,508	345	6,934	58	7,337	1	0
	Glennallen	Fish wheel	613	580	2,077	38,077	392	40,546	2,193	40,073	409	42,675	42	0
	Chitina	Dip net	6,418	5,438	1,644	71,053	2,168	74,865	1,903	80,796	2,533	85,232	0	264
	Total		7,430	6,361	4,039	115,262	2,618	121,919	4,441	127,803	3,000	135,244	43	264
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

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Appendix F11.–Page 2 of 3.

			Permits		Reported harvest				Expanded harvest					
					Salmon				Salmon				Other species	
Year	District	Gear	Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
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
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

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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
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	217
	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	1,558
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	391
	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	996
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	293
	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	971
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
2008–2017 10-year Average	Glennallen	Dip net	876	711	707	15,960	48	16,664	1,808	19,465	55	21,327	0	34
	Glennallen	Fish wheel	570	520	1,244	39,691	157	41,091	1,332	43,184	168	44,683	3	177
	Chitina	Dip net	10,098	8,241	875	120,781	1,196	122,852	1,025	140,771	1,419	143,215	0	540
	Total		11,544	9,472	2,825	176,432	1,401	180,607	4,164	203,419	1,641	209,224	3	751

APPENDIX G: HERRING

Appendix G1.–Annual Pacific herring biomass indices for Prince William Sound Area harvest management years 1973–2018.

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

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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]	
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
2016–2017	0	580	1,883	8.12	9,896
2017–2018	0	200	659	4.52	3,646

Note: All biomass estimates are in short tons (2,000 lb) and all linear extent of milt estimates are in statute miles.

[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.

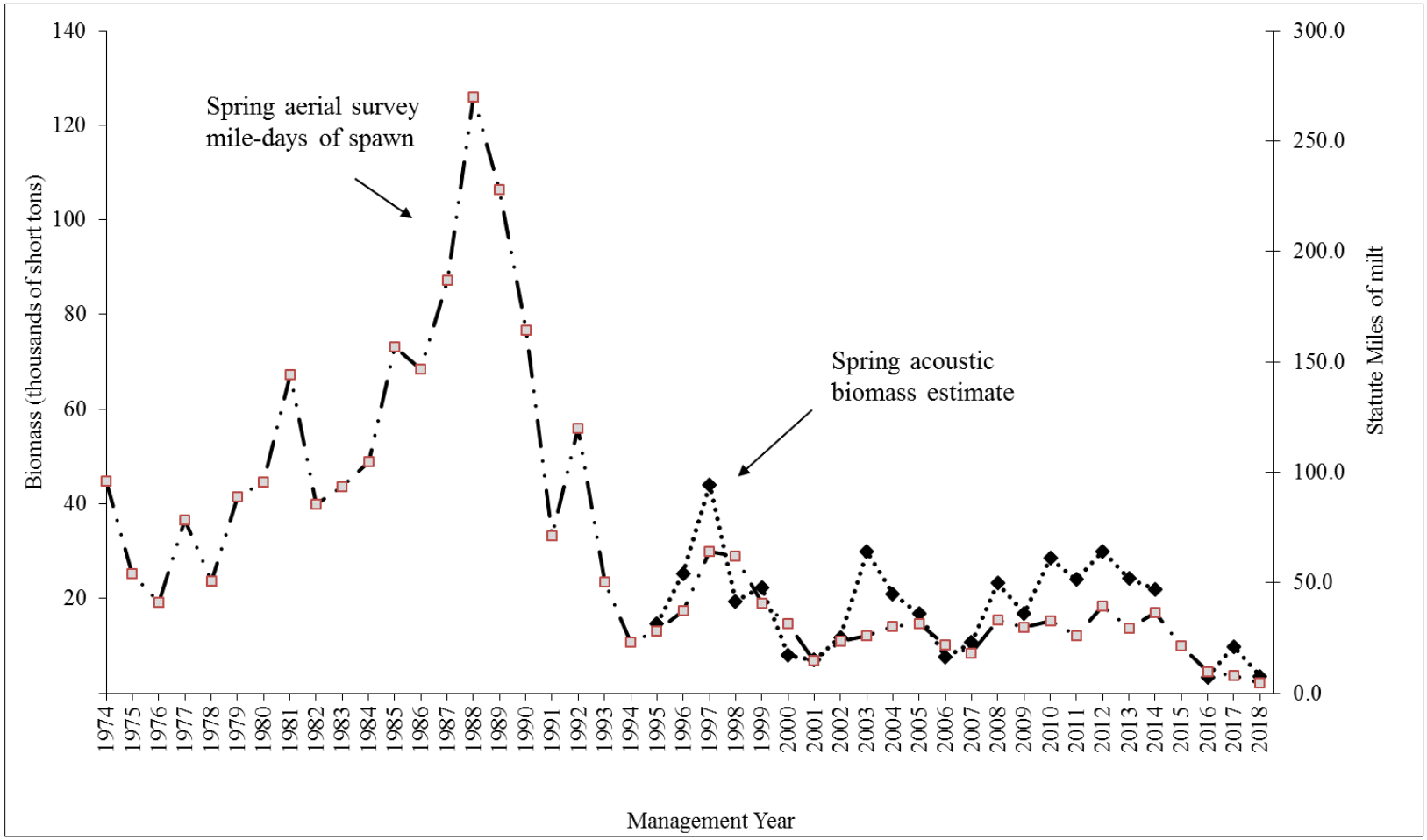
[d] Sum of the daily observed linear miles of herring milt calculated in ArcMap from digitized hand-annotated paper maps and data collected electronically.

