Fishery Management Report No. 19-23

2018 Lower Cook Inlet Area Finfish Management Report

by

Glenn Hollowell

Edward O. Otis

and

Ethan Ford

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

FISHERY MANAGEMENT REPORT NO. 19-23

2018 LOWER COOK INLET AREA FINFISH MANAGEMENT REPORT

by

Glenn Hollowell, Edward O. Otis, and Ethan Ford
Alaska Department of Fish and Game, Division of Commercial Fisheries, Homer

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

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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone regional peer review.

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Glenn Hollowell, Edward O. Otis, and Ethan Ford,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
3298 Douglas Place, Homer, Alaska 99603, USA

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ABSTRACT

The Lower Cook Inlet consists of all coastal waters and inland drainages entering waters north of Cape Douglas, west of Cape Fairfield, and south of Anchor Point. In 2018, commercial harvest was 2.0 million salmon and was composed of 1.6 million pink *Oncorhynchus gorbuscha*, 370,460 sockeye *O. nerka*, 48,729 chum *O. keta*, 15,387 coho *O. kisutch*, and 381 Chinook salmon *O. tshawytscha*. Approximately 37.9% of the harvest (758,000) salmon were sold as common property harvest, and 1.2 million salmon were sold for hatchery cost recovery, including carcass sales. Homepack and donated fish (5,270 salmon) accounted for less than 1% of the harvest. Based on fish ticket reporting of prices, the preliminary value of the commercial salmon harvest was $7.2 million, including hatchery sales. This amount does not include postseason adjustments, bonuses, etc. During the 2018 season, 19 set gillnet and 20 purse seine permit holders reported deliveries. Set gillnet harvest value was an estimated $305,000, with average permit earnings of $16,051. Purse seine fishery exvessel harvest value was an estimated $2.3 million, with average permit earnings of $112,927. Revenue generated by cost recovery for hatchery operations was approximately $4.6 million. An additional $293,111 was disbursed to Cook Inlet Aquaculture Association from a 2% salmon enhancement tax in Area H. A total of 2,578 salmon were harvested in personal use and subsistence fisheries. Approximately 215 subsistence and personal use permits were issued to Alaska residents, in addition to 1,956 coho salmon landed by sport fish permit holders in a derby in Seward. Although these fish were subsequently sold commercially, they were not included in the total commercial harvest. The commercial Pacific herring *Clupea pallasii* fishery in the Kamishak Bay District remained closed in 2018 for the 17th consecutive year to allow the spawning population to continue rebuilding.

Key words: Pacific salmon *Oncorhynchus* spp., sockeye salmon *O. nerka*, pink salmon *O. gorbuscha*, chum salmon *O. keta*, Chinook salmon *O. tshawytscha*, coho salmon *O. kisutch*, Pacific herring *Clupea pallasii*, harvest, set gillnet, purse seine, commercial salmon harvest, salmon enhancement, hatchery, cost recovery, sport fishery, subsistence fishery, personal use fishery, escapement, Cook Inlet Aquaculture Association CIAA, Lower Cook Inlet, Kamishak Bay, Kachemak Bay, Resurrection Bay, Annual Management Report, AMR

INTRODUCTION

LOWER COOK INLET MANAGEMENT AREA COMMERCIAL SALMON AND HERRING FISHERIES

The Lower Cook Inlet (LCI) comprises waters of the Cook Inlet area south of the latitude of Anchor Point, including the western shore of Cook Inlet south to Cape Douglas, and the eastern shore of Cook Inlet along the Kenai Peninsula to Cape Fairfield. This area is included in Area H and encompasses all coastal waters and inland drainages entering this area (Figure 1).

This salmon management area is divided into 5 districts that correspond to local geography and distribution of the 5 species of Pacific salmon (*Oncorhynchus* spp.) harvested by commercial fisheries (Figure 2). The primary management objective for all districts is to achieve spawning escapement goals for major salmon stocks while allowing orderly fisheries to harvest fish surplus to spawning requirements. In addition, Alaska Department of Fish and Game (ADF&G) follows regulatory guidelines to both manage fisheries and allow private nonprofit hatcheries to achieve cost-recovery and broodstock objectives.

Three hatcheries currently contribute to the area's salmon fisheries. The Trail Lakes Hatchery at Mile 29 of the Seward Highway produces sockeye *O. nerka* and coho salmon *O. kisutch* and is operated by the Cook Inlet Aquaculture Association (CIAA).[1] ADF&G operates the Ship Creek Hatchery Complex near Anchorage that produces Chinook *O. tshawytscha* and coho salmon,

[1] Cook Inlet Aquaculture Association (CIAA) project and hatchery reports provide preliminary data used throughout this report. For more information please contact CIAA or visit the website at: http://www.ciaanet.org/data/project-reports.html.

which are released in the LCI Area. In 2011, the Tutka Bay Lagoon Hatchery (TBLH) once again began incubating pink salmon *O. gorbuscha* eggs for release into Kachemak Bay. In 2015, the Port Graham Hatchery also began incubating pink salmon eggs for release in Kachemak Bay.

Gear utilized in commercial salmon fisheries includes purse seine and set gillnet. Purse seine gear is permitted to fish in the Southern, Outer, Eastern, and Kamishak Bay districts. Set gillnet gear is permitted to fish in the Southern District. The Barren Islands District is closed by regulation to salmon harvest.

When Pacific herring *Clupea pallasii* spawning biomass allows for a commercial fishery in the Kamishak District, annual harvest level ranges are established in regulation (5 AAC 27.465) and divided between the commercial purse seine sac roe fishery in that district (90%) and the Shelikof Strait food and bait fishery (10%) in the Kodiak Management Area. Other districts in LCI were closed to commercial herring harvest by the Alaska Board of Fisheries (BOF) in 2002, pending an increase in stock levels sufficient to ensure that a commercial herring fishery can be conducted in a sustainable manner.

OVERVIEW OF AREAWIDE SALMON AND HERRING FISHERIES

In 2018, the LCI commercial harvest of 2.0 million salmon included 1.6 million pink, 370,460 sockeye, 48,729 chum *O. keta*, 14,544 coho, and 381 Chinook salmon (Table 1; Figure 3). Hatchery runs of sockeye and pink salmon in general were close to forecast at hatchery release sites. Commercial harvests of sockeye, coho, and pink salmon were above the previous 10-year (2008–2017) averages (Table 2). Approximately 39% of the harvest (758,117 fish) was attributed to the common property fishery and 1.2 million fish were harvested for hatchery cost recovery. An additional 11,418 sockeye and 331,169 pink salmon were harvested by hatcheries for broodstock (Appendices F2 and F3). Homepack harvest (1,069 fish) accounted for less than 1% of the commercial harvest from LCI districts (Table 1). The 2018 preliminary exvessel value estimates by gear group from the common property fishery for both wild and enhanced salmon were $2.3 million (88.1%) for purse seine and $304,965 (11.9%) for set gillnet (Table 3; Figure 4). The average price per pound paid to fishermen was generally above the 10-year average for all salmon species (Table 4). The combined harvest value for purse seine and set gillnet in 2018 was $2.6 million, which was above the previous 10-year average of $2.2 million (Table 5). Hatchery harvest in 2018 was estimated at $4.6 million. Of that, $3.1 million were from sockeye salmon sales and much of the remainder from pink salmon sales.

No commercial fisheries for herring occurred in 2018 to allow the population further opportunity to rebuild from historically low abundance (Figure 5).

SALMON SEASON SUMMARY BY DISTRICT

SOUTHERN DISTRICT

The Southern District includes the waters of eastern Cook Inlet south of Anchor Point and north of a line from Cape Elizabeth to Cape Douglas, excluding waters east of a line from Point Adam to the tip of Cape Elizabeth (Figure 6). Commercial fishing in this district is restricted by regulation to waters along the south shore of Kachemak Bay from Chugachik Island near the terminus of Kachemak Bay to Point Bede approximately 4 miles south of the village of Nanwalek (English Bay; Figures 7 and 8). Purse seine gear is permitted in all open waters of this district during periods established by emergency order (EO). Commercial set gillnet harvest is restricted

to approximately 15 miles of shoreline in 5 subdistricts in this district: the east shore of Ismailof Island near Halibut Cove; waters surrounding McDonald Spit extending to Jakolof Bay; waters east of Barabara Point extending approximately 1.4 miles; waters along the west shore of outer Seldovia Bay; and waters of a portion of the south shore of Port Graham and English Bay. Although any Cook Inlet area (Area H) commercial set gillnet permit holder may register to fish in these areas, this registration would preclude that permit holder from fishing in the Northern District and Upper Subdistrict of the Central District for the remainder of that calendar year. Other areas in the "Greater Cook Inlet Area," as defined in 5 AAC 21.345, may be fished in a given year by set gillnet permit holders fishing in the Southern District. The primary target species in this district for both purse seine and set gillnet permit holders are sockeye and pink salmon, although modest numbers of chum and coho salmon are also harvested. The major natural producer of sockeye salmon in this district is the English Bay River. Pink salmon historically have returned in large numbers to Humpy Creek and Seldovia River, as well as numerous smaller streams in the Southern District. Hatchery releases began in 1972, when 241,000 coho and 34,000 Chinook salmon were released into Kasitsna Creek. This was followed by releases of chum and pink salmon into Halibut Cove Lagoon in 1974 and 1975. Sockeye salmon were released into Leisure Lake and Halibut Cove Lagoon in 1976. Since that time, hatchery releases have continued to provide additional salmon harvest opportunities within this district (Appendices F10–F12).

Preseason Outlook and Harvest Strategy

The 2018 commercial wild stock harvest forecast for the Southern District was 37,000 pink and 64,100 sockeye salmon (Appendix H1). The enhanced sockeye salmon run to CIAA release sites was forecast to be 367,716 fish. A total of 1,917,647 hatchery-produced pink salmon were anticipated to return to the LCI Area in 2018 from the 2017 release of 54.2 million fry from Tutka Bay Lagoon and 6.1 million fry from Port Graham Bay (Appendices F5, F7, and F12).

As specified in regulation, the set gillnet fishing season in the Southern District opens on or after June 1 with two 48-hour periods per week unless modified by EO. The seine fishing season and fishing periods are opened and closed by EO, depending on the available harvestable surplus of both wild and hatchery stock salmon. Given that cost-recovery objectives were not anticipated to be met by sockeye salmon returns to Resurrection Bay, all returning hatchery sockeye and pink salmon in excess of broodstock requirements in other areas were anticipated to be required for cost-recovery harvest. Considering recent good runs of sockeye salmon to the Port Graham Subdistrict, the commercial set gillnet fishery opened on June 1.

Early season management of the Southern District (excluding the Port Graham Subdistrict) was based on actual harvest versus anticipated harvest. Port Graham Subdistrict management was based on anticipated run strength versus actual run strength to the English Bay Lakes, as measured by the English Bay River weir. Environmental conditions, fishing effort, and harvest consistency throughout the period were also taken into account. By early July, ground survey estimates of chum and early pink salmon escapement began to weigh more heavily when scheduling commercial fishing periods. These surveys became primary tools in late July and August when management focus shifted to pink salmon in this district.

Season Summary

The 2018 Southern District total sockeye salmon commercial common property harvest, excluding homepack, was 70,403 fish, with 15,157 (21.5%) harvested by the set gillnet fleet and 55,246 harvested by seine permit holders (Appendices A1–A3). In addition, CIAA harvested

68,979 sockeye salmon from the TBLH and China Poot special harvest areas (SHA) for cost recovery and 3,008 for broodstock purposes (Appendix F2). Total common property pink salmon harvest was 528,842 fish, with 472,204 (89.3%) harvested by the seine fleet and 56,638 harvested by set gillnet permit holders. In addition, CIAA harvested 939,967 pink salmon from the Tutka SHA, 57,549 from the Port Graham SHA, and 2 from the China Poot SHA while targeting hatchery sockeye salmon returns at that location (Appendix F3). A total of 316 Chinook salmon were harvested in the Southern District, with 185 harvested by set gillnet permit holders and the remaining by seine permit holders. A total of 5,398 chum salmon were harvested, with 4,232 by set gillnet and 1,166 by seine permit holders. In addition, 4,814 coho salmon were harvested, with 3,067 by set gillnet and 1,747 by seine permit holders (Appendices A1 and A2; Table 1). A total of 61 Chinook, 773 sockeye, 135 coho, 72 pink, and 28 chum salmon were retained by 20 commercial permit holders (12 seine, 10 set gillnet) for personal homepack use from this district and were not sold (Appendix E7; Table 1).

Set gillnet

The Southern District set gillnet commercial fishing season was opened by EO on Friday, June 1 (Table 6). The first 24-hour commercial fishing period was also announced in this EO to begin at 6:00 AM on that date. All subsequent commercial set gillnet fishing periods were 48 hours in length. Weather during the winter of 2017–2018 was cooler than recent years when scant snowfall and frequent above-freezing temperatures were often the norm. In 2018, snow remained on the ground in many areas in the LCI area well into April. Temperatures in May remained cool with moderate amounts of rain. Pink salmon at the TBLH remained in the gravel until early May, and releases of fed fry from net pens occurred from May 27 through June 1. In contrast, pink salmon were moved into net pens in mid-April in 2016 (Hollowell et al. 2017). Adult salmon weir passage at the English Bay River was later than recent years as well, and no sockeye salmon were counted prior to June 3 (Appendices A4 and A5; Hollowell et al. 2017).

Harvest from the 24-hour Friday, June 1, fishing period was lackluster, with 4 permit holders delivering 6 Chinook, 101 sockeye, and 1 chum salmon. Harvests from the 2 periods in statistical week 23 (June 3–9; Table 7) combined was 367 sockeye, 17 Chinook, and 10 chum salmon. Otoliths collected from sockeye salmon during this week were 30.0% thermal marked (Appendix F25). Cool and overcast conditions continued until mid-June. This resulted in good water flow in many streams and allowed consistent early season salmon passage. Prior to June 16, a total of 697 sockeye salmon had been counted at the English Bay weir versus an anticipated range of 835–1,878 by this date to achieve the sustainable escapement goal (SEG) on July 31 (Appendix A4).

Harvests from the 2 fishing periods that occurred in statistical week 24 (June 10–16) only slightly increased from the previous week, with 744 sockeye, 30 Chinook, and 93 chum salmon reported (Appendix A1). Sockeye salmon otoliths collected during this statistical week were 14.1% thermal marked (Appendix F25). The weather warmed significantly during this week, with daily temperatures in the high 60s and sunny skies.

Warming weather, consistent rainfall, and big tides during the latter part of statistical week 25 (June 17–23) allowed sockeye salmon passage at the English Bay weir to increase, with 2,290 passed by June 23. This was within the anticipated range of passage (1,721–3,872) for this date to achieve the SEG on July 31. Harvest during statistical week 25 was 37 Chinook, 1,174 sockeye,

and 402 chum salmon. Otoliths collected from sockeye salmon were 17.6% thermal marked (Appendix F25).

Sockeye salmon passage through the English Bay weir during statistical week 26 (June 24–30) declined with only 2,981 fish passed by the end of this week. This was below the anticipated level required to achieve the SEG range on July 31 (3,291–7,405; Appendix A4). Consequently, commercial set gillnet harvest in the Port Graham Subdistrict was suspended until further notice at the conclusion of the fishing period on Saturday, June 30. Harvest from statistical week 26 was 39 Chinook, 2,546 sockeye, and 604 chum salmon. Otoliths collected from sockeye salmon were 18.0% thermal marked (Appendix F25).

Weir passage improved markedly the following week with a total of 8,343 sockeye salmon counted during statistical week 27 (July 1–7). This is above the minimum SEG of 6,000 fish. Consequently, commercial set gillnet harvest was reopened on Thursday, July 5, in the Port Graham Subdistrict. Total commercial set gillnet harvest from the Southern District during statistical week 27 was 22 Chinook, 2,618 sockeye, 807 chum, and 1,594 pink salmon. Otoliths collected from sockeye salmon were 21.6% thermal marked (Appendix F25).

Harvest during statistical week 28 (July 8–14) was 22 Chinook, 2,649 sockeye, 670 coho, 5,045 pink, and 785 chum salmon (Appendix A1). Otoliths sampled from sockeye salmon were 18.0% thermal marked (Appendix F25). Weir passage through July 14 was 11,754 sockeye salmon and was within the range of 5,304–11,935 fish for this date to achieve the SEG for this system (Appendix A4).

Harvest during statistical week 29 (July 15–21) was 8 Chinook, 2,869 sockeye, 1,121 coho, 11,038 pink, and 824 chum salmon (Appendix A1). Otoliths collected from sockeye salmon were 7.7% thermal marked (Appendix F25). Otoliths from pink salmon were 39.6% thermal marked (Appendix F35). Sockeye salmon passage at the English Bay River weir through July 21 was 16,925 fish (Appendix A4) which was in excess of the upper end of the SEG range for this system of 6,000–13,500 (Table 8).

Harvest from statistical week 30 (July 22–28) was 3 Chinook, 1,134 sockeye, 489 coho, 15,118 pink, and 369 chum salmon (Appendix A1). Otoliths sampled from sockeye salmon during this week were 27.0% thermal marked (Appendix F25). Otoliths sampled from pink salmon were 63.0% thermal marked (Appendix F35). Final passage at the English Bay weir through July 31 was 18,804 sockeye salmon, which was above the SEG range of 6,000–13,500.

Harvest from statistical week 31 (July 29–August 4) was 1 Chinook, 569 sockeye, 222 coho, 15,313 pink, and 222 chum salmon (Appendix A1). Otoliths from sockeye salmon recovered during this statistical week were 16.8% thermal marked (Appendix F25). Otoliths collected from pink salmon were 48.4% thermal marked (Appendix F35). Participation in the set gillnet fishery declined during statistical weeks 32–34 with fewer than 3 permit holders reporting deliveries each week. Harvests numbers associated with these deliveries is confidential. The commercial set gillnet salmon season was closed by regulation on October 1. Overall, the level of thermal-marked otoliths in samples collected in 2018 was 17.8% for sockeye (Appendix F25) and 50.3% for pink salmon (Appendix F35). Levels of thermal-marked sockeye and pink salmon identified in previous years in the commercial set gillnet harvest are documented in Appendices F20–F24, and F34.

Purse seine

The Southern District commercial purse seine season was opened by EO on Monday, June 18, with a fishing schedule of 3 weekly 16-hour periods (6:00 AM to 10:00 PM) on Mondays, Wednesdays, and Fridays in portions of the district east of McDonald Spit (Table 6).

Harvest from statistical week 25 (June 17–23) was 49 Chinook, 2,149 sockeye, 1 coho, 3 pink, and 47 chum salmon, with 7 permits making deliveries (Appendix A2). Both the Hazel Lake and China Poot SHAs were open for these periods; the Tutka SHA remained closed. Otoliths collected from sockeye salmon were 58.3% thermal marked (Appendix F29).

Seine harvest from statistical week 26 (June 24–June 30) was 44 Chinook, 6,998 sockeye, 41 pink, and 259 chum salmon (Appendix A2); otoliths collected were 81.7% thermal marked.

Harvest from statistical week 27 (July 1–7) was 33 Chinook, 13,632 sockeye, 40 coho, 1,863 pink, and 116 chum salmon (Appendix A2). Open areas for this gear in the Southern District remained unchanged from previous weeks except waters in the China Poot SHA were closed beginning Monday, July 2, and waters of the Hazel Lake SHA were closed beginning Friday, July 6. Otoliths collected from sockeye salmon were 78.2% thermal marked (Appendix F29).

Harvest from statistical week 28 (July 8–14) was 2 Chinook, 16,550 sockeye, 584 coho, 22,593 pink, and 157 chum salmon (Appendix A2). Areas open to commercial purse seine harvest remained unchanged from the previous week. Sockeye salmon otoliths collected were 44.0% thermal marked (Appendix F29). Pink salmon otoliths collected were 81.3% thermal marked (Appendix F39).

Harvest from statistical week 29 (July 15–21) was 2 Chinook, 9,404 sockeye, 494 coho, 22,546 pink, and 159 chum salmon (Appendix A2). Otoliths collected from sockeye salmon were 54.0% thermal marked (Appendix F29). Pink salmon otoliths collected were 87.0% thermal marked (Appendix F39). Open waters remained the same in the Southern District for this gear in statistical week 29.

Harvest from statistical week 30 (July 22–28) was 1,380 sockeye, 93 coho, 28,085 pink, and 59 chum salmon (Appendix A2). Otoliths collected from sockeye salmon were 31.6% thermal marked (Appendix F29). This was the last week of sockeye salmon otolith sampling in this fishery. Pink salmon otoliths collected were 87.9% thermal marked (Appendix F39). Open areas during this statistical week remained essentially the same with only the China Poot SHA opening on Wednesday, July 25, to harvest the remaining sockeye salmon returning to China Poot Lake. Prior to this (July 2–24), the China Poot SHA was open to hatchery cost-recovery harvest exclusively. In addition, the closed waters area defined in 5AAC 21.350(d)(2) was open for a 16-hour fishing period for cost recovery. This area is just offshore of the China Poot personal use dip net fishery (5 AAC 77.545). This fishery targets hatchery-produced sockeye salmon returning to China Poot Creek. ADF&G concerns about pink salmon escapement to China Poot Creek is a primary reason that the closed waters area in China Poot Bay remain closed to cost-recovery harvest and are not opened to common property commercial harvest. This creek has an SEG of 2,500–6,300 pink salmon. The SEG was not met in 2017 or 2018 (Table 8). The personal use dip net fishery at China Poot Creek was determined to be a more effective means of harvesting the tail end of the enhanced sockeye salmon run with minimal impact on the pink salmon run. Most harvest effort in this week was focused in the Eldred Passage area, where sockeye salmon returns to the Tutka and nearby Hazel and China Poot Lake SHAs are targeted.

Harvest from statistical week 31 (July 29–August 4) was 1 Chinook, 854 sockeye, 97 coho, 106,839 pink, and 175 chum salmon (Appendix A2). The Humpy Creek Subdistrict opened on Monday, July 30, with anadromous stream closures relaxed (Table 6). This system has been prone to overescapement given the steeply sloped bathymetric profile of the area immediately offshore of Humpy Creek. Fishery managers in 1975, 1979, and 1981 directed staff to construct inseason weirs on this creek to slow pink salmon returns and allow further harvest opportunity. Managers reported in several years that the pink salmon "literally smashed down the fence on subsequent flood tides" (Schroeder and Kyle 1985). In addition, waters of the Port Graham Subdistrict also opened on Monday, July 30, and on Wednesday, August 1. The Port Graham Hatchery SHA remained closed. Otoliths collected from pink salmon were 86.9% thermal marked (Appendix F39).

Harvest from statistical week 32 (August 5–11) was 479 sockeye, 184 coho, 140,249 pink, and 141 chum salmon (Appendix A2). Pink salmon otoliths collected were 50.4% thermal marked (Appendix F39). On Friday, August 10, the Tutka SHA excluding waters southwest of a line from Seastar Point (lat 59°26.15′N, long 151°22.76′W) to the base of the powerline tower on the western shore of Tutka Bay opened to commercial common property fishing. In addition, waters of the Port Graham Subdistrict west of USCG day beacon #6 and waters south of lat 59°20.83′N were also open from 6:00 AM to 10:00 PM on Friday, August 10.

Harvest from statistical week 33 (August 12–18) was 586 sockeye, 34 coho, 25,124 pink, and 47 chum salmon (Appendix A2), with the bulk of these fish harvested from the Tutka SHA. Pink salmon otoliths collected were 84.5% thermal marked (Appendix F39). In addition, the outer portion of the Port Graham Subdistrict exclusive of the SHA was opened to commercial common property harvest concurrent with the ongoing Monday, Wednesday, and Friday schedule of 6:00 AM to 10:00 PM fishing periods.

Harvest from statistical week 34 (August 19–25) was 2 sockeye, 126 coho, 121,641 pink, and 5 chum salmon (Appendix A2). Commercial purse seine harvest opportunity remained similar to the previous week, but the waters of the Seldovia Subdistrict and the Port Graham Hatchery SHA (excluding waters near the net pens) were added.

There was no reported harvest from statistical week 35.

Harvest from statistical week 36 was 3,212 sockeye, 95 coho, 3,220 pink and 1 chum salmon. Pink salmon otoliths collected were 94.6% thermal marked (Appendix F39). There were no further commercial purse seine deliveries reported from the Southern District in 2018 (Appendix A2; Table 6).

Overall, the level of thermally marked fish in samples collected in 2018 in the commercial common property purse seine harvest was 66.7% for sockeye and 78.6% for pink salmon. Levels of thermally marked salmon identified in previous years in this fishery are documented in Appendices F26–F28 and F36–F38.

Escapement

Of the 6 pink salmon index streams in the Southern District, 5 had final escapement estimates that were above the SEG ranges (Humpy Creek, Tutka Lagoon Creek, Barabara Creek, Port Graham River, and the Seldovia River), while 1 fell below the assigned SEG range (China Poot Creek). The only chum salmon SEG in the Southern District is for the Port Graham River. The final chum salmon escapement in this system was above the SEG range (Appendices A7 and A8; Table 8).

The final spawning escapement for the English Bay River was 18,804 sockeye salmon, which was above the SEG range of 6,000–13,500 (Table 8). The 10-year average spawning escapement was 10,777 sockeye salmon for this system (Appendix A6).

Summary

The total 2018 Southern District common property commercial harvest of 70,403 sockeye salmon was above the 10-year average harvest of 56,897 and above the anticipated wild-only harvest of 64,100 (Appendices A3 and H1). The pink salmon commercial common property harvest of 528,842 was above the anticipated wild-only harvest of 37,000, and also above the 10-year average harvest of 98,803 (Appendix A3).

OUTER DISTRICT

The Outer District includes the waters of LCI along the Kenai Peninsula south and east of a line from Point Adam to Cape Elizabeth, and east of the longitude of Cape Elizabeth to the longitude of Aligo Point, which is 35 miles southwest of Seward (Figures 1, 2, and 9–12). Purse seine gear is permitted in all open waters of this district during periods established by EO. Historically, the primary target species have been sockeye and pink salmon. The major natural producers of sockeye salmon in this district are Delight, Desire, and Delusion lakes. All 3 of these lakes were reported to have been glaciated in the early part of the 20th century, with the McCarty Glacier terminus stretching from James Lagoon on the west to McCarty Lagoon on the east (Cook and Norris 1998, page 251). Pink salmon return in large numbers to Rocky, Port Dick, and Windy bays, as well as several smaller systems. In addition, chum salmon are regularly harvested from Dogfish Lagoon and Port Dick. There have been a few historical releases of hatchery sockeye salmon into this district, but none in recent years (Appendix F10).

Preseason Outlook and Harvest Strategy

The 2018 commercial wild stock harvest forecast for the Outer District was 5,100 sockeye and 95,800 pink salmon (Appendix H1). As specified in regulation, the seine fishing season and periods are opened and closed by EO depending on the available harvestable surplus of wild stock salmon returning to spawning systems in the Outer District.

Historically, management of commercial sockeye, pink, and chum salmon fisheries in this district have relied heavily on aerial and ground surveys of major spawning systems for those species. From 1997 to 2014, daily monitoring of sockeye salmon returning to Delight Lake was conducted using a picket weir staffed by ADF&G field personnel. Funding for the weir was cut in 2015 and escapement monitoring through 2017 was conducted using aerial surveys. However, in 2018, CIAA staffed the weir and provided daily inseason escapement counts to ADF&G fishery managers in Homer. Typically, sockeye salmon runs to this lake, as well as to Desire and Delusion lakes, peak in late July. Escapement into these lakes is frequently driven by rain events, with weeks of limited passage followed by a significant spike in escapement as the result of increased water volume in the lake outflow. By early August, chum and pink salmon runs to this district may increase to harvestable levels.

Season Summary

The weir at Delight Lake was installed on July 3. An aerial survey of the lake prior to weir installation (July 2) counted 200 sockeye salmon. The SEG for this system established at the 2016 BOF meeting using the 3-tier Percentile Approach (Clark et al. 2014) is 5,100–10,600 fish

(Otis et al. 2016a) and was calibrated to aerial surveys, which is a less efficient method of enumerating salmon than weirs. When functioning, weirs essentially provide a census of all fish entering a system. The SEG previously used when the weir was in place was 7,500–17,650 fish. That goal was calibrated to weir counts and it is a more appropriate escapement goal during years when the weir is used to monitor escapement (Otis et al. 2010a), so it was used to manage the Delight Lake fishery in 2018. If the weir continues to be operated, this weir-based goal may need to be updated using the 3-tier Percentile Approach (Clark et al. 2014) to be consistent with other LCI goals (Otis et al. 2016a). Weir passage through July 7 was modest with only 385 fish counted; however, passage increased the following week with 3,597 counted through the weir prior to Friday, July 13. The anticipated percent of the total return through the weir on this date is 20.2%. When this value was applied to the 2018 weir passage, an anticipated total run estimate of 17,800 fish was above the upper bound of the weir-based SEG range.

Portions of the Outer District in the Delight and Desire lake areas were opened to commercial common property salmon harvest beginning on Saturday, July 14, and Sunday, July 15. This was followed by a 7-days-per-week daily schedule of 6:00 AM to 10:00 PM openings that continued through September when the season closed. Although significant commercial fishing opportunity was provided in this area in 2018, fewer than 3 permit holders reported deliveries from this area, consequentially harvest numbers are confidential.

Western portions of the Outer District opened on Monday, July 16, on a schedule of Monday, Wednesday, and Friday 6:00 AM to 10:00 PM fishing periods. Harvest from statistical week 29 (July 15–21) was 1,398 sockeye, 2,377 pink and 12,145 chum salmon with 7 permit holders reporting deliveries. Ground surveys of Dogfish Bay Lagoon documented good numbers of chum salmon in lagoon creeks, and aerial surveys were showing large numbers of chum and pink salmon holding in the lagoon. Dogfish Bay Lagoon is defined in regulation as closed waters, (5 AAC 21.350(f)(5)). Waters of Dogfish Bay Lagoon west of long 151°50.75′W were opened by EO on Friday, July 20, for a single 16-hour fishing period. Tides on that date were modest. This was intended to keep salmon spread throughout the lagoon, allowing approximately half of the fish in the lagoon to be harvested in the waters open to commercial harvest and the other half left unharvested in waters that remained closed.

