

**2013 Prince William Sound Area Finfish Management  
Report**

by

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November 2014

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Mathematics, statistics</b>	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	$H_A$
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	$e$
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, $\chi^2$ , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	$^\circ$
		Company	Co.	degrees of freedom	df
<b>Weights and measures (English)</b>		Corporation	Corp.	expected value	$E$
cubic feet per second	ft <sup>3</sup> /s	Incorporated	Inc.	greater than	>
foot	ft	Limited	Ltd.	greater than or equal to	≥
gallon	gal	District of Columbia	D.C.	harvest per unit effort	HPUE
inch	in	et alii (and others)	et al.	less than	<
mile	mi	et cetera (and so forth)	etc.	less than or equal to	≤
nautical mile	nmi	exempli gratia		logarithm (natural)	ln
ounce	oz	(for example)	e.g.	logarithm (base 10)	log
pound	lb	Federal Information Code	FIC	logarithm (specify base)	log <sub>2</sub> , etc.
quart	qt	id est (that is)	i.e.	minute (angular)	'
yard	yd	latitude or longitude	lat or long	not significant	NS
		monetary symbols		null hypothesis	$H_0$
		(U.S.)	\$, ¢	percent	%
		months (tables and figures): first three letters	Jan, ..., Dec	probability	P
<b>Time and temperature</b>		registered trademark	®	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
day	d	trademark	™	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
degrees Celsius	°C	United States (adjective)	U.S.	second (angular)	"
degrees Fahrenheit	°F	United States of America (noun)	USA	standard deviation	SD
degrees kelvin	K	U.S.C.	U.S.C.	standard error	SE
hour	h	U.S. state	use two-letter abbreviations (e.g., AK, WA)	variance	
minute	min			population	Var
second	s			sample	var
<b>Physics and chemistry</b>					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

***FISHERY MANAGEMENT REPORT NO. 14-43***

**2013 PRINCE WILLIAM SOUND AREA  
FINFISH MANAGEMENT REPORT**

by

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## ABSTRACT

The 2013 Prince William Sound (PWS) management area (coastal waters and inland drainages entering the north central Gulf of Alaska between Cape Suckling and Cape Fairfield) commercial salmon harvest was 99.68 million fish. The harvest was comprised of 92.64 million pink *Oncorhynchus gorbuscha*, 2.33 million sockeye *O. nerka*, 4.07 million chum *O. keta*, 619,000 coho *O. kisutch*, and 10,800 Chinook (king) salmon *O. tshawytscha*. Approximately 94.77 million fish were commercial common property harvest and 4.89 million fish were sold for hatchery cost recovery. Homepack, salmon obtained by educational permits, and donated fish accounted for less than 1% of total harvest. The estimated value of the combined commercial salmon harvest, including hatchery sales, was approximately \$168.28 million. During the 2013 season, 522 drift gillnet, 28 set gillnet, and 211 purse seine permit holders fished. Drift gillnet exvessel harvest value was an estimated \$48.47 million (average permit earnings of \$92,900); set gillnet exvessel harvest value was an estimated \$2.49 million (average permit earnings at \$88,900); and, purse seine exvessel harvest value was an estimated \$104.91 million (average permit earnings at \$497,000). Revenue generated for hatchery operations was approximately \$12.41 million. The PWS management area personal use and subsistence fisheries harvested a total of 285,000 fish in 2013. For these fisheries, approximately 12,800 subsistence and personal use permits were issued to Alaska residents. The commercial Pacific herring *Clupea pallasii* fishery in the PWS management area was closed in 2013 for the fourteenth consecutive year because age structure and available surplus in the spawning biomass did not support a fishery.

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

## PRINCE WILLIAM SOUND MANAGEMENT AREA COMMERCIAL SALMON AND HERRING FISHERIES

### OVERVIEW OF MANAGEMENT AREA

The Prince William Sound (PWS) management area, also known as Commercial Fisheries Area E, encompasses all coastal waters and inland drainages entering the north central Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). In addition to PWS, the management area includes the Bering and Copper rivers and has a total adjacent land area of approximately 38,000 square miles.

The salmon management area is divided into 11 districts that correspond to the local geography and distribution of the 5 species of salmon harvested by the commercial fishery (Figure 2). The management objective for all districts is the achievement of spawning escapement goals for the major salmon species and stock groupings while allowing for the orderly harvest of all fish surplus to spawning requirements. In addition, Alaska Department of Fish and Game (ADF&G) follows regulatory plans to manage fisheries and allow private non-profit (PNP) hatcheries to achieve cost recovery and broodstock objectives.

Six hatcheries contribute to the area's fisheries. Five are operated by the regional aquaculture association, 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 the sound, 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) operates Solomon Gulch Hatchery (SGH) in Port Valdez and produces pink and coho salmon. Additional information regarding hatchery production in PWS may be found in Vercesi (2014), and Sheridan et al. (2013).

Gear for the salmon fishery includes purse seine, drift gillnet, and set gillnet. Drift gillnet permits are the most numerous and are allowed in the Bering River, Copper River, Coghill, Unakwik, and Eshamy districts. From 2009 through 2013 drift gillnet gear was permitted to harvest hatchery chum salmon in the Port Chalmers Subdistrict of the Montague District, as stipulated in the *Prince William Sound Management and Allocation Plan* (5 AAC 24.370). 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.

As an avenue for the commercial fishing industry to formally provide management recommendations to ADF&G, representatives from PWS area processors, gear groups, and aquaculture associations sit on an advisory body known as the PWS Salmon Harvest Task Force (SHTF). Fishermen's meetings are held every spring to discuss management strategy for the upcoming fishing season.

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), and spawn-on-kelp (in pounds) fisheries occurring in the spring, and the herring food/bait fishery occurring in the fall. The guideline harvest level established by the *Prince William Sound Herring Management Plan*, 5 AAC 27.365, is intended to provide for 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 a high quality portion of the biomass while maintaining a threshold spawning biomass.

## **OVERVIEW OF AREAWIDE SALMON AND HERRING FISHERIES**

The 2013 PWS management area commercial salmon harvest was 99.68 million fish. The harvest was composed of a record high 92.64 million pink, 2.33 million sockeye, 4.07 million chum, 619,000 coho, and 10,800 Chinook (king) salmon *O. tshawytscha* (Table 1; Figure 3). Hatchery runs of sockeye salmon were below preseason forecast, but the coho, pink, and chum salmon harvest was above forecast and exceeded the 10-year average (2003–2012) commercial harvest (Appendix E1; Table 2). Approximately 95.1% of the commercial harvest (94.77 million fish) was attributed to the commercial common property fishery (CCPF) and 4.89 million fish were attributed to the hatchery cost recovery fishery (Table 1). The 2013 preliminary exvessel value estimates by gear group from the CCPF, including both wild and enhanced salmon, are \$104.91 million (67.3%) for purse seine, \$48.47 million (31.1%) for drift gillnet, and \$2.49 million (1.6%) for set gillnet (Table 3; Figure 4). The average price per pound paid to fishermen was above the 10-year (2003–2012) average for all species overall (Table 4). The harvest value for the purse seine gear group was the highest on record, and the drift gillnet gear group had the third highest harvest value on record. The set gillnet gear group harvest value was the fourth highest in the last 10 years and above the 10-year average (Table 5).

According to the *Prince William Sound Management and Salmon Enhancement Allocation Plan* (5 AAC 24.370) drift gillnet permit holders were permitted to harvest hatchery chum salmon in the Port Chalmers Subdistrict of the Montague District (Figure 1).

No commercial fisheries for herring occurred in 2013; the projected spawning biomass of 26,100 tons for spring 2013 was above the regulatory minimum spawning biomass of 22,000 tons. Because a majority of the population was projected to be recruit-age fish, and uncertainty in the

forecast point estimate, all commercial herring fisheries were closed. Given the PWS herring spawning population, current size and age structure, a commercial harvest was not anticipated in 2014.

## **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). Average 10 year commercial harvest from the Copper River District for 2003–2012 was 25,100 Chinook, 1.27 million sockeye, and 241,000 coho salmon. The 25-year average for 1988–2012 was 35,900 Chinook, 1.32 million sockeye, and 275,000 coho salmon (Appendix A4). The 2013 harvest was 8,830 Chinook, 1.61 million sockeye, and 245,000 coho salmon (Table 1).

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*. At the December 1999 BOF meeting, 5 AAC 24.361, *Copper River Chinook Salmon Management Plan*, was amended to provide ADF&G both the tools and the discretion to manage early season fisheries as necessary to maintain the spawning escapement within the range of 28,000 to 55,000 Chinook salmon. In 2003 the spawning escapement goal was changed to 24,000 or greater Chinook salmon (Table 6; Bue et al. 2002). At the December 2005 BOF meeting, the *Copper River Chinook Salmon Management Plan* 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 per week. At the December 2011 BOF meeting, the *Copper River Chinook Salmon Management Plan* was amended to limit the number of commercial openings inside of the barrier islands in statistical weeks 20 and 21 to no more than 1 during this entire 2-week period to increase the probability of Chinook salmon making their escapement goal.

Achieving escapement goals and satisfying management plan provisions remain the primary management objectives of ADF&G. Management tools such as inriver sonar, aerial survey observations, Chinook salmon mark–recapture estimates, and harvest data provide ADF&G fishery managers with indices of abundance used to regulate Copper River fisheries. ADF&G relies primarily on the inriver passage index provided by the sonar at Miles Lake to manage the commercial fishery and provide for upriver escapement and fishery allocations. Additionally, upper river aerial escapement observations, thermal and strontium marked otolith data, and weir and tower data have provided supporting information on the relative success of ADF&G in meeting provisions of the *Copper River District Salmon Management Plan*.

From 2003 to 2012 the combined upriver subsistence and personal use harvest (federal and state) has ranged from 140,000 sockeye salmon (in 2008) to the record harvest of 275,000 (in 2013), with a 10-year average of 188,000 sockeye salmon (Appendix A1). A general increasing trend in subsistence harvest is reflected annually through additions to the inriver goal.

The Copper River District commercial fishing season opens in mid-May. Commercial fishing periods are established inseason by emergency order (EO). In general fishing time has steadily been reduced over the years in response to increased efficiency of the commercial fleet and reallocations by the BOF. Two evenly spaced commercial fishing periods per week on Mondays

and Thursdays has been the recent schedule with the duration of each fishing period dependent upon trends in escapement, harvest, and environmental conditions.

The current sustainable escapement goal (SEG) is a range of 360,000–750,000 wild sockeye salmon for the upper Copper River (Fair et al. 2011). Between 2003 and 2011, a range of 300,000–500,000 wild sockeye salmon was utilized as the SEG for the upper Copper River (Table 6; Bue et al. 2002). Prior to 2003, the sockeye salmon SEG was 300,000 fish (adopted in 1972 and placed into regulation in 1980; Fried 1994).

The components of the 2013 inriver goal were as follows:

- Spawning escapement: 360,000 to 750,000 sockeye salmon
- Other salmon: 17,500 salmon
- Subsistence harvest: 82,500 salmon
- Personal Use harvest: 133,000 salmon
- Sport fishery: 15,000 salmon
- Gulkana Hatchery broodstock: 20,000 sockeye salmon
- Gulkana Hatchery surplus: 100,000 sockeye salmon
- Total: 728,000 to 1,120,000 salmon

Of the 7 categories within the inriver goal, the most significant increases over time have been in Gulkana Hatchery surplus, subsistence, and personal use categories. In the early 1980s the Miles Lake sonar minimum inriver goal was 350,000 salmon. Since that time, the minimum inriver goal has been set as high as 768,000 salmon, primarily in response to large forecasts of enhanced sockeye salmon and increasing subsistence and personal use harvests. Subsistence and personal use salmon within the inriver goal are calculated annually using the average subsistence and personal use harvests. However, the subsistence and personal use additions to the inriver goal must be within allocation ranges specified in 5 AAC 24.360 as 100,000 to 150,000 (Chitina Subdistrict personal use) and 61,000 to 82,500 (Glennallen Subdistrict subsistence). The daily inriver goal is the anticipated number of salmon counted daily at the Miles Lake sonar necessary to meet the overall inriver goal. For 6 of the 7 inriver goal components, the daily inriver goal is calculated using both 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(33) which states: "subsistence uses" means "the noncommercial, customary and traditional uses of *wild*, renewable resources..." Hatchery surplus sockeye salmon within the inriver goal is determined annually using the GH run forecast to estimate the surplus escapement of hatchery fish required to not exceed the wild stock exploitation rate estimated to produce maximum sustained yield (70.0%) during the late June and July mixed stock fishery in the Copper River District (Clark et al. 2007). Surplus hatchery sockeye salmon do not fulfill any wild salmon escapement needs, nor are they linked to any upriver subsistence or sport allocations; these fish are not intended for harvest in any fishery, but a significant percentage are harvested during July and August in these upriver fisheries.

## **Preseason Outlook and Harvest Strategy**

The 2013 commercial harvest forecast for the Copper River District was 14,200 Chinook, 1.30 million sockeye, and 240,000 coho salmon (Appendix A10). The GH enhanced sockeye salmon run was forecast by ADF&G to be 401,000 fish (Appendix E1). PWSAC requires approximately 20,000 fish for broodstock and the department builds in hatchery surplus into the inriver goal. All GH fish beyond these categories are available for commercial, subsistence, personal use, and sport harvests. The 2013 inriver goal for salmon passing Miles Lake was 728,000 to 1.12 million fish. This number equated to a sonar goal of 695,000 to 1.07 million salmon by July 27, which was the season ending date for sonar counting at Miles Lake in 2013 (Appendix A7).

The current fishing schedule for the Copper River District is 2 evenly spaced fishing periods per week, with periods generally occurring on Monday and Thursday mornings with duration announced by emergency order.

During years when Miles Lake sonar is not operational prior to the first opening, early season management of the Copper River District is based on actual harvest versus anticipated harvest. In addition, environmental conditions, fishing effort, and harvest consistency throughout the period are also taken into account. 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 an anticipated weekly escapement index. The SEG range for Copper River Delta sockeye salmon stocks is 55,000 to 130,000 fish (Table 6; Bue et al. 2002).

Typically, coho salmon management begins in the second week of August. The historical precedent is to provide an initial single 24-hour opening per week. If harvest or aerial survey numbers warrant, the duration of this fishing period may be increased to 36, 48, or 60 hours; or a second fishing period may be added during the week. Aerial escapement indices for the early portion of the coho salmon run likely underestimate salmon abundance due to other species of salmon remaining in tributaries, making accurate Chinook species identification problematic. Additionally, stormy fall weather makes weekly survey flights difficult. The SEG range for the Copper River Delta is 32,000 to 67,000 coho salmon (Table 6; Bue et al. 2002).

## **Sockeye and Chinook Salmon Fishery Season Summary**

The total 2013 Copper River sockeye salmon run was 3.02 million fish with 1.61 million (53.0%) commercially harvested and sold, 275,000 (9.1%) harvested by upriver subsistence and personal use fishermen, and an estimated 15,300 (0.5%) by upriver sport fishermen. Commercial permit holders retained 9,450 sockeye salmon for “homepack” (0.3%). Sport fishermen on the Copper River Delta harvested an estimated 1,030 (<0.1%) sockeye salmon. Reported educational permit and subsistence harvest in the Copper River District totaled 5,790 (0.2%). Upriver and Copper River Delta wild sockeye salmon escapement was 1.05 million (34.5%) fish, and 72,400 (2.4%) fish returned to the GH sites (Appendix A1). Overall, 2.23 million (74.2%) of the sockeye salmon originated from upriver wild stock systems, 341,000 (11.4%) from Copper River Delta wild stock systems, and 434,000 (14.4%) came from the GH (Appendix A2).

The 2013 total Chinook salmon run was 42,900 fish with 8,830 (20.6%) commercially harvested and sold, 1,470 (3.4%) harvested through educational and subsistence permits in the Copper

River District, and 564 (1.3%) retained by commercial permit holders as “homepack”. The commercial harvest ranks as the third lowest annual harvest since 1960. A total of 3,300 (7.7%) were harvested by upriver personal use and subsistence users, an estimated 1,110 (2.6%) were harvested by sport fishermen, and the remaining 28,200 (65.7%) represent spawning escapement (Appendix A3). This spawning escapement is above the lower bound SEG of 24,000 for Copper River Chinook salmon specified in 5 AAC 24.361(a). The entire Chinook salmon run is assumed to have originated from wild upriver stocks.

The Copper River commercial sockeye salmon harvest of 1.61 million was 23.9% above the projected 1.30 million and 26.8% above the previous 10-year average of 1.27 million sockeye salmon. The overall commercial sockeye salmon harvest from the Copper River District was the seventh largest harvest in the history of the fishery. The commercial harvest of 8,830 Chinook salmon was 35.2% of the previous 10-year average of 25,100 fish. The overall commercial harvest of Chinook salmon was the third lowest since 1960 (Appendix A4).

A total of 521 drift gillnet permits were active in the Copper River District in 2013 out of 532 total permits. Fishing effort and harvest in 2013 peaked during the third period that began May 27 when 479 permit holders harvested 320,000 sockeye and 2,920 Chinook salmon during a 12-hour opening. (Appendix A5).

The 2013 cumulative Miles Lake sonar count on July 27 (last day of operation) was 1.27 million salmon, which was above the upper bound of the inriver goal range of 695,000 to 1.07 million salmon (Appendices A7 through A9). River height was above the historical maximum from late May through early June and remained above the 30-year average through early July and then again from mid-July through the end of the month. Throughout the first half of July water level on the river plummeted until settling at less than a meter above the historical minimum on July 12 (Appendix A11).

Final escapement index count for the Copper River Delta systems was 75,705 sockeye salmon, within the SEG range of 55,000–130,000 fish (Appendix A12; Table 6) and 1,020 fish above the recent 10-year average (Appendices A12 and A13). However, the management objective of meeting the long-term average escapement of 84,400 sockeye salmon for Copper River Delta was not achieved, possibly due in part to increased commercial fishing effort on the Gulkana Hatchery sockeye salmon run. Two aerial surveys of upper Copper River index streams were conducted and peak counts for these surveys recorded (Appendix A13).

Based on strontium chloride (Sr) otolith mark analysis, an estimated 318,000 GH sockeye salmon were harvested in the Copper River District commercial fishery in 2013, accounting for 19.8% of the total sockeye salmon commercial harvest (Appendix E6). This is almost 2 times the previous 10-year average commercial harvest of 166,000 GH sockeye salmon (Appendix E7). The majority were 5-year-old fish from the 2009 GH release of 22.0 million fry. (Appendix E8). Additionally, there were an estimated 35,600 MBH sockeye salmon in the Copper River District commercial harvest (Appendix E6).

In 2013, the overall run of sockeye salmon produced by the Gulkana hatcheries totaled 434,000 fish (Appendix E7). This was almost identical to the PWSAC total return forecast of 434,000 fish and greater than ADF&G’s forecast return of 401,000 fish (PWSAC 2013a; Appendix E1). A total of 72,400 sockeye salmon were reported collected for broodstock or escaped into the watershed. Of these fish, 18,100 were harvested for broodstock and an estimated 54,300 sockeye salmon returned to the hatcheries (including remote release locations) and were not harvested



(PWSAC 2013a). Prior to the beginning of 1984 only extremely low levels of sockeye salmon were present in Crosswind Lake. Hatchery surplus at Crosswind Lake can be problematic because lake residents are opposed to large numbers of salmon carcasses rotting along the shores of the lake. To resolve this issue, the weir in the SHA at Crosswind Lake enumerates fish and prevents fish surplus to escapement needs from migrating into the lake, and fish excess to broodstock needs are destroyed.

The Miles Lake north bank sonar became operational on May 15 and the south bank became fully operational on May 27. The first observed salmon were enumerated on May 25 with the north bank passing 8 fish. Both banks began 24 hour monitoring on May 27 (Appendices A7 and A8).

Due to a poor Chinook salmon forecast, inside waters as described in 5 AAC 24.350(1)(B) were closed for the first 4 fishing periods, 2 fishing periods beyond the regulatory requirement in 5 AAC 24.361(b). Actual Chinook salmon harvest was below inseason harvest projections for the first 2 fishing periods and river conditions limited upriver passage into early June, prompting the department to maintain the inside waters closure into the second week of June based on the likelihood of a smaller than anticipated Chinook salmon run.

The first Copper River District commercial fishing period on Thursday, May 16 was for 12 hours and 303 commercial drift gillnet permits fished. Participation in this first fishing period was limited due to stormy weather. Harvest from this period was 77,900 sockeye and 801 Chinook salmon. The anticipated harvest was 35,600 sockeye and 1,830 Chinook salmon (Appendices A5 and A10). Sockeye salmon harvest was more than double the anticipated harvest, giving an early indication of the large run to come. Processors reported paying a grounds price of approximately \$6.50 per pound for Chinook and \$4.00 per pound for sockeye salmon. The second 12-hour period occurred on Monday, May 20 and 473 permit holders reported deliveries, 170 more permits than the previous period. Harvest from this period was 191,000 sockeye salmon (again double the anticipated harvest of 83,700) and 1,530 Chinook salmon (well below the anticipated harvest of 2,080 fish; Appendices A5 and A10). Strong sockeye salmon run entry through the west and central portion of the district, outside the barrier islands, accounted for a majority of the harvest.

The largest series of spring tides (greater than 12 feet) in May started at the end of the second week of the commercial fishing season. Larger tidal cycles typically are a contributing factor to salmon movement and passage, frequently correlating to above expected commercial harvests and counts at the Miles Lake sonar station. Sonar passage during statistical week 21 (May 19–25) was 8 salmon counted compared to an inriver goal of 64,300 for the 1 week period (Appendices A7 and A8). The movement of salmon into the river appeared to be acutely delayed as evidenced by the historically low sonar counts.

The Copper River District commercial fishery shifted to a schedule of 1 period a week, based on the extremely low sonar count and a harvest that was double the anticipated harvest to date. The fishery remained closed during the latter half of statistical week 21. The risk of repeatedly fishing on salmon milling in the district over an extended period of time, potentially overexploiting a segment of the run, was too high to maintain a schedule of 2 periods per week.

The third 12-hour period occurred on Monday, May 27. Harvest from this period was 320,000 sockeye (the second largest 12-hour harvest on record) and 2,920 Chinook salmon; and 479 permit holders made deliveries. Anticipated harvest for this period was 116,000 sockeye and

1,700 Chinook salmon. Sockeye salmon harvest was nearly triple the number anticipated and 54.3% of the cumulative harvest; and Chinook salmon harvest was above anticipated, but below the average cumulative harvest for this date (Appendices A5 and A10). Chinook salmon was 22.2% below and sockeye salmon was 60.4% above the recent 5-year average cumulative harvest (2008–2012).

Even with the reduction in fishing time, Miles Lake sonar passage totaled only 47,600 fish during statistical week 22 (May 26–June 1) and was approximately 75% below the minimum inriver goal for this date (Appendices A7 and A8). Daily announcements were initiated on May 29 to allow for short notice of the next fishing period should the trend in sonar passage improve enough to warrant a fishery. A steadily increasing trend in salmon passage above the daily minimum inriver objective started on May 31 and increased to 24,900 salmon on June 2, giving an indication of improved run entry, but only netting 9,920 fish beyond the minimum daily passage requirements. This trend in passage came close to providing justification for a fishing period on Monday, June 2, keeping to the 1-period a week plan. However, the continued record cumulative deficit of between 140,000 and 150,000 fish at the sonar, tied to late ice out followed by record water stage height of the river, necessitated a delay in opening the fishery to be certain the trend would continue. A 3-day decline in sonar passage started on June 3 and declined to 12,600 fish on June 5, resulted in a continuation of the record passage deficit. Considering the record passage deficit, trend in fish passage, and record high water stage height, the fishery remained closed pending an improving trend in fish passage. The trend in fish passage over the next 3 days, June 6–8, provided enough support to announce on Saturday, June 8 for a 24-hour fishing period on Monday, June 10. This decision was predicated on the assumption that fish passage would continue to climb and remain elevated long enough to allow early timed salmon to make up the bulk of the inriver passage deficit. At this point in time there was no firm indication that the passage deficit would be made up through the remainder of the season, let alone with salmon in the river between the fishing district and the sonar.

Starting June 10, the Miles Lake sonar set a 3-day record for fish passage. The previous single day record sonar count of 83,100 salmon occurred on May 29, 2012. The average sonar count between June 10 and June 12 was 107,000 salmon. After June 10, the cumulative daily passage surpassed the cumulative minimum inriver objective for the year. Through June 12 nearly 600,000 salmon had passed the sonar, moving the cumulative count ahead of the maximum inriver passage objective for the first time in the season. Over a period of 1 week (June 6–12), inriver salmon passage went from 145,000 below the minimum inriver passage objective to 41,300 fish above the maximum inriver passage objective, a swing in salmon passage never before observed on the Copper River.

In 2011 and 2012, large numbers of salmon (>200,000) passed the sonar over a similar 1-week time period with earlier timing (May 24–29). Both of these large fish passage events occurred during a regular fishing schedule in years with sockeye salmon runs in the top 5 overall. Weak Chinook salmon runs in both years necessitated limiting time in the commercial fishery to avoid overexploiting the Chinook salmon run. In contrast, the Copper River salmon run was compressed and late in 2010 and resulted in an extended fishery closure. These consecutive closures contributed to the passage of 168,000 salmon in a week (Botz and Somerville 2011). The pattern of sonar counts waning in the early portion of the season, then rapidly escalating as hundreds of thousands of salmon entered the district and river following a closure of the

commercial fishery, has occurred in the past and is difficult to predict with limited early season run entry information.

Harvest from the fourth period that started on Monday, June 10 was 118,000 sockeye and 846 Chinook salmon; and 362 permit holders reported deliveries. This harvest was 56,600 fish higher than the anticipated sockeye salmon harvest and 29 fish higher than the anticipated Chinook salmon harvest. This fishing period was the first 24-hour period of the season (Appendices A5 and A10). Harvest from the 36-hour period on Thursday, June 13 was 140,000 sockeye and 1,160 Chinook salmon; and 317 permit holders made deliveries. Anticipated harvest was 47,000 sockeye and 454 Chinook salmon. At the beginning of statistical week 24, daily passage rates were set at the sonar, but by the end of the week (June 15) daily sonar passage was only 7,000 fish above the daily maximum inriver goal (Appendices A7 and A8).

Daily sonar passage through statistical week 25 (June 16–22) dipped down to within 1,000 fish above the minimum daily inriver passage objective on June 18 prior to increasing above the maximum daily inriver passage objective by the end of the week. The actual sonar count averaged 6,040 fish over the minimum anticipated daily count during this time period, and by the end of the week the actual cumulative salmon passage was 335,000 fish ahead of the minimum anticipated inriver goal (Appendices A7 and A8). A 36-hour period began on Monday, June 17 and a 24-hour period began on Thursday, June 20. The sockeye salmon harvest totaled 223,000 fish and Chinook salmon harvest totaled 888 fish, representing declines from the previous week's sockeye and Chinook salmon harvest totals of 258,000 and 2,010 fish, respectively. Participation in the fishery declined by 117 permits from June 10 through June 21 (Appendices A5 and A10). This reduction in fishing effort was likely the result of permit holders choosing to focus on runs of PWS hatchery sockeye salmon (MBH) and chum salmon (WNH). Participation in the fishery continued to decline, with 181 permits fishing during period 08 (June 24 – 25). This period and the previous fishing period were reduced to 24 hours to provide an extended escapement window for Copper River Delta sockeye salmon stocks. Sockeye salmon harvest began to increase during this time period, indicating an increase in the abundance of GH sockeye salmon. Chinook salmon harvest decreased, showing a harvest trend similar to anticipated during this time period. Harvest averaged 216 Chinook salmon per fishing period, whereas the anticipated harvest average was 189 Chinook salmon (Appendices A5 and A10). In the first otolith sample on June 11, GH enhanced sockeye salmon represented 9.9% of the overall sockeye salmon harvest. By the June 21 fishing period, the GH sockeye salmon component had increased to 31.5% of the harvest (Appendix E6).

Supported by increasing numbers of GH sockeye salmon and based on higher than anticipated Copper River Delta sockeye salmon escapement indices, the June 27 and July 1 fishing periods were increased to 48 and 36 hours, respectively (Appendix A5 and A12). This decision was also supported by historical run timing of the wild and enhanced stocks and by increasing numbers of Sr marked GH fish harvested in the commercial fishery. Participation and combined harvest from these fishing periods increased from the previous 2 fishing periods and 211 permit holders reported 125,000 sockeye and 199 Chinook salmon harvested in the June 27 period and 230 permit holders reported 91,200 sockeye and 75 Chinook salmon harvested in the July 1 period (Appendix A5). GH sockeye salmon were at peak abundance in the fishery during these fishing periods, representing 48.2% (June 27) and 56.0% (July 1) of the harvest. (Appendix E6). The peak harvest during the June 27 fishing period was earlier than normal and was nearly 3 times the anticipated harvest (43,600 fish), but only 60.1% of the record peak midseason harvest of

208,000 sockeye salmon in 2011 (Appendices A5 and A10). With sonar passage sustained at higher than anticipated levels and strong sockeye salmon wild stock contributions in the fishery, a 60 hour fishing period was scheduled to start July 4 under the assumption that GH and wild sockeye salmon could likely withstand higher exploitation in the commercial fishery. Fishing time and area were primarily based on inseason indices of available wild stock surplus and secondarily by abundance of GH sockeye salmon. Copper River Delta aerial escapement surveys steadily increased from late June into early July and remained above or near the midpoint escapement target for this time period (Appendix A12). Harvest from the July 4–6 60-hour fishing period was 83,600 sockeye salmon and served as a clear indication that sockeye salmon harvest was on the decline in the district.

Miles Lake sonar continued to exhibit elevated passage from early July through the end of July (the last day of counts was July 27), and daily counts were nearly double the daily minimum inriver passage objective. The cumulative count through July was 338,000 salmon counted versus a minimum inriver goal of 177,000 salmon (Appendix A7). Copper River Delta survey conditions remained good and the sockeye salmon escapement index was ahead of the anticipated through mid-August, allowing for the continuation of a regular fishing schedule (Appendix A12). A schedule of extended fishing periods (36 or 48 hour) continued until the start of coho salmon management on August 15. Fleet participation declined from mid-July through early August, from 205 permits on the July 11–12 fishing period to 12 permits on the July 29–30 fishing period. Sockeye salmon harvest declined from 64,300 fish on the July 8–10 fishing period to fewer than 700 fish per period after the August 1–2 fishing period (Appendix A5). Low fleet participation in the fishery in late July and early August was largely the result of a combination of low harvest rates and high fuel prices.

The cumulative sonar count on July 27 was 1.27 million salmon, 199,000 fish above the maximum inriver passage objective of 1.07 million (Appendices A7 and A8). The final escapement index value for Copper River Delta sockeye salmon stocks based on aerial surveys was 73,500, and was within the SEG range of 55,000–130,000 fish (Appendix A12; Table 6). Since 2002, the escapement index has ranged from a low of 58,400 in 2005 to a high of 98,900 in 2006 and recent 10-year average index value of 75,100 (Appendix A13).

Typically, 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. The majority of the sockeye salmon harvested commercially, 71.9%, were 5-year-old fish from brood year 2008, and most of the rest were 4-year-old fish (19.0%) and 6-year-old fish (9.0%). Over half of the sockeye salmon harvested, 57.1%, were males (Appendix A15). The majority of the Chinook salmon harvested commercially, 63.9%, were also 5-year-old fish from brood year 2008, and most of the rest were 4-year-old (19.2%) and 6-year-old fish (15.1%). Approximately 0.1% of the run was 7-year-old fish from brood year 2006. Less than half of the Chinook salmon harvested (44.3%) were males (Appendix A16).

### **Coho Salmon Fishery Season Summary**

The 2013 coho salmon run was estimated to be 331,000 fish. 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. A total of 245,000 coho salmon were harvested and sold commercially; 249 were reported retained as “homepack”; 1 was harvested from the Copper River District in the subsistence gillnet fishery; 861 were harvested by personal use and

subsistence dip net fishermen in the Chitina Subdistrict; 148 were harvested in the Glennallen Subdistrict dip net and fish wheel subsistence fisheries; an estimated 15,100 were harvested by sport fisherman on the Copper River Delta near Cordova; and an estimated 45 fish were harvested by upriver sport fisherman. Finally, 310 coho salmon were harvested in the federally managed Copper River Delta subsistence fishery (Appendices A18, F5, and F6). The Copper River Delta spawning escapement index was 69,400 coho salmon (Appendix A18). The aerial survey index for this season was 34,700 fish and was within the SEG index range of 32,000–67,000 (Table 6; Appendix A19). The 2013 index value was at the lower end of the SEG index range and is at least 37,000 fish below any of the 2003 to 2006 index values. This is comparable to low index values from 2009–2012 (Appendix A20).

The coho salmon commercial harvest of 245,000 was 1.9% above the projected harvest of 240,000 fish (Appendix A10). Peak fishing effort for the coho salmon season was during the 24-hour period that occurred on August 26 when 207 permit holders delivered 26,100 coho salmon. Peak harvest occurred on August 19 with 29,200 coho salmon harvested (Appendices A5). As is typical in this fishery, estimation of coho salmon escapement was hampered by frequent storms and poor visibility in major index streams. Rough seas and inclement weather likely had a negative impact on harvest levels of coho salmon.

In 2013 aerial survey indices were above anticipated ranges early in the season and a 2-period per week schedule was initiated at the start of the season (Appendix A19). The coho season progressed with liberal opportunity based on adequate escapement for the rest of the season (Appendices A5, A6, A19, A10).

The coho salmon season officially began at 7:00 a.m. on Thursday, August 15 during statistical week 33 with a 24-hour period (Appendix A6). An aerial survey flown on August 5 produced a count of 3,970 coho salmon in index streams, which was above the target range (1,230–2,570) for statistical week 32 (Appendix A19). Harvest from the August 15 fishing period was 12,500 coho salmon and 138 permit holders reported deliveries (Appendix A5). The fishing period beginning on August 19 resulted in 29,200 coho salmon delivered by 145 permit holders (Appendix A5). The anticipated harvest for this fishing period was 20,200 coho salmon (Appendix A10). An aerial survey flown under good observational conditions on August 19 documented 12,930 coho salmon in index streams (Appendix A19). This survey index count was above the upper escapement target for this date. Along with the steady increase in participation, harvest remained higher than anticipated, and 2 fishing-periods per week continued with a third 24-hour fishing period on August 22. During this period 28,600 coho salmon were harvested by 198 permit holders (Appendix A5). An aerial survey flown on August 26 documented 19,000 coho salmon in index streams (Appendix A19). This was close to the upper end of the escapement target range for this date. Two 24-hour periods were allowed in statistical week 35, 1 on Monday, August 26 and 1 on Thursday, August 29. Harvest from these periods was 26,100 (August 26) and 29,000 (August 29) coho salmon. During the Monday period, 207 permit holders reported deliveries. Due to poor weather, participation in the fishery decreased by nearly 80 permits during the Thursday period (Appendix A5).

An aerial survey was flown on September 1 under good observational conditions resulted in an index of 24,900 (Appendix A19). Consequently, 2 fishing periods per week were allowed during the weeks of Sunday, September 1 and Sunday, September 8. The 24-hour periods on Monday, September 2 and Thursday, September 5, resulted in a harvest of 46,900 coho salmon. Participation remained high with 186 permit holders participating in the Monday fishing period,

and 165 permit holders in the Thursday fishing period. The 24-hour periods on Monday, September 9 and Thursday, September 12, resulted in a harvest of 22,900 coho salmon, roughly half of the previous week's harvest. Participation declined with 102 permit holders participating in the Monday fishing period, and 107 permit holders in the Thursday fishing period.

Stormy conditions persisted in the Cordova area for the next several weeks having a negative impact on harvest and participation for the remainder of the season. Harvest for the week of September 15–21 was 15,700 coho salmon with 77 permit holders reporting deliveries in the first period and 35 permit holders in the second period. An aerial survey was flown on Friday, September 20 under good observational conditions resulting in an index of 26,000 (Appendix A19). There were 4 deliveries on the following Monday (September 23) with a reported 187 coho salmon harvested. In the remaining 5 fishing periods of the season no harvest was reported (Appendices A5 and A6). An aerial survey flown on October 8 was mired by poor water conditions, and numbers of coho salmon observed in index streams were below the escapement range for statistical week 41 (Appendix A19).

The majority of the coho salmon harvested commercially (72.1%) were 3-year-old from brood year 2010 with 4-year-old (27.7%) and 5-year-old (0.2%) fish contributing most of the remaining fish. An estimated 49.4% of the coho salmon harvested were males (Appendix A17).

## **BERING RIVER DISTRICT**

### **Preseason Outlook and Harvest Strategy**

Historically this district has opened in early June to sockeye salmon harvest and is managed concurrently with the Copper River District. Given that the minimum sockeye salmon SEG of 20,000 (as measured by aerial survey) was not met between 2006 and 2010, ADF&G announced at the preseason fishermen's meeting that the district would not be open until escapement levels were within the anticipated weekly escapement index.

### **Sockeye Salmon Season Summary**

The first aerial survey of the Bering River District was flown during the week ending June 15. The total index count from this survey was 4,100 sockeye salmon. This survey was above the anticipated index range (3,250–7,150 sockeye salmon) (Appendix A22). As a result of this early season count being within the anticipated index range, ADF&G elected to open the Bering River District concurrent with the Copper River District on June 13, but for a reduced duration (12 hours). The rationale for this short period was tied to the potential for fishing effort and subsequent harvest beyond the exploitation potential for this date. Harvest from this first fishing period was confidential with only 1 delivery reported (Appendix A23). At least 6 boats were observed fishing in the district during this first fishing period and boats were reported to have fished after the period closed. At least 2 boats were known to have harvested fish. With the potential for underreported harvest and higher than anticipated exploitation, the fishery remained closed on Monday, June 17 pending another aerial survey to assess escapement progress.

The second survey, flown on June 18 under good observational conditions, documented 12,200 sockeye salmon in index streams (Appendix A22). This survey was above the upper end of the escapement target for this date and was 2,850 fish shy of the lower end of the Bering River District SEG. Considering the continued upward trend in escapement, a 24 hour fishing period was scheduled to start on Thursday, June 20. Harvest from this fishing period was 2,540 sockeye salmon and 9 permit holders reported deliveries (Appendix A23). The third survey, flown on June

25, documented 17,100 sockeye salmon in index streams and was above the upper end of the anticipated escapement index range for that week (6,100–13,400). As a result of healthy escapement and lack of fishing effort, ADF&G elected to keep the Bering River District open to commercial harvest on a twice weekly basis until the start of coho salmon season in mid-August. Weekly surveys were within the weekly escapement index targets through early August and the peak count occurred on July 17 when 22,150 sockeye salmon were observed in index systems (Appendix A22). No commercial harvest was reported in the Bering River District until the coho salmon season was initiated (Appendix A23).

### **Coho Salmon Season Summary**

Weather conditions only allowed for sporadic aerial surveys of coho salmon index streams in the Bering River District. For the sixth year in a row, the Bering River District coho salmon run was late, but final escapement was within the SEG range for the district (Appendix A25). Commercial harvest was the fourth largest in the last 10 years, and only 3,000 less than the recent 10-year average (Appendix A21).

An aerial survey flown on August 5 documented numbers of coho salmon that were less than runs in recent years (Appendix A25). In 2013 the first opening of the Bering River District coho salmon fishery was on August 15 during statistical week 33 and harvest was confidential (Appendix A24). The low fishing effort and harvest in the first fishing period provided justification for a follow up period to be scheduled on Monday, August 19. Harvest from this period was 2,290 coho salmon with 9 permits reporting harvest, indicating that run entry was improving and that effort would likely increase quickly through the peak of the run. An aerial survey flown under good conditions on August 19 documented 1,760 coho salmon in index streams (Appendix A25). This survey index count was below the lower escapement target for this date. The low coho salmon abundance apparent in this survey triggered a 1 period per week management strategy that has historically been shown to allow for coho salmon escapement while maintaining limited fishing effort. There was 1 additional 24 hour opening occurring on August 26, during which commercial fishing effort increased to 28 boats. This coincided with the historical trend of increasing fishing effort into late August and early September. Harvest from the August 26 fishing period was 5,650 coho salmon (Appendix A23).

An aerial survey flown on August 26 documented 6,730 coho salmon in Bering River and Controller Bay index streams. This compares to an anticipated index target range of 4,000–10,200 coho salmon (Appendix A25). The improved survey results in combination with the increase in commercial harvest confirmed that there was the potential for a late run. Consequently, two 24-hour periods were allowed in statistical week 36, the first period on September 2 and the second period on September 5. Harvests from these periods were 22,100 (September 2) and 12,800 (September 5) coho salmon. Effort was comparable during both periods with 36 and 32 permit holders reporting deliveries, respectively (Appendix A23). An aerial survey was also flown on September 1 under good observational conditions and produced an index count of 11,300 coho salmon. This was within the weekly anticipated index target range (8,730–22,200) for statistical week 36 (September 1–7; Appendix A25). Harvest from the two 24-hour periods in the next statistical week was 12,800 coho salmon and 89 permits reported deliveries. An aerial survey was also flown on Friday, September 20 under poor observational conditions and produced an index count of 17,700 coho salmon. This was the peak count for the season and at the upper end of the weekly anticipated index target range (6,970–17,700) for statistical week 38 (September 15–21) (Appendix A25). Harvest from the two 24-hour periods in

the statistical week 38 was 3,720 coho salmon and 16 permits reported deliveries. There were 6 additional commercial fishing periods held over the next 3 weeks but no deliveries were reported (Appendix A23). The final aerial survey of the season was flown on October 7 when 4,850 coho salmon were counted, below the weekly anticipated index target of 5,160–13,100 fish for statistical week 41 (October 6–12). This survey was abbreviated and only assessed escapement outside of the Bering River drainage (Appendix A25). The Bering River District closed for the 2013 season on October 12 (Appendix A23).

Peak fishing effort and harvest was during statistical week 36 (September 1–7) when 39 boats harvested 22,100 coho salmon (Appendix A24). The total harvest of 47,000 coho salmon was below the previous 10 year harvest average of 49,700 fish (Appendix A21). The coho salmon SEG was achieved with a peak escapement index count of 18,800 fish. This was below the previous 10-year average of 29,300 and within the SEG range of 13,000 to 33,000 fish for the Bering River District (Table 6; Appendices A20 and A25).

## **COGHILL DISTRICT**

### **Preseason Outlook and Harvest Strategy**

The 2013 forecast of the sockeye salmon run to Coghill Lake was 156,000 fish. Meeting the midpoint of the SEG range of 20,000–60,000 sockeye salmon (Table 6; Fair et al. 2011) would leave 116,000 fish for the common property fishery (Table 7). The enhanced chum salmon run to WNH was forecast to be 2.54 million fish. PWSAC's projection for cost recovery and broodstock requirements was approximately 663,000 fish, leaving 1.88 million chum salmon for the CCPF. The projected run of pink salmon to the WNH facility was 6.20 million fish. Of those, PWSAC's projection for cost recovery and broodstock requirements was approximately 703,000 fish, leaving 5.50 million pink salmon available to the CCPF. An estimated run of 63,400 coho salmon were projected for WNH. A total of 2,700 were anticipated to be harvested for broodstock and the remaining 60,700 fish would be available to the CCPF (PWSAC 2013a).

The 5-year rolling average allocation calculation used to guide 2013 fisheries management was 57.6% purse seine, 42.4% drift gillnet, and 4.1% set gillnet. As a result, the drift gillnet fleet had exclusive access to the Port Chalmers Subdistrict from June 1 to July 30 in 2013, and the set gillnet fleet was not limited to 36 hours per week after July 10, 2013.

PWSAC, in consultation with ADF&G, elected to initiate pink and chum salmon cost recovery harvest before allowing CCPF openings in the WNH Hatchery Escapement Exclusion Zone (HEEZ). CCPF openings in hatchery subdistricts and terminal areas during cost recovery were anticipated to occur on a regular basis once initiated, with frequency, duration, and open area dependent on run entry and cost recovery progress.

### **Season Summary**

Early season management of the Coghill District is largely based on Coghill Lake wild sockeye salmon escapement. Coghill River escapement was assessed from June 17 to July 26. Weir operation began later than normal due to ice conditions in the lagoon and lake. Total sockeye salmon escapement was 17,200 fish, which was below the lower SEG bound of 20,000 fish (Table 6 and Appendices B1–B3). Also, 360,000 pink salmon were passed at the Coghill River weir. The district pink and chum salmon escapement goals were met.



The total CCPF purse seine and drift gillnet combined sockeye salmon harvest for the Coghill District was 95,700 (97.9% drift gillnet) fish; the total CCPF harvests was 2.17 million chum salmon (96.8% drift gillnet), 2.45 million pink salmon (26.8% drift gillnet) and 63,000 coho salmon (89.3% drift gillnet; Table 1 and Appendices B4 and B5).

In 2013, PWSAC reported a WNH chum salmon purse seine cost recovery harvest of 529,000 fish, a raceway cost recovery harvest of 53,700 fish and broodstock carcass sales of 183,000 fish. PWSAC also reported a pink salmon purse seine cost recovery harvest of 1.24 million fish, no raceway cost recovery harvest, and broodstock carcass sales of 100,000 fish. As part of chum salmon brood collection, 183,000 chum salmon were used as broodstock, 52,300 fish were not viable or unspawned, and 4,690 fish were holding mortalities. PWSAC estimated that 25,000 fish were not harvested and remained within waters of the Special Harvest Area (SHA). PWSAC collected 223,000 pink salmon for broodstock, 31,200 fish were unviable or unspawned, 27,000 fish were holding mortalities, and PWSAC estimated that 180,000 fish were not harvested and remained within waters of the SHA. PWSAC also reported harvesting no coho salmon for raceway cost recovery and 2,290 fish as part of broodstock collection (Appendix E12).

Based on the detection of thermally-marked otoliths, it is estimated that enhanced salmon made up 63.3% of the sockeye salmon, 97.8% of the chum salmon, and 88.2% of the pink salmon harvested by the CCPF harvest in the Coghill District (Appendices E9–E11). There were approximately 60,600 MBH sockeye salmon harvested in the Coghill District commercial fishery, accounting for 63.3% of the 95,700 sockeye salmon harvested (Appendix E9). Of the 2.17 million chum salmon harvested in the Coghill district in the CCPF, approximately 2.12 million (97.8%) originated from WNH, AFK, and the Port Chalmers remote release site (Appendix E11). Of the 9.14 million pink salmon harvested in this district by the CCPF, 7.03 million (76.9%) were released at WNH, 632,000 (6.9%) were released at CCH, 262,000 (2.9%) were released at SGH, and 139,000 (1.5%) were released at AFK (Appendix E10).

The total Coghill District commercial drift gillnet harvest was 93,700 sockeye, 2.10 million chum, 2.45 million pink, and 63,000 coho salmon, with 388 permit holders reported deliveries (Table 1 and Appendices B4, B6, and B8).

The Coghill District drift gillnet fishery began on May 27. A general schedule of 2 openings, 48–84 hours in duration, per week was established, coinciding with openings in the Copper River and Eshamy districts. Beginning June 27, the western boundary used for the Coghill District was a line from Point Pigot to Point Pakenham (Bettles Bay Subdistrict), with the purpose of limiting harvest of wild chum salmon returning to the western side of Port Wells (Appendix B4). The closure of this subdistrict typically begins around the second week of July to protect chum salmon stocks.

The WNH chum salmon run was stronger than anticipated throughout the season. Chum salmon cost recovery at WNH began on June 4, and to accommodate timely cost recovery harvest, there was initially no commercial drift gillnet fishing within the WNH terminal harvest area (THA) and SHA. Beginning June 3, the Esther Subdistrict was closed and fishing time was reduced in the Granite Bay Subdistrict to facilitate cost recovery. On June 17 cost recovery was 47.4% complete, approximately 6 days ahead of the previous year's cost recovery timing (Appendix E12). Drift gillnet chum salmon harvest in the Coghill District peaked during statistical week 27 (June 30–July 6) with 461,000 chum salmon harvested by 188 permit holders during this statistical week (Appendix B6). Chum salmon cost recovery at WNH was finished on June 18,

meeting PWSAC's revenue goal. The largest daily cost recovery harvest occurred June 13 with a harvest of 51,100 chum salmon. From June 3 through June 26, the WNH SHA and THA were closed to commercial fishing. On June 27, the WNH THA was opened for a short duration period. In subsequent periods the WNH SHA and THA were open and the WNH HEEZ was excluded. Also beginning June 3, the Esther and Granite Bay subdistricts were closed, and subsequently opened for progressively longer duration beginning June 6 (Appendix B4). Based on lower than anticipated broodstock collection PWSAC recommended that the Esther Subdistrict remain closed during this period (Appendix B4). By June 10, PWSAC estimated that the number of fish collected for broodstock in the WNH SHA was within the anticipated range for that date, but due to apparent expanded milling behavior and collection progress continuing at anticipated levels, continued to recommend limited fishing time in the Esther and Granite Bay subdistricts (Appendix E12).

Typically, the drift gillnet fleet targets WNH chum salmon in the early season and reprioritizes in late June to include MBH and Coghill Lake sockeye salmon. In 2013, Coghill District participation stayed above 150 permits per week from the first week of June through the second week of July. Most permit holders targeted WNH chum salmon beginning early in the season. This shift was likely due to a large WNH chum salmon run and a small Coghill Lake sockeye salmon run relative to many previous years. To prevent buildup of enhanced chum salmon within the WNH area, purse seine permit holders were allowed to operate within the WNH SHA and THA during period 14 (July 11–13). During this time, the drift gillnet fleet was unable to sufficiently harvest the large quantity of chum salmon in the area. In this period, 50,500 chum salmon were harvested by purse seine. On July 17, processors stopped buying gillnet-caught chum salmon from the Coghill District due to the decline in quality, and thus it was necessary to allow the purse seine fleet to harvest salmon in the WNH THA and SHA during period 16 (July 18–21). During this period, 18,700 chum salmon were harvested by purse seine (Appendix B5). PWSAC estimated that 25,000 chum salmon remained unharvested in the WNH terminal area.

The highest daily passage at Coghill River weir occurred on July 1, which is near the historical July 4 peak. However, cumulative passage did not continue to rise rapidly, and there were only 3 more days in the season in which over 1,000 sockeye salmon were counted. (Appendices B1 and B2). This pattern can be contrasted with run timing in 2011, in which daily sockeye salmon escapement exceeded 3,000 fish from June 26 through July 19; and with 2012, in which over 23,000 sockeye salmon passed the weir from July 3 through July 4. These large escapements in 2011 and 2012 may maximize or exceed the production potential for Coghill Lake, and thus the low escapement in 2013 is of less concern.

Otolith contribution estimates indicate that approximately 35,100 wild and 60,600 enhanced sockeye salmon were harvested in the Coghill District in 2013 (Appendix E9).

By regulation, on July 21, purse seine permit holders were allowed to fish Coghill District during all open fishing periods. Chum salmon harvest declined quickly through the remainder of July, largely due to processors not buying chum salmon from the hatchery terminal areas after July 21 because of quality concerns. Pink salmon harvest in the southern portion of the district increased rapidly beginning in mid-July, indicating a strong pink salmon run (Appendices B6 and B7).

Coho salmon landings increased beginning in mid-July, but daily harvest remained below 1,000 fish until August 13. The final period with reported harvest began September 9. On September 5,

the harvest of pink salmon (1,790) fell below the harvest of coho salmon (6,410; Appendices B4 and B5). Consequently, on September 9, Coghill District was closed to purse seine gear for the remainder of the season. The peak drift gillnet harvest of coho salmon (6,410) in Coghill District occurred during statistical week 36 (Appendix B6). The Coghill District closed to commercial fishing on September 28 (Appendix B4). Of the 2,290 coho salmon collected for broodstock, only 319 were viable (Appendix E12). WNH coho survival has been highly variable, ranging from nearly 12% for return year 2007 to less than 1% for return year 2012 (Appendix E5).

Peak drift gillnet fishing effort occurred during the 48-hour period on June 20 when 221 permit holders harvested 14,200 sockeye and 227,000 chum salmon. Peak drift gillnet chum salmon harvest also occurred during this period. Peak drift gillnet sockeye salmon harvest occurred during the 60-hour period on June 27–29 when 19,100 fish were landed by 185 permit holders (Appendix B4). Overall, 93,700 sockeye salmon were harvested by 388 drift gillnet permit holders during the 2013 season. This is 75,600 fish below of the previous drift gillnet 10 year harvest average of 169,000 sockeye salmon (Appendix B8). The below average sockeye salmon harvest was largely due to a poor return to MBH. The 2013 harvest of 2.10 million chum salmon by drift gillnet permit holders was substantially higher than the previous 10-year average of 1.28 million chum salmon. The 2013 harvest of 63,000 coho salmon by the drift gillnet fleet was also more than the previous 10-year average harvest of 42,300 fish (Appendix B8).

## **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. Both drift gillnet and purse seine gears are allowed during all fishing periods. CCH, a pink salmon hatchery, borders the southern boundary of the district. This district was established for management of runs of sockeye salmon to Cowpen and Miners lakes. Escapement enumeration is by aerial survey; however, water is quite turbid in Miners Lake. The management strategy in this district has been adjusted in recent years, reducing period duration to allow for uncertainty in sockeye salmon stock assessment.

### **Season Summary**

The total 2013 Unakwik District harvest was 3,590 sockeye, 284 pink, and 187 chum salmon. The 2013 sockeye salmon harvest was below the previous 10-year average of 5,680 (Appendix B12). Peak sockeye salmon harvest (1,270) occurred during the fishing period that started on June 24 (24 hours). Participation in this fishery is directly related to fishing success elsewhere in PWS. Robust salmon runs to WNH, VFDA, and the Copper River likely contributed to the low fishing effort in Unakwik District. The Unakwik District opened for the 2013 fishing season on June 13 and followed a schedule of 2 evenly-spaced periods per week, concurrent with other districts in PWS, until the district was closed for the season on July 16 (Appendix B11).

## **PORT CHALMERS SUBDISTRICT**

### **Preseason Outlook and Harvest Strategy**

PWSAC forecast a run of 634,000 chum salmon to this subdistrict in 2013 (Appendix E1). Based on the *Prince William Sound Management and Allocation Plan* (5 AAC 24.370), the drift gillnet gear group had exclusive access to Port Chalmers from June 1 through July 30, 2013. Deep

gillnets (greater than 60 meshes in depth) were not permitted in this subdistrict this year due to regulatory changes at the 2011 BOF meeting. These regulatory changes applied the same regulatory start date (the first Monday in July) for deep gear that existed in Coghill, Unakwik, and Eshamy districts.

### **Season Summary**

The total Port Chalmers Subdistrict harvest was 484,000 chum salmon, with 151 drift gillnet permit holders reporting deliveries (Appendices B13 and B14). The 2013 chum salmon harvest was below the 5-year average of 516,000 fish (Appendix B15). A total of 446,000 chum salmon (92.2%) were marked as having been released at Port Chalmers, and 8,670 (1.8%) were marked as WNH releases. The low contribution of WNH release marks, in contrast to previous year's high WNH contribution to the harvest was likely due to the decreased potential for miss assigned marks in the harvest. Wild chum salmon harvest was 23,100 which represented 4.8% of the total harvest (Appendix E21). Port Chalmers Subdistrict was open 7 days per week, with short breaks to facilitate reporting. This schedule was maintained for the duration of the drift gillnet fishery starting May 27 and continuing for 10 weeks. Effort peaked during the June 20–23 period when 77,700 chum salmon were harvested by 74 permit holders. Harvest peaked during the June 27–30 period when 89,000 chum salmon were harvested by 59 permit holders. To minimize the harvest of wild pink salmon, harvest, effort, and otolith contributions were monitored closely starting in early July. In this way effort could be focused closer to Port Chalmers if the harvest of non-target species (pink and sockeye salmon) increased substantially. A total of 28,100 pink salmon were harvested during this drift gillnet fishery with the majority (22,100 fish) harvested over a 2 week period (July 7–20; Appendices B13 and B14). The total pink salmon harvest was less than half of the 2009 peak drift gillnet harvest of 68,000 fish. (Appendix B15). This low level of pink salmon harvest did not necessitate a reduction in fishing area in 2013.

## **ESHAMY DISTRICT**

### **Preseason Outlook and Harvest Strategy**

The 2013 preseason forecast of the sockeye salmon run to Eshamy Lake was 53,100 fish. Managing to the midpoint biological escapement goal (BEG) of 20,500 would leave approximately 33,000 fish for the CCPF (Table 7). PWSAC projected the total run of enhanced sockeye salmon to MBH to be 1.13 million fish, of which 8,940 fish were required for broodstock and the remaining 1.12 million fish would be available for harvest in the common property fisheries. PWSAC typically installs a barrier seine in mid-June to begin broodstock collection (PWSAC 2013a).

According to the *Prince William Sound Management and Salmon Enhancement Allocation Plan* (5 AAC 24.370), the set gillnet gear group allocation is 4% of the value of PWSAC enhanced salmon stocks, with a fishing time restriction imposed if they exceed 5% of the 5-year average. The 2007–2011 average value percentages for each gear type are 42.4% drift gillnet, 57.6% purse seine, and 4.1% set gillnet. Therefore, fishing time for the set gillnet group was not limited to 36 hours per week beginning July 10.

### **Season Summary**

The 2013 total Eshamy District CCPF harvest was 539,000 sockeye, 227,000 chum, 81,300 pink, and 2,080 coho salmon (Table 1 and Appendix C8). Of the 539,000 sockeye salmon

commercially harvested in the Eshamy District, 496,000 (92.0%) were MBH sockeye salmon (Appendix E13). PWSAC did not conduct cost recovery on MBH sockeye salmon and had a broodstock harvest of 9,830 fish (Appendix E16).

Sockeye salmon began arriving at the MBH in late May and a schedule of 2 extended fishing periods per week was initiated beginning May 30. The entirety of the Eshamy District was initially opened to commercial fishing to allow the fleet to focus on the enhanced run to MBH while run timing overlap with Eshamy River wild sockeye salmon was minimal. On July 1, the alternating gear zone (AGZ) was closed to commercial fishing to begin broodstock collection. In 2013, the drift gillnet gear group fished the first period in the AGZ when it was opened on July 29. Although set gillnet participation remained steady for much of the season, drift gillnet participation fluctuated as permit holders moved among the Coghill, Montague, and Copper River districts. The highest level of drift gillnet participation occurred during period 8 (June 24–June 26) with 182 permit holders reporting deliveries (Appendices C4 and C5).

The Eshamy River weir did not operate in 2013. Escapement was monitored through a video monitoring project at the outlet of Eshamy Lake. This project was redesigned in 2013 to include 2 below-water cameras, night time monitoring, and lower power consumption. Also, solar panels were moved to a site with more solar exposure. Escapement counts for the season were still incomplete, largely due to fish passing through small openings in the weir outside the video tunnel and a later than normal start to the project (early August). The minimum count was ~4,500 sockeye salmon. Improvements for 2014 should include tightening up the picket weir and the substrate.

The peak Eshamy District sockeye salmon harvest of 205,000 fish occurred during statistical week 26; peak chum salmon harvest of 38,000 occurred during statistical week 27; and peak pink salmon harvest of 34,000 occurred during statistical week 28 (Appendices C6 and C7). Through June 22, the sockeye and chum salmon wild stock harvest proportions remained low, averaging 9.51% and 6.24% wild, respectively. Although wild sockeye salmon harvest proportions remained stable for the remainder of June and early July, wild chum salmon harvest proportions increased in late June and early July and remained at 33.3% throughout the rest of July (Appendices E13 and E15). Pink salmon harvest increased quickly during the first half of July. The pink salmon harvest in the Eshamy District is normally predominantly wild stocks and most fish are assumed to be returning to streams outside of the district. The majority of wild chum salmon are also assumed to be returning to streams outside of the district. This increase in wild chum salmon harvest and overall pink salmon harvest were reasons that fishing time and area were reduced during late July. This created larger time windows for these fish to move through the district. The areas open from July 18 until August included only part or all of the Main Bay Subdistrict. The second reason for this area limitation was concern for broodstock quality at MBH. During 2013, MBH experienced an unusually large return of jack sockeye salmon, which often get through commercial harvest due to their small size, but are not used for broodstock. PWSAC estimated the number of jack sockeye salmon that remained unharvested within the barrier net at the end of the run to be 100,000 (PWSAC 2013). As sockeye and chum salmon harvests decreased throughout July, pink salmon harvest peaked during period 13 (July 11–12) at 13,900 fish. Pink salmon harvest remained high (likely due to the large pink salmon return throughout PWS) until the area within the Eshamy District was limited to only the Main Bay Subdistrict (Appendices C4 and C5). This management action prevented a large harvest of pink salmon that were migrating through the district. Throughout July, it was estimated that over 50%

of the pink salmon harvested were of wild origin (Appendix E14). Limiting area to the Main Bay Subdistrict during this time also protected sockeye salmon returning to Eshamy River and Gumboot Lake. The AGZ openings on August 13 included the MBH SHA to facilitate a clean up of sockeye salmon staged in front of the hatchery, which were primarily jacks that were unsuitable for broodstock. Additionally, due to uncertainty in escapement at Eshamy River, openings in Eshamy Bay were restricted to one 14-hour period per week starting August 15 (Appendices C4 and C5). Low sockeye salmon harvest in the Eshamy Bay fishery did not support expanded fishing opportunity on the Eshamy Lake sockeye salmon stock.

Overall for the Eshamy District, 326 drift gillnet permit holders harvested 336,000 sockeye, 184,000 chum, and 62,200 pink salmon during the 2013 season (Appendix C8 and Table 1). The 10-year harvest averages of 540,000 sockeye and 87,000 pink salmon are higher than this year's drift gillnet harvest totals, while the 10-year average of 159,000 chum salmon harvested is lower than the chum salmon harvest in 2013. A total of 29 set gillnet permit holders harvested 203,000 sockeye, 42,600 chum, and 19,100 pink salmon. This sockeye and chum salmon harvest total is higher than the previous 10-year averages of 187,000 sockeye salmon and 28,700 chum salmon; however, the enhanced sockeye salmon run to MBH fell 483,000 fish short of the preseason harvest forecast of 1.12 million fish. Pink salmon harvest totals are lower than the previous 10-year average of 36,400 pink salmon (Appendix C8).

## **GENERAL PURSE SEINE DISTRICTS**

### **Preseason Outlook and Harvest Strategy**

ADF&G forecasts wild fish runs, whereas hatchery run projections are provided by PWSAC and VFDA. Run projections for species and districts without formal forecasts were based on average historical production. The 2013 PWS Area forecast CPF harvests by species, including both hatchery and wild fish, were 20,000 Chinook, 2.81 million sockeye, 465,000 coho, 33.97 million pink, and 3.13 million chum salmon (Table 7; PWSAC 2013a; VFDA 2013). Run projections are the basis for early inseason management of all 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. Escapement of pink and chum salmon is monitored throughout the season by weekly aerial surveys of 215 index streams. Pink and chum salmon escapement trends determine the area and duration of fishing periods within districts. Fewer aerial surveys were flown in 2013 than any year since 1976 due to poor weather conditions in late August and early September. Bue et al. (1998) documented that the accuracy and precision of area under-the-curve estimates decreased as the interval between surveys increased.

Inseason modifications to harvest projections, season opening dates, and strategies for weekly fishing periods occur as fisheries develop and wild salmon escapement needs are met. ADF&G uses time and area to assist with prosecuting an orderly fishery while protecting wild salmon from overharvest. When wild salmon escapements are weak, hatchery subdistrict and terminal area openings are utilized to target enhanced stocks. Further, ADF&G may use SHTF markers to close wild stock terminal areas when escapements are lower than expected or as an intermediate step before initiating areawide closures.

Hatchery *Annual Management Plans* (AMPs) from VFDA and PWSAC provide guidelines to ADF&G for managing enhanced stock fisheries to achieve cost recovery and broodstock

objectives. The AMPs underwent ADF&G and Regional Planning Team (RPT) review on April 15, 2013 and were later signed by the commissioner of ADF&G.

### **Chum Salmon**

The 2013 forecast for the wild and hatchery chum salmon run to PWS was 3.99 million fish. Based on the department's forecast of 516,000 wild chum salmon and escapement goal of 200,000, there was a potential CPF harvest of 312,000 wild chum salmon (Tables 6 and 7; PWSAC 2013a). The majority of the chum salmon run was anticipated to be from PWSAC hatchery production. PWSAC forecast a run of 306,000 chum salmon to AFK, all of which were intended for harvest by the purse seine fleet (PWSAC 2013a).

### **Pink Salmon**

The 2013 wild and hatchery pink salmon run forecast for PWS was 40.70 million fish. This estimate includes 6.23 million wild stock pink salmon, 13.80 million VFDA pink salmon, and 20.70 million PWSAC pink salmon (Tables 6 and 7; VFDA 2013a; PWSAC 2013a). The hatchery forecast was based on the release of approximately 674.05 million pink salmon fry in 2012 (Appendix E3).

PWSAC's 2013 pink salmon corporate escapement goal was based on broodstock needs of approximately 949,000 fish and a revenue goal of \$3.82 million. PWSAC estimated that approximately 2.35 million pink salmon (11.4%) of the projected 20.70 million pink salmon returning to PWSAC hatcheries would be required for cost recovery and broodstock, and the remaining 18.35 million PWSAC fish would be available for CPF harvest (PWSAC 2013a). The 2013 VFDA pink salmon sales harvest revenue goal was \$3.88 million as outlined in the 2013 SGH Annual Management Plan (AMP). VFDA estimated that approximately 2.93 million pink salmon (21.3%) of the projected 13.80 million pink salmon returning to SGH would be required for cost recovery and broodstock, and the remaining 10.87 million VFDA fish would be available for CPF (Table 7; VFDA 2013a). After an escapement of 1.45 million wild pink salmon, 6.23 million wild pink salmon were projected for CPF harvest (Tables 6 and 7).

### **Coho Salmon**

The 2013 run of coho salmon to SGH was forecast to be 127,000 fish, with 1,000 salmon needed for broodstock. Port Valdez was anticipated to be closed to CCPF purse seine fishing inside of a line from Entrance Point to Potato Point beginning on August 15. Purse seine fishing in Port Valdez was expected to resume the day after Labor Day, September 3, to target surplus SGH coho salmon (VFDA 2013a).

### **Chum Salmon Season Summary**

Out of the total PWS CCPF harvest of 4.07 million chum salmon, the purse seine fleet harvested 487,000 fish in 2013 (Table 1). In 2013, PWSAC reported a harvest of approximately 766,000 chum salmon for cost recovery and broodstock (Appendix E12; PWSAC 2013b).

Aerial surveys to assess wild chum salmon escapements in the Eastern and Northern districts began in mid-June. Surveys were conducted in other PWS districts starting in early July. High pink salmon densities observed during aerial surveys made counting chum salmon difficult. The 2013 PWS wild stock chum salmon escapement index of 205,000 fish in districts with SEGs is greater than the PWS lower bound SEG of 91,000 fish (Appendix D4). Wild stock pink salmon escapement indices in 2013 supported openings outside of hatchery subdistricts starting in late

June and running through the remainder of the season. Purse seine fishing effort was focused on large hatchery and wild pink salmon runs for much of the 2013 season, thereby minimizing effort on wild chum salmon during most openings outside hatchery subdistricts.

### **Pink Salmon Season Summary**

The 2013 record commercial harvest of 92.58 million pink salmon in PWS eclipsed the previous record harvest (71.29 million in 2010) by more than 21 million fish (Appendix D2). According to otolith contribution estimates, VFDA and PWSAC contributed 21.9% and 54.9%, respectively, to the overall PWS pink salmon CCPF harvest in 2013 (Appendices D2 and E3). Pink salmon harvest by gear type was 85.93 million by purse seine, 2.61 million by drift gillnet, 19,100 by set gillnet, and 4.09 million for hatchery harvests (Table 1). VFDA cost recovery and broodstock harvest of 2.31 million fish was approximately 10.3% of the total pink salmon run of 22.56 million fish to SGH in 2013 (Appendices E1 and E20). PWSAC cost recovery and broodstock harvest of 2.99 million fish was approximately 5.6% of the total pink salmon run of 53.77 million fish to PWSAC hatcheries in 2013 (Appendices E1, E12, E24, and E27). Pink salmon egg-take goals were made at all PWS hatcheries in 2013. Fishery participation decreased from 224 commercial purse seine permit holders reporting harvest in 2012 to 211 in 2013 (Table 1; Sheridan et al. 2013). High pink salmon abundance in PWS resulted in processor-imposed harvest limits for most of the commercial purse seine fleet during the first 2 weeks in August.

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 2013 supported openings outside of hatchery subdistricts starting in late June and running through the remainder of the season. The 2013 PWS wild stock pink salmon escapement index of 4.68 million fish is greater than the SEG range of 994,000 to 2.28 million fish, and is the second largest escapement on record (Appendix D4; Table 6).

The estimated wild pink salmon total run to PWS in 2013 is 22.25 million fish, which is the largest wild stock return since statehood and exceeds the previous high of 21.20 million fish in 1984.

### **Eastern District Summary**

ADF&G observed pink and chum salmon returning to streams in the Eastern District during the season's first aerial survey on June 17. Eastern District wild pink salmon escapement indices were greater than anticipated levels for the entirety of the 2013 season. Eastern District wild chum salmon escapement indices were at or near anticipated levels for much of the season. The Eastern District pink salmon escapement index of 1.27 million fish is greater than the district's odd-year SEG index range of 310,000 to 640,000 fish. The Eastern District chum salmon escapement index of 119,000 fish is greater than the district's 1977–2013 mean index of 108,000 fish (Appendix D4).

VFDA pink salmon cost recovery harvests began on June 20, and were conducted throughout Port Valdez in 2013. The Eastern District CCPF first opened for a 14-hour period on Monday, June 24. Wild pink salmon escapement indices supported an additional 12-hour period in general district waters of the Eastern District on June 27. A total of 673,000 pink salmon were harvested during these fishing periods, 68.2% of which were wild fish (Appendix E19). Broad area openers followed on June 30 and July 3, when 46.3% and 73.4% of VFDA's cost recovery goal was complete from a total harvest of 4.83 million pink salmon. The July 3 harvest of 2.89 million



pink salmon was the largest single day harvest in the Eastern District in 2013 (Appendices E19 and E20). From July 3 to 7, CCPF periods alternated with VFDA cost recovery fishing on an every other day basis, resulting in a commercial purse seine harvest of 6.63 million pink salmon, 91.8% of which were SGH fish. VFDA reached its pre-season pink salmon sales revenue goal on July 6. The Eastern District commercial purse seine fishery was closed on July 8 to aid SGH broodstock collection. Waters of the Eastern District, including a portion of Port Valdez, were open to daily 14-hour fishing periods from July 9–12, resulting in a CCPF harvest of 6.18 million pink salmon during these fishing periods. The Eastern District was closed on July 13, 14, 16, 18, 20–21, and 23 to aid SGH broodstock collection, and to allow for wild stock escapement progress. During this time frame, 14-hour fishing periods occurred in portions of Port Valdez and the majority of the Eastern District on July 15, 17, 19, 22, and 25; resulting in a harvest of 6.85 million pink salmon, 64.0% of which were SGH fish. On July 24, VFDA reported that they had secured sufficient broodstock at SGH, and recommended a July 26 clean up fishery in Port Valdez to harvest pink salmon surplus to their escapement needs. Harvest from the July 26 Port Valdez fishing period included 330,000 pink salmon, 59.8% of which were SGH fish. VFDA harvested an additional 304,000 pink salmon at the head of Port Valdez on July 27, thus completing its 2013 cost recovery fishing operations.

The majority of the Eastern District was open to daily fishing periods through August 22, resulting in the harvest of 2.90 million pink salmon, 70.6% of which were wild fish (Appendix E19). VFDA reached its 2013 egg-take goal at SGH on August 22, and recommended a pink salmon clean up fishery at the head of Port Valdez starting on August 23. Commercial purse seine fishing periods took place at the head of Port Valdez on August 23 and 24 concurrent with opportunity elsewhere in the Eastern District, with a total district harvest of 46,800 pink salmon for these dates. Port Valdez transitioned to coho salmon management on August 25, and was closed to commercial purse seine fishing through September 3. Eastern District waters outside of Port Valdez were opened to commercial purse seine fishing on a daily basis for the remainder of the 2013 season, resulting in the harvest of an additional 5,750 pink salmon (Appendix D11; Appendix E19). VFDA reports that 46,800 pink salmon went unharvested at SGH in 2013 (VFDA 2013b).