[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.

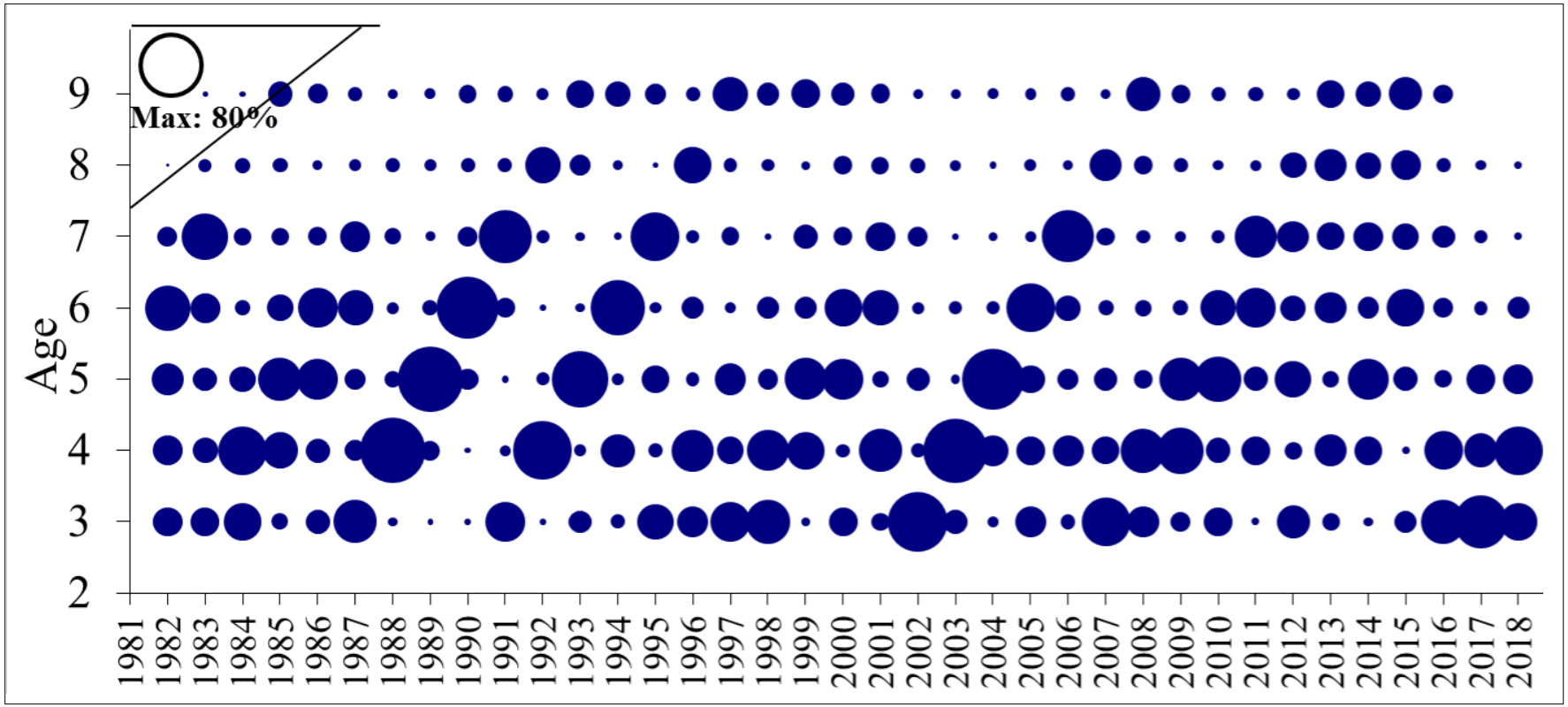
[f] Acoustics estimates for 2005–2014 are from ADF&G surveys only and are not adjusted for maturity or subsequent harvest. Therefore, they represent the total biomass and not the spawning biomass.

[g] Estimates are not available.

Appendix G2.–Prince William Sound Area annual Pacific herring biomass indices by management year, 1973–2018.



Appendix G3.–Spring PWS Pacific herring age composition by year, 1982–2018.



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

Appendix G4.–Location of spawning herring and miles of spawn observed during aerial surveys in the Prince William Sound Area, 2018.