Harvest from statistical week 30 (July 22–28) was 1 Chinook, 7 sockeye, 1 coho, 4,304 pink, and 12,402 chum salmon (Appendix B1). Waters of the Rocky Bay Subdistrict opened on a Monday, Wednesday, and Friday schedule with Dogfish Bay (excluding the lagoon) remaining open. Waters of the East Nuka Subdistrict remained open 7 days per week. The following week (July 29−August 4), the Windy Bay Subdistrict was opened on a schedule of Monday, Wednesday, and Friday fishing periods concurrent with Dogfish Bay and Rocky Bay.

Harvest from statistical week 31 was 1 Chinook, 4 sockeye, 4 coho, 8,019 pink, and 3,374 chum salmon.

There was no harvest from statistical week 32 (August 5–11). There were no changes to fishing time or areas open.

Harvest from statistical week 33 (August 12–18) was 17,626 pink and 6,936 chum salmon (Appendix B1). All harvest from this week occurred from the Dogfish Bay Subdistrict where the lagoon was opened for a single fishing period on Friday, August 17. There were no further deliveries from the Outer Subdistrict in 2018. On August 24, waters of the Port Chatham Subdistrict were opened on a schedule of Monday, Wednesday, and Friday fishing periods

concurrent with periods in the Dogfish Bay, Rocky Bay, and Windy Bay subdistricts. The East Nuka Subdistrict remained open on a 7-day-per-week schedule of daily 16-hour fishing periods. This schedule of fishing periods and open areas remained in effect until September 30 when the season was closed by EO.

Of the 9 pink salmon index streams in the Outer District monitored for escapement levels, 3 were within SEG ranges (Windy Left Creek, Windy Right Creek, Desire Lake), 3 exceeded their SEG range (Dogfish Bay Lagoon, Port Chatham, and Port Dick Creek) and 3 failed to meet the minimum SEG range (Rocky River, Island Creek, and South Nuka Creek). There are 4 chum salmon index streams with SEGs in the Outer District. Of these, 1 was above the SEG range (Rocky River), 1 was within its SEG range (Dogfish Bay Lagoon), and 2 were below assigned SEG ranges, (Port Dick Creek and Island Creek). There are 2 sockeye salmon index systems in the Outer District (Delight Lake and Desire Lake). Both systems were within their respective SEG ranges. The range for Desire Lake is calibrated for aerial surveys and was modified at the 2016 BOF meeting using the 3-tier Percentile Approach (Clark et al. 2014; Otis et al. 2016a). At that time, the aerial survey-based goal for Delight Lake (5,100–10,600) was adjusted as well. The SEG used in 2018 (7,500–17,650) to manage Delight Lake sockeye salmon returns, as measured by a weir, was the historic weir-based goal that was established in 2010 (Otis et al. 2010a; Table 8; Appendices B3–B6).

A total of 11 permits reported deliveries from the Outer District in 2018 (below the 10-year annual average of 14 permits). Although adequate harvest opportunity was provided to the fleet to fish regularly in the Outer District, good hatchery returns of pink salmon to the Southern District resulted in many fishermen electing to stay close to Homer and harvest those returns.

Total harvest from this district was 2 Chinook, 1,409 sockeye, 5 coho, 32,326 pink, and 34,857 chum salmon (Appendix B2; Table 1). In addition, 3 Chinook salmon were reported on fish tickets as having been retained for homepack use. Overall, the harvest of all species of salmon in the Outer District was below anticipated levels (Appendix H1).

EASTERN DISTRICT

The Eastern District includes all state waters of the Gulf of Alaska between the longitudes of Aligo Point and Cape Fairfield (Figures 1, 2, and 13). Purse seine gear is permitted in all open waters of this district during periods established by EO. Historically, the primary target species have been sockeye and pink salmon with commercial harvests occurring irregularly (Appendix C2). Harvests of chum salmon were larger in this district during the 1980s. The natural producers of sockeye salmon in this district have historically been Bear and Aialik lakes. Sockeye salmon production in Aialik Lake is a relatively recent event because this lake was covered by the Pedersen Glacier as late as 1909 (Cook and Norris 1998). Beginning in 1990, CIAA began supplementing natural production in Resurrection Bay by releasing up to 3.4 million sockeye salmon juveniles into Bear Lake, and 1.3–1.7 million sockeye salmon into Resurrection Bay in some years since 2008 (Appendix F10).

Pink salmon production in the Eastern District has been the result of natural spawning, excluding the years when 48,000 (1999) and 24,000 (2000) pink salmon fry were released by the Alaska Sea Life Center into Resurrection Bay (Appendix F12). The largest pink salmon producers in this district are Salmon Creek, with a 10-year (1980–1989) average escapement of 4,500, and Bear Creek, with a 10-year (1997–2006) average escapement of 11,800. In addition, Thumb Cove and Humpy Cove together produced an average of 10,500 pink salmon per year (1997–2006;

Appendix C9). Ground surveys of this area in recent years have been curtailed due to budgetary constraints and historically low runs to this area (Appendix C9).

Since the early 1960s, coho salmon production in Resurrection Bay has been supplemented by enhancement efforts. Historically, commercial harvests of this species in the Eastern District were minimal (Appendix C2). In 1966, commercial harvest of coho salmon north of a line from Cape Resurrection to Callisto Head was prohibited, and in 1968 this regulatory line was moved south to its current position at Aialik Cape. Beginning in 1985, with the start of hatchery releases of Chinook salmon in the Seward area (Appendix F9), commercial harvest of this species north of a line from Cape Resurrection to Aialik Cape was prohibited. In addition, since 1989 the *Resurrection Bay Salmon Management Plan* (5 AAC 21.376) directed commercial fishery managers to conduct those fisheries in a manner that does not interfere with recreational fisheries for enhanced Chinook and coho salmon in Resurrection Bay. Consequently, the majority of coho salmon in this area have been harvested by sport users, and runs of pink and chum salmon have generally been insufficient to target for commercial harvest. Since 1956, the Seward Chamber of Commerce has conducted a fishing derby that focuses on enhanced and wild coho salmon returning to local spawning systems at the head of Resurrection Bay. Beginning in 1990, coho salmon harvested by participants in the derby have been sold commercially by the Chamber of Commerce to a local processor as a fundraiser for that organization (Appendix C2).

Preseason Outlook and Harvest Strategy

The 2018 enhanced sockeye salmon run to CIAA release sites in Resurrection Bay was forecast to be 199,727 fish (Appendix H1). As specified in regulation, the seine fishing season and fishing periods are opened and closed by EO, depending on the available harvestable surplus of both wild stock and enhanced salmon returning to the Eastern District. CIAA announced preseason that the majority of the sockeye salmon run anticipated to return to Resurrection Bay release sites would be required to meet corporate cost-recovery harvest and broodstock needs. Early season management of the Eastern District is based on actual harvest versus anticipated harvest, as well as passage at the Bear Creek weir, which is located 8 km (5 miles) from saltwater (Figure 13). Beginning in July, management is based on aerial surveys of sockeye salmon runs to Aialik Lake. Historically, runs of pink and chum salmon to this district have been below the level required to support consistent and sustainable commercial harvests.

Season Summary

The total 2018 Eastern District sockeye salmon commercial common property harvest was 22,310 fish harvested by 5 permit holders. CIAA harvested 129,444 sockeye salmon for cost recovery from Resurrection Bay, and 28,983 more at the Bear Lake weir (Appendix F2). An additional 2,924 excess sockeye (Appendix C3 and F2) and 1,277 coho salmon (Appendix F4) were donated to members of the public at the Bear Creek weir.

The Bear Lake SHA opened by regulation to corporate cost-recovery harvest and broodstock collection at 6:00 AM on May 15. Although the first delivery did not occur until May 27, sockeye salmon began arriving at the Bear Creek weir on May 25. By May 31, only 82 fish were counted versus an anticipated minimum of 292 fish past the weir by this date (Appendices C3 and C4). Cost recovery from saltwater was completed on June 17 with 129,444 fish harvested. Given the smaller-than-anticipated return to the Copper River in mid-May, sockeye salmon prices were higher than anticipated early in the season with a total harvest value of $2.2 million versus a preseason anticipated value of $1.8 million. Following this, common property fishing periods were

established beginning Monday, June 18, on a Monday through Friday schedule of 6:00 AM to 10:00 PM fishing periods. Deliveries of hatchery-produced sockeye salmon continued through July 5 (Appendix C1). The 2,924 sockeye salmon that arrived at the weir in an unmarketable condition, or were too few in number to warrant commercial sale, were donated to members of the public (Appendices C3 and F2).

Final passage into Bear Lake was 12,779 (Appendices C3 and C4) sockeye salmon with 2,211 harvested for broodstock (Appendix F2). The remaining 10,568 fish were allowed to spawn naturally in the lake. This escapement was above the SEG range of 700–8,300 (Table 8), and above the 10-year spawning escapement average of 9,216 (Appendix C7).

A total of 300 coho salmon passed through the Bear Lake weir in 2018 (Appendices C5 and C6). An additional 456 were harvested at the weir for CIAA and ADF&G broodstock and 1,277 were donated to members of the public (Appendix F4).

In 2018, poor weather conditions, combined with pilot unavailability and time constraints, resulted in 5 aerial surveys of Aialik Lake. Turbidity in the lake, although diminished from previous years, continued to occlude visibility. Despite this, sockeye salmon were counted in the lake with a peak count of 2,620 fish on August 4 (Appendix C8). This was below the SEG range of 3,200–5,400 for this system (Table 8). Aialik Lake has failed to meet its SEG in 8 of the previous 10 years (Appendix C9).[2]

A total of 1,956 coho salmon were donated to the Seward Chamber of Commerce by sport users participating in the annual silver salmon derby; these fish were sold to local processors to benefit the Chamber (Appendix C2).

KAMISHAK BAY DISTRICT

The Kamishak Bay District includes all state waters on the west side of Cook Inlet south of the latitude of Anchor Point and north of a line from Cape Douglas to Elizabeth Island (Figures 1, 2, and 14–16). Purse seine gear is permitted in all open waters of this district during periods established by EO. Historically, the primary naturally occurring target species have been chum, sockeye, and pink salmon. From 1981 to 2010, the average harvest was 67,000 pink, 52,000 chum, and 55,000 sockeye salmon (Appendix D2). In addition to sockeye salmon releases at Chenik Lake from 1978 to 1996 (Appendix F10), pink salmon were also released into Paint River from 1980 to 1983, and in 2015, 1.0 million pink salmon fry were released into Paint River (Appendix F12). The major natural producers of pink salmon in this district have been the Bruin River, Sunday Creek, and Brown's Peak Creek. Major chum salmon producers have been the Big Kamishak and Little Kamishak rivers, as well as Cottonwood Creek and the McNeil River (Appendix D10). In addition, numerous other rivers and streams have periodically produced respectable pink and chum salmon runs.

From 1970 to 1980, Mikfik Lake was the largest single producer of sockeye salmon in this district with an average annual run of 6,600. The second largest producer, Chenik Lake, had an average run of 3,800 sockeye salmon during this period, Amakdedori Creek had an average run of 1,200, and the Kamishak rivers had an average run of 1,300. Generally, runs to Chenik Lake increased while the lake was enhanced (1978–1996; Appendix F10) and average harvests were 54,200 sockeye salmon per year from 1983 to 1993 (Appendix F15). However, there were years

[2] The SEG was 3,700–8,000 prior to 2017.

when escapement dropped below 1,000 fish (Appendix D10), possibly because overstocking resulted in an infectious hematopoietic necrosis virus outbreak (Follett and Burton 1995). Stocking of Chenik Lake was curtailed in 1996 and the population recovered quickly without further enhancement (Appendix D10). The large runs experienced since 2002 have derived entirely from natural production. Average annual escapement (1981–2010) to Mikfik Lake was 11,100, escapement to Chenik Lake was 8,700, escapement to nearby Amakdedori Creek was 2,700, and escapement to Kamishak rivers increased slightly to 1,800 (Appendix D10). Kirschner Lake has been stocked regularly with sockeye salmon since 1987 (Appendix F10), resulting in annual commercial harvests consistently exceeding 20,000 fish (Appendix F16). Hatchery sockeye salmon were also released from 1986 to 1996 at several other smaller systems in this district, albeit with poor success (Appendix F10).

Preseason Outlook and Harvest Strategy

The 2018 commercial wild stock harvest forecast for the Kamishak Bay District was 38,500 sockeye, 10,500 chum, and 7,200 pink salmon (Appendix H1). The enhanced CIAA sockeye salmon run to Kirschner Lake was forecast to be 44,600 fish (Appendix F1). As specified in regulation, the fishing season in the Kamishak Bay District opens from June 1 until closed by EO. Historically, the Kamishak District has been opened for extended 7-day periods, with specific areas closed as needed by EO to address anticipated escapement shortfalls (e.g., McNeil River chum salmon) or to allow for hatchery cost-recovery harvest. CIAA announced preseason that all of the sockeye salmon anticipated to return to the Kirschner Lake release site would probably be required to meet cost-recovery goals. Early-season management of the Kamishak Bay District is based on actual harvest versus anticipated harvest as well as escapement past the Mikfik Lake and Chenik Lake video monitoring sites. In addition, aerial surveys are flown, weather permitting, to monitor sockeye and chum salmon escapement to index streams and to recover recording media from video monitoring sites for inseason review in the Homer office. Beginning in July, management is also based on aerial surveys of pink and chum salmon runs to spawning systems in this district. Aerial surveys continued into late August and September to monitor progress of coho salmon runs to select streams in this district.

Season Summary

The total 2018 Kamishak Bay District commercial common property harvest was 33,699 sockeye, 8,298 chum, 9,077 coho, and 5,226 pink salmon harvested by 7 seine permit holders (Appendices D1 and D2; Table 1).

Waters of the Kamishak Bay District opened to commercial common property harvest on Friday, June 1, on a schedule of Monday through Sunday fishing periods, 24 hours per day. On June 18, waters of the Paint River and McNeil River subdistricts were closed to commercial harvest to prevent interception of chum salmon returning to the McNeil River (Table 6), which were designated as a *stock of concern* at the 2016 BOF meeting (Otis et al. 2016b). Additionally, on June 18, ADF&G opened the waters of Chenik Lagoon up to the freshwaters of Chenik Creek. In recent years this system had sockeye salmon escapements in the upper end or above the SEG (Appendix D10). Escapement past the video monitoring station and into Chenik Lake was similar in numbers and timing to that seen in recent years with fewer than anticipated fish in the early portion of the return. Beginning July 13, commercial harvest from Chenik Lagoon was restricted and these waters were closed. Weir passage through July 11 was 310 sockeye salmon versus an anticipated passage of 2,425 for that date. Harvest prior to this was confidential; fewer than

3 permit holders reported deliveries. Chenik Lagoon was reopened on August 4 following the video documentation of 4,766 fish entering the lake. This was within the SEG range of 2,900–13,700 fish.

Similar to recent years, managing other areas of the Kamishak District has been uneventful compared to managing the Chenik sockeye salmon return. The Kirschner Lake SHA was closed to common property harvest on June 19 and reopened on August 4. Total CIAA cost-recovery harvest during this time was 11,536 sockeye salmon (Appendices F1 and F2). An additional 95 pink and 6 chum salmon were harvested in the SHA and were sold for cost recovery.

Given the difficulty of fishing in the Kamishak District, combined with the good hatchery pink and sockeye salmon returns to the Southern District, there was only modest effort in this area in 2018; many weeks fewer than 3 permits reported deliveries.

Salmon escapement to index streams in the Kamishak District was fair with most streams meeting minimal SEG levels (Table 8; Appendices D8 and D10). Anadromous waters restrictions were removed from the Bruin River to facilitate harvest and reduce the possibility of exceeding the upper end of the SEG (Table 8).

A total of 4,966 sockeye salmon were counted from video at Mikfik Lake through August 1 until grass and vegetation shaded the solar panel at the lake outlet and ended the transmission of video data to the video recording site located on a nearby peninsula (Appendices D4 and D6). Usually on this date the run is 99.9% complete. The final count was within the SEG range of 3,400–11,000 (Table 8) but below the 10-year average of 8,179 (Appendix D10).

Final sockeye salmon escapement into Chenik Lake was 6,651 on August 25 (Appendix D3, D5, and D7). The SEG range for Chenik Lake is 2,900–13,700 (Table 8), and the previous 10-year average escapement is 15,985 (Appendix D10).

The peak aerial survey count for Amakdedori Creek was 1,916 sockeye salmon (Appendix D9). This was within the SEG range of 1,200–2,600 (Table 7) and below the 10-year average of 2,343 (Appendix D10).

Of the 3 pink salmon SEGs in the Kamishak District, only 1 (Bruin River) was met in 2018. Escapement goals were not met at either Sunday Creek or Brown's Peak Creek. Of the 7 chum salmon index streams, all but 2 (Ursus Cove and Cottonwood Creek) had final escapements above the minimum, with the Bruin River exceeding the upper end of the assigned SEG range for this system.

The McNeil River had a chum salmon escapement of 37,331 fish. This was the third consecutive year that McNeil River chum salmon escapement was within the 24,000–48,000 SEG range (Table 8; Appendices D8 and D10).

There were 33,699 sockeye salmon harvested by the commercial common property fleet from the Kamishak District in 2018 (Appendix D1). The anticipated preseason harvest was 38,500 wild sockeye salmon (Appendix H1), well below the 10-year average harvest of 56,416 (Appendix D2). The total coho salmon harvest of 9,077 was above the 10-year average harvest of 136 (Appendix D2) and above the preseason anticipated harvest of 200 (Appendix H1). The total pink salmon harvest from this district was 5,226 (Appendix D1) versus an anticipated harvest of 7,200 (Appendix H1). The 10-year average harvest was 49,542 pink salmon (Appendix D2). The total chum salmon harvest of 8,298 (Appendix D1) was below the 10-year average of 23,953 (Appendix D2). CIAA harvested 11,536 sockeye salmon for cost-recovery purposes from the

Kirschner Lake SHA (Appendix F2); this was below the anticipated harvest of 43,100 (Appendix H1).

LOWER COOK INLET SUBSISTENCE, PERSONAL USE AND HOMEPACK COMMERCIAL FISHERIES

The Cook Inlet subsistence management area (5 AAC 01.550) includes all state waters between Cape Douglas and Cape Fairfield, excluding waters of the upper Susitna River (5 AAC 01.550). Superimposed on this area is the *Anchorage-Matsu-Kenai nonsubsistence area* described in 5 AAC 99.015(a)(3). This area makes up more than 90% of the area described in 5 AAC 01.550. Under Alaska Statute 16.05.258(c), the BOF may not permit subsistence fishing in nonsubsistence areas. A portion of the LCI Management Area is outside the nonsubsistence areas and includes the southwest tip of the Kenai Peninsula and the communities of Seldovia, Port Graham, and Nanwalek, as well as portions of the western shore of the Northern District of Upper Cook Inlet near Tyonek. However, in order to provide harvest opportunity in addition to sport fishing to Alaska residents within these nonsubsistence areas, the BOF has provided 2 personal use salmon fisheries in LCI, and defined seasons and gear types for personal use herring and smelt fisheries. In addition, both resident and nonresident commercial permit holders have been allowed to retain legally harvested fish from their commercial catch for their own use as homepack (5 AAC 39.130(b)(12)).

NANWALEK/PORT GRAHAM SUBSISTENCE FISHERY

Subsistence fishing is allowed in the Port Graham and Koyuktolik (Dogfish Bay) subdistricts from April 1 through September 30, and in the Port Chatham and Windy Bay subdistricts from April 1 through August 1. Extended fishing periods in these areas are defined in regulation, occurring from 10:00 PM Thursday to 10:00 AM Wednesday (132 hours) each week. Set gillnets up to 35 fathoms in length, 6 inches in mesh size, and 45 meshes in depth may be used. This fishery has been specifically administered by ADF&G staff since the late 1970s. However, local dependence by residents on returning salmon to meet basic nutritional needs had been identified since before statehood (Stanek 1985). Fishing in these areas has tended to focus primarily on salmon returning to English Bay Lakes and the Port Graham River. Except for the past 2 years, sockeye salmon runs to English Bay Lakes have been depressed for the last 20 years. This has reduced both local commercial and subsistence salmon harvests. Partially in response to this, waters of the Port Chatham and Windy Bay subdistricts were added to regulation as areas available for salmon harvest by subsistence permit holders at the November 2001 BOF meeting. Historically, separate permits have been issued to residents of Port Graham (population 168) and Nanwalek (population 287). Permission to fish in Koyuktolik, Port Chatham, Port Graham, and Windy Bay is specified on both of these permits. Historically, there has been no requirement on these permits for the subsistence user to report from which harvest areas some or all of the harvest was caught. There is no bag or annual possession limit for subsistence salmon in the Port Graham, Port Chatham, Windy Bay, or Koyuktolik (Dogfish Bay) subdistricts.

In 2018, 50 permits were sent to the Nanwalek Traditional Council, 40 permits were sent to the Port Graham Village Council, 10 permits were sent to the Anchorage ADF&G office, and 10 permits were kept at the Homer ADF&G office. All permits were serially numbered and printed on Rite-in-the-Rain paper. Representatives from the village councils were asked to dispense these permits to village residents who intended to harvest salmon for subsistence use so that those

households would be in compliance with 5 AAC 01.580. Prior to 2012, a village resident was paid to dispense and collect permits from both of these communities and provide ADF&G with a final harvest estimate. This practice was discontinued due to budget cuts. Permits were not actively distributed from ADF&G offices prior to 2012.

In 2018, the English Bay River weir was operated by residents of Nanwalek for the third year since 2011. From 2012 to 2015, CIAA supervised operation of the weir. Sockeye salmon run timing past the English Bay River weir in 2018 was later than anticipated. During the last week of June, escapement fell below the minimum anticipated level to achieve the SEG. As a result of this, the commercial fishery was closed on June 29. Weir passage improved the following week and continued on a positive trend, exceeding the upper end of the SEG range on July 31 with a final cumulative weir count of 18,804 sockeye salmon (Appendices A4 and A5). On July 18, for the fifth year in a row, a representative from the Port Graham Village Council contacted ADF&G and requested that subsistence fishing opportunity in the Port Graham Subdistrict be increased from 5.5 days per week to 6.5 days per week. Because the English Bay weir was indicating a strong sockeye salmon return at that time, the increase of subsistence time was granted.

In 2018, ADF&G received 1 permit back from a Nanwalek resident. The returned permit was a 2017 permit that had been dispensed the previous year and not returned. The harvest reported on this permit was later verified to be a 2018 harvest. Harvest reporting has been reduced in recent years; only 1 household reported in 2012, 2015, and 2017. The previous 10-year average harvest for Nanwalek was 16 households reporting a harvest of 10 Chinook, 1,705 sockeye, 814 coho, 764 pink, and 197 chum salmon (Appendix E2). Unlike all other set gillnet fisheries in Cook Inlet and many other subsistence fisheries in Alaska, subsistence fishing gear in the Port Graham Subdistrict may be fished unattended. This has resulted in what are de facto community nets with reporting occurring irregularly. Residents have also expressed a reluctance to report subsistence harvest out of concern that if they did, ADF&G would close or restrict fishery opportunity. Subsistence harvest reports are due in the Homer office by November 30. Reports submitted after December 31 will be included in the following year's Annual Management Report as harvested the previous hear.

Similar to Nanwalek reporting, only 1 permit was returned by Port Graham residents in 2018. The total reported harvest was only 50 salmon. Harvest reporting in Port Graham has declined in recent years with only 3 permits returned in 2017. The previous 10-year average was 12 households reporting a harvest of 27 Chinook, 775 sockeye, 68 coho, 151 pink, and 244 chum salmon (Appendix E1).

In the fall of 2015, Division of Subsistence staff conducted household surveys in Nanwalek and Port Graham. Residents of these villages reported a combined harvest of 13,700 salmon in 2014. During that year a total of 3,133 salmon were reported on subsistence permits submitted to the Homer office (Appendices E1 and E2). Division of Subsistence staff indicated that these numbers were not intended to be a precise estimate of the actual number of salmon harvested; however, they do share the concern that there may be significant underreporting in this fishery (B. L. Davis, Fisheries Biologist, ADF&G, Anchorage, personal communication).

SELDOVIA SUBSISTENCE FISHERY

There are 2 subsistence fishing seasons specified in regulation that take place each year in the waters of the Seldovia Bay Subdistrict. The first season consists of two 48-hour periods each week beginning at 6:00 AM on Monday and Thursday from April 1 through May 30. The second season

consists of two 36-hour periods on the first 2 weekends in August. Legal gear is set gillnets up to 35 fathoms in length, 6 inches in mesh size, and 45 meshes in depth.

A subsistence set gillnet fishery for salmon was created in Seldovia Bay by the BOF in 1995. The harvest of Chinook salmon was limited to 200 fish to avoid impacting the stocked Chinook salmon fishery in Seldovia Bay. The annual possession limit is 20 Chinook salmon per household. The fishery is opened for two 48-hour periods per week from April 1 to May 30 and one 36-hour period each of the first 2 weekends in August. In February 1998, the BOF adopted a proposal extending the April/May period by 10 days to May 30. The highest reported subsistence harvest was 189 Chinook salmon in 2000 and the lowest was 12 reported in 2006 (Hammarstrom and Dickson 2007). Regulation requires that permit holders be physically present at the net while deployed to avoid under reporting of harvested fish.

Chinook salmon that have been released annually into the Seldovia Harbor since 1987 (Appendix F9) are funded under the federal Dingell–Johnson Sport Fish Restoration Fund. Allowing a subsistence harvest of these Chinook salmon would violate the intent of this federal program. Furthermore, there are no significant natural runs of Chinook salmon to the Seldovia area (or other locations in LCI south of the Anchor River). The customary and traditional use worksheet submitted to the BOF in 2005 identified Chinook salmon as the least important of the 5 species to residents of Seldovia as far as traditional subsistence use was concerned. In addition to structuring the timing of the fishery to avoid this hatchery run, the BOF also imposed an annual possession limit of 20 Chinook salmon per household and an overall guideline harvest level of 200 Chinook salmon per year. There is no bag or annual possession limit for other salmon species in the Seldovia subsistence fishery. A permit issued by ADF&G is required prior to setting gear, and catches are recorded on the permit. Catches are also reported to the Homer area office inseason so that cumulative harvest totals can be monitored and coho salmon are deducted from the fall personal use coho salmon fishery guideline harvest level specified in 5 AAC 77.549(a).

In 2018, 40 permits for the spring fishery were sent to the Seldovia harbormaster's office, 10 permits were retained at the Homer ADF&G office, and 10 were sent to the Anchorage ADF&G office. An additional 20 permits for the fall fishery were sent to the Seldovia harbormaster's office. All permits were serially numbered and printed on Rite-in-the-Rain paper. The Seldovia harbormaster was instructed to have Alaska residents complete the name and address portion of the permits while under witness of a harbormaster employee and then have that employee send a copy of the completed permit back to the Homer ADF&G office.

In 2018, 7 permits were dispensed to Alaska residents for the early season and 5 were returned. Of those, 3 reported fishing and 2 indicated that they did not fish. A total of 11 Chinook, 9 sockeye, and 1 pink salmon were reported harvested. This compared to the previous 10-year average of 8 permits issued, 5 permits returned, and 3 reporting not fishing with an average harvest of 5 Chinook and 49 sockeye salmon. Two permits were issued for the August weekend fishery. Only 1 of those were returned, with a harvest of 2 sockeye, 52 pink, and 1 chum salmon. The 10-year average for the August weekend fishery was 5 permits issued, and 3 permits returned, with a harvest of 20 sockeye, 8 coho, 26 pink, and 13 chum salmon (Appendix E3). Total harvest for both the early and late season was 76 salmon versus a 10-year harvest average of 122 salmon. Currently, there is no specific customary and traditional allocation for this subsistence fishery as there are for other LCI subsistence fisheries (5 AAC 01.566(d)).

CHINA POOT PERSONAL USE DIP NET AND PERSONAL USE COHO SALMON FISHERIES

There are 2 personal use salmon fisheries currently specified in regulation in LCI. These are the China Poot personal use dip net fishery and the Southern District personal use coho salmon gillnet fishery.

The China Poot dip net fishery started in 1980 when adult returns from the 1976 hatchery release of sockeye salmon began (Appendix F14). This fishery is managed by ADF&G, Division of Sport Fish. Prior to 1996, harvest from this fishery was documented as part of the Statewide Harvest Survey.[3] Currently, there are no reporting requirements to monitor overall harvest from this fishery. The daily bag and possession limit for this fishery is 6 sockeye salmon.

The personal use coho salmon fishery in the Southern District began prior to statehood, when it was considered a subsistence fishery. From 1986 through 1995, various court rulings converted it to a personal use fishery and then back to a subsistence fishery. A court action in late 1994 reestablished the boundaries of the *Anchorage-Matsu-Kenai nonsubsistence area* (5 AAC 99.015(a)(3)) that put the location of this fishery within the nonsubsistence area, thereby invalidating the subsistence regulations that governed this fishery at that time (Figure 17). As a result, early in 1995 the BOF readopted personal use regulations governing this fishery into permanent regulation and rescinded subsistence regulatory language pertaining to this fishery. Regulations pertaining to this fishery are found in 5 AAC 77.549 *Personal Use Coho Salmon Fishery Management Plan*. These currently specify a guideline harvest range of 1,000–2,000 coho salmon. Additionally, coho salmon caught in the Seldovia subsistence fishery described in 5 AAC 01.560(b)(8)(B) are deducted from this annual harvest goal. Coho salmon targeted in this fishery have shifted from exclusively wild stock fish to include hatchery coho salmon, which have periodically been stocked at several locations in Kachemak Bay since the mid-1970s (Appendix F11). Since the late 1980s, annual releases of 100,000–325,000 coho salmon smolt into the Nick Dudiak Fishing Lagoon, located on the Homer Spit, have periodically contributed significantly to the personal use harvest (Figure 18). Samples of coho salmon caught in this fishery from sites on the Homer Spit adjacent to the Nick Dudiak Fishing Lagoon documented a hatchery component of 81% (1999) and 90% (2000) for these 2 years (Szarzi et al. 2010). However, as a result of decreased releases and poor runs of late season coho salmon in the Nick Dudiak Fishing Lagoon, effort shifted away from the Homer Spit to waters between Fritz Creek and Swift Creek (Appendix E6; Figure 17). The wild stock components of this fishery are presumed to derive from the Fox River drainage at the head of Kachemak Bay; however, there are numerous smaller runs of coho salmon scattered throughout Kachemak Bay.