Port Valdez was opened for a series of daily 12-hour CCPF periods targeting potential surplus SGH coho salmon starting on September 3. A total of 140,400 coho salmon were harvested by the commercial purse seine fishing fleet in Port Valdez from September 3–6 (Appendix D1). A total of 40,000 coho salmon were subsequently harvested by VFDA at SGH, with another 2,060 fish utilized for broodstock (Appendix E20; VFDA 2013b). The district closed to commercial fishing on September 19 (Appendix E19).

There were a total of 63 Eastern District CCPF fishing periods in 2013, and 208 purse seine permit holders reported deliveries (Appendix D11; Table 1). The Eastern District CCPF harvest was 25.57 million pink, 159,000 coho, 94,300 chum, 13,000 sockeye, and 217 Chinook salmon (Table 1). The 2013 Eastern District pink salmon harvest is the largest on record (Appendix D3). The Eastern District CCPF harvest of 25.57 million pink salmon was composed of 74.0% VFDA fish, 1.4% PWSAC fish, and 24.6% wild fish (Appendices D3 and E19). The 2013 PWS total run estimate of 22.56 million VFDA-produced pink salmon was greater than VFDA's pre-season forecast of 13.80 million fish (Appendix E1; Table 6). Otolith contribution estimates indicate that VFDA pink salmon were harvested in the CCPF outside of the Eastern District, including 363,000 in the Northern District, 307 in the Southwestern District, 262,000 in the Coghill

District, 93,000 in the Montague District, and 35,300 in the Eshamy District (Appendices E10, E14 and E26).

### **Northern District Summary**

The first full survey of the Northern District was completed on July 10. Northern District wild pink salmon escapement indices were greater than anticipated levels by the second week of July. Northern District wild chum salmon escapement indices were at or near anticipated levels for much of the season. The Northern District pink salmon escapement index of 329,000 fish was greater than the district's odd-year SEG range of 90,000 to 180,000 fish. The Northern District chum salmon escapement index of 34,200 fish was greater than the district's lower bound SEG of 20,000 fish (Appendix D4).

The 2013 CCH pink salmon forecast was 7.60 million fish. PWSAC anticipated utilizing 357,000 pink salmon for broodstock and 515,000 pink salmon for cost recovery, leaving 6.73 million pink salmon for CPF harvest (PWSAC 2013a).

The Northern District commercial fishing season began with a 14 hour CCPF on July 17, excluding waters of the Perry Island Subdistrict, the Cannery Creek (HEEZ), and waters inside of the Jonah Bay and Siwash Bay SHTF markers (Appendix D11). Early season closures of the Perry Island Subdistrict and Unakwik Inlet hatchery subdistricts were implemented at PWSAC's recommendation to allow for hatchery escapement to WNH and CCH, whereas SHTF closures were implemented to allow for early season wild stock pink and chum salmon escapement. Fishing periods on July 17, 19, and 22 resulted in the harvest of 1.05 million pink salmon, including 37.6% wild and 20.0% CCH fish. The CCH SHA was expanded for cost recovery harvest on July 20 upon PWSAC's request to expedite cost recovery and allow for a timely CCPF during early run entry. However, due to later pink salmon run entry to CCH, along with higher and more consistent cost recovery harvest at WNH and AFK, PWSAC cost recovery fishing effort shifted to WNH and AFK and no purse seine cost recovery harvest occurred at CCH in 2013. Area was expanded for Northern District commercial fishing periods on July 25, 28, and 30, resulting in the harvest of 2.64 million pink salmon. PWSAC's cumulative cost recovery progress for these dates was 18.0%, 52.0%, and 79.3%, respectively. ADF&G otolith contribution estimates for these periods result in 649,000 wild fish, continuing a trend of strong wild stock harvests and escapements in PWS. PWSAC completed its cost recovery fishing operations on July 31, and the majority of PWS was opened to daily 14 hour fishing periods beginning on August 1. The majority of the Northern District remained open for daily commercial fishing periods through September 3, resulting in the harvest of an additional 13.37 million pink salmon. On September 4, PWSAC expressed concerns regarding egg-take progress at CCH, leading the department to implement area restrictions in much of Unakwik Inlet for daily 12 hour fishing periods beyond September 5. PWSAC reached its egg-take goal at CCH on September 14. There was no commercial purse seine fishing effort in the Northern District beyond August 27, and the district closed to commercial fishing on September 20 (Appendix D11; Appendix E23). PWSAC reports that 75,000 pink salmon went unharvested at CCH in 2013 (PWSAC 2013b).

The Northern District was open for 49 CCPF periods in 2013 with a total of 178 purse seine permits reporting harvest (Appendix D11; Table 1). The Northern District CCPF harvest was 17.06 million pink, 6,330 chum, 3,460 sockeye, 3,260 coho, and 18 Chinook salmon (Table 1). The 2013 Northern District pink salmon harvest is the second largest on record for the district

(Appendix D3). The Northern District pink salmon harvest was composed of 56.7% CCH fish, 21.9% WNH fish, 14.4% wild fish, 4.90% AFK fish, and 2.10% SGH fish (Appendix E23). Otolith contribution estimates indicate that CCH pink salmon were harvested in the CCPF outside of the Northern District, including 5.12 million in the Southwestern District, 632,000 in the Coghill District, 111,000 in the Eastern District, 16,532 in the Montague District, and 686 in the Eshamy District (Appendices E10, E19, E22, and E26).

### **Coghill District Summary**

The first aerial survey of the Coghill District took place on July 10. Coghill District wild pink salmon escapement indices were greater than anticipated levels by the second week of July. Coghill District wild chum salmon escapement indices were less than anticipated levels for much of the season. The Coghill District pink salmon escapement index of 640,000 fish is greater than the district's odd-year SEG range of 60,000 to 250,000 fish. The Coghill District escapement index of 11,400 chum salmon is greater than the district's lower bound SEG index of 8,000 fish (Appendix D4).

PWSAC's 2013 forecast for pink salmon returning to WNH was 6.20 million fish. PWSAC's 2013 corporate pink salmon escapement requirements for WNH included a broodstock goal of 283,000 fish and a cost recovery goal of 420,000 fish. The preseason forecast for CPF harvest of WNH pink salmon was 5.50 million fish (PWSAC 2013a).

Regulation 5 AAC 24.368(f) states that seine gear may be used in the Esther Subdistrict prior to July 21 for the purpose of preventing the deterioration of fish quality of the harvestable surplus of chum salmon that is not being adequately harvested by the drift gillnet fleet. In 2013, it was determined that these conditions had been met, leading the WNH THA and SHA to be opened to commercial purse seine fishing for 2 fishing periods prior to July 21. In the Coghill District, the WNH THA and SHA was first opened to commercial purse seine fishing in 2013 for a 60-hour period from July 11–13, resulting in the harvest of 92,300 pink and 50,500 chum salmon. The WNH THA and SHA was opened to commercial purse seine fishing for a second chum salmon clean up fishery on July 18. Harvest from this 84-hour fishing period include 704,000 pink and 18,700 chum salmon. ADF&G pink salmon otolith contribution estimates for the July 18–21 Coghill District CCPF result in 195,000 (25.0%) wild fish.

By regulation, management for pink salmon returning to the Coghill District began on July 21. Coghill District wild stock pink salmon harvests to date, pink salmon passage at the Coghill River Weir, and aerial surveys on July 10 and 15 indicated that there was a large pink salmon run returning to Coghill River. On July 21, much of the Coghill District outside of WNH hatchery subdistricts was opened for a 36-hour period, followed by 14-hour periods on July 25 and 28 in similar areas. The results from these fishing periods include a pink salmon harvest of 364,000 fish, 32.4% of which were wild fish (Appendix E10). The entirety of the Coghill District, excluding the WNH SHA was opened to commercial purse seine fishing for a 14-hour period on July 30, resulting in a harvest of 355,000 pink salmon, 23.7% of which were wild fish. Waters north of Point Pakenham were opened to commercial purse seine fishing for a 14-hour period on July 31; however, the resulting harvest is confidential (Appendix B5; Appendix E10).

PWSAC's cost recovery fishing operations at WNH began on July 24 and were completed on July 31. PWS was opened to daily 14 hour fishing periods beginning on August 1 in the majority of purse seine fishing districts. Much of the Coghill District remained open for daily commercial fishing periods through August 21, resulting in the harvest of an additional 4.68 million pink

salmon. PWSAC recommended against commercial fishing in the WNH SHA starting on August 22, and expanded their area closure recommendation to include the WNH THA for fishing periods on August 27 and August 28. Commercial purse seine harvests for the August 22–26 fishing periods include 532,000 pink salmon. There was no commercial purse seine fishing effort in the Coghill District beyond August 26, and the district closed to commercial purse seine fishing following the September 1 fishing period (Appendix B5; Appendix E10). PWSAC reached its pink salmon egg-take goal at WNH on September 3. PWSAC reports that 180,000 surplus pink salmon went unharvested at WNH in 2013 (Appendix E12; PWSAC 2013b).

There were 37 Coghill District purse seine CCPF periods with a total of 130 commercial purse seine permit holders reporting harvest in 2013 (Appendix B5; Table 1). The Coghill District purse seine CCPF harvest was 6.69 million pink, 70,300 chum, 1,980 sockeye, 7,570 coho, and 32 Chinook salmon (Table 1). The 2013 Coghill District pink salmon harvest was the fourth largest on record for the district (Appendix D3). The Coghill District pink salmon harvest was composed of 76.9% WNH fish, 11.8% wild fish, 6.9% CCH fish, 2.9% SGH fish, and 1.5% AFK fish (Appendix E10). Otolith contribution estimates indicate that WNH pink salmon were harvested in the CCPF outside of the Coghill District, including 4.97 million in the Southwestern District, 3.73 million in the Northern District, and 50,300 in the Eastern District (Appendices E19, E23 and E26).

### **Northwestern District Summary**

The first aerial survey of the Northwestern District took place on July 10. Northwestern District wild pink salmon escapement indices were greater than anticipated levels by the second week of July. Northwestern District wild chum salmon escapement indices were less than anticipated levels for much of the season. The Northwestern District pink salmon escapement index of 203,000 fish was greater than the district's odd-year SEG range of 50,000 to 110,000 fish. The Northwestern District escapement index of 4,750 chum salmon was less than the district's lower bound SEG index of 5,000 fish (Appendix D4).

The Northwestern District was open to the CCPF for 48 periods with 10 commercial purse seine permits reporting harvest in 2013 (Appendix D11; Table 1). The Northwestern District purse seine CCPF harvest was 110,000 pink, 471 sockeye, 171 chum, and 97 coho salmon (Table 1). The 2013 Northwestern District pink salmon harvest was the second largest in the district since 1990 (Appendix D3). Competing enhanced stock fisheries with higher potential yield in the Northern, Coghill, and Southwestern districts attract fishing effort away from the Northwestern District. There was no commercial purse seine fishing effort in the Northwestern District beyond August 11, and the district closed to commercial fishing on September 20 (Appendix D11).

### **Southwestern District Summary**

The first aerial survey of the Southwestern District took place on July 18. Southwestern District wild pink salmon escapement indices were greater than anticipated levels by early August. The Southwestern District pink salmon escapement index of 348,000 fish was greater than the district's odd-year SEG range of 70,000 to 190,000 fish. The Southwestern District chum salmon escapement index was 1,400 fish, but there is not a chum salmon escapement goal for this district (Appendix D4).

PWSAC's 2013 forecast for pink salmon returning to AFK was 6.90 million fish. PWSAC's 2013 corporate pink salmon escapement requirements for AFK included a broodstock goal of

309,000 fish and a cost recovery goal of 468,000 fish. The preseason forecast for CPF harvest of AFK pink salmon was 6.12 million fish (PWSAC 2013a). PWSAC's 2013 forecast for chum salmon returning to AFK was 306,000 fish, all of which were projected to be available for CPF harvest. PWSAC's preseason forecast for enhanced sockeye salmon returning to Marsha Bay was 6,400 fish (PWSAC 2013a).

Fishing to target remote-release enhanced chum salmon at the AFK THA and SHA started on June 1 for 36 hours, followed by a weekly schedule of 60- and 84-hour purse seine fishing periods until July 21. Fishing to target remote-release enhanced sockeye salmon at Marsha Bay started on June 13 for 84 hours, followed by a weekly schedule of 60- and 84-hour purse seine fishing periods until July 24 (Appendix D11).

There were 44,300 sockeye salmon harvested in the Southwestern District in June and July. Otolith contribution estimates indicate that 11.5% of the sockeye salmon harvested during this time frame were wild fish and the remaining fish were produced at MBH. An additional 2,250 sockeye salmon were harvested in the Southwestern District during the month of August, 9.1% of which were wild fish (Appendix E25).

Southwestern District pink salmon harvest management in 2013 was based on aerial survey escapement indices, otolith contribution estimates, test fishing, harvest rates, and terminal area run entry. Test fishing conducted by the R/V *Solstice* in late July provided pink salmon harvest rate, stock composition, and sex ratio data. Fishing time and area was initially limited in the hatchery subdistricts and general district waters to ensure that migration corridors through Montague, Latouche, Elrington, Prince of Wales, Bainbridge, and Knight Island passages remained open for wild and enhanced stock salmon bound for northern PWS. However, area and time were extended soon thereafter due to the apparent magnitude of the wild and enhanced pink salmon returns to PWS in 2013.

Upon transition to pink salmon management in the Southwestern District on July 19, PWSAC recommended the continuation of an 84 hour fishing period in the AFK THA and SHA through July 21 (Appendix D11). A total of 249,000 pink salmon were harvested by the purse seine fleet in the Southwestern District during this CCPF period, 17.4% of which were wild fish. A 14-hour commercial purse seine fishing period followed on July 22, with area closures recommended by PWSAC for some hatchery subdistricts to allow for cost recovery fishing progress. Harvest results from this fishing period include 233,000 pink salmon, 20.5% of which were wild fish. PWSAC's 2013 pink salmon cost recovery fishing operations at AFK began on July 24. A series of CCPF fishing periods took place in the Southwestern District on July 25, 28, and 30. PWSAC's cumulative cost recovery progress for these same dates was 18.0%, 52.0%, and 79.3%, respectively. PWSAC recommended some area closures in Southwestern District hatchery subdistricts for these 14-hour fishing periods, the harvest totals for which include 1.97 (74.1%) million hatchery pink salmon, and 688,000 (25.9%) wild pink salmon. PWSAC completed its 2013 pink salmon cost recovery program on July 31. Starting August 1 and continuing through the remainder of the 2013 season, daily fishing periods were scheduled in the Southwestern District, with pink salmon harvests of an additional 30.20 million fish (Appendix E26). PWSAC reached their pink salmon egg-take goal at AFK on September 4. PWSAC reports that 100,000 pink salmon went unharvested at AFK (PWSAC 2013b). There was no commercial purse seine fishing effort in the Southwestern District beyond August 29, and the district closed to commercial fishing on September 20 (Appendix D11).

The Southwestern District was open for 15 CCPF periods targeting AFK enhanced chum salmon, 16 CCPF periods targeting Marsha Bay enhanced sockeye salmon, and 47 CCPF periods targeting late run pink salmon, with a total of 188 purse seine permits reporting harvest in 2013 (Appendix D11; Table 1). The 2013 Southwestern District CCPF harvest was 33.51 million pink, 275,000 chum, 48,300 coho, 46,600 sockeye, and 238 Chinook salmon (Table 1). The 2013 Southwestern District pink salmon harvest was the largest on record for the district (Appendix D3). The Southwestern District's 2013 pink salmon harvest was composed of approximately 54.3% AFK fish, 15.3% CCH fish, 14.8% WNH fish, 14.6% wild fish, and 1.0% SGH fish (Appendix E26). The 2013 AFK enhanced pink salmon run of 20.24 million fish was greater than PWSAC's preseason projection of 6.90 million fish (Appendix E1; PWSAC 2013a). Otolith contribution estimates indicate that AFK pink salmon were harvested in the CCPF outside of the Southwestern District, including 845,000 in the Northern District, 184,000 in the Eastern District, 139,000 in the Coghill District, 1,560 in the Eshamy District, and 541 in the Montague District (Appendices E10, E14, E19, E22 and E23). PWSAC's PWS total CCPF harvest estimate of 319,000 AFK enhanced chum salmon was greater than the preseason forecast harvest of 306,000 fish (PWSAC 2013a and 2013b).

### **Montague District Summary**

The first aerial survey of the Montague District took place on July 18. Montague District wild pink salmon escapement indices were greater than anticipated levels by early August. The Montague District pink salmon escapement index of 411,000 fish was greater than the district's odd-year SEG range of 140,000 to 280,000 fish. The Montague District chum salmon escapement index was 1,400 fish, but there is not a chum salmon escapement goal for this district (Appendix D4).

The Montague District was open to the commercial purse seine CCPF for 48 periods and 10 commercial purse seine permits reported harvest in 2013 (Appendix D11; Table 1). The 2013 Montague District commercial purse seine harvest was 414,000 pink, 2,090 coho, 41 chum, and 11 sockeye salmon (Table 1). The 2013 Montague District pink salmon commercial purse seine harvest was composed of approximately 75.1% wild fish, 21.0% SGH fish, 3.7% CCH fish, and 0.1% AFK fish (Appendix E22). Competing enhanced stock fisheries with higher potential yield in the Northern, Coghill, and Southwestern districts attracted fishing effort away from the Montague District. There was no commercial purse seine fishing effort in the Montague District beyond August 18, and the district closed to commercial fishing on September 20 (Appendix D11).

### **Southeastern District Summary**

The first aerial survey of the Southeastern District took place on June 17. Southeastern District wild pink and chum salmon escapement indices were greater than anticipated levels starting in mid-July. The Southeastern District pink salmon escapement index of 1.47 million fish was greater than the district's odd-year SEG range of 270,000 to 620,000 fish. The Southeastern District chum salmon escapement index of 35,900 fish was greater than the district's 1977–2013 mean index of 33,000 fish (Appendix D4).

Wild pink and chum salmon escapement indices supported the commencement of commercial fishing periods in the Southeastern District beginning on June 24. Initial Southeastern District CCPF periods were scheduled concurrently with openings in Eastern District waters to provide a broad distribution of opportunity for the harvest of surplus pink and chum salmon, and to spread

out the fleet. On June 24 and June 27, purse seine CCPF periods took place in Southeastern District waters and in the Eastern District, attracting most of the 91 and 108 permits actively fishing in PWS during these 2 periods (Appendices D1 and D11). Waters of the Southeastern District were opened for 17 fishing periods during the month of July, concurrent to 14-hour fishing periods targeting VFDA enhanced pink salmon in the Eastern District (Appendix D12). Starting August 1 and continuing through the remainder of the 2013 season, daily fishing periods were scheduled in the Southeastern District. There was no commercial purse seine fishing effort in the Southeastern District beyond August 6, and the district closed to commercial fishing on September 20 (Appendix D12).

The Southeastern District was open to the commercial purse seine CCPF for 60 periods with 71 commercial purse seine permits reporting harvest in 2013 (Appendix D11; Table 1). The 2013 Southeastern District purse seine CCPF harvest was 2.57 million pink, 40,900 chum, 8,390 sockeye, 1,460 coho, and 270 Chinook salmon (Table 1). The 2013 Southeastern District pink salmon harvest was the largest in the district since 1985 (Appendix D3).

## **PRINCE WILLIAM SOUND AND COPPER RIVER SUBSISTENCE 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 *Clupea pallasii*, smelt, 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 et al. (2013).

### **Lower Copper River and Prince William Sound**

Prior to 1987, commercial permit holders were not permitted to hold subsistence fishing permits during the commercial salmon net fishing season in Area E. During this time period, 5 AAC 01.020 *Subsistence Fishing by Commercial Fishermen* stated that, “Commercial fishermen may retain fish for their personal use from their lawfully taken commercial catch.” In 1993 this was repealed with the following regulation adopted, 5 AAC 01.021 *Retention of Fish Taken in Commercial Fisheries*. This stated that, “People who commercial fish may retain fish for their own use from their lawfully taken commercial catch.” This was repealed in 2004 with 5 AAC 39.010. *Retention of Fish Taken in a Commercial Fishery* adopted. This stated that, “A person engaged in a commercial fishery may retain finfish from lawfully taken commercial catch for that person’s own use, including for the use as bait in a commercial fishery. Finfish retained under this section may not be sold or bartered.” Moving this regulation from the Subsistence chapter to Chapter 39 allowed retained fish to be used as bait. In addition it eliminated conflict with 5 AAC 01.010(b) that specified that only Alaska residents may take finfish for subsistence purposes. Currently, commercial permit holders may retain fish from their commercial harvest for their own personal use and in addition (since 1987), permit holders that are Alaska residents may also participate in subsistence fisheries in the PWS area.

Subsistence fishing is allowed 7 days per week in the Copper River District from May 15 until 2 days before the opening of the commercial fishery. Boundary lines for Copper River District

subsistence fishing are the same as the commercial drift gillnet fishery. Once the commercial season has commenced, subsistence fishing is generally allowed only during commercial fishing periods. Regulation stipulates that 2 days following the closure of the Copper River District to commercial salmon fishing for the season, subsistence fishing is allowed, 7 days a week, until September 30. 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 prior to July 15.

In 2013, 531 subsistence permits were issued for the Copper River District, of which 39 (7.3 %) were not returned. Of the 492 permits that were returned, 171 permit holders reported not fishing. A harvest of 854 Chinook, 5,640 sockeye, and 1 coho salmon were reported from the 360 permits that reported fishing (Appendix F1). In addition 8 subsistence permits were issued for the PWS general subsistence district, of which 8 were returned. One permit holder reported not fishing and the other 7 permit holders reported a harvest of 12 sockeye and 24 chum salmon (Appendix F2). Overall, 655 Alaskan residences in 28 communities received permits for the PWS saltwater subsistence fisheries (see below for details of the Tatitlek and Chenega subsistence fisheries) with a total harvest of 7,670 fish (Appendix F8).

During the 2013 commercial fishing season in the Copper River District, 9,450 sockeye, 564 Chinook and 249 coho salmon were reported as retained for their own personal use by 331 commercial permit holders (Appendices A1, A3, A18, and F7). In PWS districts, 111 commercial permit holders reported retaining 1,330 sockeye, 89 Chinook, 119 pink, 64 coho, and 28 chum salmon as “homepack” from their commercial harvests. Overall in Area E, 387 commercial permit holders from more than 22 Alaska communities and the other 49 states reported retaining 12,100 salmon for “homepack” from their commercial catches (Appendices F7 and F8).

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 2013, a total of 65 federal permits were issued; 46 permits were returned, with 102 sockeye and 310 coho salmon reported as harvested (Appendix F6).

### **Tatitlek and Chenega Area Subsistence Fisheries**

Two subsistence areas were established in 1988 to provide opportunities for customary and traditional use of salmon by residents of the Tatitlek and Chenega villages. The Chenega area includes the entirety of the Southwestern District, as described in 5 AAC 24.200 (i), as well as a portion of the Montague District along the northwestern shore of Green Island from the westernmost tip to the northernmost tip of the island (5 AAC 01.648(a)). The Tatitlek subsistence area is located south of the Valdez Nonsubsistence Area described in 5 AAC 99.015(a)(5) and encompasses portions of the Northern and Eastern districts (5 AAC 01.648(b)). Initially, only residents of Chenega and Tatitlek were eligible for subsistence permits in their respective areas. In 1989, a court ruling qualified all residents of Alaska for a subsistence permit in both of these subsistence areas, invalidating 5 AAC 01.648(a)(7) and (b)(7) which stipulate that permits may only be issued in these villages.

Permit holders are allowed to fish in these areas from May 15, 7 days per week, until 2 days before the initial commercial fishing period in the associated commercial fishing districts. 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. Two days after the



closure of the commercial fishing season in the associated commercial fishing district, subsistence fisheries are open 7 days per week until October 31.

In 2013, 13 permits were issued for the Chenega subsistence area, of which 4 were returned. Of those returned permits, 3 reported fishing and 1 reported not fishing, with a total harvest of 19 sockeye and 63 chum salmon. In the Tatitlek area, 22 permits were issued of which 11 were returned. Of those returned permits, 8 reported fishing, with a total harvest of 613 sockeye, 277 coho, and 129 chum salmon (Appendix F3).

## **UPPER COPPER RIVER**

### **Glennallen Subdistrict Subsistence Fishery**

The Glennallen Subdistrict is that portion of the main stem Copper River upstream of the McCarthy Bridge to the mouth of the Slana River. This subdistrict is open June 1 through September 30 for continuous fishing. Fish wheels and dip nets are legal gear. Participants must be Alaska residents and are allowed 1 permit per household per year and the permit identifies the single gear type to be used. Total annual harvest, assuming that 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. Both tips of the caudal fin must be clipped on all harvested salmon. Subsistence permits, with completed harvest information, are required to be returned to ADF&G by October 31 of each year.

In 2013, a total of 808 dip net permits and 531 fish wheel permits were issued to subsistence users in the Glennallen Subdistrict. Of these 178 (12.1%) were not returned. A combined total of 2,148 Chinook and 73,700 sockeye salmon were reported harvested in the Glennallen Subdistrict. Comparatively, the previous 10-year average was 3,480 Chinook and 58,200 sockeye salmon for this subdistrict. Fish wheel effort has remained somewhat constant over the last 10 years, with an average number of 651 permits issued. The number of dip net permits issued has increased over the past few years. The 10-year average of 501 dip net permits is 62.0% of the number of permits issued in 2013 (Appendix F4). Historically, sockeye salmon dominate the harvest, representing approximately 93.8% of the reported harvest, followed by Chinook and coho salmon (Appendices A1, A3, A18 and F4). Harvest from the Glennallen Subdistrict subsistence fisheries was approximately 13,300 or 18% GH sockeye salmon.

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 2013, a total of 274 federal permits were issued for the Glennallen Subdistrict. Of these, 236 permits were returned (Appendix F6). A total 15,400 sockeye, 329 Chinook, and 20 coho salmon were reported harvested (Appendices A1, A3 and A18).

### **Batzulnetas Subsistence Fishery**

In 1988, an interim subsistence fishery was provided by emergency regulation at Batzulnetas to settle the United States District Court case of John vs. Alaska. 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 emergency order, starting June 1 when fishing periods

are limited to one 48-hour period per week; beginning in July, fishing time is increased to one 84-hour period each week until September 1, when the fishery closes.

There were 3 permits issued in 2013 with 862 sockeye, 0 Chinook and 0 coho salmon reported harvested (Appendices A1 and F5). For a description of regulation governing the Batzulnetas subsistence fishery, see Botz et al. (2013).

### **Chitina Subdistrict Personal Use Fishery**

The Chitina Subdistrict is the portion of the main stem Copper River from the downstream edge of the McCarthy Road Bridge to a marker 200 yards above Haley Creek. 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. The BOF determined that retaining the bag limit of 1 Chinook salmon provided for a reasonable opportunity to harvest Chinook salmon, and would also maintain Chinook salmon harvests at historical levels. Annual bag limits would continue to be 15 salmon for a household of 1 and 30 salmon for a household of 2 or more individuals. Based upon recent harvests, the BOF determined that a range of 100,000–150,000 sockeye salmon was necessary for personal use needs in the Chitina Subdistrict fishery. This range includes a hatchery contribution of 15,000–20,000 fish, resulting in an 85,000–130,000 wild sockeye salmon stock harvest allocation.

The *Copper River Personal Use Dip Net Salmon Fishery Management Plan* (5 AAC 77.591) requires the Chitina Subdistrict personal use fishery to be opened on June 7; an emergency order may be issued to close the fishery, effective June 7, and an emergency order to reopen the season shall be issued on or before June 15 depending on the strength and timing of the sockeye salmon run. Additionally, inseason adjustments to the fishery, as necessitated by fluctuations in salmon escapement, are made by emergency order. In 2013, there were 9 EOs issued to make adjustments to the dip net fishery. The first period started on Monday, June 10 and the last period closed on Saturday, August 31. The fishery is then open by regulation from September 1 to 30. Low Chinook salmon commercial harvest rates and poor escapement indices from Native Village of Eyak's fishwheel mark-recapture program led to the closure of the Chinook salmon fishery beginning Monday, June 24. There were 10,400 permits issued for the Chitina personal use fishery in 2013. Of these, 1,942 (18.6%) were not returned. The number of permits issued was above the 10-year average of 8,550 permits issued (Appendix F4). Expanded harvest for the Chitina Subdistrict personal use fishery in 2013 was 744 Chinook, 181,000 sockeye, and 797 coho salmon. The previous 10-year average reported harvests were 1,640 Chinook, 112,000 sockeye, and 2,120 coho salmon (Appendices A1, A3 and A18). Harvest from the Chitina Subdistrict personal use fishery was approximately 32,500 or 18% GH sockeye salmon.

In 2002, the federal government began issuing permits allowing subsistence harvests on federal lands in the Chitina Subdistrict. Federal subsistence users are allowed to use either a dip net or fish wheel in the Chitina Subdistrict. In 2013, a total of 99 federal permits were issued, of which 85 were returned (Appendix F6). The reported harvest was 1,950 sockeye, 17 Chinook, and 8 coho salmon (Appendices A1, A3 and A18).

## 2013 PRINCE WILLIAM SOUND HERRING FISHERIES

The Prince William Sound 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 and harvest strategy, see Botz et al. (2013).

### Season Summary

Based on herring stock assessment information, all Pacific herring fisheries between 1 July 2012 and 30 June 2013 were closed. The projected spawning biomass for spring 2013 was above the regulatory minimum spawning biomass of 22,000 tons.

Age Structured Assessment modeling was used to estimate the 2013 spawning biomass of PWS Pacific herring. The spawning biomass forecast for 2013 was 26,100 tons (Appendix G12). Recruit-age fish (age 3 and 4) were projected to represent 37% by weight or 59% by number. (Appendix G14). Because a majority of the spawning biomass was projected to be recruit-age fish, and uncertainty in the forecast point estimate, all commercial herring fisheries were closed.

Hydroacoustic, net sampling, and aerial surveys were conducted in 2013 to assess herring biomass, disease prevalence, age composition, and growth. In March and April 2013, acoustic surveys of adult herring were conducted with the ADF&G vessel R/V *Solstice*. Broad scale surveys were conducted in eastern PWS up to Boulder Bay. Detailed acoustics data were collected on fish aggregations in Port Gravina, between St. Matthews Bay and Knowles Head.

Age composition samples taken during spring 2013 varied by location and sample gear. Spawning fish samples from southeast PWS were predominately made up of 5 age classes: age 4 (19%), 6 (19%), 7 (15%), 8 (20%), and 9 (13%) (Appendix G14). No collections were made from the smaller spawning events in the Port Fidalgo and Montague Island areas. A small grab sample from 1 of the Kayak Island spawn events were predominately 7 (18%), 8 (31%), and 9 (28%) year old fish. Some prespawning samples from Eastern PWS (upper Port Gravina) were predominantly younger fish (66% age 2).

Herring disease assessment has been included as part of the annual age, sex, and size assessment completed each spring since 1993. Disease sampling in April 2013 found no fish positive for viral hemorrhagic septicemia virus (VHSV) in 120 fish examined. In adult herring, the prevalence of *Ichthyophonus hoferi* was 32.8% in Port Gravina (119 fish examined), representing a decrease in prevalence from samples collected in 2011 and 2012.

Nineteen aerial surveys were conducted between 2 April and 9 May 2013. Surveys documented spawn in eastern PWS between St. Matthews Bay and Knowles Head (5–6, 20–21, and 26 April; and 8 May); around Gravina Point (20–22 and 24–26 April); within Tatitlek Narrows (21 April and 8 May); between Knowles Head and Two Moon Bay, and in Landlock Bay (9 April and 7–8 May); on the northwest side of Boulder Bay (8 May), between Port Chalmers and Stockdale Harbor (24 April) and southwest of Port Chalmers (9 May). Preliminary spawn estimates are

20.7 mile-days (south of Knowles Head) and 5.5 mile-days (north of Knowles Head), and 3.2 mile-days (Montague Island) for a total of 29.3 mile-days of spawn. This is fewer mile-days of spawn in PWS than in any year in which commercial fishing occurred since 1973. No fish or spawn were documented in Fairmont Bay, Naked Island, or Knight Island. An additional 5.3 mile-days of spawn were documented on Kayak Island on 5 April, but are not included in our assessment for PWS (Appendix G15).

### **2013–2014 Herring Season Outlook**

Given the PWS herring spawning population, current fish size and age structure, a commercial harvest is not anticipated in 2014. Consecutive years of low recruitment will further delay the recovery of the herring population to a size capable of supporting a sustainable commercial harvest. ADF&G will continue to monitor the PWS herring biomass to assess growth and recruitment. An ongoing disease study will continue to examine the incidence of VHSV and *I. hoferi* in the PWS herring population.

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## **TABLES AND FIGURES**

Table 1.–Prince William Sound Management Area commercial salmon harvest by gear type and district, 2013.

District	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Eastern	208	217	13,024	159,236	25,566,365	94,277	25,833,119
Northern	178	18	3,462	3,261	17,062,533	6,326	17,075,600
Coghill	130	32	1,978	7,573	6,690,850	70,271	6,770,704
Northwestern	10	0	471	97	110,432	171	111,171
Southwestern	188	238	46,574	48,276	33,510,249	275,290	33,880,627
Montague	10	0	11	2,085	413,816	41	415,953
Southeastern	71	270	8,392	1,455	2,570,809	40,929	2,621,855
Unakwik	2	0	2,815	1	81	159	3,056
Purse seine total	211	775	76,727	221,984	85,925,135	487,464	86,712,085
Bering River	56	16	3,286	46,959	2	16	50,279
Copper River	515	8,826	1,607,992	244,985	65,366	10,169	1,937,338
Coghill	388	259	93,734	62,968	2,450,108	2,100,341	4,707,410
Eshamy	326	74	336,061	1,724	62,176	184,334	584,369
Montague	151	140	2,077	255	28,097	483,686	514,255
Unakwik	2	1	776	0	203	28	1,008
Drift gillnet total	522	9,316	2,043,926	356,891	2,605,952	2,778,574	7,794,659
Eshamy	28	59	203,019	360	19,114	42,630	265,182
Set gillnet total	28	59	203,019	360	19,114	42,630	265,182
Solomon Gulch	1	0	9	39,946	2,274,237	75	2,314,267
Cannery Creek	1	0	0	0	0	0	0
Wally Noerenberg	1	0	0	0	1,318,914	761,280	2,080,194
Main Bay	0	0	0	0	0	0	0
Armin F. Koernig	1	0	0	0	496,523	0	496,523
Hatchery total <sup>a</sup>	4	0	9	39,946	4,089,674	761,355	4,890,984
Test fishery	1	0	0	0	557	0	557
Home pack	393	657	10,810	313	248	81	12,109
Confiscated fish	1	0	0	0	0	53	53
Donated fish	0	0	0	0	0	0	0
Misc. total		657	10,810	313	805	134	12,719
Prince William Sound total		10,807	2,334,491	619,494	92,640,680	4,070,157	99,675,629

<sup>a</sup> Hatchery sales for hatchery operating costs.



Table 2.—Total commercial salmon harvest by species from all gear types, Prince William Sound Area, 2003–2013.

Year	Gear <sup>a</sup>	Chinook		Sockeye		Coho		Pink		Chum	
2003	DGN	48,056	(99.8%)	1,946,105	(71.4%)	434,634	(83.3%)	118,951	(0.2%)	753,883	(19.8%)
2003	SGN	0	(0.0%)	215,733	(7.9%)	663	(0.1%)	28,537	(0.1%)	6,265	(0.2%)
2003	PS	120	(0.2%)	197,407	(7.2%)	66,838	(12.8%)	38,661,721	(74.4%)	1,481,727	(38.9%)
2003	Hatchery	0	(0.0%)	366,770	(13.5%)	19,782	(3.8%)	13,156,974	(25.3%)	1,563,019	(41.1%)
	Total	48,176		2,726,015		521,917		51,966,183		3,804,894	
2004	DGN	38,432	(99.6%)	1,500,223	(79.3%)	575,122	(92.8%)	81,090	(0.3%)	581,762	(29.1%)
2004	SGN	11	(0.0%)	91,412	(4.8%)	825	(0.1%)	51,655	(0.2%)	10,381	(0.5%)
2004	PS	156	(0.4%)	17,530	(0.9%)	33,990	(5.5%)	11,573,514	(49.2%)	881,129	(44.0%)
2004	Hatchery	0	(0.0%)	282,632	(14.9%)	9,974	(1.6%)	11,825,224	(50.3%)	528,676	(26.4%)
	Total	38,599		1,891,797		619,911		23,531,483		2,001,948	
2005	DGN	35,024	(99.4%)	1,606,130	(80.8%)	360,574	(67.8%)	228,463	(0.4%)	888,847	(42.3%)
2005	SGN	0	(0.0%)	109,532	(5.5%)	882	(0.2%)	126,135	(0.2%)	3,452	(0.2%)
2005	PS	224	(0.6%)	63,482	(3.2%)	142,672	(26.8%)	47,017,421	(78.4%)	568,847	(27.1%)
2005	Hatchery	0	(0.0%)	207,605	(10.4%)	27,417	(5.2%)	12,572,614	(21.0%)	638,320	(30.4%)
	Total	35,248		1,986,749		531,545		59,944,633		2,099,466	
2006	DGN	30,603	(99.2%)	2,012,665	(79.8%)	477,430	(62.5%)	145,348	(0.7%)	314,487	(14.4%)
2006	SGN	9	(0.0%)	124,087	(4.9%)	352	(0.0%)	20,863	(0.1%)	9,883	(0.5%)
2006	PS	227	(0.7%)	37,745	(1.5%)	268,574	(35.2%)	11,828,266	(54.5%)	1,032,627	(47.3%)
2006	Hatchery	0	(0.0%)	348,276	(13.8%)	17,198	(2.3%)	9,727,499	(44.8%)	824,558	(37.8%)
	Total	30,839		2,522,773		763,554		21,721,976		2,181,555	
2007	DGN	39,300	(98.2%)	2,645,002	(81.9%)	190,025	(57.8%)	188,950	(0.3%)	1,100,667	(30.8%)
2007	SGN	18	(0.0%)	196,537	(6.1%)	365	(0.1%)	13,796	(0.0%)	24,651	(0.7%)
2007	PS	713	(1.8%)	66,004	(2.0%)	108,593	(33.0%)	51,270,207	(80.8%)	1,353,892	(37.8%)
2007	Hatchery	0	(0.0%)	321,330	(10.0%)	29,644	(9.0%)	11,995,924	(18.9%)	1,099,730	(30.7%)
	Total	40,031		3,228,873		328,627		63,468,877		3,578,940	
2008	DGN	11,643	(98.8%)	1,061,224	(81.7%)	325,249	(59.1%)	960,113	(2.3%)	2,561,113	(50.5%)
2008	SGN	18	(0.2%)	162,403	(12.5%)	151	(0.0%)	20,455	(0.0%)	53,627	(1.1%)
2008	PS	127	(1.1%)	74,912	(5.8%)	202,003	(36.7%)	33,727,052	(79.6%)	1,820,049	(35.9%)
2008	Hatchery	0	(0.0%)	0	(0.0%)	22,623	(4.1%)	7,639,384	(18.0%)	641,332	(12.6%)
	Total	11,788		1,298,539		550,026		42,347,004		5,076,121	

-continued-

Table 2.–Page 2 of 2.

Year	Gear <sup>a</sup>	Chinook		Sockeye		Coho		Pink		Chum	
2009	DGN	9,801	(97.7%)	1,555,669	(81.4%)	275,636	(91.9%)	400,524	(2.2%)	2,292,015	(71.2%)
2009	SGN	47	(0.5%)	152,642	(8.0%)	49	(0.0%)	4,251	(0.0%)	50,748	(1.6%)
2009	PS	28	(0.3%)	70,473	(3.7%)	6,739	(2.2%)	10,765,944	(58.7%)	269,470	(8.4%)
2009	Hatchery	0	(0.0%)	133,873	(7.0%)	17,424	(5.8%)	7,411,111	(40.4%)	608,541	(18.9%)
	Total	10,036		1,912,305		299,848		18,355,212		3,219,320	
2010	DGN	10,131	(99.6%)	1,691,735	(83.1%)	298,140	(89.4%)	3,488,016	(4.9%)	3,301,015	(76.4%)
2010	SGN	17	(0.2%)	282,467	(13.9%)	69	(0.0%)	16,766	(0.0%)	80,516	(1.9%)
2010	PS	22	(0.2%)	62,759	(3.1%)	8,338	(2.5%)	62,257,799	(87.3%)	186,537	(4.3%)
2010	Hatchery	0	(0.0%)	0	(0.0%)	27,074	(8.1%)	5,546,994	(7.8%)	754,805	(17.5%)
	Total	10,170		2,036,961		333,621		71,309,575		4,322,873	
2011	DGN	18,929	(99.0%)	3,155,094	(89.3%)	233,663	(63.1%)	829,504	(2.5%)	1,305,120	(68.2%)
2011	SGN	37	(0.2%)	312,659	(8.9%)	612	(0.2%)	17,629	(0.1%)	25,350	(1.3%)
2011	PS	150	(0.8%)	64,171	(1.8%)	92,258	(24.9%)	26,110,579	(78.2%)	107,839	(5.6%)
2011	Hatchery	0	(0.0%)	0	(0.0%)	43,797	(11.8%)	6,436,933	(19.3%)	475,881	(24.9%)
	Total	19,116		3,531,924		370,330		33,394,645		1,914,190	
2012	DGN	12,939	(98.3%)	3,249,616	(87.8%)	185,593	(88.2%)	1,237,938	(4.5%)	2,865,469	(74.7%)
2012	SGN	14	(0.1%)	294,950	(8.0%)	97	(0.0%)	17,311	(0.1%)	24,368	(0.6%)
2012	PS	197	(1.5%)	155,045	(4.2%)	22,404	(10.6%)	22,805,518	(82.7%)	504,198	(13.1%)
2012	Hatchery	9	(0.1%)	1,198	(0.0%)	2,372	(1.1%)	3,521,887	(12.8%)	440,941	(11.5%)
	Total	13,159		3,700,809		210,466		27,582,654		3,834,976	
10- year avg.	DGN	25,486	(99.2%)	2,042,346	(82.2%)	335,607	(74.1%)	767,890	(1.9%)	1,596,438	(49.8%)
	SGN	17	(0.1%)	194,242	(7.8%)	407	(0.1%)	31,740	(0.1%)	28,924	(0.9%)
	PS	196	(0.8%)	80,953	(3.3%)	95,241	(21.0%)	31,601,802	(76.4%)	820,632	(25.6%)
	Hatchery	1	(0.0%)	166,168	(6.7%)	21,731	(4.8%)	8,983,454	(21.7%)	757,580	(23.6%)
	Total	25,700		2,483,710		452,985		41,384,886		3,203,574	
2013	DGN	9,314	(91.8%)	2,043,926	(88.0%)	356,891	(57.6%)	2,605,952	(2.8%)	2,778,574	(68.3%)
2013	SGN	59	(0.6%)	203,019	(8.7%)	360	(0.1%)	19,114	(0.0%)	42,630	(1.0%)
2013	PS	775	(7.6%)	76,727	(3.3%)	221,984	(35.9%)	85,925,135	(92.8%)	487,464	(12.0%)
2013	Hatchery	0	(0.0%)	9	(0.0%)	39,946	(6.5%)	4,089,674	(4.4%)	761,355	(18.7%)
	Total	10,148		2,323,681		619,181		92,639,875		4,070,023	

<sup>a</sup> DGN = Drift gillnet, SGN = set gillnet, and PS = purse seine gear.

Table 3.—Mean price and estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound, 2013.

Purse Seine		Number	Pounds	Average weight	Price	Value
Species						
Chinook		775	8,201	10.58	\$1.88	\$15,444
Sockeye		76,727	470,891	6.14	\$1.69	\$796,220
Coho		221,984	1,697,940	7.65	\$0.95	\$1,608,923
Pink		85,925,135	238,018,132	2.77	\$0.42	\$100,334,069
Chum		487,464	3,683,581	7.56	\$0.59	\$2,157,525
		86,712,085	243,878,745			\$104,912,182
Drift Gillnet		Number	Pounds	Average weight	Price	Value
Species						
Chinook		9,316	172,845	18.55	\$5.63	\$973,720
Sockeye		2,043,926	12,493,882	6.11	\$2.35	\$29,389,403
Coho		356,891	2,892,610	8.11	\$1.38	\$3,986,567
Pink		2,605,952	7,179,124	2.75	\$0.34	\$2,465,469
Chum		2,778,574	20,609,389	7.42	\$0.57	\$11,654,134
		7,794,659	43,347,850			\$48,469,293
Set gillnet		Number	Pounds	Average weight	Price	Value
Species						
Chinook		59	1,005	17.03	\$3.00	\$3,015
Sockeye		203,019	1,200,938	5.92	\$1.90	\$2,278,575
Coho		360	2,501	6.95	\$1.02	\$2,556
Pink		19,114	52,786	2.76	\$0.32	\$17,062
Chum		42,630	318,383	7.47	\$0.59	\$188,004
		265,182	1,575,613			\$2,489,211
Hatchery Sales		Number	Pounds	Average weight	Price	Value
Species						
Chinook		0	0	0.00	\$0.00	\$0
Sockeye		9	65	7.22	\$1.69	\$110
Coho		39,946	307,494	7.70	\$0.70	\$214,752
Pink		4,089,674	11,226,239	2.75	\$0.78	\$8,765,309
Chum		761,355	5,638,467	7.41	\$0.61	\$3,424,927
		4,890,984	17,172,265			\$12,405,098

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Table 3.–Page 2 of 2.

Confiscated					
Species	Number	Pounds	Average weight	Price	Value
Chinook	0	0	0.00	\$0.00	\$0
Sockeye	0	0	0.00	\$0.00	\$0
Coho	0	0	0.00	\$0.00	\$0
Pink	0	0	0.00	\$0.00	\$0
Chum	53	430	8.11	\$0.57	\$243
	53	430			\$243

Gear type	Value of catch	No. of permits	Average earnings
Purse seine	\$104,912,182	211	\$497,214
Drift gillnet	\$48,469,293	522	\$92,853
Set gillnet	\$2,489,211	28	\$88,900
Subtotal			
Value of CPF catch	\$155,870,686		
Hatchery	\$12,405,098		
Confiscated	\$243		
Grand total	\$168,276,028		

Note: CPF is common property fishery.

Table 4.–Average price paid to permit holders for salmon, Prince William Sound, 1988–2013.

Year	Chinook salmon		Sockeye salmon			Coho salmon			Pink salmon			Chum salmon		
	Gillnet		Gillnet			Gillnet			Gillnet			Gillnet		
	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
1988	\$2.23	\$2.43	\$3.20	\$2.74	\$2.68	\$2.35	\$1.19	\$1.85	NA	\$0.60	\$0.79	NA	\$0.92	\$0.72
1989	\$2.25	\$0.00	\$2.30	\$0.00	\$2.68	\$0.60	\$0.00	\$1.58	NA	\$0.00	\$0.48	NA	\$0.00	\$0.43
1990	\$2.24	\$1.45	\$2.13	\$1.59	\$1.50	\$0.97	\$0.69	\$0.50	NA	\$0.30	\$0.30	NA	\$0.70	\$0.70
1991	\$1.65	\$1.00	\$1.28	\$1.28	\$1.00	\$0.65	\$0.44	\$0.45	NA	\$0.12	\$0.12	NA	\$0.40	\$0.40
1992	\$2.50	\$1.55	\$2.50	\$1.55	\$1.55	\$0.90	\$0.90	\$0.90	NA	\$0.18	\$0.18	NA	\$0.55	\$0.55
1993	\$1.82	\$0.97	\$1.32	\$0.87	\$0.83	\$0.80	\$0.66	\$0.54	NA	\$0.17	\$0.16	NA	\$0.71	\$0.36
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 <sup>a</sup>	\$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
10-year average	\$5.02	\$1.59	\$2.02	\$1.21	\$1.08	\$1.00	\$0.75	\$0.61	\$0.28	\$0.21	\$0.24	\$0.30	\$0.48	\$0.47
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

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.

<sup>a</sup> Values from COAR 2011.

Table 5.—Estimated exvessel value of the total commercial salmon harvest by gear type with previous 10-year average, Prince William Sound, 2003–2013.

Purse Seine (thousands of dollars)												
Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Previous 10-year avg.	2013
Chinook	0.9	1.3	1.8	4.9	9.3	2.5	1.0	0.6	6.1	3.3	3.2	15.4
Sockeye	848.0	46.6	207.0	220.0	338.3	540.1	584.6	705.2	560.5	1,449.0	549.9	796.2
Coho	226.6	121.7	103.3	1,426.7	546.8	2,056.9	22.5	48.5	633.1	117.3	530.3	1,608.9
Pink	10,716.4	4,293.6	13,104.2	6,688.1	28,839.8	39,059.3	7,890.2	78,063.4	35,834.3	37,732.0	26,222.1	100,334.1
Chum	1,717.1	1,229.0	773.6	3,007.9	3,499.2	8,003.0	1,123.3	1,019.5	691.5	2,450.0	2,351.4	2,157.5
	13,509.0	5,692.0	14,190.0	11,347.7	33,233.4	49,661.8	9,621.7	79,837.2	37,725.5	41,751.6	29,657.0	104,912.2
Drift Gillnet (thousands of dollars)												
Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Previous 10-year avg.	2013
Chinook	3,810.0	4,050.9	3,575.3	3,145.4	3,886.8	1,511.4	956.1	1,025.4	2,148.1	1,352.5	2,546.2	973.7
Sockeye	13,792.0	13,436.8	15,849.2	19,375.9	26,169.0	11,533.4	17,386.8	18,486.7	36,356.1	37,444.5	20,983.0	29,389.4
Coho	1,762.6	3,561.7	2,374.7	3,972.1	1,391.2	3,937.2	3,197.3	3,523.0	2,032.0	1,646.2	2,739.8	3,986.6
Pink	27.9	12.1	84.3	54.1	82.4	1,195.8	363.4	3,446.4	1,025.5	1,660.0	795.2	2,465.5
Chum	821.8	976.6	1,965.4	845.7	2,542.3	10,853.9	9,227.8	11,974.0	8,669.2	13,170.8	6,104.8	11,654.1
	20,214.3	22,038.1	23,848.9	27,393.2	34,071.7	29,031.7	31,131.4	38,455.4	50,230.8	55,274.1	33,169.0	48,469.3
Set Gillnet (thousands of dollars)												
Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Previous 10-year avg.	2013
Chinook	0.0	0.2	0.0	0.1	1.3	0.5	1.3	0.8	1.8	0.2	0.6	3.0
Sockeye	1,070.1	454.7	608.5	822.2	1,318.8	1,238.7	1,451.9	3,103.1	2,993.3	2,454.5	1,551.6	2,278.6
Coho	1.6	1.6	4.7	1.9	0.9	1.4	0.2	0.2	2.3	0.5	1.5	2.6
Pink	6.3	7.4	23.5	8.3	5.4	21.0	3.4	20.6	21.9	28.5	14.6	17.1
Chum	6.7	17.3	6.9	29.9	53.4	231.8	197.3	451.0	163.9	122.0	128.0	188.0
	1,084.7	481.2	643.7	862.5	1,379.7	1,493.4	1,654.2	3,575.6	3,183.3	2,605.7	1,696.4	2,489.2
Hatchery Sales (thousands of dollars)												
Species	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Previous 10-year avg.	2013
Chinook	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Sockeye	1,769.2	997.0	2,383.4	2,173.8	1,790.8	0.0	1,088.4	0.0	0.0	7.7	1,021.0	0.1
Coho	0.0	35.7	0.0	102.8	162.0	67.9	145.3	44.8	280.2	0.2	83.9	214.8
Pink	6,068.4	5,718.7	7,288.9	7,300.4	6,809.4	7,574.5	5,208.9	8,911.2	11,867.5	12,381.6	7,912.9	8,765.3
Chum	1,643.2	779.3	1,704.7	2,893.2	2,105.9	2,465.4	1,816.0	2,894.8	2,802.7	2,952.3	2,205.7	3,424.9
	9,480.8	7,530.7	11,377.0	12,470.2	10,868.1	10,107.8	8,258.5	11,850.8	14,950.4	15,341.9	11,223.6	12,405.1

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Table 5.–Page 2 of 2.

Other Gear (thousands of dollars)											Previous	
Species	2003	2004	2005	2006	2007	2008	2009	2010	2011 <sup>a</sup>	2012 <sup>a</sup>	10-year avg.	2013 <sup>a</sup>
Chinook	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Sockeye	0.2	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
Coho	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pink	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	1.4	0.0
Chum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.1	0.2	0.2
	3.0	1.1	0.4	0.0	0.0	0.0	0.0	0.0	12.3	1.3	1.8	0.2
Average Earnings (thousands of dollars)												
Purse seine	\$127.4	\$54.2	\$137.8	\$299.4	\$447.4	\$352.2	\$518.4	\$216.8	\$206.2	\$186.4	\$254.6	\$497.2
Drift gillnet	\$39.3	\$42.2	\$46.8	\$69.0	\$57.4	\$57.3	\$75.3	\$96.8	\$97.9	\$105.9	\$68.8	\$92.9
Set gillnet	\$38.7	\$17.8	\$23.8	\$53.1	\$57.4	\$59.7	\$132.4	\$109.8	\$109.8	\$89.9	\$69.2	\$88.9
Number of Permits Fished												
Purse seine	106	105	103	111	111	141	154	174	183	224	141	211
Drift gillnet	514	522	508	494	506	507	511	519	513	522	512	522
Set gillnet	28	27	27	26	26	25	27	29	29	29	27	28

<sup>a</sup> Confiscated fish.

Table 6.–Spawning escapement goals for Area E salmon stocks, 2013.

Species/stock	Goal		Long-term target <sup>a</sup>	Type <sup>b</sup>	Year implemented <sup>c</sup>	Evaluation method
	Lower	Upper				
<u>Chinook salmon</u>						
Copper River	24,000	and up	27,000	SEG <sup>d</sup>	2003	Mark-recapture
<u>Coho salmon</u>						
Bering River	13,000	– 33,000		SEG	2003	Aerial surveys
Copper River Delta	32,000	– 67,000		SEG	2003	Aerial surveys
<u>Sockeye salmon</u>						
Bering River	15,000	– 33,000		SEG	2012	Aerial surveys
Upper Copper River <sup>e</sup>	360,000	– 750,000	361,000	SEG	2012	Didson sonar
Copper River Delta <sup>f</sup>	55,000	– 130,000	84,500	SEG	2003	Aerial surveys
Coghill Lake	20,000	– 60,000		SEG	2012	Weir
Eshamy Lake	13,000	– 28,000		BEG	2009	Weir
<u>Pink Salmon <sup>g</sup></u>						
<u>Even year Broodline</u>						
Eastern District	250,000	– 580,000	390,000	SEG	2012	Aerial surveys
Northern/Unakwik districts	140,000	– 210,000	160,000	SEG	2012	Aerial surveys
Coghill District	60,000	– 150,000	100,000	SEG	2012	Aerial surveys
Northwestern District	70,000	– 140,000	100,000	SEG	2012	Aerial surveys
Eshamy District	3,000	– 11,000	6,000	SEG	2012	Aerial surveys
Southwestern District	70,000	– 160,000	130,000	SEG	2012	Aerial surveys
Montague District	50,000	– 140,000	70,000	SEG	2012	Aerial surveys
Southeastern District	150,000	– 310,000	200,000	SEG	2012	Aerial surveys
<u>Odd-year Broodline</u>						
Eastern District	310,000	– 640,000	410,000	SEG	2013	Aerial surveys
Northern/Unakwik districts	90,000	– 180,000	130,000	SEG	2013	Aerial surveys
Coghill District	60,000	– 250,000	130,000	SEG	2013	Aerial surveys
Northwestern District	50,000	– 110,000	80,000	SEG	2013	Aerial surveys
Eshamy District	4,000	– 11,000	9,000	SEG	2013	Aerial surveys
Southwestern District	70,000	– 190,000	120,000	SEG	2013	Aerial surveys
Montague District	140,000	– 280,000	210,000	SEG	2013	Aerial surveys
Southeastern District	270,000	– 620,000	360,000	SEG	2013	Aerial surveys
<u>Chum salmon <sup>h</sup></u>						
Eastern District	50,000	and up	103,100	SEG <sup>d</sup>	2006	Aerial surveys
Northern District	20,000	and up	40,100	SEG <sup>d</sup>	2006	Aerial surveys
Coghill District	8,000	and up	18,750	SEG <sup>d</sup>	2006	Aerial surveys
Northwestern District	5,000	and up	13,000	SEG <sup>d</sup>	2006	Aerial surveys
Southeastern District	8,000	and up	25,000	SEG <sup>d</sup>	2006	Aerial surveys

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- <sup>a</sup> Managed for escapements that on average match the historical average escapement listed. For pink salmon, these long-term targets are the median escapement values.
- <sup>b</sup> 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.
- <sup>c</sup> Goals are generally adopted the year before they are implemented.
- <sup>d</sup> Goals are lower bound SEG goals (5 AAC 39.222).
- <sup>e</sup> 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.
- <sup>f</sup> The Copper River Delta sockeye salmon goal is managed for escapements that, on average, match the long-term escapement index of 84,500.
- <sup>g</sup> Pink and chum salmon escapements are indexed by the area under the curve (AUC) of weekly aerial surveys adjusted for stream life.
- <sup>h</sup> There are no chum salmon goals for Unakwik, Eshamy, Southwestern, or Montague districts, but streams are surveyed.

Table 7.—Preseason harvest projections for the 2013 common property salmon fishery by district and species, Prince William Sound Area.

District/facility <sup>a</sup>	Forecast type <sup>b</sup>	Chinook		Sockeye		Coho <sup>c</sup>		Pink		Chum	
		Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range	Point estimate	Range
Copper River <sup>d</sup>	CPF harvest	20	1–48	1,220	550–1,890	240	18–463				
Bering River <sup>e</sup>	CPF harvest			17	0–52	47	0–98				
Coghill <sup>f</sup>	CPF harvest			126	58–300						
Eshamy <sup>f</sup>	CPF harvest			32	9–57						
Unakwik <sup>g</sup>	CPF harvest			6	1–10						
General districts	CPF harvest							4,751	0–22,151	312	18–631
Total wild stock		20	1–48	1,401	727–2,100	287	60–516	4,751	0–22,151	312	18–631
SGH	CPF harvest					106		10,872			
AFK	CPF harvest							6,123		306	
WNH <sup>h</sup>	CPF harvest					72		5,497		2,513	
CCH	CPF harvest							6,728			
MBH <sup>i</sup>	CPF harvest			1,128							
GH	CPF harvest			280	130–440						
Total hatchery				1,408		178		29,220		2,819	
Total hatchery and wild		20		2,809		465		33,971		3,131	

-continued-

*Note:* All values are in thousands. CPF is common property fishery. 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).

- <sup>a</sup> 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. Harvest estimates are made only for species that constitute a significant portion of the catch.
- <sup>b</sup> The Alaska Department of Fish and Game (ADF&G) provides common property fishery (CPF) harvest forecasts for all wild stocks and Gulkana Hatchery sockeye salmon. Hatchery operators provide CPF forecasts for PWS hatchery returns and Gulkana Hatchery sockeye salmon. Harvest projections do not include salmon harvested by hatcheries for cost recovery.
- <sup>c</sup> ADF&G provides commercial common property (CCPF) harvest forecasts for Copper River and Bering River coho salmon.
- <sup>d</sup> 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).
- <sup>e</sup> Bering River coho and sockeye salmon harvest estimates are based on 10-year mean annual harvest.
- <sup>f</sup> Formalized sibling model forecast procedures are used for Coghill and Eshamy District sockeye salmon runs. The Coghill District's wild pink and chum salmon harvest is included in the "General (PWS) districts" projection.
- <sup>g</sup> The Unakwik District sockeye salmon harvest estimate is based on the 10-year mean annual harvest.
- <sup>h</sup> Wally Noerenberg Hatchery chum and coho salmon harvest estimates include all on-site and remote release runs of chum and coho salmon.
- <sup>i</sup> Main Bay Hatchery sockeye salmon harvest estimate includes all on site and remote release runs of sockeye salmon.

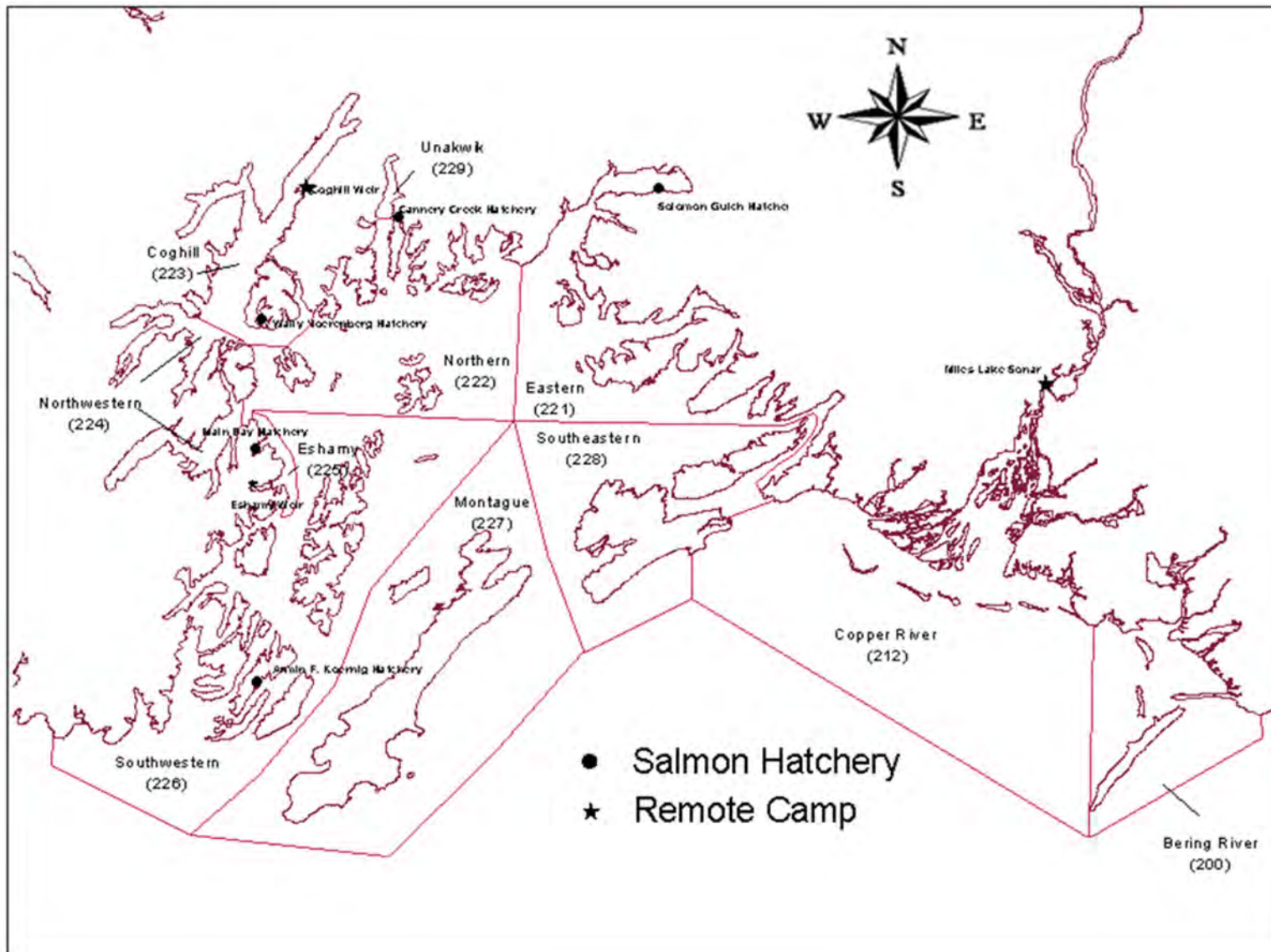


Figure 1.—Prince William Sound Management Area showing commercial fishing districts, salmon hatcheries, weir locations, and Miles Lake sonar camp.

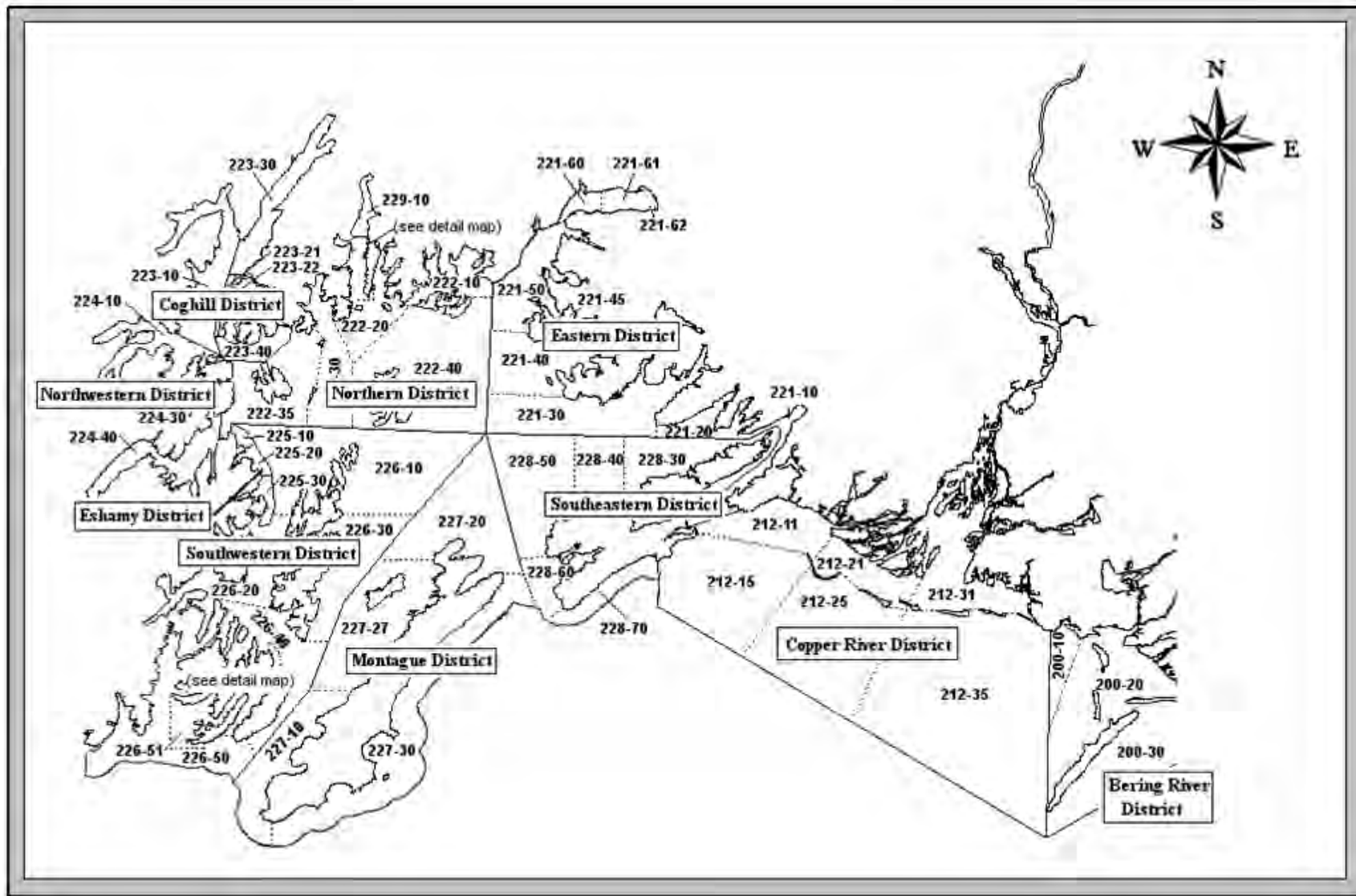


Figure 2.—Prince William Sound Management Area showing commercial fishing districts and statistical reporting areas.

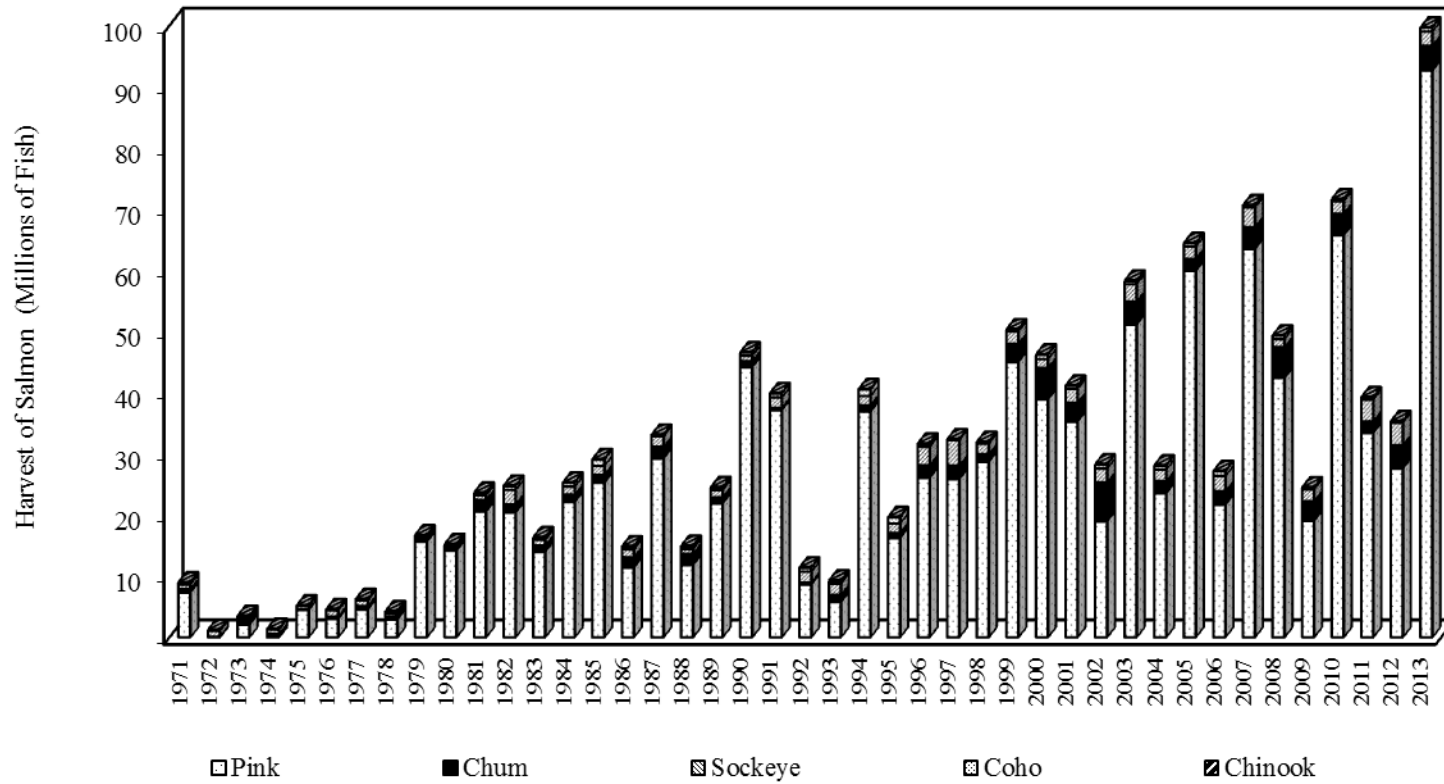


Figure 3.—Commercial salmon harvests in Prince William Sound, 1971–2013.