In addition to holding a valid sport fishing license and being an Alaska resident, participants in the personal use coho salmon fishery must obtain a fishery-specific permit from the Homer ADF&G office. Beginning in 1999, ADF&G has requested that permit holders voluntarily report their harvest daily to facilitate inseason management, to ensure that the 1,000–2,000 guideline harvest range specified in 5 AAC 77.549 is observed, and to provide opportunity for harvest to reach at least the lower end of the range. Harvest during the 2018 season was 1,947 coho, 259 sockeye, 6 Chinook, 161 pink, and 11 chum salmon, with 192 permits issued, 187 permits returned, and

[3] Alaska Sport Fishing Survey database [Internet]. 1996– . Anchorage, AK: Alaska Department of Fish and Game, Division of Sport Fish Available from: http://www.adfg.alaska.gov/sf/sportfishingsurvey/ (Accessed November 1, 2019).

132 reported as actively fished (Appendix E4). Similar to the 2 previous years, coho salmon in 2018 were abundant, with only 2 fishing days required to meet the guideline harvest range. The first and only 48-hour fishing period occurred on Thursday, August 16, beginning at 6:00 AM, and closed at 6:00 AM on Saturday, August 18. The fishery was closed by EO at the conclusion of the fishing period. The previous 10-year average was 137 permits issued and 1,544 coho salmon harvested (Appendix E4).

Coho salmon harvest data from the personal use fishery showed that catches were most robust along the shore from Fritz Creek to Swift Creek, with 777 coho salmon reported by 35 permit holders. This was followed by the east side of the Homer Spit with 484 coho salmon reported by 40 permit holders. Although harvest from the shore from Mud Bay to Fritz Creek (442 coho salmon by 30 permit holders) was lower than that on the east side of the Homer Spit, catch per permit holder was higher. Harvest was significantly lower in the remaining 3 areas: 16 permit holders reporting 159 coho salmon in the Bear Cove–Neptune Bay area, 6 permit holders reporting 45 coho salmon from the shore between Neptune Bay and Little Tutka Bay, and 5 permit holders reporting 40 coho salmon between Troublesome Creek and the tip of the Homer Spit (Appendix E6).

Without a harvest sampling program in place, it is difficult to estimate the portion of the harvest that could be attributed to hatchery fish returning to the Nick Dudiak Fishing Lagoon on the Homer Spit. Of the 192 permits issued, 82% were held by Homer area residents, 5% by Anchorage-area residents, and the remaining 12% by residents of Anchor Point and other locations in Alaska (Appendices E5 and E8).

COMMERCIAL HOMEPACK

Historically, both resident and nonresident commercial permit holders have been allowed to retain legally taken fish from their commercial catch for their own use. In 2007, the BOF amended 5 AAC 39.130(c)(12) to require that the number of fish of any species retained by commercial fishermen for their own use be documented on a fish ticket.[4] Previously, these fish had been voluntarily noted on fish tickets by some permit holders.

In 2018, 10 set gillnet and 12 purse seine permit holders reported retaining 61 Chinook, 773 sockeye, 135 coho, 72 pink, and 28 chum salmon for their own personal use (Appendix E7). Of those, 7 were residents of Homer, 6 permit holders were Seldovia residents, and the remaining 9 permit holders were Anchorage, Halibut Cove, Ninilchik, Anchor Point, and lower 48 residents (Appendix E8).

COOK INLET SALMON FISHERY ENHANCEMENT

Fisheries enhancement and rehabilitation in Alaska began in earnest in 1971 when the Alaska State Legislature created the Fisheries Rehabilitation, Enhancement and Development Division to help stabilize and rebuild fisheries production. Prior to this time and before statehood, there was only 1 hatchery in the Cook Inlet area. It was built by the Territorial Fish Commission in 1923 and located on Grouse Lake near Seward. This hatchery released Chinook and sockeye salmon from 1924 to 1926 (Appendices F9 and F10). Broodstock for released Chinook salmon came from Washington state, and brood for sockeye releases came from Grouse and Bear lakes

[4] Statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK: Alaska Department of Fish and Game, Division of Commercial Fisheries. (Cited: January 2019). [URL not available as some information is confidential]. Hereafter referred to as fish tickets.

(Appendix F10). The Seward Hatchery was destroyed by fire in March of 1927 (Roppel 1982). Since the mid-1960s, there have been sporadic releases of coho and Chinook salmon to systems in Resurrection Bay and at Kasitsna Bay near Homer. These fish were produced at ADF&G hatcheries in Anchorage on Ship Creek as well as at the Big Lake and Fire Lake hatcheries.

In 1974, the Alaska legislature passed the Private Non-Profit Hatchery Act:

> "It is the intent of this act to authorize the private ownership of salmon hatcheries by qualified non-profit corporations for the purpose of contributing by artificial means to the rehabilitation of the state's depleted and depressed salmon fishery. The program shall be operated without adversely affecting natural stocks of fish in the state and under a policy of management which allows reasonable segregation of returning hatchery reared salmon from naturally occurring stocks."

CIAA was created in 1976 as the regional aquaculture association for Cook Inlet. TBLH was built by the state of Alaska in 1976 and began rearing sockeye and pink salmon that year (Appendices F7 and F8). The Crooked Creek Hatchery was built in 1975 and began producing sockeye and Chinook salmon 2 years later, and coho salmon production started in 1979. In 1983, the Eklutna Hatchery began producing chum and coho salmon. In the early 1990s, residents of Port Graham formed the Port Graham Hatchery Corporation and began producing sockeye and pink salmon at a converted cannery in the village of Port Graham (Appendix F7). Early in 2014, CIAA acquired the assets of the Port Graham Hatchery Corporation, including permitted egg capacity, and has restored the hatchery to working condition after a protracted period of inactivity.

CIAA is among 12 nonprofit corporations in the State of Alaska that maintain private hatcheries with the capacity to produce salmon for harvest in common property fisheries. After acquiring the assets and securing comparable permitted capacity of Port Graham Hatchery Corporation in early 2015, CIAA became the second largest nonprofit hatchery in Alaska at that time in terms of overall egg capacity. In 2018, they were third on that list behind Prince William Sound Aquaculture Association and Northern Southeast Regional Aquaculture Association.

Historically, hatchery contribution to the commercial common property harvest has been estimated based entirely on the number of salmon harvested in the various SHAs versus the number harvested outside of SHAs (Figures 19–21). Using this methodology in 2018, CIAA contributed just over 8.9% (4,905) of the total Southern District purse seine common property sockeye salmon harvest of 55,246 fish, and about 70.6% (333,140) of the total LCI harvest of 472,204 pink salmon (Table 1; Appendices F1 and F18).

However, in recent years, Homer ADF&G staff began sampling otoliths from pink and sockeye salmon harvested in the commercial fishery. A total of 1,112 readable sockeye salmon otoliths were collected from the 2018 commercial common property purse seine harvest in the Southern District. The average proportion of fish sampled that were thermally marked was 66.7% (31.6–81.7%), and all but 1 fish was from the Trail Lakes Hatchery (TLH) in LCI (Appendix F29). A total of 1,709 readable pink salmon otoliths were collected from the 2018 commercial common property purse seine harvests; an average of 78.1% (49.9–94.6%) had an LCI thermal mark, and 0.5% (0.0–0.7%) had a Prince William Sound (PWS) thermal mark (Appendix F39).

Otoliths were also collected from pink and sockeye salmon harvested in the Southern District commercial set gillnet fishery. Of the 571 readable pink salmon otoliths sampled, 47.3% (38.5–60.8%) had LCI thermal marks, and 3.0% (1.0%–5.8%) had Prince Wiliam Sound thermal

marks (Appendix F35). Of the 2,060 readable sockeye salmon otoliths collected from the set gillnet fishery in 2018, an average of 15.9% (6.2–30.0%) had LCI thermal marks, 1.1% (0.0–3.8%) had Prince William Sound thermal marks, and 0.7% (0.3–2.4%) had Pillar Creek Hatchery (Kodiak Island) thermal marks (Appendix F25).

In addition to sockeye and pink salmon releases, CIAA also released an average of 431,000 coho salmon over the last 10 years into Resurrection Bay (Appendices F6 and F11). Ship Creek Hatchery Complex (operated by ADF&G) also releases Chinook and coho salmon into LCI (Appendix F8), where both of these species are primarily harvested by sport users (Appendix F9).

LOWER COOK INLET COMMERCIAL HARVEST SAMPLING

Salmon released into LCI have been thermally marked since 1990 (sockeye salmon) and 1999 (coho salmon). Pink salmon thermal marking began in 2012 and the first marked adults returned in 2014. Prior to this, in some years, some hatchery releases may have been injected with a coded wire tag for use by the hatchery in assessing run strength. Due to the cost of coded wire tagging salmon, typically only a small percentage of the overall release is tagged. Thermal marking, however, applies a complex mark to the otolith of all salmon being released at a modest cost per marked fish. Due to a lack of funding, the Homer ADF&G office did not begin taking advantage of these marks until 2013. Prior to this, the enhanced portion of the harvest was estimated using a variety of methods. These included comparing the historic average sockeye salmon harvest with that year's harvest, and in some years, assuming that all fish harvested within the SHA were of hatchery origin and that all fish harvested outside of the SHA were of wild origin. In recent years, examining the otoliths of commercially harvested salmon has shown managers that significant numbers of hatchery-produced salmon are harvested outside of SHAs, and that a small portion of these fish originate from nonlocal hatcheries. However, funding to support more temporally and spatially intensive sampling is required before staff will be able to reliably estimate the overall hatchery contribution to commercial harvests in LCI.

Beginning in 2013, samples were taken from sockeye salmon harvested in the set gillnet commercial fishery and 4.2% of the 382 otoliths examined had an LCI thermal mark (Appendix F20). In 2014, 21.5% of the 748 sockeye salmon otoliths collected had an LCI thermal mark, and 0.5% had a Main Bay Hatchery thermal mark (Appendix F21). In 2015, 21.0% of the sockeye salmon otoliths collected had an LCI thermal mark, and 1.6% had a Main Bay Hatchery thermal mark (Appendix F22). Samples collected during 2013–2015 were mixed and included unknown proportions of fish harvested from the Tutka Bay, Barabara Creek, and Seldovia subdistricts. Beginning in 2016, the tender operator and fish processor worked with ADF&G staff to keep harvests from different subdistricts separated until they could be sampled. In 2016, 20.9% of the otoliths sampled had an LCI thermal mark, 8.2% of the otoliths had a Main Bay Hatchery mark, and 3 pairs of otoliths (0.2%) had a Kitoi Bay Hatchery thermal mark (Appendix F23).[5] By 2017, only 9% of sockeye salmon otoliths collected had an LCI thermal mark, 1% were Main Bay Hatchery thermal marked otolith pairs, and 1.7% of otoliths collected had a Kitoi Bay Hatchery thermal mark (Appendix F24).

Pink salmon otoliths were sampled from the set gillnet fishery for the first time in 2017; 16.1% had an LCI thermal mark, and 12.0% had a Prince William Sound thermal mark (Appendix F34).

[5] Kitoi Bay Hatchery had only recently (2013) begun marking sockeye salmon releases.

In 2018, 15.9% of the 2,060 set gillnet sockeye salmon sampled had an LCI thermal mark, 1.1% had a Main Bay Hatchery thermal mark, and 0.7% had a Kitoi Bay Hatchery thermal mark (Appendix F25). Additionally, 47.3% of the 571 pink salmon otoliths examined in 2018 had an LCI thermal mark, and only 3.0% had Prince William Sound thermal marks (Appendix F35).

In 2015, 369 sockeye and 475 pink salmon were sampled from the purse seine harvest, and 148 sockeye and 381 pink salmon were sampled from the cost-recovery harvest. Over 95% of both species in the cost-recovery harvest had LCI thermal marks (Appendices F30 and F40). Sockeye salmon otoliths in the purse seine harvest were 43.4% (6.5–92.1%) LCI thermal marked (Appendix F26). Of otoliths collected from pink salmon, 68.0% (38.9–84.9%) had an LCI thermal mark and 0.8% had a Prince William Sound thermal mark (Appendix F36).

The 2016 purse seine common property harvest had a similar proportion of sockeye salmon: 49.6% (14.0–96.8%) of the of otoliths collected had an LCI thermal mark (Appendix F27), as did 83.1% (79.8–88.2%) of the pink salmon (Appendix F37). No pink or sockeye salmon sampled in the 2016 common property purse seine harvest had a Prince William Sound thermal mark. The average hatchery proportion of LCI-marked sockeye and pink salmon in the 2016 cost-recovery harvest samples was above 92% (83.3–100%; Appendices F31 and F41).

In the only 2017 sockeye salmon purse seine cost-recovery harvest, 97% of sockeye salmon otoliths had an LCI thermal mark (Appendix F32). Pink salmon were not sampled from the cost-recovery harvest in 2017. Of the samples from commercial common property seine deliveries, 50.3% (25.5–91.9%) of the sockeye salmon (Appendix F28) and 28.5% (12.6–47.1%) of the pink salmon had an LCI thermal mark (Appendix F38). In addition, although there were no Kodiak or Prince William Sound thermally marked sockeye salmon otoliths identified in the purse seine commercial common property harvest, 2.1% (0.0–15.8%) of the pink salmon otoliths examined had marks associated with PWS hatcheries (Appendix F38).

The average LCI hatchery proportion in the 2018 cost-recovery samples for both sockeye and pink salmon was over 92% (92.1–98.3%; Appendices F33 and F42). An average of 63.3% (31.6–81.7%) of sockeye salmon otoliths collected from the common property purse seine harvest had LCI thermal marks, and 78.1% (49.9–94.6%) of the pink salmon sampled had LCI thermal marks (Appendix F29). In addition, 0.5% (0.0–0.7%) of the pink salmon otoliths had with Prince William Sound thermal marks (Appendix F39).

TUTKA BAY LAGOON HATCHERY

TBLH is located in Tutka Bay, approximately 23 kilometers (14 miles) south of Homer (Figure 20) and was constructed in 1976. It is owned by ADF&G and has been operated by CIAA under contract since 1992. Prior to the start of hatchery production of pink salmon, ADF&G staff began a study examining the diet of pink salmon fry in Tutka Bay beginning in 1975. This study found that harpacticoid copepods were the preferred diet of pink salmon fry, and decapod zoea (which include crab and shrimp) comprised less than 10% by organism number (Kron and Yuen 1978). The facility was originally constructed as a pink and sockeye salmon hatchery; however, it also produced chum salmon from 1979 to 1990 (Appendices F5 and F13). Water for hatchery operations is supplied by Tutka Lagoon Creek. Permitted water capacity is 76 L/s, with a current usage of 68 L/s. TBLH had an initial capacity of 10 million pink salmon eggs, but major renovation work by CIAA shortly after leasing the facility in 1993 increased the physical capacity to 150 million eggs. In addition, TBLH had a sockeye salmon egg physical capacity of 1.8 million, as well as raceways to accommodate the resulting fry. However, problems with infectious

hematopoietic necrosis virus outbreaks in the sockeye salmon incubators plagued this facility and made for erratic sockeye salmon releases from 1977 to 1999 (Appendix F5). Sockeye salmon produced at TBLH were released into Leisure Lake (1977), Tustumena Lake (1978), English Bay Lakes (1990), and Tutka Bay (1996, 1997, and 1999). Fish released into Tutka Bay in 1996, 1997, and 1999 derived from the Packers Lake stock. Beginning in 2005, sockeye salmon were incubated and reared at TLH using Hidden Lake broodstock and then transferred to Tutka Bay Lagoon for imprinting and release, resulting in better survival rates. Pink salmon were raised consistently at the TBLH from 1977 to 2004, with releases ranging in number from 318,000 (1977) to 105 million (1996), and an average release of 42.4 million fry (Appendix F5). All pink salmon broodstock was derived locally from the adjacent Tutka Lagoon Creek. Pink salmon were released from the hatchery site directly, and also remote released from Halibut Cove Lagoon (1975, 1977, 1986–1992), Paint River (1980–1983, and 2015), Homer Spit (1987–1992), and Ingram Creek (1987–1990) in Turnagain Arm (Appendix F12). Pink salmon production was halted in 2004 because of low market value, resulting in an inability to generate adequate cost-recovery revenue to fund the pink salmon program. Chum salmon were reared and released on site from 1979 to 1990 in numbers ranging from 7,992 in 1981 to 3.2 million in 1988 (Appendix F5). Broodstock for the chum salmon return was initially taken from Port Dick Creek in 1978, with 732,000 fry released in Tutka Lagoon in 1979. The last 4 years of chum salmon releases into Tutka Lagoon (1987–1990) used broodstock collected from Cottonwood Creek on the west side of Cook Inlet.

In 2012, CIAA resumed production of pink salmon with the release of brood year (BY) 2011 fry. TBLH has a permitted capacity of 125 million pink and 660,000 sockeye salmon eggs. Prior to brood year 2012, thermal marks were not applied at this location. However, following facility upgrades in 2012, thermal marks were applied to the 4.4 million pink salmon that were released from Tutka Bay Lagoon in 2013, and all releases since (Appendix F5).

The 2018 pink salmon run to the TBLH was only the sixth year of returns since resuming pink salmon production after a 7-year hiatus. Of the 54.2 million BY 2016 fry released in 2017, an estimated 1.9 million adults (3%) were anticipated to return (Appendices F12 and H1). The actual run was estimated at 1.3 million fish (Appendix F1). Of these fish, CIAA reported that 176,550 were harvested for broodstock (Appendix F3).

Total pink salmon cost-recovery harvest from this facility in 2018 was 939,967 fish. ADF&G staff collected pink salmon otoliths from cost-recovery harvested fish in the Tutka SHA in 2018. Of the 89 readable otoliths collected, 92.1% had TLH thermal marks, and the remaining fish were unmarked (Appendix F42).

The final escapement index for Tutka Lagoon Creek pink salmon in 2018 was 60,691 fish. This was above the SEG range of 6,500–17,000 (Table 8) and above the 10-year average escapement for this system of 24,827 (Appendix A8).

PORT GRAHAM HATCHERY

Port Graham Hatchery (PGH) is in the village of Port Graham (Figures 1 and 21) and was originally located in a converted Whitney-Fidalgo salmon cannery. The hatchery was permitted in September 1992 and actively operated by the Port Graham Hatchery Corporation until 2007. Ownership of this facility was transferred to CIAA in 2014. Water for operations in the main hatchery building was supplied by the untreated Port Graham municipal water supply at a rate of 13–28 L/s. Freshwater for the adult holding and egg-take complex comes from nearby Cannery Creek via an 8-inch pipeline at a rate of 50–107 L/s. Prior to permitting, the hatchery had been

conducting experimental pink and sockeye salmon egg takes and fry releases via a scientific/educational permit since 1990. Sockeye salmon were raised at this facility from 1991 to 2006 and releases ranged from 85,000 (1991) to 918,000 (1999) with an average release of 316,000 fish between 1991 and 2006 (Appendix F7). This facility provided sockeye salmon fry and smolt for the Nanwalek Salmon Enhancement Project from 1992 to 2008.

Pink salmon were released during most years from 1991 to 2007; releases ranged from 255,000 (1991) up to 57.2 million (2003) fry (average release 11.6 million fry). Coho salmon eggs were collected from the Port Graham River in 1996, and in October 1997 a total of 29,963 coho salmon smolt were released from this facility (Appendix F7). The coho salmon project was discontinued after this release. In January 1998, a fire destroyed the original PGH building, including incubation modules containing pink and sockeye salmon eggs collected during the previous year. A separate building that housed the empty coho salmon module was undamaged by the fire. This building was converted to pink and sockeye salmon incubation to allow incubation of eggs collected during the upcoming summer. Rearing infrastructure in this newer building allowed the hatchery manager to thermally mark all pink salmon fry beginning in 1998. Sockeye salmon thermal marking began in 2003. In 2006, the loss of the hatchery manager, combined with financial troubles, resulted in salmon releases ending in 2006 (sockeye salmon) and 2007 (pink salmon). Consequently, the Port Graham Hatchery Corporation contracted with CIAA in 2007 to harvest 510,000 sockeye salmon eggs from returning PGH fish. The eggs were incubated at the TLH and released as fry in the English Bay Lakes (246,000; October 30, 2008) and as smolt in Port Graham (112,000; June 15, 2009).

In 2018, a total of 20.9 million pink salmon fry that had been incubated at the PGH were held in net pens in the SHA and released on June 18, 2018. This marks the third year where fry released in the PGH SHA were incubated in the PGH facility. Releases from 2013 to 2015 were incubated at the TBLH facility. A total of 94,000 pink salmon were harvested for broodstock from the Port Graham SHA in 2018 (Appendices F1).

In addition, in 2017, a total of 3,969 pink salmon adults were collected from the Bruin River for use as a brood source for fry plants upstream of the Paint River fish ladder. Of the 3,969 adults collected, 1,607 (40.5%) were viable broodstock. From these 1,448,927, green eggs were collected with 335,690 (23.2%) successfully transitioning to the eyed stage. Of those, 305,000 (90.9%) became emergent fry. These were transported to Upper Paint River Lake and released in May 2018. From this release, a total of 9,150 adult pink salmon are anticipated to return to spawn in the Paint River in 2019 via the Paint River fish ladder. See the *Paint River Fish Ladder* section of this report for further details.

Of the 305,995 pink salmon harvested in the 2018 common property purse seine harvest in the Port Graham Subdistrict, 173 readable otoliths were collected on August 10 (statistical week 32). Of those, 59 (34.1%) were thermally marked. Of those, 56 had a PGH thermal mark, 2 had a TBLH mark and 1 mark was of Wally Noerenberg Hatchery (PWS) origin (Appendix F39).

There were no cost-recovery or excess male sales associated with this facility in 2018. Assessing the overall hatchery return to this facility based on otolith marks collected on a single day is problematic given that the commercial harvest occurred over a 3-week period. However, applying the percent of PGH marks in the sample (32.4%) to the commercial harvest yields an estimated hatchery component of 99,142 pink salmon harvested in the PGH Subdistrict. An additional

94,000 pink salmon were harvested for broodstock, of which only 16,440 (17.5%) were viable. The anticipated pink salmon return to this facility was 181,794 fish (Appendix H1).

TRAIL LAKES HATCHERY

TLH is located on the Seward Highway approximately 47 kilometers (29 miles) north of Seward (Figure 1). ADF&G built this hatchery in 1982, and CIAA has operated it under contract since 1989. Initially, this facility produced Chinook, sockeye, and coho salmon. Water for hatchery operations is supplied by ground wells that are capable of producing approximately 139–186 L/s, of which 132 L/s are required for hatchery operations. All releases from this hatchery are remote releases. Sockeye salmon have been consistently produced at the TLH since 1983, with releases ranging from 516,000 (1986) to 18.9 million (2002), producing an average of 9.2 million fish per year from 2005 to 2014. In addition to release sites in Upper Cook Inlet, TLH-produced hatchery sockeye salmon have been released into LCI systems such as Bear Lake and Grouse Lake, as well as lakes (Leisure, Hazel, and Kirschner) that were stocked by the Tutka, Crooked Creek, and Eklutna hatcheries prior to 1998. Coho salmon have also been produced at TLH in consistent numbers since 1983, with releases ranging in size from 75,000 (1996) up to 1.7 million (1987), with a 10-year (2005–2014) average release of 627,200 fish (Appendix F6). The majority of the coho salmon reared in recent years have been released into Bear Lake. Chinook salmon were produced from 1984 to 1988, and chum salmon were raised for 1 year, with a release of 455,809 fish in 1985 into Resurrection Bay systems. This hatchery has consistently applied thermal marks to releases since 1991.

In 2018, the total run of adult sockeye salmon to remote release sites from this Cook Inlet hatchery was 460,500 fish, above the CIAA forecast of 387,420 fish (Appendix F1). The 242,859 sockeye salmon sold for hatchery cost recovery or donated to members of the public were worth $3.1 million (Table 3) and included 993 sockeye salmon carcasses donated or sold to processors from the Hidden Lake return in Upper Cook Inlet after otolith extraction (Appendix F1). A total of 11,418 sockeye salmon were collected for broodstock across all TLH sites, and of those, only 6,042 (52.9%) were viable broodstock. The remainder were holding mortalities or otherwise unsuitable for egg harvest and were subsequently donated to members of the public (Appendix F2). The common property fishery harvested approximately 108,479 of the total TLH sockeye salmon run of 460,500 (Appendix F1). This includes remote releases at Hidden Lake, Kirschner Lake, Resurrection Bay, and sites in Kachemak Bay. Currently, TLH has a permitted capacity of 4 million Chinook, 30 million sockeye, and 6 million coho salmon eggs.

In 2018, a total of 7.9 million sockeye salmon eggs composed of 3 stocks were collected from 3 sites in Cook Inlet (Appendix F1).

Sockeye salmon were released at 6 locations in LCI as well as into Hidden Lake in Upper Cook Inlet in 2018. Bear Lake stock was released into Resurrection Bay and stocked back into Bear Lake. Tutka Bay Lagoon sockeye salmon releases (518,000 smolt) were all from 2016 returns to Tutka Lagoon of English Bay lineage fish. No broodstock were taken from English Bay Lakes in 2018. A total of 2.8 million fry were released into Leisure and Hazel Lakes, and Kirschner Lake was stocked with 244,000 fry (Appendix F10).

In 2018, a total of 2,033 adult coho salmon returned to the Bear Creek weir. CIAA collected 259 fish for broodstock, 240 of which were viable. An additional 197 were used in the Salmon in the Classroom program or were used for broodstock at the ADF&G Anchorage hatchery. The remaining 1,277 fish were donated to members of the public (Appendix F4). A total of 300 adult

coho salmon were allowed to migrate into Bear Lake where they spawned naturally (Appendices C5 and C6). Of the fish used for broodstock, a total of 640,000 green eggs were harvested, which was fewer than the 4.0 million eggs that CIAA was permitted for (Appendix F1). The majority of the coho salmon run originated from the BY 2015 fry release (501,600; Appendix F1). No coho salmon were commercially harvested in the common property fishery from the Eastern District, but 5 were harvested from the Outer District in 2018 (Appendix C2). In the Southern District, 1,747 coho salmon were harvested in the commercial common property fishery. An additional 9,077 coho salmon were harvested in the Kamishak District (Table 1). Given that 136,000 BY 2015 smolt from the Ship Creek Hatchery Complex in Anchorage were stocked into the Nick Dudiak Fishing Lagoon on the Homer Spit (Appendix F11), an unknown percentage of the Southern District commercial coho salmon harvest may have originated from that facility.

LOWER COOK INLET REMOTE RELEASES

Nanwalek Salmon Enhancement Project

The English Bay Lakes (EBL) system is located approximately 1.6 kilometers (1 mile) southeast of the village of Nanwalek (formerly English Bay; Figures 1, 2, 8, and 21). The EBL system is a chain of 5 small lakes with a total surface area of approximately 200 hectares (0.77 square miles). These lakes have the only commercially significant wild stock of sockeye salmon in the Southem District of LCI. Production in this system declined in the early 1980s, resulting in commercial fishery closures beginning in 1985 and later subsistence harvest restrictions in order to increase escapement. ADF&G's Fisheries Rehabilitation, Enhancement and Development Division conducted limnology studies and reported in 1992 that these lakes were nutrient poor (oligotrophic), and given that recent escapements (1985–1990) were only 60% of the historical average, "the amount of nutrients from carcasses has been reduced from what it once was, and has further decreased fertility of the lakes in the English Bay watershed" (Edmundson et al. 1992). Stocking at EBL began in 1990 with a release of 855,000 sockeye salmon fry (Appendix F10) that were grown from eggs collected the previous year in EBL and reared at the Big Lake Hatchery (BLH) near Wasilla. With the closure of BLH in 1992, incubation and early rearing of sockeye salmon from EBL occurred at the nearby PGH. The EBL system has received hatchery sockeye salmon releases in 19 of the last 28 years since 1990, when backstocking began. These releases have varied significantly in number from 50,096 to 918,348 fish during that time, with a 5-year average of 207,300 fry released (2011–2015; Appendix F10). There were no fry released into EBL in the fall of 2016 or 2017 because broodstock were not collected the previous years because of a disagreement between CIAA and members of the Nanwalek local government. Otoliths were not collected at the English Bay River weir in 2018.

Leisure Lake and Hazel Lake

Leisure Lake (also known as China Poot) is located approximately 18 kilometers (11 miles) southeast of Homer (Figures 1, 2, and 19). Leisure Lake has a surface area of approximately 100 hectares (0.4 square miles). The lake outlet has a set of impassable falls that prevents the return of anadromous fish. This lake has been stocked regularly with an average of 1.6 million sockeye salmon fry per year since 1976 (Appendix F10). Until the early 1990s, Leisure Lake was used experimentally to determine fry-stocking densities that would produce optimum adult returns. Following studies done by Bechtol and Dudiak from 1977 to 1984, lake fertilization using ammonium nitrate was initiated in 1984 to increase salmon production and continued through 2018 (Bechtol and Dudiak 1988). The brood source for stocking from 1976 to 2004 was Tustumena

Lake. A lawsuit by the Wilderness Society and the Alaska Center for the Environment challenging the permit to collect these eggs in a designated wilderness area within the Kenai National Wildlife Refuge resulted in the loss of Tustumena Lake as a collection site. The broodstock source was changed to Hidden Lake in Upper Cook Inlet. Hidden Lake is 680 hectares (2.6 square miles) in size and is 68 kilometers (42 miles) east of Soldotna. Hidden Lake has an indigenous population of sockeye salmon with similar run timing to the Tustumena Lake stock. This stock was first enhanced by ADF&G in 1976 and later by CIAA. From 2004 to 2011, Hidden Lake was the source of broodstock for both Leisure Lake and Hazel Lake. In 2012, fry from EBL were planted into Hazel Lake, with Hidden Lake stock sockeye salmon planted into Leisure Lake. Hazel Lake is located approximately 4 kilometers (2.5 miles) southwest of Leisure Lake (Figure 1). Hazel Lake has a surface area of approximately 90 hectares (0.35 square miles) and drains into the Wosnesenski River, which is approximately 14 kilometers (9 miles) long. Hazel Lake has been stocked for 26 of the last 30 years with an average of 1.1 million sockeye salmon juveniles per year (Appendix F10).

Hatchery salmon returning to both Hazel and Leisure lakes have been thermally marked since brood year 1990. However, without funding to support a sampling program, ADF&G has been unable to take full advantage of these identifying features. Beginning in 2013, under an informal cooperative agreement, ADF&G has collected sockeye salmon heads from the Southern District set gillnet harvest and CIAA has examined their otoliths for thermal marks. Cost-recovery purse seine harvests occurred in the China Poot SHA on July 3, 10, and 15. Otolith samples collected on July 10 were 98.3% thermal marked (Appendix F33).