## **APPENDIX A: COPPER RIVER**

Appendix A1.—Total estimated sockeye salmon runs to the Copper River by end user or destination with previous 10-year average, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-year Average	2013
Commercial harvest <sup>a</sup>	1,188,052	1,048,004	1,331,664	1,496,754	1,901,773	320,815	896,621	636,214	2,052,432	1,866,541	1,273,887	1,608,117
Commercial, homepack <sup>a</sup>	4,077	525	1,785	1,539	2,023	2,172	6,528	7,064	9,070	7,985	4,277	9,448
Commercial, donated <sup>a</sup>	35	74	83	114	180	80	47	0	0	0	61	0
Educational drift gillnet permit <sup>a</sup>	0	0	42	16	62	29	8	61	23	200	44	152
Subsistence (Cordova, drift gillnet) <sup>b</sup>	1,607	1,822	830	4,355	6,148	3,969	1,764	1,980	1,783	4,270	2,853	5,639
Federal Subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel) <sup>b</sup>	0	0	109	150	36	32	46	36	35	64	51	102
Subsistence (Batzulnetas, dip net, fish wheel or spear) <sup>b</sup>	164	182	0	0	1	1	0	106	9	101	56	862
Subsistence (Glennallen Subdistrict, dip net, fish wheel or spear) <sup>c</sup>	47,007	55,510	64,213	57,710	65,714	43,157	46,849	70,719	59,622	76,305	58,681	73,728
Federal Subsistence (Glennallen subdistrict, dip net, fish wheel or spear) <sup>d</sup>	13,616	17,704	19,973	16,711	17,642	14,475	14,033	14,134	15,753	16,487	16,053	17,060
Personal Use Reported (Chitina Subdistrict, dip net) <sup>c</sup>	80,796	107,312	120,013	123,261	125,126	81,359	90,035	138,487	128,052	127,143	112,158	180,663
Federal Subsistence (Chitina subdistrict, dip net) <sup>d</sup>	717	1,215	1,265	1,379	1,028	959	882	2,324	1,933	915	1,262	2,252
Upriver sport harvest <sup>e</sup>	7,108	6,464	8,135	14,297	23,009	11,431	13,415	14,743	7,727	23,404	12,973	27,407
Delta sport harvest <sup>e</sup>	631	952	656	113	1,704	1,225	959	1,342	838	764	918	1,026
Upriver spawning escapement <sup>f</sup>	517,638	462,664	528,816	600,378	624,457	491,516	477,327	524,692	621,545	970,611	581,964	889,143
Delta spawning escapement <sup>g</sup>	146,300	138,770	116,812	197,792	176,570	135,900	138,584	167,810	153,014	133,700	150,525	151,410
Hatchery broodstock/Excess <sup>h</sup>	45,024	6,618	92,455	97,192	28,648	44,865	43,409	157,980	59,589	65,348	64,113	72,369
Total estimated sockeye salmon run size	2,052,772	1,847,816	2,286,851	2,611,761	2,974,121	1,151,985	1,730,507	1,737,692	3,111,425	3,293,838	2,279,877	3,039,378

<sup>a</sup> Numbers are from fish ticket data. Homepack numbers for sockeye salmon are voluntarily reported, but are legally required.

<sup>b</sup> Data are reported harvest from returned state and federal subsistence permits.

<sup>c</sup> Data are expanded harvest from returned state and federal subsistence permits.

<sup>d</sup> Data are reported harvest, 2002–2004, and expanded harvest, 2005–2011, from returned state and federal subsistence permits.

<sup>e</sup> Upriver and Copper River Delta sport harvest data are from statewide sport fish harvest surveys and current year's estimates are preliminary and may be the product of a multiyear average or recent year's sport harvest.

<sup>f</sup> Beginning in 1999 sockeye salmon spawning escapement is 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 and personal use fisheries.

<sup>g</sup> Delta spawning escapement estimated by doubling the peak aerial survey index.

<sup>h</sup> Hatchery broodstock and onsite excess are from PWSAC 2013b.



Appendix A2.—Total estimated sockeye salmon runs to the Copper River by origin with previous 10-year average, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-year Average	2013
Upriver wild contribution <sup>a</sup>	1,444,582	1,374,017	1,753,627	1,773,532	2,264,577	852,496	1,260,759	992,075	2,004,105	2,503,339	1,622,311	2,224,951
Delta wild contribution <sup>b</sup>	395,602	366,231	306,563	531,312	564,546	202,811	324,744	289,313	512,515	333,445	382,708	351,644
Gulkana contributions <sup>c</sup>	202,845	93,438	216,583	287,906	132,625	85,916	136,402	434,608	580,917	439,688	261,093	433,778
Total estimated sockeye salmon run size	2,043,029	1,833,686	2,276,773	2,592,750	2,961,748	1,141,223	1,721,904	1,715,995	3,097,537	3,276,472	2,266,112	3,010,373

<sup>a</sup> Beginning in 1999, the upriver wild sockeye contribution is 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.

<sup>b</sup> Delta wild sockeye salmon contribution is estimated as the total CR district harvest multiplied by proportion CR Delta sockeye salmon (delta escapement divided by the total number of sockeye salmon passed the Miles Lake sonar plus CR Delta escapement) then adding CR Delta escapement and CR Delta sport harvest.

<sup>c</sup> Gulkana Hatchery sockeye salmon contributions from 1995 to 2003 are based on coded wire tag recovery; contributions from 2004 to 2011 are based on strontium marks from commercial, personal use, subsistence samples applied to reported harvest, and the historical average of mainstem and upper Copper River sport harvest times 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 with previous 10-year average, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-year Average	2013
Commercial harvest <sup>a</sup>	47,721	38,191	34,624	30,278	39,095	11,437	9,457	9,645	18,500	11,764	25,071	8,826
Commercial, homepack <sup>a</sup>	1,073	539	760	779	1,019	537	876	906	1,282	853	862	564
Commercial, donated <sup>a</sup>	3	5	11	3	0	4	0	0	0	0	3	0
Educational drift gillnet permit <sup>a</sup>	0	0	92	11	70	47	50	31	6	6	31	55
Subsistence (Cordova, drift gillnet) <sup>b</sup>	710	1,106	260	779	1,145	470	212	276	212	237	541	854
Subsistence (Batzulnetas, dip net, fish wheel or spear) <sup>b</sup>	0	0	0	0	0	0	0	0	0	0	0	5
Subsistence (Glennallen Subdistrict, dip net, fish wheel or spear) <sup>c</sup>	2,538	3,346	2,229	2,769	3,276	2,381	2,493	2,099	2,319	2,095	2,555	2,148
Federal Subsistence (Glennallen subdistrict, dip net, fish wheel or spear) <sup>d</sup>	554	636	345	430	663	837	549	326	744	415	550	374
Personal Use harvests (Chitina Subdistrict, dip net) <sup>c</sup>	1,903	2,495	2,043	2,663	2,694	1,999	214	700	1,067	567	1,635	744
Federal Subsistence (Chitina subdistrict, dip net) <sup>d</sup>	18	7	22	13	28	23	9	18	13	5	16	18
Sport harvest <sup>e</sup>	5,717	3,435	4,093	3,425	5,123	3,618	1,355	2,409	1,753	459	3,139	1,106
Upriver spawning escapement <sup>f</sup>	34,034	30,645	21,528	58,454	34,565	32,485	27,781	16,771	27,993	27,911	31,217	28,191
Total estimated Chinook salmon run size	94,271	80,405	66,007	99,604	87,678	53,838	42,996	33,181	53,889	44,312	65,618	42,885

<sup>a</sup> Numbers are from fish ticket data.

<sup>b</sup> Data are reported harvest from returned state and federal subsistence permits.

<sup>c</sup> Data are expanded harvest from returned state and federal subsistence permits.

<sup>d</sup> Data are reported harvest, 2002–2004, and expanded harvest, 2005–2011, from returned state and federal subsistence permits.

<sup>e</sup> 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.

<sup>f</sup> Upriver Chinook salmon spawning escapement is estimated using the inriver abundance estimate and subtracting subsistence, personal use, and sport Chinook salmon harvests. Beginning in 1999, inriver abundance estimates were calculated using mark-recapture studies; prior to 1999 inriver abundance estimates were calculated using aerial and foot surveys.

Appendix A4.—Total commercial salmon harvest by species in the Copper River District, 1960–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1960	14,052	593,824	118,395	375	314	726,960
1961	7,621	528,223	133,987	1,639	106	671,576
1962	14,792	677,626	174,628	1,880	513	869,439
1963	10,871	375,925	202,621	1,487	85	590,989
1964	12,751	699,548	242,666	548	62	955,575
1965	15,390	818,277	70,786	803	331	905,587
1966	11,422	1,005,615	116,147	717	115	1,134,016
1967	9,853	679,503	160,532	573	218	850,679
1968	9,743	573,270	230,867	4,343	473	818,696
1969	14,040	696,836	77,405	847	244	789,372
1970	19,375	1,115,695	161,892	645	687	1,298,294
1971	16,486	616,801	208,915	1,762	5,287	849,251
1972	22,250	727,144	103,021	2,304	717	855,436
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	1,705,827
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
25 year Average	35,947	1,319,000	275,120	15,098	12,886	1,704,780
10-year Average	25,071	1,273,887	240,907	23,406	8,544	1,688,639
2013	8,826	1,608,117	244,985	65,366	10,169	1,937,463

Appendix A5.—Copper River District commercial drift gillnet salmon harvest by period, 2013.

Period <sup>a</sup>	Emergency Order		Permits			Chinook		Sockeye		Coho		Pink		Chum	
	Date	Issued	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
01 <sup>b</sup>	05/16-05/16	2-F-E-001-13	12	303	358	801	14,860	77,916	486,434	0	0	0	0	1,221	8,707
02 <sup>b</sup>	05/20-05/20	2-F-E-002-13	12	473	760	1,530	29,777	191,406	1,185,445	0	0	28	82	2,347	16,285
03 <sup>b</sup>	05/27-05/27	2-F-E-004-13	12	479	830	2,919	53,408	320,337	1,959,218	0	0	1	4	2,067	13,805
04 <sup>b</sup>	06/10-06/11	2-F-E-017-13	24	362	732	846	16,250	118,450	722,583	7	47	16	49	360	2,215
05	06/13-06/14	2-F-E-020-13	36	317	810	1,160	22,843	139,726	852,315	73	503	3,670	10,765	1,547	10,919
06	06/17-06/18	2-F-E-023-13	36	283	843	642	12,353	156,481	947,567	9	70	604	1,781	330	2,130
07	06/20-06/21	2-F-E-025-13	24	245	464	246	4,170	66,816	403,942	37	255	796	2,323	534	3,764
08	06/24-06/25	2-F-E-030-13	24	181	405	186	3,473	92,356	553,111	26	172	1,335	3,910	132	966
09	06/27-06/29	2-F-E-031-13	48	211	641	199	3,424	125,402	770,130	211	1,432	3,413	9,996	303	2,215
10	07/01-07/02	2-F-E-034-13	36	230	419	75	1,481	91,172	564,196	382	2,671	1,393	4,085	277	2,075
11	07/04-07/06	2-F-E-040-13	60	219	573	75	1,263	83,564	498,577	367	2,496	3,971	11,650	619	4,272
12	07/08-07/10	2-F-E-041-13	48	184	446	44	946	64,295	387,372	300	1,952	2,150	6,303	75	487
13	07/11-07/12	2-F-E-045-13	36	205	384	39	555	39,786	232,541	72	497	840	2,478	52	383
14	07/15-07/16	2-F-E-047-13	36	167	223	15	245	20,365	118,239	269	1,810	1,940	5,688	58	396
15	07/18-07/19	2-F-E-061-13	36	72	90	13	185	10,528	58,759	542	3,929	11,654	34,132	145	1,004
16	07/22-07/23	2-F-E-063-13	36	49	59	4	69	3,802	22,788	150	1,018	2,613	7,660	25	163
17	07/25-07/26	2-F-E-065-13	36	17	19	3	53	1,131	6,839	222	1,570	1,897	5,560	14	97
18	07/29-07/30	2-F-E-059-13	36	12	13	4	95	1,195	7,191	1,016	7,246	8,798	25,777	22	151
19	08/01-08/02	2-F-E-113-13	36	21	22	7	116	543	3,269	3,191	25,045	12,523	36,690	15	104
20	08/05-08/06	2-F-E-114-13	36	41	49	1	12	654	3,914	3,358	26,579	5,892	17,268	12	73
21	08/08-08/09	2-F-E-115-13	36	34	39	9	52	451	2,689	2,885	21,668	386	1,133	0	0
22	08/12-08/13	2-F-E-075-13	36	102	160	2	39	668	4,029	20,613	147,483	1,321	3,876	7	51
23	08/15-08/16	2-F-E-077-13	24	138	180	2	36	210	1,246	12,523	96,299	57	168	2	12
24	08/19-08/20	2-F-E-077-13	24	145	273	0	0	148	892	29,213	232,386	46	137	2	15
25	08/22-08/23	2-F-E-085-13	24	198	293	3	49	84	518	28,630	239,617	9	27	1	5
26	08/26-08/27	2-F-E-088-13	24	207	294	0	0	291	2,004	26,104	220,691	4	12	1	7
27	08/29-08/30	2-F-E-090-13	24	128	204	0	0	22	123	29,008	242,790	0	0	0	0
28	09/02-09/03	2-F-E-093-13	24	186	249	0	0	15	86	21,681	185,675	2	6	0	0

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Appendix A5.–Page 2 of 2.

Period <sup>a</sup>	Emergency Order		Permits			Chinook		Sockeye		Coho		Pink		Chum	
	Date	Issued	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
29	09/05-09/06	2-F-E-093-13	24	165	238	0	0	233	1,790	25,240	214,172	0	0	0	0
30	09/09-09/10	2-F-E-099-13	24	102	113	0	0	1	7	11,961	103,527	0	0	0	0
31	09/12-09/13	2-F-E-101-13	24	107	136	1	10	1	8	10,976	91,911	0	0	0	0
32	09/16-09/17	2-F-E-103-13	24	77	116	0	0	12	72	11,215	96,064	7	21	1	8
33	09/19-09/20	2-F-E-107-13	24	35	44	0	0	56	334	4,517	39,092	0	0	0	0
34	09/23-09/24	2-F-E-109-13	24	4	4	0	0	0	0	187	1,867	0	0	0	0
35	09/26-09/28	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
36	9/30-10/02	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
37	10/03-10/05	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
38	10/07-10/09	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
39	10/10-10/12	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
Total			1,320	521	10,483	8,826	165,764	1,608,117	9,798,228	244,985	2,010,534	65,366	191,581	10,169	70,309
Average Weights							18.78		6.09		8.21		2.93		6.91

<sup>a</sup> Unless otherwise noted, all waters available to commercial salmon fishing were open in the Copper River District.

<sup>b</sup> Waters of the inside closure area described in 5 AAC 24.350(1)(B) were closed.

Appendix A6.–Copper River District commercial drift gillnet salmon harvest by statistical week, 2013.

Week	Start Date	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
20	05/12	12	303	358	801	14,860	77,916	486,434	0	0	0	0	1,221	8,707
21	05/19	12	473	759	1,530	29,777	191,264	1,184,595	0	0	0	0	2,347	16,285
22	05/26	12	479	830	2,919	53,408	320,337	1,959,218	0	0	1	4	2,067	13,805
23	06/02	0	0	0	0	0	0	0	0	0	0	0	0	0
24	06/09	60	379	1,542	2,006	39,093	258,176	1,574,898	80	550	3,686	10,814	1,907	13,134
25	06/16	60	295	1,307	888	16,523	223,234	1,351,131	46	325	1,418	4,158	864	5,894
26	06/23	72	232	1,047	385	6,897	217,963	1,324,469	237	1,604	4,758	13,934	435	3,181
27	06/30	96	245	992	150	2,744	174,736	1,062,773	749	5,167	5,364	15,735	896	6,347
28	07/07	84	225	830	83	1,501	104,081	619,913	372	2,449	2,990	8,781	127	870
29	07/14	72	176	313	28	430	30,893	176,998	811	5,739	13,594	39,820	203	1,400
30	07/21	72	52	78	7	122	4,933	29,627	372	2,588	4,510	13,220	39	260
31	07/28	72	24	35	11	211	1,738	10,460	4,207	32,291	21,321	62,467	37	255
32	08/04	72	58	88	10	64	1,105	6,603	6,243	48,247	6,278	18,401	12	73
33	08/11	60	155	340	4	75	878	5,275	33,136	243,782	1,378	4,044	9	63
34	08/18	48	216	566	3	49	232	1,410	57,843	472,003	55	164	3	20
35	08/25	48	231	498			313	2,127	55,112	463,481	4	12	1	7
36	09/01	48	202	487			248	1,876	46,921	399,847	2	6		
37	09/08	48	134	249	1	10	2	15	22,937	195,438				
38	09/15	48	80	160			68	406	15,732	135,156	7	21	1	8
39	09/22	84	4	4					187	1,867				
40	09/29	120												
41	10/06	120												
Total		1,320	521	10,483	8,826	165,764	1,608,117	9,798,228	244,985	2,010,534	65,366	191,581	10,169	70,309
Average Weights						18.78		6.09		8.21		2.93		6.91

Appendix A7.--Daily salmon counts at Miles Lake sonar, 2013.

Date	Water Level	Daily sonar counts						Minimum Inriver Passage Objective		Maximum Inriver Passage Objective	
		North Bank	South Bank	Daily	Cumulative	0600 Count	Projected Daily	Daily	Cumulative	Daily	Cumulative
5/15	<sup>a,b</sup> N/A	0	N/A	0	N/A	N/A	N/A	0	N/A	0	N/A
5/16	<sup>c</sup> N/A	0	N/A	0	0	N/A	0	471	471	723	723
5/17	<sup>d</sup> N/A	0	N/A	0	0	N/A	0	746	1,217	1,146	1,869
5/18	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	2,241	3,458	3,442	5,311
5/19	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	3,936	7,394	6,045	11,356
5/20	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	5,736	13,131	8,809	20,165
5/21	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	6,472	19,602	9,939	30,104
5/22	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	9,960	29,563	15,296	45,400
5/23	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	11,367	40,929	17,456	62,856
5/24	<sup>e</sup> N/A	0	N/A	0	0	N/A	0	12,546	53,475	19,266	82,122
5/25	<sup>e</sup> N/A	8	N/A	8	8	N/A	0	14,319	67,794	21,991	104,113
5/26	<sup>f</sup> N/A	18	N/A	18	26	0	0	17,671	85,466	27,138	131,251
5/27	<sup>g</sup> N/A	14	6	20	46	0	0	16,726	102,192	25,687	156,938
5/28	42.24	0	0	0	46	0	0	17,788	119,980	27,317	184,255
5/29	41.93	55	90	145	191	5	20	17,853	137,833	27,417	211,672
5/30	42.25	1,535	6,480	8,015	8,206	639	2,556	19,488	157,321	29,928	241,600
5/31	42.56	2,578	15,870	18,448	26,654	4,955	19,820	17,090	174,411	26,245	267,845
6/1	42.68	2,216	18,774	20,990	47,644	3,826	15,304	19,608	194,019	30,113	297,957
6/2	42.64	2,583	22,320	24,903	72,547	5,246	20,984	17,729	211,747	27,226	325,183
6/3	42.55	2,193	15,462	17,655	90,202	4,521	18,084	17,570	229,317	26,982	352,166
6/4	42.44	2,171	11,676	13,847	104,049	3,708	14,832	16,201	245,518	24,880	377,045
6/5	42.23	1,302	11,256	12,558	116,607	2,775	11,100	17,611	263,129	27,046	404,091
6/6	42.03	2,064	14,706	16,770	133,377	3,722	14,888	14,960	278,089	22,974	427,065
6/7	42.03	2,980	21,090	24,070	157,447	5,726	22,904	16,411	294,500	25,203	452,269
6/8	42.07	6,439	34,698	41,137	198,584	8,670	34,680	17,192	311,692	26,402	478,670
6/9	41.79	18,378	59,376	77,754	276,338	13,564	54,256	14,806	326,499	22,738	501,409
6/10	41.99	19,278	91,905	111,183	387,521	24,177	96,708	13,269	339,768	20,378	521,787
6/11	42.37	21,595	92,382	113,977	501,498	29,524	118,096	12,115	351,883	18,605	540,392
6/12	42.57	14,204	82,446	96,650	598,148	33,160	132,640	10,715	362,598	16,455	556,847
6/13	42.76	7,887	35,412	43,299	641,447	16,692	66,768	9,345	371,943	14,351	571,198
6/14	42.88	2,494	17,568	20,062	661,509	6,769	27,076	9,126	381,068	14,014	585,212
6/15	42.72	4,755	17,244	21,999	683,508	3,458	13,832	9,658	390,726	14,832	600,044
6/16	42.70	4,246	15,474	19,720	703,228	5,530	22,120	9,427	400,153	14,477	614,521
6/17	43.39	2,009	9,936	11,945	715,173	2,889	11,556	9,337	409,490	14,339	628,859
6/18	43.59	1,439	8,676	10,115	725,288	2,667	10,668	9,047	418,537	13,894	642,753
6/19	43.77	1,687	9,936	11,623	736,911	1,929	7,716	9,346	427,883	14,353	657,106
6/20	43.69	2,771	13,674	16,445	753,356	3,201	12,804	8,892	436,775	13,656	670,762
6/21	43.67	2,578	15,564	18,142	771,498	4,112	16,448	8,660	445,435	13,300	684,062

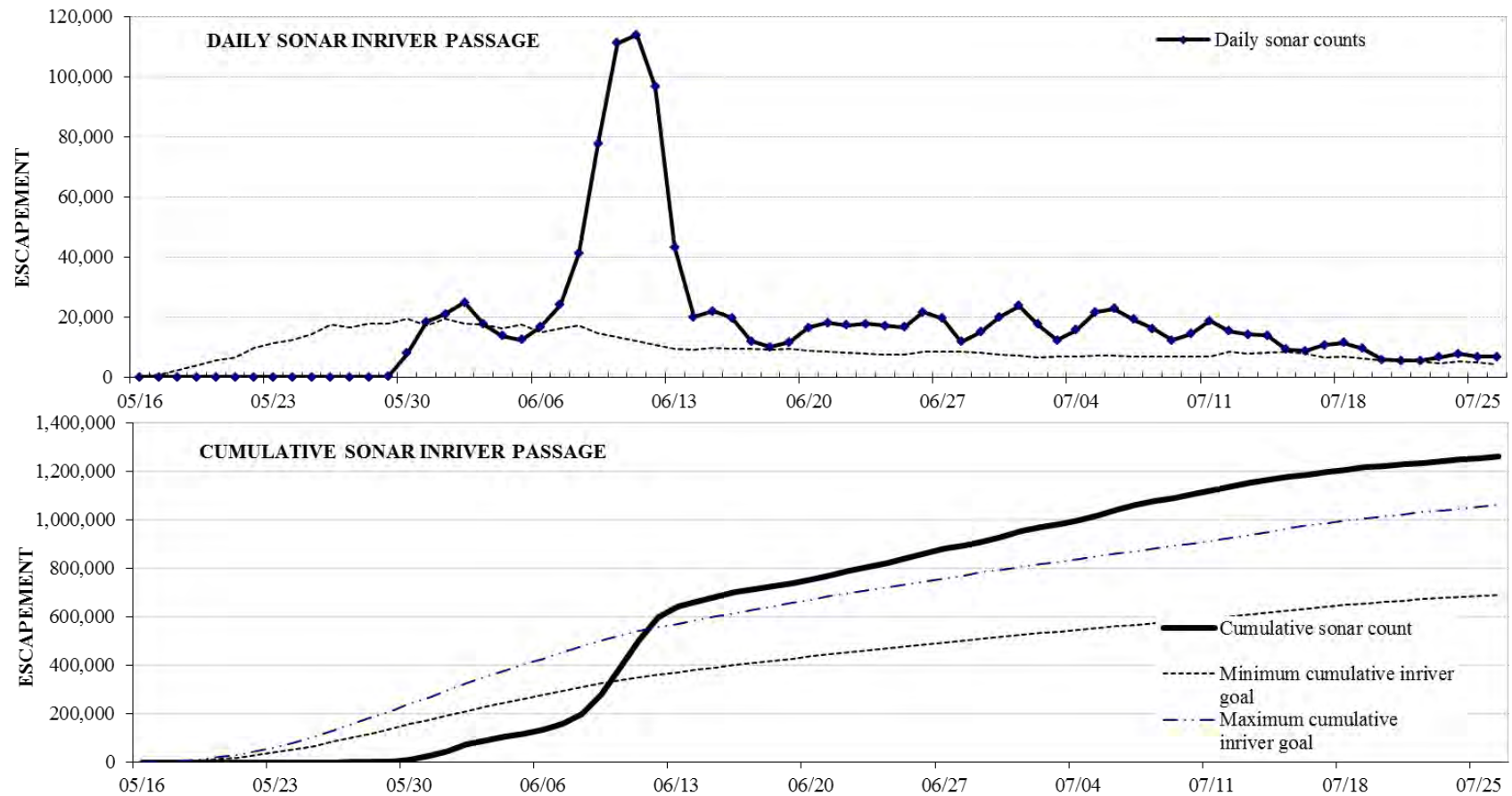
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Date	Water Level	Daily sonar counts						Minimum Inriver Passage Objective		Maximum Inriver Passage Objective	
		North Bank	South Bank	Daily	Cumulative	0600 Count	Projected Daily	Daily	Cumulative	Daily	Cumulative
6/22	43.60	2,771	14,562	17,333	788,831	3,803	15,212	8,304	453,740	12,753	696,815
6/23	43.44	2,371	15,366	17,737	806,568	3,811	15,244	7,762	461,502	11,921	708,735
6/24	43.22	2,229	14,928	17,157	823,725	4,082	16,328	7,708	469,210	11,837	720,572
6/25	43.10	2,826	13,770	16,596	840,321	4,249	16,996	7,619	476,828	11,700	732,272
6/26	43.26	2,791	18,864	21,655	861,976	3,605	14,420	8,500	485,329	13,054	745,326
6/27	43.69	1,217	18,378	19,595	881,571	4,786	19,144	8,552	493,881	13,134	758,460
6/28	44.05	807	11,046	11,853	893,424	2,827	11,308	8,385	502,266	12,878	771,337
6/29	44.24	1,975	13,074	15,049	908,473	4,102	16,408	8,237	510,503	12,649	783,987
6/30	44.18	2,156	17,946	20,102	928,575	4,147	16,588	7,605	518,108	11,679	795,665
7/1	44.14	3,310	20,496	23,806	952,381	5,462	21,848	7,228	525,336	11,100	806,766
7/2	44.12	2,363	15,300	17,663	970,044	4,243	16,972	6,704	532,040	10,296	817,061
7/3	43.95	1,800	10,476	12,276	982,320	1,943	7,772	6,837	538,877	10,499	827,560
7/4	43.49	2,325	13,428	15,753	998,073	3,645	14,580	6,966	545,842	10,697	838,258
7/5	43.01	3,118	18,594	21,712	1,019,785	4,638	18,552	7,117	552,959	10,929	849,187
7/6	42.67	3,029	19,782	22,811	1,042,596	4,868	19,472	7,200	560,159	11,057	860,244
7/7	42.41	3,231	16,080	19,311	1,061,907	5,174	20,696	6,812	566,970	10,461	870,704
7/8	42.46	2,984	13,248	16,232	1,078,139	4,162	16,648	6,935	573,905	10,650	881,355
7/9	42.58	1,844	10,518	12,362	1,090,501	3,143	12,572	7,052	580,957	10,830	892,184
7/10	42.56	2,532	11,934	14,466	1,104,967	2,102	8,408	6,937	587,894	10,653	902,838
7/11	42.38	4,727	14,094	18,821	1,123,788	3,139	12,556	6,835	594,729	10,496	913,333
7/12	42.35	3,917	11,424	15,341	1,139,129	3,575	14,300	8,403	603,132	12,905	926,238
7/13	42.47	2,632	11,676	14,308	1,153,437	2,959	11,836	8,042	611,173	12,350	938,588
7/14	42.55	2,379	11,496	13,875	1,167,312	2,927	11,708	8,095	619,268	12,431	951,019
7/15	42.68	1,597	7,728	9,325	1,176,637	1,809	7,236	8,427	627,695	12,941	963,961
7/16	42.85	1,703	7,122	8,825	1,185,462	1,880	7,520	7,935	635,631	12,186	976,147
7/17	43.11	1,937	8,802	10,739	1,196,201	2,584	10,336	6,532	642,162	10,031	986,178
7/18	43.32	2,248	9,252	11,500	1,207,701	3,015	12,060	6,893	649,055	10,586	996,763
7/19	43.50	2,113	7,452	9,565	1,217,266	2,595	10,380	6,134	655,189	9,420	1,006,183
7/20	43.68	1,502	4,398	5,900	1,223,166	1,439	5,756	5,687	660,877	8,734	1,014,918
7/21	43.72	1,304	4,254	5,558	1,228,724	963	3,852	5,677	666,554	8,718	1,023,636
7/22	43.68	1,102	4,422	5,524	1,234,248	881	3,524	5,451	672,004	8,371	1,032,007
7/23	43.49	1,577	5,124	6,701	1,240,949	2,070	8,280	4,752	676,756	7,297	1,039,304
7/24	43.40	1,903	5,844	7,747	1,248,696	2,449	9,796	5,247	682,003	8,057	1,047,361
7/25	43.56	1,546	5,334	6,880	1,255,576	1,685	6,740	4,884	686,887	7,501	1,054,862
7/26	43.66	1,804	5,004	6,808	1,262,384	1,412	5,648	4,345	691,232	6,672	1,061,534
7/27	43.64	1,238	3,438	4,676	1,267,060	1,401	5,604	4,076	695,308	6,260	1,067,794

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- <sup>a</sup> Anticipated counts are not available prior to 15 May because the sonar has only been deployed three times prior to 15 May (2003, 2004, 2005).
- <sup>b</sup> The North Bank operated for 4 hours beginning at 1800. The South Bank is not operational.
- <sup>c</sup> The North Bank operated for 13 hours beginning 0900. The South Bank is not operational.
- <sup>d</sup> The North Bank operated for 12 hours beginning 1000. The South Bank is not operational.
- <sup>e</sup> Only the North Bank is operational. Ice and low water level precluded the operation of the South Bank sonar.
- <sup>f</sup> The South Bank sonar is operational, but a large piece of underwater ice connected to the substrate interfered with the view at 10 meters.
- <sup>g</sup> Both banks operational.



Appendix A8.—Minimum and maximum inriver sonar goal versus actual daily and cumulative salmon passage, Miles Lake sonar, 2013.

Appendix A9.—Inriver salmon passage at the Miles Lake sonar, 1978–2013.

Year	Total	Rank
1978	107,011	36
1979	328,090	35
1980	374,091	34
1981	576,681	28
1982	517,885	31
1983	592,563	27
1984	618,732	24
1985	466,190	33
1986	481,628	32
1987	523,022	30
1988	528,940	29
1989	643,367	20
1990	624,922	23
1991	593,185	26
1992	604,898	25
1993	819,700	14
1994	738,011	16
1995	637,293	21
1996	907,267	8
1997	1,164,791	3
1998	865,896	10
1999	850,597	12
2000	636,837	22
2001	878,205	9
2002	830,263	13
2003	747,091	15
2004	684,103	19
2005	855,125	11
2006	959,706	4
2007	919,601	6
2008	718,344	17
2009	709,748	18
2010	923,811	5
2011	914,231	7
2012	1,294,400	1
10-year Average	872,616	
2013	1,267,060	2

Appendix A10.—Anticipated and actual semi-weekly harvest of sockeye, Chinook, and coho salmon in the Copper River District drift gillnet fishery, 2013.

Semi-Weekly		Fishing	Anticipated	Actual	Anticipated	Actual	Anticipated	Actual
Date		Time	Sockeye salmon	Sockeye salmon	Chinook salmon	Chinook salmon	Coho salmon	Coho salmon
		(Hours)	Harvest <sup>a</sup>	Harvest	Harvest <sup>b</sup>	Harvest	Harvest <sup>c</sup>	Harvest
5/15	Wed	0	9,200	0	662	0	0	0
5/18	Sat	12	35,623	77,916	1,833	801	0	0
5/22	Wed	12	83,669	191,406	2,078	1,530	1	0
5/25	Sat	0	83,753	0	1,746	0	8	0
5/29	Wed	12	115,971	320,337	1,704	2,919	10	0
6/01	Sat	0	81,665	0	1,251	0	8	0
6/05	Wed	0	129,098	0	1,608	0	5	0
6/08	Sat	0	60,012	0	785	0	6	0
6/12	Wed	24	61,853	118,450	817	846	22	7
6/15	Sat	36	46,981	139,726	454	1,160	25	73
6/19	Wed	36	59,141	156,481	422	642	48	9
6/22	Sat	24	41,274	66,816	186	246	72	37
6/26	Wed	24	64,550	92,356	192	186	180	26
6/29	Sat	48	43,640	125,402	80	199	146	211
7/03	Wed	36	55,485	91,172	67	75	236	382
7/06	Sat	60	45,466	83,564	38	75	212	367
7/10	Wed	48	67,825	64,295	31	44	347	300
7/13	Sat	36	43,077	39,786	12	39	495	72
7/17	Wed	36	53,701	20,365	15	15	890	269
7/20	Sat	36	29,961	10,528	7	13	749	542
7/24	Wed	36	30,699	3,802	6	4	857	150
7/27	Sat	36	12,661	1,131	1	3	954	222
7/31	Wed	36	16,238	1,195	2	4	1,744	1,016
8/03	Sat	36	7,862	543	1	7	1,947	3,191
8/07	Wed	36	7,517	654	1	1	5,006	3,358
8/10	Sat	36	4,703	451	1	9	6,048	2,885

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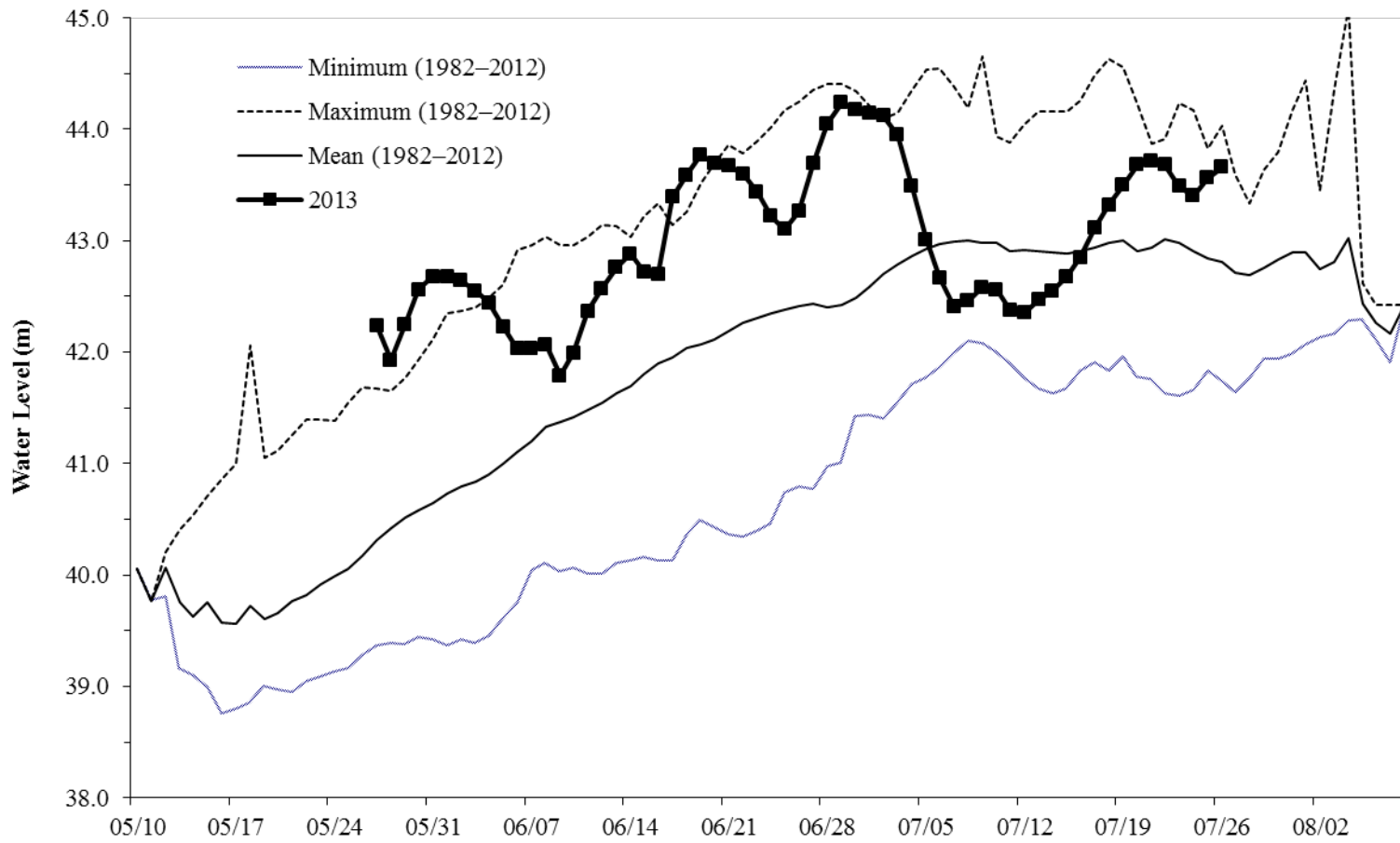
Appendix A10.–Page 2 of 2.

Semi-Weekly		Fishing Time (Hours)	Anticipated Sockeye salmon Harvest <sup>a</sup>	Actual Sockeye salmon Harvest	Anticipated Chinook salmon Harvest <sup>b</sup>	Actual Chinook salmon Harvest	Anticipated Coho salmon Harvest <sup>c</sup>	Actual Coho salmon Harvest
Date								
8/14	Wed	36	3,314	668	1	2	10,917	20,613
8/17	Sat	24	2,044	210	1	2	13,263	12,523
8/21	Wed	24	987	148	0	0	20,159	29,213
8/24	Sat	24	994	84	0	3	20,853	28,630
8/28	Wed	24	350	291	0	0	28,742	26,104
8/31	Sat	24	308	22	0	0	22,403	29,008
9/04	Wed	24	195	15	0	0	28,257	21,681
9/07	Sat	24	114	233	0	0	22,780	25,240
9/11	Wed	24	33	1	0	0	19,691	11,961
9/14	Sat	24	20	1	0	1	14,283	10,976
9/18	Wed	24	9	12	0	0	9,269	11,215
9/21	Sat	24	3	56	0	0	4,316	4,517
9/25	Wed	24	1	0	0	0	3,569	187
9/28	Sat	60	0	0	0	0	929	0
10/02	Wed	60	0	0	0	0	535	0
10/05	Sat	60	0	0	0	0	299	0
10/09	Wed	60	0	0	0	0	82	0
10/12	Sat	60	0	0	0	0	5	0
10/16	Wed	0	0	0	0	0	1	0
Total		1,320	1,300,000	1,608,117	14,000	8,826	240,371	244,985

<sup>a</sup> Sockeye salmon anticipated harvest is based on the midpoint preseason forecast (1,300,876) and the 1998–2007 harvest timing.

<sup>b</sup> Chinook salmon anticipated harvest is based on the preseason harvest forecast (14,162) and the 1998–2007 harvest timing. This harvest forecast is the total run forecast minus the lower escapement goal threshold times the mean commercial exploitation rate. Therefore, the Chinook salmon harvest should be considered a maximum harvest because the escapement goal is a lower threshold.

<sup>c</sup> Coho salmon anticipated harvest is based on the midpoint preseason harvest forecast (240,371) and the 1973–2009 harvest timing.



Appendix A11.—Water stage height at the Million Dollar Bridge, 2013.

Appendix A12.–Aerial escapement indices by statistical week and location for sockeye salmon returning to the Copper River Delta, 2013.

System <sup>a</sup>	Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>b</sup>											Site <sup>c</sup>	System <sup>d</sup>	Anticipated, (by drainage)				
	6/15	6/22	6/29	7/13	7/20	8/10	8/24	8/31	9/7	9/21	10/12							
Eyak River																		
Eyak River	1,450	300	300	50	200	5	0	0	0	0	0	NS	5	20,505	9,972	to	23,571	
West Shore Beaches	100	0	900	600	800	1,900	500	100	200	0	0	1,900						
East Shore Beaches	1,550	1,000	1,500	3,500	5,900	11,500	2,300	2,200	2,400	500	0	11,500						
Middle Arm Beaches <sup>e</sup>	2,200	1,500	2,700	1,800	2,300	3,200	4,000	4,100	6,000	800	0	5,400						
North Shore Beaches	600	0	500	0	300	400	300	500	230	0	NS	400						
Hatchery Creek Delta	0	0	100	100	100	0	0	0	0	0	NS	0						
Hatchery Creek	0	0	50	350	200	300	400	300	200	20	NS	300						
Power Creek Delta	0	0	500	100	100	0	0	0	0	0	NS	0						
Power Creek	0	0	0	700	900	1,000	300	100	200	0	NS	1,000						
Ibeck Creek																		
Ibeck Creek	NS	NS	NS	NS	200	0	200	100	20	0	0	200	200					
Alaganik Slough																		
Alaganik Slough	50	0	200	0	0	0	0	0	0	0	0	0	7,900	8,359	to	19,758		
McKinley Lake	0	0	2,100	6,100	5,700	4,700	1,100	450	500	300	NS	5,700						
Salmon Creek West Fork	0	0	0	50	2,000	1,000	1,200	500	600	0	0	2,000						
Salmon Creek East Fork	0	0	0	0	200	100	100	0	10	0	0	200						
26/27 Mile Creek																		
26/27 Mile Creek	0	0	850	800	800	950	250	0	50	0	NS	950	950	2,182	to	5,157		
39 Mile Creek																		
39 Mile Creek	0	0	100	750	2,000	1,100	500	200	100	NS	30	2,000	2,000	5,772	to	13,642		
Goat Mountain																		
Goat Mountain Creek	150	200	300	50	300	200	0	0	0	0	0	300	300	549	to	1,298		
Pleasant Creek																		
Pleasant Creek	750	2,600	5,900	1,750	1,900	250	0	0	0	0	NS	5,900	5,900	1,075	to	2,542		
Martin River																		
Martin River - Lower	350	110	260	20	0	NS	0	0	0	NS	NS	0	0					
Ragged Point River	50	300	1,200	1,400	1,800	600	0	0	0	0	NS	600	3,500					
Ragged Point Lake Outlet																		
Ragged Point Lake	0	0	0	50	200	1,600	300	0	0	0	NS	1,600						
Ragged Point Lake	NS	NS	NS	50	500	1,300	1,000	600	600	500	NS	1,300						
Martin River - Upper <sup>e</sup>	1,200	500	450	150	100	320	150	100	0	0	NS	150	150					
Martin Lake Outlet	200	300	300	100	100	100	0	0	0	0	NS	100	22,900	17,598	to	41,596		
Martin Lake	5,600	2,900	16,000	11,100	11,500	1,400	0	0	0	100	NS	11,500						
Martin Lake Feeders	0	0	100	6,500	10,400	8,800	650	100	50	0	NS	10,400						
Pothole River	NS	NS	NS	700	400	200	50	0	0	0	NS	400						
Pothole Lake	NS	NS	NS	200	500	2,200	2,350	4,500	600	500	NS	500						
Little Martin River	0	120	75	100	100	0	0	0	0	0	0	0	5,800					
Little Martin Lake	NS	0	475	2,400	4,500	4,400	5,800	5,300	4,900	600	0	5,800						

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System <sup>a</sup>	Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>b</sup>											Site <sup>c</sup>	System <sup>d</sup>	Anticipated, (by drainage)		
	6/15	6/22	6/29	7/13	7/20	8/10	8/24	8/31	9/7	9/21	10/12					
Tokun																
Tokun Springs	0	0	200	500	200	300	0	0	0	0	NS	200	4,000	5,352	to	12,649
Tokun River	300	500	500	500	100	750	300	600	400	0	NS	100				
Tokun Lake Outlet	0	1,000	500	400	300	100	0	0	100	0	NS	300				
Tokun Lake	200	100	2,000	2,300	3,400	1,700	2,800	2,100	1,600	500	NS	3,400				
Martin River Slough																
Martin River Slough	0	0	1,600	1,350	1,200	500	200	50	0	0	NS	1,600	1,600	4,141	to	9,787
Total	14,750	11,430	39,660	44,520	59,200	50,875	24,750	21,900	18,760	3,820	30	75,705	75,705			
Lower SEG	7,270	14,273	17,627	30,055	31,424	24,976	24,382	19,762	17,446	10,561	2,611					55,000
Average SEG, (avg. antic. esc.)	11,157	21,902	27,050	46,121	48,222	38,326	37,415	30,326	26,772	16,206	4,006					84,400
Upper SEG	17,184	33,736	41,665	71,040	74,276	59,034	57,630	46,711	41,236	24,962	6,170					130,000

Note: NS indicates no survey.

<sup>a</sup> The system represents the majority of known sockeye salmon spawning locations within the Copper River Delta.

<sup>b</sup> 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.

<sup>c</sup> Where the survey site is a terminal spawning area, the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplicate of counts across dates is selected.

<sup>d</sup> The sum of the indices by site within a system.

<sup>e</sup> Site typically has a protracted run timing or two temporally segregated spawning populations at one location. Aerial counts from more than one day may be used in the escapement index if the surveyor indicates these counts represented different fish.



Appendix A13.–Copper River and Bering River area sockeye salmon escapement indices, 2003–2013.

Stream/Lake <sup>a,b</sup>	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-yr Average	2013
Eyak Lake	12,900	14,300	9,130	26,290	28,640	9,290	11,980	25,000	22,775	23,350	18,366	19,205
Hatchery Creek	0	500	290	2,700	980	560	680	870	100	1,000	768	300
Power Creek	850	1,500	566	2,320	1,030	220	260	1,853	2,600	3,300	1,450	1,000
Ibek Creek	475	2,300	500	620	142	41	100	10	475	870	553	200
McKinley Lake	3,200	4,500	360	4,306	3,740	3,510	3,520	2,980	3,950	7,750	3,782	5,700
Salmon Creek	1,800	7,400	7,260	4,660	2,630	820	500	1,370	1,910	75	2,843	2,200
26/27 Mile Creek	475	1,125	3,000	3,200	700	8	0	0	870	350	973	950
39 Mile Creek	7,800	2,600	2,900	2,700	2,710	2,950	160	620	1,500	3,000	2,694	2,000
Goat Mountain	0	700	1,250	1,450	363	100	30	140	50	1,925	601	300
Pleasant Creek	6,850	3,525	50	6,600	4,860	4,920	2,610	3,460	7,600	2,300	4,278	5,900
Martin River	3,425	2,275	800	1,570	9,270	6,440	2,610	2,992	2,300	0	3,168	150
Ragged Pt. River/Lake	4,750	1,975	500	3,050	3,870	3,430	610	1,010	2,700	2,500	2,440	3,500
Martin Lake	18,900	17,300	23,300	23,300	4,200	8,970	19,071	19,660	10,200	3,850	14,875	22,000
Pothole Lake	1,500	1,350	1,200	5,600	2,430	5,800	2,540	4,440	0	6,900	3,176	900
L. Martin Lake	2,175	1,610	1,500	600	450	1,060	421	680	3,700	3,510	1,571	5,800
Tokun Lake/River	3,600	3,775	1,800	4,280	16,920	18,321	22,680	15,480	9,637	5,500	10,199	4,000
Martin River Slough	4,450	2,650	4,000	5,650	5,350	900	1,520	2,270	2,000	670	2,946	1,600
Copper River Delta Total	73,150	69,385	58,406	98,896	88,285	67,340	69,292	82,835	72,367	66,850	74,681	75,705
Upper Copper River <sup>c</sup>	517,638	462,664	528,816	600,378	624,457	491,516	477,327	524,692	621,545	970,611	581,964	889,143
Copper River District Total	590,788	532,049	587,222	699,274	712,742	558,856	546,619	607,527	693,912	1,037,461	656,645	964,848
Bering River/Lake	32,075	22,550	19,890	9,310	8,550	17,545	11,250	3,280	15,060	15,950	15,546	19,100
Shepherd Creek	205	195	1,220	60	0	180	91	46	4,800	1,400	820	750
Stillwater Creek	375	500	0	140	450	111	190	81	175	170	219	1,200
Kushtaka Lake	185	15	230	61	40	100	90	140	530	370	176	850
Katalla River	17,000	1,875	9,550	5,100	12,130	260	1,850	820	7,965	400	5,695	2,000
Bering River Area Total	49,840	25,135	30,890	14,671	21,170	18,196	13,471	4,367	28,530	18,290	22,456	23,900
Copper/Bering River Total	640,628	557,184	618,112	713,945	733,912	577,052	560,090	611,894	722,442	1,055,751	679,101	988,748

<sup>a</sup> 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.

<sup>b</sup> The stream/lake represents the combined survey sites corresponding to the "system" designations presented elsewhere in this publication.

<sup>c</sup> Upriver escapement index from Miles Lake sonar counts minus Chinook salmon inriver abundance estimate, upriver harvests, and hatchery escapement and broodstock.

Appendix A14.—Aerial survey indices of sockeye salmon escapement to the upper Copper River drainage, 1998–2013.

Location	Yearly Survey Indices <sup>a</sup>																Anticipated Indices <sup>b</sup>
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Mentasta Lake	6,100	715	1,200	13,000	5,400	4,800	6,000	7,090	7,790	8,507	3,379	3,320	2,870	27,000	9,000	6,000	3,277
Fish Creek–Mentasta	1,400	450	800	3,500	900	–	–	3,330	3,700	323	1,440	680	400	91	300	900	963
Bad Crossing 1 & 2	7,800	195	19	2,000	157	90	30	5,120	620	1,683	520	1,691	1,390	742	261	4,100	2,604
Suslota Lake	1,060	0	3,000	2,500	1,500	2,750	1,975	1,230	1,300	30	86	320	6	350	55	500	1,416
Tanada Lake	–	350	3,200	200	950	0	3,950	683	30	563	986	1,290	NS	800	1,715	2,600	3,849
Dickey Lake	350	11	0	1	0	0	10	55	185	71	37	20	3	59	26	30	115
Keg Creek	160	125	0	1	30	38	0	7	190	0	1	423	0	0	15	15	725
Swede Lake	770	270	135	500	150	325	225	7	2,570	731	343	109	320	137	400	60	531
Mahlo Creek	12,300	325	1,000	400	5,000	6,850	500	1,950	5,000	14,512	10,261	11,735	4,570	292	10,100	3,800	2,648
Mendeltna Creek	–	120	2,800	800	1,875	1,200	50	318	700	473	727	1,945	1,550	760	1,085	850	2,470
St. Anne Creek	4,100	1,300	1,100	300	3,500	3,750	970	1,692	6,560	11,970	14,000	8,123	2,420	1,751	5,800	3,200	4,888
Tonsina Lake	–	–	–	–	–	–	0	–	20	20	3	0	–	0	15	0	1,080
Long Lake	–	–	–	–	–	–	–	–	1,400	505	382	14	10	290	375	5	1,577
Tana River	–	–	–	–	–	250	–	–	1,392	312	434	19	100	40	410	65	1,345
Salmon Creek (Bremner)	–	0	500	1,500	1,400	300	–	217	790	750	3,500	530	340	276	1,000	1,500	825
Fish Lake	4,900	1,880	5,000	5,000	125	1,300	0	281	7,250	1,066	158	0	89	1,008	35	20	6,418
Mud Creek.– Summit Lake	700	820	140	450	2,800	3,900	40	–	1,800	2,705	11,410	0	2,759	211	870	600	7,445
Paxson Inlet–Mud Creek	15,200	5,700	2,200	7,000	4,800	2,800	2,200	363	2,470	9,317	4,665	2,720	2,301	1,520	7,900	9,900	6,560
Mud Creek and Lake	–	20	30	300	30	75	5	145	310	2	10	0	20	2	10	11	172
Paxson Lake Outlet	200	1,800	1,000	200	140	–	5	155	270	324	596	0	560	1,700	350	2,000	2,661
<b>Total</b>	<b>55,040</b>	<b>14,081</b>	<b>22,124</b>	<b>37,652</b>	<b>28,757</b>	<b>28,428</b>	<b>15,960</b>	<b>22,643</b>	<b>44,347</b>	<b>53,864</b>	<b>52,938</b>	<b>32,939</b>	<b>19,708</b>	<b>37,029</b>	<b>39,722</b>	<b>36,156</b>	<b>51,569</b>

<sup>a</sup> 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.

<sup>b</sup> Calculated using the 1983–1992 average.

Appendix A15.—Estimated age and sex composition of sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2013.

Strata Combined:	05/16 - 09/24	Brood Year and Age Class									
		2010		2009		2008			2007		
Sampling dates:	05/16 - 07/17	0.2	1.1	0.3	1.2	0.4	1.3	2.2	1.4	2.3	
Sample size:	3,473										
Female	Percentage of sample	0.0	0.0	0.5	7.5	0.0	30.3	0.5	0.7	3.2	42.8
	Number in harvest	0	287	7,752	120,949	566	486,719	8,594	10,609	52,032	687,508
Male	Percentage of sample	0.1	0.0	0.9	10.1	0.0	40.3	0.6	0.9	4.2	57.1
	Number in harvest	1,063	0	13,857	162,552	149	648,667	10,319	14,324	67,755	918,686
Total	Percentage of sample	0.1	0.0	1.3	17.6	0.0	70.7	1.2	1.6	7.4	100.0
	Number in harvest	1,063	287	21,608	283,788	715	1,137,022	18,914	24,933	119,787	1,608,117
	Standard error	754	287	3,165	10,112	585	12,770	3,255	3,526	7,368	

Appendix A16.—Estimated age and sex composition of Chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2013.

Strata Combined:		05/16 - 09/24										
Sampling dates:		05/16 - 06/15										
Sample size:		916										
		2010		2009		2008		2007		2006		Total
		1.1	1.2	2.1	1.3	2.2	1.4	2.3	3.3			
Female	Percentage of sample	1.2	13.9	0.0	32.5	1.4	5.3	0.3	0.1	54.7		
	Number in harvest	110	1,223	0	2,872	126	464	25	5	4,825		
Male	Percentage of sample	0.5	5.0	0.2	29.2	0.2	8.8	0.5	0.0	44.3		
	Number in harvest	44	439	22	2,574	13	776	45	0	3,913		
Total <sup>a</sup>	Percentage of sample	1.7	18.9	0.2	62.3	1.6	14.3	0.8	0.1	100.0		
	Number in harvest	154	1,669	22	5,502	139	1,263	70	5	8,826		
	Standard error	57	140	22	168	51	115	28	5			

<sup>a</sup> Sex could not be determined for some fish. Thus, the number of female plus male sampled do not always equal the total.

Appendix A17.—Estimated age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2013.

Strata Combined:		05/15	-	09/24	<u>Brood Year and Age Class</u>			
Sampling dates:		08/20	-	09/03	<u>2010</u>	<u>2009</u>	<u>2008</u>	
Sample size:		807			1.1	2.1	3.1	Total
Female	Percentage of sample				34.5	14.8	0.1	49.4
	Number in harvest				84,521	36,291	281	121,093
Male	Percentage of sample				36.5	12.7	0.1	49.4
	Number in harvest				89,470	31,159	326	120,955
Total	Percentage of sample				72.1	27.7	0.2	100.0
	Number in harvest				176,602	67,776	608	244,985
	Standard error				3,885	3,874	431	

Appendix A18.—Total estimated coho salmon run to the Copper River by end user or destination with previous 10-year average, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-year Average	2013
Commercial harvest <sup>a</sup>	363,489	467,859	263,465	318,285	117,182	202,621	207,776	210,621	127,511	130,261	240,907	244,985
Commercial, homepack <sup>a</sup>	0	2	119	137	340	423	767	1,026	543	1,037	439	249
Commercial, donated <sup>a</sup>	0	0	0	0	0	154	0	0	0	0	15	0
Educational drift gillnet permit <sup>a</sup>	0	0	0	0	0	0	0	0	0	0	0	0
Subsistence (Cordova, drift gillnet) <sup>b</sup>	36	46	15	1	15	53	22	27	34	0	25	1
Federal Subsistence (PWS/Chugach Nat'l Forest, dip net, spear, rod and reel) <sup>b</sup>	0	0	141	100	68	119	185	68	581	392	165	310
Subsistence (Batzulnetas, fish wheel, dip net or spear) <sup>b</sup>	–	–	–	0	0	0	0	0	0	0	0	0
Subsistence (Glennallen Subdistrict, dip net or fish wheel) <sup>c</sup>	467	577	154	212	238	493	228	293	372	335	337	144
Federal Subsistence (Glennallen subdistrict, dip net or fish wheel) <sup>d</sup>	NA	152	126	28	57	229	55	81	223	173	125	21
Personal Use (Chitina Subdistrict, dip net) <sup>c</sup>	2,533	2,860	1,869	2,715	1,742	2,711	1,712	2,013	1,702	1,385	2,124	797
Federal Subsistence (Chitina subdistrict, dip net) <sup>d</sup>	70	18	0	20	41	100	11	30	10	8	31	8
Delta sport harvest <sup>e</sup>	14,166	14,512	9,727	5,477	6,749	7,706	14,384	15,752	14,283	15,230	11,799	15,088
Upriver sport harvest <sup>e</sup>	277	131	72	54	0	57	36	114	21	0	76	45
Upriver spawning escapement <sup>f</sup>	–	–	–	–	–	–	–	–	–	–	–	–
Delta spawning escapement <sup>g</sup>	144,110	199,010	199,364	178,140	102,430	153,784	82,588	82,154	76,290	74,020	129,189	69,360
Total estimated coho salmon run size	525,148	685,167	475,052	505,169	228,862	368,450	307,764	312,179	221,570	222,841	385,220	331,008

<sup>a</sup> Numbers are from fish ticket data.

<sup>b</sup> Data are reported harvest from returned state and federal subsistence permits.

<sup>c</sup> Data are expanded harvest from returned state and federal subsistence permits.

<sup>d</sup> Data are reported harvest, 2002–2004, and expanded harvest, 2005–2011, from returned state and federal subsistence permits.

<sup>e</sup> Upper Copper River and Copper River Delta sport harvest data are from statewide sport fish harvest surveys.

<sup>f</sup> Numbers of upriver coho salmon spawners are unavailable.

<sup>g</sup> The Copper River Delta spawning escapement index is calculated by doubling the final peak aerial survey index.

Appendix A19.–Aerial escapement indices by statistical week and location for the coho salmon run to the Copper River Delta, 2013.

Drainage	System <sup>b</sup>	Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>a</sup>											Site <sup>c</sup>	System <sup>d</sup>	Anticipated (by drainage)
		8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28	10/5	10/12			
Eyak River	Eyak River		700		300	300	200		100		NS		200	3,970	6,916
	East Shore Beaches		200		200	1,600	2,000		300		300		2,000		
	West Shore Beaches		0		20	650	1,150		400		200		1,150		
	Middle Arm Beaches		0		200	400	500		700		700		500		
	North Shore Beaches		0		0	50	30		0		NS		30		
	Hatchery Creek Delta		0		0	0	0		0		NS		0		
	Hatchery Creek		0		10	50	40		800		NS		40		
	Power Creek Delta		0		0	0	0		0		NS		0		
	Power Creek		0		0	25	50		50		NS		50		
Ibeck Creek	Ibeck Creek		0	1,500	3,410	7,100		9,150		8,600		9,150	9,150	6,227	
Scott River	Scott Lake		NS		0	20	50		0		NS		50	50	1,429
	Scott River		NS		0	0	0		0		NS		0		
	Elsner Lake <sup>e</sup>		NS		0	0	20		50		NS		50		
Alaganik Slough	Alaganik Slough		0		200	50	300		300		200		200	1,370	2,591
	18/20 Mile Creek		0		150	150	225		300		120		120		
	McKinley Lake		0		0	150	50		200		NS		200		
	Salmon Creek West Fork		0		400	100	200		100		100		100		
	Salmon Creek East Fork		0		0	75	50		50		750		750		
26/27 Mile Creek	26/27 Mile Creek		200		450	350	700		1,800		NS		1,800	1,800	829
39 Mile Creek	39 Mile Creek		2,200		2,300	1,950	1,900		NS		2,200		2,300	2,300	3,831
Goat Mountain Cr.	Goat Mountain Creek		20		900	450	500		250		0		900	900	1,181
Pleasant Creek	Pleasant Creek		0		90	185	1,500		300		NS		1,500	1,500	

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		Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>a</sup>														Anticipated
Drainage	System <sup>b</sup>	8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28	10/5	10/12	10/19	Site <sup>c</sup>	System <sup>d</sup>	(by drainage)
Martin River	Martin River - Lower		NS		40	75	40		NS			NS		NS	NS	6,522
	Ragged Point River		150		800	300	300		250			NS		800	2,500	849
	Ragged Point Lake Outlet		0		1,200	200	150		0			NS		1,200		
	Ragged Point Lake		0		500	350	200		1,000			NS		500		
	Martin River - Upper		150		350	2,800	3,000		350			NS		350	350	
	Martin Lake Outlet		0		0	100	100		50			NS		0	2,870	1,936
	Martin Lake		0		2,500	350	200		350			NS		2,500		
	Martin Lake Feeders		0		250	1,350	1,400		300			NS		250		
	Pothole River		0		20	200	100		150			NS		20		1,370
	Pothole Lake		0		100	600	100		800			NS		100		
	Little Martin River		0		0	300	250		3,500			1,500		3,500	3,800	5,413
	Little Martin Lake		0		100	300	200		300			300		300		
Tokun	Tokun Springs		0		0	0	10		20			NS		20	620	1,376
	Tokun River		350		110	200	200		300			NS		300		
	Tokun Lake Outlet		0		0	150	0		200			NS		200		
	Tokun Lake		0		100	200	30		100			NS		100		
Martin River Slough	Martin River Slough		0		140	1,575	2,050		3,500			NS		3,500	3,500	9,531
Copper River Aerial Survey Daily Total			3,970		12,930	19,015	24,895		26,020			14,970		34,680	34,680	
Lower SEG		86	1,225	2,025	5,846	9,298	16,147	21,447	18,286	16,908	15,542	17,896	8,474			32,000
Average SEG, (average anticipated escapement)		135	1,914	3,164	9,134	14,528	25,229	33,510	28,571	26,418	24,284	27,962	13,241			50,000
Upper SEG		181	2,565	4,240	12,239	19,468	33,807	44,904	38,285	35,401	32,540	37,470	17,743			67,000

<sup>a</sup> 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.

<sup>b</sup> The system represents the majority of known coho salmon spawning locations in the Copper River delta.

<sup>c</sup> 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.

<sup>d</sup> The sum of the index counts by site within the index systems.

<sup>e</sup> This stream is not included in the estimated delta wide escapement; it is a non-index stream.



Appendix A20.–Copper River Delta and Bering River coho salmon escapement indices, 2003–2013.

Stream/Lake <sup>a,b</sup>	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	10-yr Average	2013
Eyak Lake	10,050	12,700	2,812	1,940	5,810	17,030	950	13,360	640	3,950	6,924	3,880
Hatchery Creek	0	1,450	0	160	710	370	2,320	640	2,000	100	775	40
Power Creek	1,500	500	40	360	800	1,140	990	350	2,520	150	835	50
Ibeck Creek	26,000	32,000	34,900	36,300	13,200	10,265	9,963	3,381	14,200	7,600	18,781	9,150
Scott & Elsner River <sup>c</sup>	125	475	1,400	200	1,520	3,281	1,170	700	380	575	983	50
18/20 Mile	205	1,560	610	740	550	161	150	144	310	450	488	120
McKinley Lake	0	275	140	1,400	280	300	450	630	75	100	365	400
Salmon Creek	725	6,100	2,250	200	150	700	1,540	730	1,620	1,300	1,532	850
26/27 Mile	275	850	820	60	480	10	100	0	1,150	475	422	1,800
39 Mile	1,250	3,120	9,900	4,400	3,300	5,460	1,570	1,340	2,800	2,400	3,554	2,300
Goat Mountain	125	450	4,500	3,100	1,400	920	1,220	331	210	400	1,266	900
Pleasant Creek	2,000	3,950	3,790	7,030	500	2,800	680	1,700	245	440	2,314	1,500
Martin River	10,200	11,600	1,050	9,100	8,830	9,323	1,651	5,560	2,100	1,420	6,083	350
Ragged Point River/Lake	375	575	650	360	260	302	590	690	1,100	4,000	890	2,500
Martin Lake	6,300	4,475	24,100	2,900	4,775	2,770	1,360	3,511	450	2,350	5,299	2,750
Pothole Lake	4,000	500	140	120	870	3,661	2,750	2,000	1,400	2,300	1,774	120
Little Martin Lake	1,000	7,900	2,100	7,500	2,700	8,760	2,810	460	4,500	4,700	4,243	3,800
Tokun River/Lake	550	1,750	2,030	700	830	3,020	850	1,370	1,350	3,200	1,565	620
Martin River Slough	7,500	9,750	9,850	12,700	5,770	7,780	10,180	4,180	1,475	1,400	7,059	3,500
Copper River Delta Total	72,180	99,980	101,082	89,270	52,735	78,053	41,294	41,077	38,495	37,010	65,118	34,680
Katalla River	5,000	10,000	6,500	12,100	8,900	5,510	3,340	1,590	1,430	950	5,532	800
Bering River/Lake	15,375	13,750	10,125	15,040	13,052	4,910	8,491	6,320	5,520	5,700	9,828	7,750
Dick Creek	1,700	2,050	2,750	362	1,660	530	1,410	1,210	2,050	2,000	1,572	2,800
Shepherd Creek	675	700	1,125	100	60	130	370	10	20	150	334	0
Nichawak River	1,420	900	1,475	6,900	3,200	11,900	10,120	4,690	6,800	3,750	5,116	3,800
Gandil River	330	900	2,000	4,450	640	2,650	840	1,610	820	500	1,474	1,100
Controller Bay	9,700	4,175	6,210	5,590	5,680	7,332	4,251	6,330	2,250	2,555	5,407	2,570
Bering River Area Total	34,200	32,475	30,185	44,542	33,192	32,962	28,822	21,760	18,890	15,605	29,263	18,820
Copper/Bering Total	106,380	132,455	131,267	133,812	85,927	111,015	70,116	62,837	57,385	52,615	94,381	53,500

<sup>a</sup> 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.

<sup>b</sup> The stream/lake in this table represents combined survey sites corresponding to the "system" designations for the current year survey results presented elsewhere in this publication.

<sup>c</sup> Not an index stream.

Appendix A21.—Total commercial salmon harvest by species in the Bering River District, 1974–2013.

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 <sup>a</sup>	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 <sup>b</sup>	330	91,784	214,632	309	20,408	327,463
1985 <sup>b</sup>	215	26,561	419,276	214	9,642	455,908
1986 <sup>c</sup>	128	19,038	115,809	15	243	135,233
1987 <sup>c</sup>	34	16,926	15,864	54	7	32,885
1988 <sup>c</sup>	19	7,152	86,539	23	181	93,914
1989 <sup>c</sup>	30	9,225	26,952	7	2	36,216
1990 <sup>c</sup>	14	8,332	42,952	2	1	51,301
1991 <sup>c</sup>	28	19,181	110,951	4	195	130,359
1992 <sup>c</sup>	21	19,721	125,616	4	1	145,363
1993 <sup>c</sup>	130	33,951	115,833	82	22	150,018
1994 <sup>c</sup>	121	27,926	259,003	34	63	287,147
1995 <sup>c</sup>	44	21,585	282,045	26	229	303,929
1996 <sup>c</sup>	111	37,712	93,763	0	30	131,616
1997 <sup>c</sup>	23	9,651	97	2	0	9,773
1998 <sup>c</sup>	70	8,439	12,284	5	2	20,800
1999 <sup>c</sup>	42	13,697	9,852	204	96	23,891
2000 <sup>c</sup>	5	1,279	56,329	0	0	57,613
2001 <sup>c</sup>	76	5,450	2,715	0	0	8,241
2002 <sup>c</sup>	14	235	108,522	0	0	108,771
2003 <sup>c</sup>	151	18,266	59,481	33	0	77,931
2004 <sup>c</sup>	87	13,165	95,595	2	21	108,870
2005 <sup>c</sup>	277	77,464	43,030	9,327	14	130,112
2006 <sup>c</sup>	238	36,867	56,713	54	39	93,911
2007 <sup>c</sup>	88	16,470	9,305	6	1	25,870
2008 <sup>c</sup>	42	1,175	40,380	8	1	65,601
2009 <sup>c</sup>	15	4,157	45,522	1	5	49,700
2010 <sup>c</sup>	0	51	80,560	2	0	80,613
2011 <sup>c</sup>	1	6	19,956	8	0	19,971
2012 <sup>c</sup>	1	0	46,169	1	0	46,171
10-year Average	90	16,762	49,671	944	8	67,476
2013 <sup>c</sup>	16	3,286	46,959	2	16	50,279

<sup>a</sup> In 1980 fishing was prohibited before August 11.

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

<sup>c</sup> The Alaska Board of Fisheries closed the Kayak Island Subdistrict due to interceptions of non-local stocks.

Appendix A22.—Aerial escapement indices by statistical week and location for sockeye salmon returning to the Bering River District, 2013.

Drainage	System <sup>b</sup>	Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>a</sup>										Site <sup>c</sup>	System <sup>d</sup>	Anticipated (by drainage)	
		6/15	6/22	6/29	7/13	7/20	8/10	8/24	8/31	9/7	9/21				
Bering River	Bering River	1,700	1,100	250	1,010	0	0	0	0	0	0	0	0	19,100	21,903
	Bering Lake	2,400	11,050	16,850	5,400	7,900	3,000	100	0	0	0	7,900			
	Dick Creek	0	0	0	6,300	11,200	6,800	2,100	200	200	0	11,200			
	Shepherd Creek Lagoon	NS	NS	NS	0	0	0	NS	NS	NS	NS	0	750	4,375	
	Shepherd Creek	NS	NS	NS	200	600	600	NS	NS	NS	NS	600			
	Carbon Creek	NS	NS	NS	0	150	100	NS	NS	NS	NS	150			
	Clear Creek	NS	NS	NS	1,200	300	800	NS	NS	NS	NS	1,200	1,200	1,197	
	Kushtaka Lake	NS	NS	NS	0	0	250	NS	NS	NS	NS	250	850		
	Shockum Creek	NS	NS	NS	0	0	600	NS	NS	NS	NS	600		1,226	
Katalla River	Katalla River <sup>e</sup>	0	0	0	800	2,000	500	20	20	10	0	2,000	2,000		
<b>Bering River District Weekly Index</b>		<b>4,100</b>	<b>12,150</b>	<b>17,100</b>	<b>14,910</b>	<b>22,150</b>	<b>12,650</b>	<b>2,220</b>	<b>220</b>	<b>210</b>	<b>0</b>	<b>23,900</b>	<b>23,900</b>		
Lower SEG		3,251	4,048	6,092	11,051	11,004	4,301	1,481	1,044	571	21			15,000	
Average SEG, (average anticipated esc.)		5,202	6,477	9,747	17,682	17,606	6,882	2,370	1,670	914	34			24,000	
<b>Upper SEG</b>		<b>7,153</b>	<b>8,906</b>	<b>13,402</b>	<b>24,313</b>	<b>24,208</b>	<b>9,462</b>	<b>3,259</b>	<b>2,297</b>	<b>1,256</b>	<b>46</b>			<b>33,000</b>	

<sup>a</sup> The 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. "NS" signifies that no survey was flown.

<sup>b</sup> The survey systems represent the majority of known sockeye salmon spawning locations in the Bering River drainage.

<sup>c</sup> 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.

<sup>d</sup> The sum of the index counts by site within a system.

<sup>e</sup> This stream is not included in the indexed escapement for the Bering River drainage, it is a non-index stream.

Appendix A23.–Bering River District commercial drift gillnet salmon harvest by period, 2013.

Period	Date	Emergency order Issued	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
						Number <sup>a</sup>	Pounds <sup>a</sup>	Number <sup>a</sup>	Pounds <sup>a</sup>	Number <sup>a</sup>	Pounds <sup>a</sup>	Number <sup>a</sup>	Pounds <sup>a</sup>	Number <sup>a</sup>	Pounds <sup>a</sup>
01	6/13	2-F-E-020-13	12	1	1										
02	06/20-06/21	2-F-E-025-13	24	9	16	13	249	2,537	15,405	0	0	0	0	13	94
03	06/24-06/25	2-F-E-030-13	24	0	0	0	0	0	0	0	0	0	0	0	0
04	06/27-06/29	2-F-E-031-13	48	0	0	0	0	0	0	0	0	0	0	0	0
05	07/01-07/02	2-F-E-034-13	36	0	0	0	0	0	0	0	0	0	0	0	0
06	07/04-07/06	2-F-E-040-13	60	0	0	0	0	0	0	0	0	0	0	0	0
07	07/08-07/10	2-F-E-041-13	48	0	0	0	0	0	0	0	0	0	0	0	0
08	07/11-07/12	2-F-E-045-13	36	0	0	0	0	0	0	0	0	0	0	0	0
09	07/15-07/16	2-F-E-047-13	36	0	0	0	0	0	0	0	0	0	0	0	0
10	07/18-07/19	2-F-E-061-13	36	0	0	0	0	0	0	0	0	0	0	0	0
11	07/22-07/23	2-F-E-063-13	36	0	0	0	0	0	0	0	0	0	0	0	0
12	07/25-07/26	2-F-E-065-13	36	0	0	0	0	0	0	0	0	0	0	0	0
13	07/29-07/30	2-F-E-059-13	36	0	0	0	0	0	0	0	0	0	0	0	0
14	08/01-08/02	2-F-E-113-13	36	0	0	0	0	0	0	0	0	0	0	0	0
15	08/05-08/06	2-F-E-114-13	36	0	0	0	0	0	0	0	0	0	0	0	0
16	08/08-08/09	2-F-E-115-13	36	0	0	0	0	0	0	0	0	0	0	0	0
17	08/12-08/13	2-F-E-075-13	36	0	0	0	0	0	0	0	0	0	0	0	0
18	08/15-08/16	2-F-E-077-13	24	2	2	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
19	08/19-08/20	2-F-E-077-13	24	9	12	0	0	7	40	2,290	18,524	2	5	2	16
20	08/26-08/27	2-F-E-088-13	24	28	47	0	0	1	8	5,646	46,391	0	0	0	0
21	09/02-09/03	2-F-E-093-13	24	36	58	0	0	2	13	8,837	73,472	0	0	1	7
22	09/05-09/06	2-F-E-093-13	24	32	64	0	0	3	10	13,294	109,998	0	0	0	0
23	09/09-09/10	2-F-E-099-13	24	30	46	0	0	0	0	8,163	65,898	0	0	0	0
24	09/12-09/13	2-F-E-101-13	24	27	43	0	0	0	0	4,634	37,474	0	0	0	0
25	09/16-09/17	2-F-E-103-13	24	16	28	0	0	0	0	3,068	25,669	0	0	0	0
26	09/19-09/20	2-F-E-107-13	24	5	5	0	0	0	0	651	6,360	0	0	0	0
27	09/23-09/24	2-F-E-109-13	24	0	0	0	0	0	0	0	0	0	0	0	0
28	9/26–9/28	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
29	9/30–10/02	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
30	10/03–10/05	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
31	10/07–10/09	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
32	10/10–10/12	2-F-E-111-13	60	0	0	0	0	0	0	0	0	0	0	0	0
Total			1,152	521	322	16	285	3,286	19,886	46,959	386,668	2	5	16	117
Average Weights							17.81		6.05		8.23		2.50		7.31

<sup>a</sup> Confidential data, less than 3 permit holders delivering.

Appendix A24.–Bering River District commercial drift gillnet salmon harvest by statistical week, 2013.

Week	Dates <sup>a</sup>	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
24	06/09	12	1	1	b	b	b	b	b	b	b	b	b	b
25	06/16	24	9	16	13	249	2,537	15,405	0	0	0	0	13	94
26	06/23	72	0	0	0	0	0	0	0	0	0	0	0	0
27	06/30	96	0	0	0	0	0	0	0	0	0	0	0	0
28	07/07	84	0	0	0	0	0	0	0	0	0	0	0	0
29	07/14	72	0	0	0	0	0	0	0	0	0	0	0	0
30	07/21	72	0	0	0	0	0	0	0	0	0	0	0	0
31	07/28	72	0	0	0	0	0	0	0	0	0	0	0	0
32	08/04	72	0	0	0	0	0	0	0	0	0	0	0	0
33	08/11	60	2	2	b	b	b	b	b	b	b	b	b	b
34	08/18	24	9	12	0	0	7	40	2,290	18,524	2	5	2	16
35	08/25	24	28	47	0	0	1	8	5,646	46,391	0	0	0	0
36	09/01	48	39	122	0	0	5	23	22,131	183,470	0	0	1	7
37	09/08	48	35	89	0	0	0	0	12,797	103,372	0	0	0	0
38	09/15	48	16	33	0	0	0	0	3,719	32,029	0	0	0	0
39	09/22	84	0	0	0	0	0	0	0	0	0	0	0	0
40	09/29	120	0	0	0	0	0	0	0	0	0	0	0	0
41	10/06	120	0	0	0	0	0	0	0	0	0	0	0	0
Total		1,152	521	322	16	285	3,286	19,886	46,959	386,668	2	5	16	117
Average Weights						17.81		6.05		8.23		2.50		7.31

<sup>a</sup> Statistical week beginning date.

<sup>b</sup> Confidential data, less than 3 permit holders delivering.

Appendix A25.–Aerial escapement indices by statistical week and location for coho salmon returning to the Bering River District, 2013.

Drainage	System <sup>b</sup>	Weekly Escapement Indices (Statistical Week Ending Date Listed) <sup>a</sup>											Site <sup>c</sup>	System <sup>d</sup>	Anticipated, (by drainage)
		8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28	10/5	10/12			
Bering River	Bering River <sup>e</sup>		0		730	875	1,950		2,450			NS	2,450	10,550	7,720
	Bering Lake		100		500	2,900	3,700		5,300			NS	5,300		
	Dick Creek		0		340	1,400	1,700		2,800			NS	2,800		
	Shepherd Creek - Lagoon		0		NS	NS	NS		NS			NS	0	0	
	Shepherd Creek		0		NS	NS	NS		NS			NS	0		
	Carbon Creek <sup>f</sup>		0		NS	NS	NS		NS			NS	0		
Katalla River	Katalla River		0		100	200	500		800			NS	800	800	4,993
Lower Bering River	Gandil River		NS		10	175	520		1,100			700	1,100	4,900	2,910
	Nichawak River		NS		75	600	1,100		3,800			1,900	3,800		
Controller Bay	Campbell River		NS		NS	20	0		0			0	20	2,570	7,378
	Edwardes River		NS		0	460	1,500		1,400			2,200	2,200		
	Okalee River		NS		NS	100	350		50			50	350		
	Other Clear Streams <sup>f</sup>		NS		NS	0	0		0			0	0		
Bering River District Weekly Index			100		1,755	6,730	11,320		17,700			4,850	18,820	18,820	
Lower SEG			4	434	487	2,533	4,002	8,732	8,803	6,969	5,041	4,199	5,156	1,042	13,000
Average SEG, (average anticipated escapement)			7	768	861	4,482	7,080	15,448	15,574	12,330	8,919	7,429	9,122	1,844	23,001
Upper SEG			11	1,102	1,236	6,431	10,158	22,165	22,345	17,691	12,797	10,659	13,089	2,645	33,000

<sup>a</sup> The 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. "NS" signifies that no survey was flown.

<sup>b</sup> The survey system represent the majority of known coho salmon spawning locations in the Bering River drainage.

<sup>c</sup> 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.

<sup>d</sup> The sum of the index counts by site within a system

<sup>e</sup> Counts include coho salmon observed in the Don Miller Hill tributaries.

<sup>f</sup> 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.—Anticipated daily and cumulative salmon escapement versus actual escapement through the Coghill River weir, 2013.

Date	Sockeye salmon						Pink salmon		Comments
	Actual		Projected Lower <sup>a</sup>		Projected Upper <sup>a</sup>		Actual		
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	
06/05	NA	NA	0	0	0	0	NA	NA	
06/06	NA	NA	0	0	0	0	NA	NA	
06/07	NA	NA	0	1	1	2	NA	NA	
06/08	NA	NA	0	1	0	2	NA	NA	
06/09	NA	NA	0	1	0	2	NA	NA	
06/10	NA	NA	2	3	6	9	NA	NA	
06/11	NA	NA	7	10	21	29	NA	NA	
06/12	NA	NA	13	23	38	68	NA	NA	
06/13	NA	NA	30	52	89	157	NA	NA	
06/14	NA	NA	34	86	102	259	NA	NA	Lagoon is clear of ice
06/15	NA	NA	19	105	56	315	NA	NA	Ice from lake is coming down
06/16	NA	NA	61	166	182	497	NA	NA	
06/17	1	1	92	258	277	775	0	0	First day of weir operation
06/18	0	1	104	362	311	1,086	0	0	
06/19	0	1	101	463	302	1,388	0	0	
06/20	21	22	148	611	443	1,832	0	0	
06/21	44	66	162	772	485	2,316	0	0	
06/22	47	113	219	991	658	2,974	0	0	
06/23	129	242	192	1,183	575	3,549	0	0	Lake nearly clear of ice
06/24	791	1,033	214	1,397	641	4,190	0	0	2 jacks
06/25	574	1,607	383	1,780	1,150	5,339	0	0	Will install trap for first ASL sample today
06/26	402	2,009	340	2,120	1,021	6,361	0	0	1 jack Began ASL sample. Did not see many fish in survey downriver; one school of 500 and two of 200-300.
06/27	289	2,298	357	2,478	1,072	7,433	1	1	Visibility was low. Fewer fish passed due to ASL sampling; however, not many fish present
06/28	66	2,364	551	3,029	1,654	9,088	2	3	
06/29	204	2,568	466	3,496	1,399	10,487	8	11	All fish passed were sampled. 2 jacks.
06/30	1,021	3,589	769	4,265	2,308	12,795	43	54	Finished ASL sample #1. 1 jack.
07/01	2,110	5,699	831	5,096	2,492	15,287	63	117	1 jack
07/02	750	6,449	622	5,717	1,865	17,152	22	139	3 jacks
07/03	503	6,952	810	6,528	2,431	19,583	26	165	4 jacks
07/04	583	7,535	1,457	7,985	4,372	23,954	458	623	4 jacks

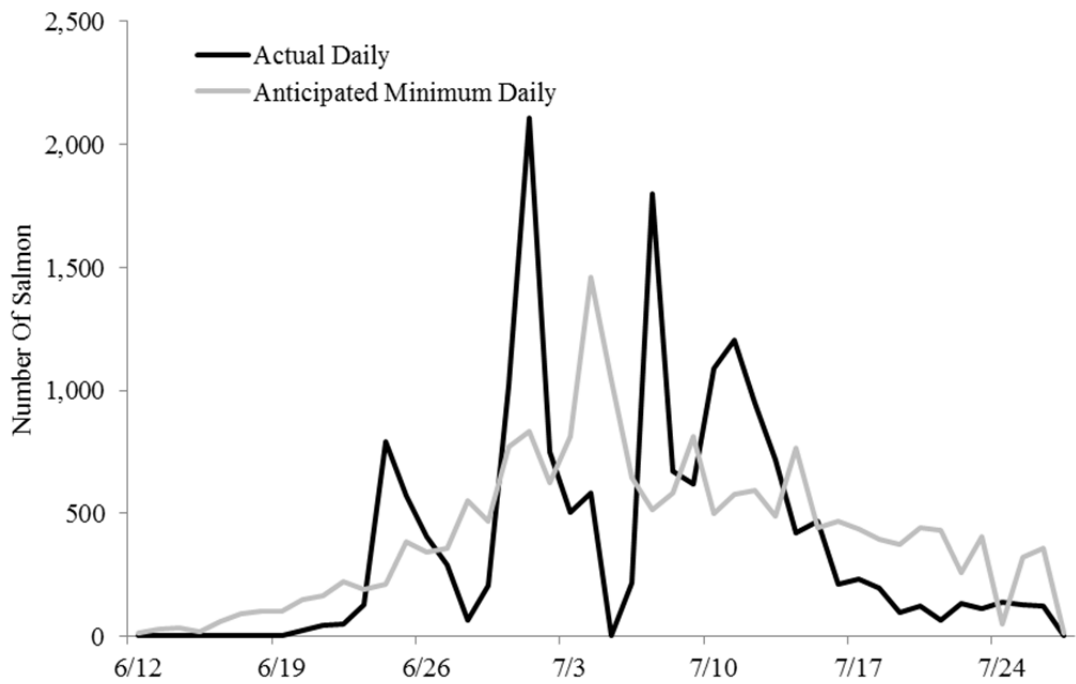
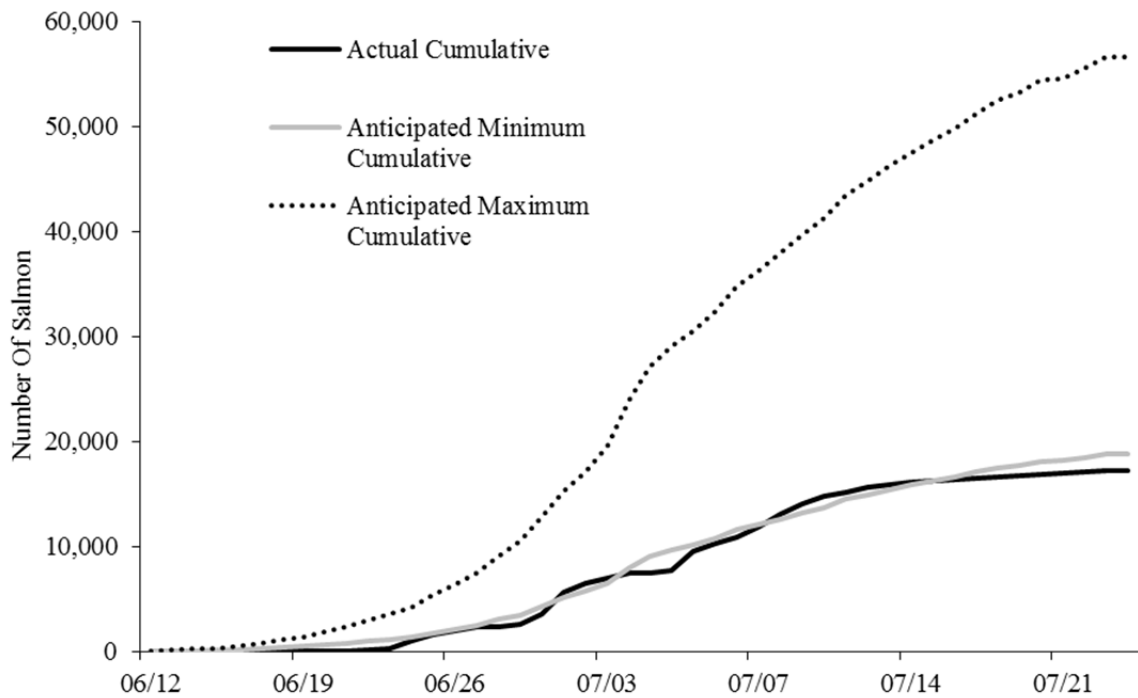
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Appendix B1.–Page 2 of 2.

Date	Sockeye salmon						Pink salmon		Comments
	Actual		Projected Lower <sup>a</sup>		Projected Upper <sup>a</sup>		Actual		
	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	
07/05	0	7,535	1,042	9,026	3,125	27,079	55	678	Begin second ASL sample. No sockeye passed due to ASL sampling.
07/06	214	7,749	645	9,671	1,935	29,013	384	1,062	All fish passed were sampled. 1 jack, 1 chum. Water level rising rapidly.
07/07	1,800	9,549	517	10,188	1,550	30,563	2,400	3,462	Weir pulled due to high water. Counts are estimated. Finished ASL sample #2
07/08	672	10,221	581	10,768	1,742	32,305	2,244	5,706	Weir pulled due to high water for most of the day; weir fish tight at 8 pm. Counts are estimated.
07/09	619	10,840	814	11,583	2,443	34,749	1,251	6,957	
07/10	1,087	11,927	497	12,080	1,492	36,240	1,923	8,880	4 jacks
07/11	1,205	13,132	575	12,655	1,725	37,965	4,616	13,496	
07/12	948	14,080	593	13,248	1,778	39,743	18,046	31,542	
07/13	716	14,796	490	13,738	1,471	41,214	22,984	54,526	
07/14	419	15,215	766	14,504	2,299	43,513	20,118	74,644	Difficult to attain sockeye ASL sample with so many pinks.
07/15	466	15,681	443	14,947	1,328	44,841	25,253	99,897	
07/16	212	15,893	468	15,415	1,404	46,244	18,434	118,331	7 chum
07/17	230	16,123	433	15,848	1,300	47,545	21,530	139,861	2 chum, 3 jacks
07/18	196	16,319	393	16,242	1,180	48,725	23,472	163,333	18 chum
07/19	97	16,416	371	16,613	1,114	49,840	16,398	179,731	
07/20	124	16,540	440	17,053	1,319	51,159	21,353	201,084	
07/21	63	16,603	428	17,481	1,284	52,443	19,219	220,303	3 jacks, 14 chum. Water level very low.
07/22	131	16,734	257	17,738	771	53,214	21,900	242,203	2 jacks, 5 chum
07/23	112	16,846	403	18,141	1,210	54,424	27,496	269,699	Passed 1 Chinook, 4 chum, 4 jacks
07/24	138	16,984	49	18,190	146	54,570	27,270	296,969	5 chum, 5 jacks
07/25	126	17,110	318	18,508	955	55,525	37,975	334,944	4 jacks, 2 Chinook, and 9 chum
07/26	121	17,231	355	18,863	1,064	56,589	24,894	359,838	2 jacks, 1 Chinook, and 8 chum -- no below weir estimates. Last day of counts for 2013 season.
07/27	-	17,231	11	18,874	34	56,623	-	359,838	
07/28	-	17,231	0	18,874	0	56,623	-	359,838	

<sup>a</sup> The projected lower and upper daily escapements are calculated using the lower bound (20,000) and upper bound (60,000) of the sustainable escapement goal apportioned to day with the historical run timing proportions.



Appendix B2.—Anticipated cumulative and daily sockeye salmon escapement versus actual escapement through the Coghill River weir, 2013.

Appendix B3.–Salmon escapement by species in the Coghill District, 1971–2013.

Year	Sockeye <sup>a</sup>	Pink <sup>b</sup>	Chum <sup>b</sup>
1971	15,000	62,160	6,600
1972	51,000	30,960	28,160
1973	55,000	493,780	72,610
1974	22,333	56,940	29,280
1975	34,855	452,430	3,640
1976	9,056	53,908	31,398
1977	31,562	320,680	79,957
1978	42,284	67,084	15,966
1979	48,281	125,544	7,823
1980	142,253	148,066	20,919
1981	156,112	140,436	2,389
1982	180,314	309,202	21,586
1983	38,783	284,164	55,127
1984	63,622	365,226	13,500
1985	163,311	238,728	14,514
1986	71,095	109,798	16,300
1987	187,263	67,761	22,472
1988	72,052	42,985	42,536
1989	37,751	48,802	22,434
1990	8,949	45,558	20,494
1991	9,752	84,790	7,055
1992	29,642	23,122	7,583
1993	9,232	41,666	7,404
1994	7,264	65,648	14,176
1995	30,382	46,029	11,596
1996	38,693	104,781	19,669
1997	35,517	52,961	3,101
1998	28,923	85,968	22,764
1999	59,311	168,816	5,057
2000	28,446	223,646	20,488
2001	38,558	148,665	13,388
2002	28,323	54,882	7,430
2003	75,427	375,147	19,729
2004	30,569	36,717	5,000
2005	30,313	528,264	11,979
2006	23,479	145,511	15,900
2007	70,001	197,405	14,052
2008	29,298	145,177	39,660
2009	23,186	125,907	5,208
2010	24,312	355,108	51,589
2011	102,359	257,020	16,368
2012	72,678	172,611	10,281
10-year Average	51,047	233,887	18,977
2013	17,231	640,414	11,369

<sup>a</sup> Escapement count of sockeye salmon past the Coghill River weir.

<sup>b</sup> Pink and chum escapements indexed for streams by aerial survey. Historical data revised in 1990.

Appendix B4.-Coghill District commercial common property drift gillnet salmon harvest by period, 2013.

Period	Dates	Emergency Order		Permits		Chinook		Sockeye		Coho		Pink		Chum	
		Issued	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 <sup>a</sup>	5/27-5/29	2-F-E-006-13	60	44	179	19	326	113	798	0	0	0	0	47,972	356,117
2 <sup>a</sup>	5/30-6/2	2-F-E-007-13	84	194	1,088	91	1,351	229	1,444	0	0	1	3	208,432	1,528,368
3 <sup>b</sup>	6/3-6/5	2-F-E-010-13	48	200	699	25	389	106	675	0	0	0	0	146,132	1,095,766
4 <sup>c</sup>	6/6-6/9	2-F-E-015-13	72	301	1,104	14	173	173	1,138	0	0	0	0	132,232	1,000,041
5 <sup>d</sup>	6/10-6/11	2-F-E-016-13	24	103	305	5	63	233	1,508	0	0	0	0	72,661	553,414
6 <sup>d</sup>	6/13-6/14	2-F-E-021-13	24	135	396	3	54	610	4,161	0	0	1	4	110,638	839,291
7 <sup>d</sup>	6/17-6/18	2-F-E-024-13	36	203	605	10	143	5,004	31,968	1	8	6	17	133,547	994,857
8 <sup>e</sup>	6/20-6/22	2-F-E-026-13	48	221	927	10	148	14,238	94,421	1	4	225	618	227,211	1,697,684
9 <sup>f</sup>	6/24-6/26	2-F-E-032-13	48	192	704	6	88	13,004	83,145	0	0	48	129	194,067	1,441,902
10 <sup>g</sup>	6/27-6/29	2-F-E-033-13	60	185	837	10	137	19,119	123,907	0	0	754	2,087	226,269	1,673,358
11 <sup>h</sup>	7/1-7/3	2-F-E-035-13	48	153	675	9	175	9,590	62,284	10	80	2,794	7,686	247,329	1,859,423
12 <sup>i</sup>	7/4-7/6	2-F-E-042-13	60	174	649	12	196	7,623	45,807	80	554	12,378	34,030	213,581	1,596,192
13 <sup>i</sup>	7/8-7/10	2-F-E-043-13	48	145	471	12	143	7,107	43,569	136	950	89,344	245,693	80,896	599,548
14 <sup>j</sup>	7/11-7/13	2-F-E-044-13	60	115	269	5	103	4,166	26,105	77	583	108,805	299,224	22,557	179,029
15 <sup>k</sup>	7/15-7/17	2-F-E-048-13	60	99	270	5	72	3,564	22,183	591	4,289	75,426	207,411	16,927	123,405
16 <sup>l</sup>	7/18-7/21	2-F-E-062-13	84	93	244	1	12	3,369	20,368	590	4,195	76,692	210,915	8,818	64,778
17 <sup>m</sup>	7/21-7/22	2-F-E-067-13	36	17	24	0	0	290	1,762	162	1,134	8,350	22,960	668	4,999
18 <sup>n</sup>	7/25	2-F-E-068-13	14	40	54	3	25	536	3,293	195	1,400	21,892	60,195	925	6,948
19 <sup>o</sup>	7/28	2-F-E-116-13	14	24	42	2	19	333	2,157	129	919	24,843	68,328	586	4,433
20 <sup>p</sup>	7/30	2-F-E-071-13	14	91	146	3	15	812	5,166	437	3,197	63,840	175,548	1,317	9,383
21 <sup>p</sup>	7/31	2-F-E-071-13	14	15	15	2	14	18	99	27	174	1,399	3,850	241	1,887
22 <sup>q</sup>	8/1	2-F-E-072-13	14	135	208	0	0	325	2,050	329	2,371	94,839	260,809	1,004	7,110
23 <sup>q</sup>	8/2	2-F-E-072-13	14	82	117	0	0	150	934	184	1,298	46,443	127,716	506	3,702
24 <sup>q</sup>	8/3	2-F-E-072-13	14	58	75	0	0	516	3,169	178	1,383	74,501	204,869	378	2,739
25 <sup>q</sup>	8/4	2-F-E-073-13	14	73	145	1	8	509	3,146	196	1,511	141,103	388,009	754	3,333
26 <sup>q</sup>	8/5	2-F-E-073-13	14	142	253	2	27	672	4,060	314	2,258	212,118	583,330	1,315	5,070
27 <sup>q</sup>	8/6	2-F-E-073-13	14	161	259	1	6	474	2,925	443	3,250	130,176	357,986	428	2,893
28 <sup>a</sup>	8/7	2-F-E-074-13	14	155	221	1	10	360	2,249	443	3,404	68,315	187,874	370	2,692
29 <sup>a</sup>	8/8	2-F-E-074-13	14	108	182	2	14	113	715	518	3,708	95,909	263,754	406	2,122
30 <sup>a</sup>	8/9	2-F-E-074-13	14	80	121	3	30	83	535	802	4,371	101,395	278,833	134	965
31 <sup>r</sup>	8/10	2-F-E-079-13	14	64	103	0	0	60	406	373	2,810	82,966	228,150	68	502

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Appendix B4.-Page 2 of 3.

Period	Dates	Emergency Order		Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Issued	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	
32 <sup>s</sup>	8/11	2-F-E-079-13	14	77	116	0	0	50	331	508	3,714	53,359	146,741	64	463	
33 <sup>s</sup>	8/12	2-F-E-079-13	14	104	150	1	5	71	459	744	5,580	73,411	201,884	57	400	
34 <sup>a</sup>	8/13	2-F-E-117-13	14	92	161	0	0	23	149	1,003	7,420	120,817	332,244	41	287	
35 <sup>a</sup>	8/14	2-F-E-117-13	14	68	104	1	22	20	128	876	6,393	94,952	261,120	20	133	
36 <sup>q</sup>	8/15	2-F-E-117-13	14	80	146	0	0	13	88	1,052	7,724	103,498	284,626	848	2,615	
37 <sup>q</sup>	8/16	2-F-E-081-13	14	73	122	0	0	7	48	689	4,899	65,059	178,898	5	35	
38 <sup>q</sup>	8/17	2-F-E-082-13	14	45	60	0	0	6	40	651	4,764	28,073	77,196	5	40	
39 <sup>q</sup>	8/18	2-F-E-082-13	14	25	46	0	0	6	40	811	5,691	32,419	89,158	2	14	
40 <sup>a</sup>	8/19	2-F-E-082-13	14	22	28	0	0	3	21	884	6,409	27,954	76,877	3	23	
41 <sup>a</sup>	8/20-8/21	2-F-E-083-13	36	54	144	0	0	10	66	3,058	22,922	82,843	227,809	248	682	
42 <sup>r</sup>	8/22-8/23	2-F-E-084-13	36	47	139	0	0	5	36	4,070	30,755	78,945	217,099	4	29	
43 <sup>r</sup>	8/24	2-F-E-087-13	15	38	61	0	0	0	0	3,782	29,372	39,500	108,629	0	0	
44 <sup>r</sup>	8/25	2-F-E-087-13	15	23	47	0	0	2	10	3,010	20,489	23,572	64,824	4	31	
45 <sup>r</sup>	8/26	2-F-E-087-13	15	49	80	0	0	4	29	4,864	37,383	26,357	72,475	717	2,150	
46 <sup>s</sup>	8/27	2-F-E-118-13	15	53	63	0	0	3	22	3,080	22,108	16,222	44,613	1	10	
47 <sup>s</sup>	8/28	2-F-E-118-13	15	35	43	0	0	0	0	1,018	7,857	5,978	16,442	5	39	
48 <sup>a</sup>	8/29	2-F-E-092-13	15	30	39	0	0	0	0	2,696	21,267	7,386	20,310	0	0	
49 <sup>a</sup>	8/30	2-F-E-092-13	15	50	68	0	0	0	0	4,842	36,151	15,392	42,331	0	0	
50 <sup>t</sup>	8/31	2-F-E-095-13	15	42	52	0	0	0	0	2,083	16,616	6,237	17,160	0	0	
51 <sup>t</sup>	9/1	2-F-E-095-13	15	24	39	0	0	3	18	3,206	25,837	3,958	10,886	1	6	
52 <sup>a</sup>	9/2-9/4	2-F-E-119-13	60	46	116	0	0	5	35	6,417	55,198	7,820	21,496	0	0	
53 <sup>t</sup>	9/5-9/7	2-F-E-119-13	60	37	83	0	0	4	28	6,412	51,458	1,793	4,933	0	0	
54 <sup>t</sup>	9/9-9/11	2-F-E-100-13	60	13	24	0	0	0	0	996	8,024	0	0	0	0	
55 <sup>a</sup>	9/12-9/14	2-F-E-102-13	60	0	0	0	0	0	0	0	0	0	0	0	0	
56 <sup>a</sup>	9/16-9/18	2-F-E-104-13	60	0	0	0	0	0	0	0	0	0	0	0	0	
57 <sup>a</sup>	9/19-9/21	2-F-E-108-13	60	0	0	0	0	0	0	0	0	0	0	0	0	
58 <sup>a</sup>	9/23-9/25	2-F-E-110-13	60	0	0	0	0	0	0	0	0	0	0	0	0	
59 <sup>a</sup>	9/26-9/28	2-F-E-112-13	60	0	0	0	0	0	0	0	0	0	0	0	0	
Total			1,909	388	13,318	259	3,767	93,734	597,695	62,968	481,882	2,450,108	6,737,779	2,100,394	15,668,908	
Average Weights							14.54		6.38		7.65		2.75		7.46	

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- <sup>a</sup> Waters of the Coghill District, excluding waters of the WNH HEEZ, were open.
- <sup>b</sup> Waters of the Coghill District, excluding waters of the WNH SHA and THA, and excluding the Esther and Granite Bay Subdistricts, were open.
- <sup>c</sup> Waters of the Coghill District, excluding waters of the WNH SHA and THA, and excluding the Esther and Granite Bay subdistricts, were open. The Granite Bay Subdistrict was open for a 12-hour period.
- <sup>d</sup> Waters of the Coghill District, excluding waters of the WNH SHA and THA, and excluding the Esther and Granite Bay subdistricts, were open. The Granite Bay Subdistrict and the Esther Subdistrict were open for a 12-hour period.
- <sup>e</sup> Waters of the Coghill District, excluding the Esther Subdistrict, were open. Waters of the Esther Subdistrict, excluding the WNH SHA and THA, were open for a 24-hour period.
- <sup>f</sup> Waters of the Coghill District, excluding the Esther Subdistrict, were open. Waters of the Esther Subdistrict, excluding the WNH SHA and THA, were open for a 12-hour period.
- <sup>g</sup> Waters of the Coghill District, excluding the Bettles Bay Subdistrict and excluding waters of the WNH SHA and THA, were open. The WNH THA was open for a 24-hour period.
- <sup>h</sup> Waters of the Coghill District, excluding the Bettles Bay and Esther subdistricts, were open. The Esther Subdistrict, excluding the WNH SHA and THA, was open for a 24-hour period.
- <sup>i</sup> Waters of the Coghill District, excluding the Bettles Bay Subdistrict and the WNH HEEZ, were open.
- <sup>j</sup> Waters of the WNH SHA and THA, excluding the WNH HEEZ, were open to PURSE SEINE and DRIFT GILLNET fishing. Waters of the Coghill District, excluding the Bettles Bay Subdistrict and the WNH SHA and THA, were open for 48 hours.
- <sup>k</sup> Waters of the WNH SHA and THA, excluding the WNH HEEZ, were open. Waters of the Coghill District, excluding the Bettles Bay Subdistrict and the WNH SHA and THA, were open for 36 hours.
- <sup>l</sup> Waters of the WNH SHA and THA up to a line of buoys in front of the barrier net were open to PURSE SEINE and DRIFT GILLNET fishing. Waters of the Coghill District, excluding the Bettles Bay Subdistrict and the WNH SHA and THA, were open to DRIFT GILLNET fishing for 36 hours.
- <sup>m</sup> Waters of the Coghill District, excluding the Bettles Bay Subdistrict and excluding the Esther Subdistrict, were open. The WNH SHA and THA closed to all commercial fishing 8:00 pm on Sunday, July 21.
- <sup>n</sup> Waters of the Coghill District, excluding the Bettles Bay Subdistrict and excluding the Esther Subdistrict and WNH SHA and THA, were open.
- <sup>o</sup> Waters of the Coghill District, excluding the Esther Subdistrict and WNH SHA and THA, were open.
- <sup>p</sup> Waters of the Coghill District north of 60°55.81'N were open.
- <sup>q</sup> Waters of the Coghill District, including waters of the WNH SHA up to a line of buoys in front of the barrier net, were open.
- <sup>r</sup> Waters of the Coghill District, excluding the WNH SHA, were open.
- <sup>s</sup> Waters of the Coghill District, excluding the WNH SHA and THA, were open.
- <sup>t</sup> Waters of the Coghill District, excluding waters of the WNH SHA north and east of a line from 60° 47.820' N lat, 148° 05.294' W long to 60° 48.044' N. lat, 148° 05.618' W long, were open.

Appendix B5.-Coghill District commercial common property purse seine salmon harvest by period dates, 2013.

Date	NR dates <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/11-07/13	07/10	60	10	21	1	12	666	4,053	4	32	92,318	253,875	50,516	375,847
07/18-07/21	07/17	84	52	91	4	45	476	2,803	55	428	703,649	1,935,033	18,729	132,051
07/21-07/22	07/20	36	4	5	27	167	203	1,179	75	640	50,998	140,243	326	2,512
7/25	07/24	14	10	10	0	0	416	2,683	0	0	126,063	346,679	212	1,568
7/28	07/27	14	9	11	0	0	44	266	6	48	132,107	363,295	40	279
7/30	07/29	14	29	35	0	0	31	189	14	94	355,336	977,130	173	1,266
7/31	07/29	14	1	1	0	0	0	0	0	0	15,741	43,289	0	0
8/1	07/31	14	16	20	0	0	9	54	4	28	221,588	609,369	34	230
8/2	07/31	14	7	8	0	0	3	18	6	45	92,908	255,492	7	56
8/3	07/31	14	9	13	0	0	14	99	20	139	185,016	508,799	20	135
8/4	08/03	14	21	25	0	0	16	111	4	35	375,690	1,033,150	72	567
8/5	08/03	14	50	72	0	0	20	120	12	67	952,515	2,619,431	22	158
8/6	08/03	14	47	52	0	0	35	224	27	175	521,039	1,432,842	51	389
8/7	08/06	14	8	11	0	0	0	0	0	0	109,495	301,116	0	0
8/8	08/06	14	13	13	0	0	5	27	8	41	139,831	384,532	10	58
8/9	08/06	14	29	36	0	0	15	105	24	142	386,941	1,064,082	26	179
8/10	08/09	14	32	39	0	0	3	17	19	156	509,541	1,401,231	9	56
8/11	08/09	14	21	23	0	0	5	31	53	369	181,019	497,803	6	41
8/12	08/09	14	12	12	0	0	15	100	15	94	70,023	192,565	0	0
8/13	08/12	14	19	22	0	0	0	0	11	69	271,216	745,843	0	0
8/14	08/12	14	18	19	0	0	0	0	45	287	193,402	531,852	4	23
8/15	08/12, 08/13	14	13	14	0	0	1	7	90	523	153,153	421,169	3	18
8/16	08/15	14	14	15	1	10	1	8	13	80	95,152	261,669	10	64
8/17	08/16	14	3	3	0	0	0	0	236	1,641	13,314	36,613	1	4
8/18	08/16	14	1	1	0	0	0	0	0	0	30,067	82,685	0	0
8/19	08/16	14	3	3	0	0	0	0	107	847	31,602	86,906	0	0
08/20-08/21	08/19	36	7	14	0	0	0	0	149	1,147	149,542	411,241	0	0
08/22-08/23	08/21	36	16	28	0	0	0	0	1,139	8,282	249,976	687,434	0	0

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Date	NR dates <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
8/24	08/23	15	17	18	0	0	0	0	1,841	14,646	125,234	344,396	0	0
8/25	08/23	15	14	16	0	0	0	0	2,286	20,886	102,464	281,773	0	0
8/26	08/23	15	9	9	0	0	0	0	1,310	10,511	53,910	148,247	0	0
8/27	08/26	15	0	0	0	0	0	0	0	0	0	0	0	0
8/28	08/26	15	0	0	0	0	0	0	0	0	0	0	0	0
8/29	08/28	15	0	0	0	0	0	0	0	0	0	0	0	0
8/30	08/28	15	0	0	0	0	0	0	0	0	0	0	0	0
8/31	08/30	15	0	0	0	0	0	0	0	0	0	0	0	0
9/1	08/30	15	0	0	0	0	0	0	0	0	0	0	0	0
		709	130	660	33	234	1,978	12,094	7,573	61,452	6,690,850	18,399,784	70,271	515,501
							7.09	6.11		8.11		2.75		7.34

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

*Note:* Required parameters for searching the ADF&G Commercial Fishing News Release System include: Effective Year = 2013; Species Group = Salmon; Management Area = Prince William Sound.

<sup>a</sup> Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by Publication Date, with the corresponding date listed under the column heading "NR dates".



Appendix B6.–Coghill District commercial common property drift gillnet salmon harvest by statistical week, 2013.

Week	Dates	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
22	5/26-6/1	124	183	1,063	88	1,395	268	1,766	0	0	1	3	213,819	1,577,235
23	6/2-6/8	132	312	1,971	60	825	334	2,156	0	0	0	0	317,545	2,377,382
24	6/9-6/15	56	170	736	9	136	854	5,747	0	0	1	4	186,700	1,418,356
25	6/16-6/22	84	241	1,533	20	291	19,250	126,444	2	12	231	635	360,761	2,692,565
26	6/23-6/29	108	226	1,541	16	225	32,123	207,052	0	0	802	2,216	420,336	3,115,260
27	6/30-7/6	108	188	1,324	21	371	17,213	108,091	90	634	15,172	41,716	460,910	3,455,615
28	7/7-7/13	108	162	740	17	246	11,273	69,674	213	1,533	198,149	544,917	103,453	778,577
29	7/14-7/20	124	120	494	6	84	6,626	40,715	1,076	7,731	144,236	396,651	24,951	181,963
30	7/21-7/27	70	52	98	3	25	1,133	6,891	462	3,287	38,124	104,830	2,387	18,167
31	7/28-8/3	84	162	603	7	48	2,154	13,575	1,284	9,342	305,865	841,120	4,032	29,254
32	8/4-8/10	98	205	1,284	10	95	2,271	14,036	3,089	21,312	831,982	2,287,936	3,475	17,577
33	8/11-8/17	98	140	859	2	27	190	1,243	5,523	40,494	539,169	1,482,709	1,040	3,973
34	8/18-8/24	115	69	418	0	0	24	163	12,605	95,149	261,661	719,572	257	748
35	8/25-8/31	105	72	392	0	0	9	61	21,593	161,871	101,144	278,155	727	2,230
36	9/1-9/7	135	55	238	0	0	12	81	16,035	132,493	13,571	37,315	1	6
37	9/8-9/14	120	13	24	0	0	0	0	996	8,024	0	0	0	0
38	9/15-9/21	120	0	0	0	0	0	0	0	0	0	0	0	0
39	9/22-9/28	120	0	0	0	0	0	0	0	0	0	0	0	0
Total		1,909	388	13,318	259	3,767	93,734	597,695	62,968	481,882	2,450,108	6,737,779	2,100,394	15,668,908
Average Weights						14.54		6.38		7.65		2.75		7.46

Appendix B7.-Coghill District commercial common property purse seine salmon harvest by statistical week, 2013.

Week	Dates	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
28	07/07-07/13	60	10	21	1	12	666	4,053	4	32	92,318	253,875	50,516	375,847
29	07/14-07/20	84	24	44	3	40	308	1,789	15	111	397,999	1,094,503	16,822	117,853
30	07/21-07/27	50	54	62	28	172	787	4,876	115	957	482,711	1,327,452	2,445	18,278
31	07/28-08/03	84	43	85	0	0	101	626	47	330	966,233	2,657,103	272	1,950
32	08/04-08/10	98	87	248	0	0	94	604	94	616	2,995,052	8,236,384	190	1,407
33	08/11-08/17	98	40	111	1	10	22	146	466	3,087	1,013,742	2,787,785	26	166
34	08/18-08/24	115	19	64	0	0	0	0	3,236	24,922	586,421	1,612,662	0	0
35	08/25-08/31	105	15	25	0	0	0	0	3,596	31,397	156,374	430,020	0	0
36	09/01-09/07	15	0	0	0	0	0	0	0	0	0	0	0	0
Total		709	130	660	33	234	1,978	12,094	7,573	61,452	6,690,850	18,399,784	70,271	515,501
Average Weights							7.09	6.11		8.11		2.75		7.34

Appendix B8.—Commercial common property harvest by species in the Coghill District, 1984–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift Gillnet						
1984	396	94,956	563	897,496	264,878	1,258,289
1985	380	339,296	1,131	454,531	246,824	1,042,162
1986	617	381,565	789	68,887	218,971	670,829
1987	352	377,454	13,396	712,897	318,842	1,422,941
1988	501	82,294	41,307	1,314,061	346,388	1,784,551
1989	364	106,114	80,737	628,522	194,584	1,010,321
1990	126	11,988	128,605	1,907,510	301,209	2,349,438
1991	92	3,888	78,363	231,501	34,223	348,067
1992	242	57,919	86,782	167,384	182,433	494,760
1993	576	66,532	37,898	141,279	635,208	881,493
1994	390	12,928	50,879	58,334	554,181	676,712
1995	468	57,797	29,343	161,493	379,659	628,760
1996	575	177,530	20,926	59,447	612,969	871,447
1997	862	227,231	5,618	154,969	689,977	1,078,657
1998	605	59,463	2,925	383,604	347,317	793,914
1999	401	106,028	1,114	32,408	689,210	829,161
2000	269	176,452	82,869	88,228	1,643,801	1,991,619
2001	216	87,539	3,185	308,707	1,142,449	1,542,096
2002	203	59,758	784	6,457	1,660,443	1,727,645
2003	114	161,872	9,900	44,419	726,431	942,736
2004	126	216,156	10,200	20,081	534,959	781,522
2005	115	94,748	52,416	72,110	880,967	1,100,356
2006	71	96,435	97,002	24,659	266,233	484,400
2007	89	173,430	60,982	65,407	858,179	1,158,087
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
10-year Average	137	169,316	42,284	653,931	1,276,063	2,141,730
2013	259	93,734	62,968	2,450,108	2,100,394	4,707,463

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
	Purse Seine					
1984	0	21	0	10,911	1,126	12,058
1985	85	10,757	112	69,242	19,330	99,526
1986	186	18,514	98	145,706	27,078	191,582
1987	58	38,899	1,956	865,671	59,252	965,836
1988	63	1,623	15,787	1,600,481	11,755	1,629,709
1989	61	2,030	39,484	3,296,965	124,639	3,463,179
1990	2	286	11,819	785,278	10,951	808,336
1991	11	1,562	621	1,980,074	11,519	1,993,787
1992	6	765	27,382	196,503	1,603	226,259
1993	46	6,250	1,760	352,468	3,645	364,169
1994	50	21,060	30,517	3,538,760	3,575	3,593,962
1995	33	20,670	5,337	917,200	2,597	945,837
1996	1	2,640	5,319	1,484,422	463	1,492,845
1997	7	5,694	1,269	1,875,617	33,139	1,915,726
1998	20	1,702	1,531	2,845,157	21,600	2,870,010
1999	34	3,229	338	3,509,722	621,349	4,134,672
2000	1	2,984	31,991	3,271,314	1,338	3,307,628
2001	8	2,398	356	648,335	3,802	654,899
2002	5	2,068	2,431	1,271,180	794,794	2,070,478
2003	15	125,641	724	11,439,915	750,834	12,317,129
2004	2	195	133	23,609	386,042	409,981
2005	1	10,722	1,558	3,246,778	275,783	3,534,842
2006	9	5,944	16,995	1,348,377	297,576	1,668,901
2007	9	12,472	24,602	2,334,590	318,626	2,690,299
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
10-year Average	7	17,454	10,980	4,258,860	233,945	4,521,246
2013	33	1,978	7,573	6,690,850	70,271	6,770,705

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Combined Purse Seine and Drift Gillnet						
1984	396	94,977	563	908,407	266,004	1,270,347
1985	465	350,053	1,243	523,773	266,154	1,141,688
1986	803	400,079	887	214,593	246,049	862,411
1987	410	416,353	15,352	1,578,568	378,094	2,388,777
1988	564	83,917	57,094	2,914,542	358,143	3,414,260
1989	425	108,144	120,221	3,925,487	319,223	4,473,500
1990	128	12,274	140,424	2,692,788	312,160	3,157,774
1991	103	5,450	78,984	2,211,575	45,742	2,341,854
1992	248	58,684	114,164	363,887	184,036	721,019
1993	622	72,782	39,658	493,747	638,853	1,245,662
1994	440	33,988	81,396	3,597,094	557,756	4,270,674
1995	501	78,467	34,680	1,078,693	382,256	1,574,597
1996	576	180,170	26,245	1,543,869	613,432	2,364,292
1997	869	232,925	6,887	2,030,586	723,116	2,994,383
1998	625	61,165	4,456	3,228,761	368,917	3,663,924
1999	435	109,257	1,452	3,542,130	1,310,559	4,963,833
2000	270	179,436	114,860	3,359,542	1,645,139	5,299,247
2001	224	89,937	3,541	957,042	1,146,251	2,196,995
2002	208	61,826	3,215	1,277,637	2,455,237	3,798,123
2003	129	287,513	10,624	11,484,334	1,477,265	13,259,865
2004	128	216,351	10,333	43,690	921,001	1,191,503
2005	116	105,470	53,974	3,318,888	1,156,750	4,635,198
2006	80	102,379	113,997	1,373,036	563,809	2,153,301
2007	98	185,902	85,584	2,399,997	1,176,804	3,848,385
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
10-year Average	144	190,454	52,571	4,744,502	1,501,416	6,489,086
2013	292	95,712	70,541	9,140,958	2,170,665	11,478,168

Appendix B9.—Estimated age and sex composition of sockeye salmon harvested in the Coghill District commercial common property drift gillnet and purse seine fisheries, 2013.

Strata Combined:		05/27 - 09/11		Brood Year and Age Class <sup>a</sup>					Total <sup>b</sup>	
		07/03 - 07/03		2010	2009	2008		2007		
Sample size:		312		1.1	1.2	1.3	2.2	1.4	2.3	
Female	Percentage of sample			0.0	21.8	36.9	0.6	0.6	3.2	63.1
	Number in escapement			0	20,429	34,549	601	601	3,004	59,185
Male	Percentage of sample			0.3	11.9	21.2	0.3	1.3	1.9	36.9
	Number in escapement			300	11,116	19,828	300	1,202	1,803	34,549
Total	Percentage of sample			0.3	33.7	58.0	1.0	1.9	5.1	100.0
	Number in escapement			300	31,545	54,378	901	1,803	4,807	93,734
	Standard error			300	2,512	2,623	519	730	1,172	

<sup>a</sup> 79 fish with resorbed scales have been removed. Scale pattern analysis indicates 23% Coghill Lake are wild stock.

<sup>b</sup> Total harvest does not include 1,978 fish harvested in the purse seine fishery. All samples obtained from the drift gillnet fishery.

Appendix B10.–Estimated age and sex composition of the sockeye salmon escapement through the weir on the outlet stream of Coghill Lake, 2013.

Stratum dates:	06/17 - 07/27	Brood Year and Age Class <sup>a, b</sup>							
		2010		2009	2008		2007		Total
Sampling date:	06/27 - 07/19	0.2	1.1	1.2	1.3	2.2	1.4	2.3	
Sample size:	961								
Female	Percentage of sample	0.0	0.0	7.4	24.6	0.2	3.7	2.4	38.3
	Number in harvest	0	0	1,279	4,236	32	642	411	6,600
Male	Percentage of sample	0.1	0.3	32.0	20.7	0.8	6.8	1.0	61.6
	Number in harvest	16	49	5,514	3,565	129	1,163	178	10,614
Total	Percentage of sample	0.1	0.3	39.5	45.3	0.9	10.5	3.4	100.0
	Number in harvest	16	49	6,810	7,801	161	1,805	588	17,231
	Standard error	16	28	320	316	51	255	159	

<sup>a</sup> Fish with resorbed scales have been removed; Strata #1 had 26, #2 - 16.

<sup>b</sup> 274 ages determined using otoliths; Strata #1 had 128, #2 - 128, #3 - 18.

Appendix B11.-Commercial common property salmon harvest by period in the Unakwik District drift gillnet and purse seine fisheries, 2013.

Period	Date <sup>a</sup>	Emergency Orders				Chinook		Sockeye		Coho		Pink		Chum	
		Issued	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Drift Gillnet															
01	6/13-6/14	2-F-E-120-13	24	0	0	0	0	0	0	0	0	0	0	0	0
02	6/17-6/18	2-F-E-120-13	24	0	0	0	0	0	0	0	0	0	0	0	0
03	6/20-6/21	2-F-E-026-13	24	0	0	0	0	0	0	0	0	0	0	0	0
04	6/24-6/25	2-F-E-032-13	24	0	0	0	0	0	0	0	0	0	0	0	0
05	6/27-6/28	2-F-E-033-13	24	0	0	0	0	0	0	0	0	0	0	0	0
06	7/1-7/2	2-F-E-035-13	24	0	0	0	0	0	0	0	0	0	0	0	0
07	7/4-7/5	2-F-E-042-13	24	0	0	0	0	0	0	0	0	0	0	0	0
08	7/8-7/9	2-F-E-043-13	36	2	4	1	4	776	5,415	0	0	203	558	28	245
09	7/11-7/12	2-F-E-044-13	24	0	0	0	0	0	0	0	0	0	0	0	0
10	7/15-7/16	2-F-E-048-13	24	0	0	0	0	0	0	0	0	0	0	0	0
Total			204	2	4	1	4	776	5,415	0	0	203	558	28	245
Average Weight								4.00	6.98		0.00		2.75		8.75
Purse Seine															
01	6/13-6/14	2-F-E-120-13	24	0	0	0	0	0	0	0	0	0	0	0	0
02	6/17-6/18	2-F-E-120-13	24	0	0	0	0	0	0	0	0	0	0	0	0
03	6/20-6/21	2-F-E-026-13	24	1	1	0	0	681	4,076	0	0	0	0	101	708
04	6/24-6/25	2-F-E-032-13	24	2	2	0	0	1,267	7,600	0	0	4	10	12	86
05	6/27-6/28	2-F-E-033-13	24	2	2	0	0	867	5,202	1	4	77	211	46	325
06	7/1-7/2	2-F-E-035-13	24	0	0	0	0	0	0	0	0	0	0	0	0
07	7/4-7/5	2-F-E-042-13	24	0	0	0	0	0	0	0	0	0	0	0	0
08	7/8-7/9	2-F-E-043-13	36	0	0	0	0	0	0	0	0	0	0	0	0
09	7/11-7/12	2-F-E-044-13	24	0	0	0	0	0	0	0	0	0	0	0	0
10	7/15-7/16	2-F-E-048-13	24	0	0	0	0	0	0	0	0	0	0	0	0
Total			204	2	5	0	0	2,815	16,878	1	4	81	221	159	1,119
Average Weight								0.00	6.00		4.00		2.73		7.04

<sup>a</sup> All waters designated for commercial salmon fishing in the Unakwik District were open for all periods.



Appendix B12.–Commercial common property salmon harvest by species in the Unakwik District, 1983–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift Gillnet						
1983	3	13,215	0	1,515	1,426	16,159
1984	2	18,522	0	27,742	7,125	53,391
1985	26	27,532	22	9,191	3,942	40,713
1986	5	25,759	1	1,973	2,463	30,201
1987	2	5,894	1	4,871	1,356	12,124
1988	15	8,589	0	281	1,504	10,389
1989	31	21,412	27	41,820	404	63,694
1990	3	247	127	9,986	23	10,386
1991	13	4,482	11	12,299	118	16,923
1992	3	2,224	13	3,972	94	6,306
1993	5	14,691	4	3,338	978	19,016
1994	0	548	0	300	0	848
1995	8	2,116	0	1	36	2,161
1996	3	6,063	0	17	694	6,777
1997	3	3,411	0	0	177	3,591
1998	10	13,651	55	1,932	586	16,234
1999	4	8,544	5	0	296	8,849
2000	0	1,119	0	0	20	1,139
2001	3	2,298	2	4	44	2,351
2002	5	9,825	14	0	761	10,605
2003	0	2,163	0	0	0	2,163
2004	5	7,438	1	0	168	7,612
2005	6	23,027	27	1,540	858	25,458
2006	1	698	1	36	171	907
2007	1	15,146	0	0	222	15,369
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
10-year Average	1	5,845	3	270	215	6,334
2013	1	776	0	203	28	1,008

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Purse Seine						
1983	0	6	0	3,344	716	4,066
1984	0	0	0	0	0	0
1985	0	138	0	28,210	4,123	32,471
1986	0	76	0	4,718	4,675	9,469
1987	0	146	0	187,752	6,549	194,447
1988	0	667	7	57,844	23,860	82,378
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0
1991	0	819	3	121,068	79	121,969
1992	0	42	2	13,264	119	13,427
1993	0	79	0	3,233	67	3,379
1994	0	226	102	388,901	73	389,302
1995	0	0	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	1	386	0	0	2	389
2000	0	0	0	20,485	0	20,485
2001	0	0	0	0	0	0
2002	3	1,141	16	133	123	1,416
2003	0	1,017	0	2,261	20	3,298
2004	0	0	0	0	0	0
2005	0	80	0	81,858	0	81,938
2006	0	0	0	0	0	0
2007	0	547	0	0	4	551
2008	0	0	0	0	0	0
2009	0	1,153	0	0	10	1,163
2010	1	31	0	34	26	92
2012	0	370	0	18	148	536
10-year Average	0	434	2	8,430	33	8,899
2013	0	2,815	1	81	159	3,056

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Combined Gear						
1983	3	13,221	0	4,859	2,142	20,225
1984	2	18,522	0	27,742	7,125	53,391
1985	26	27,670	22	37,401	8,065	73,184
1986	5	25,835	1	6,691	7,138	39,670
1987	2	6,040	1	192,623	7,905	206,571
1988	15	9,256	0	58,125	25,364	92,760
1989	31	21,412	27	41,820	404	63,694
1990	3	247	127	9,986	23	10,386
1991	13	5,301	11	133,367	197	138,889
1992	3	2,266	13	17,236	213	19,731
1993	5	14,770	4	6,571	1,045	22,395
1994	0	774	0	389,201	73	390,048
1995	8	2,116	0	1	36	2,161
1996	3	6,063	0	17	694	6,777
1997	3	3,411	0	0	177	3,591
1998	10	13,651	55	1,932	586	16,234
1999	5	8,930	5	0	298	9,238
2000	0	1,119	0	20,485	20	21,624
2001	3	2,298	2	4	44	2,351
2002	8	10,966	14	133	884	12,005
2003	0	3,180	0	2,261	20	5,461
2004	5	7,438	1	0	168	7,612
2005	6	23,107	27	83,398	858	107,396
2006	1	698	1	36	171	907
2007	1	15,693	0	0	226	15,920
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	1,390	1,390	0	1	30	2,811
2012	1,707	1,707	1,707	1,707	1,707	1,707
10-year Average	311	5,678	174	8,832	365	15,359
2013	1	3,591	1	284	187	4,064

Appendix B13.—Port Chalmers Subdistrict commercial common property drift gillnet harvest of salmon by period, 2013.

Period	Date	Emergency				Chinook		Sockeye		Coho		Pink		Chum	
		Orders Issued	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	5/27-5/29	2-F-E-006-13	60	4	11	16	307	0	0	0	0	0	0	663	6,081
2	5/30-6/2	2-F-E-007-13	84	9	35	20	323	0	0	0	0	1	4	5,747	44,039
3	6/3-6/5	2-F-E-010-13	60	19	48	9	138	3	20	0	0			3,400	26,853
4	6/6-6/9	2-F-E-015-13	84	35	154	17	245	48	273	0	0	2	8	37,953	276,334
5	6/10-6/12	2-F-E-016-13	60	52	182	26	382	160	908	0	0	57	158	24,605	181,721
6	6/13-6/16	2-F-E-021-13	84	63	156	20	232	315	2,046	0	0	1,034	2,854	25,850	202,225
7	6/17-6/19	2-F-E-024-13	60	21	48	0	0	100	599	0	0	259	713	9,142	71,450
8	6/20-6/23	2-F-E-026-13	84	74	271	9	115	321	2,069	1	4	608	1,679	77,682	575,833
9	6/24-6/26	2-F-E-032-13	60	37	138	1	10	96	630			199	552	39,374	297,431
10	6/27-6/30	2-F-E-033-13	84	59	233	3	38	501	3,171	1	5	50	138	88,991	641,594
11	7/1-7/3	2-F-E-035-13	60	35	143	8	108	154	786	3	21	67	184	53,345	383,802
12	7/4-7/7	2-F-E-042-13	84	24	120	3	43	21	118	1	8	52	143	55,556	375,381
13	7/8-7/10	2-F-E-043-13	60	40	146	6	85	140	820	41	304	6,669	18,413	40,582	271,259
14	7/11-7/14	2-F-E-044-13	84	18	89	2	27	137	773	7	49	7,240	19,979	13,716	94,095
15	7/15-7/17	2-F-E-048-13	60	8	26	0	0	53	240	6	30	4,110	11,348	4,705	32,699
16	7/18-7/21	2-F-E-062-13	84	8	22	0	0	17	100	64	406	4,818	13,297	1,469	9,727
17	7/22-7/24	2-F-E-064-13	60	2	5	0	0	3	13	27	135	1,383	3,817	512	3,581
18	7/25-7/28	2-F-E-066-13	84	3	7	0	0	8	33	104	654	1,548	4,272	341	2,383
19	7/29-7/30	2-F-E-060-13	36	0	0	0	0	0	0	0	0	0	0	0	0
Total				151	1,834	140	2,053	2,077	12,599	255	1,616	28,097	77,559	483,633	3,496,488
Average Weight							14.66		6.07		6.34		2.76		7.23

Note: Waters of the Port Chalmers Subdistrict were open for all periods. The Port Chalmers Subdistrict consists of waters on the west side of Montague Island that are east of a line connecting the following points: 60°20.00' N., 147°26.59' W., 60°14.75' N., 147°35.35' W., 60°02.50' N., 147°44.41' W.

Appendix B14.—Port Chalmers Subdistrict drift gillnet commercial common property harvest of salmon by statistical week, 2013.

Week	Dates	Hours	Permits		Chinook		Sockeye		Coho		Pink		Chum	
			Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
22	5/26-6/1	124	5	30	30	525	0	0	0	0	0	0	3,166	26,361
23	6/2-6/8	144	34	169	26	428	33	192	0	0	3	12	32,706	242,356
24	6/9-6/15	144	91	359	47	605	465	2,878	0	0	1,025	2,832	58,374	437,468
25	6/16-6/22	144	85	269	12	161	409	2,605	1	4	842	2,318	75,579	564,851
26	6/23-6/29	144	89	402	5	49	582	3,691	1	5	340	944	126,829	934,432
27	6/30-7/6	144	51	281	11	160	230	1,254	4	29	111	306	112,379	783,184
28	7/7-7/13	144	43	243	9	125	215	1,263	46	343	11,311	31,218	64,704	441,022
29	7/14-7/20	144	13	67	0	0	125	639	51	341	10,777	29,751	8,998	60,535
30	7/21-7/27	144	4	13	0	0	18	77	132	741	3,275	9,039	898	6,279
31	7/28-8/3	56	1	1	0	0	0	0	20	153	413	1,139	0	0
Total		1,332	151	1,834	140	2,053	2,077	12,599	255	1,616	28,097	77,559	483,633	3,496,488
Average Weights						14.66		6.07		6.34		2.76		7.23

Note: Waters of the Port Chalmers Subdistrict were open for all periods. The Port Chalmers Subdistrict consists of waters on the west side of Montague Island that are east of a line connecting the following points: 60°20.00' N., 147°26.59' W., 60°14.75' N., 147°35.35' W., 60°02.50' N., 147°44.41' W.

Appendix B15.—Total commercial common property harvest by species in the Port Chalmers Subdistrict, 2008–2013.

Year	Number of permits fished	Gear Type	Numbers of fish					Total
			Chinook	Sockeye	Coho	Pink	Chum	
2008	81	purse seine	88	10,225	23	216,013	1,233,909	1,460,258
2009	207	drift gillnet	87	10,208	2,318	67,978	672,918	753,509
2010	113	drift gillnet	188	5,512	76	15,794	243,456	265,026
2011	44	drift gillnet	79	1,613	618	4,435	103,102	109,847
2012	54	drift gillnet	46	486	27	13,525	325,137	339,221
5-year Average	100		98	5,609	612	63,549	515,704	585,572
2013	151	drift gillnet	140	2,077	255	28,097	483,633	514,202

Appendix B16.–Estimated age and sex composition of chum salmon harvested in the Port Chalmers subdistrict of the Montague District commercial common property drift gillnet and purse seine fisheries, 2013.

Strata Combined:	05/27 - 07/28	Brood Year and Age Class			Total <sup>a</sup>
		2009	2008	2007	
Sampling dates:	06/12 - 06/29				
Sample size:	763	0.3	0.4	0.5	
Female	Percentage of sample	11.1	37.3	0.1	48.5
	Number in harvest	53,562	180,341	708	234,611
Male	Percentage of sample	14.4	36.5	0.4	51.3
	Number in harvest	69,742	176,651	1,974	248,367
Total	Percentage of sample	25.6	73.8	0.6	100.0
	Number in harvest	124,011	356,992	2,682	483,686
	Standard error	7,573	7,638	1,345	

<sup>a</sup> Total does not include 41 fish harvested in the purse seine fishery.





## **APPENDIX C: ESHAMY DISTRICT**

Appendix C1.–Salmon escapement by species past the Eshamy River weir, 1967–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1967	0	10,821	192	10,433	1	21,447
1968	1	68,048	450	919	1	69,419
1969	0	61,196	96	3,095	2	64,389
1970	0	11,460	25	387	0	11,872
1971 <sup>a</sup>	0	954	97	3,179	0	4,230
1972 <sup>b</sup>	0	28,683	0	0	0	28,683
1973	0	10,202	205	1,698	0	12,105
1974 <sup>b</sup>	0	633	0	0	0	633
1975 <sup>b</sup>	0	1,724	0	0	0	1,724
1976 <sup>b</sup>	0	19,367	0	0	0	19,367
1977	0	11,746	230	32,080	0	44,056
1978	0	12,580	20	552	0	13,152
1979	0	12,169	5	3,654	1	15,829
1980	5	44,263	128	963	2	45,361
1981	1	23,048	249	5,956	13	29,267
1982	0	6,782	79	1,056	79	7,996
1983	0	10,348	40	7,047	4	17,439
1984	2	36,121	881	3,970	0	40,974
1985	0	26,178	96	6,271	0	32,545
1986	2	6,949	55	1,004	31	8,041
1987 <sup>c</sup>	0	0	0	0	0	0
1988	2	31,747	48	1,205	1	33,003
1989	1	57,232	0	7,782	210	65,225
1990	0	14,477	43	2,209	5	16,734
1991	2	46,229	907	31,241	17	78,396
1992	1	36,237	52	3,004	5	39,299
1993	1	42,893	92	3,435	9	46,430
1994	1	64,660	1,184	12,061	87	77,993
1995	7	21,701	1,076	18,601	407	41,792
1996	2	5,271	108	7,959	9	13,349
1997	2	39,015	111	15,142	18	54,288
1998 <sup>c</sup>	0	0	0	0	0	0
1999	1	27,057	194	32,756	3	60,011
2000	2	22,653	151	20,515	381	43,702
2001	0	55,187	335	21,027	176	76,725
2002	0	40,478	14	4,843	1,072	46,407
2003	2	39,845	NA	2,440	335	42,622
2004	0	13,443	0	1,518	0	14,961
2005	1	23,523	46	11,024	529	35,123
2006	0	41,823	201	3,585	608	46,217
2007	0	16,646	831	29,409	243	46,673
2008	0	18,494	27	2,060	20	20,601
2009	1	24,025	147	3,849	416	28,438
2010	0	16,291	114	2,268	84	18,757
2011	0	24,129	0	2,879	35	27,043
2012 <sup>c</sup>	0	0	0	0	0	0
10-year Average	0	21,822	152	5,903	227	28,104
2013 <sup>c</sup>	0	0	0	0	0	0

Note: NA means count is not available. For the breakdown of jacks versus adult sockeye salmon see specific year's daily escapement enumeration table.

<sup>a</sup> Estimate may be low due to holes in weir; actual escapement is estimated to be more than 3,000 sockeye salmon.

<sup>b</sup> Passage of salmon other than sockeye salmon was not recorded.

<sup>c</sup> The Eshamy River weir was not in operation.

Appendix C2.—Total drift gillnet common property salmon harvest by period in the Eshamy District, 2013.

Period	Date	Emergency				Chinook		Sockeye		Coho		Pink		Chum	
		Orders	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	<sup>a</sup> 5/30-6/2	2-F-E-006-13	84	2	5	1	7	6	40	0	0	0	0	651	5,035
2	<sup>a</sup> 6/3-6/5	2-F-E-010-13	48	34	73	14	200	265	1,759	0	0	0	0	13,918	102,655
3	<sup>a</sup> 6/6-6/9	2-F-E-015-13	72	82	235	19	271	2,469	15,797	0	0	2	6	21,965	161,050
4	<sup>a</sup> 6/10-6/12	2-F-E-016-13	48	58	110	8	101	3,830	26,877	0	0	0	0	7,263	56,025
5	<sup>a</sup> 6/13-6/16	2-F-E-021-13	72	125	391	11	152	17,270	113,769	0	0	50	138	29,931	221,868
6	<sup>a</sup> 6/17-6/19	2-F-E-024-13	48	109	252	6	61	15,317	99,285	0	0	8	23	11,436	84,875
7	<sup>a</sup> 6/20-6/22	2-F-E-026-13	48	102	256	2	15	25,740	168,670	0	0	4	15	12,163	88,900
8	<sup>a</sup> 6/24-6/26	2-F-E-032-13	48	182	614	3	36	88,230	553,461	2	14	170	474	19,798	152,982
9	<sup>a</sup> 6/27-6/29	2-F-E-033-13	60	119	434	0	0	50,760	313,508	56	396	725	2,030	12,531	93,743
10	<sup>b</sup> 7/1-7/3	2-F-E-035-13	48	96	313	2	35	40,746	247,610	86	564	4,287	11,835	27,448	207,615
11	<sup>b</sup> 7/4-7/6	2-F-E-042-13	60	90	273	0	0	29,720	181,695	126	949	8,637	23,832	14,743	107,134
12	<sup>c</sup> 7/8-7/10	2-F-E-043-13	48	73	211	0	0	17,568	100,779	106	777	12,520	34,539	7,667	56,332
13	<sup>c</sup> 7/11-7/12	2-F-E-044-13	36	48	121	5	68	7,534	44,673	319	2,045	13,885	38,338	2,687	19,442
14	<sup>d</sup> 7/15-7/16	2-F-E-048-13	36	39	102	0	0	5,189	31,573	640	4,653	13,205	36,446	1,869	13,720
15	<sup>e</sup> 7/18-7/19	2-F-E-062-13	24	9	11	0	0	829	4,782	38	293	560	1,549	61	493
16	<sup>e</sup> 7/22-7/23	2-F-E-064-13	24	6	9	0	0	558	3,575	56	443	1,040	2,870	54	379
17	<sup>f</sup> 7/25-7/27	2-F-E-066-13	48	16	25	2	17	2,266	13,541	107	693	2,981	8,228	100	726
18	<sup>g</sup> 7/29-7/31	2-F-E-060-13	48	20	40	1	9	27,725	139,167	129	675	2,052	5,662	22	153
19	<sup>h</sup> 8/1-8/3	2-F-E-121-13	48	0	0	0	0	0	0	0	0	0	0	0	0
20	<sup>i</sup> 8/5	2-F-E-121-13	14	1	1	0	0	0	0	0	0	964	2,661	25	177
21	<sup>j</sup> 8/6-8/7	2-F-E-121-13	36	0	0	0	0	0	0	0	0	0	0	0	0
22	<sup>g</sup> 8/8-8/9	2-F-E-121-13	36	0	0	0	0	0	0	0	0	0	0	0	0
23	<sup>k</sup> 8/12	2-F-E-076-13	14	2	2	0	0	39	246	59	408	1,086	2,996	2	12

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Period	Date	Emergency				Chinook		Sockeye		Coho		Pink		Chum	
		Orders	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
24	<sup>l</sup> 8/13-8/14	2-F-E-076-13	36	0	0	0	0	0	0	0	0	0	0	0	0
25	<sup>i</sup> 8/15	2-F-E-078-13	14	0	0	0	0	0	0	0	0	0	0	0	0
26	<sup>k</sup> 8/19	2-F-E-078-13	14	0	0	0	0	0	0	0	0	0	0	0	0
27	<sup>i</sup> 8/22	2-F-E-086-13	14	0	0	0	0	0	0	0	0	0	0	0	0
28	<sup>k</sup> 8/26	2-F-E-089-13	14	0	0	0	0	0	0	0	0	0	0	0	0
29	<sup>i</sup> 8/29	2-F-E-091-13	14	0	0	0	0	0	0	0	0	0	0	0	0
30	<sup>k</sup> 9/2	2-F-E-094-13	14	0	0	0	0	0	0	0	0	0	0	0	0
31	<sup>i</sup> 9/5	2-F-E-094-13	14	0	0	0	0	0	0	0	0	0	0	0	0
Total			1,182	326	3,478	74	972	336,061	2,060,807	1,724	11,910	62,176	171,642	184,334	1,373,316
Average Weight							13.14		6.13		6.91		2.76		7.45

- <sup>a</sup> All waters of the Eshamy District were open.
- <sup>b</sup> Waters of the Eshamy District, excluding the MBH AGZ, were open.
- <sup>c</sup> Waters of the Eshamy District, excluding the MBH SHA and AGZ, were open.
- <sup>d</sup> Waters of the Eshamy District, excluding the Main Bay Subdistrict, were open.
- <sup>e</sup> Waters of the Main Bay Subdistrict, excluding the MBH SHA and AGZ, were open.
- <sup>f</sup> Waters of the Main Bay Subdistrict, excluding the MBH AGZ, were open.
- <sup>g</sup> Waters of the Main Bay Subdistrict were open. The AGZ was open to drift gillnet permit holders only.
- <sup>h</sup> Waters of the Main Bay Subdistrict were open. The AGZ was open to set gillnet permit holders only.
- <sup>i</sup> Waters of the Eshamy District were open. The AGZ was open to drift gillnet permit holders only.
- <sup>j</sup> Waters of the MBH SHA were open. The AGZ was open to set gillnet permit holders only.
- <sup>k</sup> Waters of the Eshamy District were open. The AGZ was open to set gillnet permit holders only.
- <sup>l</sup> Waters of the MBH SHA were open. The AGZ was open to drift gillnet permit holders only.

Appendix C3.—Total set gillnet common property salmon harvest by period in the Eshamy District, 2013.