In 2018, overall sockeye salmon returns to Hazel and Leisure lakes deriving from 2014 (BY 2013; 2.6 million) and 2015 (BY 2014; 1.7 million; Appendix F10) was estimated at 13,155 (Appendix F1). The 2014 and 2015 releases were English Lake stock fish.

Kirschner Lake

Kirschner Lake is the third lake in LCI that has historically been used for remote sockeye salmon releases. Kirschner Lake is located on the west side of Cook Inlet and is 24 kilometers (15 miles) due west of Burr Point, which is the northernmost point of Augustine Island (Figure 15). Kirschner Lake is approximately 140 hectares (0.54 square miles) in size and has a barrier falls at the outlet that prevents freshwater migration of anadromous fish. Kirschner Lake has been stocked for 28 of the last 32 years, with an average of 280,000 fry (Appendix F10). In 2018, CIAA released 244,000 sockeye salmon fed fry of English Bay stock into Kirschner Lake. Harvest in 2018 was below the anticipated level of 44,600 fish (Appendix H1) with 11,536 harvested for cost recovery, and 7,837 harvested in the commercial common property fishery (Appendix F1). This year's run is the result of 2014 (BY 2013 English Bay) and 2015 (BY 2014 English Bay) fry releases (Appendices F1, F10, and F16).

Tutka Bay Lagoon

In addition to pink salmon releases from the TBLH, the lagoon has also been a remote release site since 2005 for sockeye salmon hatched at TLH (Appendix F10). This was due to pathogen-related issues at the TBLH facility that are specific to sockeye salmon, which hampered production of this species at the hatchery. Since 2005, releases at this site have historically been Hidden Lake stock (with Packers Lake stock released during years of local TBLH production). However, beginning in 2011, all releases have been EBL stock. The intent was to develop a return of EBL sockeye salmon stock to Tutka Lagoon so they could be used as the brood source for future hatchery

releases instead of relying on annual runs to EBL for brood. However, staging these fish in a freshwater environment between the time when they are captured and later in the fall when the eggs have ripened has been problematic. In many years interruption of the freshwater flow into the lensing bag, or a breach in the lensing bag has resulted in levels of mortality exceeding 30%.

The overall sockeye salmon adult run to this release site in 2018 was estimated to be 86,552 fish (Appendix F1). Of these, 62,389 were reported on fish tickets as being harvested for cost recovery from the Tutka SHA, 3,008 were harvested for broodstock, and an additional 20,751 were harvested commercially (including homepacks) in the Tutka hatchery subdistrict (Appendices F1 and F2). ADF&G staff did not collect otolith samples from sockeye salmon harvested from the Tutka SHA for cost recovery in 2018. However, cost-recovery samples were collected from the SHA and results indicated 95.9% (2015) and 94.4% (2016) of the fish sampled were thermally marked by TLH (Appendices F30 and F31).

In 2018, CIAA remote released 518,000 sockeye salmon smolt (BY 2016) into Tutka Lagoon (Appendix F10). These fish were hatched and reared to the smolt stage at TLH before being transferred to net pens in Tutka Bay Lagoon for imprinting. Of those released, all were EBL stock. The sockeye salmon run to this facility in 2018 were EBL stock.

Port Graham

Similar to the TBLH SHA, in recent years the PGH SHA has served as a remote release site for smolt and fry incubated at other locations. In 2009, 112,000 English Bay stock sockeye salmon were released; in 2013, 102,000 BY 2011 English Bay stock sockeye salmon were released; and in 2017, 86,000 smolt were released (Appendix F10). In 2013, pink salmon releases resumed with 14.3 million unfed fry released that were incubated at TBLH, and continued until 2016 when 1.3 million BY 2015 fry incubated at PGH were released. PGH-incubated fry releases continued in 2017 (6.1 million) and 2018 (20.1 million; Appendix F10).

Paint River Fish Ladder

The Paint River drainage in the Kamishak Bay District (Figure 1) contains at least 40 kilometers (25 miles) of potential salmon spawning and rearing habitat. Historically, the Paint River system was barren of salmon due to a 12 m waterfall at tide line that was impassable prior to 1993. The former Fisheries Rehabilitation, Enhancement and Development Division and CIAA initiated feasibility studies for a fishway in 1979 (Quimby and Dudiak 1987). CIAA received state and federal grant funds to build the fishway, completing construction in the fall of 1991. ADF&G Commissioner Carl Rosier declared the fish pass officially operational in January 1993.

The Paint River Lakes were stocked via air drop with sockeye salmon fry in 9 of the 11 years from 1986 to 1996 and again in 2002 to test the feasibility of developing a naturally producing sockeye salmon return to the Paint River. Releases ranged in size from 500,000 fry in 1996 to 2.2 million in 1988. In addition, the Paint River was stocked with approximately 500,000 pink salmon fry from 1980 to 1983 and just over 1 million pink fry in 2015. Returns from the pink salmon releases were documented by aerial survey with a few dozen to 5,000 fish observed in saltwater below the fish ladder during 3 of the 4 return years in the 1980s. Similarly, very few adult pink salmon were observed below the fish ladder in 2016. Although there were several sightings of sockeye salmon in the area of the fish ladder during return years of the sockeye releases, the only harvest that occurred was in 1991 when 400 sockeye salmon were harvested in the Paint River Subdistrict. The stated policy during these years was that the fish pass remained closed unless significant numbers

of returning sockeye salmon were observed. From 1991 to 2003, there were 500–1,000 sockeye salmon typically observed in the Paint River Subdistrict and the peak observation occurred in 1998, when 1,900 fish were observed near the fish ladder. During these years, the Paint River fish ladder remained closed to passage for the returning salmon (Hammarstrom 2003).

Modifications were made to the ladder in 2010, 2011, and 2012 to address concerns made by ADF&G Division of Wildlife Conservation that brown bears could fall into open cells of the fish ladder and drown. The fish ladder was opened for the first time to migrating adult salmon from early June through September in 2011. Following this, an aerial survey was made of the Paint River drainage with no salmon observed. The ladder has been reopened seasonally since 2011. No salmon were observed on aerial surveys in 2012 or 2013. However, in recent years modest numbers of sockeye, coho, chum, and pink salmon have been observed above the ladder on aerial surveys. CIAA is actively developing a video monitoring system for this location that will provide accurate escapement information in future years.

In 2017, CIAA purchased 3,969 pink salmon harvested in the nearby Bruin Bay Subdistrict. From these 1.5 million eggs were collected. These eggs were incubated at PGH and the 305,000 resulting fry were released in the Paint River system on May 15, 2018.

Bear Lake and Resurrection Bay

Bear Lake is located approximately 10 kilometers (6 miles) northeast of Seward (Figure 13). Bear Lake has a surface area of approximately 180 hectares (0.69 square miles) and has been monitored since 1960, when a picket weir was established where Bear Creek intersects the Salmon River. Initial enhancement activities in the early 1960s focused on coho salmon and the control of predators such as threespine stickleback *Gasterosteus aculeatus* and Dolly Varden char *Salvelinus malma*, as well as alleged competing species such as sockeye salmon. To accomplish this, ADF&G biologists applied the piscicide Rotenone to the lake on August 26, 1963. In addition, "a barrier 5 feet high was then constructed to hold the treated water until detoxification, and to prevent the ingress of nonsalmonid species (Bandirola 1965)."

Coho salmon hatched from eggs collected in Bear Creek in the previous fall were reintroduced in November and December of 1963 as described in Bandirola (1966):

> "The barrier at the outlet of rehabilitated Bear Lake was destroyed as a result of the Good Friday earthquake and reinfestation of the lake by Dolly Varden and threespine sticklebacks occurred. A concrete weir to assess upstream and downstream salmon migrations and to serve as a permanent barrier was completed in Bear Creek on August 25, 1964."

This barrier is a low concrete dam with spaced pickets along the upper surface. Water spilling over the top of the dam prevents smaller fish from travelling upstream, and larger fish are stopped by the pickets. A submerged wire cage is set in the main water outflow. This is closed and mechanically hoisted into a building above the dam and opened onto a sorting table. Smaller fish such as Dolly Varden char, sculpin *Cottidae*, Pacific lamprey *Entosphenus tridentatus*, and threespine stickleback drop through the sides and bottom of the basket back to the downstream area. Once on the sorting table, salmon can be passed to the upstream side of the dam or harvested for broodstock and hatchery cost-recovery purposes. Trout, char, and salmon species other than coho and sockeye are passed back to the downstream side of the weir. In addition to Dolly Varden char, weir operators have anecdotally reported returning steelhead trout *O. mykiss*, as well as

Chinook, pink, and chum salmon to the downstream side of the weir. Members of the public have also reported observing hundreds to thousands of coho salmon milling downstream of the weir in late fall after the weir has closed for the season. CIAA has been responsible for operation of this weir since 1990.

Bear Lake was again treated with Rotenone by ADF&G biologists on July 21–22, 1971. The stated goal of this treatment was the eradication of threespine stickleback from Bear Lake with no mention of removing other species such as sockeye salmon, Dolly Varden char, Pacific lamprey, or freshwater sculpin, etc. According to McHenry (1972), "the lake could no longer rear substantial numbers of juvenile coho salmon due to extreme competition for survival from threespine sticklebacks." In 1988, the BOF revised the *Bear Lake Management Plan* (5 AAC 21.375) to allow enhancement of sockeye salmon in this lake. Bear Lake has been stocked since 1963 with coho salmon from a variety of brood sources within Alaska. From 2005 to 2014, an average of 516,800 coho salmon smolt were released annually (Appendix F11). Broodstock for many of the coho salmon releases in the early 1960s came from the Swanson River (Kenai Peninsula), Pasagshak River (Kodiak Island), Ketchikan Creek (Southeast Alaska), and Dairy Creek (Seward Lagoon), as well as Big Creek in Oregon. Sockeye salmon have been stocked into this lake annually since 1990 with a previous 10-year (2007–2016) average of 2.5 million fry released. Sockeye salmon released into this lake from TLH from 1990 to 1992 came from the Upper Russian River and Big River, both of which drain into Upper Cook Inlet. In 1998, 507,000 Tustumena Lake sockeye salmon smolt from TLH were released. Since that time, all other releases have been derived from broodstock harvested at Bear Lake.

In addition to Bear Lake, coho and other species of Pacific salmon have been released into several locations in Resurrection Bay since the late 1970s. Returns for these species typically are targeted by noncommercial users as specified in the *Resurrection Bay Salmon Management Plan* (5 AAC 21.376). Both pink and chum salmon have been released irregularly into a variety of locations in Resurrection Bay (Appendices F12 and F13). Since 2008, CIAA has released an average of 1.6 million sockeye salmon smolt annually from net pens anchored in Resurrection Bay (Appendix F10).

The sockeye salmon runs to Resurrection Bay in 2018 originated primarily from the 4.2 million BY 2013 and 4.1 million BY 2014 releases of smolt and fry into Bear Lake and the net pens in Resurrection Bay (Appendix F1).

In 2018, 2,033 adult coho salmon returned to the Bear Creek weir during its period of operation through October 14. CIAA collected 259 coho salmon for broodstock for a total of 640,000 green eggs, which was fewer than the 4.0 million eggs that CIAA was permitted for this species. There were 1,277 fish donated to members of the public (Appendix F4).

Sampling of the sport fishery from 2003 to 2005 determined that 29.8% of the fish harvested were thermally marked hatchery coho salmon (Bosch 2011).

LOWER COOK INLET COMMERCIAL HERRING FISHERY

LCI herring fishing first began in the Southern District in 1914 with the development of a gillnet fishery within Kachemak Bay. During the peak of the fishery, 8 salteries, including 6 near Halibut Cove, were in operation. A purse seine fishery in Kachemak Bay began in 1923; but after

3 successive years of average annual harvests approaching 8,000 short tons (1 short ton = 2,000 lb), herring populations, and hence the fishery, collapsed (Rounsefell 1930).

The next LCI herring fishery began in 1939 and was centered in the Resurrection Bay and Day Harbor areas of the Eastern District (Figure 13). Product from this purse seine fishery was used exclusively for oil and meal reduction. Although the fishery continued through 1959, peak harvests occurred from 1944 to 1946, averaging 16,000 short tons each of those years (Reid 1971). After this time period, stocks sharply declined, apparently due to overexploitation.

HARVEST STRATEGY AND STOCK ASSESSMENT

The LCI herring includes waters of Cook Inlet south of the latitude of Anchor Point, including the western shore of Cook Inlet south to Cape Douglas and the eastern shore of Cook Inlet along the Kenai Peninsula to Cape Fairfield (Figure 1). This management area is divided into 5 districts that match those for LCI salmon.

Commercial fishing for Pacific herring in LCI historically occurred in 4 of the 5 management districts, with Barren Islands District the sole area where commercial herring fishing has not occurred (Figure 2). Historic fisheries have included food/bait, meal/oil reduction, and sac roe harvest; legal gear has included both gillnet and seine. All of these fisheries have suffered periods of stock depletion and extended closures (Appendix G2).

Currently, 2 herring management plans regulate fisheries in LCI, both adopted by the BOF in 2001. The first management plan (5 AAC 27.463) renders waters of the Southern, Outer, and Eastern districts closed to commercial herring harvest, citing concerns about stock abundance and sustainability of commercial harvest in these areas. The *Kamishak Bay District Herring Management Plan* (5 AAC 27.465) describes the management strategies used to set and implement the guideline harvest levels for the Kamishak Bay sac roe fishery and is the only plan currently in place that could allow a commercial herring fishery in LCI. This plan was most recently adjusted in 2001 to include a reduction in the maximum exploitation rate allowed in the fishery from a former level of 20% of the forecasted herring biomass to a new level of 15%. In addition, a reduction in the biomass threshold (the minimum necessary to allow a fishery) from 8,000 short tons to 6,000 short tons (Hammarstrom and Otis 2001) was implemented. Highlights of the original plan that were retained include a management strategy intended to limit the harvest of herring age 5 and younger, and an allocation of 10% of the allowable harvest of Kamishak Bay herring to the Shelikof food/bait fishery in the Kodiak Management Area. Lawful gear in the Kamishak Bay sac roe fishery is restricted to purse seine. The limited entry permit system for sac roe herring seining in Cook Inlet was implemented in 1977, and 75 permanent permits are currently issued for the management area (Appendices G3 and G4).

The Kamishak Bay sac roe fishery began in 1973 when 8 permit holders harvested 243 short tons (Schroeder and Kyle 1986; Appendix G4). Participation in the fishery and harvest increased rapidly, peaking at 4,824 short tons harvested in 1976 before a stock decline prompted closure of the fishery after only 415 short tons were harvested in 1979 (Schroeder and Kyle 1986; Appendix G4). The stock recovered quickly, and the fishery reopened in 1985 with a harvest of 1,132 short tons (Schroeder and Kyle 1986; Appendix G4). The fishery remained open seasonally from 1985 to 1998 with an average annual harvest of 2,878 short tons before being closed again in 1999 due to low abundance levels (Hammarstrom 2000; Appendix G4). Management since that time concentrated on assessing the Kamishak Bay herring biomass to determine when commercial harvest could be sustainably resumed. However, all funding for herring stock assessment in LCI

was cut in fiscal year 2016, and the last aerial and vessel surveys of Kamishak Bay were conducted in the spring of 2015. No herring have been commercially harvested in Kamishak Bay since 1998 (Appendix G4).

The primary method of herring biomass assessment in LCI was aerial survey. When adequate funding was available, aerial surveys were conducted annually throughout the herring spawning season in the Kamishak Bay and Southern districts from mid-April through early June, to determine the relative abundance and distribution of herring. Because a commercial herring fishery had not occurred in the Outer and Eastern districts for many years, aerial surveys of these areas tapered off soon after the BOF closed these districts to commercial herring fishing by regulation at the 2001 meeting. Because fishermen annually participate in a personal use herring fishery in Kachemak Bay, limited aerial surveys of the Southern District continued until just before all herring stock assessment funding was cut. Aerial surveys of Kamishak Bay were moderately consistent across seasons; numbers and distribution of herring schools, location and extent of spawning events, and visibility factors affecting survey results were all recorded on index maps for each survey. Beginning in 2012, and continuing until the final survey in 2015, hard copy index maps were replaced by tablet computers running a customized version of ArcPad that allowed surveyors to enter their observations directly onto digital charts. Three standard conversion factors were used to estimate herring biomass based on each 538 ft^2 (50 m^2) of school surface area sighted and the following water depth parameters: (1) 1.52 short tons for water depths of 16 ft or less, (2) 2.56 short tons for water depths between 16 and 26 ft, and (3) 2.83 short tons for water depths greater than 26 ft (Lebida and Whitmore 1985; Otis and Bechtol 1999).

Due to invariably poor weather and water clarity, aerial surveys rarely provided reliable estimates of total herring biomass returning to Kamishak District Bay waters (Otis et al. 1998). As a result, an age-structured-assessment (ASA) model was used from 1994 through 2015 to forecast herring abundance for Kamishak Bay, and to hindcast previous years' total abundance (Appendix G5). This dynamic model incorporated a variety of heterogeneous data sources, including a time series of commercial catch age composition, total run age composition, and aerial survey biomass estimates from years with adequate survey conditions and coverage. The model simultaneously minimized the differences between expected and observed values for each of its components, updated hindcasts of previous years' abundance, and produced a forecasted estimate of the following year's run. This tool was important for management to help determine appropriate harvest levels and also for research to revise previous biomass estimates with updated return data to gain a more accurate assessment of trends over time (Appendix G5).

When funding was available, ADF&G utilized a chartered commercial seine vessel to aid in herring assessment in Kamishak Bay District and to aid opportunistically in the Southern District. In years when no commercial fishery occurred, ADF&G was unable to utilize the fleet to collect samples for age, sex, and size composition analysis. By chartering a commercial purse seine vessel, age, sex, size, disease samples, and additional related information were obtained, and all used to further aid in understanding the dynamics of the Kamishak Bay herring stock. These surveys also facilitated the collection of samples for other cooperative research projects that contributed to an overall comprehension of herring disease (Hershberger et al. 2016) and stock structure (Otis and Heintz 2003; Otis et al. 2010b; Libungan et al. 2016). When sufficient funding was available, separate vessel charters were conducted to sample different portions of the spawning migration (early and late). In years when a fishery occurred (traditionally in the early part of the migration), a single late season sampling charter was employed to obtain a more complete picture

of the overall run. Hydroacoustic observations of herring schools and water temperature/depth parameters were concurrently documented during the charters. The information gathered during those sampling efforts provided age class data that (1) allowed ADF&G to generate an age composition estimate of the overall biomass observed by aerial surveyors throughout the entire duration of the spawning migration; and (2) facilitated estimating the relative strength of recruiting year classes. This was critical in generating the annual herring forecast. The charters further served to corroborate the relative magnitude of herring biomass observed by aerial surveyors.

Funding for vessel charters was eliminated in 2011, resulting in a lack of age, sex, and size data for use in the ASA model during 2011 or 2012. Temporary funding was identified in 2013, 2014, and 2015, enabling ADF&G to resume use of this important stock assessment tool during those years; however, all funding for herring stock assessment was cut prior to the 2016 season.

SEASON SUMMARY

ADF&G did not conduct aerial or vessel surveys to assess the Kamishak Bay herring stock in 2018. Historical biomass trends for Kamishak Bay herring, based on the last ASA model run in 2015, are provided in Figure 5.

2019 HERRING SEASON OUTLOOK

Due to the cessation of aerial and vessel surveys, there was insufficient data to run the ASA model to generate a forecast of the 2019 Kamishak Bay District herring spawning biomass. Given the lack of current survey information, coupled with the recent trend of low biomass and poor recruitment events, ADF&G will not prosecute a commercial fishery in 2019.

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Permanent Employees with the Division of Commercial Fisheries, Salmon/Herring Program

Name	Job Class	Project / Title
Ted Jewel	Boat Officer III	Captain, R/V *Pandalus*
Glenn Hollowell	FB III	Area Management Biologist
Edward O. "Ted" Otis	FB III	Area Research Biologist
Ethan Ford	FB II	Fishery Biologist
Carolyn Bunker	Fish &Game Program Technician	Office Administration

Seasonal Employees with the Division of Commercial Fisheries, Salmon/Herring Program

Name	Job Class	Project / Title
Mark Wayne	Admin. Clerk II	Office Administration
Patrick Houlihan	FWT II	Stream Survey Technician
David Knight	Boat Officer I	R/V *Pandalus*
Joe Loboy	FWT III	Port Sampler/GIS Technician
Tom Sigurdsson	FWT III	Stream Survey Technician
Theresa Fish	FWT II	Otolith Sampling Technician

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FIGURES AND TABLES

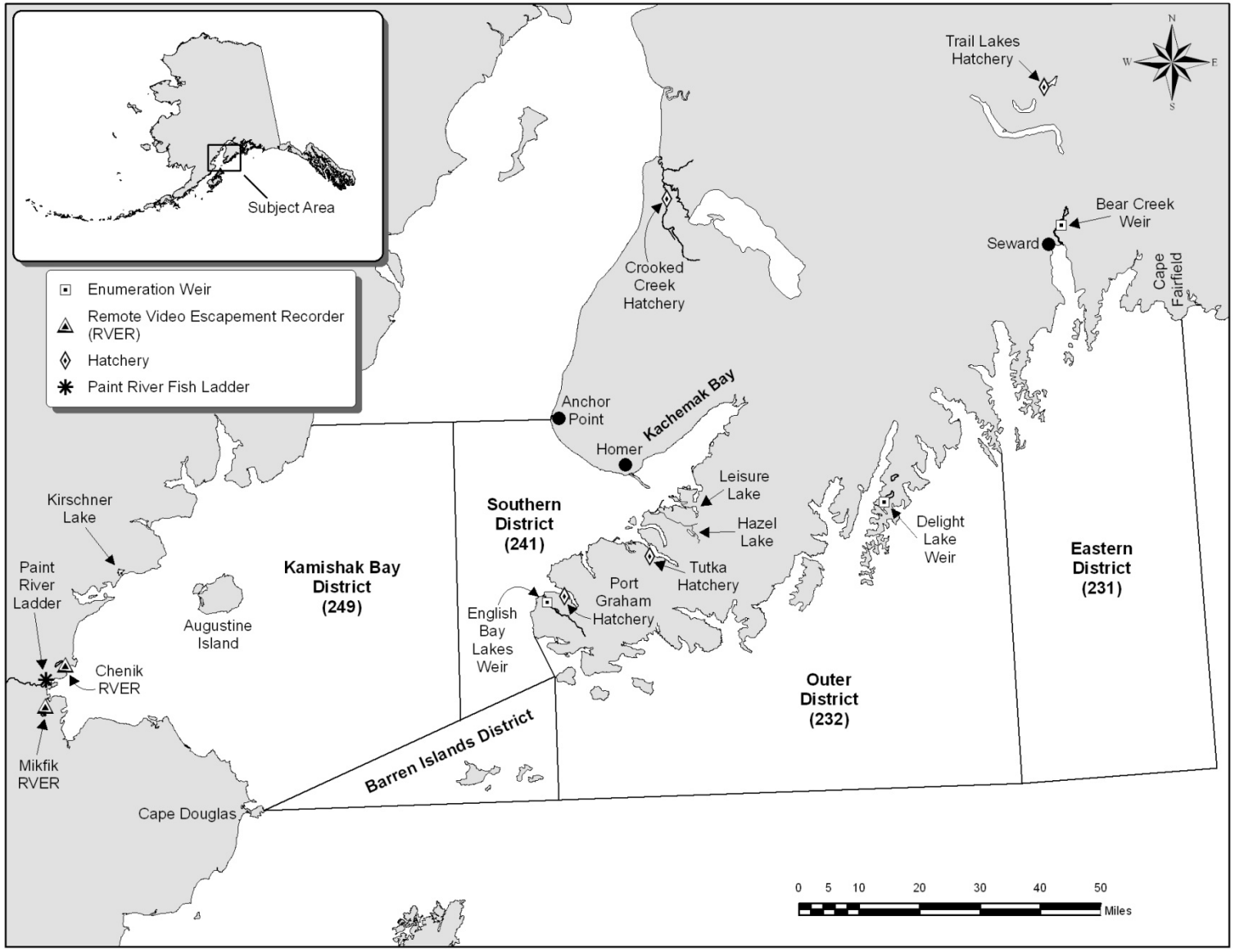

Figure 1.–Lower Cook Inlet Management Area showing commercial fishing districts, salmon hatcheries, weir and fish ladder locations, and remote video salmon monitoring sites.

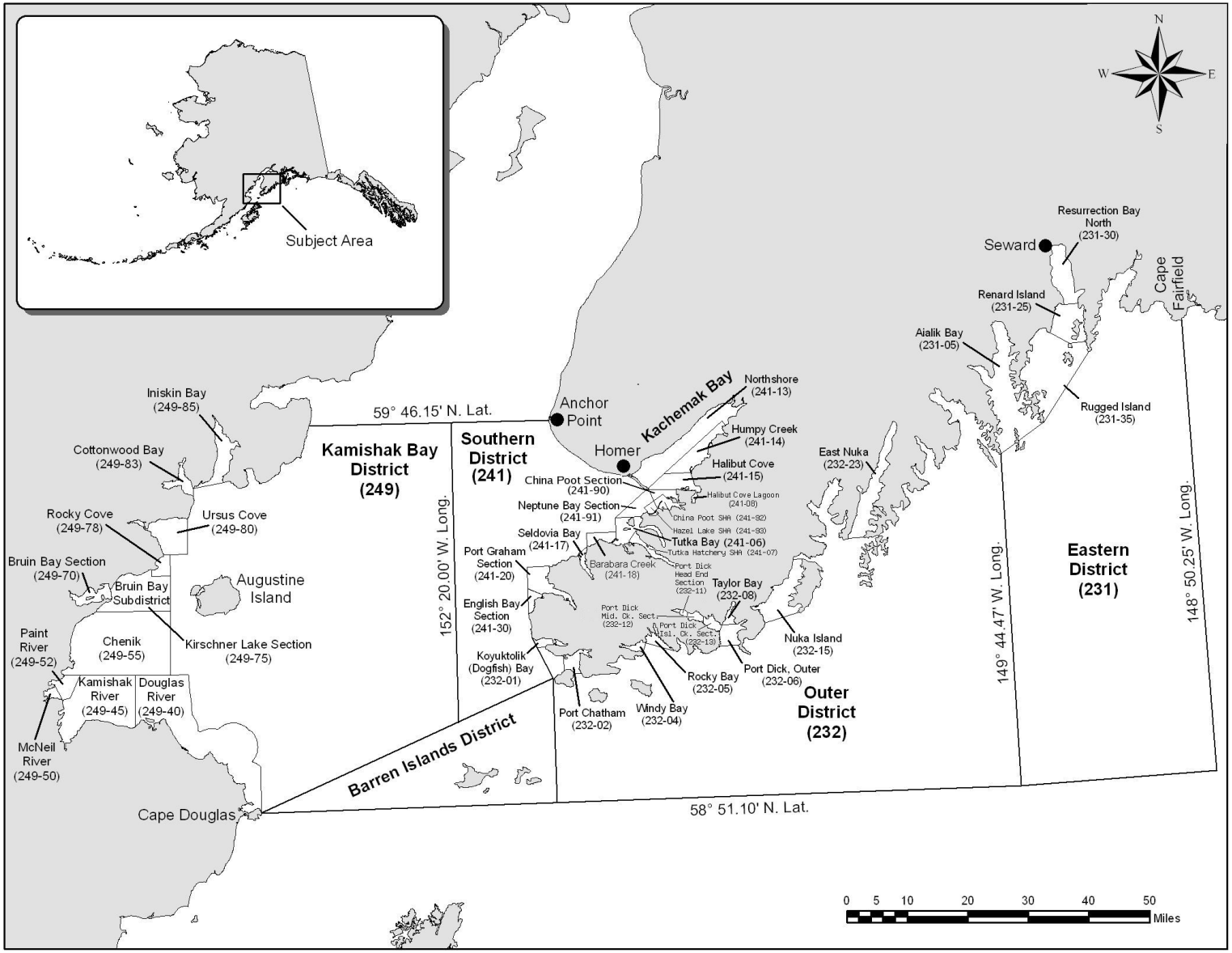

Figure 2.–Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts.

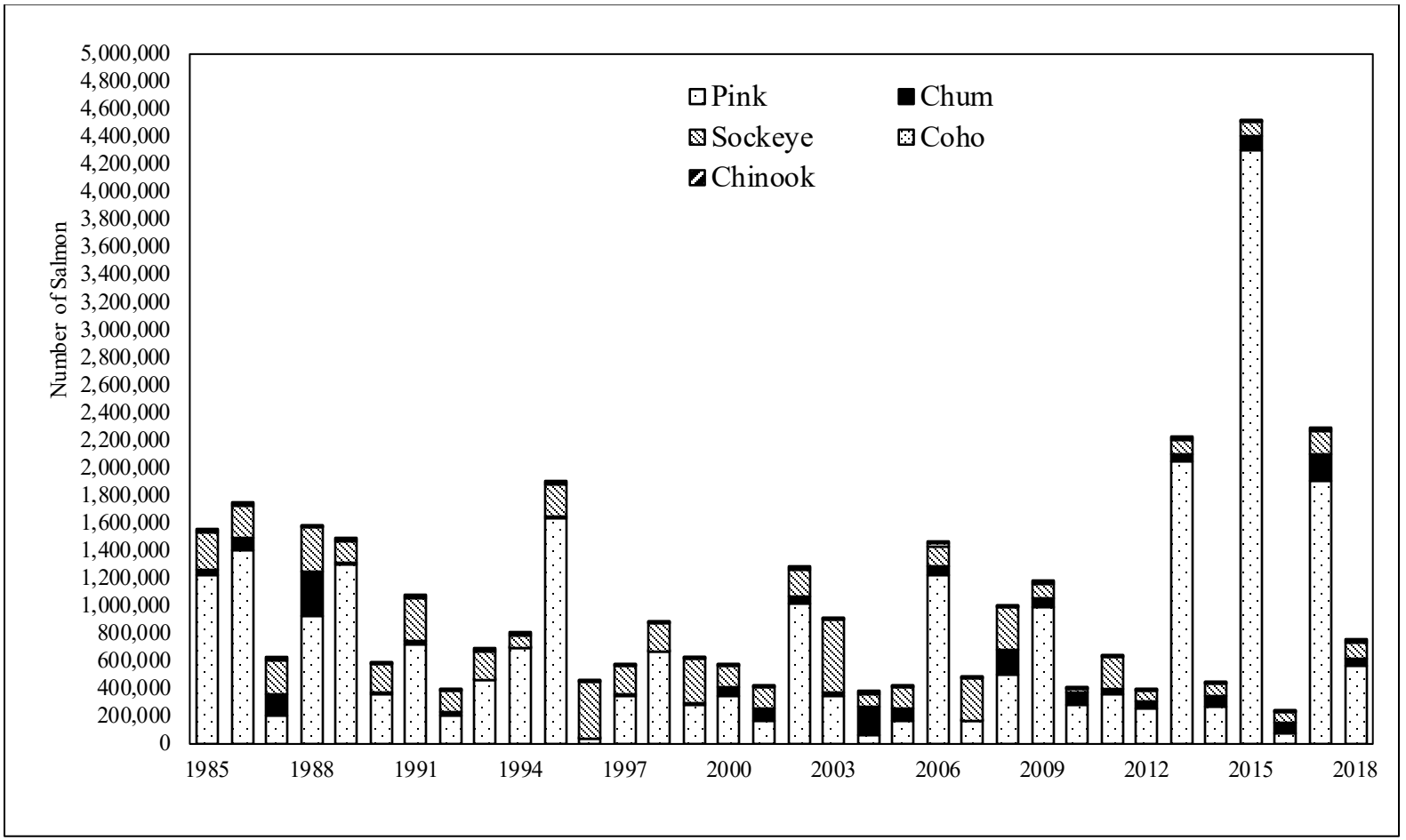

Figure 3.–Commercial common property salmon harvests in Lower Cook Inlet, 1985–2018.