Period	Date	Emergency				Chinook		Sockeye		Coho		Pink		Chum	
		Orders	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	<sup>a</sup> 5/30-6/2	2-F-E-006-13	84	10	51	12	241	109	768	0	0	0	0	2,308	17,053
2	<sup>a</sup> 6/3-6/5	2-F-E-010-13	48	15	45	3	76	228	1,502	0	0	0	0	2,171	16,395
3	<sup>a</sup> 6/6-6/9	2-F-E-015-13	72	17	88	5	120	1,697	11,074	0	0	0	0	3,659	26,863
4	<sup>a</sup> 6/10-6/12	2-F-E-016-13	48	20	105	14	175	5,398	35,829	0	0	0	0	3,051	22,800
5	<sup>a</sup> 6/13-6/16	2-F-E-021-13	72	25	164	9	128	11,327	71,083	2	26	46	126	3,024	22,406
6	<sup>a</sup> 6/17-6/19	2-F-E-024-13	48	26	151	3	64	16,438	104,147	1	5	3	10	1,995	14,767
7	<sup>a</sup> 6/20-6/22	2-F-E-026-13	48	27	189	6	84	30,554	178,145	2	15	4	12	1,964	14,299
8	<sup>a</sup> 6/24-6/26	2-F-E-032-13	48	28	191	0	0	34,954	204,670	0	0	24	76	2,686	20,598
9	<sup>a</sup> 6/27-6/29	2-F-E-033-13	60	28	214	1	13	31,036	182,630	5	32	144	412	2,966	22,834
10	<sup>b</sup> 7/1-7/3	2-F-E-035-13	48	27	172	2	31	24,467	142,050	7	45	1,222	3,382	7,631	57,755
11	<sup>b</sup> 7/4-7/6	2-F-E-042-13	60	28	167	3	54	19,662	114,349	7	60	2,300	6,333	4,170	30,600
12	<sup>c</sup> 7/8-7/10	2-F-E-043-13	48	27	119	1	19	12,591	70,932	59	438	2,908	8,031	4,319	32,240
13	<sup>c</sup> 7/11-7/12	2-F-E-044-13	36	21	75	0	0	6,613	36,516	101	581	4,643	12,827	1,402	10,391
14	<sup>d</sup> 7/15-7/16	2-F-E-048-13	36	17	63	0	0	4,269	26,285	135	1,006	5,842	16,120	1,190	8,730
15	<sup>e</sup> 7/18-7/19	2-F-E-062-13	24	8	18	0	0	976	4,961	17	135	639	1,764	33	235
16	<sup>e</sup> 7/22-7/23	2-F-E-064-13	24	3	8	0	0	379	2,383	8	56	229	628	24	156
17	<sup>f</sup> 7/25-7/27	2-F-E-066-13	48	2	13	0	0	2,056	12,077	1	8	474	1,310	33	233
18	<sup>g</sup> 7/29-7/31	2-F-E-060-13	48	1	3	0	0	105	554	0	0	126	347	0	0
19	<sup>h</sup> 8/1-8/3	2-F-E-121-13	48	0	0	0	0	0	0	0	0	0	0	0	0
20	<sup>i</sup> 8/5	2-F-E-121-13	14	1	1	0	0	100	605	10	59	0	0	0	0
21	<sup>j</sup> 8/6-8/7	2-F-E-121-13	36	0	0	0	0	0	0	0	0	0	0	0	0
22	<sup>g</sup> 8/8-8/9	2-F-E-121-13	36	0	0	0	0	0	0	0	0	0	0	0	0
23	<sup>k</sup> 8/12	2-F-E-076-13	14	1	1	0	0	60	378	5	35	510	1,408	4	28

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Period	Date	Emergency				Chinook		Sockeye		Coho		Pink		Chum	
		Orders	Hours	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
24	<sup>l</sup> 8/13-8/14	2-F-E-076-13	36	0	0	0	0	0	0	0	0	0	0	0	0
25	<sup>i</sup> 8/15	2-F-E-078-13	14	0	0	0	0	0	0	0	0	0	0	0	0
26	<sup>k</sup> 8/19	2-F-E-078-13	14	0	0	0	0	0	0	0	0	0	0	0	0
27	<sup>i</sup> 8/22	2-F-E-086-13	14	0	0	0	0	0	0	0	0	0	0	0	0
28	<sup>k</sup> 8/26	2-F-E-089-13	14	0	0	0	0	0	0	0	0	0	0	0	0
29	<sup>i</sup> 8/29	2-F-E-091-13	14	0	0	0	0	0	0	0	0	0	0	0	0
30	<sup>k</sup> 9/2	2-F-E-094-13	14	0	0	0	0	0	0	0	0	0	0	0	0
31	<sup>i</sup> 9/5	2-F-E-094-13	14	0	0	0	0	0	0	0	0	0	0	0	0
Total			1,182	29	1,838	59	1,005	203,019	1,200,938	360	2,501	19,114	52,786	42,630	318,383
Average Weight							17.03		5.92		6.95		2.76		7.47

- <sup>a</sup> All waters of the Eshamy District were open.
- <sup>b</sup> Waters of the Eshamy District, excluding the MBH AGZ, were open.
- <sup>c</sup> Waters of the Eshamy District, excluding the MBH SHA and AGZ, were open.
- <sup>d</sup> Waters of the Eshamy District, excluding the Main Bay Subdistrict, were open.
- <sup>e</sup> Waters of the Main Bay Subdistrict, excluding the MBH SHA and AGZ, were open.
- <sup>f</sup> Waters of the Main Bay Subdistrict, excluding the MBH AGZ, were open.
- <sup>g</sup> Waters of the Main Bay Subdistrict were open. The AGZ was open to drift gillnet permit holders only.
- <sup>h</sup> Waters of the Main Bay Subdistrict were open. The AGZ was open to set gillnet permit holders only.
- <sup>i</sup> Waters of the Eshamy District were open. The AGZ was open to drift gillnet permit holders only.
- <sup>j</sup> Waters of the MBH SHA were open. The AGZ was open to set gillnet permit holders only.
- <sup>k</sup> Waters of the Eshamy District were open. The AGZ was open to set gillnet permit holders only.
- <sup>l</sup> Waters of the MBH SHA were open. The AGZ was open to drift gillnet permit holders only.

Appendix C4.-Eshamy District commercial drift gillnet salmon harvest by statistical week, 2013.

Week	Dates	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
22	5/26-6/1	64	2	4	0	0	5	34	0	0	0	0	559	4305
23	6/2-6/8	132	102	305	34	478	2,692	17,262	0	0	2	6	35,784	262,936
24	6/9-6/15	120	136	464	19	253	19,057	126,804	0	0	50	138	34,641	258,748
25	6/16-6/22	104	162	549	8	76	43,143	282,097	0	0	12	38	26,343	194,419
26	6/23-6/29	108	196	1,048	3	36	138,990	866,969	58	410	895	2,504	32,329	246,725
27	6/30-7/6	108	122	586	2	35	70,466	429,305	212	1,513	12,924	35,667	42,191	314,749
28	7/7-7/13	84	85	332	5	68	25,102	145,452	425	2,822	26,405	72,877	10,354	75,774
29	7/14-7/20	60	39	113	0	0	6,018	36,355	678	4,946	13,765	37,995	1,930	14,213
30	7/21-7/27	72	18	34	2	17	2,824	17,116	163	1,136	4,021	11,098	154	1,105
31	7/28-8/3	96	20	40	1	9	27,725	139,167	129	675	2,052	5,662	22	153
32	8/4-8/10	86	1	1	0	0	0	0	0	0	964	2,661	25	177
33	8/11-8/17	64	2	2	0	0	39	246	59	408	1,086	2,996	2	12
34	8/18-8/24	28	0	0	0	0	0	0	0	0	0	0	0	0
35	8/25-8/31	28	0	0	0	0	0	0	0	0	0	0	0	0
36	9/1-9/7	28	0	0	0	0	0	0	0	0	0	0	0	0
Total		1,182	326	3,478	74	972	336,061	2,060,807	1,724	11,910	62,176	171,642	184,334	1,373,316
Average Weights							13.14	6.13		6.91		2.76		7.45

Appendix C5.–Eshamy District commercial set gillnet salmon harvest by statistical week, 2013.

Week	Dates	Permits			Chinook		Sockeye		Coho		Pink		Chum	
		Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
22	5/26-6/1	64	10	40	6	121	74	521	0	0	0	0	2,013	14,878
23	6/2-6/8	132	18	138	14	316	1,778	11,683	0	0	0	0	5,960	44,170
24	6/9-6/15	120	26	259	22	285	15,740	100,449	2	26	46	126	6,102	45,497
25	6/16-6/22	104	27	356	10	166	48,159	289,895	3	20	7	22	4,097	30,038
26	6/23-6/29	108	28	405	1	13	65,990	387,300	5	32	168	488	5,652	43,432
27	6/30-7/6	108	28	339	5	85	44,129	256,399	14	105	3,522	9,715	11,801	88,355
28	7/7-7/13	84	27	194	1	19	19,204	107,448	160	1,019	7,551	20,858	5,721	42,631
29	7/14-7/20	60	17	81	0	0	5,245	31,246	152	1,141	6,481	17,884	1,223	8,965
30	7/21-7/27	72	3	21	0	0	2,435	14,460	9	64	703	1,938	57	389
31	7/28-8/3	96	1	3	0	0	105	554	0	0	126	347	0	0
32	8/4-8/10	86	1	1	0	0	100	605	10	59	0	0	0	0
33	8/11-8/17	64	1	1	0	0	60	378	5	35	510	1408	4	28
34	8/18-8/24	28	0	0	0	0	0	0	0	0	0	0	0	0
35	8/25-8/31	28	0	0	0	0	0	0	0	0	0	0	0	0
36	9/1-9/7	28	0	0	0	0	0	0	0	0	0	0	0	0
Total		1,182	29	1,838	59	1,005	203,019	1,200,938	360	2,501	19,114	52,786	42,630	318,383
Average Weights						17.03		5.92		6.95		2.76		7.47



Appendix C6.—Total commercial harvest in the Eshamy District, 1980–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Drift Gillnet						
1980	0	684	25	3,225	130	4,064
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	1	924	8	162,541	3,427	166,901
1984	7	23,490	282	247,326	15,451	286,556
1985	1	667	0	24,899	1,021	26,588
1986	0	4	1	938	65	1,008
1987	2	642	3	3,225	7,060	10,932
1988	94	50,868	794	348,873	206,060	606,689
1989 <sup>a</sup>	0	0	0	0	0	0
1990	110	12,967	574	165,362	264,772	443,785
1991	107	296,234	468	44,516	202,183	543,508
1992	158	373,596	1,017	153,018	50,974	578,763
1993	8	80,807	673	45,974	27,045	154,507
1994	2	61,848	623	254,535	9,497	326,505
1995	21	29,851	1,468	60,712	13,284	105,336
1996	19	179,064	1,056	19,043	23,552	222,734
1997	17	475,498	426	146,324	34,768	657,033
1998	2	98,002	252	101,068	343	199,667
1999	30	86,032	2,036	127,082	13,120	228,300
2000	634	235,085	5,396	375,250	27,511	643,876
2001	47	499,972	10,423	367,588	21,316	899,346
2002	428	589,199	3,532	122,365	104,284	819,808
2003	19	575,608	1,764	61,565	16,057	655,013
2004	21	215,460	1,467	55,832	43,228	316,008
2005	15	79,227	1,636	110,499	3,493	194,870
2006	15	381,911	5,429	89,755	30,841	507,951
2007	27	538,183	2,556	42,822	81,410	664,998
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
2012	52	987,678	192	88,951	254,774	1,331,647
10-year Average	78	540,807	2,157	86,990	159,297	789,329
2013	74	336,061	1,724	62,176	184,334	584,369

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Set Gillnet						
1980	0	2,000	38	2,371	134	4,543
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	1	1,328	10	167,942	4,463	173,744
1984	5	23,226	98	278,176	3,000	304,505
1985	1	3,439	74	33,284	1,295	38,093
1986	9	1,043	86	42,123	5,764	49,025
1987	31	5,387	336	86,677	45,099	137,530
1988	100	18,321	283	180,456	93,577	292,737
1989 <sup>a</sup>	0	0	0	0	0	0
1990	56	10,204	532	369,589	94,494	474,875
1991	76	184,028	504	20,075	49,394	254,077
1992	101	144,568	1,242	390,097	4,695	540,703
1993	55	101,717	832	84,568	20,369	207,541
1994	9	97,664	628	311,134	6,908	416,343
1995	19	30,814	695	28,118	6,621	66,267
1996	13	132,268	309	16,648	9,276	158,514
1997	12	196,005	163	76,610	8,475	281,265
1998	1	25,533	91	33,916	214	59,755
1999	131	74,378	1,092	43,443	11,101	130,145
2000	41	101,105	662	139,008	12,319	253,135
2001	25	176,060	1,006	127,737	7,057	311,885
2002	30	241,660	525	64,421	22,987	329,623
2003	0	215,733	663	28,537	6,265	251,198
2004	11	91,412	825	51,655	10,381	154,284
2005	0	109,532	882	126,135	3,452	240,001
2006	9	124,087	352	20,863	9,883	155,194
2007	18	196,537	365	13,796	24,651	235,367
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
2012	14	294,632	97	17,311	24,368	336,422
10-year Average	16	187,097	398	36,419	28,683	252,613
2013	59	203,019	360	19,114	42,630	265,182

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Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Combined Gear						
1980	0	2,684	63	5,596	264	8,607
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	2	2,252	18	330,483	7,890	340,645
1984	12	46,716	380	525,502	18,451	591,061
1985	2	4,106	74	58,183	2,316	64,681
1986	9	1,047	87	43,061	5,829	50,033
1987	33	6,029	339	89,902	52,159	148,462
1988	194	69,189	1,077	529,329	299,637	899,426
1989 <sup>a</sup>	0	0	0	0	0	0
1990	166	23,171	1,106	534,951	359,266	918,660
1991	183	480,262	972	64,591	251,577	797,585
1992	259	518,164	2,259	543,115	55,669	1,119,466
1993	63	182,524	1,505	130,542	47,414	362,048
1994	11	159,512	1,251	565,669	16,405	742,848
1995	40	60,665	2,163	88,830	19,905	171,603
1996	32	311,332	1,365	35,691	32,828	381,248
1997	29	671,503	589	222,934	43,243	938,298
1998	3	123,535	343	134,984	557	259,422
1999	161	160,410	3,128	170,525	24,221	358,445
2000	675	336,190	6,058	514,258	39,830	897,011
2001	72	676,032	11,429	495,325	28,373	1,211,231
2002	458	830,859	4,057	186,786	127,271	1,149,431
2003	19	791,341	2,427	90,102	22,322	906,211
2004	32	306,872	2,292	107,487	53,609	470,292
2005	15	188,759	2,518	236,634	6,945	434,871
2006	24	505,998	5,781	110,618	40,724	663,145
2007	45	734,720	2,921	56,618	106,061	900,365
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
2012	66	1,282,310	289	106,262	279,142	1,668,069
10-year Average	95	727,904	2,555	123,409	187,980	1,041,942
2013	133	539,080	2,084	81,290	226,964	849,551

<sup>a</sup> Fishing was closed because of oil contamination on the beaches.

Appendix C7.—Estimated age and sex composition of sockeye salmon harvested in the Eshamy District commercial gillnet fishery, 2013.

Strata Combined:	05/30 - 08/12	Brood Year and Age Class <sup>a</sup>					Total
		2010	2009	2008	2007		
Sampling dates:	07/03 - 07/03	1.1	1.2	1.3	2.2	2.3	
Sample size:	170						
Female	Percentage of sample	0.6	29.4	31.2	0.0	0.6	61.8
	Number in harvest	3,171	158,553	168,066	0	3,171	332,961
Male	Percentage of sample	0.0	18.8	18.2	0.6	0.6	38.2
	Number in harvest	0	101,474	98,303	3,171	3,171	206,119
Total	Percentage of sample	0.6	48.2	49.4	0.6	1.2	100.0
	Number in harvest	3,171	260,027	266,369	3,171	6,342	539,080
	Standard error	3,171	20,721	20,732	3,171	4,471	

<sup>a</sup> 42 fish with resorbed scales have been removed.

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

Appendix D1.–Prince William Sound commercial common property purse seine harvest by day, 2013.

Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
06/01	8	8	0	0	1	7	0	0	0	0	1,652	11,899
06/02	16	16	3	57	12	66	0	0	0	0	4,480	32,475
06/03	11	11	1	9	2	12	0	0	0	0	3,107	23,301
06/04	6	6	1	12	0	0	0	0	0	0	796	6,201
06/05	13	13	0	0	5	33	0	0	0	0	3,304	23,744
06/06	12	19	1	10	40	251	0	0	2	4	9,272	66,348
06/07	11	12	0	0	12	83	0	0	3	7	6,032	47,917
06/08	4	4	0	0	0	0	0	0	0	0	2,061	13,515
06/09	12	13	0	0	27	205	0	0	37	96	8,298	64,405
06/10	9	10	2	58	10	63	0	0	0	0	4,169	30,313
06/11	15	17	1	15	147	995	1	14	35	88	9,180	72,233
06/12	7	7	0	0	47	387	0	0	42	110	3,572	27,628
06/13	22	23	1	26	659	4,060	0	0	32	84	18,834	141,300
06/14 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
06/15	13	13	1	20	460	3,200	0	0	0	0	7,158	57,606
06/16	21	22	0	0	1,260	7,647	0	0	68	176	15,999	124,254
06/17	21	23	1	18	675	4,347	0	0	27	71	7,286	57,604
06/18	16	16	0	0	753	4,831	0	0	48	124	4,197	32,244
06/19	33	34	3	22	3,660	23,756	0	0	55	145	10,963	84,941
06/20	11	11	0	0	3,256	20,282	0	0	77	204	3,191	25,828
06/21	19	19	1	10	1,914	14,060	0	0	105	277	5,183	44,140
06/22	30	32	2	21	3,004	18,629	1	7	144	380	13,085	97,364
06/23	17	17	0	0	854	5,914	0	0	105	279	6,721	53,737
06/24	91	94	255	1,918	6,205	36,601	211	1,323	236,587	692,936	29,648	226,306
06/25	18	18	0	0	875	5,473	0	0	134	356	6,604	48,992
06/26	16	17	0	0	1,389	8,145	2	14	7,813	20,778	5,152	41,374
06/27	108	113	48	448	6,545	37,721	657	4,735	740,559	2,169,796	9,392	70,062
06/28	9	9	2	32	2,629	16,856	0	0	9,381	24,956	11,621	84,574
06/29	6	6	0	0	985	6,182	0	0	703	1,872	6,932	51,283
06/30	173	225	33	423	2,257	14,910	115	614	1,970,830	5,774,437	8,619	68,999

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Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/01	8	8	4	20	5,147	28,390	4	30	2,858	7,602	13,873	102,202
07/02	9	9	6	22	3,087	21,351	8	56	3,123	8,309	11,541	77,588
07/03	185	185	7	105	1,702	8,807	21	162	2,961,164	8,674,225	10,107	74,923
07/04 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
07/05	193	193	3	29	671	4,069	49	349	1,671,428	4,896,899	5,548	46,612
07/06 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
07/07	184	189	1	6	165	981	57	417	2,191,553	6,418,033	4,939	35,529
07/08 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
07/09	193	241	28	438	699	3,967	94	754	2,025,400	5,934,427	5,546	41,987
07/10	192	201	30	531	957	5,630	227	1,675	1,193,158	3,495,955	7,499	57,710
07/11	184	201	21	222	406	2,348	332	2,330	1,294,624	3,791,720	32,632	249,249
07/12	180	220	10	234	1,064	6,825	277	2,227	1,992,249	5,831,029	28,846	214,581
07/13	5	6	0	0	584	3,537	0	0	49,391	135,826	6,521	46,192
07/14	6	6	0	0	1,078	7,211	0	0	44,080	117,252	5,933	41,891
07/15	197	279	2	78	1,129	6,812	330	2,599	2,656,912	7,781,874	7,350	54,887
07/16	4	4	0	0	49	291	0	0	8,626	22,948	129	986
07/17	196	196	16	213	2,211	13,341	705	5,070	2,200,036	6,354,696	7,664	59,630
07/18	15	15	4	44	185	1,083	1	8	126,353	342,769	7340	50,436
07/19	190	209	20	300	1,876	11,314	696	5,527	1,623,658	4,662,133	12,435	90,612
07/20	30	34	0	0	244	1,562	12	95	269,493	733,065	5,888	42,811
07/21	56	57	1	5	187	1,157	41	325	351,140	961,686	2,001	14,909
07/22	192	206	65	658	1,734	10,359	5,387	44,943	1,503,308	4,247,625	11,742	91,866
07/23	0	0	0	0	0	0	0	0	0	0	0	0
07/24	0	0	0	0	0	0	0	0	0	0	0	0
07/25	197	218	17	269	2,803	17,048	1,830	13,050	2,210,431	6,269,775	8,066	59,969

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Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
07/26	107	108	0	0	49	282	64	462	319,162	935,142	298	2,227
07/27	0	0	0	0	0	0	0	0	0	0	0	0
07/28	197	247	20	278	1,854	11,150	4,811	36,356	2,766,391	7,624,213	5,269	38,838
07/29	10	11	0	0	42	242	61	364	94,824	277,839	199	1,487
07/30	198	273	20	257	1,709	10,045	2,762	20,431	3,438,259	9,416,508	10,656	76,913
07/31	18	18	0	0	102	569	781	5,472	188,105	550,779	715	5,579
08/01	195	322	20	134	882	5,277	2,780	20,340	4,123,975	11,214,386	3,351	26,489
08/02	186	234	9	59	560	3,498	1,742	13,201	2,813,576	7,615,736	1,550	11,692
08/03	165	205	9	104	232	1,424	1,277	9,585	2,500,158	6,771,189	1,194	9,067
08/04	186	241	48	478	300	1,870	1,540	11,852	3,253,183	8,824,176	2,009	15,244
08/05	191	266	5	81	260	1,659	1,042	8,199	3,484,229	9,511,237	1,109	8,514
08/06	179	219	13	166	180	1,109	551	3,891	2,720,856	7,373,808	527	3,834
08/07	189	223	10	104	201	1,159	460	3,739	2,556,087	6,873,464	315	2,372
08/08	160	187	19	130	227	1,420	358	2,674	2,331,298	6,272,458	227	1,649
08/09	172	212	1	14	110	662	548	3,934	2,446,151	6,598,211	268	1,927
08/10	181	237	0	0	137	879	670	5,553	2,996,359	8,084,519	250	1,870
08/11	185	221	0	0	136	843	585	4,459	2,707,807	7,286,618	440	3,361
08/12	184	221	0	0	96	638	4,011	16,103	2,580,224	6,926,491	368	2,481
08/13	182	229	0	0	87	444	1,077	8,388	2,508,452	6,736,354	710	5,486
08/14	183	207	1	10	56	340	1,309	10,107	2,247,033	6,037,741	560	4,380
08/15	159	189	0	0	159	1,078	1,704	13,437	2,092,980	5,626,908	401	3,297
08/16	180	227	4	45	56	333	5,165	42,693	2,355,605	6,338,075	550	4,626
08/17	157	194	0	0	94	572	4,423	33,621	1,950,490	5,263,965	367	2,576
08/18	148	162	4	42	69	468	4,954	41,923	1,548,626	4,173,566	285	2,403
08/19	135	141	0	0	54	360	2,092	17,682	1,234,226	3,328,779	201	1,563
08/20	99	109	0	0	22	120	760	6,130	693,302	1,868,561	8	61
08/21	103	111	0	0	41	266	3,760	30,299	778,865	2,098,356	208	1,641
08/22	81	102	0	0	26	152	4,485	35,000	687,125	1,857,877	219	1,561
08/23	56	60	0	0	13	81	4,397	33,341	346,396	936,041	217	1,644
08/24	49	53	0	0	1	6	3,199	25,490	341,077	924,363	365	2,682

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Date	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
			Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
08/25	42	45	0	0	2	12	3,984	32,212	252,595	684,722	274	1,814
08/26	21	22	0	0	0	0	3,513	28,446	128,369	346,573	95	858
08/27	6	6	0	0	0	0	610	4,953	40,680	108,254	10	93
08/28	4	4	0	0	0	0	616	5,188	17,385	46,838	12	83
08/29	4	4	0	0	0	0	336	2,979	33,037	87,896	10	65
08/30 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
08/31	0	0	0	0	0	0	0	0	0	0	0	0
09/01	0	0	0	0	0	0	0	0	0	0	0	0
09/02	0	0	0	0	0	0	0	0	0	0	0	0
09/03	39	46	0	0	0	0	122,567	951,622	0	0	143	1,261
09/04	10	10	0	0	0	0	11,696	71,617	0	0	16	141
09/05	5	5	0	0	0	0	4,091	32,726	0	0	127	1,152
09/06 <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>	– <sup>a</sup>
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	0	0	0	0	0	0	0	0	0	0	0	0
09/11	0	0	0	0	0	0	0	0	0	0	0	0
09/12	0	0	0	0	0	0	0	0	0	0	0	0
09/13	0	0	0	0	0	0	0	0	0	0	0	0
09/14	0	0	0	0	0	0	0	0	0	0	0	0
09/15	0	0	0	0	0	0	0	0	0	0	0	0
09/16	0	0	0	0	0	0	0	0	0	0	0	0
09/17	0	0	0	0	0	0	0	0	0	0	0	0
09/18	0	0	0	0	0	0	0	0	0	0	0	0
09/19	0	0	0	0	0	0	0	0	0	0	0	0
09/20	0	0	0	0	0	0	0	0	0	0	0	0
Total	211	9,140	775	8,201	76,727	470,906	221,984	1,697,944	85,925,135	238,003,252	487,464	3,684,172
Average Weight				10.58		6.14		7.65		2.77		7.56

<sup>a</sup> Confidential.

Appendix D2.–Area E commercial salmon harvest by species, excluding Copper River and Bering River districts, 1971–2013.

Year <sup>a</sup>	Chinook	Sockeye	Coho	Pink	Chum	Total
1971	3,551	88,368	30,551	7,310,964	574,265	8,007,699
1972 <sup>b</sup>	547	197,526	1,634	54,783	45,370	299,860
1973	2,405	124,802	1,399	2,056,878	729,839	2,915,323
1974 <sup>b</sup>	1,590	129,366	801	448,773	88,544	669,074
1975	2,519	189,613	6,142	4,452,805	100,479	4,751,558
1976	1,044	112,809	6,171	3,018,991	370,478	3,509,493
1977	648	310,358	843	4,513,082	572,610	5,397,541
1978	1,042	222,083	1,495	2,913,721	485,147	3,623,488
1979	2,015	150,040	6,843	15,607,620	326,414	16,092,932
1980	189	189,816	2,952	14,157,057	482,016	14,832,030
1981	404	251,222	4,383	20,524,470	1,878,716	22,659,195
1982	255	1,055,099	24,362	20,396,222	1,335,368	22,811,306
1983	1,048	92,111	10,496	14,038,796	1,041,309	15,183,760
1984	489	311,955	12,420	22,086,806	1,201,842	23,613,512
1985	1,104	493,278	19,753	25,056,663	1,280,093	26,850,891
1986	1,330	488,715	12,277	11,407,271	1,683,049	13,592,642
1987	874	540,109	47,751	29,198,507	1,904,494	31,691,735
1988	1,037	183,572	75,709	11,817,323	1,832,114	13,909,755
1989	1,113	140,090	203,574	21,860,582	995,962	23,201,321
1990	447	58,497	234,525	44,163,479	959,838	45,416,786
1991	445	507,815	145,311	37,134,311	331,906	38,119,788
1992	1,475	780,932	202,311	8,635,448	328,568	9,948,734
1993	2,148	418,948	48,310	5,761,436	1,173,341	7,404,183
1994	1,376	334,183	121,518	36,874,188	1,039,095	38,370,360
1995	1,364	230,057	140,314	16,045,396	702,216	17,119,347
1996	700	606,525	172,448	26,036,570	2,077,996	28,894,239
1997	1,186	1,197,776	64,360	25,828,078	2,224,725	29,316,125
1998	2,013	365,591	74,105	28,664,281	1,266,887	30,372,877
1999	1,055	339,037	81,841	44,993,247	2,963,838	48,379,018
2000	1,133	548,790	353,013	38,875,724	5,158,397	44,937,057
2001	861	932,070	239,947	35,237,137	3,097,005	39,507,020
2002	958	1,013,396	37,586	18,947,254	6,341,864	26,341,058
2003	256	1,519,598	98,947	51,962,716	3,793,499	57,375,016
2004	864	831,356	56,430	23,526,306	1,998,511	26,413,467
2005	1,217	579,643	230,180	59,852,105	1,993,427	62,656,572
2006	1,118	990,880	388,722	21,691,138	2,164,338	25,236,196
2007	873	1,310,694	202,153	63,383,923	3,569,283	68,466,926
2008	962	979,077	307,837	42,352,208	5,074,804	48,714,888
2009	404	1,011,990	46,580	18,565,070	3,212,148	22,836,192
2010	576	1,401,815	42,500	71,288,429	4,307,249	77,040,569
2011	679	1,480,499	223,462	33,379,352	1,901,131	36,985,123
2012	501	1,826,283	32,844	27,231,297	3,791,670	32,882,595
2013	1,395	713,730	327,301	92,575,183	4,059,866	97,677,475
10-year average	859	1,112,597	185,801	45,384,501	3,207,243	49,891,000

<sup>a</sup> 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.

<sup>b</sup> General purse seine season closed.

Appendix D3.–Prince William Sound commercial common property pink salmon harvest for all gear types, by district, 1977–2013.

Year	Eastern <sup>a</sup>	Northern <sup>a</sup>	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1977	1,673,044	147,964	230,215	208,727	0	930,469	77,104	824,374	4,091,897
1978	1,516,076	933,013	13,059	0	0	0	0	216,696	2,678,844
1979	4,500,032	115,886	38,560	59,423	0	5,111,073	1,347,413	4,160,925	15,333,312
1980	3,140,134	1,271,177	134,876	306,109	0	7,507,776	950	1,271,389	13,632,411
1981	4,797,583	1,194,621	34,155	46,874	0	10,371,220	278,879	3,221,268	19,944,600
1982	2,959,601	2,331,903	1,000,524	520,972	3,997	10,801,771	6,444	747,116	18,372,328
1983	2,430,063	1,021,345	273,131	714,522	0	5,957,068	158,241	1,482,013	12,036,383
1984	4,525,029	2,194,904	996,483	1,412,822	544,082	10,197,349	11,587	1,245,042	21,127,298
1985	6,715,143	1,002,872	523,773	527,132	58,183	10,843,752	1,448,809	2,733,562	23,853,226
1986	2,488,540	944,871	214,593	285,184	43,061	6,374,535	0	147,268	10,498,052
1987	6,964,549	2,419,611	1,578,568	750,877	89,902	13,341,940	111,011	955,988	26,212,446
1988	481,324	286,743	2,932,072	7,738	529,329	5,411,424	0	1,776	9,650,406
1989	3,151,096	6,464,090	3,925,487	181,565	0 <sup>b</sup>	0 <sup>b</sup>	0 <sup>b</sup>	73,177	13,795,415
1990	7,970,364	5,482,585	2,692,788	891,444	534,951	17,811,479	10,658	12,325	35,406,594
1991	2,617,222	4,150,612	2,211,575	0	64,591	17,849,425	0	0	26,893,425
1992	489,228	1,142,061	363,887	0	543,115	3,039,775	0	0	5,578,066
1993	0	413,308	493,747	0	130,542	2,475,798	0	0	3,513,395
1994	11,554,320	7,171,038	3,597,094	0	565,669	3,408,093	0	0	26,296,214
1995	4,235,638	3,656,119	1,078,693	0	88,830	1,707,745	18,239	11,418	10,796,682
1996	6,059,063	5,039,988	1,543,869	0	35,691	5,046,919	0	0	17,725,530
1997 <sup>c</sup>	4,534,365	3,162,822	2,030,586	0	222,934	5,929,544	65,107	28,040	15,973,398
1998 <sup>c</sup>	2,231,061	5,035,736	3,228,761	0	134,984	8,425,853	430,525	350,081	19,837,001
1999	12,305,629	4,981,085	3,542,130	0	170,525	9,511,998	189,641	914,907	31,615,915
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	5,909,643	11,439,915	0	90,102	5,789,419	60,287	514,452	38,749,562
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	10,175,784	3,318,875	0	236,634	11,376,513	844,658	770,570	47,239,390
2006	5,712,890	1,331,740	1,373,036	0	110,618	3,269,037	144,417	21,805	11,963,543

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Year	Eastern <sup>a</sup>	Northern <sup>a</sup>	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
2007	22,059,138	6,221,016	2,399,997	0	56,618	17,907,847	878,371	1,869,245	51,392,232
2008	11,008,956	8,589,490	10,053,149	0	123,780	8,134,915	1,460,258	0	39,370,548
2009	95,071	2,064,871	1,305,714	0	81,790	7,481,863	87,952	36,698	11,153,959
2010	18,798,887	18,459,350	16,016,511	0	134,734	17,843,669	15,985	19,293	71,288,429
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
10-year average	13,719,089	7,041,040	4,948,283	44,978	113,562	11,368,168	496,111	627,950	38,359,181

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

<sup>a</sup> Eastern and Northern District totals exclude discarded salmon.

<sup>b</sup> The Eshamy, Southwestern and Montague districts were closed in 1989 due to the Exxon Valdez oil spill.

<sup>c</sup> Eastern and Northern district totals exclude discarded salmon.

Appendix D4.–Aerial escapement indices for pink and chum salmon by district, Prince William Sound, 2013.

Pink Salmon							
District	Escapement midpoint	Odd year escapement goal range		1977–2013 mean index	Observed escapement index <sup>a</sup>	Deviation from midpoint	
Eastern	410,000	310,000	–	640,000	604,418	1,266,783	209.0%
Northern/Unakwik	130,000	90,000	–	180,000	180,408	329,434	153.4%
Coghill	130,000	60,000	–	250,000	204,905	640,414	392.6%
Northwestern	80,000	50,000	–	110,000	119,820	203,444	154.3%
Eshamy	9,000	4,000	–	11,000	7,624	12,145	34.9%
Southwestern	120,000	70,000	–	190,000	176,231	348,012	190.0%
Montague	210,000	140,000	–	280,000	294,632	411,373	95.9%
Southeastern	360,000	270,000	–	620,000	672,500	1,472,633	309.1%
Total	1,449,000				2,260,538	4,684,239	223.3%

Chum Salmon						
District	Escapement range <sup>b</sup>		1976–2013 mean index	Observed escapement index <sup>a</sup>	Deviation from lower range	
Eastern	50,000	and up	107,660	119,110	138.2%	
Northern/Unakwik	20,000	and up	38,765	34,240	71.2%	
Coghill	8,000	and up	19,288	11,369	42.1%	
Northwestern	5,000	and up	14,381	4,746	-5.1%	
Eshamy <sup>c</sup>	None		79	0	NA	
Southwestern <sup>c</sup>	None		3,170	1,404	NA	
Montague <sup>c</sup>	None		5,154	1,401	NA	
Southeastern	8,000	and up	33,044	35,942	349.3%	
Total <sup>d</sup>	91,000	and up	213,138	205,407	125.7%	

<sup>a</sup> Based on weekly aerial survey counts of 215 index spawning streams in Prince William Sound. This does not represent the total spawning escapement but rather a comparable annual index.

<sup>b</sup> Escapement goal changed to a lower range value with no upper end after the 2005 escapement goal review.

<sup>c</sup> Escapement goal removed in 2003 after review.

<sup>d</sup> Totals exclude districts without escapement goals (Eshamy, Southwestern, and Montague districts).

Appendix D5.—Prince William Sound pink salmon escapement indices by district, 1965–2013.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
Escapement indices									
1965	257,853	59,820	91,584	159,011	9,340	65,380	77,042	255,926	975,956
1966	544,980	288,710	135,440	79,960	11,720	115,570	42,220	204,570	1,423,170
1967	255,240	144,200	65,240	82,980	5,020	42,950	10,020	236,610	842,260
1968	364,930	151,120	108,020	117,430	10,770	172,770	52,350	179,120	1,156,510
1969	160,600	94,770	39,020	23,830	0	57,890	1,550	26,910	404,570
1970	387,090	125,360	95,170	82,660	7,610	66,790	73,880	140,660	979,220
1971	352,800	126,210	62,160	14,320	1,710	79,140	296,730	179,480	1,112,550
1972	344,470	83,900	30,960	39,020	1,100	29,530	33,140	79,060	641,180
1973	309,040	69,660	493,780	2,910	0	52,320	119,520	177,780	1,225,010
1974	256,880	206,750	56,940	163,930	6,240	160,980	11,750	94,650	958,120
1975	412,560	38,260	452,430	4,990	0	77,270	85,380	194,670	1,265,560
1976	402,792	106,248	53,908	41,886	0	32,639	7,852	66,953	712,278
1977	409,082	47,897	320,680	72,591	0	179,682	185,174	302,561	1,517,667
1978	298,037	88,816	67,084	65,514	0	110,363	30,761	94,811	755,386
1979	755,752	271,952	125,544	155,077	0	286,489	308,412	998,751	2,901,977
1980	300,871	105,551	148,066	85,663	0	81,095	100,985	272,811	1,095,042
1981	650,401	206,282	140,436	108,158	0	137,759	488,066	435,217	2,166,319
1982	508,204	198,838	309,202	121,085	0	134,827	114,421	462,541	1,849,118
1983	450,165	138,993	284,164	171,938	0	145,779	217,597	594,470	2,003,106
1984	1,143,775	439,886	365,226	412,278	0	304,859	169,612	734,202	3,569,838
1985	720,386	166,768	238,728	181,797	0	152,429	316,483	571,406	2,347,997
1986	384,382	131,956	109,798	78,027	3,513	69,388	45,492	163,378	985,934
1987	517,221	114,522	67,761	67,809	3,450	129,192	144,085	328,177	1,372,217
1988	394,111	140,981	42,985	69,627	0	118,359	67,928	137,173	971,164
1989	357,249	95,445	48,802	72,591	18,578	168,518	164,540	307,953	1,233,676
1990	428,723	110,638	45,558	94,359	17,274	136,721	106,603	296,029	1,235,905
1991	427,069	159,909	84,790	89,437	19,152	176,887	239,782	528,766	1,725,792
1992	194,962	72,323	23,122	42,805	2,716	64,652	47,029	94,928	542,537
1993	314,727	95,602	41,666	45,847	9,348	98,573	144,784	315,093	1,065,640
1994	613,866	178,151	65,648	141,290	11,799	143,479	58,820	196,228	1,409,281
1995	396,696	84,447	46,029	50,582	10,182	82,490	183,448	336,310	1,190,184

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Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
<u>Escapement indices</u>									
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	214,723	168,816	52,340	6,900	163,347	381,054	853,180	2,462,862
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	957,327	262,502	375,147	103,931	5,206	130,356	320,494	691,769	2,846,732
2004	724,663	163,858	79,010	51,306	2,300	108,192	183,891	687,903	2,001,123
2005	1,025,756	579,079	528,264	401,640	32,396	272,572	566,002	1,330,407	4,736,116
2006	248,592	211,603	145,511	127,836	11,247	118,205	149,798	178,009	1,190,802
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	404,862	2,011,096
2011	982,837	162,994	257,020	147,128	4,368	232,302	598,918	1,537,438	3,923,005
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
<u>Even year Average (1966–2012)</u>									
	427,951	169,916	125,159	107,801	4,618	115,260	88,737	251,453	1,290,894
<u>Odd year Average (1965–2013)</u>									
	508,818	161,810	202,870	102,844	6,017	142,482	223,065	502,538	1,838,752

*Note:* Historical data revised in 1989. Coghill and Northwestern escapement numbers correspond to current district boundaries. Northern District totals include both Northern and Unakwik district counts combined.

Appendix D6.–Weekly aerial survey indices of pink salmon escapement by statistical area, Prince William Sound, 2013.

Survey location	Statistical area	Week ending dates <sup>a</sup>													Escapement index <sup>b</sup>	
		06/22	06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31	09/07	09/14		09/21
Orca Inlet	221-10		0		5,750		28,150		10,000	27,500	1,500	6,950				70,363
Simpson & Sheep Bay	221-20	0	0		34,250		92,000		113,750	64,500		18,850				212,283
Port Gravina	221-30	0	0		134,250		113,750		227,000	234,500		104,000				443,600
Port Fidalgo	221-40	0	0		26,000		85,250		106,250	168,000		97,000				299,594
Valdez Arm	221-50	0	0		4,575	40,300	87,875		65,800	119,825		111,000				240,942
Port Valdez	221-61															
Eastern District		0	0		204,825	40,300	407,025		522,800	614,325	1,500	337,800				1,266,783
Columbia & Long Bay	222-10	0	0		0	16,000	23,250		17,325	10,075		3,305				44,748
Wells Bay & Unakwik Inlet	222-20	0	0		2,500	20,750	75,750		127,650	155,125		14,550		3,425		219,760
Eaglek Bay	222-30				1,600	3,500	13,750		26,150	26,500				210		64,389
Northern District		0	0		4,100	40,250	112,750		171,125	191,700		17,855		3,635		328,896
West Side Port Wells	223-10				0	1,000	23,200		52,600		28,750			395		84,511
Esther Passage	223-20				0	1,000	2,500		1,575		825			0		7,856
College Fiord	223-30				32,500	75,000	150,000		300,000		175,000			5,000		548,047
Coghill District					32,500	77,000	175,700		354,175		204,575			5,395		640,414
Passage Canal & Cochrane	224-10				0	250	44,750		32,150		16,750			45		97,435
Culross Passage	224-30				0	0	0		3,550		8,075			75		9,492
Port Nellie Juan	224-40				0	1,000	31,000		26,750		15,300			25		96,518
Northwestern District					0	1,250	75,750		62,450		40,125			145		203,444
Main Bay	225-20				0	0	0		0		5			0		15
Eshamy Bay	225-30				0	0		700	1,250	4,000	2,575			0		12,131
Eshamy District					0	0	0	700	1,250	4,000	2,580			0		12,145
Herring Bay	226-10				0		0		0							0
Chenega Is. & Dangerous Pass.	226-20					20,750		47,400		123,400	44,475			250		213,687
East Knight Is.	226-30					75		10,000		13,000	7,500			0		42,786
Bainbridge & Latouche	226-40					100		5,900		21,190	10,975			270		65,163
Port Bainbridge	226-50					0		7,500		15,000	3,000			0		26,377

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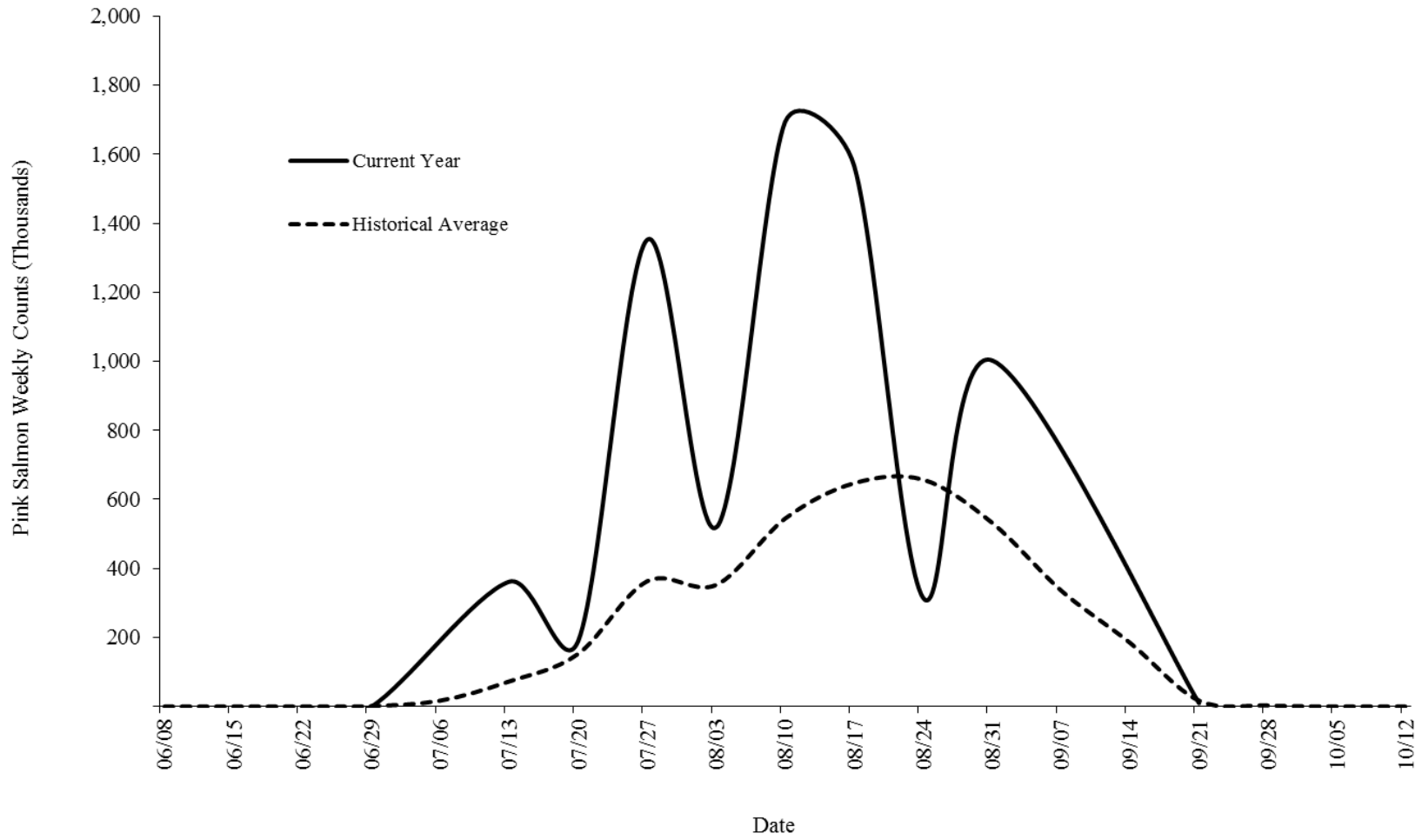


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Survey location	Statistical area	Week ending dates <sup>a</sup>														Escapement index <sup>b</sup>
		06/22	06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31	09/07	09/14	09/21	
Southwestern District					0	20,925	0	70,800	0	172,590	65,950			520	348,012	
Montague Strait	227-10					8,000		205,750		214,750			170,600		116,165	
Green Is.	227-20					3,100		41,250		53,000			54,000		295,208	
Montague District						11,100		247,000		267,750			224,600		411,373	
Orca Is. & East Hawkins	228-10				0				500				10,000		5,686	
Hawkins Cutoff	228-20	0	0		55,000		281,000		430,000				56,750		525,154	
North Hawkins & Canoe Pass.	228-30				1,000				25,000	50,000			43,250		103,509	
Double Bay	228-40				22,650					90,000			69,500		165,224	
Johnstone Point	228-50				35,500		77,500		125,000	41,500			52,500		209,385	
Port Etches	228-60	0	0		6,100		222,500	200,000		134,000			190,500		463,675	
Southeastern District		0	0		120,250		581,000	200,000	580,500	315,500			422,500		1,472,633	
Upper Unakwik Inlet	229-10				0	0			1,075						538	
Unakwik District					0	0			1,075						538	
<b>TOTAL OF 9 DISTRICTS</b>		0	0		361,675	190,825	1,352,225	518,500	1,693,375	1,565,865	314,730	1,002,755		9,695	4,684,239	

<sup>a</sup> There are 215 streams in the PWS aerial survey program. All streams are flown at least once every ten days as run timing dictates. During the peak of the run, streams may be flown more frequently for timely escapement data. When more than one survey per week was flown the weekly observation is the average of the two counts if observing conditions during both were good, or the maximum of the two counts if conditions during the minimum count were poor.

<sup>b</sup> The escapement index is based on a geometric method used since the inception of the systematic survey program in the early 1960s. In this method, aerial observers are assumed to count without error or bias. Linear interpolations between observations are used to estimate numbers of fish in the stream on days when no surveys are flown. All daily observations and interpolations are summed across the season. Because fish seen on day i+1 may include fish seen on day i, the sum of all daily observations and interpolations must be divided by some residence time for fish in the streams to account for duplicate observations. The residence time of 17.5 days has historically been used in this calculation and is from tagging studies completed by National Marine Fisheries Service on Olsen Creek in the early 1960s. Because observer bias does occur and because both observer bias and stream life are stream specific, escapement indices in this table may be used for interannual comparisons, but should not be interpreted as the true escapement.



Appendix D7.—Current year and historical weekly pink salmon escapement performance of index spawning streams, Prince William Sound, 2013. Historical data includes all odd year data for 1977–2013.

Appendix D8.—Prince William Sound total chum salmon harvests and escapement indices, including hatchery sales harvests and broodstock, 1983–2013.

Year	Chum salmon escapements <sup>a</sup>									Hatchery		CP harvest <sup>b</sup>	Total run <sup>c</sup>
	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total	Sales	Brood		
1983	109,414	78,610	55,127	26,017	0	2,000	0	14,407	285,575	0	44,000	1,030,546	1,360,121
1984	97,001	48,466	13,500	5,150	0	0	0	4,625	168,742	4,886	3,000	1,196,785	1,373,413
1985	37,310	24,561	14,514	10,256	0	500	20	2,450	89,611	3,840	0	1,302,090	1,395,541
1986	129,882	46,263	16,300	20,743	0	1,987	0	12,363	227,538	20,683	12,523	1,662,366	1,923,110
1987	189,855	27,134	22,472	25,571	0	1,150	300	46,420	312,902	2,549	15,574	1,902,063	2,233,088
1988	255,515	78,297	42,536	41,468	0	2,055	500	64,609	484,980	42,694	108,271	1,792,616	2,428,561
1989	115,385	44,823	22,434	25,252	300	10,891	0	20,574	239,659	129,551	74,513	862,551	1,306,274
1990	109,072	126,480	20,494	33,421	50	3,945	957	7,241	301,660	24,554	107,284	935,284	1,368,782
1991	66,483	18,153	7,055	9,034	0	2,075	925	9,203	112,928	13,471	114,814	318,435	559,648
1992	47,292	12,458	7,583	10,258	300	2,940	784	3,891	85,506	57,392	183,940	271,176	598,014
1993	49,904	19,265	7,404	17,692	0	1,250	30	19,173	114,718	475,148	140,330	706,196	1,436,392
1994	40,476	23,942	14,176	12,992	100	2,225	0	4,057	97,968	380,365	114,654	677,848	1,270,835
1995	75,655	28,899	11,596	4,883	0	2,250	1,000	23,200	147,483	231,539	172,542	486,510	1,038,074
1996	137,908	55,568	19,669	24,405	0	2,231	5,216	47,334	292,331	1,066,705	253,751	1,011,291	2,624,078
1997	93,146	19,429	3,101	8,387	0	800	4,000	43,274	172,137	811,179	178,933	1,413,546	2,575,795
1998	86,227	28,867	22,764	7,553	0	1,602	10,690	52,103	209,806	519,215	179,875	747,672	1,656,568
1999	242,713	36,886	5,057	4,544	0	2,393	8,725	36,181	336,499	777,180	207,073	2,186,658	3,507,410
2000	196,253	23,655	20,488	10,150	16	11,440	66,202	34,969	363,173	1,729,876	85,441	3,428,521	5,607,011
2001	198,683	75,473	13,388	6,373	700	5,187	10,408	37,526	347,738	936,028	171,046	2,153,920	3,608,732
2002	94,046	30,531	7,430	16,194	60	3,985	565	104,906	257,717	2,580,936	209,833	3,760,934	6,809,420
2003	198,921	44,565	19,729	12,736	110	12,373	9,015	116,131	413,580	1,540,227	200,933	3,981,763	6,136,503
2004	108,833	42,456	9,685	10,371	0	1,810	4,170	42,344	219,669	528,676	208,795	1,473,242	2,430,382
2005	113,135	30,657	11,979	12,696	500	1,951	0	25,547	196,465	535,773	280,881	1,461,146	2,474,265
2006	109,403	52,069	15,900	25,860	660	7,293	10,642	26,739	248,565	824,558	217,146	1,356,997	2,647,266
2007	123,814	49,740	14,052	10,778	69	4,095	16,648	60,464	279,660	1,099,730	173,452	2,479,210	4,032,052
2008	74,740	38,798	39,660	28,051	0	3,090	5,085	21,614	211,038	472,905	148,747	4,235,043	5,067,733
2009	84,636	18,578	5,208	14,146	69	9,917	17,733	86,528	236,815	465,427	156,835	2,612,300	3,471,377
2010	91,514	38,382	51,589	30,074	62	10,523	13,010	85,138	320,291	754,805	183,926	3,567,286	4,826,308
2011	196,933	52,474	16,368	11,447	0	801	5,499	91,218	374,740	471,951	183,765	1,438,293	2,468,749
2012	61,969	14,680	10,281	7,072	0	930	2,077	20,467	117,475	425,011	171,847	3,392,740	4,107,073
2013	119,110	34,240	11,369	4,746	0	1,404	1,401	35,942	208,211	530,786	264,616	3,298,324	4,301,937
Avg.	117,871	41,005	18,051	16,119	100	3,790	6,473	38,823	242,232	565,744	139,414	1,683,211	2,627,424

<sup>a</sup> Coghill and Northwestern district escapement numbers correspond to current district boundaries. The Northern District totals includes Unakwik District counts.

<sup>b</sup> Includes the commercial common property (CP) harvest of both wild and hatchery stocks. Does not include hatchery sales harvests.

<sup>c</sup> Represents the sum of the common property harvest, hatchery sales and brood (including roe recovery), plus the escapement index. Does not account for wild stock escapement into nonindex streams.

Appendix D9.—Weekly aerial survey indices of chum salmon escapement by statistical area, Prince William Sound, 2013.

Survey location	Statistical area	Week ending dates <sup>a</sup>														Escapement index <sup>b</sup>	
		06/22	06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31	09/07	09/14	09/21		
Orca Inlet	221-10		0		1,500		750		0	750	0	50					2,708
Simpson & Sheep Bay	221-20	0	250		4,750		3,075		2,500	2,250		250					7,756
Port Gravina	221-30	0	500		34,250		20,600		21,750	14,100		3,500					56,057
Port Fidalgo	221-40	0	0		12,100		7,800		8,500	9,750		5,300					33,355
Valdez Arm	221-50	0	0		6,700	5,375	5,625		4,100	5,500		4,000					19,235
Port Valdez	221-61																
Eastern District		0	750		59,300	5,375	37,850		36,850	32,350	0	13,100					119,110
Columbia & Long Bay	222-10	0	0		1,600	2,575	3,000		1,750	1,000		500					6,796
Wells Bay & Unakwik Inlet	222-20	0	0		5,050	7,125	6,775		8,500	8,750		1,000			0		24,926
Eaglek Bay	222-30				400	750	575		0	625					0		2,518
Northern District		0	0		7,050	10,450	10,350		10,250	10,375		1,500			0		34,240
West Side Port Wells	223-10				80	200	1,625		3,650		1,775				0		7,072
Esther Passage	223-20				0	0	0		0		0				0		0
College Fiord	223-30				0	0	0		2,500		1,500				0		4,297
Coghill District					80	200	1,625		6,150		3,275				0		11,369
Passage Canal & Cochrane	224-10				20	550	925		1,300		250				0		2,786
Culross Passage	224-30				0	0	0		0		0				0		0
Port Nellie Juan	224-40				0	0	1,000		750		0				0		1,960
Northwestern District					20	550	1,925		2,050		250				0		4,746
Main Bay	225-20				0	0	0		0		0				0		0
Eshamy Bay	225-30				0	0		0	0	0	0				0		0
Eshamy District					0	0	0	0	0	0	0				0		0
Herring Bay	226-10				0		0		0								0
Chenega Is. & Dangerous Pass.	226-20					450		400		450	50				0		1,182
East Knight Is.	226-30					25		0		0	0				0		32
Bainbridge & Latouche	226-40					110		0		0	0				0		189
Port Bainbridge	226-50					0		0		0	0				0		0
Southwestern District					0	585	0	400	0	450	50				0		1,404
Montague Strait	227-10					700		100		0		0					517
Green Is.	227-20					625		0		0		0					883
Montague District						1,325		100	3,000	0		0					1,401

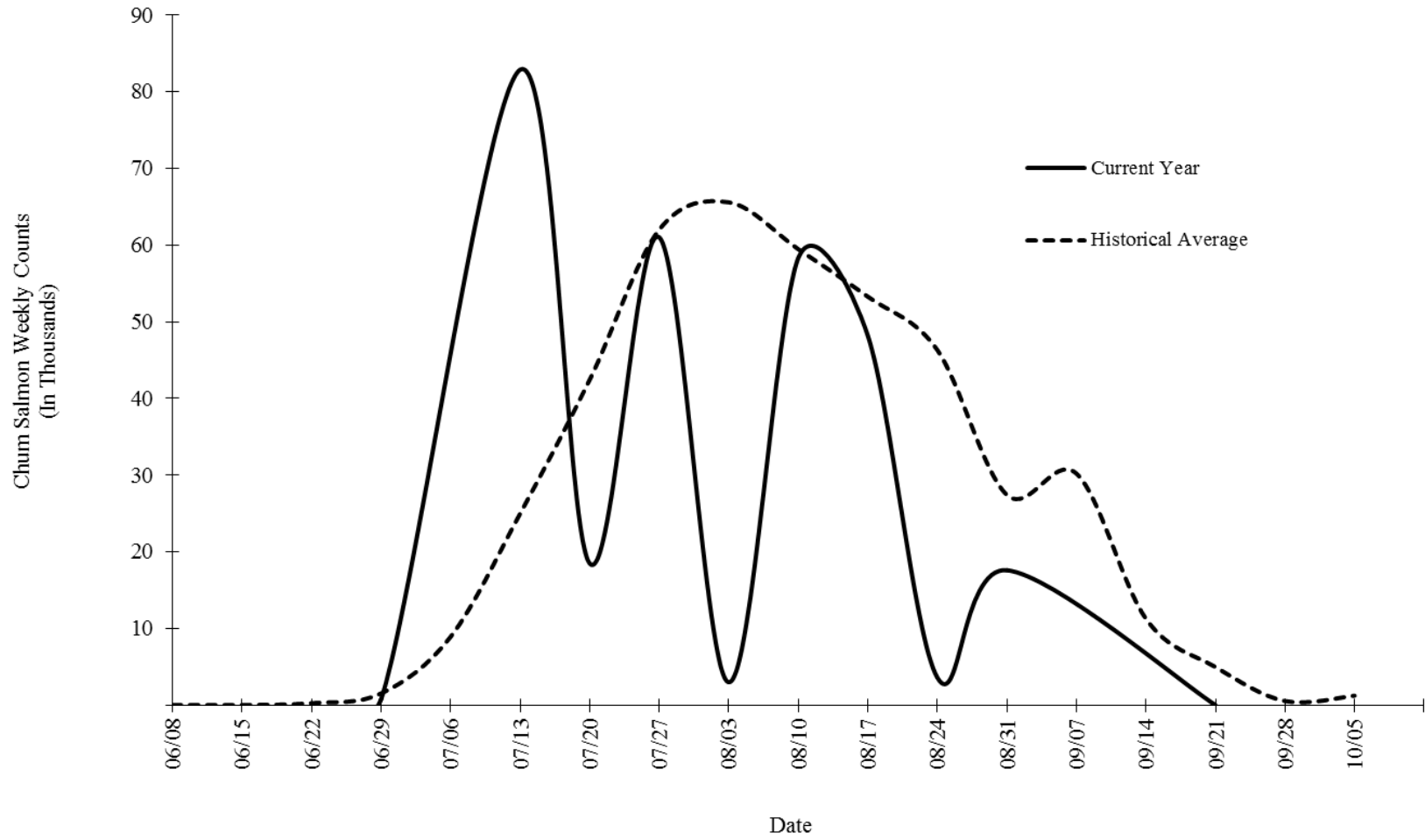
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Survey location	Statistical area	Week ending dates <sup>a</sup>														Escapement index <sup>b</sup>	
		06/22	06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31	09/07	09/14	09/21		
Orca Is. & East Hawkins	228-10				0				0			0			0		0
Hawkins Cutoff	228-20	0	0		6,000		1,750		2,000			0					9,651
North Hawkins & Canoe Pass.	228-30				0				0	0		0					0
Double Bay	228-40				4,400					0		0					6,814
Johnstone Point	228-50				1,500		0		1,000	0		0					2,347
Port Etches	228-60	0	0		4,500		7,500	2,500		5,000		3,000					17,130
Southeastern District		0	0		16,400		9,250	2,500		5,000		3,000					35,942
Upper Unakwik Inlet	229-10				0	0			0								0
Unakwik District					0	0			0								0
<b>TOTAL OF 9 DISTRICTS</b>		0	750		82,850	18,485	61,000	3,000	58,300	48,175	3,575	17,600			0		208,211

<sup>a</sup> There are 215 streams in the PWS aerial survey program. All streams are flown at least once every 10 days as run timing dictates. During the peak of the run, streams may be flown more frequently for timely escapement data. When more than one survey per week was flown the weekly observation is the average of the two counts if observing conditions during both were good, or the maximum of the two counts if conditions during the minimum count were poor.

<sup>b</sup> The escapement index is based on a geometric method used since the inception of the systematic survey program in the early 1960s. In this method, aerial observers are assumed to count without error or bias. Linear interpolations between observations are used to estimate numbers of fish in the stream on days when no surveys are flown. All daily observations and interpolations are summed across the season. Because fish seen on day i+1 may include fish seen on day i, the sum of all daily observations and interpolations must be divided by some residence time for fish in the streams to account for duplicate observations. The residence time of 17.5 days has historically been used in this calculation and is from tagging studies completed by National Marine Fisheries Service on Olsen Creek in the early 1960s. Because observer bias does occur and because both observer bias and stream life are stream specific, escapement indices in this table may be used for interannual comparisons, but should not be interpreted as the true escapement.



Appendix D10.—Current year and historical weekly chum salmon escapement performance of index spawning streams, Prince William Sound, 2013.

Appendix D11.–Summary of Prince William Sound commercial purse seine salmon fishery period dates, duration (hours), and dates of news releases issued by district, 2013.

Eastern (221)		Northern (222)		Coghill (223)		Northwestern (224)		Southwestern (226)		Montague (227)		Southeastern (228)		Unakwik (229) <sup>a</sup>		NR <sup>a</sup> dates
Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	
								06/01–06/02	36							05/17
								06/03–06/05	60							05/17
								06/06–06/09	84							06/05
								06/10–06/12	60							06/05
								06/13–06/16	84					06/13–06/14	24	06/12
								06/17–06/19	60					06/17–06/18	24	06/15
								06/20–06/23	84					06/20–06/21	24	06/19
06/24	14							06/24–06/26	60			06/24	14	06/24–06/25	24	06/22
06/27	12							06/27–06/30	84			06/27	12	06/27–06/28	24	06/26
06/30	14											06/30	14			06/29
								07/01–07/03	60					07/01–07/02	24	06/29
07/03	14											07/03	14			07/02
								07/04–07/07	84					07/04–07/05	24	07/03
07/05	14											07/05	14			07/04
07/07	14											07/07	14			07/06
								07/08–07/10	60					07/08–07/09	24	07/03
07/09	14											07/09	14			07/08
07/10	14											07/10	14			07/08
07/11	14			07/11–07/13	60			07/11–07/14	84			07/11	14	07/11–07/12	24	07/10
07/12	14											07/12	14			07/11
07/15	14							07/15–07/17	60			07/15	14	07/15–07/16	36	07/10, 07/13, 07/14
07/17	14	07/17	14									07/17	14			07/16
				07/18–07/21	84			07/18–07/21	84							07/17
07/19	14	07/19	14			07/19	14			07/19	14	07/19	14			07/18
				07/21–07/22	36											07/20
								07/22, 14,	14,							
07/22	14	07/22	14			07/22	14	07/22–07/24	60	07/22	14	07/22	14			07/17, 07/20
07/25	14	07/25	14	07/25	14	07/25	14	07/25	14	07/25	14	07/25	14			07/24
07/26	14															07/25
07/28	14	07/28	14	07/28	14	07/28	14	07/28	14	07/28	14	07/28	14			07/27
07/30	14	07/30	14	07/30	14	07/30	14	07/30	14	07/30	14	07/30	14			07/29
07/31	14			07/31	14											07/29
08/01	14	08/01	14	08/01	14	08/01	14	08/01	14	08/01	14	08/01	14			07/31

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Eastern (221)		Northern (222)		Coghill (223)		Northwestern (224)		Southwestern (226)		Montague (227)		Southeastern (228)		Unakwik (229)		NR <sup>a</sup>
Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	dates
08/02	14	08/02	14	08/02	14	08/02	14	08/02	14	08/02	14	08/02	14			07/31
08/03	14	08/03	14	08/03	14	08/03	14	08/03	14	08/03	14	08/03	14			07/31
08/04	14	08/04	14	08/04	14	08/04	14	08/04	14	08/04	14	08/04	14			08/03
08/05	14	08/05	14	08/05	14	08/05	14	08/05	14	08/05	14	08/05	14			08/03
08/06	14	08/06	14	08/06	14	08/06	14	08/06	14	08/06	14	08/06	14			08/03
08/07	14	08/07	14	08/07	14	08/07	14	08/07	14	08/07	14	08/07	14			08/06
08/08	14	08/08	14	08/08	14	08/08	14	08/08	14	08/08	14	08/08	14			08/06
08/09	14	08/09	14	08/09	14	08/09	14	08/09	14	08/09	14	08/09	14			08/06
08/10	14	08/10	14	08/10	14	08/10	14	08/10	14	08/10	14	08/10	14			08/09
08/11	14	08/11	14	08/11	14	08/11	14	08/11	14	08/11	14	08/11	14			08/09
08/12	14	08/12	14	08/12	14	08/12	14	08/12	14	08/12	14	08/12	14			08/09
08/13	14	08/13	14	08/13	14	08/13	14	08/13	14	08/13	14	08/13	14			08/12
08/14	14	08/14	14	08/14	14	08/14	14	08/14	14	08/14	14	08/14	14			08/12
08/15	14	08/15	14	08/15	14	08/15	14	08/15	14	08/15	14	08/15	14			08/12, 08/13
08/16	14	08/16	14	08/16	14	08/16	14	08/16	14	08/16	14	08/16	14			08/15
08/17	14	08/17	14	08/17	14	08/17	14	08/17	14	08/17	14	08/17	14			08/16
08/18	14	08/18	14	08/18	14	08/18	14	08/18	14	08/18	14	08/18	14			08/16
08/19	14	08/19	14	08/19	14	08/19	14	08/19	14	08/19	14	08/19	14			08/16
08/20–08/21	36	08/20–08/21	36	08/20–08/21	36	08/20–08/21	36	08/20–08/21	36	08/20–08/21	36	08/20–08/21	36			08/19
08/22–08/23	36	08/22–08/23	36	08/22–08/23	36	08/22–08/23	36	08/22–08/23	36	08/22–08/23	36	08/22–08/23	36			08/21
08/24	15	08/24	15	08/24	15	08/24	15	08/24	15	08/24	15	08/24	15			08/23
08/25	15	08/25	15	08/25	15	08/25	15	08/25	15	08/25	15	08/25	15			08/23
08/26	15	08/26	15	08/26	15	08/26	15	08/26	15	08/26	15	08/26	15			08/23
08/27	15	08/27	15	08/27	15	08/27	15	08/27	15	08/27	15	08/27	15			08/26
08/28	15	08/28	15	08/28	15	08/28	15	08/28	15	08/28	15	08/28	15			08/26
08/29	15	08/29	15	08/29	15	08/29	15	08/29	15	08/29	15	08/29	15			08/28
08/30	15	08/30	15	08/30	15	08/30	15	08/30	15	08/30	15	08/30	15			08/28
08/31	15	08/31	15	08/31	15	08/31	15	08/31	15	08/31	15	08/31	15			08/30
09/01	15	09/01	15	09/01	15	09/01	15	09/01	15	09/01	15	09/01	15			08/30
09/02	15	09/02	15			09/02	15	09/02	15	09/02	15	09/02	15			08/30
09/03	15	09/03	15			09/03	15	09/03	15	09/03	15	09/03	15			08/30
09/04	15	09/04	15			09/04	15	09/04	15	09/04	15	09/04	15			08/30
09/05	12	09/05	12			09/05	12	09/05	12	09/05	12	09/05	12			09/04
09/06	12	09/06	12			09/06	12	09/06	12	09/06	12	09/06	12			09/04

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Eastern (221)		Northern (222)		Coghill (223)		Northwestern (224)		Southwestern (226)		Montague (227)		Southeastern (228)		Unakwik (229)		NR <sup>a</sup>
Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	Dates	Hrs.	dates
09/07	12	09/07	12			09/07	12	09/07	12	09/07	12	09/07	12			09/06
09/08	12	09/08	12			09/08	12	09/08	12	09/08	12	09/08	12			09/06
09/09	12	09/09	12			09/09	12	09/09	12	09/09	12	09/09	12			09/06
09/10	12	09/10	12			09/10	12	09/10	12	09/10	12	09/10	12			09/09
09/11	12	09/11	12			09/11	12	09/11	12	09/11	12	09/11	12			09/09
09/12	12	09/12	12			09/12	12	09/12	12	09/12	12	09/12	12			09/09
09/13	12	09/13	12			09/13	12	09/13	12	09/13	12	09/13	12			09/09
09/14–09/20	156	09/14–09/20	156			09/14–09/20	156	09/14–09/20	156	09/14–09/20	156	09/14–09/20	156			09/13

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

Note: Required parameters for searching the ADF&G Commercial Fishing News Release System include: Effective Year = 2013; Species Group = Salmon; Management Area = Prince William Sound.

<sup>a</sup> Queries made through the ADF&G Commercial Fishing News Release System will provide results sorted by Publication Date.



## **APPENDIX E: SALMON ENHANCEMENT**

Appendix E1.–Summary of salmon runs to Prince William Sound and Copper River hatcheries, 2013.

Sockeye salmon <sup>a</sup>										
Hatchery	BY 2008 release	BY 2009 release	2013 forecast run <sup>b</sup>	Estimated CPF contribution	Estimated sales harvest contribution <sup>c</sup>	Broodstock & unharvested contribution <sup>d</sup>	Estimated total run <sup>e</sup>	Eggs collected		
Gulkana Hatchery I	20,660,000	20,680,000	381,084	421,912	0	72,369	494,281	33,700,000		
Gulkana Hatchery II	1,340,000	1,330,000	20,100		0			1,750,000		
Main Bay Hatchery	8,492,000	8,680,000	1,137,400	639,157	0 <sup>f</sup>	189,059	828,216	13,700,000		
Total sockeye salmon	30,492,000		1,538,584	1,061,069	0	261,428	1,322,497	49,150,000		
Coho salmon <sup>a, g</sup>										
Hatchery or release site		BY 2010 release	2013 forecast run <sup>b</sup>	Estimated CPF contribution <sup>g</sup>	Estimated sales harvest contribution <sup>c</sup>	Broodstock & unharvested contribution <sup>d</sup>	Estimated total run <sup>e</sup>	Eggs collected		
Solomon Gulch		1,879,768	127,260	204,013	39,946	7,071	251,030	2,006,449		
Wally Noerenberg		1,018,000	74,400	75,822	0	2,293	78,115	653,000		
Total coho salmon		2,897,768	201,660	279,835	39,946	9,364	329,145	2,659,449		
Pink salmon <sup>a</sup>										
Hatchery		BY 2011 release	2013 forecast run <sup>b</sup>	Estimated CPF contribution	Estimated sales harvest contribution <sup>c</sup>	Broodstock & unharvested contribution <sup>d</sup>	Estimated total run <sup>e</sup>	Eggs collected		
Solomon Gulch		214,526,737	13,804,796	20,250,865	1,940,455	367,032	22,558,352	230,165,203		
Armin F. Koernig		150,000,000	6,900,000	19,389,119	512,872	337,757	20,239,748	169,000,000		
Wally Noerenberg		137,000,000	6,200,000	15,798,116	1,213,218	445,188	17,456,522	147,000,000		
Cannery Creek		172,000,000	7,600,000	15,591,511	18,977	462,241	16,072,729	187,000,000		
Total pink salmon		673,526,737	34,504,796	71,029,611	3,685,522	1,612,218	76,327,351	733,165,203		
Chum salmon <sup>a</sup>										
Hatchery or release site	BY 2007 release	BY 2008 release	BY 2009 release	BY 2010 release	2013 forecast run <sup>b</sup>	Estimated CPF contribution	Estimated sales harvest contribution <sup>c</sup>	Broodstock & unharvested contribution <sup>d</sup>	Estimated total run <sup>e</sup>	Eggs collected
Sawmill Bay	32,100,000	15,100,000	12,900,000	30,500,000	306,000	319,127	0	0	319,127	0
Wally Noerenberg	76,900,000	71,900,000	76,500,000	69,000,000	2,542,000	2,241,680	530,711	264,616	3,037,007	174,000,000
Port Chalmers	38,900,000	38,100,000	40,800,000	40,000,000	634,000	499,588	0	0	499,588	0
Mixed <sup>h</sup>	0	0	0	0	0	0	0	0	0	0
Total chum salmon	147,900,000	125,100,000	130,200,000	139,500,000	3,482,000	3,060,395	530,711	264,616	3,855,722	174,000,000
Total-all salmon						75,430,910	4,256,179	2,147,626	81,834,715	958,974,652

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- <sup>a</sup> Contribution estimates from Prince William Sound Aquaculture Corporation (PWSAC) and Valdez Fisheries Development Association (VFDA) hatcheries are based on analysis of otolith recoveries, historical data, and location of harvest as reported on fish tickets.
- <sup>b</sup> Gulkana Hatchery run forecasts were completed by ADF&G; all other hatchery run forecasts were completed by PWSAC and VFDA.
- <sup>c</sup> Includes whole fish purse seine and raceway harvest, but does not include carcass sales from viable broodstock.
- <sup>d</sup> Includes viable broodstock, unviable broodstock, holding mortalities, watershed spawners, donated and discarded fish, and fish remaining in the bay after all harvests were complete.
- <sup>e</sup> Does not include confiscated salmon.
- <sup>f</sup> Includes Solf Lake marked sockeye salmon.
- <sup>g</sup> Includes remote releases at Chenega, Cordova, and Whittier.
- <sup>h</sup> The brood year 2006 thermal mark 1,2,3H fed chum salmon fry were released in multiple locations as follows: 23.5 million fry at Wally Noerenberg Hatchery, 15.5 million fry at Sawmill Bay remote release site, and 40.1 million fry at Port Chalmers remote release site.

Appendix E2.—Sales harvests of salmon by species from private nonprofit hatcheries in Prince William Sound as reported on fish tickets, 1977–2013.

Year	Hatchery <sup>a</sup>	Sockeye sales <sup>b</sup>	Sockeye brood sales <sup>c</sup>	Coho sales <sup>b</sup>	Coho brood sales <sup>c</sup>	Pink sales <sup>b</sup>	Pink brood sales <sup>c</sup>	Chum sales <sup>b</sup>	Chum brood sales <sup>c</sup>	Total
1977	AFK					15,545				15,545
1978	AFK					114,188				114,188
1979	AFK					223,748				223,748
1980	AFK, N					346,728		6		346,734
1981	AFK					707,037		118		707,155
1982	AFK					1,354,732				1,354,732
1983	AFK					616,963				616,963
1984	AFK, SGH					415,393		4,886		420,279
1985	AFK, SGH					1,209,960		3,840		1,213,800
1986	AFK, SGH			2,156		905,464		20,683		928,303
1987 <sup>d</sup>	AFK, SGH, E, CCH			7,015		2,691,190		2,549		2,700,754
1988	AFK, SGH, E			6,110		1,632,701		42,694		1,681,505
1989 <sup>e</sup>	AFK, SGH, WNH, CCH, MBH			52,307		7,812,373		131,362		7,996,042
1990	AFK, SGH, WNH, CCH			14,199		8,732,658		24,554		8,771,411
1991	AFK, SGH, WNH, CCH			52,625		5,955,561		13,471		6,021,657
1992	AFK, SGH, WNH, CCH, MBH	163,086		73,530		3,049,394		57,392		3,343,402
1993	AFK, SGH, WNH, CCH, MBH	113,738		3,259		2,212,403		475,148		2,804,548
1994	AFK, SGH, WNH, CCH, MBH	79,541		22,454		10,521,439		380,365		11,003,799
1995	AFK, SGH, WNH, CCH, MBH	63,326		13,248		5,100,819		231,539		5,408,932
1996 <sup>f</sup>	AFK, SGH, WNH, CCH, MBH	86,911		38,945		8,291,205		1,066,683		9,483,744
1997	AFK, SGH, WNH, CCH, MBH, GH	266,335		2,933		9,854,675		811,179		10,935,122
1998	AFK, SGH, WNH, CCH, MBH, GH	148,288		20,199		8,825,226		519,215		9,512,928
1999	AFK, SGH, WNH, CCH, GH	28,769		0		13,130,211		777,180		13,936,168
2000	AFK, SGH, WNH, CCH, MBH	218		1		11,125,819		1,729,876		12,855,914
2001	AFK, SGH, WNH, CCH, MBH	43,073		21,781		12,914,314		936,028		13,915,196
2002	AFK, SGH, WNH, CCH, MBH	93,722		1		10,787,752		2,580,926		13,462,402
2003	AFK, SGH, WNH, CCH, MBH	366,770		0	19,782	12,426,375	730,599	1,540,227	22,792	15,083,753
2004	AFK, SGH, WNH, CCH, MBH	279,902		0		11,825,224		528,676		12,633,802
2005	AFK, SGH, WNH, CCH, MBH	207,605		27,417	60,676	12,529,283	1,246,992	535,783	98,695	14,607,756

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Year	Hatchery <sup>a</sup>	Sockeye sales <sup>b</sup>	Sockeye brood sales <sup>c</sup>	Coho sales <sup>b</sup>	Coho brood sales <sup>c</sup>	Pink sales <sup>b</sup>	Pink brood sales <sup>c</sup>	Chum sales <sup>b</sup>	Chum brood sales <sup>c</sup>	Total
2006 <sup>g</sup>	AFK, SGH, WNH, CCH, MBH	348,156		17,198	5,090	9,727,499	239,905	824,558	22,105	10,917,531
2007	AFK, SGH, WNH, CCH, MBH	321,330	0	11,954	17,690	11,990,924	912,585	1,099,730	173,452	14,354,213
2008	AFK, SGH, WNH, CCH	0	0	267	22,356	6,563,243	1,076,140	478,690	162,643	8,303,339
2009	AFK, SGH, WNH, CCH, MBH	133,873	0	17,424	0	6,760,475	1,107,515	608,541	143,114	8,770,942
2010	AFK, SGH, WNH, CCH	0	0	43,878	754	4,739,891	725,805	594,044	155,912	6,260,284
2011	AFK, SGH, WNH, CCH	0	0	41,497	2,511	5,403,677	943,487	330,064	148,255	6,869,491
2012	AFK, SGH, WNH, CCH, MBH	1,198	0	1	2,372	2,630,402	901,456	171,612	269,329	3,976,370
10-year average		165,883	0	15,964	14,581	8,459,699	876,054	671,193	132,922	10,177,748
2013	AFK, SGH, WNH, CCH, MBH	9	0	0	39,946	3,504,089	585,585	529,428	231,927	4,890,984

<sup>a</sup> Hatchery abbreviations are as follows:

N = NERKA Inc.

SGH = Solomon Gulch Hatchery (VFDA)

AFK = Armin F. Koernig Hatchery (PWSAC) (formerly Port San Juan Hatchery)

CCH = Cannery Creek Hatchery (PWSAC) (formerly operated by ADF&G)

E = Esther Hatchery (PWSAC) (renamed WNH in 1989)

WNH = Wally Noerenberg Hatchery (PWSAC) (formerly Esther Hatchery)

MBH = Main Bay Hatchery (PWSAC) (formerly operated by ADF&G)

GH = Gulkana Hatchery (Crosswind Lake Weir) (formerly operated by ADF&G)

<sup>b</sup> Salmon harvested to generate revenues to offset operating costs. Does not include broodstock sales.

<sup>c</sup> Includes all reported broodstock sales (carcasses from egg takes and roe extraction).

<sup>d</sup> PWSAC administered a sales harvest at the state owned Cannery Creek hatchery. The majority of coho salmon sold were carcasses and surplus brood fish from the Solomon Gulch hatchery.

<sup>e</sup> PWSAC administered a sales harvest at the state owned Main Bay Hatchery to harvest surplus chum salmon from the closure of the common property fishery.

<sup>f</sup> Includes 269,848 pink salmon Peter Pan Seafoods bought from VFDA and then discarded after roe extraction. Also includes approximately 250,000 chum processed by PWSAC for meal production and roe extraction.

<sup>g</sup> Includes 1,227 pink salmon incidentally harvested in the MBH cost recovery fishery.

Appendix E3.—Historical harvest contributions, thermally marked otolith releases, and total returns of pink salmon to Prince William Sound hatcheries, brood years 1996–2011.

Brood year	Return year	Fry release	Hatchery contribution to broodstock esc. <sup>a</sup>	Total sales harvest	Hatchery contribution to sales harvest	Hatchery contribution to the CCPF <sup>b</sup>	Total hatchery return	Estimated marine survival
Solomon Gulch Hatchery								
1996	1998	188,862,094	295,438	3,428,348	3,076,945	1,226,679	4,599,062	2.44%
1997	1999	195,162,163	954,305	4,379,659	4,354,601	9,465,378	14,774,284	7.57%
1998	2000	213,906,642	520,934	4,033,635	3,983,473	7,635,581	12,139,988	5.68%
1999	2001	195,763,690	524,857	3,970,310	3,932,080	11,458,958	15,915,895	8.13%
2000	2002	203,897,201	420,062	4,430,173	4,368,519	360,850	5,149,431	2.53%
2001	2003	202,573,328	1,636,618	4,188,294	4,184,463	11,871,024	17,692,105	8.73%
2002	2004	206,397,607	300,362	3,782,011	3,597,708	7,262,379	11,160,448	5.41%
2003	2005	215,000,000	585,196	3,534,939	3,534,939	13,713,349	17,833,484	8.29%
2004	2006	222,218,569	481,121	3,855,271	3,762,010	4,840,097	9,083,228	4.09%
2005	2007	216,921,213	294,054	3,967,798	3,967,798	19,586,090	23,847,942	10.99%
2006	2008	220,408,302	283,434	4,267,840	4,226,915	10,946,866	15,457,215	7.01%
2007	2009	199,639,850	478,100	742,660	714,431	29,942	1,222,473	0.61%
2008	2010	226,202,628	225,834	2,163,386	2,087,212	16,084,863	18,397,909	8.13%
2009	2011	223,083,753	306,629	2,113,247	1,997,515	11,302,997	13,607,141	6.10%
2010	2012	222,603,439	329,784	1,373,104	974,184	9,391,677	10,695,645	4.80%
2011	2013	214,526,737	512,087	2,274,237	1,795,400	20,225,804	22,533,291	10.50%
2012	2014	218,276,748						
Armin F. Koernig Hatchery								
1996	1998	52,384,532	643,153	1,634,956	1,582,038	5,037,454	7,262,645	13.86%
1997	1999	105,974,235	1,352,746	2,814,760	2,994,037	5,108,346	9,455,129	8.92%
1998	2000	133,156,995	235,813	2,017,913	1,998,334	4,646,469	6,880,616	5.17%
1999	2001	142,537,692	368,706	2,929,441	2,803,175	1,668,025	4,839,906	3.40%
2000	2002	150,287,930	368,694	2,285,050	2,291,770	5,098,103	7,758,567	5.16%
2001	2003	155,982,828	1,135,571	1,436,990	1,436,990	4,494,486	7,067,047	4.53%
2002	2004	146,407,222	750,252	3,485,375	2,816,777	1,293,453	4,860,481	3.32%
2003	2005	174,200,000	793,048	2,898,305	2,898,305	6,429,875	10,121,228	5.81%
2004	2006	131,197,783	459,670	2,379,170	2,364,838	2,391,723	5,216,231	3.98%
2005	2007	159,616,613	265,216	3,040,328	3,045,323	12,449,638	15,760,177	9.87%
2006	2008	179,000,000	193,982	893,600	708,534	5,209,753	6,112,269	3.41%
2007	2009	144,000,000	252,120	4,007,244	4,000,465	6,290,036	10,542,621	7.32%
2008	2010	145,000,000	188,604	704,355	699,931	12,880,255	13,768,790	9.50%
2009	2011	149,000,000	221,476	1,002,464	987,631	1,880,604	3,089,711	2.07%
2010	2012	148,000,000	287,167	674,536	394,942	3,384,656	4,066,765	2.75%
2011	2013	150,000,000	354,106	496,523	496,523	19,388,728	20,239,357	13.49%
2012	2014	152,000,000						

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Brood year	Return year	Fry release	Hatchery contribution to broodstock esc. <sup>a</sup>	Total sales harvest	Hatchery contribution to sales harvest	Hatchery contribution to the CCPF <sup>b</sup>	Total hatchery return	Estimated marine survival
Wally Noerenberg Hatchery								
1996	1998	106,440,456	1,163,890	2,437,615	2,427,120	4,817,354	8,408,364	7.90%
1997	1999	103,675,208	886,277	3,860,431	3,861,891	4,828,682	9,576,850	9.24%
1998	2000	123,869,678	255,851	3,536,232	3,520,212	4,980,503	8,756,566	7.07%
1999	2001	116,069,339	325,003	4,937,169	4,949,180	1,906,503	7,180,686	6.19%
2000	2002	127,651,881	350,000	3,471,338	3,426,483	1,840,319	5,616,802	4.40%
2001	2003	106,229,524	982,982	4,400,958	4,400,958	12,422,082	17,806,022	16.76%
2002	2004	119,553,743	360,928	2,292,300	2,292,300	144,533	2,797,761	2.34%
2003	2005	110,000,000	1,043,736	3,619,170	3,619,170	4,515,479	9,178,385	8.34%
2004	2006	84,060,920	321,679	2,327,268	2,327,268	1,459,313	4,108,260	4.89%
2005	2007	84,795,328	236,438	3,472,456	3,456,332	3,831,328	7,524,098	8.87%
2006	2008	77,200,000	202,568	1,265,683	1,068,239	7,429,854	8,700,661	11.27%
2007	2009	136,000,000	242,345	1,343,506	1,316,027	1,664,792	3,223,164	2.37%
2008	2010	128,000,000	204,202	1,573,523	1,573,523	15,540,309	17,318,034	13.53%
2009	2011	136,000,000	252,308	2,114,370	2,094,128	4,341,563	6,687,999	4.92%
2010	2012	136,000,000	255,069	1,378,093	1,134,053	4,306,100	5,695,222	4.19%
2011	2013	137,000,000	460,226	1,318,914	1,198,180	15,798,034	17,456,440	12.74%
2012	2014	135,000,000						
Cannery Creek Hatchery								
1996	1998	136,838,852	904,945	1,324,307	1,305,144	4,869,014	7,079,103	5.17%
1997	1999	137,571,564	1,293,460	2,076,361	2,014,448	5,414,942	8,722,850	6.34%
1998	2000	131,195,588	280,811	1,538,039	1,575,341	4,688,206	6,544,358	4.99%
1999	2001	132,236,317	428,859	1,089,998	1,103,072	589,171	2,121,102	1.60%
2000	2002	139,226,716	345,082	601,191	616,354	627,065	1,588,501	1.14%
2001	2003	138,626,713	551,247	2,400,133	2,400,133	5,390,008	8,341,388	6.02%
2002	2004	135,584,680	540,129	2,265,538	2,265,538	135,021	2,940,688	2.17%
2003	2005	139,400,000	590,559	2,436,874	2,436,874	10,452,306	13,479,739	9.67%
2004	2006	126,575,805	431,920	1,164,563	1,155,733	1,319,036	2,906,689	2.30%
2005	2007	138,157,160	348,619	1,443,191	1,443,191	5,638,233	7,430,043	5.38%
2006	2008	141,000,000	206,926	1,270,289	1,056,676	9,749,992	11,013,594	7.81%
2007	2009	131,000,000	340,864	667,071	644,852	2,275,948	3,261,664	2.49%
2008	2010	141,000,000	429,115	374,801	379,225	18,971,438	19,779,778	14.03%
2009	2011	139,000,000	290,508	324,403	324,403	3,876,149	4,491,060	3.23%
2010	2012	135,000,000	185,903	106,625	1,974	3,732,276	3,920,153	2.90%
2011	2013	172,526,737	481,218	0	0	15,591,488	16,072,706	9.32%
2012	2014	94,300,000						

<sup>a</sup> Includes broodstock (for egg take and roe extraction), ground fish, fish given away, holding mortalities, watershed spawners, and fish remaining in the bay after all harvests were complete.

<sup>b</sup> Commercial common property fisheries.

Appendix E4.—Historical harvest contributions, coded wire tag (CWT) and thermally marked otolith releases, and total returns of pink salmon to all hatcheries combined, brood years 1977–2011.

Brood year	Return year	Fry release <sup>b</sup>	CWT/otolith applied to fry release <sup>c</sup>	Hatchery contributions <sup>a</sup>			Broodstock escapement <sup>f</sup>	Total return	Estimated marine survival
				Hatchery cost recovery harvest <sup>d</sup>	Commercial common property harvest	Other harvests <sup>e</sup>			
1977	1979	16,950,784	0	223,748	275,000	0	54,207	552,955	3.26%
1978	1980	25,600,739	0	346,728	1,092,048	0	145,061	1,583,837	6.19%
1979	1981	24,194,000	0	707,037	1,430,747	0	268,501	2,406,285	9.95%
1980	1982	91,076,000	0	1,354,732	4,303,900	0	239,945	5,898,577	6.48%
1981	1983	91,951,000	0	686,963	3,338,366	0	258,062	4,283,391	4.66%
1982	1984	115,107,533	0	415,393	3,313,423	0	341,259	4,070,075	3.54%
1983	1985	116,336,000	0	1,209,960	6,259,923	0	640,340	8,110,223	6.97%
1984	1986	191,306,265	0	905,464	5,662,315	0	466,471	7,034,250	3.68%
1985	1987	231,538,713	646,561	2,691,190	14,197,065	0	1,158,908	18,047,163	7.79%
1986	1988	218,830,647	568,688	1,632,701	8,748,000	0	824,302	11,205,003	5.12%
1987	1989	532,045,966	939,498	5,767,911	10,561,099	0	856,927	19,052,529	<sup>g</sup> 3.58%
1988	1990	507,688,297	1,074,099	6,691,160	24,379,475	0	749,910	33,315,579	<sup>g</sup> 6.56%
1989	1991	615,139,948	1,128,899	5,201,860	20,900,355	3,573,805	1,324,255	32,750,955	<sup>g</sup> 5.32%
1990	1992	603,519,636	1,091,403	2,626,248	4,345,805	30,290	789,880	8,579,332	<sup>g</sup> 1.42%
1991	1993	495,700,200	823,128	1,544,727	2,392,162	14,648	921,073	6,177,575	<sup>g</sup> 1.25%
1992	1994	567,320,470	950,976	7,613,582	21,173,273	56,396	1,422,306	35,100,601	<sup>g</sup> 6.19%
1993	1995	488,575,978	941,811	4,703,457	9,072,469	78,020	1,154,635	14,475,842	<sup>g</sup> 2.96%
1994	1996	613,158,229	1,017,782	5,363,551	14,502,198	0	544,531	24,284,522	<sup>g</sup> 3.96%
1995	1997	651,675,427	1,079,354	9,780,451	14,893,055	226	1,974,521	26,648,253	4.09%
1996	1998	484,525,934	484,525,934	8,666,960	16,145,999	6,931	3,008,251	27,828,141	5.74%
1997	1999	542,356,070	542,356,934	12,988,616	24,838,848	237,318	4,529,055	42,593,837	7.85%
1998	2000	602,128,903	602,128,903	11,055,419	22,099,196	728	1,293,409	34,448,752	5.72%
1999	2001	586,607,038	586,607,038	12,765,960	15,625,341	1,204	1,647,425	30,039,930	5.12%
2000	2002	621,063,728	621,063,728	10,703,126	7,926,335	992	1,497,115	20,127,568	3.24%
2001	2003	603,412,393	603,412,393	12,422,544	34,177,600	606	4,306,418	50,907,168	8.44%
2002	2004	607,943,252	607,943,252	11,825,224	8,835,385	652	1,951,671	22,612,932	3.72%
2003	2005	638,600,000	638,600,000	12,529,283	35,111,009	272	5,013,716	52,654,280	8.25%
2004	2006	564,053,077	564,053,077	9,726,272	10,010,169	384	1,694,390	21,431,215	3.80%
2005	2007	599,490,314	599,490,314	11,888,945	41,505,289	653	1,144,327	54,539,214	9.10%
2006	2008	617,608,302	617,608,302	7,060,364	33,336,465	715	886,910	41,284,454	6.68%
2007	2009	610,639,859	610,639,859	6,675,775	10,260,718	1,295	1,313,429	18,251,217	2.99%
2008	2010	640,202,628	640,202,628	4,739,891	65,725,418	1,152	1,047,755	71,514,216	11.17%
2009	2011	647,083,753	647,083,753	5,403,677	21,401,314	767	1,070,921	27,876,679	4.31%
2010	2012	641,603,439	641,603,439	2,759,902	20,814,709	22,840	803,174	24,400,625	3.80%
2011	2013	673,526,737	673,526,737	3,685,522	71,004,054	25,557	1,612,218	76,327,351	11.33%

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- <sup>a</sup> Data from ADF&G contribution estimates. No otolith collections were made from broodstock escapements after 1999 because the 1997–1999 data indicated broodstock escapements were < 0.05 % wild stock fish. Otolith sampling has been a low priority in the hatchery cost recovery (CR) harvests since 1999 because sampling in the 1997–1999 CR harvests indicated few wild fish (< 2%). Contributions do not include harvest from the Bering and Copper River districts.
- <sup>b</sup> Data for brood years 1985 and 1987–1995 provided by the ADF&G CWT project; Prince William Sound Aquaculture Corporation (PWSAC) provided data for all other years.
- <sup>c</sup> Brood years 1985–1995 pink salmon were part of the ADF&G CWT project; after 1995, all hatchery pink salmon were thermally marked.
- <sup>d</sup> Data for brood years 1985–1995 are from the ADF&G CWT project; after 1995, data obtained from otolith analysis.
- <sup>e</sup> Includes donated, discarded, and confiscated fish in addition to all fish harvested in the Southwestern District otolith test fishery.
- <sup>f</sup> Beginning in 1994, broodstock numbers include fish processed for roe. Broodstock escapements prior to 1997 may not include fish remaining in the bay and watershed spawners and may underestimate broodstock escapement.
- <sup>g</sup> Revised contribution based on individual hatchery CWT adjustment factors. The individual categories were not adjusted; only the total return and estimated marine survival were adjusted.
- <sup>h</sup> Hatchery cost recovery is the whole fish purse seine and raceway effort and does not include carcass sales from viable broodstock.
- <sup>i</sup> Broodstock escapement include broodstock sales (carcasses from egg take), holding mortalities, watershed spawners, and fish remaining in the bay after all harvests were complete.

Appendix E5.—Historical harvest contributions, thermally marked otolith releases, and total returns of coho salmon to Prince William Sound hatcheries, brood years 1988–2010.

Solomon Gulch Hatchery										
Brood Year	Return Year	Fry Release	Hatchery Contribution to the CCPF <sup>a</sup>	Hatchery Contribution to Subs/PU Harvest <sup>b</sup>	Hatchery Contribution to Sport Harvest <sup>c</sup>	Hatchery Contribution to Broodstock Esc. <sup>d</sup>	Hatchery Contribution to Cost Recovery. <sup>e</sup>	Total Hatchery Return	Estimated Marine Survival	
1988	1991	807,153	4,157	984	10,536	1,461	39,176	56,314	6.98%	
1989	1992	993,633	5,000	369	17,789	2,651	26,776	52,585	5.29%	
1990	1993	1,226,044	102	305	12,979	1,658	2,343	17,387	1.42%	
1991	1994	461,388	0	143	19,012	11,376	22,091	52,622	11.41%	
1992	1995	915,087	78,006	0	37,474	16,045	21,592	153,117	16.73%	
1993	1996	1,325,316	87,360	38	43,467	21,772	13,713	166,350	12.55%	
1994	1997	1,875,823	47,500	45	36,520	13,605	9,818	107,488	5.73%	
1995	1998	1,315,183	23,717	321	37,126	3,880	19,068	84,112	6.40%	
1996	1999	1,748,486	67,232	541	36,310	2,541	12,679	119,303	6.82%	
1997	2000	1,863,528	342,490	468	68,014	1,625	24,887	437,484	23.48%	
1998	2001	1,625,599	147,000	230	60,201	1,778	25,595	234,804	14.44%	
1999	2002	1,519,328	25,017	136	29,945	21,323	8,000	84,421	5.56%	
2000	2003	1,821,889	63,132	185	78,405	17,379	4,087	163,188	8.96%	
2001	2004	1,275,145	26,711	315	58,489	2,585	9,897	97,997	7.69%	
2002	2005	1,442,274	129,966	286	67,291	2,102	30,686	230,331	15.97%	
2003	2006	1,968,366	210,382	18	61,169	2,455	16,172	290,196	14.74%	
2004	2007	1,511,592	58,299	0	74,853	3,564	17,748	154,464	10.22%	
2005	2008	1,973,604	154,383	0	58,689	3,101	22,356	238,529	12.09%	
2006	2009	1,828,100	914	131	43,042	3,955	17,424	65,466	3.58%	
2007	2010	1,525,927	2,918	189	70,877	2,847	43,722	120,553	7.90%	
2008	2011	1,915,058	28,412	883	50,388	7,145	38,285	125,113	6.53%	
2009	2012	2,111,389	914	75	59,570	2,458	454	63,471	3.01%	
2010	2013	1,879,768	155,736	277	48,000	7,071	39,946	251,030	13.35%	

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Wally Noerenberg Hatchery										
Brood Year	Return Year	Fry Release	Hatchery Contribution to the CCPF <sup>a</sup>	Hatchery Contribution to Subs/PU Harvest <sup>b</sup>	Hatchery Contribution to Sport Harvest <sup>c</sup>	Hatchery Contribution to Broodstock Esc. <sup>d</sup>	Hatchery Contribution to Cost Recovery. <sup>e</sup>	Total Hatchery Return	Estimated Marine Survival	
1988	1991	2,397,419	71,947	36	4,708	6,469	13,990	97,150	4.05%	
1989	1992	2,223,282	114,165	20	1,411	0	46,121	161,717	7.27%	
1990	1993	1,831,198	39,658	51	1,608	4,857	1,532	47,706	2.61%	
1991	1994	1,303,077	81,396	65	3,061	5,439	13,258	103,220	7.92%	
1992	1995	1,483,936	34,680	57	1,690	4,964	5,152	46,543	3.14%	
1993	1996	2,063,934	26,245	8	3,851	4,081	39,506	73,690	3.57%	
1994	1997	275,406	5,626	26	2,084	5,674	0	13,410	4.87%	
1995	1998	203,651	2,800	35	3,327	1,541	0	7,703	3.78%	
1996	1999	407,715	338	66	2,658	2,533	0	5,595	1.37%	
1997	2000	1,068,338	111,256	197	7,963	2,551	0	121,966	11.42%	
1998	2001	375,670	2,488	98	11,815	3,277	0	17,678	4.71%	
1999	2002	219,967	3,215	105	18,898	2,389	0	24,607	11.19%	
2000	2003	485,834	9,624	133	17,459	1,314	0	28,529	5.87%	
2001	2004	920,858	9,333	37	14,899	150	637	25,056	2.72%	
2002	2005	989,383	53,257	178	28,220	11,450	19	93,124	9.41%	
2003	2006	1,057,922	113,997	20	16,531	17,079	0	147,627	13.95%	
2004	2007	1,052,897	84,867	36	27,216	2,129	11,975	126,223	11.99%	
2005	2008	1,850,000	116,641	90	13,665	2,609	267	133,272	7.20%	
2006	2009	1,930,000	20,209	52	13,157	2,064	0	35,482	1.84%	
2007	2010	226,000	5,215	9	20,563	1,399	0	27,186	12.03%	
2008	2011	3,490,000	95,267	274	25,791	7,374	678	129,384	3.71%	
2009	2012	3,480,000	10,276	123	20,078	558	0	31,035	0.89%	
2010	2013	1,018,000	64,022	0	11,800	2,293	0	78,115	7.67%	

<sup>a</sup> Commercial common property fishery (CCPF).

<sup>b</sup> Subsistence and personal use fisheries.

<sup>c</sup> 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.

<sup>d</sup> 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.

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

Appendix E6.—Sockeye salmon hatchery and wild stock contributions to the Copper River drift gillnet commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin						Total	
			Gulkana		Main Bay		Hatchery	Wild		
			Number	Percent	Number	Percent		Number		Percent
05/16 - 05/16	1 <sup>a</sup>	12	0	0.0%	0	0.0%	0	77,916	100.0%	77,916
05/20 - 05/20	2 <sup>a</sup>	12	0	0.0%	0	0.0%	0	191,406	100.0%	191,406
05/27 - 05/27	3 <sup>a</sup>	12	0	0.0%	0	0.0%	0	320,337	100.0%	320,337
06/10 - 06/11	4	24	11,715	9.9%	18,223	15.4%	29,938	88,512	74.7%	118,450
06/13 - 06/14	5	36	14,708	10.5%	8,825	6.3%	23,533	116,193	83.2%	139,726
06/17 - 06/18	6	36	39,953	25.5%	0	0.0%	39,953	116,528	74.5%	156,481
06/20 - 06/21	7	24	21,062	31.5%	726	1.1%	21,788	45,028	67.4%	66,816
06/24 - 06/25	8	24	30,447	33.0%	0	0.0%	30,447	61,909	67.0%	92,356
06/27 - 06/29	9	48	60,488	48.2%	1,475	1.2%	61,963	63,439	50.6%	125,402
07/01 - 07/02	10	36	51,013	56.0%	2,171	2.4%	53,184	37,988	41.7%	91,172
07/04 - 07/06	11	60	34,670	41.5%	1,778	2.1%	36,448	47,116	56.4%	83,564
07/08 - 07/10	12	48	26,729	41.6%	1,445	2.2%	28,174	36,121	56.2%	64,295
07/11 - 07/12	13	36	15,914	40.0%	0	0.0%	15,914	23,872	60.0%	39,786
07/15 - 07/16	14	36	7,906	38.8%	240	1.2%	8,146	12,219	60.0%	20,365
07/18 - 07/19	15 <sup>b,c</sup>	36	2,586	24.6%	554	5.3%	3,140	7,388	70.2%	10,528
07/22 - 07/23	16 <sup>b</sup>	36	722	19.0%	200	5.3%	922	2,880	75.7%	3,802
07/25 - 07/26	17 <sup>b</sup>	36	161	14.2%	0	0.0%	161	970	85.8%	1,131
07/29 - 07/30	18 <sup>b</sup>	36	113	9.5%	0	0.0%	113	1,082	90.5%	1,195
08/01 - 08/02	19 <sup>b</sup>	36	26	4.7%	0	0.0%	26	517	95.3%	543
08/05 - 08/06	20 <sup>b</sup>	36	0	0.0%	0	0.0%	0	654	100.0%	654
08/08 - 08/09	21 <sup>b</sup>	36	0	0.0%	0	0.0%	0	451	100.0%	451
08/12 - 08/13	22 <sup>b</sup>	36	0	0.0%	0	0.0%	0	668	100.0%	668
08/15 - 08/16	23 <sup>b</sup>	24	0	0.0%	0	0.0%	0	210	100.0%	210
08/19 - 08/20	24 <sup>b</sup>	24	0	0.0%	0	0.0%	0	148	100.0%	148
08/22 - 08/23	25 <sup>b</sup>	24	0	0.0%	0	0.0%	0	84	100.0%	84
08/26 - 08/27	26 <sup>b</sup>	24	0	0.0%	0	0.0%	0	291	100.0%	291
08/29 - 08/30	27 <sup>b</sup>	24	0	0.0%	0	0.0%	0	22	100.0%	22
09/02 - 09/03	28 <sup>b</sup>	24	0	0.0%	0	0.0%	0	15	100.0%	15
09/05 - 09/06	29 <sup>b</sup>	24	0	0.0%	0	0.0%	0	233	100.0%	233
09/09 - 09/10	30 <sup>b</sup>	24	0	0.0%	0	0.0%	0	1	100.0%	1
09/12 - 09/13	31 <sup>b</sup>	24	0	0.0%	0	0.0%	0	1	100.0%	1
09/16 - 09/17	32 <sup>d</sup>	24	0	0.0%	0	0.0%	0	12	100.0%	12
09/19 - 09/20	33 <sup>d</sup>	24	0	0.0%	0	0.0%	0	56	100.0%	56
09/23 - 09/24	34 <sup>d</sup>	24	0	0.0%	0	0.0%	0	0	100.0%	0
09/26 - 09/28	35 <sup>d</sup>	60	0	0.0%	0	0.0%	0	0	100.0%	0
09/30 - 10/02	36 <sup>d</sup>	60	0	0.0%	0	0.0%	0	0	100.0%	0
10/03 - 10/05	37 <sup>d</sup>	60	0	0.0%	0	0.0%	0	0	0.0%	0
10/07 - 10/09	38 <sup>d</sup>	60	0	0.0%	0	0.0%	0	0	0.0%	0
10/10 - 10/12	39 <sup>d</sup>	60	0	0.0%	0	0.0%	0	0	0.0%	0
<b>Total</b>			<b>318,212</b>	<b>19.8%</b>	<b>35,637</b>	<b>2.2%</b>	<b>353,849</b>	<b>1,254,268</b>	<b>78.0%</b>	<b>1,608,117</b>

<sup>a</sup> No samples collected. Linear regression of periods 4–10 and historical data indicate there should be few to no Gulkana stocks. Assumed all wild fish.

<sup>b</sup> No samples collected. Gulkana Hatchery proportions are based on a linear regression of periods 10–15.

<sup>c</sup> No samples collected. Proportions of hatchery marks other than the Gulkana Hatchery are based on period 15 results

<sup>d</sup> No harvest reported.

Appendix E7.—Gulkana Hatchery sockeye salmon harvests and total contribution, 1977–2013.

Year	Hatchery Contributions			Broodstock/ Escapement <sup>d</sup>	Total Hatchery Run
	Commercial <sup>a</sup>	Subsistence/ Personal Use <sup>b</sup>	Sport <sup>c</sup>		
1977	183	12	0	122	318
1978	720	74	1	1,300	2,095
1979	900	393	6	3,425	4,724
1980	350	589	22	4,250	5,211
1981	3,600	478	9	4,650	8,736
1982	3,600	322	4	5,740	9,666
1983	6,600	1,167	14	8,396	16,177
1984	5,318	450	9	4,846	10,623
1985	31,955	2,121	73	24,021	58,170
1986	30,404	2,667	113	25,408	58,592
1987	47,347	3,071	182	25,505	76,105
1988	92,552	9,351	260	94,563	196,726
1989	175,643	13,734	532	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	548	62,361	426,665
2003	138,056	19,513	253	45,024	202,845
2004	59,540	27,117	163	6,618	93,438
2005	95,897	28,031	200	92,455	216,583
2006	163,691	26,860	163	97,192	287,906
2007	94,232	9,656	89	28,648	132,625
2008	21,669	19,175	207	44,865	85,916
2009	59,948	29,355	335	43,409	133,047
2010	207,915	68,180	533	157,980	434,608
2011	487,916	33,113	299	59,589	580,917
2012	330,402	43,549	389	65,348	439,688
10-year Average	165,927	30,455	263	64,113	260,757
2013	318,212	45,800	407	72,369	436,788

<sup>a</sup> Commercial 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).

<sup>b</sup> 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).

<sup>c</sup> 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.

<sup>d</sup> Broodstock and escapement contributions are based on survey of release sites and hatchery reporting.

Appendix E8.—Gulkana Hatchery salmon fry releases, 1974–2013.

Release Year	Chinook salmon			Sockeye salmon					
	Monsoon Lake	Gulkana River (East 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
10-year Average				6,987,483	5,378,581	8,999,059			21,365,122
2013				6,000,000	6,000,000	6,560,000			18,560,000



Appendix E9.—Sockeye salmon hatchery and wild stock contributions to the Coghill District commercial common property fishery by period, 2013.

Dates	Period	Hours		Origin									Total
				Gulkana <sup>a</sup>		Main Bay		Solf Lake		Hatchery Total	Wild		
				Number	Percent	Number	Percent	Number	Percent		Number	Percent	
05/27 - 05/27	1	60	<sup>a</sup>	0	0.0%	88	78.1%	0	0.0%	88	25	21.9%	113
05/30 - 05/30	2	84	<sup>a</sup>	0	0.0%	179	78.1%	0	0.0%	179	50	21.9%	229
06/03 - 06/03	3	48	<sup>a</sup>	0	0.0%	83	78.1%	0	0.0%	83	23	21.9%	106
06/06 - 06/06	4	72	<sup>a</sup>	0	0.0%	135	78.1%	0	0.0%	135	38	21.9%	173
06/10 - 06/11	5	24	<sup>a</sup>	0	0.0%	182	78.1%	0	0.0%	182	51	21.9%	233
06/13 - 06/14	6	24	<sup>a</sup>	0	0.0%	477	78.1%	0	0.0%	477	133	21.9%	610
06/17 - 06/18	7	36	<sup>a</sup>	0	0.0%	3,909	78.1%	0	0.0%	3,909	1,095	21.9%	5,004
06/20 - 06/22	8	48		0	0.0%	11,123	78.1%	0	0.0%	11,123	3,115	21.9%	14,238
06/24 - 06/26	9	48		0	0.0%	9,289	71.4%	0	0.0%	9,289	3,715	28.6%	13,004
06/27 - 06/29	10	60		0	0.0%	15,388	80.5%	0	0.0%	15,388	3,731	19.5%	19,119
07/01 - 07/03	11	48		0	0.0%	4,854	50.6%	0	0.0%	4,854	4,736	49.4%	9,590
07/04 - 07/06	12	60		0	0.0%	3,764	49.4%	0	0.0%	3,764	3,859	50.6%	7,623
07/08 - 07/10	13	48		0	0.0%	3,650	51.4%	0	0.0%	3,650	3,457	48.6%	7,107
07/11 - 07/13	14	60		0	0.0%	3,064	63.4%	0	0.0%	3,064	1,768	36.6%	4,832
07/15 - 07/17	15	60		0	0.0%	1,584	44.4%	0	0.0%	1,584	1,980	55.6%	3,564
07/18 - 07/22	16	108		0	0.0%	1,205	27.8%	0	0.0%	1,205	3,133	72.2%	4,338
07/25 - 07/25	17	14		0	0.0%	264	27.8%	0	0.0%	264	688	72.2%	952
07/28 - 07/28	18	14	<sup>b</sup>	0	0.0%	105	27.8%	0	0.0%	105	272	72.2%	377
07/29 - 07/29	19	14	<sup>c</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
07/30 - 07/30	20	14	<sup>b</sup>	0	0.0%	234	27.8%	0	0.0%	234	609	72.2%	843
07/31 - 07/31	21	14	<sup>b</sup>	0	0.0%	5	27.8%	0	0.0%	5	13	72.2%	18
08/01 - 08/01	22	14	<sup>b</sup>	0	0.0%	93	27.8%	0	0.0%	93	241	72.2%	334
08/02 - 08/02	23	14	<sup>b</sup>	0	0.0%	43	27.8%	0	0.0%	43	111	72.2%	153
08/03 - 08/03	24	14	<sup>b</sup>	0	0.0%	147	27.8%	0	0.0%	147	383	72.2%	530
08/04 - 08/04	25	14	<sup>b</sup>	0	0.0%	146	27.8%	0	0.0%	146	379	72.2%	525
08/05 - 08/05	26	14	<sup>b</sup>	0	0.0%	192	27.8%	0	0.0%	192	500	72.2%	692
08/06 - 08/06	27	14	<sup>b</sup>	0	0.0%	141	27.8%	0	0.0%	141	368	72.2%	509
08/07 - 08/07	28	14	<sup>b</sup>	0	0.0%	100	27.8%	0	0.0%	100	260	72.2%	360
08/08 - 08/08	29	14	<sup>b</sup>	0	0.0%	33	27.8%	0	0.0%	33	85	72.2%	118
08/09 - 08/09	30	14	<sup>b</sup>	0	0.0%	27	27.8%	0	0.0%	27	71	72.2%	98
08/10 - 08/10	31	14	<sup>b</sup>	0	0.0%	18	27.8%	0	0.0%	18	46	72.2%	63

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Dates	Period	Hours		Origin										Total
				Gulkana <sup>a</sup>		Main Bay		Solf Lake		Hatchery	Wild			
				No.	Percent	No.	Percent	No.	Percent		Total	No.	Percent	
08/11 - 08/11	32	14	b	0	0.0%	15	27.8%	0	0.0%	15	40	72.2%	55	
08/12 - 08/12	33	14	b	0	0.0%	24	27.8%	0	0.0%	24	62	72.2%	86	
08/13 - 08/13	34	14	b	0	0.0%	6	27.8%	0	0.0%	6	17	72.2%	23	
08/14 - 08/14	35	14	b	0	0.0%	6	27.8%	0	0.0%	6	14	72.2%	20	
08/15 - 08/15	36	14	b	0	0.0%	4	27.8%	0	0.0%	4	10	72.2%	14	
08/16 - 08/16	37	14	b	0	0.0%	2	27.8%	0	0.0%	2	6	72.2%	8	
08/17 - 08/17	38	14	b	0	0.0%	2	27.8%	0	0.0%	2	4	72.2%	6	
08/18 - 08/18	39	14	b	0	0.0%	2	27.8%	0	0.0%	2	4	72.2%	6	
08/19 - 08/19	40	14	b	0	0.0%	1	27.8%	0	0.0%	1	2	72.2%	3	
08/20 - 08/21	41	36	b	0	0.0%	3	27.8%	0	0.0%	3	7	72.2%	10	
08/22 - 08/23	42	36	b	0	0.0%	1	27.8%	0	0.0%	1	4	72.2%	5	
08/24 - 08/24	43	15	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/25 - 08/25	44	15	b	0	0.0%	1	27.8%	0	0.0%	1	1	72.2%	2	
08/26 - 08/26	45	15	b	0	0.0%	1	27.8%	0	0.0%	1	3	72.2%	4	
08/27 - 08/27	46	15	b	0	0.0%	1	27.8%	0	0.0%	1	2	72.2%	3	
08/28 - 08/28	47	15	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/29 - 08/29	48	15	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/30 - 08/30	49	15	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/31 - 08/31	50	15	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/01 - 09/01	51	15	b	0	0.0%	1	27.8%	0	0.0%	1	2	72.2%	3	
09/02 - 09/04	52	60	b	0	0.0%	1	27.8%	0	0.0%	1	3	72.2%	4	
09/05 - 09/07	53	60	b	0	0.0%	1	27.8%	0	0.0%	1	3	72.2%	4	
09/09 - 09/11	54	60	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/12 - 09/14	55	60	b	0	0.0%	0	27.8%	0	0.0%	0	1	72.2%	1	
09/16 - 09/18	56	60	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/19 - 09/21	57	60	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/23 - 09/25	58	60	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/26 - 09/28	59	60	c	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
Total				0	0.0%	60,594	63.3%	0	0.0%	60,594	35,118	36.7%	95,712	

Note: Total harvest numbers are based on data available 27 November 2013.

<sup>a</sup> No samples collected. Proportions based on period 8 results.

<sup>b</sup> No samples collected. Proportions based on period 17 results.

<sup>c</sup> No harvest reported.

Appendix E10.–Pink salmon hatchery and wild stock contributions to the Coghill District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number		Percent
05/27 - 05/29	1	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
05/30 - 06/02	2	84 <sup>b</sup>	0	10.4%	0	0.0%	0	0.0%	0	0.0%	0	1	89.6%	1
06/03 - 06/05	3	48 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/06 - 06/09	4	72 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/10 - 06/11	5	24 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/13 - 06/14	6	24 <sup>b</sup>	282	10.4%	0	0.0%	0	0.0%	0	0.0%	282	2,415	89.6%	2,697
06/17 - 06/18	7	36 <sup>b</sup>	1	10.4%	0	0.0%	0	0.0%	0	0.0%	1	5	89.6%	6
06/20 - 06/22	8	48 <sup>b</sup>	24	10.4%	0	0.0%	0	0.0%	0	0.0%	24	201	89.6%	225
06/24 - 06/26	9	48 <sup>b</sup>	5	10.4%	0	0.0%	0	0.0%	0	0.0%	5	43	89.6%	48
06/27 - 06/29	10	60	79	10.4%	0	0.0%	0	0.0%	0	0.0%	79	675	89.6%	754
07/01 - 07/03	11	48 <sup>c</sup>	950	34.0%	0	0.0%	0	0.0%	0	0.0%	950	1,844	66.0%	2,794
07/04 - 07/06	12	60 <sup>c</sup>	4,210	34.0%	0	0.0%	0	0.0%	0	0.0%	4,210	8,168	66.0%	12,378
07/08 - 07/10	13	48	51,440	57.6%	0	0.0%	0	0.0%	0	0.0%	51,440	37,904	42.4%	89,344
07/11 - 07/13	14	60	134,082	66.7%	0	0.0%	3,192	1.6%	0	0.0%	137,274	63,849	31.7%	201,123
07/15 - 07/17	15	60	14,919	19.8%	0	0.0%	6,631	8.8%	0	0.0%	21,550	53,876	71.4%	75,426
07/18 - 07/22	16	84	23,410	3.0%	7,804	1.0%	554,042	71.0%	0	0.0%	585,256	195,085	25.0%	780,341
07/21 - 07/22	17	36	1,780	3.0%	594	1.0%	42,137	71.0%	0	0.0%	44,511	14,837	25.0%	59,348
07/25 - 07/25	18	14 <sup>d</sup>	2,176	1.5%	1,088	0.7%	98,065	66.3%	1,042	0.7%	102,370	45,585	30.8%	147,955
07/28 - 07/28	19	14	0	0.0%	0	0.0%	97,265	62.0%	2,211	1.4%	99,475	57,475	36.6%	156,950
07/30 - 07/30	20	14	0	0.0%	28,236	6.8%	289,418	69.5%	0	0.0%	317,654	98,826	23.7%	416,480
07/31 - 07/31	21	14 <sup>e</sup>	0	0.0%	867	5.1%	13,668	79.7%	0	0.0%	14,535	2,605	15.2%	17,140
08/01 - 08/01	22	14 <sup>e</sup>	0	0.0%	16,000	5.1%	252,337	79.7%	0	0.0%	268,337	48,090	15.2%	316,427
08/02 - 08/02	23	14 <sup>e</sup>	0	0.0%	7,046	5.1%	111,127	79.7%	0	0.0%	118,173	21,178	15.2%	139,351
08/03 - 08/03	24	14 <sup>e</sup>	0	0.0%	13,122	5.1%	206,954	79.7%	0	0.0%	220,076	39,441	15.2%	259,517
08/04 - 08/04	25	14 <sup>e</sup>	0	0.0%	26,132	5.1%	412,121	79.7%	0	0.0%	438,252	78,541	15.2%	516,793
08/05 - 08/05	26	14	0	0.0%	38,821	3.3%	1,048,170	90.0%	0	0.0%	1,086,991	77,642	6.7%	1,164,633
08/06 - 08/06	27	14 <sup>f</sup>	6,512	1.0%	62,951	9.7%	527,484	81.0%	6,512	1.0%	603,459	47,756	7.3%	651,215
08/07 - 08/07	28	14 <sup>f</sup>	1,778	1.0%	17,188	9.7%	144,026	81.0%	1,778	1.0%	164,771	13,039	7.3%	177,810
08/08 - 08/08	29	14	4,715	2.0%	37,718	16.0%	169,733	72.0%	4,715	2.0%	216,881	18,859	8.0%	235,740
08/09 - 08/09	30	14 <sup>g</sup>	4,883	1.0%	77,049	15.8%	360,283	73.8%	4,883	1.0%	447,099	41,237	8.4%	488,336
08/10 - 08/10	31	14	0	0.0%	92,168	15.6%	447,672	75.6%	0	0.0%	539,840	52,667	8.9%	592,507
08/11 - 08/11	32	14 <sup>h</sup>	0	0.0%	24,740	10.6%	186,200	79.4%	13,021	5.6%	223,961	10,417	4.4%	234,378
08/12 - 08/12	33	14 <sup>h</sup>	0	0.0%	15,140	10.6%	113,950	79.4%	7,969	5.6%	137,059	6,375	4.4%	143,434
08/13 - 08/13	34	14 <sup>h</sup>	0	0.0%	41,381	10.6%	311,448	79.4%	21,780	5.6%	374,609	17,424	4.4%	392,033
08/14 - 08/14	35	14 <sup>h</sup>	0	0.0%	30,437	10.6%	229,081	79.4%	16,020	5.6%	275,538	12,816	4.4%	288,354

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Dates	Period	Hours	Origin												Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent		
08/15 - 08/15	36	14	0	0.0%	14,258	5.6%	213,876	83.3%	28,517	11.1%	256,651	0	0.0%	256,651	
08/16 - 08/16	37	14 <sup>i</sup>	0	0.0%	4,450	2.8%	146,860	91.7%	8,901	5.6%	160,211	0	0.0%	160,211	
08/17 - 08/17	38	14 <sup>i</sup>	0	0.0%	1,150	2.8%	37,938	91.7%	2,299	5.6%	41,387	0	0.0%	41,387	
08/18 - 08/18	39	14 <sup>i</sup>	0	0.0%	1,736	2.8%	57,279	91.7%	3,471	5.6%	62,486	0	0.0%	62,486	
08/19 - 08/19	40	14	0	0.0%	0	0.0%	59,556	100.0%	0	0.0%	59,556	0	0.0%	59,556	
08/20 - 08/21	41	36	10,563	4.5%	31,689	13.6%	190,133	81.8%	0	0.0%	232,385	0	0.0%	232,385	
08/22 - 08/23	42	36	0	0.0%	11,342	3.4%	306,237	93.1%	11,342	3.4%	328,921	0	0.0%	328,921	
08/24 - 08/24	43	15 <sup>j</sup>	0	0.0%	9,704	5.9%	148,758	90.3%	2,840	1.7%	161,302	3,432	2.1%	164,734	
08/25 - 08/25	44	15 <sup>j</sup>	0	0.0%	7,425	5.9%	113,813	90.3%	2,173	1.7%	123,410	2,626	2.1%	126,036	
08/26 - 08/26	45	15	0	0.0%	6,689	8.3%	70,234	87.5%	0	0.0%	76,923	3,344	4.2%	80,267	
08/27 - 08/27	46	15 <sup>k</sup>	0	0.0%	1,352	8.3%	14,194	87.5%	0	0.0%	15,546	676	4.2%	16,222	
08/28 - 08/28	47	15 <sup>k</sup>	0	0.0%	498	8.3%	5,231	87.5%	0	0.0%	5,729	249	4.2%	5,978	
08/29 - 08/29	48	15 <sup>k</sup>	0	0.0%	616	8.3%	6,463	87.5%	0	0.0%	7,078	308	4.2%	7,386	
08/30 - 08/30	49	15 <sup>k</sup>	0	0.0%	1,283	8.3%	13,468	87.5%	0	0.0%	14,751	641	4.2%	15,392	
08/31 - 08/31	50	15 <sup>k</sup>	0	0.0%	520	8.3%	5,457	87.5%	0	0.0%	5,977	260	4.2%	6,237	
09/01 - 09/01	51	15 <sup>k</sup>	0	0.0%	330	8.3%	3,463	87.5%	0	0.0%	3,793	165	4.2%	3,958	
09/02 - 09/04	52	60 <sup>k</sup>	0	0.0%	652	8.3%	6,843	87.5%	0	0.0%	7,494	326	4.2%	7,820	
09/05 - 09/07	53	60 <sup>k</sup>	0	0.0%	149	8.3%	1,569	87.5%	0	0.0%	1,718	75	4.2%	1,793	
09/09 - 09/11	54	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/12 - 09/14	55	60 <sup>k</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/16 - 09/18	56	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/19 - 09/21	57	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/23 - 09/25	58	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/26 - 09/28	59	60 <sup>a</sup>	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
Totals			261,809	2.9%	632,324	6.9%	7,026,375	76.9%	139,473	1.5%	8,059,982	1,080,976	11.8%	9,140,958	

- <sup>a</sup> No harvest reported.
- <sup>b</sup> No samples collected. Results are based on period 10 results.
- <sup>c</sup> No samples collected. Results based on an average of period 10 and 13 results.
- <sup>d</sup> No samples collected. Results based on an average of period 16 and 18 results.
- <sup>e</sup> No samples collected. Results based on an average of period 20 and 26 results.
- <sup>f</sup> No samples collected. Results based on an average of period 26 and 29 results.
- <sup>g</sup> No samples collected. Results based on an average of period 29 and 31 results.
- <sup>h</sup> No samples collected. Results based on an average of period 31 and 36 results.
- <sup>i</sup> No samples collected. Results based on an average of period 36 and 40 results.
- <sup>j</sup> No samples collected. Results based on an average of period 42 and 45 results.
- <sup>k</sup> No samples collected. Results are based on period 45 results.

Appendix E11.–Chum salmon hatchery and wild stock contributions to the Coghill District commercial common property harvest, 2013.

Dates	Period	Hours	Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		Total
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
05/27 - 05/29	1	60 <sup>a</sup>	35,056	73.1%	615	1.3%	11,685	24.4%	47,357	615	1.3%	47,972
05/30 - 06/02	2	84 <sup>a</sup>	152,316	73.1%	2,672	1.3%	50,772	24.4%	205,760	2,672	1.3%	208,432
06/03 - 06/05	3	48 <sup>a</sup>	106,789	73.1%	1,873	1.3%	35,596	24.4%	144,259	1,873	1.3%	146,132
06/06 - 06/09	4	72	96,631	73.1%	1,695	1.3%	32,210	24.4%	130,537	1,695	1.3%	132,232
06/10 - 06/11	5	24	47,925	66.0%	0	0.0%	23,190	31.9%	71,115	1,546	2.1%	72,661
06/13 - 06/14	6	24 <sup>b</sup>	77,054	69.6%	0	0.0%	31,177	28.2%	108,232	2,406	2.2%	110,638
06/17 - 06/18	7	36	97,934	73.3%	0	0.0%	32,645	24.4%	130,579	2,968	2.2%	133,547
06/20 - 06/22	8	48	145,711	64.1%	0	0.0%	76,560	33.7%	222,272	4,939	2.2%	227,211
06/24 - 06/26	9	48	137,113	70.7%	0	0.0%	54,845	28.3%	191,958	2,109	1.1%	194,067
06/27 - 06/29	10	60	166,725	73.7%	0	0.0%	54,781	24.2%	221,505	4,764	2.1%	226,269
07/01 - 07/03	11	48	171,025	69.1%	0	0.0%	73,672	29.8%	244,698	2,631	1.1%	247,329
07/04 - 07/06	12	60	137,107	64.2%	4,495	2.1%	71,925	33.7%	213,528	0	0.0%	213,528
07/08 - 07/10	13	48 <sup>c</sup>	49,567	61.3%	1,273	1.6%	27,107	33.5%	77,947	2,949	3.6%	80,896
07/11 - 07/13	14	60	42,626	58.3%	761	1.0%	24,358	33.3%	67,745	5,328	7.3%	73,073
07/15 - 07/17	15	60 <sup>d</sup>	9,773	57.7%	88	0.5%	4,774	28.2%	14,636	2,291	13.5%	16,927
07/18 - 07/22	16	84	15,702	57.0%	0	0.0%	6,336	23.0%	22,038	5,509	20.0%	27,547
07/21 - 07/22	17	36	566	56.9%	0	0.0%	229	23.0%	795	199	20.0%	994
07/25 - 07/25	18	14 <sup>e</sup>	591	52.0%	0	0.0%	247	21.7%	838	299	26.3%	1,137
07/28 - 07/28	19	14	293	46.9%	0	0.0%	127	20.3%	421	205	32.8%	626
07/30 - 07/30	20	14 <sup>f</sup>	698	46.9%	0	0.0%	303	20.3%	1,001	489	32.8%	1,490
07/31 - 07/31	21	14 <sup>f</sup>	113	46.9%	0	0.0%	49	20.3%	162	79	32.8%	241
08/01 - 08/01	22	14 <sup>f</sup>	487	46.9%	0	0.0%	211	20.3%	697	341	32.8%	1,038
08/02 - 08/02	23	14 <sup>f</sup>	240	46.9%	0	0.0%	104	20.3%	345	168	32.8%	513
08/03 - 08/03	24	14 <sup>f</sup>	187	46.9%	0	0.0%	81	20.3%	267	131	32.8%	398
08/04 - 08/04	25	14 <sup>f</sup>	387	46.9%	0	0.0%	168	20.3%	555	271	32.8%	826
08/05 - 08/05	26	14 <sup>f</sup>	627	46.9%	0	0.0%	272	20.3%	898	439	32.8%	1,337
08/06 - 08/06	27	14 <sup>f</sup>	225	46.9%	0	0.0%	97	20.3%	322	157	32.8%	479
08/07 - 08/07	28	14 <sup>f</sup>	173	46.9%	0	0.0%	75	20.3%	249	121	32.8%	370
08/08 - 08/08	29	14 <sup>f</sup>	195	46.9%	0	0.0%	85	20.3%	280	137	32.8%	416
08/09 - 08/09	30	14 <sup>f</sup>	75	46.9%	0	0.0%	33	20.3%	108	53	32.8%	160
08/10 - 08/10	31	14 <sup>f</sup>	36	46.9%	0	0.0%	16	20.3%	52	25	32.8%	77
08/11 - 08/11	32	14 <sup>f</sup>	33	46.9%	0	0.0%	14	20.3%	47	23	32.8%	70
08/12 - 08/12	33	14 <sup>f</sup>	27	46.9%	0	0.0%	12	20.3%	38	19	32.8%	57
08/13 - 08/13	34	14 <sup>f</sup>	19	46.9%	0	0.0%	8	20.3%	28	13	32.8%	41
08/14 - 08/14	35	14 <sup>f</sup>	11	46.9%	0	0.0%	5	20.3%	16	8	32.8%	24

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Dates	Period	Hours	Wally Noerenberg		Port Chalmers		Armin F Koernig		Hatchery total	Wild		Total
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
08/15 - 08/15	36	14 <sup>f</sup>	399	46.9%	0	0.0%	173	20.3%	572	279	32.8%	851
08/16 - 08/16	37	14 <sup>f</sup>	7	46.9%	0	0.0%	3	20.3%	10	5	32.8%	15
08/17 - 08/17	38	14 <sup>f</sup>	3	46.9%	0	0.0%	1	20.3%	4	2	32.8%	6
08/18 - 08/18	39	14 <sup>f</sup>	1	46.9%	0	0.0%	0	20.3%	1	1	32.8%	2
08/19 - 08/19	40	14 <sup>f</sup>	1	46.9%	0	0.0%	1	20.3%	2	1	32.8%	3
08/20 - 08/21	41	36 <sup>f</sup>	116	46.9%	0	0.0%	50	20.3%	167	81	32.8%	248
08/22 - 08/23	42	36 <sup>f</sup>	2	46.9%	0	0.0%	1	20.3%	3	1	32.8%	4
08/24 - 08/24	43	15 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25 - 08/25	44	15 <sup>f</sup>	2	46.9%	0	0.0%	1	20.3%	3	1	32.8%	4
08/26 - 08/26	45	15 <sup>f</sup>	336	46.9%	0	0.0%	146	20.3%	482	235	32.8%	717
08/27 - 08/27	46	15 <sup>f</sup>	0	46.9%	0	0.0%	0	20.3%	1	0	32.8%	1
08/28 - 08/28	47	15 <sup>f</sup>	2	46.9%	0	0.0%	1	20.3%	3	2	32.8%	5
08/29 - 08/29	48	15 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/30 - 08/30	49	15 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/31 - 08/31	50	15 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/01 - 09/01	51	15 <sup>f</sup>	0	46.9%	0	0.0%	0	20.3%	1	0	32.8%	1
09/02 - 09/04	52	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/05 - 09/07	53	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/09 - 09/11	54	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/12 - 09/14	55	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/16 - 09/18	56	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/19 - 09/21	57	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/23 - 09/25	58	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/26 - 09/28	59	60 <sup>g</sup>	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
<b>Total</b>			<b>1,494,909</b>	<b>68.9%</b>	<b>13,474</b>	<b>0.6%</b>	<b>614,146</b>	<b>28.3%</b>	<b>2,122,529</b>	<b>48,083</b>	<b>2.2%</b>	<b>2,170,612</b>

- <sup>a</sup> No samples collected. Proportions are based on period 4 results.
- <sup>b</sup> No samples collected. Proportions are based on an average of period 5 and 7 results.
- <sup>c</sup> No samples collected. Proportions are based on an average of period 12 and 14 results.
- <sup>d</sup> No samples collected. Proportions are based on an average of period 14 and 16 results.
- <sup>e</sup> No samples collected. Proportions are based on an average of period 16 and 18 results.
- <sup>f</sup> No samples collected. Proportions are based on period 18 results.
- <sup>g</sup> No harvest reported.

Appendix E12.—Daily salmon sales and sex ratios, sales summary, and broodstock summary at the Wally Noerenberg Hatchery, 2013.

Date	Pink Salmon					Chum Salmon					Coho Salmon	
	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative	Sales Harvest	Sales Harvest cumulative
06/04		0	0	0	0	24.0%	29,606	29,606	0	0	0	0
06/05		0	0	0	0	11.0%	23,158	52,764	0	0	0	0
06/06		0	0	0	0	11.0%	17,593	70,357	0	0	0	0
06/07		0	0	0	0	21.3%	34,668	105,025	0	0	0	0
06/08		0	0	0	0	17.0%	44,715	149,740	0	0	0	0
06/09		0	0	0	0	35.0%	46,628	196,368	0	0	0	0
06/10		0	0	0	0	31.0%	29,285	225,653	0	0	0	0
06/11		0	0	0	0	26.0%	50,770	276,423	0	0	0	0
06/12		0	0	0	0	34.0%	47,501	323,924	0	0	0	0
06/13		0	0	0	0	42.0%	51,125	375,049	0	0	0	0
06/14		0	0	0	0	37.0%	33,934	408,983	0	0	0	0
06/15		0	0	0	0	43.0%	37,031	446,014	0	0	0	0
06/16		0	0	0	0	46.0%	29,423	475,437	0	0	0	0
06/17		0	0	0	0	51.0%	32,211	507,648	0	0	0	0
06/18		0	0	0	0	48.0%	21,705	529,353	0	0	0	0
07/05		0	0	0	0		458	529,811	3,425	3,425	0	0
07/06		0	0	0	0		915	530,726	7,066	10,491	0	0
07/07		0	0	0	0		2,860	533,586	9,661	20,152	0	0
07/08		0	0	0	0		2,643	536,229	9,508	29,660	0	0
07/09		0	0	0	0		2,107	538,336	10,431	40,091	0	0
07/10		0	0	0	0		1,952	540,288	9,899	49,990	0	0
07/11		0	0	0	0		3,038	543,326	9,884	59,874	0	0
07/12		0	0	0	0		3,415	546,741	12,238	72,112	0	0
07/13		0	0	0	0		3,795	550,536	10,764	82,876	0	0
07/14		0	0	0	0		3,602	554,138	12,596	95,472	0	0
07/15		0	0	0	0		3,880	558,018	10,740	106,212	0	0
07/16		0	0	0	0		5,332	563,350	13,446	119,658	0	0
07/17		0	0	0	0		5,328	568,678	10,740	130,398	0	0
07/18		0	0	0	0		3,928	572,606	10,608	141,006	0	0
07/19		0	0	0	0		2,323	574,929	12,967	153,973	0	0
07/20		0	0	0	0		1,207	576,136	10,014	163,987	0	0
07/21		0	0	0	0		733	576,869	3,388	167,375	0	0
07/22		0	0	0	0		1,606	578,475	11,856	179,231	0	0
07/23		0	0	0	0		2,051	580,526	7,314	186,545	0	0
07/24	11.0%	202,922	202,922	0	0		2,520	583,046	128	186,673	0	0
07/25		0	202,922	0	0		0	583,046	0	186,673	0	0

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Date	Pink Salmon					Chum Salmon					Coho Salmon	
	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative	Sales Harvest	Sales Harvest cumulative
07/26		0	202,922	0	0		0	583,046	608	187,281	0	0
07/27	13.2%	375,445	578,367	0	0		0	583,046	0	187,281	0	0
07/28		0	578,367	0	0		0	583,046	0	187,281	0	0
07/29	20.0%	337,998	916,365	0	0		0	583,046	0	187,281	0	0
07/30		0	916,365	0	0		0	583,046	0	187,281	0	0
07/31	19.0%	281,815	1,198,180	0	0		0	583,046	0	187,281	0	0
08/20		0	1,198,180	11,386	11,386		0	583,046	0	187,281	0	0
08/21		0	1,198,180	12,599	23,985		0	583,046	0	187,281	0	0
08/22		0	1,198,180	11,092	35,077		0	583,046	0	187,281	0	0
08/23		13,852	1,212,032	7,915	42,992		0	583,046	0	187,281	0	0
08/24		16,416	1,228,448	8,595	51,587		0	583,046	0	187,281	0	0
08/25		17,730	1,246,178	15,351	66,938		0	583,046	0	187,281	0	0
08/26		0	1,246,178	18,258	85,196		0	583,046	0	187,281	0	0
08/27		19,407	1,265,585	17,808	103,004		0	583,046	0	187,281	0	0
08/28		0	1,265,585	22,050	125,054		0	583,046	0	187,281	0	0
08/29		26,294	1,291,879	21,966	147,020		0	583,046	0	187,281	0	0
08/30		0	1,291,879	25,365	172,385		0	583,046	0	187,281	0	0
08/31		0	1,291,879	24,422	196,807		0	583,046	0	187,281	0	0
09/01		0	1,291,879	24,951	221,758		0	583,046	0	187,281	0	0
09/02		27,035	1,318,914	25,689	247,447		0	583,046	0	187,281	0	0
09/03		0	1,318,914	10,575	258,022		0	583,046	0	187,281	0	0
09/04		0	1,318,914	3,562	261,584		0	583,046	0	187,281	0	0
Hatchery escapement summary <sup>c</sup>					Pink salmon	Chum Salmon					Coho Salmon	
Purse seine whole fish harvest					1,198,180	529,353					0	
Raceway harvest <sup>d</sup>					15,038	1,358					0	
Viable broodstock (spawned, eggs in incubators)					223,150	182,592					319	
Unviable broodstock (green/over-ripe/bad)					14,566	45,670					2	
Unspawned fish (e.g., excess males/females)					16,642	6,665					1,798	
Holding mortalities (raceway, pen mortalities)					10,830	4,689					174	
Estimated unharvested return <sup>e</sup>					180,000	25,000					0	
Estimated total run to hatchery site					1,658,406	795,327					2,293	
Sales Summary					Pink Salmon	Chum Salmon					Coho Salmon	
Purse seine whole fish sales					1,198,180	529,353					0	
Raceway sales <sup>f</sup>					120,734	53,693					0	
Carcass sales <sup>g</sup>						182,592					0	
Total sales					1,318,914	765,638					0	

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- <sup>a</sup> Daily whole fish from purse seine and raceway harvests as reported inseason and on fish tickets.
- <sup>b</sup> Broodstock daily totals from PWSAC egg-take log.
- <sup>c</sup> Determined by fish tickets, PWSAC egg-take log, and annual report.
- <sup>d</sup> Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.
- <sup>e</sup> Fish remaining in saltwater and freshwater after all hatchery harvest is complete.
- <sup>f</sup> Sum of raceway harvest, unviable broodstock and unspawned fish.
- <sup>g</sup> Represents the sale of "viable broodstock" carcasses.

Appendix E13.–Sockeye salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2013.

Dates	Period	Hours	Gulkana <sup>a</sup>		Main Bay		Solf Lake		Hatchery Total	Wild		Total
			Number	Percent	Number	Percent	Number	Percent		Number	Percent	
05/30 – 06/02	1 <sup>a</sup>	84	0	0.0%	98	85.4%	0	0.0%	98	17	14.6%	115
06/03 – 06/05	2 <sup>a</sup>	48	0	0.0%	421	85.4%	0	0.0%	421	72	14.6%	493
06/06 – 06/09	3	72	0	0.0%	3556	85.4%	0	0.0%	3,556	610	14.6%	4,166
06/10 – 06/12	4	48	0	0.0%	8414	91.2%	0	0.0%	8,414	814	8.8%	9,228
06/13 – 06/16	5	72	0	0.0%	27072	94.7%	0	0.0%	27,072	1525	5.3%	28,597
06/17 – 06/19	6	48	0	0.0%	31093	97.9%	0	0.0%	31,093	662	2.1%	31,755
06/20 – 06/22	7	48	0	0.0%	52685	93.6%	0	0.0%	52,685	3609	6.4%	56,294
06/24 – 06/26	8	48	0	0.0%	116561	94.6%	0	0.0%	116,561	6,623	5.4%	123,184
06/27 – 06/29	9	60	0	0.0%	75692	92.5%	0	0.0%	75,692	6104	7.5%	81,796
07/01 – 07/03	10	48	0	0.0%	60458	92.7%	0	0.0%	60,458	4,755	7.3%	65,213
07/04 – 07/06	11	60	0	0.0%	42695	86.5%	0	0.0%	42,695	6687	13.5%	49,382
07/08 – 07/10	12	48	0	0.0%	28804	95.5%	0	0.0%	28,804	1,355	4.5%	30,159
07/11 – 07/12	13 <sup>b</sup>	36	0	0.0%	11164	78.9%	0	0.0%	11,164	2,983	21.1%	14,147
07/15 – 07/16	14	36	0	0.0%	5894	62.3%	0	0.0%	5,894	3,564	37.7%	9,458
07/18 – 07/19	15 <sup>c</sup>	24	0	0.0%	1148	63.6%	0	0.0%	1,148	657	36.4%	1,805
07/22 – 07/23	16 <sup>c</sup>	24	0	0.0%	596	63.6%	0	0.0%	596	341	36.4%	937
07/25 – 07/27	17	48	0	0.0%	2805	64.9%	0	0.0%	2,805	1,517	35.1%	4,322
07/29 – 07/31	18	48	0	0.0%	26670	95.8%	0	0.0%	26,670	1160	4.2%	27,830
08/01 – 08/03	19 <sup>d</sup>	48	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/05 – 08/05	20 <sup>e</sup>	14	0	0.0%	96	95.8%	0	0.0%	96	4	4.2%	100
08/06 – 08/07	21 <sup>d</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/08 – 08/09	22 <sup>d</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/12 – 08/12	23 <sup>e</sup>	14	0	0.0%	95	95.8%	0	0.0%	95	4	4.2%	99
08/13 – 08/14	24 <sup>d</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/15 – 08/15	25 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/19 – 08/19	26 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/22 – 08/22	27 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26 – 08/26	28 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29 – 08/29	29 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/02 – 09/02	30 <sup>d</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
<b>Total</b>			<b>0</b>	<b>0.0%</b>	<b>496,017</b>	<b>92.0%</b>	<b>0</b>	<b>0.0%</b>	<b>496,017</b>	<b>43,063</b>	<b>8.0%</b>	<b>539,080</b>

<sup>a</sup> No samples collected. Proportions based on period 3 results.

<sup>b</sup> No samples collected. Proportions based on an average of period 12 and 14 results.

<sup>c</sup> No samples collected. Proportions based on an average of period 14 and 17 results.

<sup>d</sup> No harvest reported.

<sup>e</sup> No samples collected. Proportions based on period 18 results.

Appendix E14.–Pink salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin												Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery Total	Wild			
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent		
05/30 - 06/02	1 <sup>a</sup>	84	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
06/03 - 06/05	2 <sup>a</sup>	48	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
06/06 - 06/09	3 <sup>b</sup>	72	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2	100.0%	2	
06/10 - 06/12	4 <sup>a</sup>	48	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
06/13 - 06/16	5 <sup>b</sup>	72	9	9.4%	0	0.0%	0	0.0%	0	0.0%	9	87	90.6%	96	
06/17 - 06/19	6 <sup>b</sup>	48	1	9.1%	0	0.0%	0	0.0%	0	0.0%	1	10	90.9%	11	
06/20 - 06/22	7 <sup>b</sup>	48	1	12.5%	0	0.0%	0	0.0%	0	0.0%	1	7	87.5%	8	
06/24 - 06/26	8 <sup>b</sup>	48	18	9.3%	0	0.0%	0	0.0%	0	0.0%	18	176	90.7%	194	
06/27 - 06/29	9	60	79	9.1%	0	0.0%	0	0.0%	0	0.0%	79	790	90.9%	869	
07/01 - 07/03	10 <sup>c</sup>	48	2,425	44.0%	0	0.0%	0	0.0%	0	0.0%	2,425	3,084	56.0%	5,509	
07/04 - 07/06	11 <sup>c</sup>	60	4,814	44.0%	0	0.0%	0	0.0%	0	0.0%	4,814	6,123	56.0%	10,937	
07/08 - 07/10	12	48	12,180	78.9%	0	0.0%	0	0.0%	0	0.0%	12,180	3,248	21.1%	15,428	
07/11 - 07/12	13	36	4,804	25.9%	686	0	0	0.0%	0	0.0%	5,490	13,038	70.4%	18,528	
07/15 - 07/16	14	36	7,017	36.8%	0	0.0%	0	0.0%	1,002	0	8,019	11,027	57.9%	19,046	
07/18 - 07/19	15 <sup>d</sup>	24	442	36.9%	0	0.0%	0	0.0%	63	0	505	694	57.9%	1,199	
07/22 - 07/23	16 <sup>d</sup>	24	468	36.9%	0	0.0%	0	0.0%	67	0	535	735	57.9%	1,270	
07/25 - 07/27	17 <sup>d</sup>	48	1,273	36.8%	0	0.0%	0	0.0%	182	5.3%	1,455	2,000	57.9%	3,455	
07/29 - 07/31	18 <sup>d</sup>	48	802	36.8%	0	0.0%	0	0.0%	115	5.3%	917	1,261	57.9%	2,178	
08/01 - 08/03	19 <sup>a</sup>	48	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/05 - 08/05	20 <sup>a</sup>	14	355	36.8%	0	0.0%	0	0.0%	51	5.3%	406	558	57.9%	964	
08/06 - 08/07	21 <sup>d</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/08 - 08/09	22 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/12 - 08/12	23 <sup>d</sup>	14	588	36.8%	0	0.0%	0	0.0%	84	0	672	924	57.9%	1,596	
08/13 - 08/14	24 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/15 - 08/15	25 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/19 - 08/19	26 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/22 - 08/22	27 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/26 - 08/26	28 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/29 - 08/29	29 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/02 - 09/02	30 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
<b>Total</b>			<b>35,276</b>	<b>43.4%</b>	<b>686</b>	<b>0.8%</b>	<b>0</b>	<b>0.0%</b>	<b>1,564</b>	<b>1.9%</b>	<b>37,526</b>	<b>43,764</b>	<b>53.8%</b>	<b>81,290</b>	

<sup>a</sup> No harvest reported.