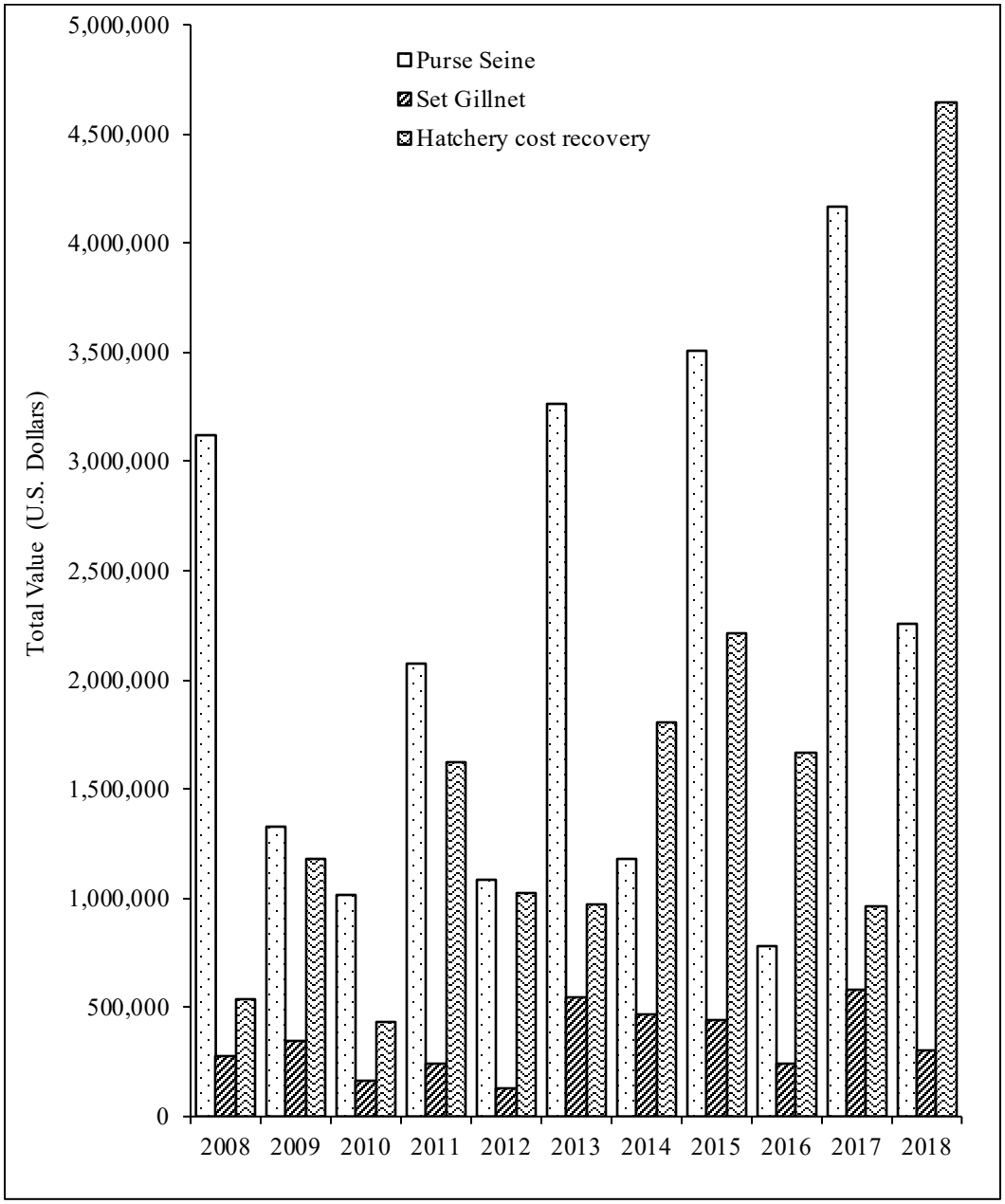

Figure 4.–Exvessel value of Lower Cook Inlet commercial salmon harvest, 2008–2018.

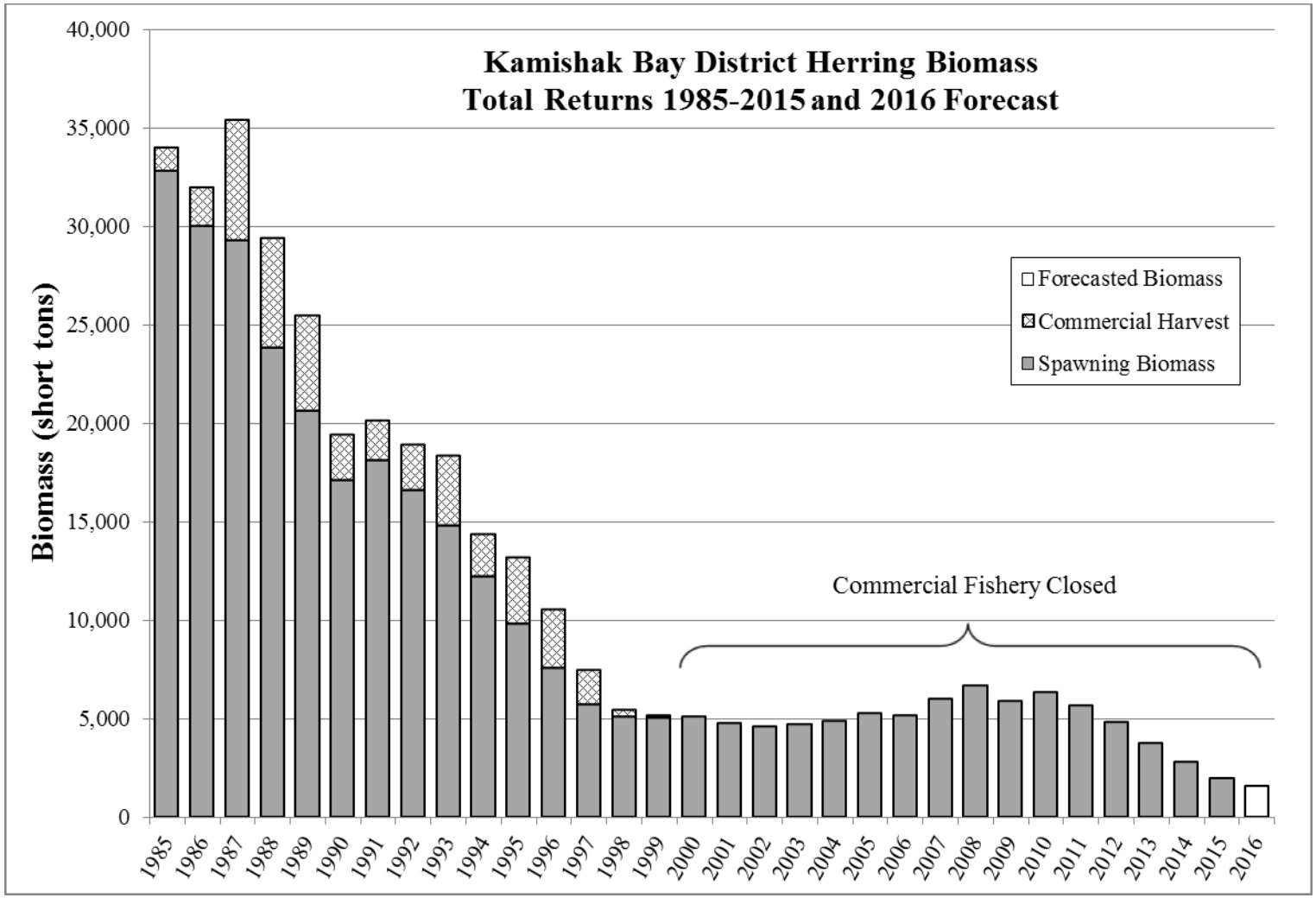

Figure 5.–Age-structured-assessment (ASA) biomass estimates and commercial harvests of Pacific herring in the sac roe seine fishery, Kamishak Bay District, Lower Cook Inlet, 1985–2015 and 2016 projection.

Note: Funding for herring stock assessment was cut in 2015; therefore, hindcasts and forecasts after 2016 are not available. All spawning biomass estimates derived from 2015 ASA calculations.

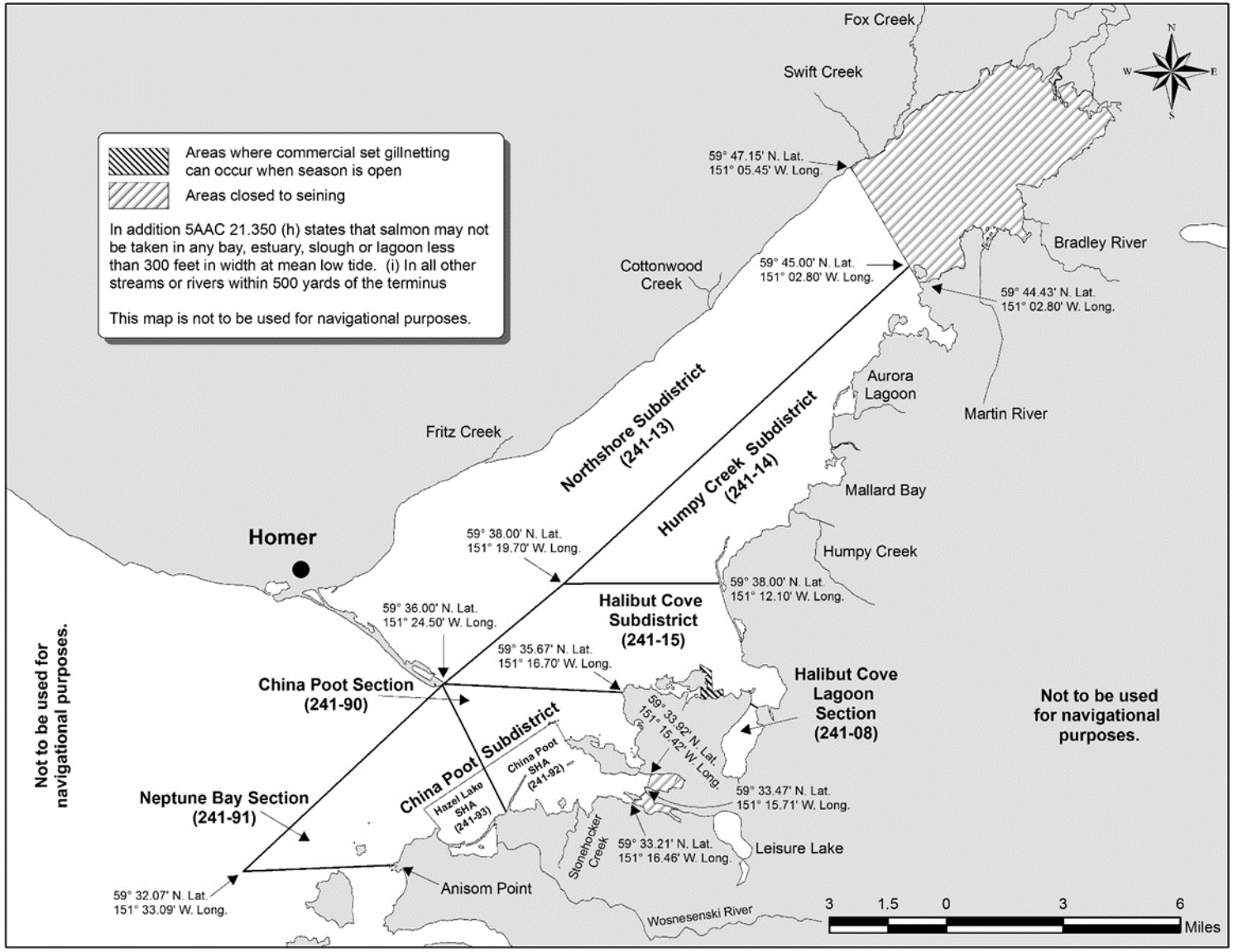

Figure 6.–Southern District of Lower Cook Inlet Management Area showing commercial fishing and reporting subdistricts, Chugachik Island to Anisom Point.

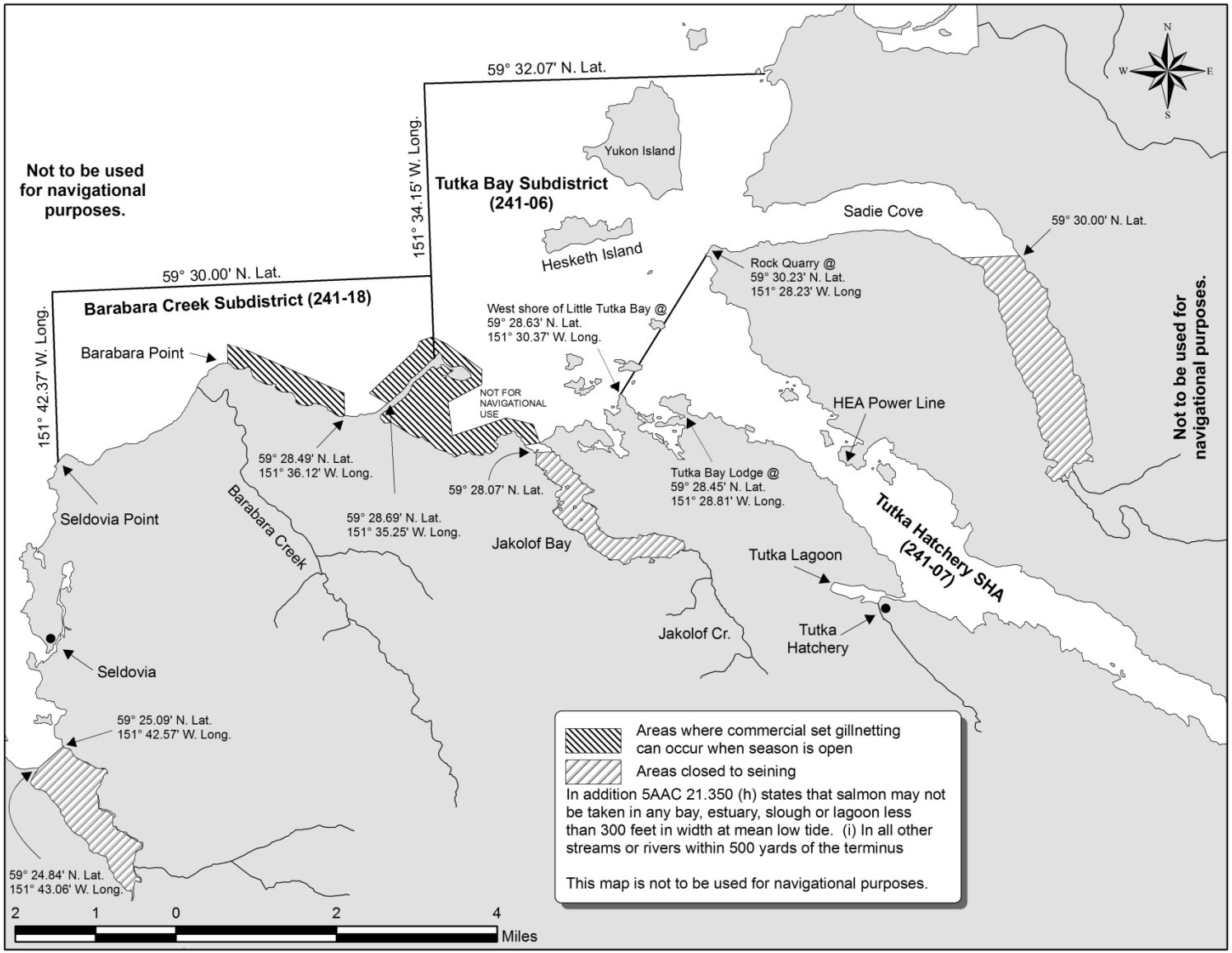

Figure 7.–Southern District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Anisom Point to Seldovia Point.

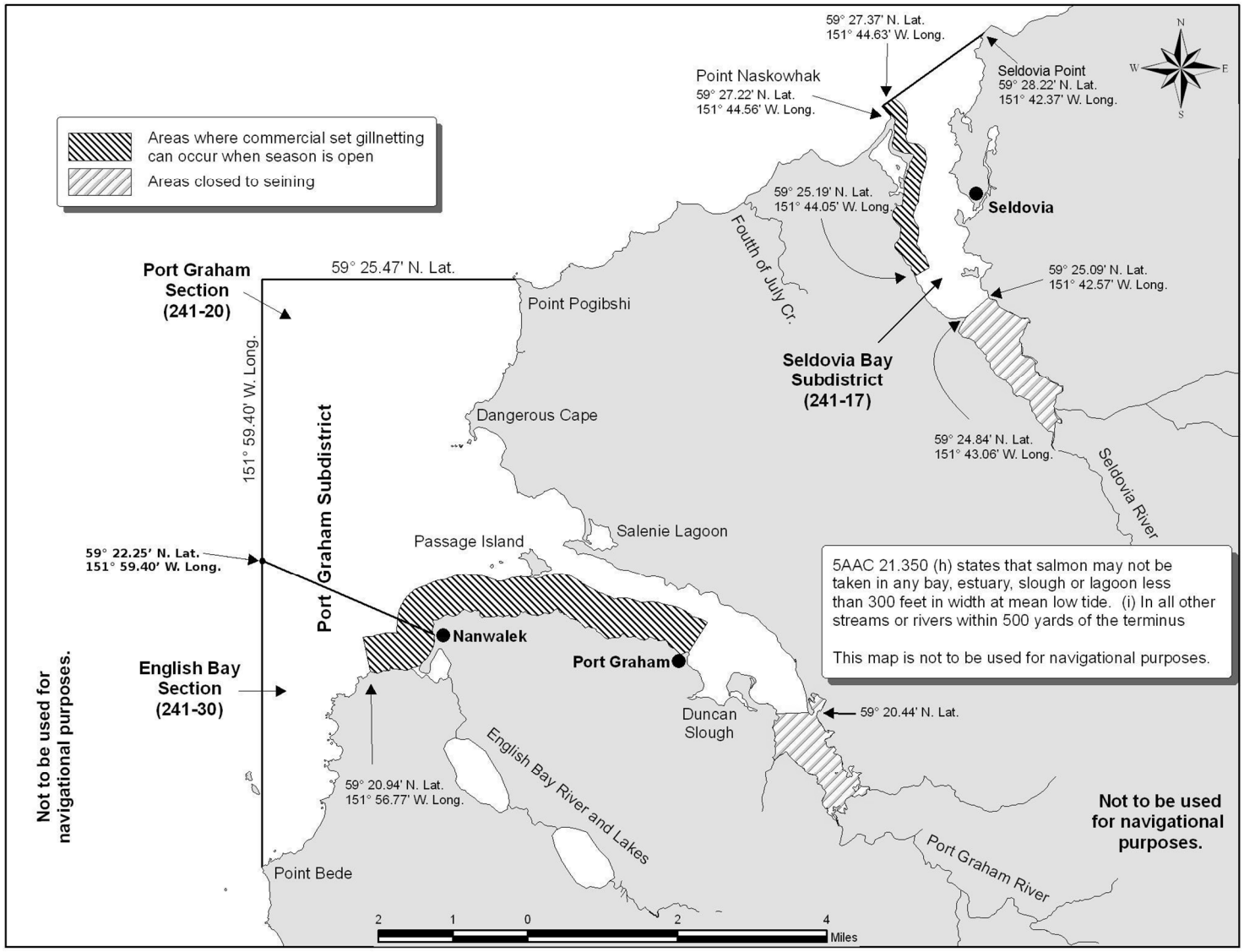

Figure 8.–Southern District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Seldovia Point to Point Bede.

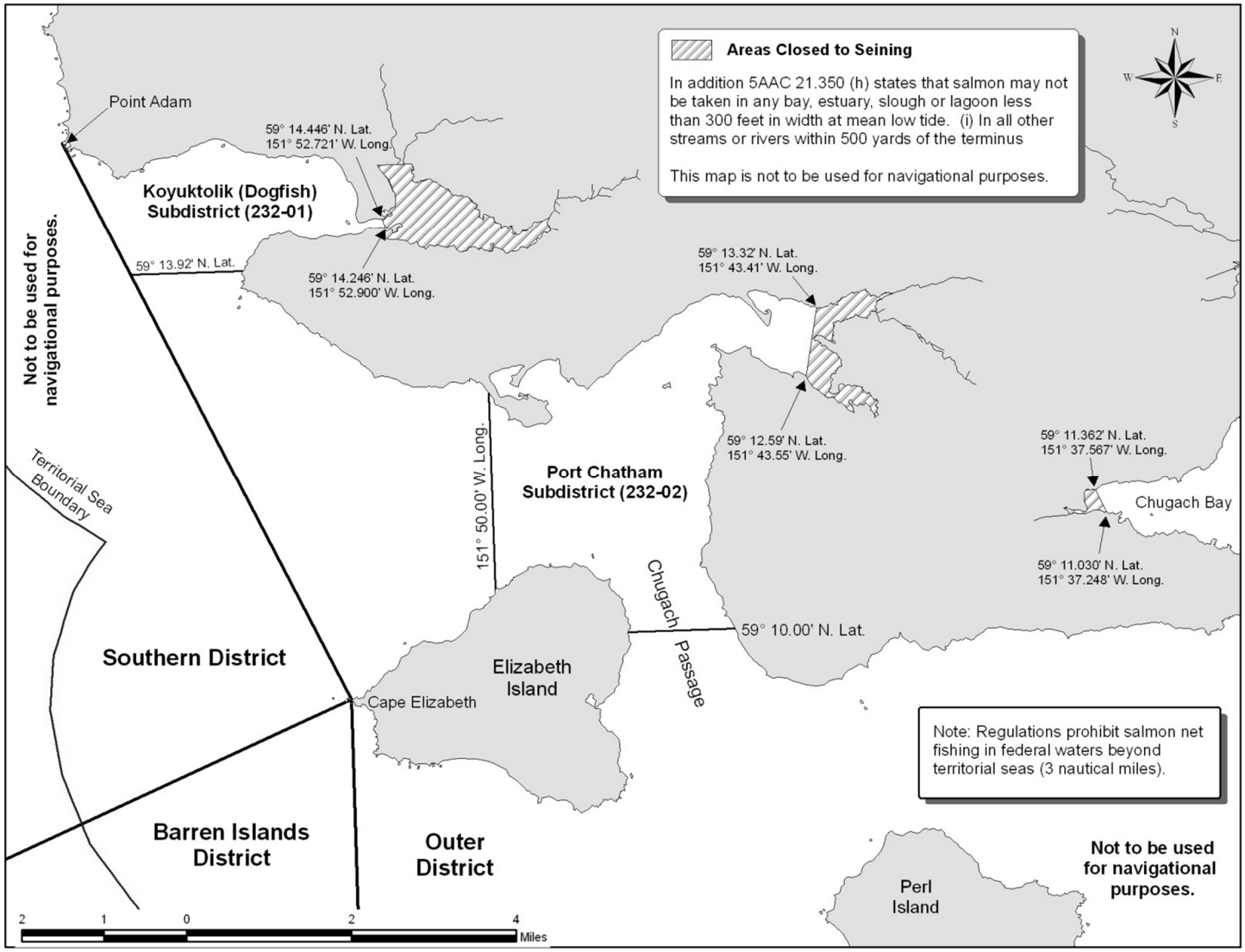

Figure 9.–Outer District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Point Adam to Chugach Bay.

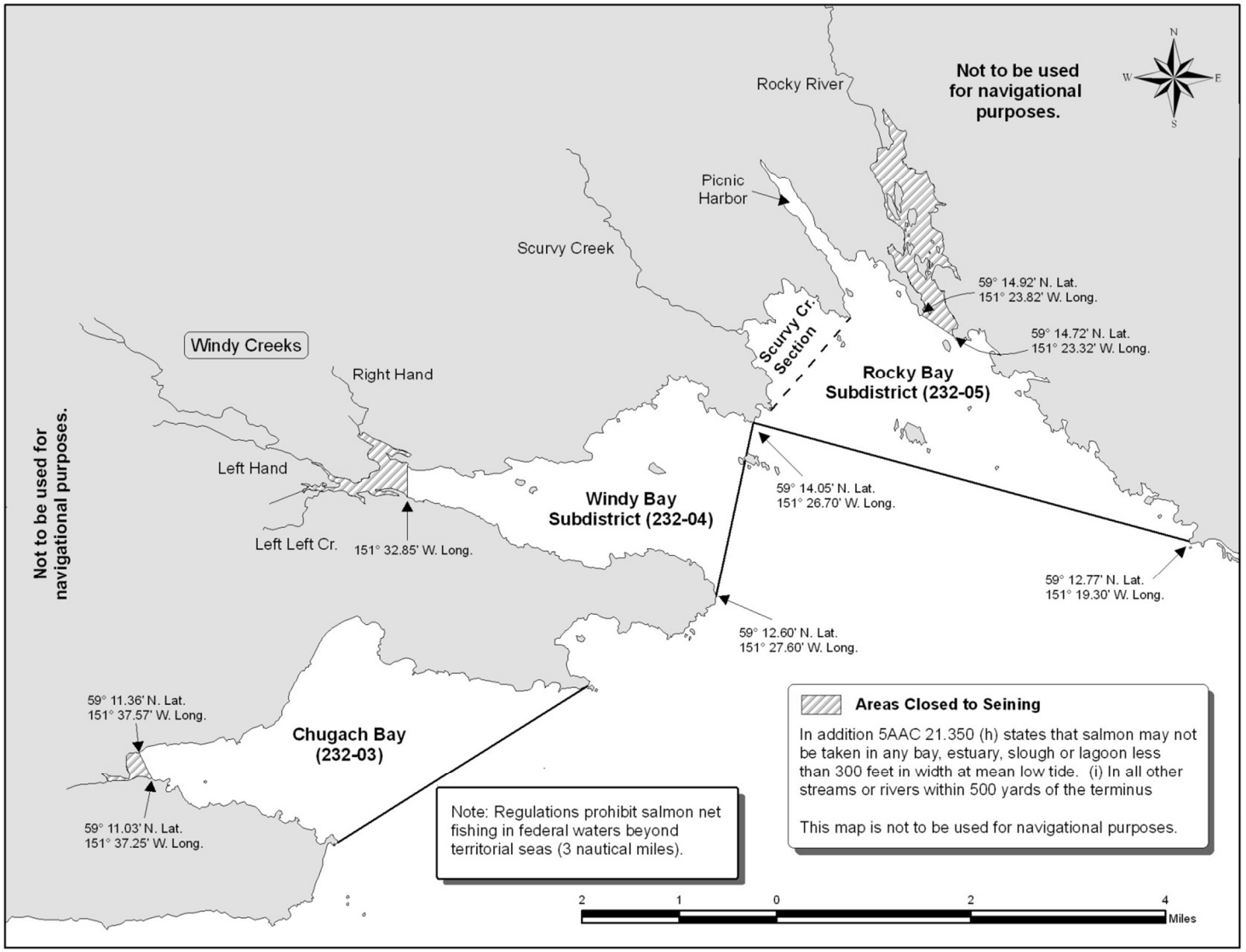

Figure 10.–Outer District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Chugach Bay to Rocky Bay.

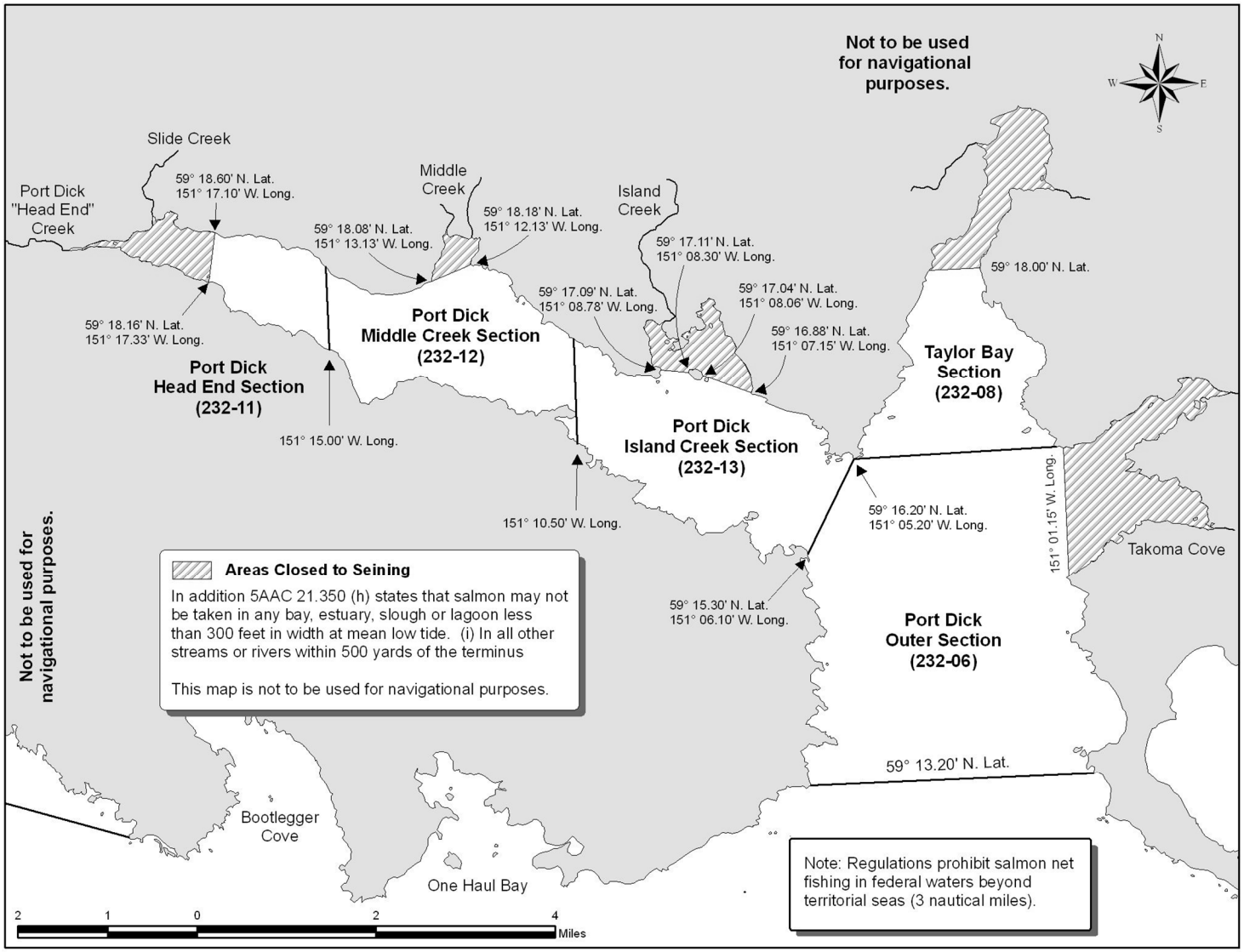

Figure 11.–Outer District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Port Dick area.

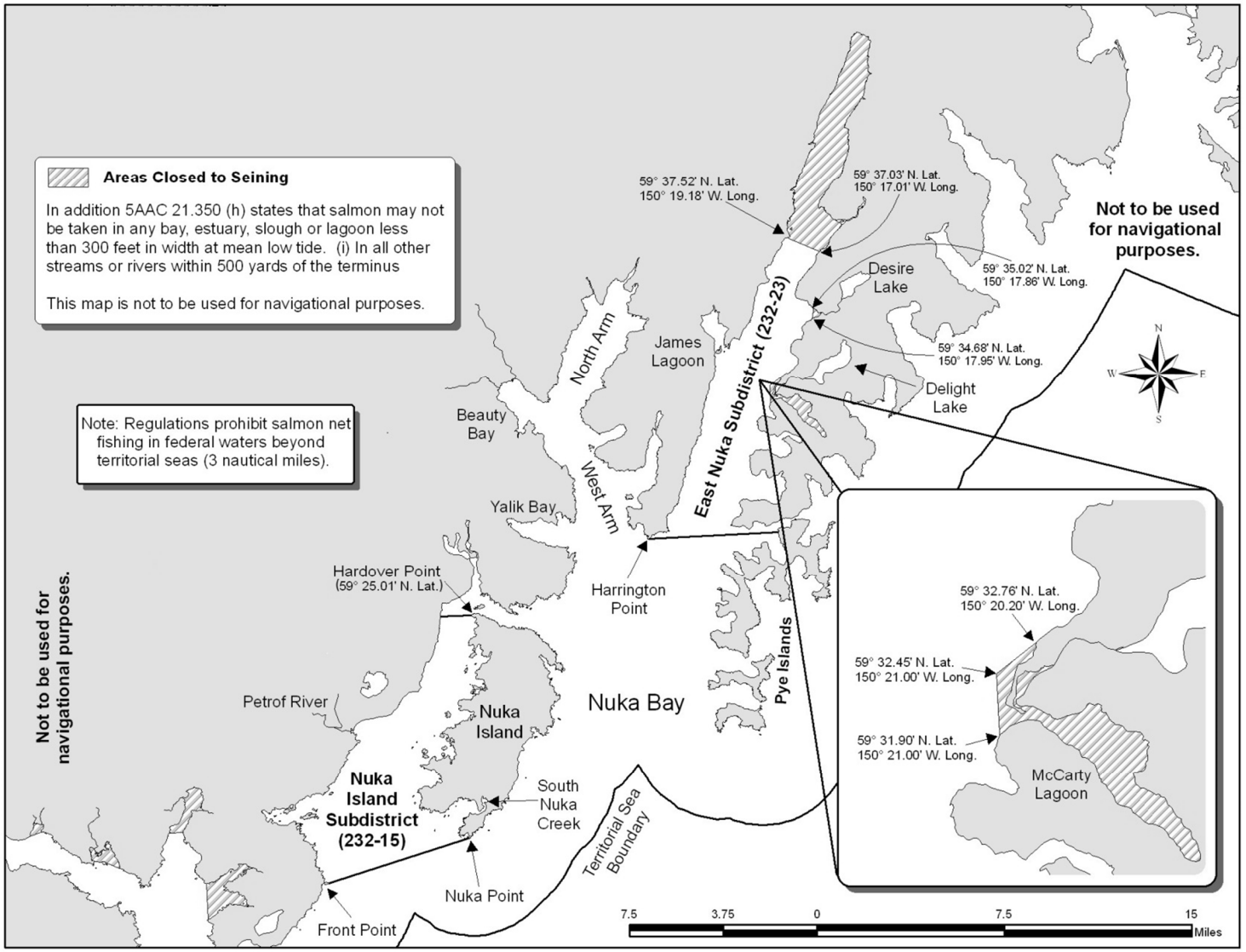

Figure 12.–Outer District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Nuka Bay area.

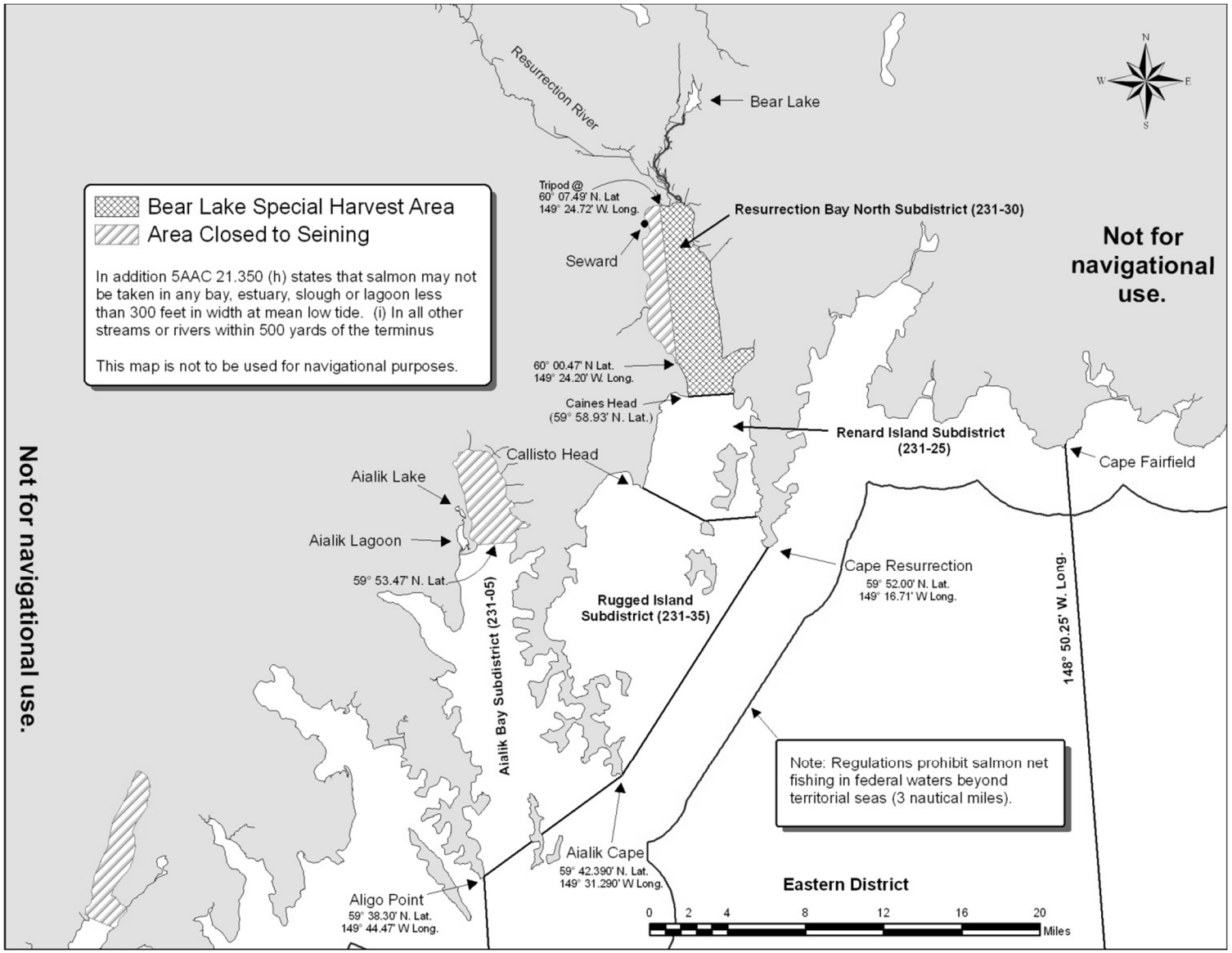

Figure 13.–Eastern District of Lower Cook Inlet Management Area showing commercial fishing districts, reporting subdistricts, and hatchery special harvest area, Aligo Point to Cape Fairfield.

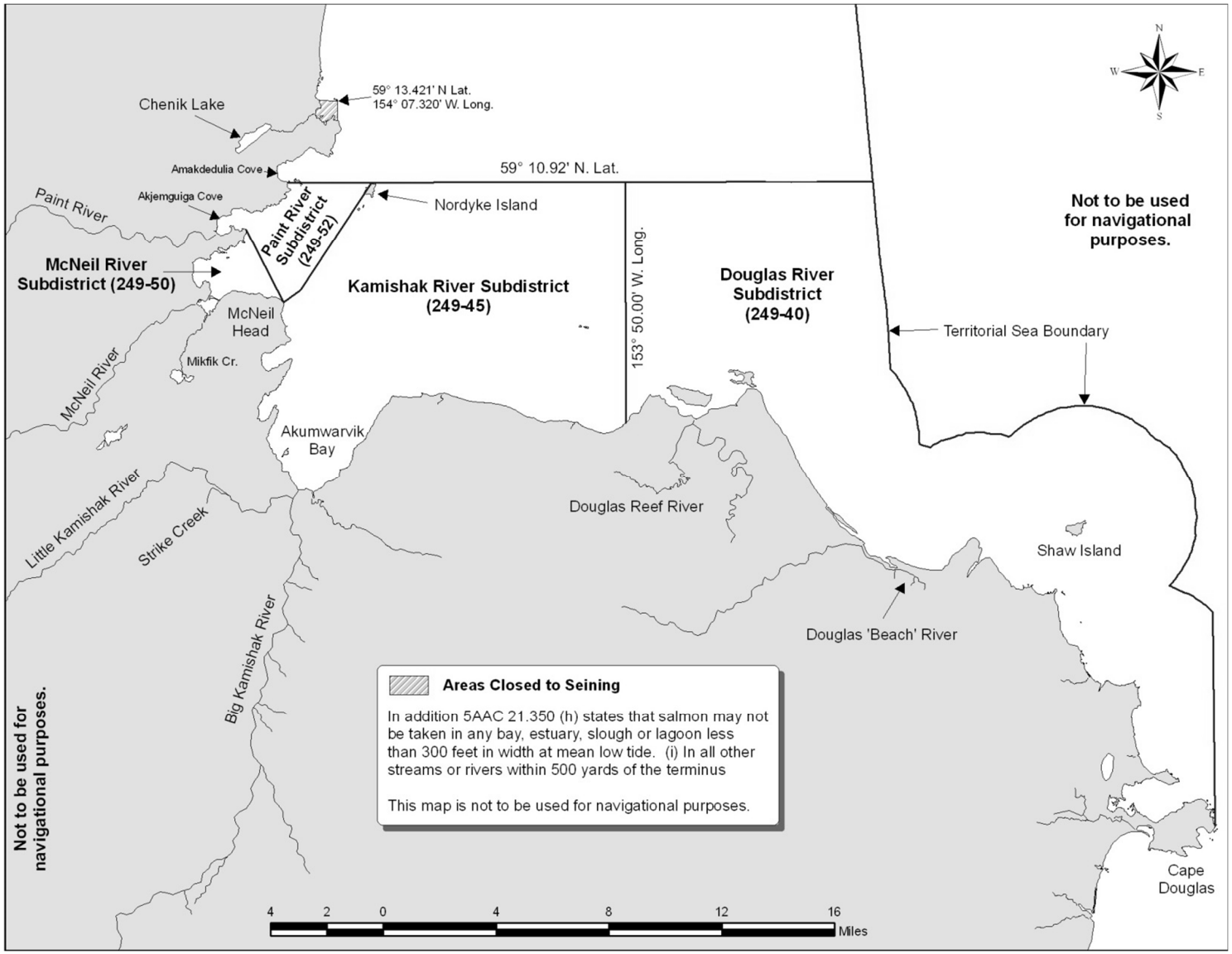

Figure 14.–Kamishak Bay District of Lower Cook Inlet Management Area showing commercial fishing districts and reporting subdistricts, Chenik Lake to Cape Douglas.

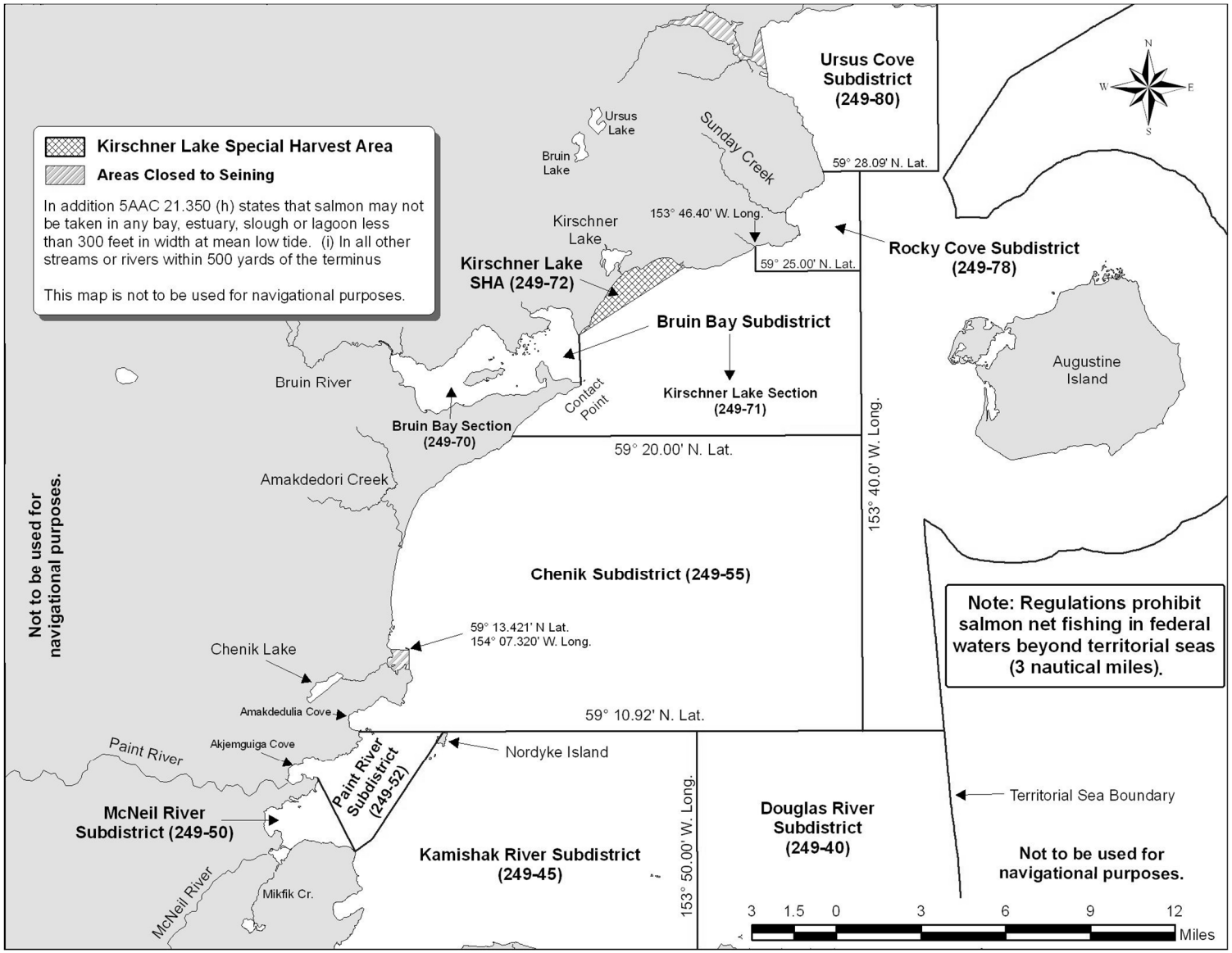

Figure 15.–Kamishak Bay District of Lower Cook Inlet Management Area showing commercial fishing districts, reporting subdistricts, and hatchery special harvest area, McNeil River to Ursus Cove.

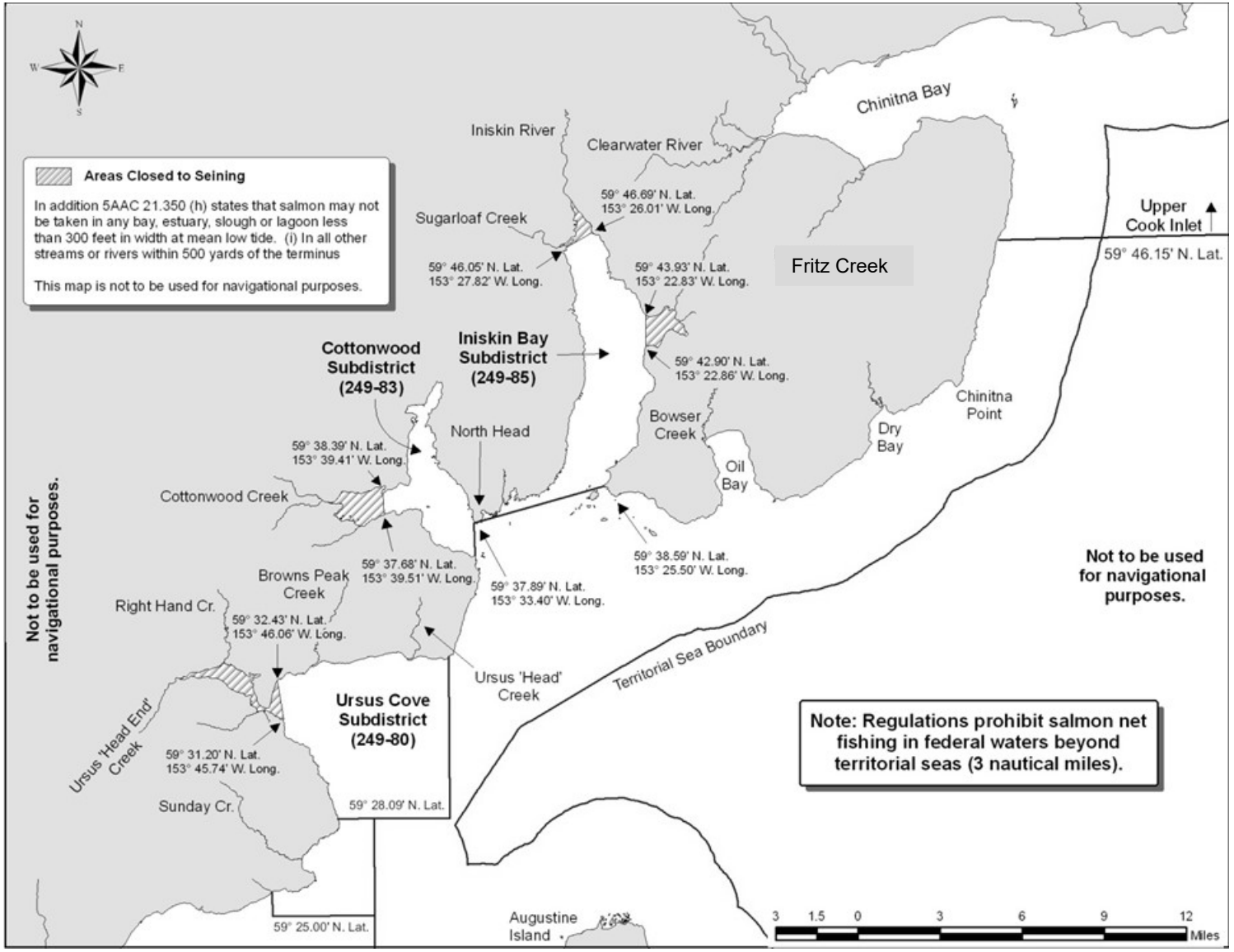

Figure 16.–Kamishak Bay District of Lower Cook Inlet Management Area showing commercial fishing districts, Ursus Cove to Chinitna Point.

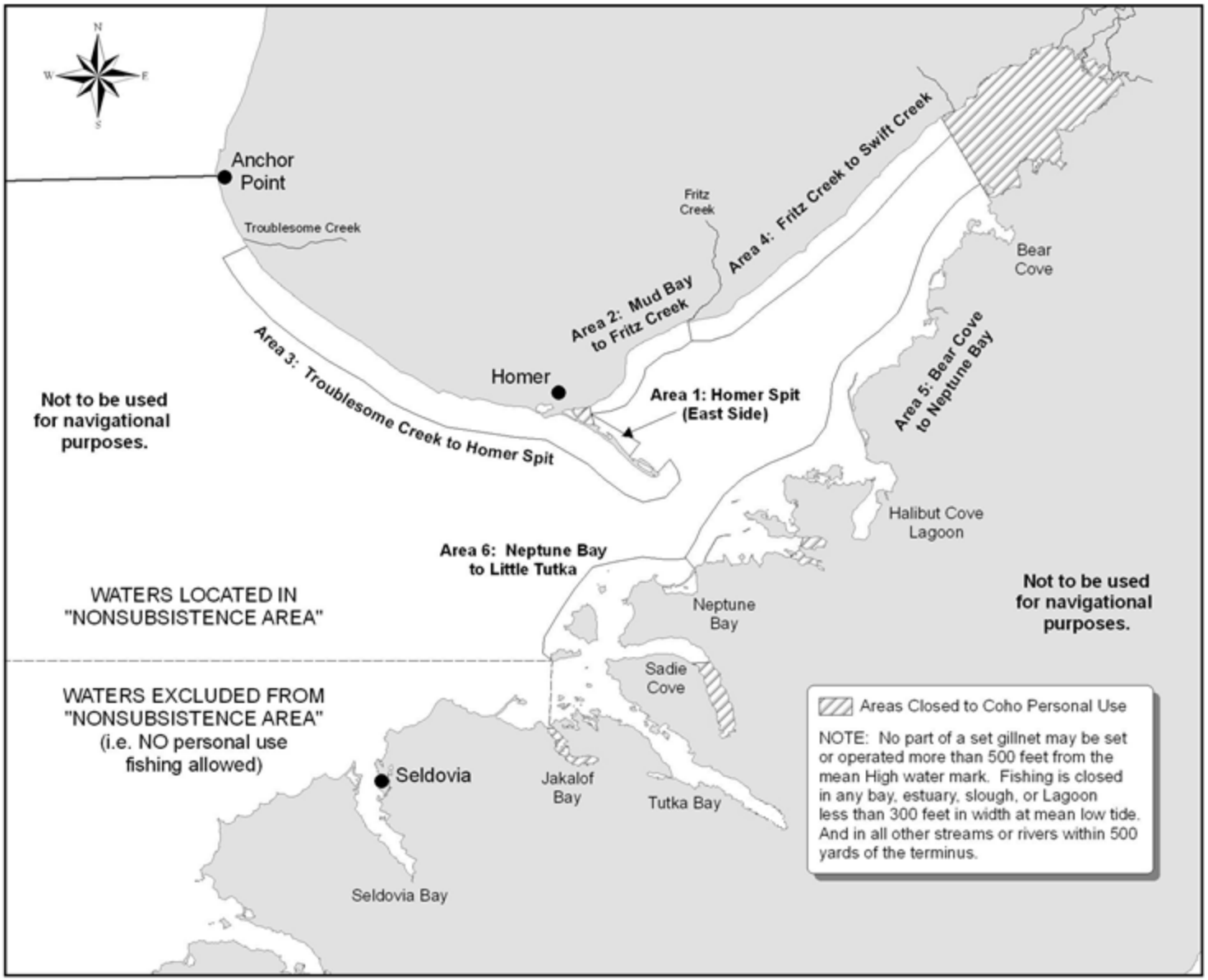

Figure 17.–Kachemak Bay personal use coho salmon fishery registration areas.

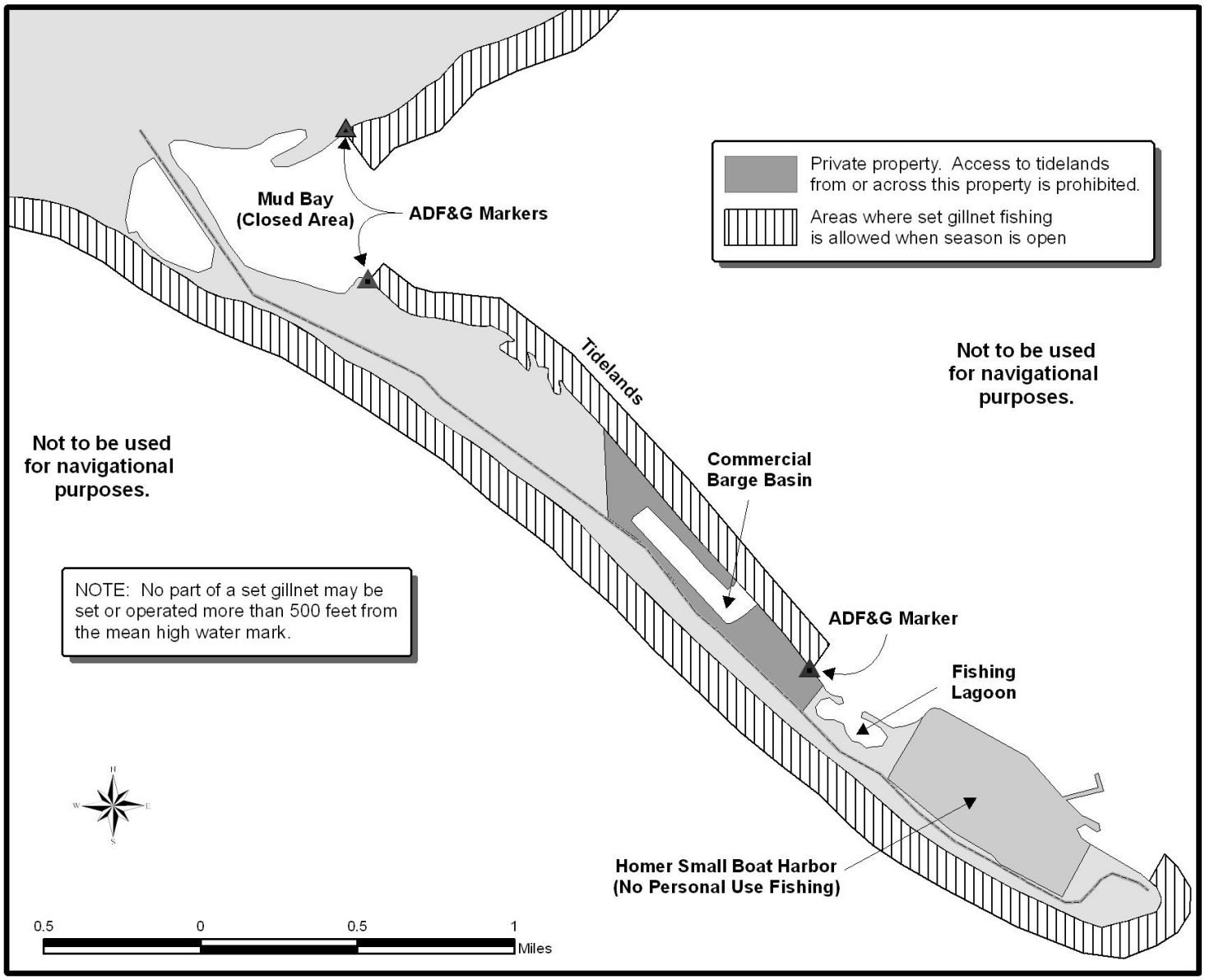

Figure 18.–Southern District personal use coho salmon fishery, Homer Spit area.