<sup>b</sup> No samples collected. Results are based on period 9 results.

<sup>c</sup> No samples collected. Results based on an average of period 9 and 12 results.

<sup>d</sup> No samples collected. Results are based on period 14 results.

Appendix E15.—Chum salmon hatchery and wild stock contributions to the Eshamy District commercial common property fishery by period, 2013.

Dates	Period	Hours	Hatchery Marks <sup>a</sup>						Hatchery Total	Wild		Total
			Wally Noerenberg		Port Chalmers		Armin F Koernig			Number	Percent	
			Number	Percent	Number	Percent	Number	Percent				
05/30 - 06/02	1 <sup>a</sup>	84	2,049	69.2%	0	0.0%	740	25.0%	2,788	171	5.8%	2,959
06/03 - 06/05	2 <sup>a</sup>	48	11,139	69.2%	0	0.0%	4,022	25.0%	15,161	928	5.8%	16,089
06/06 - 06/09	3	72	17,740	69.2%	0	0.0%	6,406	25.0%	24,146	1,478	5.8%	25,624
06/10 - 06/12	4 <sup>b</sup>	48	6,258	60.7%	110	1.1%	3,209	31.1%	9,578	736	7.1%	10,314
06/13 - 06/16	5	72	17,179	52.1%	701	2.1%	12,270	37.2%	30,150	2,805	8.5%	32,955
06/17 - 06/19	6	48	7,618	56.7%	200	1.5%	5,212	38.8%	13,030	401	3.0%	13,431
06/20 - 06/22	7 <sup>c,d</sup>	48	6,907	48.9%	105	0.7%	6,021	42.6%	13,033	1,094	7.7%	14,127
06/24 - 06/26	8 <sup>d</sup>	48	9,235	41.1%	0	0.0%	10,439	46.4%	19,674	2,811	12.5%	22,484
06/27 - 06/29	9	60	7,412	47.8%	337	2.2%	5,727	37.0%	13,476	2,021	13.0%	15,497
07/01 - 07/03	10 <sup>e</sup>	48	14,235	40.6%	381	1.1%	12,328	35.1%	26,945	8,134	23.2%	35,079
07/04 - 07/06	11 <sup>e</sup>	60	7,675	40.6%	206	1.1%	6,647	35.1%	14,527	4,386	23.2%	18,913
07/08 - 07/10	12	48	3,995	33.3%	0	0.0%	3,995	33.3%	7,991	3,995	33.3%	11,986
07/11 - 07/12	13 <sup>f</sup>	36	1,363	33.3%	0	0.0%	1,363	33.3%	2,726	1,363	33.3%	4,089
07/15 - 07/16	14 <sup>f</sup>	36	1,020	33.3%	0	0.0%	1,020	33.3%	2,039	1,020	33.3%	3,059
07/18 - 07/19	15 <sup>f</sup>	24	31	33.3%	0	0.0%	31	33.3%	63	31	33.3%	94
07/22 - 07/23	16 <sup>f</sup>	24	26	33.3%	0	0.0%	26	33.3%	52	26	33.3%	78
07/25 - 07/27	17 <sup>f</sup>	48	44	33.3%	0	0.0%	44	33.3%	89	44	33.3%	133
07/29 - 07/31	18 <sup>f</sup>	48	7	33.3%	0	0.0%	7	33.3%	15	7	33.3%	22
08/01 - 08/03	19 <sup>g</sup>	48	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/05 - 08/05	20 <sup>f</sup>	14	8	33.3%	0	0.0%	8	33.3%	17	8	33.3%	25
08/06 - 08/07	21 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/08 - 08/09	22 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/12 - 08/12	23 <sup>f</sup>	14	2	33.3%	0	0.0%	2	33.3%	4	2	33.3%	6
08/13 - 08/14	24 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/15 - 08/15	25 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/19 - 08/19	26 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/22 - 08/22	27 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26 - 08/26	28 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29 - 08/29	29 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/02 - 09/02	30 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
<b>Total</b>			<b>113,942</b>	<b>50.2%</b>	<b>2,041</b>	<b>0.9%</b>	<b>79,519</b>	<b>35.0%</b>	<b>195,502</b>	<b>31,462</b>	<b>13.9%</b>	<b>226,964</b>

<sup>a</sup> No samples were collected. Proportions are based on period 3 results.

<sup>b</sup> No samples were collected. Proportions are based on an average of period 3 and 5 results.

<sup>c</sup> No samples were collected. Proportions are based on an average of period 3 and 5 results.

<sup>d</sup> Proportion results include one fish with a WNH06 thermal mark, accounting for the remaining fish in the harvest for periods 7 and 8.

<sup>e</sup> No samples were collected. Proportions are based on an average of period 9 and 12 results.

<sup>f</sup> No samples were collected. Proportions are based on period 12 results.

<sup>g</sup> No harvest reported.

Appendix E16.–Daily salmon sales and sex ratios, sales summary, and broodstock summary at the Main Bay Hatchery, 2013.

Sockeye Salmon					
Date	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative
06/25		0	0	8	8
06/26		0	0	22	30
06/27		0	0	23	53
06/28		0	0	21	74
06/29		0	0	12	86
06/30		0	0	10	96
07/01		0	0	13	109
07/02		0	0	15	124
07/03		0	0	10	134
07/04		0	0	11	145
07/05		0	0	11	156
07/06		0	0	8	164
07/07		0	0	0	164
07/08		0	0	14	178
07/09		0	0	10	188
07/10		0	0	21	209
07/11		0	0	32	241
07/12		0	0	46	287
07/13		0	0	17	304
07/14		0	0	23	327
07/15		0	0	38	365
07/16		0	0	33	398
07/17		0	0	88	486
07/18		0	0	85	571
07/19		0	0	71	642
07/20		0	0	55	697
07/21		0	0	149	846
07/22		0	0	46	892
07/23		0	0	0	892
07/24		0	0	0	892
07/25		0	0	0	892
07/26		0	0	0	892
07/27		0	0	0	892
07/28		0	0	1	893
07/29		0	0	0	893
07/30		0	0	0	893
07/31		0	0	0	893
08/01		0	0	0	893
08/02		0	0	0	893
08/03		0	0	40	933
08/04		0	0	201	1,134
08/05		0	0	0	1,134
08/06		0	0	20	1,154

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Date	Sockeye Salmon				
	% Female	Sales Harvest <sup>a</sup>	Sales Harvest cumulative	Brood Stock <sup>b</sup>	Brood Stock cumulative
08/07		0	0	585	1,739
08/08		0	0	60	1,799
08/09		0	0	990	2,789
08/10		0	0	24	2,813
08/11		0	0	1000	3,813
08/12		0	0	29	3,842
08/13		0	0	999	4,841
08/14		0	0	28	4,869
08/15		0	0	1063	5,932
08/16		0	0	48	5,980
08/17		0	0	1054	7,034
08/18		0	0	63	7,097
08/19		0	0	828	7,925
08/20		0	0	11	7,936
08/21		0	0	438	8,374
08/22		0	0	815	9,189
08/23		0	0	328	9,517
08/24		0	0	316	9,833
<b>Hatchery escapement summary<sup>c</sup></b>					<b>Sockeye salmon</b>
Purse seine whole fish harvest					0
Raceway harvest <sup>d</sup>					0
Viable broodstock (spawned, eggs in incubators)					6,450
Unviable broodstock (green/over-ripe/bad)					221
Unspawned fish (e.g., excess males/females)					2,615
Holding mortalities (raceway, pen mortalities)					547
Estimated unharvested return <sup>e</sup>					179,226
Estimated total run to hatchery site					189,059
<b>Sales Summary</b>					
Purse seine whole fish sales					0
Raceway sales <sup>f</sup>					0
Carcass sales <sup>g</sup>					0
Total sales					0

<sup>a</sup> Whole fish from purse seine and raceway sales.

<sup>b</sup> Broodstock daily harvest numbers include viable broodstock, unviable broodstock, unspawned fish, and holding mortalities.

<sup>c</sup> Determined by fish tickets and PWSAC egg-take log, and annual report.

<sup>d</sup> Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

<sup>e</sup> Fish remaining in saltwater and fresh water after all hatchery harvest is complete.

<sup>f</sup> Sum of raceway harvest, unviable broodstock and unspawned fish.

<sup>g</sup> Represents the sale of "viable broodstock" carcasses.

Appendix E17.–Main Bay sockeye salmon harvests and total contribution, 1990–2013.

Year	Hatchery Contributions <sup>a</sup>					Total Hatchery Contribution
	Commercial	Subsistence/ Personal Use	Sport	Broodstock/ Escapement	Cost Recovery	
1990	9,000	8	0	0	0	9,008
1991	480,200	260	0	4,700	0	485,160
1992	368,427	395	0	6,185	158,893	533,900
1993	208,709	656	0	8,020	97,594	314,979
1994	214,737	181	0	72,335	85,511	372,764
1995	134,778	114	0	11,148	62,782	208,822
1996	406,100	120	935	7,979	83,430	498,564
1997	845,871	147	1,031	16,498	236,031	1,099,578
1998	128,702	133	1,746	10,596	111,026	252,203
1999	143,511	187	2,207	7,104	0	153,008
2000	339,305	75	1,835	5,426	0	346,641
2001	770,884	170	2,861	10,508	50,458	834,881
2002	846,534	17	3,566	7,352	93,794	951,263
2003	1,047,133	229	4,731	6,878	366,768	1,425,739
2004	355,821	506	4,160	17,578	279,139	657,205
2005	233,089	531	2,884	44,366	188,904	469,774
2006	668,780	203	2,568	15,854	350,742	1,038,147
2007	819,244	290	6,290	20,285	321,330	1,167,439
2008	835,241	344	3,482	15,659	0	854,727
2009	756,130	244	5,473	10,815	131,553	903,971
2010	1,347,644	1,013	2,980	18,196	0	1,366,340
2011	1,274,096	983	3,291	12,810	0	1,291,180
2012	1,271,314	1,542	3,033	19,173	40	1,296,372
10-year Average	860,849	588	3,889	18,161	163,848	1,047,089
2013	639,157	1,333	3,652	189,059	0	833,201

<sup>a</sup> Commercial harvest estimates are from otolith marks. Sport and subsistence/personal use estimates are derived from commercial harvest proportions. Broodstock/escapement and hatchery cost recovery are assumed to be 100% MBH origin.

Appendix E18.–Main Bay Hatchery salmon fry releases, 1983–2013.

Release Year	Primary Return Years	Sockeye salmon			Total Released <sup>a</sup>	Pink salmon	Chum salmon
		Coghill Lake stock	Eshamy Lake stock	Eyak Lake stock		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		
10-year Average		9,209,547			9,209,547		
2013	2015, 2016	11,500,000			11,500,000		

<sup>a</sup> Totals do not include releases at other locations, such as Coghill, Davis, Eshamy, Esther Pass, Eyak, Marsha, Pass, Solf lakes, and Esther Pass.



Appendix E19.–Pink salmon hatchery and wild stock contributions to the Eastern District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number		Percent
06/24 - 06/24	01	14	1,162	1.1%	0	0.0%	0	0.0%	0	0.0%	1,162	109,256	98.9%	110,418
06/27 - 06/27	02	12	213,337	37.9%	0	0.0%	0	0.0%	0	0.0%	213,337	349,636	62.1%	562,973
06/30 - 06/30	03	14	1,637,504	84.0%	0	0.0%	0	0.0%	82,912	4.3%	1,720,416	228,007	11.7%	1,948,423
07/03 - 07/03	04	14	2,645,990	91.7%	0	0.0%	0	0.0%	0	0.0%	2,645,990	240,545	8.3%	2,886,535
07/05 - 07/05	05 <sup>a</sup>	14	1,436,064	91.8%	0	0.0%	0	0.0%	0	0.0%	1,436,064	129,099	8.2%	1,565,163
07/07 - 07/07	06	14	2,001,771	91.8%	0	0.0%	0	0.0%	0	0.0%	2,001,771	177,935	8.2%	2,179,706
07/09 - 07/09	07	14	1,641,175	83.3%	0	0.0%	0	0.0%	0	0.0%	1,641,175	328,235	16.7%	1,969,410
07/10 - 07/10	08	14	996,147	88.4%	0	0.0%	0	0.0%	0	0.0%	996,147	130,448	11.6%	1,126,595
07/11 - 07/11	09 <sup>b</sup>	14	1,023,503	82.5%	0	0.0%	0	0.0%	0	0.0%	1,023,503	216,980	17.5%	1,240,483
07/12 - 07/12	10	14	1,412,871	76.6%	0	0.0%	0	0.0%	0	0.0%	1,412,871	431,711	23.4%	1,844,582
07/15 - 07/15	11	14	2,281,032	91.3%	0	0.0%	0	0.0%	0	0.0%	2,281,032	218,729	8.8%	2,499,761
07/17 - 07/17	12 <sup>c</sup>	14	1,268,761	76.4%	0	0.0%	0	0.0%	0	0.0%	1,268,761	392,918	23.6%	1,661,679
07/19 - 07/19	13	14	641,133	61.5%	0	0.0%	0	0.0%	0	0.0%	641,133	402,067	38.5%	1,043,200
07/22 - 07/22	14	14	188,023	30.0%	23,503	3.8%	23,503	3.8%	39,171	6.3%	274,200	352,543	56.3%	626,743
07/25 - 07/25	15	14	624,180	61.1%	32,285	3.2%	0	0.0%	0	0.0%	656,465	365,898	35.8%	1,022,363
07/26 - 07/26	16 <sup>d</sup>	14	197,277	59.8%	7,100	2.2%	0	0.0%	3,790	1.1%	208,167	121,526	36.9%	329,693
07/28 - 07/28	17	14	216,617	58.6%	4,247	1.1%	0	0.0%	8,495	2.3%	229,359	140,164	37.9%	369,523
07/29 - 07/29	18 <sup>e</sup>	14	52,464	48.5%	622	0.6%	1,728	1.6%	1,244	1.1%	56,058	52,206	48.2%	108,264
07/30 - 07/30	19	14	164,104	38.3%	0	0.0%	13,675	3.2%	0	0.0%	177,779	250,714	58.5%	428,493
07/31 - 07/31	20 <sup>f</sup>	14	62,454	34.3%	4,090	2.2%	2,904	1.6%	0	0.0%	69,448	112,542	61.8%	181,990
08/01 - 08/01	21 <sup>f</sup>	14	121,748	34.3%	7,972	2.2%	5,661	1.6%	0	0.0%	135,382	219,388	61.8%	354,770
08/02 - 08/02	22	14	66,124	30.3%	9,796	4.5%	0	0.0%	0	0.0%	75,920	142,044	65.2%	217,964
08/03 - 08/03	23 <sup>g</sup>	14	17,871	15.2%	2,648	2.2%	0	0.0%	7,364	6.3%	27,882	89,936	76.3%	117,818
08/04 - 08/04	24 <sup>g</sup>	14	14,142	8.3%	4,410	2.6%	0	0.0%	10,624	6.3%	29,176	140,809	82.8%	169,985
08/05 - 08/05	25	14	0	0.0%	0	0.0%	0	0.0%	24,661	12.5%	24,661	172,628	87.5%	197,289
08/06 - 08/06	26 <sup>h</sup>	14	1,211	1.5%	2,423	2.9%	0	0.0%	5,148	6.3%	8,782	73,590	89.3%	82,372
08/07 - 08/07	27 <sup>h</sup>	14	88	1.5%	176	2.9%	0	0.0%	187	3.1%	451	5,534	92.5%	5,985
08/08 - 08/08	28 <sup>h</sup>	14	139	1.5%	279	2.9%	0	0.0%	148	1.6%	566	8,916	94.0%	9,482
08/09 - 08/09	29 <sup>h</sup>	14	879	1.5%	1,757	2.9%	0	0.0%	467	0.8%	3,103	56,645	94.8%	59,748
08/10 - 08/10	30	14	711	2.9%	1,423	5.9%	0	0.0%	0	0.0%	2,134	22,056	91.2%	24,190
08/11 - 08/11	31 <sup>i</sup>	14	298	1.5%	595	2.9%	0	0.0%	0	0.0%	893	19,343	95.6%	20,236
08/12 - 08/12	32 <sup>i</sup>	14	640	1.5%	1,279	2.9%	0	0.0%	0	0.0%	1,919	41,578	95.6%	43,497
08/13 - 08/13	33 <sup>i</sup>	14	214	1.5%	427	2.9%	0	0.0%	0	0.0%	641	13,890	95.6%	14,531
08/14 - 08/14	34 <sup>i</sup>	14	482	1.5%	964	2.9%	0	0.0%	0	0.0%	1,446	31,335	95.6%	32,781
08/15 - 08/15	35	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	41,779	100.0%	41,779

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Dates	Period	Hours	Origin												Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild				
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent			
08/16 - 08/16	36 <sup>j</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	120,340	100.0%	120,340
08/17 - 08/17	37	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	132,801	100.0%	132,801
08/18 - 08/18	38 <sup>k</sup>	14	0	0.0%	1,041	1.5%	1,041	1.5%	0	0.0%	2,082	68,711	97.1%	70,793		70,793
08/19 - 08/19	39 <sup>k</sup>	14	0	0.0%	921	1.5%	921	1.5%	0	0.0%	1,842	60,770	97.1%	62,611		62,611
08/20 - 08/21	40	36	0	0.0%	849	2.9%	849	2.9%	0	0.0%	1,698	27,169	94.1%	28,867		28,867
08/22 - 08/23	41	36	0	0.0%	1,092	3.4%	0	0.0%	0	0.0%	1,092	30,568	96.6%	31,660		31,660
08/24 - 08/24	42 <sup>l</sup>	15	0	0.0%	521	3.4%	0	0.0%	0	0.0%	521	14,595	96.6%	15,116		15,116
08/25 - 08/25	43 <sup>l</sup>	15	0	0.0%	114	3.4%	0	0.0%	0	0.0%	114	3,199	96.6%	3,313		3,313
08/26 - 08/26	44 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
08/27 - 08/27	45 <sup>l</sup>	15	0	0.0%	6	3.4%	0	0.0%	0	0.0%	6	176	96.6%	182		182
08/28 - 08/28	46 <sup>l</sup>	15	0	0.0%	76	3.4%	0	0.0%	0	0.0%	76	2,114	96.6%	2,190		2,190
08/29 - 08/29	47 <sup>l</sup>	15	0	0.0%	2	3.4%	0	0.0%	0	0.0%	2	66	96.6%	68		68
08/30 - 08/30	48 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
08/31 - 08/31	49 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/01 - 09/01	50 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/02 - 09/02	51 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/03 - 09/03	52 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/04 - 09/04	53 <sup>m</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/05 - 09/05	54 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/06 - 09/06	55 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/07 - 09/07	56 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/08 - 09/08	57 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/09 - 09/09	58 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/10 - 09/10	59 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/11 - 09/11	60 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/12 - 09/12	61 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/13 - 09/13	62 <sup>m</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
09/14 - 09/20	63 <sup>m</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		0
<b>Total</b>			<b>18,930,117</b>	<b>74.0%</b>	<b>110,620</b>	<b>0.4%</b>	<b>50,282</b>	<b>0.2%</b>	<b>184,211</b>	<b>0.7%</b>	<b>19,275,230</b>	<b>6,291,135</b>	<b>24.6%</b>	<b>25,566,365</b>		

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- <sup>a</sup> No samples collected. Proportions based on an average of period 4 and 6 results.
- <sup>b</sup> No samples collected. Proportions based on an average of period 8 and 10 results.
- <sup>c</sup> No samples collected. Proportions based on an average of period 11 and 13 results.
- <sup>d</sup> No samples collected. Proportions based on an average of period 15 and 17 results.
- <sup>e</sup> No samples collected. Proportions based on an average of period 17 and 19 results.
- <sup>f</sup> No samples collected. Proportions based on an average of period 19 and 22 results.
- <sup>g</sup> No samples collected. Proportions based on an average of period 22 and 25 results.
- <sup>h</sup> No samples collected. Proportions based on an average of period 25 and 30 results.
- <sup>i</sup> No samples collected. Proportions based on an average of period 30 and 35 results.
- <sup>j</sup> No samples collected. Proportions based on an average of period 35 and 37 results.
- <sup>k</sup> No samples collected. Proportions based on an average of period 37 and 40 results.
- <sup>l</sup> No samples collected. Proportions based on period 41 results.
- <sup>m</sup> No harvest reported.

Appendix E20.–Daily salmon sales and sex ratios, sales summary, and broodstock summary at the Solomon Gulch Hatchery, 2013.

Date	Pink salmon					Coho salmon	
	% Female	Sales harvest <sup>a</sup>	Sales harvest cumulative	Brood stock <sup>b</sup>	Brood stock cumulative	Sales harvest	Sales harvest cumulative
06/25	11.0%	82,809	82,809	0	0	0	0
06/26	16.0%	136,532	219,341	0	0	0	0
06/27	17.0%	137,699	357,040	0	0	0	0
06/28	22.0%	206,652	563,692	0	0	0	0
06/29	26.0%	107,684	671,376	0	0	0	0
07/01	26.0%	204,368	875,744	0	0	0	0
07/02	29.0%	208,977	1,084,721	0	0	0	0
07/04	30.0%	191,725	1,276,446	0	0	0	0
07/05		39,951	1,316,397	0	0	0	0
07/06	35.0%	189,256	1,505,653	0	0	0	0
07/27		303,733	1,809,386	0	0	0	0
07/31		13,660	1,823,046	12,667	12,667	0	0
08/01		16,475	1,839,521	16,475	29,142	0	0
08/02		15,825	1,855,346	13,825	42,967	0	0
08/05		22,864	1,878,210	19,884	62,851	0	0
08/06		22,455	1,900,665	22,364	85,215	0	0
08/07		21,976	1,922,641	16,994	102,209	0	0
08/08		20,265	1,942,906	20,092	122,301	0	0
08/09		19,713	1,962,619	15,360	137,661	0	0
08/10		18,671	1,981,290	0	137,661	0	0
08/12		27,881	2,009,171	21,402	159,063	0	0
08/13		19,455	2,028,626	17,145	176,208	0	0
08/14		19,454	2,048,080	19,454	195,662	0	0
08/15		16,811	2,064,891	16,811	212,473	0	0
08/16		17,893	2,082,784	17,893	230,366	0	0
08/17		17,145	2,099,929	17,084	247,450	0	0
08/19		19,408	2,119,337	19,408	266,858	0	0
08/20		25,864	2,145,201	21,700	288,558	0	0
08/21		22,306	2,167,507	20,118	308,676	0	0
08/22		19,776	2,187,283	6,672	315,348	0	0
08/23		21,441	2,208,724	1,916	317,264	0	0
08/26		22,649	2,231,373	0	317,264	0	0
08/27		16,521	2,247,894	0	317,264	0	0
08/28		11,307	2,259,201	0	317,264	0	0
08/29		9,988	2,269,189	0	317,264	0	0
09/03		3,966	2,273,155	0	317,264	1,258	1,258
09/04		861	2,274,016	0	317,264	2,386	3,644
09/05		157	2,274,173	0	317,264	1,250	4,894
09/06		64	2,274,237	0	317,264	1,271	6,165
09/09		0	2,274,237	0	317,264	2,516	8,681
09/10		0	2,274,237	0	317,264	2,513	11,194
09/11		0	2,274,237	0	317,264	2,501	13,695
09/12		0	2,274,237	0	317,264	1,895	15,590
09/13		0	2,274,237	0	317,264	2,552	18,142

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Date	Pink salmon				Coho salmon		
	% Female	Sales harvest <sup>a</sup>	Sales harvest cumulative	Brood stock <sup>b</sup>	Brood stock cumulative	Sales harvest	Sales harvest cumulative
09/16		0	2,274,237	0	317,264	2,503	20,645
09/17		0	2,274,237	0	317,264	2,494	23,139
09/18		0	2,274,237	0	317,264	1,250	24,389
09/19		0	2,274,237	0	317,264	1,252	25,641
09/20		0	2,274,237	0	317,264	2,542	28,183
09/23		0	2,274,237	0	317,264	1,276	29,459
10/08		0	2,274,237	0	317,264	2,610	32,069
10/09		0	2,274,237	0	317,264	2,813	34,882
10/11		0	2,274,237	0	317,264	3,687	38,569
10/15		0	2,274,237	0	317,264	1,377	39,946
Totals			2,274,237		317,264		39,946

Hatchery escapement summary <sup>c</sup>	Pink salmon	Coho salmon
Purse seine whole fish harvest	1,809,386	0
Raceway harvest <sup>d</sup>	145,055	40,405
Viable broodstock (spawned, eggs in incubators)	222,112	745
Unviable broodstock (green/over-ripe/bad)	7,184	45
Unspawned fish (excess males and females)	86,397	849
Holding mortalities (raceway, pen mortalities)	4,491	420
Estimated unharvested return <sup>e</sup>	46,848	5,000
Estimated total run to hatchery site	2,321,473	47,464

Sales summary <sup>f</sup>	Pink salmon	Coho salmon
Purse seine whole fish sales	1,809,386	0
Raceway whole fish sales, and carcass sales <sup>g</sup>	464,851	39,946
Total sales	2,274,237	39,946

<sup>a</sup> Daily whole fish from purse seine and raceway harvests as reported inseason and on fish tickets.

<sup>b</sup> Broodstock daily totals from VFDA egg-take log.

<sup>c</sup> Determined by VFDA inseason reporting, fish ticket data, and VFDA 2013b.

<sup>d</sup> Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

<sup>e</sup> Fish remaining in saltwater and freshwater after all hatchery harvest is complete.

<sup>f</sup> From VFDA inseason reporting and fish tickets.

<sup>g</sup> Represents the sale of "viable broodstock" carcasses, and fish harvested during roe-recovery operations.

Appendix E21.–Chum salmon hatchery and wild stock contributions to the Montague District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total
			Port Chalmers		Wally Noerenberg		Armin F Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
05/27 - 05/29	1 <sup>a</sup>	60	628	94.7%	0	0.0%	14	2.1%	642	21	3.2%	663	
05/30 - 06/02	2 <sup>a</sup>	84	5,441	94.7%	0	0.0%	122	2.1%	5,564	183	3.2%	5,747	
06/03 - 06/05	3 <sup>a</sup>	60	3,219	94.7%	0	0.0%	72	2.1%	3,291	109	3.2%	3,400	
06/06 - 06/09	4 <sup>a</sup>	84	35,934	94.7%	0	0.0%	808	2.1%	36,742	1,211	3.2%	37,953	
06/10 - 06/12	5	60	23,296	94.7%	0	0.0%	524	2.1%	23,820	785	3.2%	24,605	
06/13 - 06/16	6 <sup>b</sup>	84	24,210	93.7%	272	1.1%	411	1.6%	24,893	957	3.7%	25,850	
06/17 - 06/19	7 <sup>b</sup>	60	8,562	93.7%	96	1.1%	145	1.6%	8,804	338	3.7%	9,142	
06/20 - 06/23	8	84	71,958	92.6%	1,635	2.1%	818	1.1%	74,411	3,271	4.2%	77,682	
06/24 - 06/26	9 <sup>c</sup>	60	36,522	92.6%	830	2.1%	415	1.1%	37,767	1,660	4.2%	39,427	
06/27 - 06/30	10 <sup>d</sup>	84	81,452	91.5%	2,357	2.6%	942	1.1%	84,751	4,240	4.8%	88,991	
07/01 - 07/03	11 <sup>e</sup>	60	48,238	90.4%	1,703	3.2%	568	1.1%	50,508	2,838	5.3%	53,345	
07/04 - 07/07	12	84	50,237	90.4%	1,773	3.2%	591	1.1%	52,601	2,955	5.3%	55,556	
07/08 - 07/10	13	60	37,165	91.6%	0	0.0%	427	1.1%	37,592	2,990	7.4%	40,582	
07/11 - 07/13	14 <sup>f</sup>	60	12,561	91.6%	0	0.0%	144	1.1%	12,705	1,011	7.4%	13,716	
07/15 - 07/17	15 <sup>f</sup>	60	4,309	91.6%	0	0.0%	50	1.1%	4,358	347	7.4%	4,705	
07/18 - 07/21	16 <sup>f</sup>	84	1,345	91.6%	0	0.0%	15	1.1%	1,361	108	7.4%	1,469	
07/22 - 07/24	17 <sup>f</sup>	62	469	91.6%	0	0.0%	5	1.1%	474	38	7.4%	512	
07/25 - 07/28	18 <sup>f</sup>	86	312	91.6%	0	0.0%	4	1.1%	316	25	7.4%	341	
07/29 - 07/30	19 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/01 - 08/01	20 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/02 - 08/02	21 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/03 - 08/03	22 <sup>f</sup>	14	34	91.6%	0	0.0%	0	1.1%	34	3	7.4%	37	
08/04 - 08/04	23 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/05 - 08/05	24 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/06 - 08/06	25 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/07 - 08/07	26 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/08 - 08/08	27 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/09 - 08/09	28 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/10 - 08/10	29 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/11 - 08/11	30 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/12 - 08/12	31 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/13 - 08/13	32 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/14 - 08/14	33 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/15 - 08/15	34 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/16 - 08/16	35 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	

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Dates	Period	Hours	Origin										Total
			Port Chalmers		Wally Noerenberg		Armin F Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
08/17 - 08/17	36 <sup>f</sup>	14	4	91.6%	0	0.0%	0	1.1%	4	0	7.4%	4	
08/18 - 08/18	37 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/19 - 08/19	38 <sup>g</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/20 - 08/21	39 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/22 - 08/23	40 <sup>g</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/24 - 08/24	41 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/25 - 08/25	42 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/26 - 08/26	43 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/27 - 08/27	44 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/28 - 08/28	45 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/29 - 08/29	46 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/30 - 08/30	47 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/31 - 08/31	48 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/01 - 09/01	49 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/02 - 09/02	50 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/03 - 09/03	51 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/04 - 09/04	52 <sup>g</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/05 - 09/05	53 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/06 - 09/06	54 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/07 - 09/07	55 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/08 - 09/08	56 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/09 - 09/09	57 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/10 - 09/10	58 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/11 - 09/11	59 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/12 - 09/12	60 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/13 - 09/13	61 <sup>g</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/14 - 09/20	62 <sup>g</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
<b>Total</b>			<b>445,896</b>	<b>92.2%</b>	<b>8,666</b>	<b>1.8%</b>	<b>6,075</b>	<b>1.3%</b>	<b>460,637</b>	<b>23,090</b>	<b>4.8%</b>	<b>483,727</b>	

- <sup>a</sup> No samples collected. Proportions are based on period 5 results.
- <sup>b</sup> No samples collected. Proportions are based on the average of periods 5 and 8.
- <sup>c</sup> No samples collected. Proportions are based on period 8 results.
- <sup>d</sup> No samples collected. Proportions are based on the average of periods 8 and 12.
- <sup>e</sup> No samples collected. Proportions are based on period 12 results.
- <sup>f</sup> No samples collected. Proportions are based on period 13 results.
- <sup>g</sup> No harvest reported.

Appendix E22.—Pink salmon hatchery and wild stock contributions to the Montague District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number		Percent
05/27 - 05/29	1 <sup>a</sup>	60	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
05/30 - 06/02	2 <sup>b</sup>	84	1	55.0%	0	0.0%	0	0.0%	0	0.0%	1	0	45.0%	1
06/03 - 06/05	3 <sup>a</sup>	60	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
06/06 - 06/09	4 <sup>b</sup>	84	1	55.0%	0	0.0%	0	0.0%	0	0.0%	1	1	45.0%	2
06/10 - 06/12	5 <sup>b</sup>	60	31	55.0%	0	0.0%	0	0.0%	0	0.0%	31	26	45.0%	57
06/13 - 06/16	6 <sup>b</sup>	84	569	55.0%	0	0.0%	0	0.0%	0	0.0%	569	465	45.0%	1,034
06/17 - 06/19	7 <sup>b</sup>	60	142	55.0%	0	0.0%	0	0.0%	0	0.0%	142	117	45.0%	259
06/20 - 06/23	8 <sup>b</sup>	84	334	55.0%	0	0.0%	0	0.0%	0	0.0%	334	274	45.0%	608
06/24 - 06/26	9 <sup>b</sup>	60	109	55.0%	0	0.0%	0	0.0%	0	0.0%	109	90	45.0%	199
06/27 - 06/30	10 <sup>b</sup>	84	28	55.0%	0	0.0%	0	0.0%	0	0.0%	28	23	45.0%	50
07/01 - 07/03	11 <sup>b</sup>	60	37	55.0%	0	0.0%	0	0.0%	0	0.0%	37	30	45.0%	67
07/04 - 07/07	12 <sup>b</sup>	84	29	55.0%	0	0.0%	0	0.0%	0	0.0%	29	23	45.0%	52
07/08 - 07/10	13 <sup>b</sup>	60	3,668	55.0%	0	0.0%	0	0.0%	0	0.0%	3,668	3,001	45.0%	6,669
07/11 - 07/13	14	60	3,982	55.0%	0	0.0%	0	0.0%	0	0.0%	3,982	3,258	45.0%	7,240
07/15 - 07/17	15	60	1,406	34.2%	0	0.0%	0	0.0%	541	13.2%	1,947	2,163	52.6%	4,110
07/18 - 07/21	16	84	945	19.6%	189	3.9%	0	0.0%	0	0.0%	1,134	3,684	76.5%	4,818
07/22 - 07/24	17 <sup>c</sup>	62	602	19.6%	120	3.9%	0	0.0%	0	0.0%	723	2,349	76.5%	3,072
07/25 - 07/28	18 <sup>c</sup>	86	304	19.6%	61	3.9%	0	0.0%	0	0.0%	364	1,184	76.5%	1,548
07/29 - 07/30	19 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/01 - 08/01	20 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/02 - 08/02	21 <sup>c</sup>	14	3,178	19.6%	636	3.9%	0	0.0%	0	0.0%	3,814	12,395	76.5%	16,209
08/03 - 08/03	22 <sup>c</sup>	14	8,039	19.6%	1,608	3.9%	0	0.0%	0	0.0%	9,647	31,352	76.5%	40,999
08/04 - 08/04	23 <sup>c</sup>	14	5,677	19.6%	1,135	3.9%	0	0.0%	0	0.0%	6,813	22,141	76.5%	28,954
08/05 - 08/05	24 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/06 - 08/06	25 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/07 - 08/07	26 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/08 - 08/08	27 <sup>c</sup>	14	7,947	19.6%	1,589	3.9%	0	0.0%	0	0.0%	9,537	30,994	76.5%	40,531
08/09 - 08/09	28 <sup>c</sup>	14	1,322	19.6%	264	3.9%	0	0.0%	0	0.0%	1,586	5,155	76.5%	6,741
08/10 - 08/10	29 <sup>c</sup>	14	7,023	19.6%	1,405	3.9%	0	0.0%	0	0.0%	8,428	27,391	76.5%	35,819

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Dates	Period	Hours	Origin										Total	
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number		Percent
08/11 - 08/11	30 <sup>c</sup>	14	8,823	19.6%	1,765	3.9%	0	0.0%	0	0.0%	10,588	34,411	76.5%	44,999
08/12 - 08/12	31 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/13 - 08/13	32 <sup>c</sup>	14	3,025	19.6%	605	3.9%	0	0.0%	0	0.0%	3,630	11,798	76.5%	15,428
08/14 - 08/14	33 <sup>c</sup>	14	7,160	19.6%	1,432	3.9%	0	0.0%	0	0.0%	8,592	27,925	76.5%	36,517
08/15 - 08/15	34 <sup>c</sup>	14	11,292	19.6%	2,258	3.9%	0	0.0%	0	0.0%	13,550	44,039	76.5%	57,589
08/16 - 08/16	35 <sup>c</sup>	14	13,684	19.6%	2,737	3.9%	0	0.0%	0	0.0%	16,421	53,368	76.5%	69,789
08/17 - 08/17	36 <sup>c</sup>	14	1,662	19.6%	332	3.9%	0	0.0%	0	0.0%	1,994	6,480	76.5%	8,474
08/18 - 08/18	37 <sup>c</sup>	14	1,976	19.6%	395	3.9%	0	0.0%	0	0.0%	2,371	7,707	76.5%	10,078
08/19 - 08/19	38 <sup>a</sup>	14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/20 - 08/21	39 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/22 - 08/23	40 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/24 - 08/24	41 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/25 - 08/25	42 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/26 - 08/26	43 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/27 - 08/27	44 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/28 - 08/28	45 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/29 - 08/29	46 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/30 - 08/30	47 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/31 - 08/31	48 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/01 - 09/01	49 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/02 - 09/02	50 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/03 - 09/03	51 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/04 - 09/04	52 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/05 - 09/05	53 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/06 - 09/06	54 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/07 - 09/07	55 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/08 - 09/08	56 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/09 - 09/09	57 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/10 - 09/10	58 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/11 - 09/11	59 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/12 - 09/12	60 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/13 - 09/13	61 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/14 - 09/20	62 <sup>a</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
<b>Total</b>			<b>92,997</b>	<b>21.0%</b>	<b>16,532</b>	<b>3.7%</b>	<b>0</b>	<b>0.0%</b>	<b>541</b>	<b>0.1%</b>	<b>110,070</b>	<b>331,843</b>	<b>75.1%</b>	<b>441,913</b>

<sup>a</sup> No harvest reported.

<sup>b</sup> No samples collected. Results are based on period 14 results.

<sup>c</sup> No samples collected. Results are based on period 16 results.

Appendix E23.–Pink salmon hatchery and wild stock contributions to the Northern District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Hatchery total	Wild		Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Number	Percent				
07/17 - 07/17	1	14	132,490	33.3%	12,618	3.2%	56,782	14.3%	0	0.0%	201,890	195,581	49.2%	397,471		
07/19 - 07/19	2	14	94,406	35.8%	42,320	16.0%	42,320	16.0%	3,255	1.2%	182,301	81,385	30.9%	263,686		
07/22 - 07/22	3	14	16,108	4.1%	155,714	39.7%	96,650	24.7%	5,369	1.4%	273,842	118,128	30.1%	391,970		
07/25 - 07/25	4	14	11,107	2.3%	216,577	44.8%	72,192	14.9%	0	0.0%	299,876	183,258	37.9%	483,134		
07/28 - 07/28	5	14	33,917	2.8%	390,042	32.4%	407,001	33.8%	50,875	4.2%	881,835	322,209	26.8%	1,204,044		
07/30 - 07/30	6	14	13,083	1.4%	536,400	56.2%	248,576	26.0%	13,083	1.4%	811,142	143,912	15.1%	955,054		
08/01 - 08/01	7 <sup>a</sup>	14	7,063	0.7%	626,732	60.8%	239,971	23.3%	7,063	0.7%	880,830	150,412	14.6%	1,031,242		
08/02 - 08/02	8	14	0	0.0%	405,742	65.4%	127,291	20.5%	0	0.0%	533,033	87,513	14.1%	620,546		
08/03 - 08/03	9	14	0	0.0%	460,285	69.2%	76,714	11.5%	0	0.0%	536,999	127,857	19.2%	664,856		
08/04 - 08/04	10 <sup>b</sup>	14	0	0.0%	821,967	72.4%	167,303	14.7%	7,274	0.6%	996,544	138,207	12.2%	1,134,751		
08/05 - 08/05	11	14	0	0.0%	719,956	75.6%	170,837	17.9%	12,203	1.3%	902,995	48,811	5.1%	951,806		
08/06 - 08/06	12 <sup>c</sup>	14	14,767	1.4%	693,864	63.5%	245,740	22.5%	51,306	4.7%	1,005,677	87,088	8.0%	1,092,765		
08/07 - 08/07	13 <sup>c</sup>	14	10,669	1.4%	501,328	63.5%	177,551	22.5%	37,070	4.7%	726,618	62,923	8.0%	789,541		
08/08 - 08/08	14	14	19,188	2.7%	364,570	51.4%	191,879	27.0%	57,564	8.1%	633,201	76,752	10.8%	709,953		
08/09 - 08/09	15 <sup>d</sup>	14	6,917	1.4%	255,261	49.9%	139,345	27.2%	45,519	8.9%	447,042	64,819	12.7%	511,861		
08/10 - 08/10	16	14	0	0.0%	387,449	48.4%	219,554	27.4%	77,490	9.7%	684,493	116,235	14.5%	800,728		
08/11 - 08/11	17 <sup>e</sup>	14	0	0.0%	268,308	34.8%	257,568	33.4%	130,762	17.0%	656,638	114,370	14.8%	771,008		
08/12 - 08/12	18	14	0	0.0%	126,556	21.2%	235,033	39.4%	144,636	24.2%	506,225	90,397	15.2%	596,622		
08/13 - 08/13	19 <sup>f</sup>	14	0	0.0%	234,987	48.4%	122,644	25.3%	75,058	15.5%	432,690	52,982	10.9%	485,672		
08/14 - 08/14	20 <sup>f</sup>	14	0	0.0%	212,362	48.4%	110,836	25.3%	67,832	15.5%	391,030	47,881	10.9%	438,911		
08/15 - 08/15	21	14	0	0.0%	310,565	75.6%	45,671	11.1%	27,403	6.7%	383,639	27,403	6.7%	411,042		
08/16 - 08/16	22 <sup>g</sup>	14	0	0.0%	295,275	85.7%	19,148	5.6%	15,116	4.4%	329,540	15,116	4.4%	344,656		
08/17 - 08/17	23	14	0	0.0%	506,126	95.8%	0	0.0%	11,124	2.1%	517,249	11,124	2.1%	528,373		
08/18 - 08/18	24 <sup>h</sup>	14	0	0.0%	364,902	84.0%	53,436	12.3%	4,575	1.1%	422,912	11,700	2.7%	434,612		
08/19 - 08/19	25	14	0	0.0%	267,721	72.1%	91,269	24.6%	0	0.0%	358,990	12,169	3.3%	371,159		
08/20 - 08/21	26	36	0	0.0%	320,980	75.6%	76,165	17.9%	0	0.0%	397,145	27,202	6.4%	424,347		
08/22 - 08/23	27	36	0	0.0%	153,341	82.7%	6,866	3.7%	0	0.0%	160,207	25,175	13.6%	185,382		
08/24 - 08/24	28 <sup>i</sup>	15	891	3.6%	12,103	48.5%	8,483	34.0%	0	0.0%	21,478	3,477	13.9%	24,955		
08/25 - 08/25	29 <sup>i</sup>	15	2,067	5.4%	12,115	31.4%	18,964	49.1%	0	0.0%	33,146	5,445	14.1%	38,591		
08/26 - 08/26	30	15	271	7.1%	542	14.3%	2,440	64.3%	0	0.0%	3,253	542	14.3%	3,795		
08/27 - 08/27	31 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		
08/28 - 08/28	32 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0		
08/29 - 08/29	33 <sup>j</sup>	15	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											Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild		
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent	
08/30 - 08/30	34 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
08/31 - 08/31	35 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/01 - 09/01	36 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/02 - 09/02	37 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/03 - 09/03	38 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/04 - 09/04	39 <sup>j</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/05 - 09/05	40 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/06 - 09/06	41 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/07 - 09/07	42 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/08 - 09/08	43 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/09 - 09/09	44 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/10 - 09/10	45 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/11 - 09/11	46 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/12 - 09/12	47 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/13 - 09/13	48 <sup>j</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
09/14 - 09/20	49 <sup>j</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0
Totals			362,946	2.1%	9,676,710	56.7%	3,728,229	21.9%	844,577	4.9%	14,612,461	2,450,072	14.4%	17,062,533

- <sup>a</sup> No samples collected. Results based on an average of period 6 and 8 results.
- <sup>b</sup> No samples collected. Results based on an average of period 9 and 11 results.
- <sup>c</sup> No samples collected. Results based on an average of period 11 and 14 results.
- <sup>d</sup> No samples collected. Results based on an average of period 14 and 16 results.
- <sup>e</sup> No samples collected. Results based on an average of period 16 and 18 results.
- <sup>f</sup> No samples collected. Results based on an average of period 18 and 21 results.
- <sup>g</sup> No samples collected. Results based on an average of period 21 and 23 results.
- <sup>h</sup> No samples collected. Results based on an average of period 23 and 25 results.
- <sup>i</sup> No samples collected. Results based on an average of period 27 and 30 results.
- <sup>j</sup> No harvest reported.

Appendix E24.—Daily salmon sales, sex ratios, sales summary, and broodstock summary at the Cannery Creek Hatchery, 2013.

Date	Pink salmon				
	% Female	Sales Harvest <sup>a</sup>	Sales harvest cumulative	Brood stock <sup>b</sup>	Brood stock cumulative
08/24		0	0	6,508	6,508
08/25		0	0	4,922	11,430
08/26		0	0	8,852	20,282
08/27		0	0	14,444	34,726
08/28		0	0	18,917	53,643
08/29		0	0	15,853	69,496
08/30		0	0	2,762	72,258
08/31		0	0	21,318	93,576
09/01		0	0	17,254	110,830
09/02		0	0	15,798	126,628
09/03		0	0	10,579	137,207
09/04		0	0	15,813	153,020
09/05		0	0	31,563	184,583
09/06		0	0	29,174	213,757
09/07		0	0	31,028	244,785
09/08		0	0	36,337	281,122
09/09		0	0	34,264	315,386
09/10		0	0	22,836	338,222
09/11		0	0	21,631	359,853
09/12		0	0	18,931	378,784
09/13		0	0	8,457	387,241
Totals			0		387,241

Hatchery escapement summary <sup>c</sup>	Pink salmon
Purse seine whole fish harvest	0
Raceway harvest <sup>d</sup>	18,977
Viable broodstock (spawned, eggs in incubators)	246,968
Unviable broodstock (green/over-ripe/bad)	39,993
Unspawned fish (e.g., excess males/females)	82,950
Holding mortalities (raceway, pen mortalities)	17,330
Estimated unharvested return <sup>e</sup>	75,000
Estimated total run to hatchery site	481,218

Sales summary <sup>f</sup>	Pink salmon
Purse seine whole fish sales	0
Raceway whole fish sales, and carcass sales <sup>g</sup>	0
Total sales	0

<sup>a</sup> Whole fish from purse seine and raceway harvest.

<sup>b</sup> Broodstock daily totals from egg-take log.

<sup>c</sup> Determined by PWSAC egg-take log, and annual report.

<sup>d</sup> Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

<sup>e</sup> Fish remaining in saltwater and freshwater after all hatchery harvest is complete.

<sup>f</sup> From fish tickets.

<sup>g</sup> Represents the sale of "viable broodstock" carcasses.

Appendix E25.--Sockeye salmon hatchery and wild stock contributions to the Southwestern District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total
			Gulkana		Main Bay		Solf Lake		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
06/01 - 06/02	1 <sup>a</sup>	36	0	0.0%	11	83.3%	0	0.0%	11	2	16.7%	13	
06/03 - 06/05	2 <sup>a</sup>	60	0	0.0%	6	83.3%	0	0.0%	6	1	16.7%	7	
06/06 - 06/09	3 <sup>a</sup>	84	0	0.0%	66	83.3%	0	0.0%	66	13	16.7%	79	
06/10 - 06/12	4	60	0	0.0%	170	83.3%	0	0.0%	170	34	16.7%	204	
06/13 - 06/16	5	84	0	0.0%	2,377	93.5%	0	0.0%	2,377	166	6.5%	2,543	
06/17 - 06/19	6	60	0	0.0%	5,088	100.0%	0	0.0%	5,088	0	0.0%	5,088	
06/20 - 06/23	7	84	0	0.0%	8,052	96.5%	0	0.0%	8,052	295	3.5%	8,347	
06/24 - 06/26	8 <sup>b</sup>	60	0	0.0%	3,938	89.9%	0	0.0%	3,938	442	10.1%	4,380	
06/27 - 06/30	9	84	0	0.0%	3,761	83.3%	0	0.0%	3,761	752	16.7%	4,513	
07/01 - 07/03	10	60	0	0.0%	7,036	77.6%	0	0.0%	7,036	2,027	22.4%	9,063	
07/04 - 07/07	11	84	0	0.0%	3,798	90.9%	0	0.0%	3,798	380	9.1%	4,178	
07/08 - 07/10	12 <sup>c</sup>	60	0	0.0%	972	90.9%	0	0.0%	972	97	9.1%	1,069	
07/11 - 07/14	13 <sup>c</sup>	84	0	0.0%	1,064	90.9%	0	0.0%	1,064	106	9.1%	1,170	
07/15 - 07/17	14 <sup>c</sup>	60	0	0.0%	409	90.9%	0	0.0%	409	41	9.1%	450	
07/18 - 07/21	15 <sup>c</sup>	84	0	0.0%	387	90.9%	0	0.0%	387	39	9.1%	426	
07/22 - 07/22	16 <sup>c</sup>	14	0	0.0%	401	90.9%	0	0.0%	401	40	9.1%	441	
07/25 - 07/25	17 <sup>c</sup>	14	0	0.0%	475	90.9%	0	0.0%	475	48	9.1%	523	
07/28 - 07/28	18 <sup>c</sup>	14	0	0.0%	757	90.9%	0	0.0%	757	76	9.1%	833	
07/30 - 07/30	19 <sup>c</sup>	14	0	0.0%	903	90.9%	0	0.0%	903	90	9.1%	993	
08/01 - 08/01	20 <sup>c</sup>	14	0	0.0%	410	90.9%	0	0.0%	410	41	9.1%	451	
08/02 - 08/02	21 <sup>c</sup>	14	0	0.0%	204	90.9%	0	0.0%	204	20	9.1%	224	
08/03 - 08/03	22 <sup>c</sup>	14	0	0.0%	89	90.9%	0	0.0%	89	9	9.1%	98	
08/04 - 08/04	23 <sup>c</sup>	14	0	0.0%	135	90.9%	0	0.0%	135	14	9.1%	149	
08/05 - 08/05	24 <sup>c</sup>	14	0	0.0%	152	90.9%	0	0.0%	152	15	9.1%	167	
08/06 - 08/06	25 <sup>c</sup>	14	0	0.0%	49	90.9%	0	0.0%	49	5	9.1%	54	
08/07 - 08/07	26 <sup>c</sup>	14	0	0.0%	143	90.9%	0	0.0%	143	14	9.1%	157	
08/08 - 08/08	27 <sup>c</sup>	14	0	0.0%	65	90.9%	0	0.0%	65	6	9.1%	71	
08/09 - 08/09	28 <sup>c</sup>	14	0	0.0%	66	90.9%	0	0.0%	66	7	9.1%	73	
08/10 - 08/10	29 <sup>c</sup>	14	0	0.0%	85	90.9%	0	0.0%	85	8	9.1%	93	
08/11 - 08/11	30 <sup>c</sup>	14	0	0.0%	76	90.9%	0	0.0%	76	8	9.1%	84	
08/12 - 08/12	31 <sup>c</sup>	14	0	0.0%	43	90.9%	0	0.0%	43	4	9.1%	47	
08/13 - 08/13	32 <sup>c</sup>	14	0	0.0%	67	0.0%	0	0.0%	67	7	9.1%	74	
08/14 - 08/14	33 <sup>c</sup>	14	0	0.0%	36	0.0%	0	0.0%	36	4	9.1%	40	

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Dates	Period	Hours	Origin										Total
			Gulkana		Main Bay		Solf Lake		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent		Number	Percent		
08/15 - 08/15	34 <sup>c</sup>	14	0	0.0%	143	0.0%	0	0.0%	143	14	9.1%	157	
08/16 - 08/16	35 <sup>c</sup>	14	0	0.0%	49	0.0%	0	0.0%	49	5	9.1%	54	
08/17 - 08/17	36 <sup>c</sup>	14	0	0.0%	76	0.0%	0	0.0%	76	8	9.1%	84	
08/18 - 08/18	37 <sup>c</sup>	14	0	0.0%	40	0.0%	0	0.0%	40	4	9.1%	44	
08/19 - 08/19	38 <sup>c</sup>	14	0	0.0%	35	0.0%	0	0.0%	35	3	9.1%	38	
08/20 - 08/21	39 <sup>c</sup>	36	0	0.0%	50	0.0%	0	0.0%	50	5	9.1%	55	
08/22 - 08/23	40 <sup>c</sup>	36	0	0.0%	34	0.0%	0	0.0%	34	3	9.1%	37	
08/24 - 08/24	41 <sup>c</sup>	15	0	0.0%	1	0.0%	0	0.0%	1	0	9.1%	1	
08/25 - 08/25	42 <sup>c</sup>	15	0	0.0%	2	0.0%	0	0.0%	2	0	9.1%	2	
08/26 - 08/26	43 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/27 - 08/27	44 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/28 - 08/28	45 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/29 - 08/29	46 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/30 - 08/30	47 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/31 - 08/31	48 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/01 - 09/01	49 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/02 - 09/02	50 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/03 - 09/03	51 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/04 - 09/04	52 <sup>d</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/05 - 09/05	53 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/06 - 09/06	54 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/07 - 09/07	55 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/08 - 09/08	56 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/09 - 09/09	57 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/10 - 09/10	58 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/11 - 09/11	59 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/12 - 09/12	60 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/13 - 09/13	61 <sup>d</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/14 - 09/20	62 <sup>d</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
<b>Total</b>			0	0.0%	41,720	89.6%	0	0.0%	41,720	4,854	10.4%	46,574	

<sup>a</sup> No samples collected. Proportions based on period 4 results.  
<sup>b</sup> No samples collected. Proportions based on an average of period 7 and 9 results.  
<sup>c</sup> No samples collected. Proportions based on period 11 results.  
<sup>d</sup> No harvest reported.

Appendix E26.–Pink salmon hatchery and wild stock contributions to the Southwestern District commercial common property fishery by period, 2013.

Dates	Period	Hours	Origin										Total		
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number		Percent	
06/01 - 06/02	1 <sup>a</sup>	36	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
06/03 - 06/05	2 <sup>a</sup>	60	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
06/06 - 06/09	3 <sup>b</sup>	84	14	32.5%	0	0.0%	0	0.0%	0	0.0%	14	28	67.5%	42	
06/10 - 06/12	4 <sup>b</sup>	60	25	32.5%	0	0.0%	0	0.0%	0	0.0%	25	52	67.5%	77	
06/13 - 06/16	5 <sup>b</sup>	84	33	32.5%	0	0.0%	0	0.0%	0	0.0%	33	68	67.5%	100	
06/17 - 06/19	6 <sup>b</sup>	60	42	32.5%	0	0.0%	0	0.0%	0	0.0%	42	88	67.5%	130	
06/20 - 06/23	7 <sup>b</sup>	84	140	32.5%	0	0.0%	0	0.0%	0	0.0%	140	291	67.5%	431	
06/24 - 06/26	8 <sup>b</sup>	60	2,905	32.5%	0	0.0%	0	0.0%	0	0.0%	2,905	6,034	67.5%	8,939	
06/27 - 06/30	9 <sup>b</sup>	84	3,424	32.5%	0	0.0%	0	0.0%	0	0.0%	3,424	7,112	67.5%	10,536	
07/01 - 07/03	10	60	4,317	32.5%	0	0.0%	0	0.0%	0	0.0%	4,317	8,966	67.5%	13,283	
07/04 - 07/07	11 <sup>c</sup>	84	4,594	31.5%	0	0.0%	0	0.0%	202	1.4%	4,796	9,775	67.1%	14,571	
07/08 - 07/10	12 <sup>c</sup>	60	362	31.5%	0	0.0%	0	0.0%	16	1.4%	378	771	67.1%	1,149	
07/11 - 07/14	13	84	13,557	30.6%	0	0.0%	0	0.0%	1,232	2.8%	14,789	29,579	66.7%	44,368	
07/15 - 07/17	14	60	8,573	10.9%	857	1.1%	857	1.1%	49,721	63.0%	60,008	18,860	23.9%	78,867	
07/18 - 07/21	15	84	2,890	1.2%	2,890	1.2%	11,559	4.7%	187,836	75.6%	205,175	43,347	17.4%	248,522	
07/22 - 07/22	16	14	36,956	15.9%	7,919	3.4%	21,118	9.1%	118,788	51.1%	184,782	47,515	20.5%	232,297	
07/25 - 07/25	17	14	35,602	11.0%	3,560	1.1%	49,843	15.4%	160,210	49.5%	249,216	74,765	23.1%	323,981	
07/28 - 07/28	18	14	18,646	2.2%	9,323	1.1%	83,908	10.0%	503,445	60.0%	615,322	223,753	26.7%	839,075	
07/30 - 07/30	19	14	0	0.0%	16,945	1.1%	186,393	12.5%	898,074	60.2%	1,101,411	389,730	26.1%	1,491,141	
08/01 - 08/01	20	14	0	0.0%	27,456	1.2%	384,382	16.7%	1,455,160	63.1%	1,866,997	439,294	19.0%	2,306,291	
08/02 - 08/02	21	14	44,354	2.4%	155,238	8.5%	243,945	13.4%	1,153,193	63.4%	1,596,729	221,768	12.2%	1,818,497	
08/03 - 08/03	22 <sup>d</sup>	14	26,142	1.9%	140,622	10.0%	255,429	18.1%	786,875	55.8%	1,209,068	202,165	14.3%	1,411,233	
08/04 - 08/04	23 <sup>d</sup>	14	28,002	1.9%	150,628	10.0%	273,603	18.1%	842,862	55.8%	1,295,095	216,549	14.3%	1,511,644	
08/05 - 08/05	24	14	16,947	1.3%	152,521	11.4%	305,041	22.8%	643,976	48.1%	1,118,484	220,308	16.5%	1,338,792	
08/06 - 08/06	25 <sup>e</sup>	14	12,165	1.3%	121,808	12.8%	151,208	15.9%	542,367	57.2%	827,548	121,185	12.8%	948,733	
08/07 - 08/07	26 <sup>e</sup>	14	20,029	1.3%	200,550	12.8%	248,954	15.9%	892,975	57.2%	1,362,509	199,523	12.8%	1,562,032	
08/08 - 08/08	27	14	18,499	1.3%	203,493	14.3%	129,495	9.1%	943,466	66.2%	1,294,954	129,495	9.1%	1,424,449	
08/09 - 08/09	28 <sup>f</sup>	14	9,280	0.6%	252,522	17.7%	177,791	12.4%	764,771	53.5%	1,204,366	224,803	15.7%	1,429,169	
08/10 - 08/10	29	14	0	0.0%	341,711	21.1%	256,283	15.8%	662,065	40.8%	1,260,060	363,068	22.4%	1,623,128	
08/11 - 08/11	30 <sup>g</sup>	14	0	0.0%	315,588	19.1%	250,294	15.1%	783,528	47.4%	1,349,409	304,705	18.4%	1,654,114	
08/12 - 08/12	31	14	0	0.0%	313,645	17.1%	265,392	14.5%	989,189	53.9%	1,568,227	265,392	14.5%	1,833,619	
08/13 - 08/13	32 <sup>h</sup>	14	0	0.0%	301,746	17.5%	279,093	16.2%	960,997	55.8%	1,541,836	179,769	10.4%	1,721,605	
08/14 - 08/14	33 <sup>h</sup>	14	0	0.0%	353,098	22.8%	244,982	15.9%	768,707	49.7%	1,366,786	178,636	11.6%	1,545,422	
08/15 - 08/15	34	14	0	0.0%	257,092	17.9%	257,092	17.9%	826,367	57.7%	1,340,551	91,819	6.4%	1,432,370	
08/16 - 08/16	35	14	0	0.0%	486,104	28.2%	267,357	15.5%	753,461	43.7%	1,506,921	218,747	12.7%	1,725,668	
08/17 - 08/17	36	14	0	0.0%	305,356	24.4%	112,500	9.0%	691,069	55.1%	1,108,925	144,642	11.5%	1,253,567	

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Dates	Period	Hours	Origin												Total
			Solomon Gulch		Cannery Creek		Wally Noerenberg		A.F. Koernig		Hatchery total	Wild			
			Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent		
08/18 - 08/18	37 <sup>i</sup>	14	0	0.0%	284,793	28.0%	129,317	12.7%	518,504	51.0%	932,614	84,423	8.3%	1,017,037	
08/19 - 08/19	38	14	0	0.0%	243,308	31.6%	126,520	16.5%	360,096	46.8%	729,925	38,929	5.1%	768,854	
08/20 - 08/21	39	36	0	0.0%	150,269	17.3%	139,535	16.0%	472,273	54.3%	762,076	107,335	12.3%	869,411	
08/22 - 08/23	40	36	0	0.0%	180,410	32.0%	82,688	14.7%	255,580	45.3%	518,678	45,102	8.0%	563,780	
08/24 - 08/24	41 <sup>j</sup>	15	0	0.0%	51,251	29.2%	19,828	11.3%	88,410	50.3%	159,490	16,282	9.3%	175,772	
08/25 - 08/25	42 <sup>j</sup>	15	0	0.0%	31,557	29.2%	12,209	11.3%	54,436	50.3%	98,202	10,025	9.3%	108,227	
08/26 - 08/26	43	15	0	0.0%	18,596	26.3%	5,579	7.9%	39,051	55.3%	63,226	7,438	10.5%	70,664	
08/27 - 08/27	44	15	0	0.0%	18,691	46.2%	0	0.0%	15,576	38.5%	34,268	6,230	15.4%	40,498	
08/28 - 08/28	45 <sup>k</sup>	15	0	0.0%	7,013	46.2%	0	0.0%	5,844	38.5%	12,857	2,338	15.4%	15,195	
08/29 - 08/29	46 <sup>k</sup>	15	0	0.0%	15,216	46.2%	0	0.0%	12,680	38.5%	27,897	5,072	15.4%	32,969	
08/30 - 08/30	47 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
08/31 - 08/31	48 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/01 - 09/01	49 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/02 - 09/02	50 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/03 - 09/03	51 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/04 - 09/04	52 <sup>a</sup>	15	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/05 - 09/05	53 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/06 - 09/06	54 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/07 - 09/07	55 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/08 - 09/08	56 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/09 - 09/09	57 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/10 - 09/10	58 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/11 - 09/11	59 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/12 - 09/12	60 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/13 - 09/13	61 <sup>a</sup>	12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
09/14 - 09/20	62 <sup>a</sup>	156	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	
<b>Total</b>			307,499	0.9%	5,121,776	15.3%	4,972,195	14.8%	18,203,005	54.3%	28,604,474	4,905,775	14.6%	33,510,249	

- <sup>a</sup> No harvest reported.
- <sup>b</sup> No samples collected. Results are based on period 10 results.
- <sup>c</sup> No samples collected. Results based on an average of period 10 and 13 results.
- <sup>d</sup> No samples collected. Results based on an average of period 21 and 24 results.
- <sup>e</sup> No samples collected. Results based on an average of period 24 and 27 results.
- <sup>f</sup> No samples collected. Results based on an average of period 27 and 29 results.
- <sup>g</sup> No samples collected. Results based on an average of period 29 and 31 results.
- <sup>h</sup> No samples collected. Results based on an average of period 31 and 34 results.
- <sup>i</sup> No samples collected. Results based on an average of period 36 and 38 results.
- <sup>j</sup> No samples collected. Results based on an average of period 40 and 43 results.
- <sup>k</sup> No samples collected. Results are based on period 44 results.



Appendix E27.—Daily salmon sales, sex ratios, sales summary, and broodstock summary at the Armin F. Koerning Hatchery, 2013.

Date	Pink salmon				
	% female	Sales harvest <sup>a</sup>	Sales harvest cumulative	Brood stock <sup>b</sup>	Brood stock cumulative
07/24	23.0%	102,233	102,233	0	0
07/26	11.5%	109,092	211,325	0	0
07/27	10.3%	91,790	303,115	0	0
07/29	14.0%	125,006	428,121	0	0
07/31	23.0%	68,402	496,523	0	0
08/21	-	0	496,523	1,755	1,755
08/22	-	0	496,523	5,261	7,016
08/23	-	0	496,523	12,087	19,103
08/24	-	0	496,523	16,452	35,555
08/25	-	0	496,523	14,736	50,291
08/26	-	0	496,523	15,531	65,822
08/27	-	0	496,523	17,216	83,038
08/28	-	0	496,523	16,482	99,520
08/29	-	0	496,523	17,075	116,595
08/30	-	0	496,523	18,604	135,199
08/31	-	0	496,523	20,393	155,592
09/01	-	0	496,523	18,297	173,889
09/02	-	0	496,523	20,874	194,763
09/03	-	0	496,523	24,769	219,532
09/04	-	0	496,523	18,225	237,757
Totals			496,523		237,757

Hatchery escapement summary<sup>c</sup>

	Pink salmon
Purse seine whole fish harvest	496,523
Raceway harvest <sup>d</sup>	16,349
Viable broodstock (spawned, eggs in incubators)	195,259
Unviable broodstock (green/over-ripe/bad)	30,833
Unspawned fish (e.g., excess males/females)	8,052
Holding mortalities (raceway, pen mortalities)	3,613
Estimated unharvested return <sup>e</sup>	100,000
Estimated total run to hatchery site	850,629

Sales Summary<sup>f</sup>

	Pink salmon
Purse seine whole fish sales	496,523
Raceway whole fish sales, and carcass sales <sup>g</sup>	0
Total sales	496,523

<sup>a</sup> Daily whole fish from purse seine and raceway harvests as reported inseason and on fish tickets.

<sup>b</sup> Broodstock daily totals from PWSAC egg-take log.

<sup>c</sup> Determined by PWSAC egg-take log, and annual report.

<sup>d</sup> Raceway harvest includes whole fish as well as roe extraction not conducted as egg take.

<sup>e</sup> Fish remaining in saltwater and freshwater after all hatchery harvest is complete.

<sup>f</sup> Sum of raceway harvest, unviable broodstock and unspawned fish.

<sup>g</sup> Represents the sale of "viable broodstock" carcasses.



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

Appendix F1.–Salmon harvest and effort in the Copper River District subsistence drift gillnet fishery, 1961–2013.

Year	Permits				Reported Harvest			
	Issued	Returned	Fished	Not fished <sup>a</sup>	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
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	274	232	470	3,969	53	4,492
2009	323	293	158	165	212	1,764	22	1,998
2010	325	314	150	175	276	1,980	27	2,283
2011	273	263	123	150	212	1,783	34	2,029
2012	378	357	225	153	237	4,270	0	4,507
10-year Average	383	362	219	155	541	2,853	25	3,418
2013	531	492	360	171	854	5,639	1	6,494

<sup>a</sup> As reported on returned permits.

Appendix F2.–Salmon harvest and effort in the Prince William Sound general area subsistence fishery, 1965–2013.

Year	Permits				Reported Harvest <sup>a</sup>							
	Issued	Returned	Fished	Not fished <sup>b</sup>	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total	
1965	22	16	0	0	0	0	0	179	25	0	204	
1966	3	3	0	0	0	3	19	20	50	0	92	
1967	4	3	0	0	0	0	4	4	0	0	8	
1968	4	3	0	0	0	0	20	156	0	22	198	
1969	7	3	0	0	0	0	16	0	0	0	16	
1970	1	1	0	0	0	0	0	0	0	0	0	
1971	3	2	0	0	0	0	0	46	0	0	46	
1972	0	0	0	0	0	0	0	0	0	0	0	
1973	19	16	0	0	0	0	289	0	0	0	289	
1974	3	1	0	0	0	0	0	0	0	0	0	
1975	2	0	0	0	0	0	0	0	0	0	0	
1976	0	0	0	0	0	0	0	0	0	0	0	
1977	4	4	0	0	0	0	0	0	0	0	0	
1978	3	2	0	0	0	0	0	0	0	0	0	
1979	15	2	0	0	0	0	0	0	0	0	0	
1980	26	15	0	0	0	7	6	0	0	0	13	
1981	12	8	0	0	0	3	29	0	2	0	34	
1982	35	27	0	0	0	84	4	31	24	0	143	
1983	26	21	0	0	0	22	36	9	79	0	146	
1984	8	8	0	0	0	10	0	11	2	0	23	
1985	22	16	0	0	1	27	16	14	26	0	84	
1986	25	14	0	0	0	5	15	0	0	0	20	
1987	18	17	0	0	5	31	6	0	16	0	58	
1988	7	7	0	0	2	51	7	10	9	0	79	
1989	11	7	0	0	0	0	0	0	3	0	3	
1990	8	7	0	0	0	0	7	4	0	0	11	
1991	9	5	2	3	0	2	0	0	0	0	2	
1992	10	6	1	5	0	20	0	0	0	0	20	
1993	6	6	4	2	1	104	10	0	0	0	115	
1994	5	4	2	2	0	0	0	0	0	0	0	
1995	4	2	0	2	0	0	0	0	0	0	0	
1996	10	7	0	7	0	0	0	0	0	0	0	
1997	4	3	1	2	0	3	0	0	0	0	3	
1998	4	3	0	3	0	0	0	0	0	0	0	
1999	3	3	0	3	0	0	0	0	0	0	0	
2000	3	3	0	3	0	0	0	0	0	0	0	
2001	5	5	0	5	0	0	0	0	0	0	0	
2002	11	9	2	7	0	31	0	9	7	0	47	
2003	3	3	0	3	0	48	0	0	3	0	51	
2004	12	11	5	6	0	8	0	0	3	0	11	
2005	14	13	1	12	0	4	0	0	0	0	4	
2006	11	9	2	7	0	20	0	30	0	0	50	
2007	3	3	1	2	0	30	0	0	0	0	30	
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	
10-year average	8	7	2	5	3	22	0	4	4	0	33	
2013	8	8	7	1	0	12	0	0	24	5	41	

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

<sup>b</sup> As reported on returned permits.

Appendix F3.—Salmon harvest and effort in the Tatitlek and Chenega subsistence fisheries, 1988–2013.

Year	Permits				Reported Harvest <sup>a</sup>						
	Issued	Returned	Fished	Not fished <sup>b</sup>	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total
Tatitlek											
1988	17	13	9	4	2	210	211	143	245	0	811
1989	14	10	7	3	1	107	653	33	43	0	837
1990	13	6	3	3	0	5	241	10	4	0	260
1991	17	10	7	3	0	107	984	320	28	0	1,439
1992	16	7	5	2	2	441	369	30	49	0	891
1993	18	11	7	4	2	512	305	144	74	180	1,217
1994	14	5	4	1	0	50	143	50	70	0	313
1995	15	3	0	3	0	0	0	0	0	0	0
1996	6	3	1	2	0	0	38	0	0	0	38
1997	6	4	3	1	0	107	45	0	54	0	206
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
10-year Average	14	5	4	1	2	283	188	39	13	0	524
2013	22	11	8	3	0	613	277	0	129	0	1,019
Chenega											
1988	10	6	5	1	1	50	8	251	294	0	604
1989	8	7	7	0	0	322	0	554	180	0	1,056
1990	7	4	2	2	1	36	5	20	2	0	64
1991	12	7	4	3	3	345	42	195	53	0	638
1992	14	6	6	0	1	526	23	313	99	0	962
1993	22	19	17	2	2	875	60	232	124	0	1,293
1994	16	10	8	2	5	192	77	402	161	0	837
1995	10	7	5	2	2	152	67	67	41	0	329
1996	7	6	4	2	0	135	9	125	46	0	315
1997	5	4	4	0	44	193	30	110	272	0	649
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
10-year Average	12	7	4	2	3	278	46	49	91	0	467
2013	13	4	3	1	0	19	0	0	63	0	82

<sup>a</sup> Reported harvest only. NR indicates not reported.

<sup>b</sup> As reported on returned subsistence permits.

Appendix F4.–Personal use and subsistence salmon harvests by year, district and gear types for the Upper Copper River subsistence and personal use fisheries, 1998–2013.