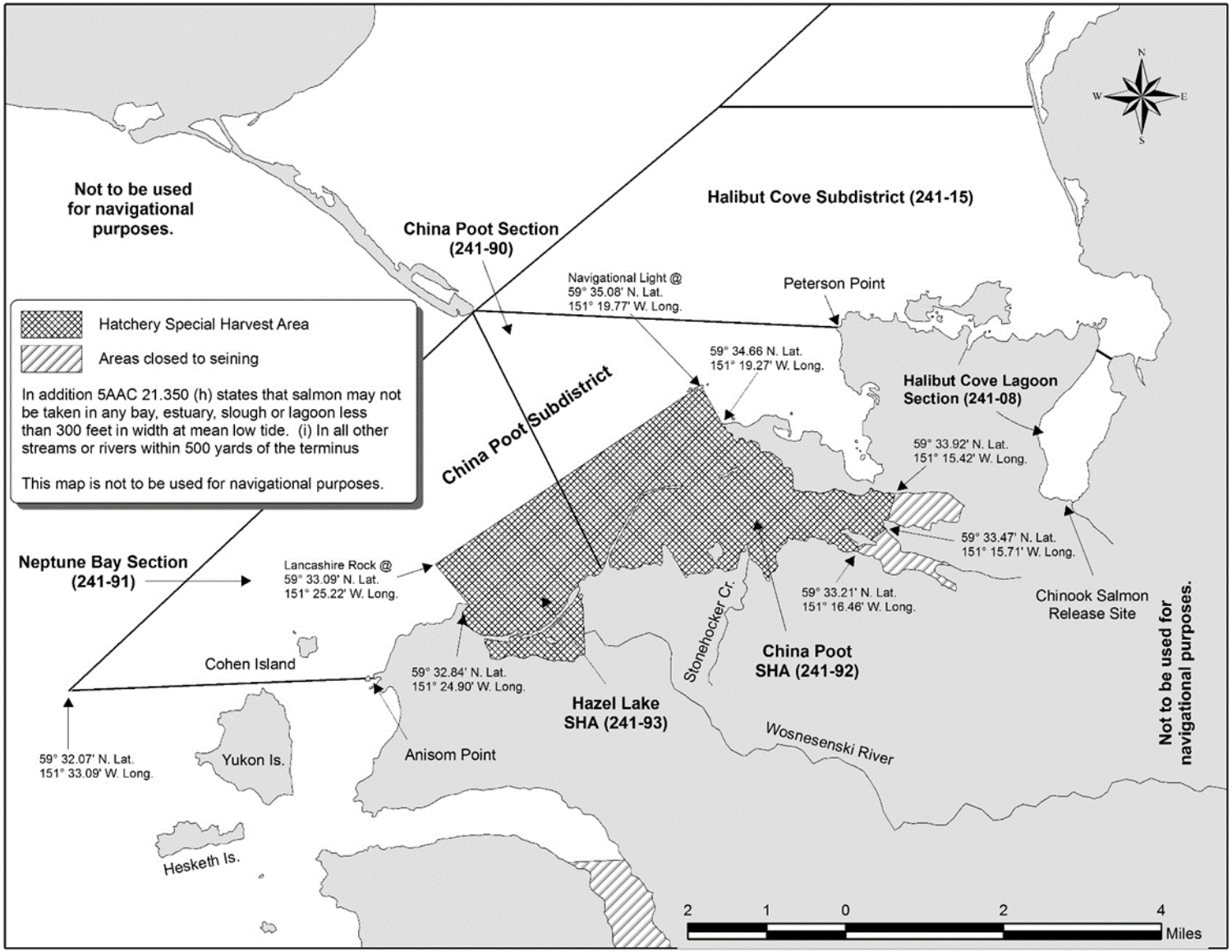

Figure 19.–Lower Cook Inlet Management Area, Southern District hatchery special harvest areas, Halibut Cove to Anisom Point.

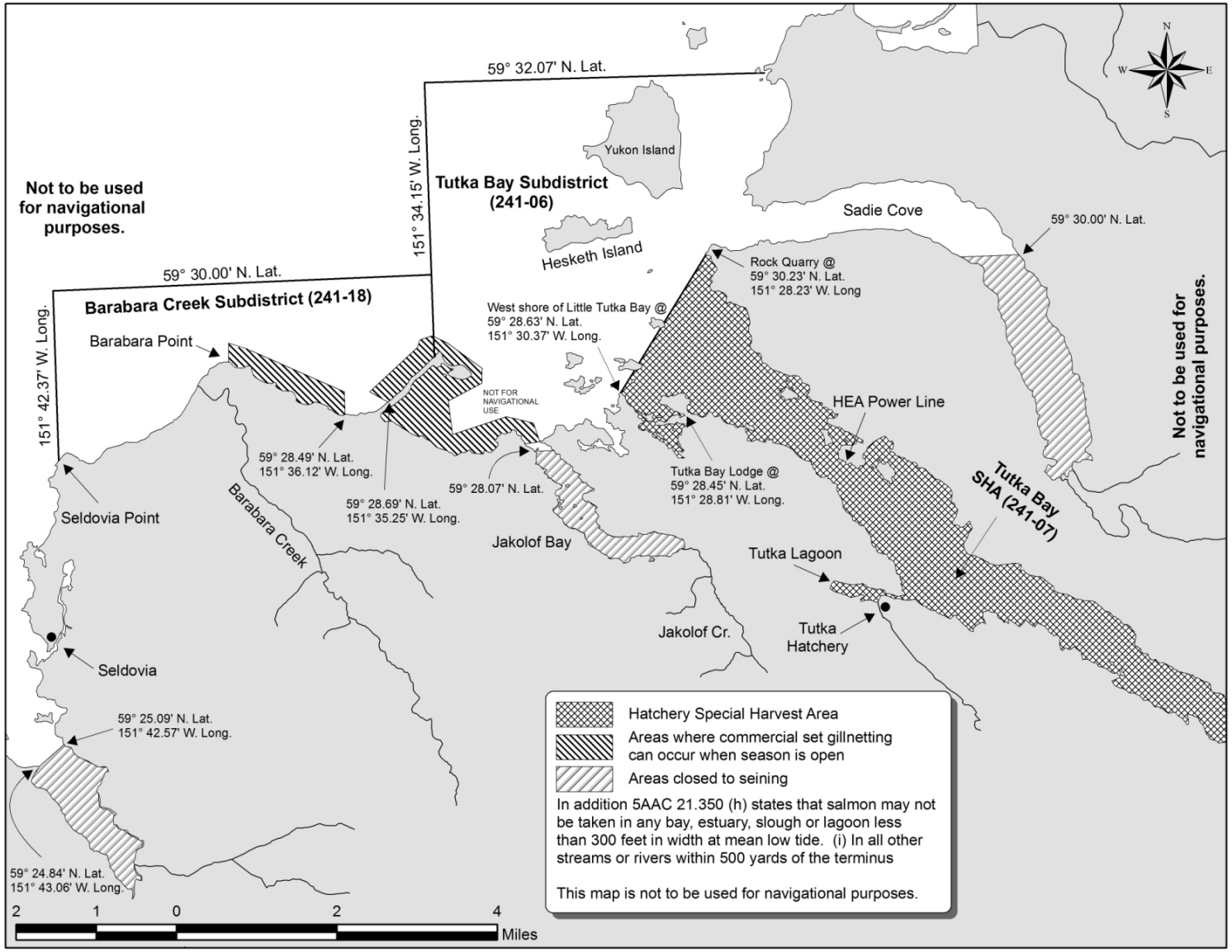

Figure 20.–Lower Cook Inlet Management Area, Southern District hatchery special harvest areas, Anisom Point to Seldovia Point.

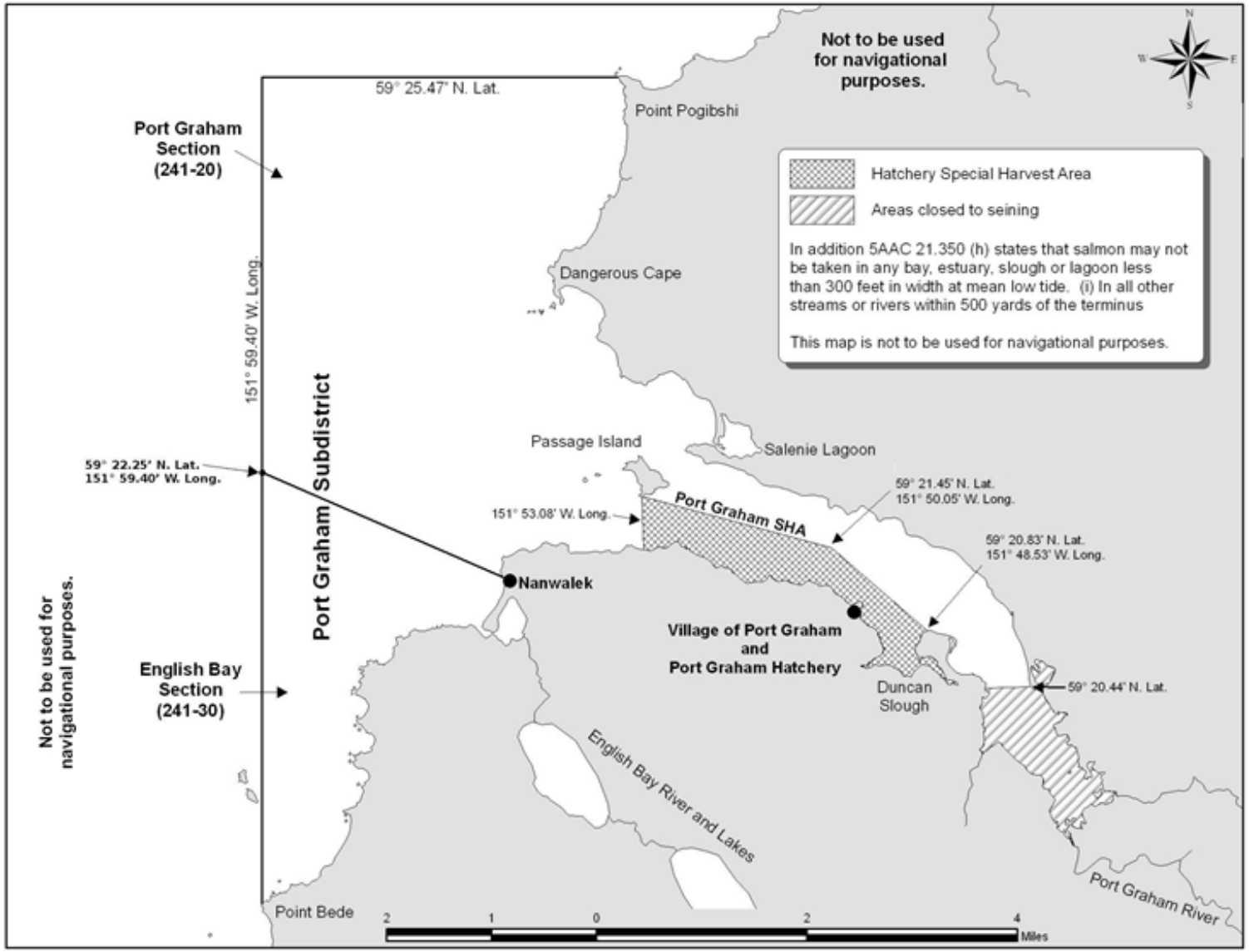

Figure 21.–Lower Cook Inlet Management Area, Southern District hatchery special harvest areas, Port Graham Area.

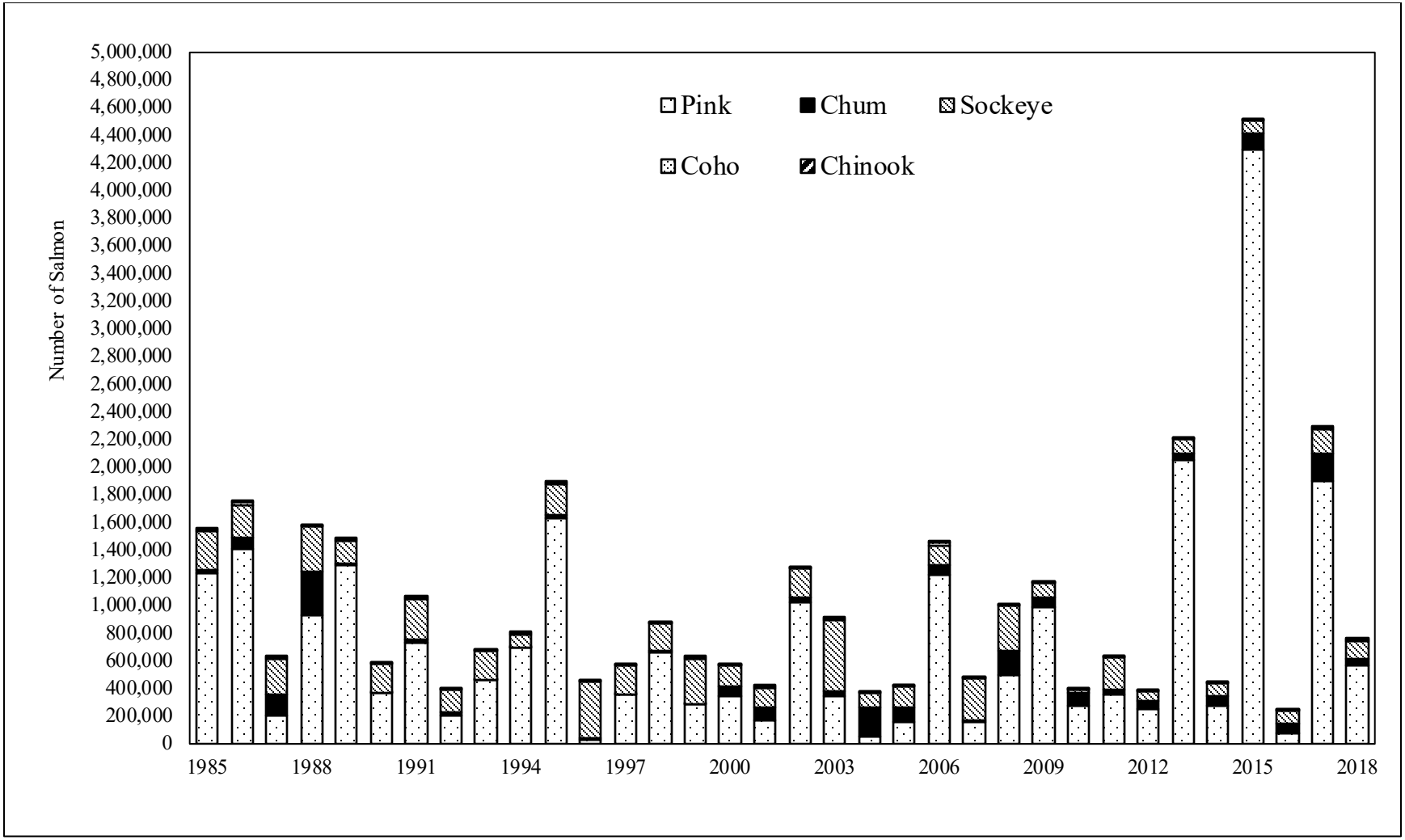

Figure 22.–Commercial common property salmon harvests in Lower Cook Inlet, 1985–2018.

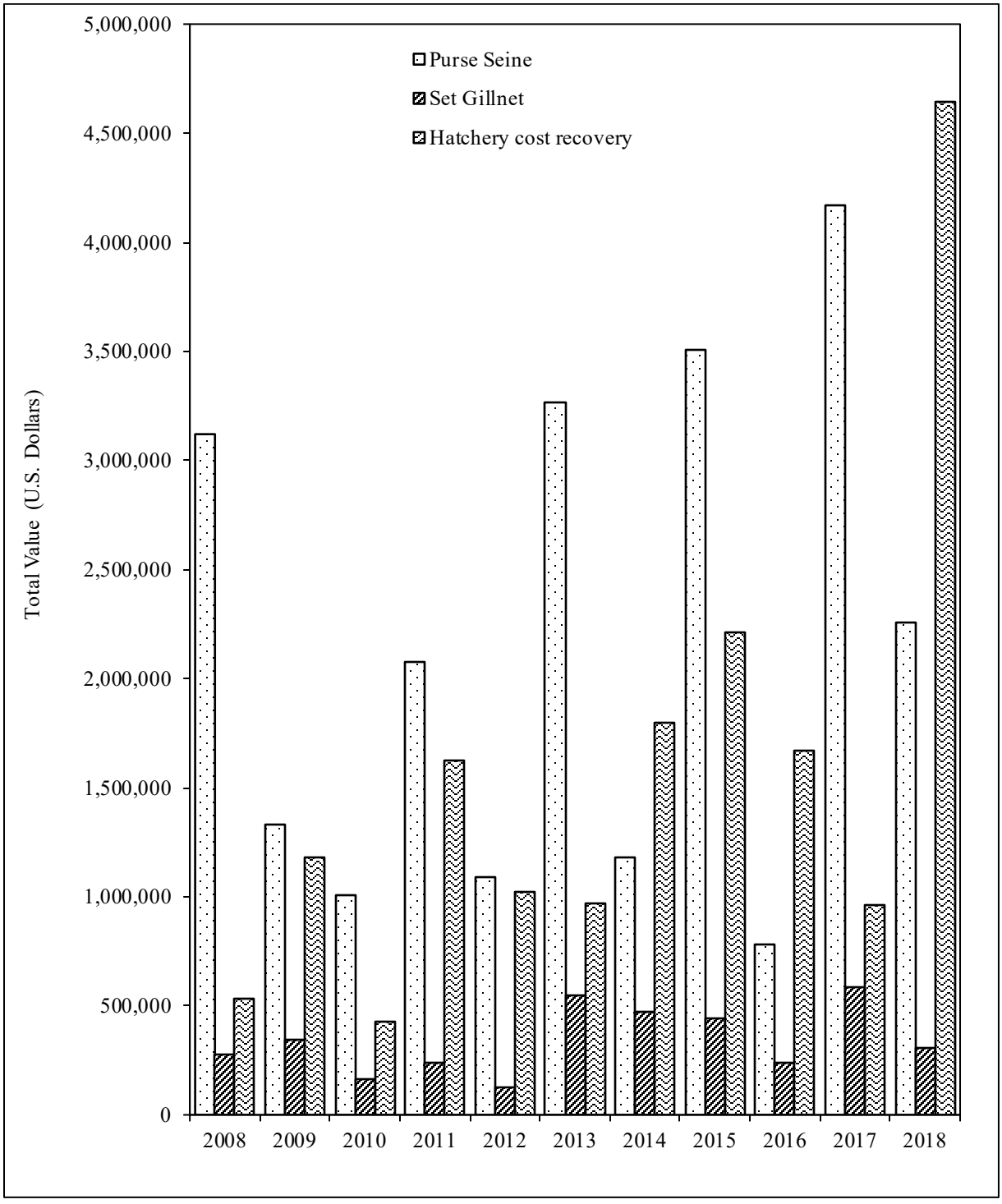

Figure 23.–Exvessel value of Lower Cook Inlet commercial salmon harvest, 2008–2018.

Table 1.–Lower Cook Inlet Management Area commercial salmon harvest by gear and district, 2018.

District	Permit holders[a]	Chinook[a]	Sockeye[a]	Coho[a,b]	Pink[a]	Chum[a]	Total
Southern District	20	131	55,246	1,747	472,204	1,166	530,494
Outer District	11	2	1,409	5	32,326	34,857	68,599
Eastern District	5	0	22,310	0	0	66	22,376
Kamishak Bay District	7	0	33,699	9,077	5,226	8,298	56,300
Purse seine total	20	133	112,664	10,829	509,756	44,387	677,769
Southern District	19[c]	185	15,157	3,067	56,638	4,232	79,279
Set gillnet total	19	185	15,157	3,067	56,638	4,232	79,279
Commercial common property total		318	127,821	13,896	566,394	48,619	757,048
Hatchery cost-recovery total[d]		2	238,942	79	997,613	82	1,236,718
Commercially sold total		320	366,763	13,975	1,564,007	48,701	1,993,766
Homepack		61	773	135	72	28	1,069
Hatchery donated fish[e]			2,924	1,277			4,201
Misc. Total		61	3,697	1,412	72	28	5,270
Lower Cook Inlet total		381	370,460	15,387	1,564,079	48,729	1,999,036

[a] Numbers of fish and numbers of permit holders delivering are from ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

[b] There were 1,956 coho salmon harvested in the Seward Salmon Derby and sold by the sponsor to commercial processors. These fish were caught by sport permit holders using rod and reel (troll gear). This harvest is not included in the commercial harvest total catch.

[c] Of the 19 permit holders that delivered, 6 were dual permits.

[d] Hatchery sales for hatchery operating costs. Includes incidentally harvested wild salmon.

[e] Excess sockeye and pink salmon harvested at the Bear Creek weir and Tutka hatchery.

Table 2.–Total commercial salmon harvest by species from all gear types, Lower Cook Inlet area, including cost recovery for all Cook Inlet area hatcheries, 1990–2018.

Year	Gear	Permits[a]	Chinook[a]	Sockeye[a]	Coho[a]	Pink[a]	Chum[a]
1990	Purse Seine	71	199	188,032	733	353,781	5,013
1990	Set Gillnet	20	1,361	15,863	1,046	12,646	1,938
1990	Hatchery	0	0	0	5,876	17,243	0
	Total		1,560	203,895	7,655	383,670	6,951
1991	Purse Seine	68	576	281,250	7,068	722,535	22,623
1991	Set Gillnet	20	842	20,525	5,011	3,954	1,577
1991	Hatchery	0	0	0	0	0	0
	Total		1,418	301,775	12,079	726,489	24,200
1992	Purse Seine	61	603	143,537	3,049	187,853	20,511
1992	Set Gillnet	20	1,288	17,002	848	15,958	1,687
1992	Hatchery	0	0	16,105	1,528	275,957	5
	Total		1,891	176,644	5,425	479,768	22,203
1993	Purse Seine	51	1,079	195,896	1,710	445,283	1,776
1993	Set Gillnet	17	1,089	14,791	3,088	12,008	2,591
1993	Hatchery	0	0	0	0	0	0
	Total		2,168	210,687	4,798	457,291	4,367
1994	Purse Seine	30	127	73,543	7,024	670,944	3,049
1994	Set Gillnet	16	1,103	14,004	1,073	23,621	2,419
1994	Hatchery	0	1	27,871	4,968	953,364	1
	Total		1,231	115,418	13,065	1,647,929	5,469
1995	Purse Seine	46	225	207,237	9,867	1,593,453	11,676
1995	Set Gillnet	23	2,078	19,406	3,564	41,654	3,958
1995	Hatchery	0	0	38,780	1,318	1,213,357	2
	Total		2,303	265,423	14,749	2,848,464	15,636
1996	Purse Seine	34	126	339,626	3,892	17,546	946
1996	Set Gillnet	24	1,054	69,338	5,779	14,813	2,792
1996	Hatchery	0	1	41,492	1,334	420,431	26
	Total		1,181	450,456	11,005	452,790	3,764
1997	Purse Seine	23	126	144,091	1,185	288,969	1,736
1997	Set Gillnet	25	1,135	59,401	4,475	64,162	4,166
1997	Hatchery	0	0	36,681	3,177	2,461,300	6
	Total		1,261	240,173	8,837	2,814,431	5,908
1998	Purse Seine	39	119	177,250	2,325	639,505	883
1998	Set Gillnet	24	952	26,131	1,057	24,403	3,754
1998	Hatchery	0	0	80,648	10,717	793,911	10
	Total		1,071	284,029	14,099	1,457,819	4,647
1999	Purse Seine	43	273	302,070	2,873	276,742	3,606
1999	Set Gillnet	20	1,491	27,646	1,374	5,348	4,335
1999	Hatchery	0	0	147,063	2,502	858,398	0
	Total		1,764	476,779	6,749	1,140,488	7,941
2000	Purse Seine	36	168	129,133	506	321,342	67,769
2000	Set Gillnet	24	1,019	26,503	621	21,845	5,214
2000	Hatchery	0	1	66,693	169	1,044,119	271
	Total		1,188	222,329	1,296	1,387,306	73,254

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Year	Gear	Permits[a]	Chinook[a]	Sockeye[a]	Coho[a]	Pink[a]	Chum[a]
2001	Purse Seine	25	123	119,806	909	156,657	85,473
2001	Set Gillnet	18	865	28,503	1,811	13,393	3,487
2001	Hatchery	0	0	60,619	34	422,881	9
	Total		988	208,928	2,754	592,931	88,969
2002	Purse Seine	25	40	158,284	1,502	1,013,649	38,541
2002	Set Gillnet	24	1,513	46,812	2,393	6,741	4,681
2002	Hatchery	0	0	84,194	311	949,671	37
	Total		1,553	289,290	4,206	1,970,061	43,259
2003	Purse Seine	27	302	438,236	3,121	335,147	30,625
2003	Set Gillnet	24	878	81,722	2,291	7,325	4,998
2003	Hatchery	0	0	122,024	253	513,649	63
	Total		1,180	641,982	5,665	856,121	35,686
2004	Purse Seine	24	258	84,633	5,647	57,878	205,445
2004	Set Gillnet	19	1,400	16,087	1,164	834	1,234
2004	Hatchery	0	0	29,363	0	2,458,843	0
	Total		1,658	130,083	6,811	2,517,555	206,679
2005	Purse Seine	29	85	134,649	914	161,255	97,274
2005	Set Gillnet	17	525	15,669	1,905	341	1,326
2005	Hatchery	0	0	81,058	1	2,144,818	2
	Total		610	231,376	2,820	2,306,414	98,602
2006	Purse Seine	24	50	125,878	26,019	1,206,631	69,810
2006	Set Gillnet	22	580	14,219	2,426	12,288	2,019
2006	Hatchery	0	0	83,464	0	252,658	125
	Total		630	223,561	28,445	1,471,577	71,954
2007	Purse Seine	19	28	278,570	1,827	162,762	266
2007	Set Gillnet	16	439	28,870	1,616	0	1,437
2007	Hatchery	0	0	58,514	26	124,649	74
	Total		467	365,954	3,469	287,411	1,777
2008	Purse Seine	25	42	293,363	740	498,930	174,128
2008	Set Gillnet	18	148	26,819	599	1,884	1,394
2008	Hatchery	0	0	87,208	2	4,886	208
	Total		190	407,390	1,341	505,700	175,730
2009	Purse Seine	13	1	65,771	9	985,451	71,700
2009	Set Gillnet	19	83	38,220	968	2,136	2,274
2009	Hatchery	0	0	175,539	1	1,760	0
	Total		84	279,530	978	989,347	73,974
2010	Purse Seine	14	10	8,615	589	274,859	93,245
2010	Set Gillnet	21	29	14,765	171	3,106	1,503
2010	Hatchery	0	0	69,219	31	246	7
	Total		39	92,599	791	278,211	94,755
2011	Purse Seine	23	36	211,700	49	359,058	29,741
2011	Set Gillnet	21	100	22,782	103	2,643	1,946
2011	Hatchery	0	0	158,272	0	205	4
	Total		136	392,754	152	361,906	31,691

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Year	Gear	Permits[a]	Chinook[a]	Sockeye[a]	Coho[a]	Pink[a]	Chum[a]
2012	Purse Seine	16	47	61,728	142	245,190	54,177
2012	Set Gillnet	15	86	10,260	33	10,305	927
2012	Hatchery	0	0	114,592	7	772	330
	Total		133	186,580	182	256,267	55,434
2013	Purse Seine	11	141	61,305	1,955	2,048,707	51,684
2013	Set Gillnet	19	250	38,238	3,616	1,961	2,698
2013	Hatchery	0	0	70,193	0	48,017	20
	Total		391	169,736	5,571	2,098,685	54,402
2014	Purse Seine	20	18	64,898	269	267,808	67,865
2014	Set Gillnet	19	330	33,090	521	3,549	5,372
2014	Hatchery	0	20	173,030	1	161	278
	Total		368	271,018	791	271,518	73,515
2015	Purse Seine	19	59	60,149	1,100	4,272,374	100,165
2015	Set Gillnet	24	812	36,219	3,519	27,825	11,567
2015	Hatchery	0	0	148,802	200	2,088,584	1,737
	Total		871	245,170	4,819	6,388,783	113,469
2016	Purse Seine	19	153	68,294	774	52,016	71,986
2016	Set Gillnet	21	766	19,542	858	22,077	2,165
2016	Hatchery	0	0	172,733	0	27,121	94
	Total		919	260,569	1,632	101,214	74,245
2017	Purse Seine	18	190	165,925	4,079	1,860,434	189,523
2017	Set Gillnet	20	471	37,202	9,542	44,025	7,962
2017	Hatchery	0	4	90,597	1,071	113,691	246
	Total		665	293,724	14,692	2,018,150	197,731
Previous 10-yr Average	Purse Seine	18	71	127,542	1,126	1,075,978	83,662
	Set Gillnet	19	318	27,292	2,103	11,596	3,387
	Hatchery	0	0	114,567	134	240,993	272
	Total	0	390	269,401	3,363	1,328,567	87,321
2018	Purse Seine	20	183	113,335	10,856	509,757	44,389
2018	Set Gillnet	24	196	15,259	3,175	56,709	4,258
2018	Hatchery	0	2	241,866	1,356	997,613	82
	Total		381	370,460	15,387	1,564,079	48,729

[a] Numbers of fish and numbers of permit holders delivering are from the ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential]. These numbers do not include sport caught fish from the Seward salmon derby that were later sold. Historical numbers in this table include commercial homepack fish.

Table 3.–Mean price and estimated exvessel value of the total commercial salmon harvest (excluding homepack) by gear type, Lower Cook Inlet, 2018.

PURSE SEINE			Average		
Species	Number[a]	Pounds[a]	Weight	Price[a]	Value
Chinook	183	1,056	7.05	$2.95	$3,117
Sockeye	113,335	498,438	4.40	$2.14	$1,067,949
Coho	10,856	95,628	8.82	$1.23	$118,044
Pink	509,757	1,987,186	3.90	$0.39	$775,594
Chum	44,389	375,973	8.47	$0.78	$293,842
	678,520	2,958,281			$2,258,547
SET GILLNET			Average		
Species	Number[a]	Pounds[a]	Weight	Price[a]	Value
Chinook	196	2,086	11.03	$4.79	$9,999
Sockeye	15,259	79,310	5.21	$2.56	$202,800
Coho	3,175	20,494	6.66	$1.41	$28,877
Pink	56,709	213,610	3.77	$0.19	$40,484
Chum	4,258	32,094	7.56	$0.71	$22,805
	79,597	347,594			$304,965
HATCHERY SALES			Average		
Species	Number[a]	Pounds[a]	Weight	Price[a]	Value
Chinook	2	23	11.50	$2.96	$68
Sockeye	241,866	906,321	3.75	$3.39	$3,070,644
Coho	1,356	3,248	6.77	$0.80	$2,598
Pink	997,613	3,565,797	3.57	$0.44	$1,570,933
Chum	82	561	6.84	$0.71	$398
	1,240,919	4,475,950			$4,644,642
TOTAL HARVEST			Average		
Species	Number [a]	Pounds[a]	Weight	Price[a]	Value
Chinook	381	3,165	9.27	$4.17	13,184
Sockeye	370,460	1,484,069	4.01	$2.93	4,341,393
Coho	15,387	119,370	8.09	$1.25	149,519
Pink	1,564,079	5,766,593	3.69	$0.41	2,387,011
Chum	48,729	408,628	8.39	$0.78	317,046
	1,999,036	7,781,825			$7,208,154

Gear Type	Value of Catch	No. of Permit holders[b]	Average Earnings
Purse Seine	$2,258,547	20	$112,927
Set Gillnet	$304,965	19	$16,051
Subtotal-Value of CPF Catch	$2,563,512		
Hatchery	$4,644,642		
GRAND TOTAL	$7,208,154		

[a] Mean prices are based on weighted average prices from the ADF&G statewide electronic fish ticket database [Internet]. 1985– Juneau, AK. [URL not available as some information is confidential]. Pounds and numbers of fish are based on fish ticket reporting.

[b] In 2018, 6 set gillnet permit holders fished 2 permits. Permit stacking has been permitted by the Alaska Board of Fisheries since 2014. In addition, in 2018, 1 permit was transferred midseason.