Year	District	Gear	Reported Harvest						Expanded Harvest					
			Permits		Salmon			Salmon			Other species			
			Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
1998	Glennallen	Dip net	272	244	232	7,616	96	7,944	NA	NA	NA	NA	NA	NA
	Glennallen	Fish wheel	738	703	1,519	53,652	411	55,582	1,842	64,463	533	66,838	0	0
	Chitina	Dip net	10,006	9,747	6,583	134,299	2,100	142,982	6,723	137,161	2,145	146,029	0	46
	Total		11,016	10,694	8,334	195,567	2,607	206,508	8,565	201,624	2,678	212,867	0	46
1999	Glennallen	Dip net	336	295	306	8,928	131	9,365	NA	NA	NA	NA	NA	NA
	Glennallen	Fish wheel	765	712	2,616	61,971	922	65,509	3,278	77,369	1,121	81,768	0	0
	Chitina	Dip net	9,944	8,966	5,758	137,942	2,070	145,770	5,913	141,658	2,128	149,699	0	34
	total		11,045	9,973	8,680	208,841	3,123	220,644	9,191	219,027	3,249	231,467	0	34
2000	Glennallen	Dip net	464	422	537	8,368	78	8,983	NA	NA	NA	NA	NA	NA
	Glennallen	Fish wheel	787	757	4,245	49,873	433	54,551	4,856	59,497	532	64,885	0	0
	Chitina	Dip net	8,151	7,680	3,007	103,269	3,540	109,816	3,168	107,856	3,657	114,681	0	203
	total		9,402	8,859	7,789	161,510	4,051	173,350	8,024	167,353	4,189	179,566	0	203
2001	Glennallen	Dip net	407	367	299	8,532	25	8,856	NA	NA	NA	NA	NA	NA
	Glennallen	Fish wheel	832	809	3,074	70,585	1,076	74,735	3,553	82,858	1,144	87,555	0	0
	Chitina	Dip net	9,462	8,356	2,803	121,304	2,385	126,492	3,113	132,108	2,720	137,941	0	484
	total		10,701	9,532	6,176	200,421	3,486	210,083	6,666	214,966	3,864	225,496	0	484
2002	Glennallen	Dip net	469	384	409	6,855	142	7,406	470	7,641	148	8,259	0	0
	Glennallen	Fish wheel	662	626	3,015	41,037	382	44,434	3,183	43,209	382	46,774	25	0
	Chitina	Dip net	6,805	5,733	1,745	75,747	1,712	79,204	2,023	85,968	1,934	89,925	0	317
	total		7,936	6,743	5,169	123,639	2,236	131,044	5,676	136,818	2,464	144,958	25	317
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

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Year	District	Gear	Reported Harvest						Expanded Harvest					
			Permits		Salmon			Salmon			Other species			
			Issued	Returned	Chinook	Sockeye	Coho	Total	Chinook	Sockeye	Coho	Total	Steelhead	Other
2006	Glennallen	Dip net	338	273	266	6,243	10	6,519	335	7,170	10	7,515	0	1
	Glennallen	Fish wheel	646	605	2,178	46,516	200	48,894	2,434	50,540	202	53,176	0	82
	Chitina	Dip net	8,566	6,762	2,071	102,443	1,886	106,400	2,663	123,261	2,715	128,639	0	464
	total		9,550	7,640	4,515	155,202	2,096	161,813	5,432	180,971	2,927	189,330	0	547
2007	Glennallen	Dip net	467	383	432	8,155	28	8,615	496	9,416	28	9,940	0	1
	Glennallen	Fish wheel	707	654	2,674	53,322	203	56,199	2,780	56,298	210	59,288	0	55
	Chitina	Dip net	8,490	7,187	2,388	112,753	1,492	116,633	2,694	125,126	1,742	129,562	0	660
	total		9,664	8,224	5,494	174,230	1,723	181,447	5,970	190,840	1,980	198,790	0	716
2008	Glennallen	Dip net	536	447	445	6,517	35	6,997	496	7,177	35	7,708	0	0
	Glennallen	Fish wheel	650	600	1,793	33,687	447	35,927	1,885	35,980	458	38,323	0	75
	Chitina	Dip net	8,258	6,861	1,690	70,597	2,346	74,633	1,999	81,359	2,711	86,069	0	407
	total		9,444	7,908	3,928	110,801	2,828	117,557	4,380	124,516	3,204	132,100	0	482
2009	Glennallen	Dip net	469	391	342	6,030	8	6,380	394	6,950	19	7,363	0	1
	Glennallen	Fish wheel	621	575	1,988	37,708	186	39,882	2,099	39,899	209	42,207	0	72
	Chitina	Dip net	7,958	6,908	199	81,432	1,452	83,083	214	90,035	1,712	91,961	0	267
	total		9,048	7,874	2,529	125,170	1,646	129,345	2,707	136,884	1,940	141,531	0	340
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
10-year Average	Glennallen	Dip net	501	414	366	7,551	33	7,899	1,398	9,386	39	10,823	0	33
	Glennallen	Fish wheel	651	605	1,970	45,702	273	47,945	2,086	48,770	292	51,148	12	71
	Chitina	Dip net	8,551	7,030	1,388	97,899	1,745	101,031	1,635	112,158	2,124	115,917	0	413
	total		9,703	8,049	3,725	151,152	2,050	156,876	5,119	170,315	2,455	177,888	13	517
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



Appendix F5.–Salmon harvest and effort in the Batzulnetas subsistence harvests, 1987–2013.

Year	Permits				Reported Harvest <sup>a</sup>			
	Issued	Returned	Fished	Not fished <sup>b</sup>	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	0	101	0	101
10-year Average	1	1	1	0	0	56	0	56
2013	3	3	3	0	0	862	0	862

<sup>a</sup> Harvest reported on subsistence permits.

<sup>b</sup> As reported on returned permits.

Appendix F6.–Salmon harvest and effort in the PWS and upper Copper River Federal subsistence fisheries, 2002–2013.

Year	Permits				Reported Harvest <sup>a</sup>			Total
	Issued	Returned	Fished	Not fished <sup>b</sup>	Chinook	Sockeye	Coho	
Chitina Subdistrict								
2002	122	89	NA	NA	33	575	0	608
2003	100	82	NA	NA	18	717	70	805
2004	109	83	NA	NA	7	1,215	18	1,240
2005	76	64	27	NA	22	1,265	0	1,287
2006	75	64	29	NA	13	1,379	20	1,412
2007	98	87	74	12	26	929	40	995
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
5 year Avg.	86	74	44	25	15	1,192	29	1,236
2013	99	85	39	46	17	1,946	8	1,971
Glennallen Subdistrict								
2002	201	162	NA	NA	564	7,950	81	8,595
2003	221	184	NA	NA	554	13,616	152	14,322
2004	262	206	NA	NA	636	17,704	152	18,492
2005	275	224	197	NA	345	19,973	126	20,444
2006	254	220	170	NA	430	16,711	28	17,169
2007	281	238	224	14	569	15,225	34	15,828
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
5 year Avg.	276	234	175	46	523	13,238	101	13,862
2013	274	236	160	76	329	15,432	20	15,781
PWS/Chugach Subdistrict								
2005	46	45	22	23	0	109	141	250
2006	49	48	23	25	0	150	100	250
2007	33	33	17	16	0	36	68	104
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
5 year Avg.	51	46	30	17	0	42	236	277
2013	65	46	29	17	0	102	310	412
Total federal subsistence harvests								
2002	323	251	NA	NA	0	597	81	9,203
2003	321	266	NA	NA	0	572	222	15,127
2004	371	289	NA	NA	0	643	170	19,732
2005	397	333	246	23	0	367	267	21,981
2006	378	332	222	25	0	443	148	18,831
2007	412	358	315	42	0	595	142	16,927
2008	397	334	200	22	0	727	349	13,244
2009	384	327	231	96	0	502	230	13,417
2010	414	367	248	119	0	317	163	15,412
2011	433	363	265	98	0	711	765	16,978
2012	432	377	232	145	0	375	542	16,271
5 year Avg.	397	344	243	61	0	517	206	15,566
2013	438	367	228	139	0	346	338	18,164

<sup>a</sup> Reported harvest only.

<sup>b</sup> As reported on returned permits.

Appendix F7.—Salmon retained from the commercial harvest for personal use (home pack) by district, species, and gear type, in Prince William Sound and the Copper River and Bering River districts, 1994–2013.

Year	Prince William Sound (drift gillnet, set gillnet, and purse seine)																	
	Chinook				Sockeye				Coho				Pink			Chum		
	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		
1994	5	0	5	0	0	0	12	0	32	0	0	0	0	0	0	0		
1995	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
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		
10-year Average	38	2	29	0	22	470	72	48	64	0	8	358	0	6	132	0		
2013	111	0	65	24	50	1,049	228	25	39	0	0	119	0	0	28	0		

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Copper River District (all drift gillnet)					Bering River District (all drift gillnet)				
Year	Permits	Chinook	Sockeye	Coho	Year	Permits	Chinook	Sockeye	Coho
1994	192	751	947	21	20 1994	3	12	0	0
1995	318	1,688	0	0	19 1995	5	11	0	0
1996	345	2,169	0	0	18 1996	7	31	0	0
1997	284	1,243	0	0	17 1997	1	3	0	0
1998	309	1,411	1,435	14	16 1998	5	7	0	0
1999	297	1,115	1,333	36	15 1999	2	2	20	102
2000	245	740	651	0	14 2000	1	3	0	0
2001	289	935	2,113	24	13 2001	2	2	0	0
2002	247	773	1,138	187	12 2002	1	1	0	0
2003	287	1,073	4,077	0	11 2003	6	6	52	0
2004	174	539	525	2	10 2004	2	0	1	10
2005	228	760	1,785	119	9 2005	2	2	0	0
2006	264	779	1,539	137	8 2006	4	9	6	0
2007	280	1,019	2,023	340	7 2007	2	2	0	0
2008	223	537	2,172	423	6 2008	4	9	6	0
2009	328	876	6,528	767	5 2009	1	0	0	20
2010	333	906	7,064	1,026	4 2010	5	0	0	82
2011	336	1,282	9,070	543	3 2011	1	0	0	10
2012	378	853	7,985	1,037	2 2012	4	1	0	155
10-year Average	283	862	4,277	439	1 10-year Average	3	3	7	28
2013	331	564	9,448	249	0 2013	2	4	35	0

Appendix F8.—Area E commercial home pack and subsistence harvests by permit holder community of residence, 2013.

Community	Commercial Home pack <sup>a</sup>						Total
	Permits	Chinook	Sockeye	Coho	Pink	Chum	
ANCHOR POINT	3	2	23	6			31
ANCHORAGE	19	26	330		1	1	358
CIRCLE CITY	1		363				363
COPPER CENTER	1	1	1				2
CORDOVA	194	388	4,990	136	19	43	5,576
DELTA JUNCTION	2		11				11
EAGLE RIVER	1		242				242
FAIRBANKS	1	1	137	1			139
GIRDWOOD	6	4	86	2			92
HOMER	37	35	455	30	110	16	646
HOONAH	1		17				17
KASILOF	2	8	5				13
MOOSE PASS	1	3					3
NIKOLAEVSK	1					1	1
NINILCHIK	1	1	1				2
PALMER	1	1	9				10
SEWARD	9	18	44	2			64
SOLDOTNA	3	5	15	12			32
VALDEZ	4	11	25		18	14	68
WASILLA	19	24	537	15	5		581
WHITTIER	1		6				6
WILLOW	2		62	11	35		108
USA Balance	77	116	3,435	98	60	6	3,715
Unknown	—	13	16				29
<b>Total</b>	<b>387</b>	<b>657</b>	<b>10,810</b>	<b>313</b>	<b>248</b>	<b>81</b>	<b>12,109</b>

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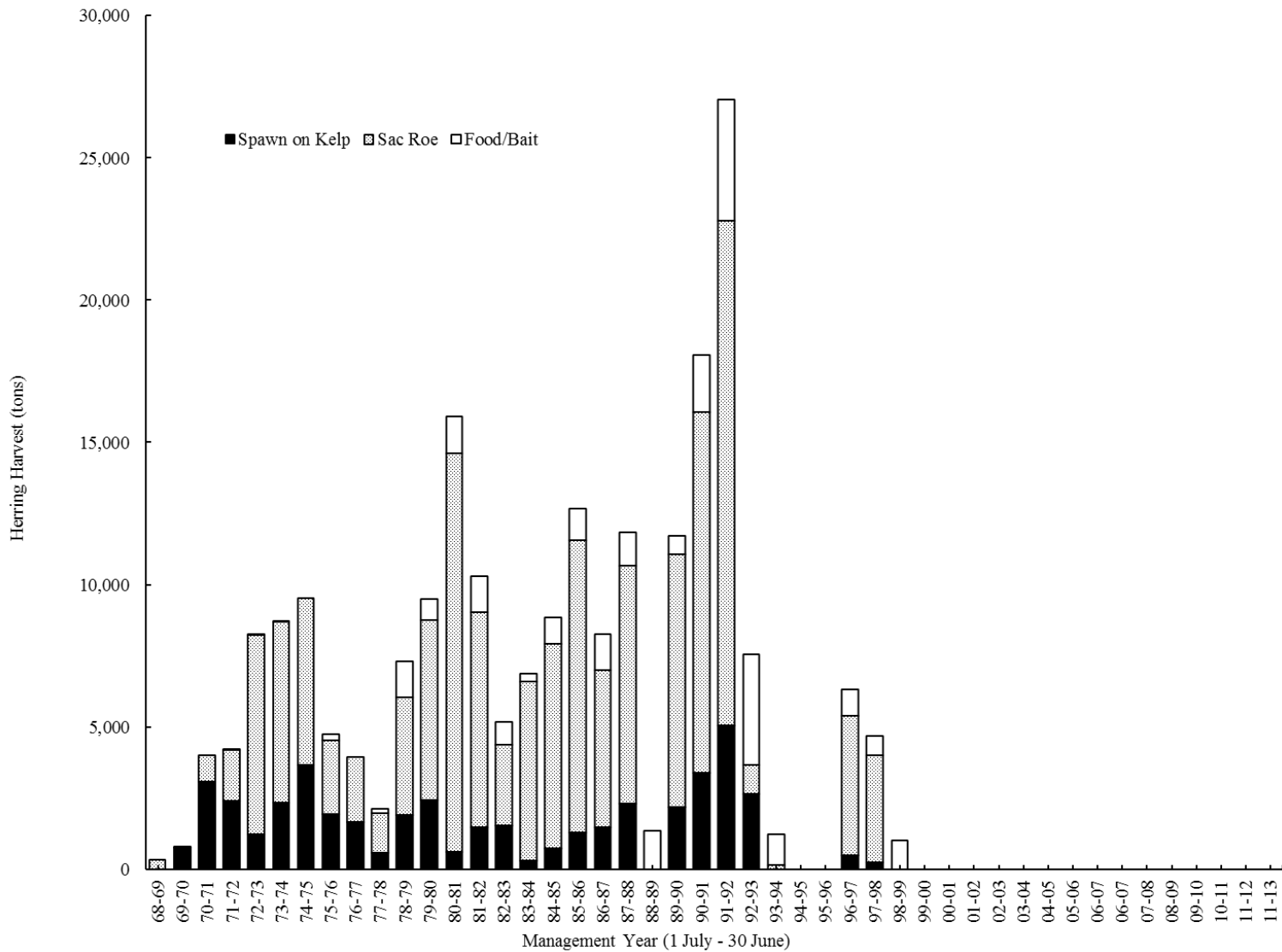
Appendix F8.–Page 2 of 2.

Community	Area E Subsistence <sup>b</sup>						Total
	Permits	Chinook	Sockeye	Coho	Pink	Chum	
Anchor Point	1	4	11	0	0	0	15
Anchorage	59	46	380	0	0	23	449
Big Lake	1	5	0	0	0	0	5
Chenega Bay	8	0	11	0	0	53	64
Chugiak	4	6	25	0	0	0	31
Cordova	447	680	3,839	1	17	1	4,538
Delta Jct	2	2	60	0	0	0	62
Delta Junction	4	6	131	0	0	0	137
Eagle River	2	1	6	0	0	0	7
Fairbanks	1	0	0	0	0	0	0
Girdwood	1	0	0	0	0	0	0
Homer	30	42	647	0	0	0	689
Juneau	1	5	13	0	0	0	18
Kasilof	1	0	0	0	0	0	0
Kenai	1	0	0	0	0	0	0
Kodiak	1	0	0	0	0	0	0
Moose Pass	2	1	11	0	0	0	12
Nikolacvsk	1	0	0	0	0	0	0
Nikolaevsk	1	0	0	0	0	0	0
North Pole	1	0	0	87	0	0	87
Palmer	8	9	66	0	0	1	76
Seward	13	7	78	0	0	0	85
Soldotna	5	6	40	0	0	0	46
Sterling	3	3	0	0	0	0	3
Tatitlek	19	4	638	190	0	129	961
Valdez	12	9	37	0	0	0	46
Wasilla	23	21	153	0	0	11	185
Willow	3	1	149	0	0	0	150
<b>Total</b>	<b>655</b>	<b>858</b>	<b>6,295</b>	<b>278</b>	<b>17</b>	<b>218</b>	<b>7,666</b>

<sup>a</sup> Home pack fish are defined in 5 AAC 39.010 as finfish retained from lawfully taken commercial catch for that fisherman's own use.

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

## **APPENDIX G: HERRING**



Appendix G1.—Prince William Sound commercial Pacific herring harvest by management year and fishery, 1968–2013.



Appendix G2.—Pacific herring sac roe purse seine fishery effort, anticipated harvest, and actual harvest, 1969–2013.

Calendar year	Opening dates	Purse seine fishery						
		Hours	Effort (boats)	Guideline harvest <sup>a</sup>	Harvest (tons)	CPUE (tons/boat hr)	Estimated roe %	
1969	03/01–06/30		5			325.4		
1970	03/01–06/30							
1971	03/01–06/30		12			919.2		
1972	03/01–06/30		18			1,777.2		
1973	04/23–05/09		31			6,991.9		
1974	04/10–04/17		72			6,371.0		
1975	04/15–04/22	14.0	76			5,853.8	5.50	
1976	05/08 & 06/01	13.0	66			2,584.2	3.01	
1977	04/09–04/10	38.0	58			2,265.6	1.03	
1978	04/17–04/21 <sup>b</sup>	106.0	75	5,000		1,329.5	0.17	
1979	04/07–04/19	215.5	89	5,000		4,138.0	0.22	
1980	04/01–04/09	162.0	76	5,000		6,042.2	0.49	
1981	04/01–04/09	60.0	106	5,000		13,768.2	2.16	
1982	04/23	2.0	95	5,000		7,148.3	37.62	10–14%
1983	04/13	1.0	103 <sup>c</sup>	5,000		2,728.5	26.49	11.0%
1984	04/14	3.0	105 <sup>d</sup>	5,000		5,946.1	18.88	10–11%
1985	04/28–04/29	4.0	103 <sup>e</sup>	5,000		6,764.1	16.42	10–12%
1986	04/17	3.0	106	5,000–7,000		9,828.1	30.91	11.0%
1987	04/08–04/09	1.5	96	3,000–5,000		4,982.2	34.60	10.0%
1988	04/21–04/22	2.0	105	4,000–5,000		7,977.3	37.99	10.5%
1989	Season closed <sup>f</sup>			6,400				
1990	04/12	0.3	96	6,038		8,362.1	290.35	10.0%
1991	04/09, 04/10, & 04/19	1.3	104	11,233		11,923.0 <sup>g</sup>	85.32	10.5%
1992	04/13, 04/17, & 04/21	2.0	104	14,100		16,784.2 <sup>h</sup>	80.69	10.0%
1993	No harvest			15,586				
1994	Season closed <sup>i</sup>			0		151.0 <sup>k</sup>		
1995	Season closed <sup>i</sup>			0				
1996	Season closed <sup>i</sup>			0				
1997	04/13,04/15	1.8	71	2,965		4,703.5	36.80	9.75%
1998	04/06	0.5	46	3,367		3,329.7	144.77	9.6%
1999	Season closed <sup>j</sup>			3,447				
2000–2013	Season closed <sup>l</sup>							

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- <sup>a</sup> Guideline harvest based on preseason harvest projection beginning in 1986.
- <sup>b</sup> An additional opening on 6/14 for 6 hours resulted in no harvest.
- <sup>c</sup> Of 103 permit holders participating, 72 made deliveries.
- <sup>d</sup> Of 105 permit holders participating, 101 made deliveries.
- <sup>e</sup> Of 103 permit holders participating, 62 made deliveries at Montague Island and 90 made deliveries in the north-shore area.
- <sup>f</sup> All herring commercial fisheries in PWS were closed during spring 1989 because of the potential for contamination from the T/V Exxon Valdez oil spill.
- <sup>g</sup> Total for 1991 includes a 92.2 ton test fishing set made by ADF&G for aerial survey calibration.
- <sup>h</sup> Total for 1992 includes a 192.5 ton test fishing harvest made by ADF&G for aerial survey calibration.
- <sup>i</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.
- <sup>j</sup> Because no significant biomass was located, the season was cancelled on 20 April.
- <sup>k</sup> Harvest for 1994 consisted of a single test fishing harvest made by ADF&G for aerial survey calibration.
- <sup>l</sup> The 2000–2013 seasons was closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.

Appendix G3.–Pacific herring sac roe drift gillnet fishery effort, anticipated harvest, and actual harvest, 1969–2013.

Drift gillnet fishery							
Calendar year	Opening dates	Hours	Effort (boats)	Guideline harvest <sup>a</sup>	Harvest (tons)	CPUE (tons/boat hr)	Estimated roe %
1974	04/10–04/17		3		3.8		
1975	04/15–04/22	14.0					
1976		13.0					
1977	04/09–04/10	38.0	1		1.6	0.04	
1978 <sup>b</sup>	04/17–04/21	106.0	38		61.7	0.02	
1979	Season closed <sup>c</sup>						
1980	04/17–05/05		16		264.4		
1981	04/16–04/18	53.0	18		234.5	0.25	
1982	04/24–04/26	54.0	18		393.9	0.41	12–15%
1983	04/21–04/22	24.0	22		105.4	0.20	11.0%
1984	04/18–04/22	59.0	23	250	342.7	0.25	8–14%
1985	04/29–05/01	34.0	21	250	413.3	0.58	10–12%
1986	04/24–04/28	90.0	24	300–400	448.6	0.21	11.4%
1987	04/10–04/11	24.0	24	200–300	533.3	0.93	9.5%
1988	04–23	5.5	24	275	353.0	2.67	10.0%
1989	Season closed <sup>d</sup>			375			
1990	04/13	4.0	24	353	505.4	5.26	10.6%
1991	04/18	10.5	24	657	742.0	2.94	11.06%
1992	04/23–04/24	11.0	24	825	940.6	3.56	10.8%
1993	04/15, 04/17–04/19	36.0	24	912	1,029.9	1.19	11.01%
1994	Season closed <sup>e</sup>			0			
1995	Season closed <sup>e</sup>			0			
1996	Season closed <sup>e</sup>			0			
1997	04/09	2.5	22	175	175.7	3.19	8.00%
1998	04/11, 04/12	6.5	20	197	415.1	3.19	11.0%
1999	Season closed <sup>f</sup>			202			
2000–2013	Season closed <sup>g</sup>			0			

<sup>a</sup> Guideline harvest based on preseason harvest projection beginning in 1986.

<sup>b</sup> An additional opening on 14 June for 6 hours resulted in no harvest.

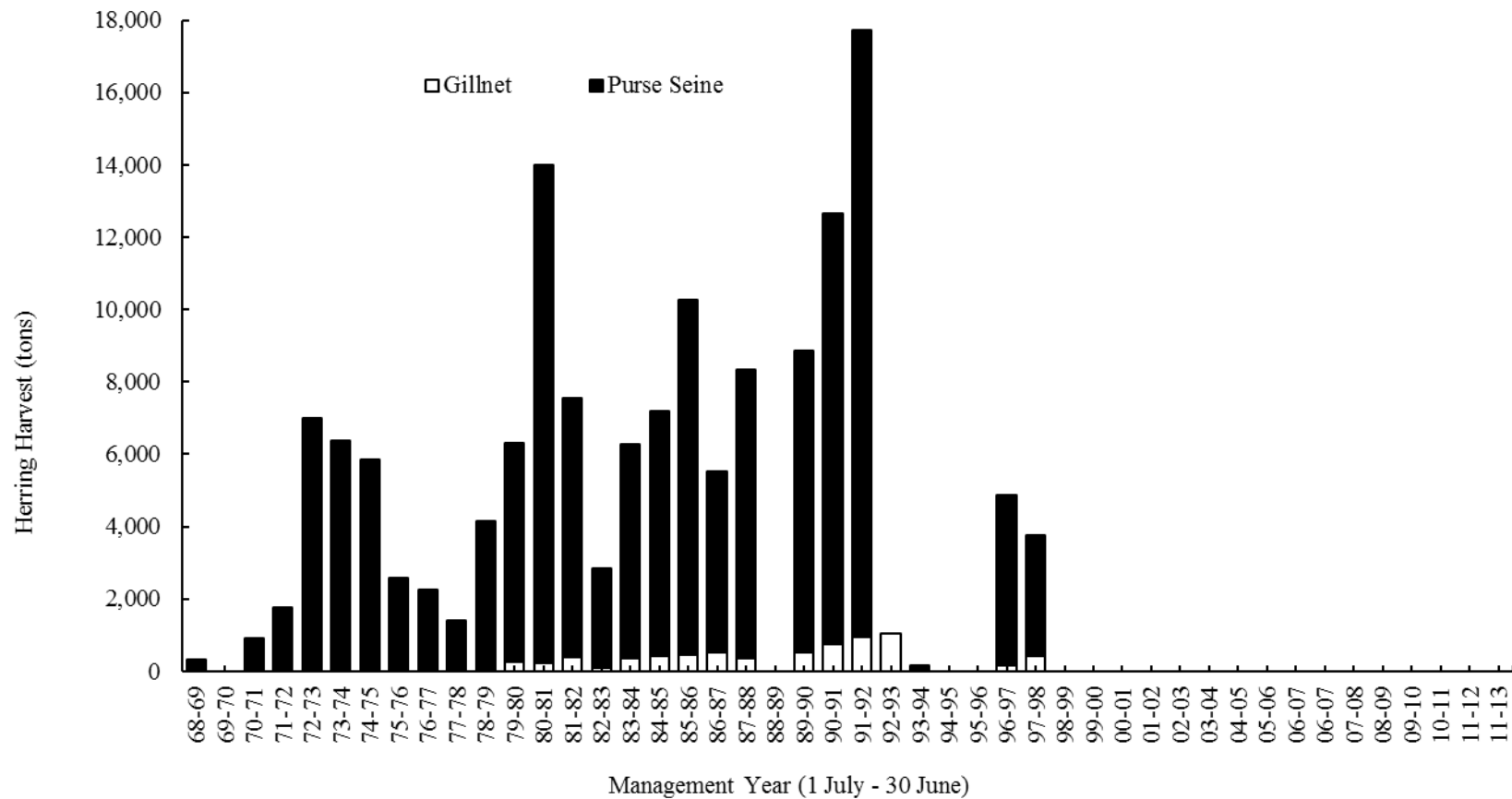
<sup>c</sup> Drift gillnet fishery closed by Board of Fisheries action.

<sup>d</sup> All commercial herring fisheries in PWS were closed during spring 1989 because of the potential for contamination from the T/V Exxon Valdez oil spill.

<sup>e</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.

<sup>f</sup> Because no significant biomass was located, the season was cancelled on 20 April.

<sup>g</sup> The 2000–2013 seasons was closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.



Appendix G4.—Prince William Sound commercial Pacific herring sac roe purse seine and gillnet harvest by management year, 1968–2013.

Appendix G5.—Pacific herring pound spawn-on-kelp fishery harvest, 1979–2013.

Calendar year	Fishery dates <sup>c</sup>	Effort				Guideline harvest (tons)	Blades per permit holder		Spawn-on-kelp harvest (tons)			Herring utilized <sup>b</sup> (tons)
		CFEC permits <sup>d</sup>	Permits committed <sup>e</sup>	Producing permits <sup>a</sup>			Closed <sup>f</sup>	Open <sup>g</sup>	Ribbon	Macrocystis	Total	
1979		2	0									
1980	04/14	14	4	2		8			0.9	0.4	1.3	16.6
1981	04/14	18	18	7		16			8.6	1.1	9.7	120.7
1982	04/29–05/10	25	20	18		26			25.1	0.5	25.5	319.2
1983	04/30–05/04	47	38	26		26			17.7	10.1	27.7	346.7
1984	04/24–05/08	65	45	37		26			6.4	18.8	25.2	315.1
1985	04/25–05/07	81	59	50		40			12.1	28.1	40.2	502.1
1986	04/21–04/28	104	82	81		60			0	72.2	72.2	903.0
1987	04/10–04/21	111	111	108		85			0	61.2	61.2	765.1
1988	04/12–04/23	122	122	119		85			0	123.2	123.2	1,540.5
1989	Season closed <sup>h</sup>											
1990	04/11–04/26	128	128	122		118			0	98.8	98.8	1,235.3
1991	04/07–04/20	126	126	119		220	1,200		0	202.4	202.4	2,530.5
1992	04/07–04/24	127	127	127		276	1,770		0	242.2	242.2	3,027.7
1993	04/10–04/22	128	124	52		305	1,950		0	106.4	106.4	1,330.5
1994	Season closed <sup>i</sup>											
1995	Season closed <sup>i</sup>											
1996	Season closed <sup>i</sup>											
1997	04/10–05/06	128	116	7	84	725	410	640	0	34.3	34.3	290.5
1998	04/04, 04/05, 04/09, 04/13 <sup>j</sup>	128	36	13	20	823	425	660	0	10.7	10.7	104.3
1999	04/01, 04/20 <sup>k</sup>	128	27	7	2	843	435	680	0	6.2	6.2	48.8
2000–2013	Season closed <sup>l</sup>											

-continued-

- <sup>a</sup> Number of permits successful in producing product. Because of group cooperation, production is often reported for some individuals whose pounds did not produce product.
- <sup>b</sup> The equivalent harvest of herring due to stress mortality and the removal of reproductive capacity from the population based on the assumption that 12.5 tons of herring are used to produce each ton of spawn-on-kelp product.
- <sup>c</sup> Dates that the fishery was opened to purse seines for the capture and placement of herring into pounds.
- <sup>d</sup> Prior to 1994, commissioner's permits issued to applicants registering before the 1 March deadline. After 1994, the number of permits represents limited entry permits. Beginning in 1997 permit holders could operate pounds in open or closed configuration, but were required to state intended configuration prior to season.
- <sup>e</sup> The number of individuals receiving an equal allocation of the guideline harvests. Prior to 1994 this represents the number of individual pounds constructed by the 1 April deadline. Beginning in 1997, this number represents permit holders stating intended configuration prior to season.
- <sup>f</sup> A pound fished in a closed configuration consists of a rectangular floating frame with webbing suspended below, that encloses herring and kelp for period of time during spawning.
- <sup>g</sup> A pound fished in an open configuration consists of a rectangular floating frame with either no webbing suspended below, or with webbing that permits volitional entry and exit of herring on at least one side.
- <sup>h</sup> All herring commercial fisheries in Prince William Sound were closed spring 1989 because of the potential for contamination from the T/V Exxon Valdez oil spill.
- <sup>i</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.
- <sup>j</sup> Opening dates for each area were: Montague Island 4 April, Eastern 5 April, Northern 9 April, and Southeastern 13 April. All areas closed by regulation on 31 December 1998.
- <sup>k</sup> Opening dates for each area were: Montague Island 1 April, St. Matthews Bay 20 April. All areas closed by emergency order on 25 April 1999.
- <sup>l</sup> The 2000–2013 seasons was closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.

Appendix G6.—Natural spawning Pacific herring spawn-on-kelp harvests in pounds and tons, 1969–2013.

Calendar year	Fishery dates	Hours	Effort (no. of divers)	Guideline harvest (tons)	Spawn-on-kelp harvest		Herring utilized <sup>a</sup> (tons)
					lbs.	tons	
1969	05/18–05/31		3		5,424	2.7	21.7
1970	04/19–06/06		34		190,374	95.2	761.5
1971	04/18–05/15		159		769,481	384.7	3,077.9
1972	04/30–05/20		397		600,453	300.2	2,401.8
1973	04/23–05/26		176		306,358	153.2	1,225.4
1974	04/22–05/04		143		580,588	290.3	2,322.4
1975	04/25–05/10		328		916,919	458.5	3,667.7
1976	04/21– ?		279		485,043	242.5	1,940.2
1977	04/27–12/31		104		417,000	208.5	1,668.0
1978	04/20–04/30		66	165	141,268	70.6	565.1
1979	04/25–05/03		97	200	474,242	237.1	1,897.0
1980	04/23–04/30	10	458	200	603,880	301.9	2,415.5
1981	04-25	12	196	200	122,532	61.3	490.1
1982	05/05–05/08	73	152	187	291,430	145.7	1,165.7
1983	04/27	12	185	187	298,362	149.2	1,193.4
1984	Season Closed <sup>b</sup>		225 <sup>c</sup>	187			
1985	05/06 & 05/08	20	106	169	60,832	30.4	243.3
1986	04/30–05/03	86	29	142	95,205	47.6	380.8
1987	04/15–04/17	44	59	103	176,485	88.2	705.9
1988	04/29 & 04/30	12	159	103	194,762	97.4	779.0
1989	Season Closed <sup>d</sup>			110			
1990	04/21–04/22	16	134	104	237,575	118.8	950.3
1991	05/11–05/17	95	48	195	215,147	107.6	860.8
1992	04/24–04/30	101	217	243	504,663	252.3	2,018.7
1993	04/19–04/24	114	83	268	325,181	162.6	1,300.7
1994	Season Closed <sup>e</sup>			110			
1995	Season Closed <sup>e</sup>						
1996	Season Closed <sup>e</sup>						
1997	04/25 & 04/26	26.4	45	56.4	52,800	26.4	211.2
1998	04/22 - 04/27	62	35	464	34,695	17.3	138.8
1999	Season Closed <sup>e</sup>			475			
2000-2013	Season Closed <sup>e</sup>						

<sup>a</sup> Indicates the annual removal of reproductive capacity from the population based on the assumption that average fish roe recovery is 10%, and 80% of spawn-on-kelp harvest weight consists of eggs.

<sup>b</sup> Season remained closed due to lack of suitable spawn.

<sup>c</sup> Permits issued.

<sup>d</sup> All herring commercial fisheries in Prince William Sound were closed spring 1989 because of the potential for contamination of catches from the T/V Exxon Valdez oil spill.

<sup>e</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.

Appendix G7.—Natural spawning Pacific herring spawn-on-kelp harvests by kelp species, 1969–2013.

Calendar year	Fishery dates	Effort Hours	Effort (no. of divers)	Guideline harvest (tons)	Harvest by kelp species and grounds price (\$/lb)							
					Ribbon		Sieve		Fucus		Other	
					Percent	Price	Percent	Price	Percent	Price	Percent	Price
1969	05/18–05/31		3									
1970	04/19–06/06		34									
1971	04/18–05/15		159									
1972	04/30–05/20		397									
1973	04/23–05/26		176									
1974	04/22–05/04		143									
1975	04/25–05/10		328									
1976	04/21– ?		279									
1977	04/27–12/31		104									
1978	04/20–04/30		66	165	23%		50%				27%	<sup>a</sup>
1979	04/25–05/03		97	200								
1980	04/23–04/30	10	458	200	60%	\$1.25	40%	\$0.85				
1981	04–25	12	196	200	38%	\$1.25	60%	\$0.85			2%	<sup>a</sup>
1982	05/05–05/08	73	152	187	83%	\$1.42	11%	\$0.95			6%	<sup>a</sup>
1983	04/27	12	185	187	51%	\$2.00–2.45	35%	\$1.50–1.70			14%	<sup>b</sup>
1984	Season closed <sup>c</sup>		225	187								
1985	05/06 & 05/08	20	106	169	51%	\$1.25	49%	\$0.50				
1986	04/30–05/03	86	29	142	97%	\$1.75		\$0.80				<sup>a</sup>
1987	04/15–04/17	44	59	103	90%	\$1.70		\$0.85				<sup>a</sup>
1988	04/29 & 04/30	12	159	103	64%	\$1.50	24%	\$0.75–1.00			12%	<sup>a</sup>
1989	Season closed <sup>e</sup>			110								
1990	04/21–04/22	16	134	104	37%	\$0.99	6%	\$0.52			57%	<sup>a</sup>
1991	05/11–05/17	95	48	195					100%	\$0.75–0.85		
1992	04/24–04/30	101	217	243	21%	\$0.70			76%	\$0.40	3%	
1993	04/19–04/24	114	83	268					100%	\$0.55		
1994	Season closed <sup>f</sup>			110								
1995	Season closed <sup>f</sup>											
1996	Season closed <sup>f</sup>											
1997	04/25 & 04/26	26	45	56.4					100%			
1998	04/22–04/27	62	35	464	16%	\$0.80			84%	\$0.50		
1999	Season closed <sup>f</sup>			475								
2000–2013	Season closed <sup>f</sup>											

<sup>a</sup> Hair kelp.

<sup>b</sup> Mostly Macrocystis. Some hair kelp.

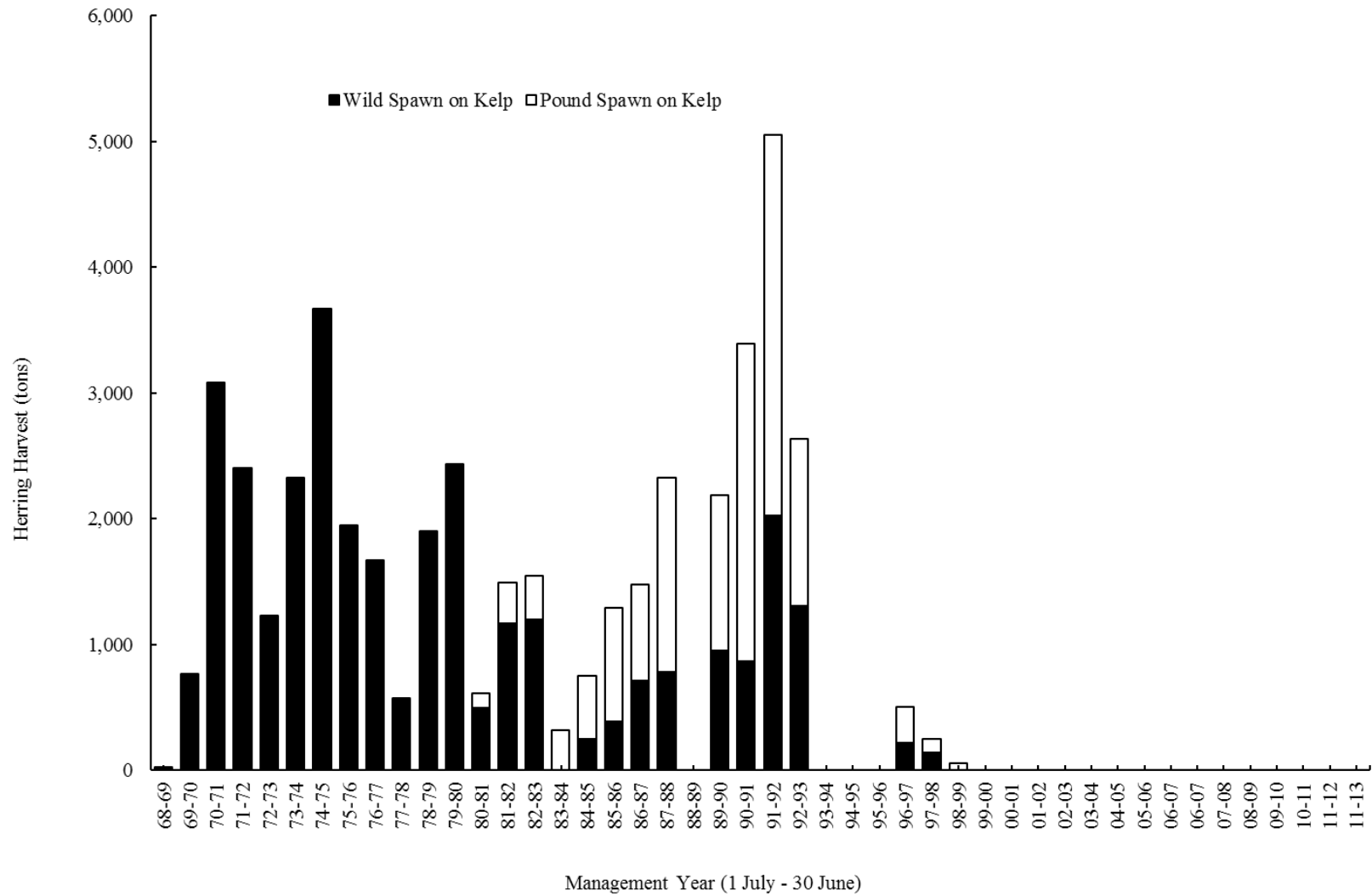
<sup>c</sup> Season remained closed due to lack of suitable spawn.

<sup>d</sup> Permits issued.

<sup>e</sup> All herring commercial fisheries in Prince William Sound were closed spring 1989 because of the potential for contamination of catches from the T/V Exxon Valdez oil spill.

<sup>f</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.





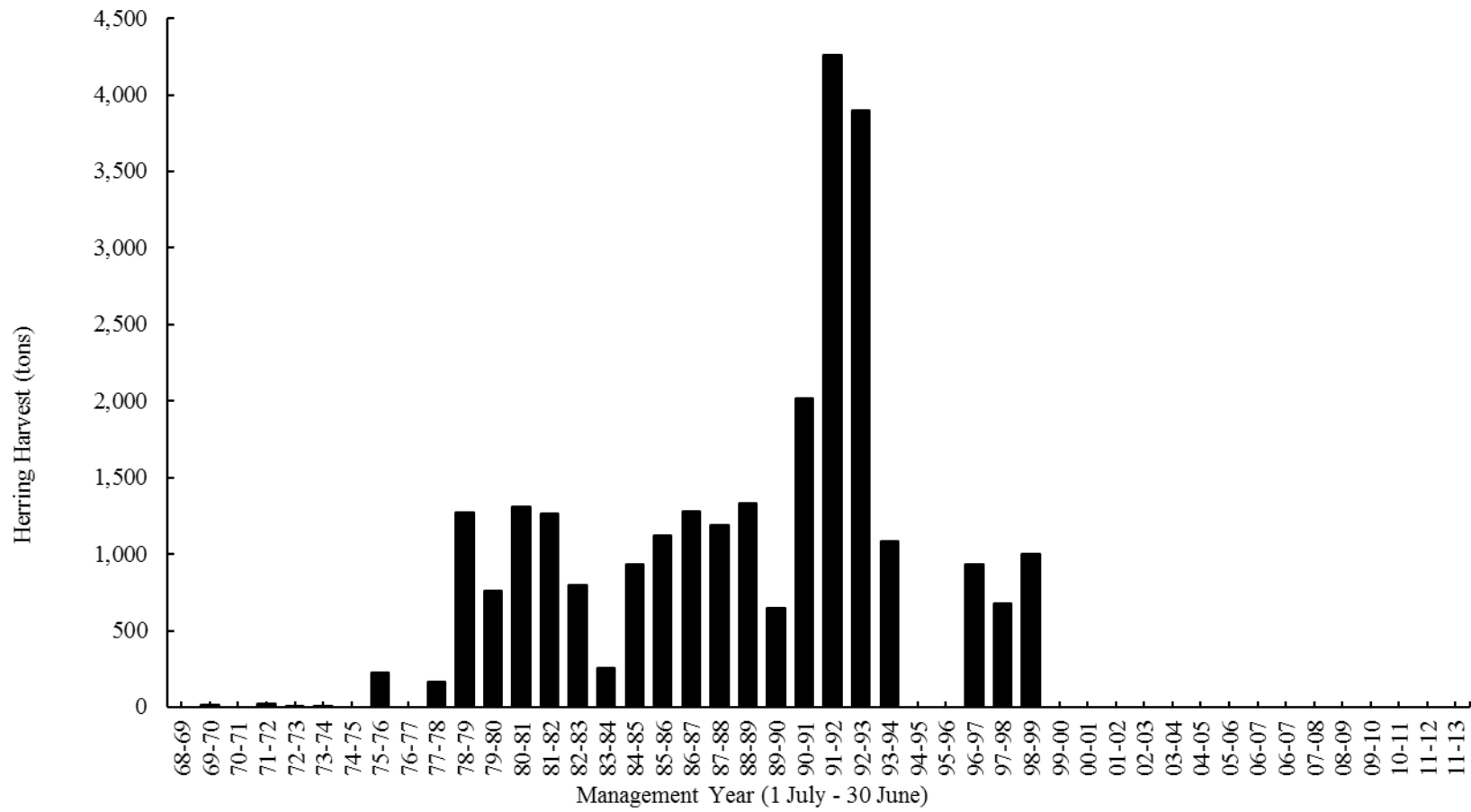
Appendix G8.—Prince William Sound commercial spawn-on-kelp Pacific herring usage by management year, 1968–2013.

Appendix G9.—Prince William Sound commercial Pacific herring food/bait fishery effort and harvests, management years 1969–2013.

Harvest management year	Guideline		Purse seine									Total harvest (tons)
	Opened	Closed	harvest (tons)	Effort (boats)	Harvest (tons)	Effort (boats)	Harvest (tons)	Effort (boats)	Harvest (tons)	Effort (boats)	Harvest (tons)	
1969–1970	10/1/1969	6/30/1970 <sup>a</sup>			14							14
1970–1971	10/1/1970	6/30/1971 <sup>a</sup>										0
1971–1972	10/1/1971	6/30/1972 <sup>a</sup>			20							20
1972–1973	10/1/1972	5/9/1973 <sup>a</sup>			9							9
1973–1974	8/27/1973	4/17/1974 <sup>a</sup>	b		8.5							8.5
1974–1975	7/15/1974	3/10/1975	b									0
1975–1976	6/1/1975	6/25/1975 <sup>c</sup>	b	4	226.7							226.7
1976–1977	2/1/1977	3/9/1977	b									0
1977–1978	10/1/1977	2/28/1978	b		17	-	145.3					162.3
1978–1979	10/16/1978	? <sup>d</sup>	b		195.4	7	988.7		9.4		81	1,274.40
1979–1980	9/16/1979	2/28/1980 <sup>e</sup>	1,400		510.8	4	145.1		103.2		2.6	761.7
1980–1981	9/15/1980	11/7/1980	1,400		1,030.40	6	275.7					1,306.10
1980–1982	9/15/1981	9/30/1981	1,400	7	1,189.40	-	73.1					1,262.50
1982–1983	9/15/1982	1/31/1983	1,400	6	797.3							797.3
1983–1984	9/15/1983	1/31/1984	1,400		257.6							257.6
1984–1985	9/15/1984	1/31/1985	1,400		936.2							936.2
1985–1986	9/1/1985	2/15/1986	1,400	6	1,118.10							1,118.10
1986–1987	9/1/1986	10/24/1986	1,400	6	1,276.20							1,276.20
1987–1988	9/2/1987	11/12/1987 <sup>f</sup>	1,400	7	1,189.40							1,189.40
1988–1989	11/1/1988	11/5/1988	1,400	8	1,335.30							1,335.30
1989–1990	11/1/1989	1/31/1990	1,694		646.1							646.1
1990–1991	9/21/1990	11/24/1990 <sup>g</sup>	3,151	5	1,955.00			-	60.8			2,015.90
1991–1992	10/1/1991	10/14/1991	3,956	14	4,258.50							4,258.50
1992–1993	10/1/1992	10/22/1992	3,416	17	3,900.30							3,900.30
1993–1994	10/7/1993	10/10/1993	978	8	1,087.00							1,087.00
1994–1995	Season closed <sup>j</sup>											0
1995–1996	Season closed <sup>j</sup>											0
1996–1997	11/1/1996	11/3/1996	825	6	933.9							933.9
1997–1998 <sup>k</sup>	11/1/97, 02/19/98	2/28/1998	945	12	679.7							679.7
1998–1999	11/2/1998	11/04/98, 11/06/98	967	11 <sup>l</sup>	1,003.30	-	-					1,003.30
1999-2013	Season closed <sup>j</sup>											

-continued-

- <sup>a</sup> Openings set by regulation. Ending date coincides with regulatory ending of sac roe season.
- <sup>b</sup> No official quota, but unofficial goal was 1,500 tons.
- <sup>c</sup> Harvest from special June food-and-bait fishery opening. Although this harvest actually occurred at the end of the 1975 management year, it is included in the 1976 harvest management year to be consistent with other food-and-bait harvests that occur after spring sac roe fisheries.
- <sup>d</sup> Fishery closed from 1 January to 6 January 1979.
- <sup>e</sup> Fishery closed from 1 January to 15 February 1980.
- <sup>f</sup> Fishing season opened by regulation on 1 September 1987 in the District. The north-shore and east-shore herring districts opened on 23 September. The season was closed by emergency order on October 6 for a period of 5 weeks, reopened on 9 November, and closed for the duration of the 1987–1988 season on 12 November 1987.
- <sup>g</sup> Fishery open from 21 September until 24 November. The Montague Island area was open from 24 September until 24 November.
- <sup>h</sup> Preseason guideline harvest level based on spawn deposition biomass estimate. Final guideline harvest based on age-structured analysis was issued in January 1993 and was 4,373 tons.
- <sup>i</sup> Preseason guideline harvest level based on preliminary aerial survey biomass estimate of 40,000 tons.
- <sup>j</sup> Season closed because the herring biomass was forecast to be less than the 22,000 ton spawning biomass threshold.
- <sup>k</sup> Season reopened in spring 1998 based on final age structured assessment modeling. Of the total harvest, 578.1 tons were taken in November 1997 and 101.6 tons were taken in February 1998.
- <sup>l</sup> Includes sale from ADF&G test fishing near Knowles Head, 31 October 1998.



Appendix G10.—Prince William Sound commercial food/bait Pacific herring harvest, management years 1968–2013.

Appendix G11.—Mean price and estimated exvessel value of the commercial Pacific herring harvest by gear type based on verbal postseason estimates from processors and permit holders, 1978–2013.

Calendar year	Sac roe fisheries		Spawn on kelp fisheries				Food-and-bait fishery			TOTAL VALUE	
	Purse seine		Drift gillnet		Wild spawn on kelp		Pounds		Mixed gear		
	Price per ton	Total value	Price per ton	Total value	Price per lb	Total value	Price per lb <sup>a</sup>	Total value	Price per ton	Total value	
1978	\$ 720	\$ 956,800	NO FISHERY		\$ 1.25	\$ 175,000	NO FISHERY		\$ 380	\$ 489,820	\$ 1,621,700
1979	\$ 1,260	\$ 5,213,880	NO FISHERY		\$ 1.74	\$ 821,280	NO FISHERY		\$ 300	\$ 196,800	\$ 6,231,960
1980	\$ 320	\$ 1,933,760	NO FISHERY		\$ 1.09	\$ 667,080	NO FISHERY		\$ 300	\$ 424,800	\$ 3,025,640
1981	\$ 400	\$ 5,508,000	\$ 580	\$ 135,720	\$ 1.00	\$ 122,000	NO FISHERY		\$ 260	\$ 328,120	\$ 6,093,840
1982	\$ 380	\$ 2,716,240	\$ 640	\$ 251,520	\$ 1.29	\$ 397,320	NO FISHERY		\$ 220	\$ 194,260	\$ 3,559,340
1983	\$ 600	\$ 1,634,400	\$ 1,040	\$ 109,200	\$ 2.10	\$ 634,200	NO FISHERY		\$ 260	\$ 70,980	\$ 2,448,780
1984	\$ 760	\$ 4,435,360	\$ 640	\$ 218,880	NO HARVEST		\$ 3.50	\$ 176,439	\$ 260	\$ 265,460	\$ 5,096,139
1985	\$ 760	\$ 5,380,800	\$ 900	\$ 371,700	\$ 0.48	\$ 19,200	\$ 7.09	\$ 569,058	\$ 250	\$ 279,500	\$ 6,620,258
1986	\$ 820	\$ 8,058,960	\$ 920	\$ 412,160	\$ 1.70	\$ 159,800	\$ 8.00	\$ 1,155,200	\$ 180	\$ 229,680	\$ 10,015,800
1987	\$ 1,100	\$ 5,480,200	\$ 960	\$ 511,680	\$ 1.70	\$ 299,200	\$ 15.00	\$ 1,836,000	\$ 300	\$ 356,700	\$ 8,483,780
1988	\$ 840	\$ 6,600,000	\$ 1,400	\$ 537,000	\$ 1.20	\$ 232,000	\$ 18.00	\$ 4,500,000	\$ 300	\$ 400,590	\$ 12,236,500
1989			SEASON CLOSED						\$ 300	\$ 193,830	\$ 193,830
1990	\$ 640	\$ 5,351,744	\$ 640	\$ 323,456	\$ 0.90	\$ 213,840	\$ 11.40	\$ 2,305,080	\$ 300	\$ 605,130	\$ 8,799,250
1991	\$ 600	\$ 7,153,800	\$ 600	\$ 445,200	\$ 0.80	\$ 172,160	\$ 9.00	\$ 2,880,000	\$ 250	\$ 1,064,625	\$ 11,715,785
1992	\$ 400	\$ 6,713,680	\$ 800	\$ 752,480	\$ 0.46	\$ 232,116	\$ 8.00	\$ 3,875,200	\$ 200	\$ 780,060	\$ 12,353,536
1993	NO HARVEST		\$ 400	\$ 411,960	\$ 0.55	\$ 178,860	\$ 10.00	\$ 2,000,000	\$ 200	\$ 217,400	\$ 2,808,220
1994			SEASON CLOSED								
1995			SEASON CLOSED								
1996			SEASON CLOSED						\$ 200	\$ 187,000	\$ 187,000
1997	\$ 200	\$ 940,600	\$ 80	\$ 14,080	\$ 0.61	\$ 32,000	\$ 8.00	\$ 426,816	\$ 250	\$ 170,000	\$ 1,583,496
1998	\$ 300	\$ 999,000	\$ 375	\$ 156,000	\$ 0.65	\$ 23,000	\$ 5.00	\$ 107,000	\$ 295	\$ 296,000	\$ 1,581,000
1999			SEASON CLOSED					\$ 8.00	\$ 99,000	SEASON CLOSED	

<sup>a</sup> The price per pound for spawn on kelp in pounds is based on the final product weight, not harvest weight.

Appendix G12.—Annual Pacific herring biomass indices for harvest management years 1973–2013.

Harvest management year	Total spring	Aerial survey estimates				Unexploited esc. biomass	Pre-fishery run biomass	Observed peak acoustic biomass estimates		Prior year forecast (tons)
	Use and harvest mortality <sup>a</sup> (tons)	Peak biomass estimate <sup>b</sup> (tons)	Maximum possible observed biomass <sup>c</sup>	Miles of spawn <sup>d</sup>	Mile days of spawn <sup>e</sup>	Age structured analysis <sup>f</sup> (tons)	Age structured analysis <sup>f</sup> (tons)	Fall (tons)	Spring (tons)	
1973–1974	6,375	41,080	107,290	38.5	96.0	ND	ND	ND	ND	ND
1974–1975	5,854	ND	ND	34.2	54.0	ND	ND	ND	ND	ND
1975–1976	2,584	7,330	25,247	32.8	41.2	ND	ND	ND	ND	ND
1976–1977	2,267	16,830	17,460	39.3	78.2	ND	ND	ND	ND	ND
1977–1978	1,391	13,410	36,540	28.7	50.8	ND	ND	ND	ND	ND
1978–1979	4,138	42,100	107,390	54.5	89.0	ND	ND	ND	ND	ND
1979–1980	6,323	62,110	122,050	50.5	95.5	50,106	59,987	ND	ND	ND
1980–1981	14,124	77,810	161,690	85.4	144.0	55,774	74,614	ND	ND	ND
1981–1982	7,861	68,790	97,620	49.0	85.5	51,794	64,565	ND	ND	ND
1982–1983	3,181	41,850	107,710	67.4	93.5 <sup>g</sup>	58,745	67,490	ND	ND	ND
1983–1984	6,604	58,870	158,760	60.1	104.8	69,611	82,430	ND	ND	ND
1984–1985	7,679	20,830	60,954	101.2	156.7	90,022	106,214	ND	ND	ND
1985–1986	11,180	15,180	54,820	72.4	146.8	75,306	93,483	ND	ND	ND
1986–1987	6,281	26,530	52,192	65.3	186.8	74,038	86,777	ND	ND	ND
1987–1988	9,871	34,270	67,175	166.3	269.8	100,503	119,312	ND	ND	43,992
1988–1989	<sup>h</sup>	56,915	186,708	98.4	228.1	111,512	122,921	ND	ND	54,899
1989–1990	10,103	57,900	145,013	94.1	164.4	85,550	104,399	ND	ND	51,692
1990–1991	15,196	42,765	141,375	58.0	71.5	62,226	82,607	ND	ND	96,666
1991–1992	20,752	53,835	130,569	74.7	119.8	66,343	90,825	ND	ND	121,342
1992–1993	2,360	20,725	109,865	20.4	50.3	26,859	31,639	ND	ND	134,133
1993–1994	151	19,640	154,008	14.6	23.1	13,947	15,374	20,998	ND	29,787
1994–1995	0	7,113	20,868	20.4	28.2	14,775	16,287	13,840	14,639	19,009
1995–1996	0	10,691	37,771	27.2	37.3	19,636	21,645	26,776	25,346	24,332
1996–1997	5,170	10,858	57,114	42.7	64.3	25,744	32,821	3,086	44,083	37,599
1997–1998	3,849	13,817	50,124	38.7	62.0	22,065	27,807	ND	19,456	38,640
1998–1999	49	6,366	10,872	25.4	40.7	18,782	20,754	ND	22,397	39,557
1999–2000	0	1,610	2,889	19.5	31.7	14,857	16,377	ND	8,024	23,987

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Harvest management year	Total spring	Aerial survey estimates				Unexploited esc. biomass	Pre-fishery run biomass	Observed peak acoustic biomass estimates		Prior year forecast (tons)
	Use and harvest mortality <sup>a</sup> (tons)	Peak biomass estimate <sup>b</sup> (tons)	Maximum possible observed biomass <sup>c</sup>	Miles of spawn <sup>d</sup>	Mile days of spawn <sup>e</sup>	Age structured analysis <sup>f</sup> (tons)	Age structured analysis <sup>f</sup> (tons)	Fall (tons)	Spring (tons)	
2000–2001	0	587	1,075	16.0	14.8	10,469	10,469	ND	7,035	NA
2001–2002	0	646	1,433	21.5	23.6	11,902	11,902	ND	11,791	NA
2002–2003	0	5,600	8,951	25.2	26.1	16,091	16,091	ND	29,864	NA
2003–2004	0	12,305	17,650	29.7	30.4	19,227	19,227	ND	21,046	NA
2004–2005	0	4,773	5,230	29.9	31.7	13,516	13,516	ND	16,801 <sup>i</sup>	21,064
2005–2006	0	540	609	19.9	21.7	10,393	10,393	ND	7,850 <sup>i</sup>	17,554
2006–2007	0	770	1,615	NA <sup>j</sup>	18.3	11,361	11,361	ND	14,431 <sup>i</sup>	15,830
2007–2008	0	10,700	13,740	NA <sup>j</sup>	33.2	15,220	15,220	ND	22,852 <sup>i</sup>	10,252
2008–2009	0	1,933	2,913	NA <sup>j</sup>	29.8	16,123	16,123	ND	16,815 <sup>i</sup>	17,903
2009–2010	0	4,180	15,160	NA <sup>j</sup>	32.7	17,503	17,503	ND	79,979 <sup>i</sup>	NA <sup>k</sup>
2010–2011	0	7,570	14,380	NA <sup>j</sup>	26.2	15,161	15,161	ND	NA <sup>k</sup>	22,704
2011–2012	0	1,960	7,360	NA <sup>j</sup>	39.3	18,668	18,668	ND	NA <sup>k</sup>	22,397
2012–2013	0	1,720	5,837	NA <sup>j</sup>	29.3	NA	NA	ND	NA <sup>k</sup>	26,095

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

<sup>b</sup> Largest single day aerial estimate of herring biomass in short tons (2,000 lb). Does not include Kayak Island estimates.

<sup>c</sup> The sum of all daily aerial biomass estimates for a given year. Does not include Kayak Island estimates.

<sup>d</sup> Total linear miles of spawn (statute miles).

<sup>e</sup> The sum of the daily observed linear miles of herring spawn was calculated in ArcMap from digitized hand-annotated paper maps and data collected electronically (statute miles). Estimate does not include Kayak Island data.

<sup>f</sup> Unexploited escapement and run biomass estimates from age structured analysis, September 2012.

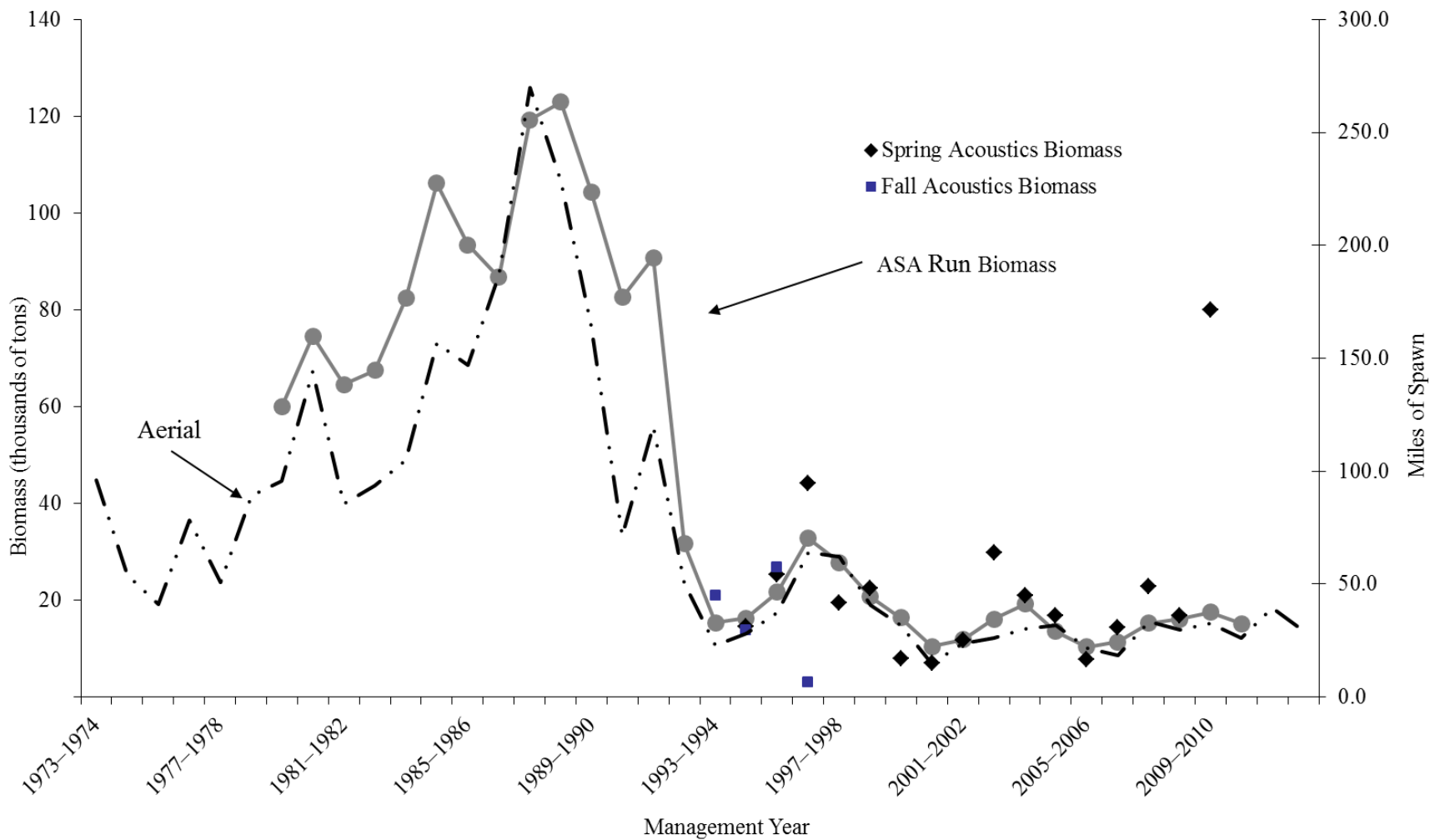
<sup>g</sup> Partial estimate of spawning biomass from feasibility study.

<sup>h</sup> 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.

<sup>i</sup> Acoustics estimates for 2005–2010 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.

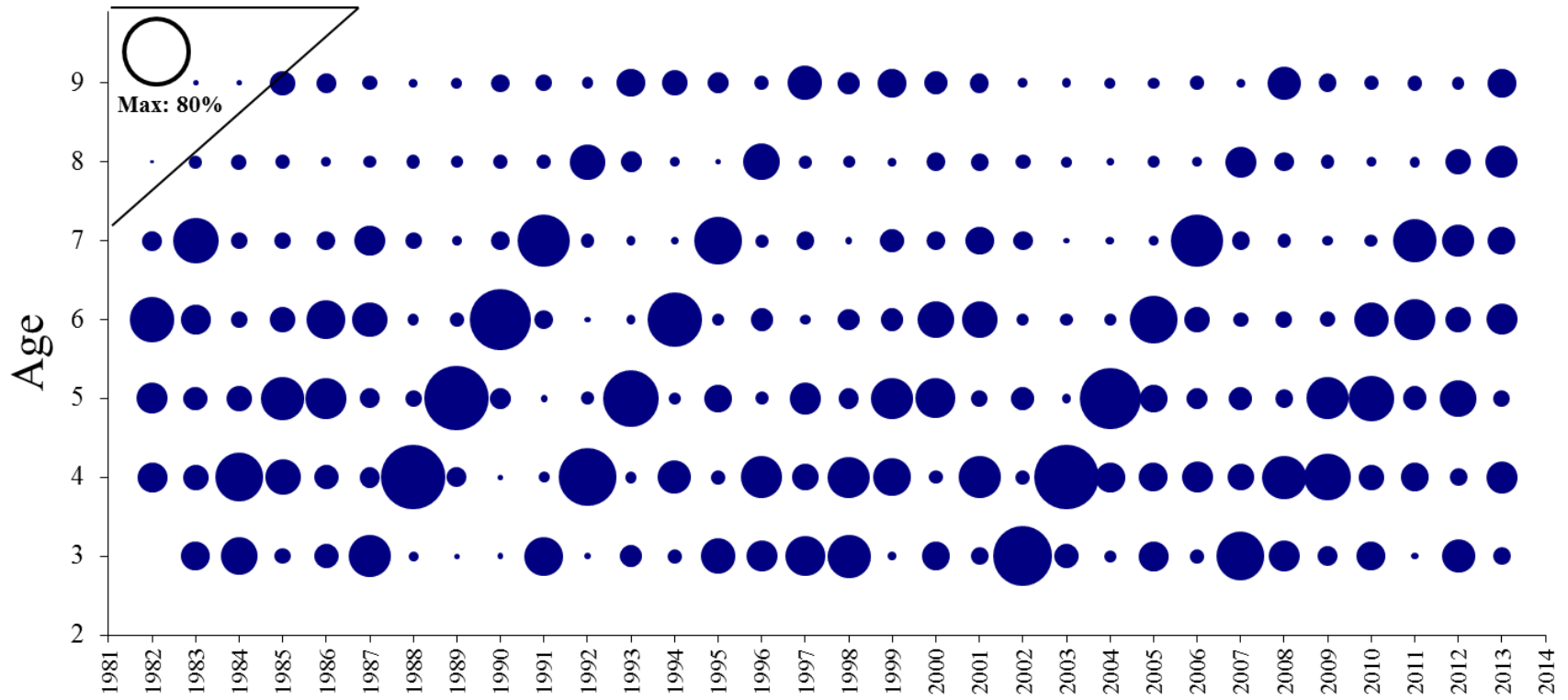
<sup>j</sup> Miles of spawn estimate for 2007–2013 are not available.

<sup>k</sup> Estimates are not available.

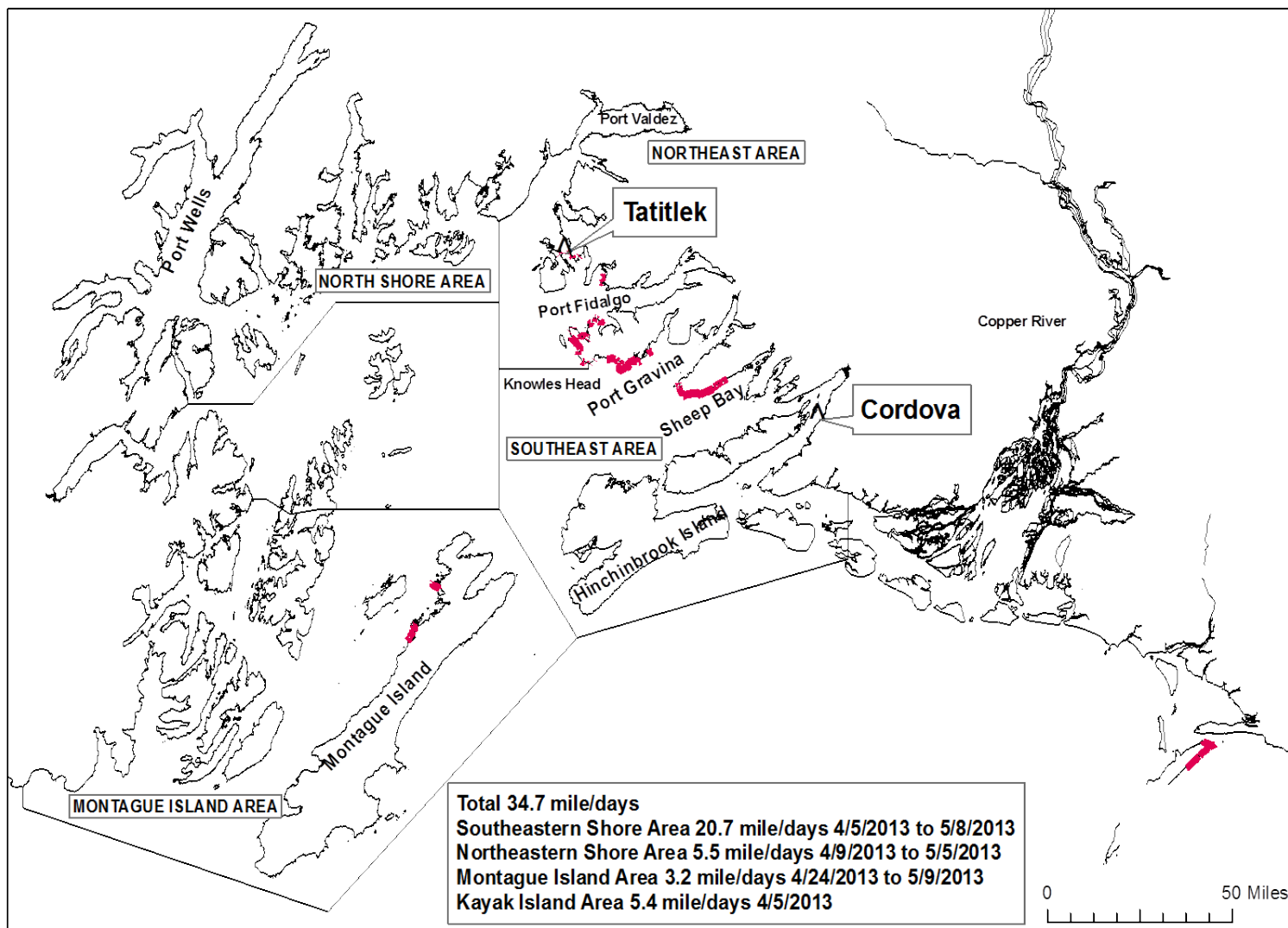


Appendix G13.—Prince William Sound annual Pacific herring biomass indices by management year, 1973–2013, and forecast run biomass from the 2012 ASA model.





Appendix G14.—Pacific herring percentage contribution by number of each age group to the spring run biomass, 1982–2012.



Appendix G15.—Location of spawning herring and miles of spawn observed during aerial surveys in Prince William Sound, 2013.