Table 4.–Average price per pound paid to permit holders for salmon, Lower Cook Inlet, 1990–2018.

	Chinook salmon			Sockeye salmon			Coho salmon			Pink salmon			Chum salmon		
Year	Seine	Set Gillnet	Combined	Seine	Set Gillnet	Combined	Seine	Set Gillnet	Combined	Seine	Set Gillnet	Combined	Seine	Set Gillnet	Combined
1990	NA	NA	$1.35	$1.38	$1.89	$1.88	$0.50	$0.84	$0.84	$0.35	$0.30	$0.32	$0.40	$0.55	$0.55
1991	NA	$1.53	$1.53	NA	$1.45	$1.45	NA	NA	$0.29	NA	$0.25	$0.25	NA	$0.41	$0.41
1992	$0.97	$1.41	$1.29	$1.45	$1.46	$1.45	$0.43	$0.50	$0.44	$0.15	$0.15	$0.15	$0.26	$0.33	$0.27
1993	$0.89	$1.10	$1.02	$0.78	$1.00	$0.80	$0.42	$0.58	$0.52	$0.14	$0.13	$0.14	$0.30	$0.26	$0.28
1994	$0.90	$0.96	$0.95	$1.12	$1.23	$1.14	$0.66	$0.71	$0.66	$0.16	$0.15	$0.16	$0.15	$0.35	$0.25
1995	$0.85	$1.19	$1.17	$1.11	$1.20	$1.11	$0.47	$0.53	$0.49	$0.15	$0.16	$0.15	$0.23	$0.26	$0.24
1996	$0.76	$1.37	$1.32	$0.90	$1.00	$0.92	$0.29	$0.40	$0.36	$0.05	$0.06	$0.05	$0.15	$0.19	$0.18
1997	$0.69	$1.32	$1.29	$0.81	$0.84	$0.82	$0.29	$0.49	$0.46	$0.11	$0.10	$0.11	$0.19	$0.25	$0.23
1998	$0.68	$1.58	$1.58	$0.98	$1.01	$0.99	$0.55	$0.66	$0.60	$0.13	$0.14	$0.13	$0.19	$0.29	$0.28
1999	$0.97	$2.07	$2.04	$1.32	$1.67	$1.41	$0.45	$0.70	$0.62	$0.13	$0.16	$0.14	$0.10	$0.43	$0.35
2000	$0.75	$1.94	$1.86	$0.98	$1.01	$0.98	$0.45	$0.54	$0.49	$0.09	$0.15	$0.09	$0.29	$0.18	$0.28
2001	$0.75	$1.87	$1.76	$0.64	$0.73	$0.66	$0.30	$0.43	$0.39	$0.09	$0.05	$0.09	$0.36	$0.20	$0.35
2002	$0.30	$1.12	$1.10	$0.56	$0.68	$0.58	$0.17	$0.25	$0.22	$0.06	$0.03	$0.06	$0.16	$0.19	$0.16
2003	$0.25	$1.14	$1.02	$0.61	$0.74	$0.64	$0.20	$0.11	$0.16	$0.05	$0.02	$0.05	$0.15	$0.20	$0.15
2004	$0.33	$1.68	$1.56	$0.80	$1.16	$0.86	$0.44	$0.52	$0.45	$0.05	$0.07	$0.05	$0.20	$0.21	$0.20
2005	$0.83	$1.65	$1.54	$0.87	$1.30	$0.93	$0.29	$0.53	$0.45	$0.08	$0.10	$0.08	$0.22	$0.24	$0.22
2006	$0.50	$2.41	$2.26	$1.10	$1.74	$1.18	$0.50	$0.82	$0.53	$0.11	$0.11	$0.11	$0.31	$0.26	$0.31
2007	$0.70	$2.73	$2.70	$0.88	$1.45	$0.95	$0.50	$0.46	$0.48	$0.11	$0.11	$0.11	$0.25	$0.25	$0.25
2008	$0.65	$3.67	$3.57	$1.39	$1.64	$1.42	$0.50	$0.84	$0.66	$0.23	$0.23	$0.23	$0.55	$0.25	$0.55
2009	$1.00	$3.50	$3.45	$1.20	$1.49	$1.33	$0.52	$0.80	$0.80	$0.22	$0.18	$0.22	$0.54	$0.25	$0.53
2010	$0.50	$3.76	$3.57	$1.46	$1.88	$1.74	$1.08	$1.27	$1.12	$0.33	$0.25	$0.33	$0.79	$0.47	$0.79
2011	$1.93	$4.19	$3.85	$1.56	$1.56	$1.56	$0.52	$0.79	$0.70	$0.41	$0.30	$0.37	$0.83	$0.61	$0.81
2012	$2.08	$4.53	$4.09	$1.59	$1.80	$1.63	$0.75	$1.06	$0.80	$0.39	$0.25	$0.38	$0.70	$0.37	$0.70
2013	$1.02	$5.14	$4.53	$2.00	$2.21	$2.11	$0.83	$1.01	$0.95	$0.38	$0.33	$0.38	$0.53	$0.35	$0.52
2014	$2.67	$3.92	$3.89	$1.94	$2.23	$2.15	$0.75	$1.24	$1.11	$0.28	$0.26	$0.28	$0.59	$0.47	$0.57
2015	$1.70	$3.16	$3.11	$1.45	$1.86	$1.62	$0.42	$0.73	$0.64	$0.20	$0.18	$0.20	$0.45	$0.34	$0.43
2016	$1.43	$3.14	$2.92	$1.45	$1.78	$1.60	$0.63	$1.01	$0.97	$0.21	$0.15	$0.19	$0.50	$0.36	$0.45
2017	$4.34	$3.79	$3.86	$1.41	$2.16	$1.97	$0.95	$0.77	$0.80	$0.30	$0.15	$0.24	$0.75	$0.50	$0.63
10-yr avg	$1.73	$3.88	$3.68	$1.55	$1.86	$1.71	$0.69	$0.95	$0.85	$0.29	$0.23	$0.28	$0.62	$0.40	$0.60
2018	$2.95	$4.79	$4.17	$2.14	$2.56	$2.20	$1.23	$1.41	$1.27	$0.39	$0.19	$0.37	$0.78	$0.71	$0.78

Source: These prices are based on weighted average prices from the ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential] and do not reflect postseason adjustments and bonuses. Caution should be used when estimating value from these prices.

Table 5.–Estimated exvessel value of commercial salmon harvest by gear type with 10-year average, Lower Cook Inlet, 2008–2018.

Purse seine											10-yr	
	Species	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average	2018
	Chinook	228	34	15	648	483	689	411	624	1,966	10,485	1,558	3,117
	Sockeye	1,924,898	347,202	58,349	1,485,538	461,300	644,508	618,967	424,498	478,989	1,062,723	750,697	1,067,949
	Coho	2,183	41	4,131	157	706	9,366	1,314	2,892	3,140	23,363	2,659	118,044
	Pink	408,666	665,639	328,849	423,068	300,992	2,403,739	264,127	2,788,824	49,958	1,955,477	848,207	775,594
	Chum	784,343	314,421	619,305	166,691	323,923	205,517	294,110	287,699	243,999	1,117,301	360,001	293,842
		$3,120,319	$1,327,338	$1,010,648	$2,076,101	$1,087,404	$3,263,819	$1,178,929	$3,504,537	$778,052	$4,169,350	1,927,461	$2,258,547
Set gillnet													
	Species												
	Chinook	14,408	5,412	1,792	8,032	4,847	15,135	11,533	24,510	23,757	29,001	13,843	9,999
	Sockeye	253,544	332,005	151,183	218,700	109,526	502,583	433,220	359,009	190,984	455,125	300,588	202,800
	Coho	3,406	4,953	1,458	488	200	20,959	3,220	13,635	4,735	44,430	5,895	28,877
	Pink	1,650	1,073	2,728	2,606	10,074	2,217	3,351	18,010	13,896	25,531	6,178	40,484
	Chum	2,678	4,216	4,972	7,975	2,528	6,842	18,062	25,534	4,905	28,931	8,635	22,805
		$275,685	$347,659	$162,132	$237,801	$127,176	$547,736	$469,385	$440,698	$238,277	$583,018	316,283	$304,965
Hatchery sales													
	Species												
	Chinook	0	0	0	0	0	0	245	0	0	0	24	68
	Sockeye	528,507	1,177,187	430,230	1,625,199	1,021,125	910,285	1,799,731	821,739	1,642,913	862,685	1,081,960	3,070,644
	Coho	4	2	222	0	44	0	0	554	0	2,909	92	2,598
	Pink	3,867	1,249	280	487	1,074	57,622	130	1,383,195	24,290	94,108	163,577	1,570,933
	Chum	1,009	0	33	16	1,034	83	628	4,444	422	1,055	852	398
		$533,387	$1,178,437	$430,765	$1,625,702	$1,023,277	$967,990	$1,800,733	$2,209,932	$1,667,624	$960,758	1,270,872	$4,644,642
Average earnings													
	Purse seine	$124,813	$102,103	$72,189	$90,265	$67,963	$296,711	$58,946	$184,449	$40,950	$231,631	127,002	$112,927
	Set gillnet	$15,316	$18,298	$7,721	$11,324	$8,478	$28,828	$24,704	$18,362	$11,347	$29,151	17,353	$12,707
Number of permit holders fishing													
	Purse seine	25	13	14	23	16	11	20	19	19	18	18	20
	Set gillnet	18	19	21	21	15	19	19	24	21	20	20	24

Table 6.–Emergency orders issued for the commercial, personal use, and subsistence salmon fisheries in Lower Cook Inlet, 2018.

E.O. No./ Issue date	Description
2-F-H-001-18/ Thursday, May 31	Southern District, commercial harvest. Opens waters of the Southern District to commercial salmon harvest and establishes 2 weekly 48-hour set gillnet fishing periods in the Southern District beginning at 6:00 AM on Mondays and Thursdays effective Friday, June 1. Establishes 7-day-per-week purse seine fishing periods in the Kamishak District begining June 1. Closes McNeil and Paint River subdistricts to salmon fishing effective June 18, and closes the Kirschner Lake SHA on June 18. Opens Chenik Lagoon up to the freshwater of the Chenik River begining on June 18. Corrects 3 erroneous seaward boundary points for the commercial set gillnet fishery.
2-F-H-002-18/ Friday, June 15	Southern District, set gillnet and purse seine. Opens the commercial purse seine salmon fishing season on Monday, June 18, in the Southern and Eastern districts and establishes a MWF fishing schedule in portions of the former. Establishes a Monday–Friday schedule of commercial purse seine fishing periods in Resurrection Bay. Allows commercial seine harvest up to the fresh water of the Wosnesenski River.
2-F-H-003-18/ Friday, June 29	Southern District, set gillnet and purse seine. Closes the Port Graham Subdistrict to commercial set gillnet harvest and closes the China Poot SHA to commercial purse seine salmon harvest.
2-F-H-004-18/ Monday, July 2	Southern District, purse seine. Clarifies that the China Poot SHA and Hazel Lake SHA are separate areas managed independently. Assigns latitude and longitude coordinates to shared boundary.
2-F-H-005-18/ Thursday, July 5	Southern District, set gillnet and purse seine. Closes the Hazel Lake SHA to commercial purse seine salmon harvest, reopens the Port Graham Subdistrict to commercial set gillnet harvest.
2-F-H-006-18/ Monday, July 9	Southern District, purse seine. Expands area open to cost-recovery harvest in the China Poot SHA into regulatory closed waters.
2-F-H-007-18/ Friday, July 13	Kamishak, Outer, and Eastern districts, purse seine. Opens the Outer District purse seine season and establishes fishing periods in portions of this area. Suspends regulatory closed waters in the Delight Lake area. Ends the commercial fishing periods in Resurrection Bay and closes Chenik Lagoon to commercial salmon harvest.
2-F-H-008-18/ Monday, July 16	Outer District, purse seine. Establishes daily fishing periods in the East Nuka Subdistrict and suspends regulatory closed waters in the Desire Lake area.
2-F-H-009-18/ Wednesday, July 18	Outer District, purse seine. Opens waters of Dogfish Bay Lagoon west of 151°50.75'W to commercial purse seine harvest on July 20 for one 16-hour fishing period.
2-F-H-010-18/ Wednesday, July 18	Southern District, subsistence harvest. Extends the regulatory 5-1/2 day fishing period to 6-1/2 days.
2-F-H-011-18/ Thursday, July 19	Kamishak District, purse seine. Suspends anadromous waters closures for the Bruin River.
2-F-H-012-18/ Friday, July 20	Southern and Outer districts, purse seine. Opens the Hazel Lake SHA to commercial common property harvest. Opens the China Poot SHA and portions of regulatory closed waters July 21–24. Opens the Rocky River Subdistrict up to freshwater on a Monday, Wednesday, and Friday schedule of fishing periods.

-continued-

Table 6.–Page 2 of 2.

E.O. number/ Issue date	Description
2-F-H-013-18/ Tuesday, July 24	Southern District, purse seine. Opens the China Poot SHA to common property commercial harvest on July 25 for 1 period.
2-F-H-014-18/ Friday, July 27	Southern and Outer districts, purse seine. Opens Humpy Creek Subdistrict up to the freshwater of Humpy Creek. Opens portions of the Port Graham Subdistrict and the Windy Bay Subdistrict to commercial purse seine harvest.
2-F-H-015-18/ Thursday, August 2	Southern and Kamishak districts, purse seine. Suspends regulatory closed waters at Chenik Lagoon, opens the Kirschner SHA to common property purse seine harvest, and closes the Port Graham Subdistrict to purse seine harvest.
2-F-H-016-18/ Friday, August 3	Outer and Southern districts, purse seine. Re-establishes closed waters in the Wosnesenski River and Rocky River areas.
2-F-H-017-18/ Thursday, August 9	Southern District, purse seine. Opens portions of the Port Graham Subdistrict on August 10 to commercial purse seine harvest, modifies the boundary of the regulatory closed waters area in Port Graham, and opens portions of the Tutka Hatchery SHA on August 10 with anadromous waters closures suspended.
2-F-H-018-18/ Sunday, August 12	Southern District, purse seine. Opens the Tutka Hatchery SHA exclusive of the Tutka Lagoon on a MWF fishing schedule. Opens portions of the Port Graham Subdistrict to commercial purse seine on a MWF schedule and re-establishes regulatory closed waters in that area.
2-F-H-019-18/ Thursday, August 16	Outer and Southern districts, purse seine. Opens waters of Dogfish Bay Lagoon west of 151°50.75'W to commercial purse seine harvest on August 17 for one 16-hour fishing period. Opens waters of the Seldovia Subdistrict to purse seine harvest on a MWF schedule.
2-F-H-020-18/ Saturday, August 18	Southern District, personal use fishing. Closes the Kachemak Bay Personal Use set gillnet fishery for the 2018 season on August 18.
2-F-H-021-18/ Friday, August 18	Southern District, purse seine. Opens waters of the Port Graham SHA near the net pens and suspends anadromous closed waters in the Port Graham Section on August 20.
2-F-H-022-18/ Tuesday, August 21	Southern District, purse seine. Opens waters of Port Graham Subdistrict to commercial purse seine harvest on August 22.
2-F-H-023-18/ Friday, August 24	Southern and Outer districts, purse seine. Opens waters of Port Graham and Port Chatham subdistricts on a MWF schedule to commercial purse seine harvest.
2-F-H-024-18/ Friday, August 31	Southern District, purse seine. Expands fishing opportunity in the Tutka SHA up to the mouth of the lagoon channel.
2-F-H-025-18/ Tuesday, September 4	Southern District, purse seine. Opens the Tutka Lagoon along with the remainder of the SHA on a schedule of daily 6:00 AM to 10:00 PM fishing periods.
2-F-H-026-18/ Friday, September 7	Southern District, purse seine. Extends commercial fishing opportunity in the Tutka SHA until the season closes on October 1.

Table 7.–Commercial fishing statistical weeks, 2018.

Week	Beginning Date	Ending Date	Week	Beginning Date	Ending Date
1	1-Jan	6-Jan	28	8-Jul	14-Jul
2	7-Jan	13-Jan	29	15-Jul	21-Jul
3	14-Jan	20-Jan	30	22-Jul	28-Jul
4	21-Jan	27-Jan	31	29-Jul	4-Aug
5	28-Jan	3-Feb	32	5-Aug	11-Aug
6	4-Feb	10-Feb	33	12-Aug	18-Aug
7	11-Feb	17-Feb	34	19-Aug	25-Aug
8	18-Feb	24-Feb	35	26-Aug	1-Sep
9	25-Feb	3-Mar	36	2-Sep	8-Sep
10	4-Mar	10-Mar	37	9-Sep	15-Sep
11	11-Mar	17-Mar	38	16-Sep	22-Sep
12	18-Mar	24-Mar	39	23-Sep	29-Sep
13	25-Mar	31-Mar	40	30-Sep	6-Oct
14	1-Apr	7-Apr	41	7-Oct	13-Oct
15	8-Apr	14-Apr	42	14-Oct	20-Oct
16	15-Apr	21-Apr	43	21-Oct	27-Oct
17	22-Apr	28-Apr	44	28-Oct	3-Nov
18	29-Apr	5-May	45	4-Nov	10-Nov
19	6-May	12-May	46	11-Nov	17-Nov
20	13-May	19-May	47	18-Nov	24-Nov
21	20-May	26-May	48	25-Nov	1-Dec
22	27-May	2-Jun	49	2-Dec	8-Dec
23	3-Jun	9-Jun	50	9-Dec	15-Dec
24	10-Jun	16-Jun	51	16-Dec	22-Dec
25	17-Jun	23-Jun	52	23-Dec	29-Dec
26	24-Jun	30-Jun	53	30-Dec	31-Dec
27	1-Jul	7-Jul			

Table 8.–Escapements relative to escapement goals, and methods used to monitor escapements in 2018 for Chinook, chum, pink, and sockeye salmon stocks in Cook Inlet, Alaska.

		Escapement goal				Monitoring method			
	2018	Type[a]	Range						
Species/stock	Escapement	(BEG, SEG)	Lower	Midpoint	Upper	Aerial	Ground	Video	Weir
Chum salmon (12 w/goals)									
Port Graham River	3,725	SEG	1,200	1,950	2,700		X		
Dogfish Bay Lagoon	7,615	SEG	3,500	6,050	8,600		X		
Rocky River	5,620	SEG	1,500	2,950	4,400	X	X		
Port Dick Creek	724	SEG	1,900	3,100	4,300	X	X		
Island Creek	1,368	SEG	5,100	8,500	11,900	X	X		
Big Kamishak River	7,694	SEG	6,800	11,200	15,600	X			
Little Kamishak River	14,417	SEG	8,000	12,400	16,800	X			
McNeil River	37,331	SEG	24,000	36,000	48,000	X			
Bruin River	28,497	SEG	5,200	7,600	10,000	X			
Ursus Cove	3,718	SEG	5,900	8,000	10,100	X			
Cottonwood Creek	1,326	SEG	5,200	8,700	12,200	X			
Iniskin Bay	9,149	SEG	5,900	9,750	13,600	X			
Pink salmon (18 w/goals)									
Humpy Creek	54,816	SEG	17,500	34,450	51,400		X		
China Poot Creek	2,280	SEG	2,500	4,400	6,300		X		
Tutka Creek	60,691	SEG	6,500	11,750	17,000		X		
Barabara Creek	7,236	SEG	2,000	3,800	5,600		X		
Seldovia Creek	50,827	SEG	21,800	29,600	37,400		X		
Port Graham River	33,419	SEG	7,700	13,700	19,700		X		
Dogfish Bay Lagoon Cks.	8,398	SEG	800	3,950	7,100		X		
Port Chatham	18,122	SEG	7,800	12,950	18,100		X		
Windy Creek Right	8,925	SEG	3,400	7,300	11,200		X		
Windy Creek Left	14,043	SEG	5,400	16,250	27,100		X		
Rocky River	2,088	SEG	11,700	33,250	54,800		X		
Port Dick Creek	94,585	SEG	17,900	33,850	49,800	X	X		
Island Creek	5,558	SEG	9,600	21,050	32,500	X	X		
S. Nuka Island Creek	545	SEG	2,800	7,000	11,200	X	X		
Desire Lake	2,547	SEG	1,500	9,750	18,000	X			
Bruin River	94,715	SEG	17,800	60,400	103,000	X			
Sunday Creek	3,400	SEG	4,400	14,650	24,900	X			
Brown's Peak Creek	1,341	SEG	2,600	10,050	17,500	X			
Sockeye salmon (8 w/goals)									
English Bay	18,804	SEG	6,000	9,750	13,500	X			X
Delight Lake[b]	13,428	SEG	7,500	12,575	17,650	X			X
Desire Lake	9,840	SEG	4,800	8,350	11,900	X			
Bear Lake	10,568	SEG	700	4,500	8,300				X
Aialik Lake	2,620	SEG	3,200	4,300	5,400	X			
Mikfik Lake	4,966	SEG	3,400	7,200	11,000	X		X	
Chenik Lake	6,651	SEG	2,900	8,300	13,700	X		X	
Amakdedori Creek	1,916	SEG	1,200	1,900	2,600	X			

[a] SEG = sustainable escapement goal; BEG = biological escapement goal.

[b] Used weir-based goal because CIAA operated a weir at Delight Lake in 2019. See Appendix B8 for 2018 aerial survey counts.

APPENDIX A: SOUTHERN DISTRICT

Appendix A1.–Southern District commercial set gillnet salmon harvest (excluding homepacks) by fishing period, 2018.

Period[a]	Statistical Week	Date	Hours	Permit holders fishing	Chinook		Sockeye		Coho		Pink		Chum	
					Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1[a]	22	06/01–06/02	24	4	6	79	101	451	[b]	[b]	[b]	[b]	1	9
2	23	06/04–06/06	48	5	7	90	177	833	[b]	[b]	[b]	[b]	1	11
3	23	06/07–06/09	48	5	10	162	190	910	[b]	[b]	[b]	[b]	9	80
4	24	06/11–06/13	48	6	14	156	377	2,040	[b]	[b]	[b]	[b]	30	279
5	24	06/14–06/16	48	5	16	201	367	1,933	[b]	[b]	[b]	[b]	63	537
6	25	06/18–06/20	48	7	27	234	507	2,660	46	318	2	9	182	1,520
7	25	06/21–06/23	48	8	10	116	667	3,619	[b]	[b]	9	38	220	1,754
8	26	06/25–06/27	48	10	23	220	998	5,260	[b]	[b]	50	169	308	2,301
9[c]	26	06/28–06/30	48	9	16	173	1,548	7,903	1	4	205	838	296	2,177
10[c]	27	07/02–07/04	48	12	13	93	1,711	8,862	13	80	698	2,675	478	3,687
11	27	07/05–07/07	48	11	9	79	907	4,751	20	132	896	3,356	329	2,448
12	28	07/09–07/11	48	11	17	206	1,577	8,261	465	3,042	2,424	9,326	518	3,962
13	28	07/12–07/14	48	11	5	85	1,072	5,562	205	1,299	2,621	9,581	267	2,084
14	29	07/16–07/18	48	8	4	97	1,594	8,475	611	3,951	4,634	18,992	460	3,475
15	29	07/19–07/21	48	14	4	35	1,275	6,582	510	3,307	6,404	25,181	364	2,565
16	30	07/23–07/25	48	11	1	6	708	3,861	334	2,167	9,119	36,289	203	1,521
17	30	07/26–07/28	48	5	2	32	426	2,352	155	1,033	5,999	24,972	166	1,247
18	31	07/30–08/01	48	6	1	23	401	2,107	174	1,204	10,664	37,271	148	1,073
19	31	08/02–08/04	48	6	0	0	168	872	48	320	4,649	19,018	74	563
20[b]	32	08/06–08/08	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
21[b]	32	08/09–08/11	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
22[b]	33	08/13–08/15	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
23[b]	33	08/16–08/18	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
24[b]	34	08/20–08/22	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
25	34	08/23–08/25	48	0	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
35[a]	39	09/27–09/29	18	0	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
Total				19	185	2,086	15,157	79,311	3,067	20,494	56,638	213,610	4,232	32,094
Average weight						17.46		5.70		6.15		3.88		7.58

Note: No deliveries during Periods 25–35, from August 23 through September 29.

[a] All set gillnet sections in LCI open to commercial harvest in 48-hour periods except for 06/01 which was a 24-hour fishing period and 9/27 which was an 18-hour fishing period.

[b] Confidential data. Fewer than 3 permits reporting.

[c] Set gillnet section in Port Graham Subdistrict closed to commercial harvest.

[d] No permits fished.

Appendix A2.–Southern District commercial purse seine salmon harvest (excluding homepacks) by period, 2018.

Period	Statistical Week	Date	Hours	Permits Fished	Chinook No.	Chinook Pounds	Sockeye No.	Sockeye Pounds	Coho No.	Coho Pounds	Pink No.	Pink Pounds	Chum No.	Chum Pounds
1 [a,b]	25	6/18	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
2 [b]	25	6/20	16	4	28	146	516	2,819	0	0	0	0	3	29
3 [b]	25	6/22	16	7	21	127	1,547	8,130	0	0	3	13	18	193
4 [b]	26	6/25	16	10	23	116	1,085	5,642	0	0	2	6	135	904
5 [b]	26	6/27	16	10	15	156	3,952	21,588	0	0	14	39	58	574
6 [b]	26	6/29	16	9	6	62	1,961	10,154	0	0	25	87	66	761
7 [b,c]	27	7/2	16	12	8	41	4,514	23,891	7	44	224	874	33	388
8 [b,c]	27	7/4	16	15	10	103	6,839	35,920	5	29	167	610	48	468
9 [b,c,d]	27	7/6	16	14	15	62	2,279	11,776	28	186	1,472	5,564	35	350
10 [b,c,d]	28	7/9	16	17	1	5	7,831	34,136	420	2,198	8,968	33,913	91	796
11 [b,c,d]	28	7/11	16	13	1	2	6,396	25,979	130	892	11,863	46,896	40	315
12 [b,c,d]	28	7/13	16	12	0	0	2,323	9,071	34	160	1,762	7,016	26	290
13 [b,c,d]	29	7/16	16	12	0	0	4,707	18,784	205	1,065	5,921	17,756	64	562
14 [b,c,d]	29	7/18	16	14	2	3	2,902	12,479	202	1,423	9,162	38,609	28	285
15 [b,c,d]	29	7/20	16	11	0	0	1,795	7,525	87	618	7,463	30,444	67	512
16 [b,c]	30	7/23	16	8	0	0	293	1,231	46	311	6,132	21,475	10	82
17 [b]	30	7/25	16	10	0	0	617	2,594	16	129	7,876	31,545	10	79
18 [b,c]	30	7/27	16	8	0	0	470	1,980	31	192	14,077	56,611	39	300
19 [b,c,e,f]	31	7/30	16	9	0	0	394	1,565	48	362	25,962	100,645	30	297
20 [b,c,e,f]	31	8/1	16	14	0	0	365	1,445	25	205	73,600	287,975	143	1,210
21 [b,c,e]	31	8/3	16	15	1	5	95	452	24	180	7,277	28,861	2	12
22 [b,c,e]	32	8/6	16	12	0	0	253	967	123	752	8,927	35,887	12	71
23 [b,c,e]	32	8/8	16	11	0	0	104	512	43	445	3,655	14,776	4	32
24 [b,c,e,g,h]	32	8/10	16	19	0	0	122	593	18	130	127,667	503,046	125	1,034
25 [b,c,e,g,h]	33	8/13	16	13	0	0	401	1,983	26	159	18,136	67,050	39	355
26 [b,c,e,g,h]	33	8/15	16	10	0	0	160	737	0	0	6,496	22,100	6	43
27 [b,c,e,g,h,i]	33	8/17	16	3	0	0	25	83	8	60	492	1,940	2	14
28 [b,c,e,g,h,i]	34	8/20	16	12	0	0	2	8	124	1,147	44,705	175,025	5	48
29 [b,c,e,g,h,i]	34	8/22	16	10	0	0	0	0	2	17	76,936	295,094	0	0
30 [b,c,e,g,h,i]	34	8/24	16	0	0	0	0	0	0	0	0	0	0	0
31 [b,c,e,g,h,i]	35	8/27	16	0	0	0	0	0	0	0	0	0	0	0

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Period	Statistical Week	Date	Hours	Permits Fished	Chinook No.	Chinook Pounds	Sockeye No.	Sockeye Pounds	Coho No.	Coho Pounds	Pink No.	Pink Pounds	Chum No.	Chum Pounds
32 [b,c,e,g,h,i]	35	8/29	16	0	0	0	0	0	0	0	0	0	0	0
33 [b,c,e,g,h,i]	35	8/31	16	0	0	0	0	0	0	0	0	0	0	0
34 [b,c,e,g,h,i]	36	9/3	16	0	0	0	0	0	0	0	0	0	0	0
35 [b,c,e,g,h,i,j]	36	9/5	16	3	0	0	3,212	13,042	95	682	3,220	13,492	1	8
Total				17	131	828	55,246	255,544	1,747	11,385	472,204	1,837,349	1,166	10,323
Average weight					12.95		5.44		5.97		3.59		8.00	

Note: No deliveries during after September 5. Unless otherwise noted, regular closed waters were in effect.

[a] Confidential data. Fewer than 3 permits reporting.

[b] Waters of the Tutka Bay, China Poot, Neptune Bay and Halibut Cove subdistricts, excluding waters of the SHA in the Tutka Subdistrict, is open to commercial salmon seine harvest for regular 16-hour periods.

[c] Waters of the China Poot SHA closed to commercial salmon harvest.

[d] Waters of the Hazel Lake SHA closed to commercial salmon harvest.

[e] Humpy Creek Subdistrict open to commercial seine harvest.

[f] Port Graham subdistrict excluding the SHA open to seine harvest

[g] Portions of the Port Graham Subdistrict open.

[h] Portions of the Tutka SHA opened.

[i] Seldovia Subdistrict opened.

[j] Portions of the Tutka SHA open daily.

Appendix A3.–Total commercial common property salmon harvest (excluding homepacks) in the Southern District, 1970–2018.

Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Set gillnet			
1970	ND	26	11,455	1,154	18,512	1,575
1971	ND	41	18,398	1,449	8,564	1,352
1972	ND	69	31,340	323	6,303	2,819
1973	ND	134	23,970	1,089	20,222	2,374
1974	ND	175	26,996	3,010	11,097	2,713
1975	ND	96	26,588	2,337	49,490	4,020
1976	ND	176	33,993	1,321	13,412	1,353
1977	ND	175	54,404	869	38,064	2,765
1978	ND	1,052	86,934	3,053	11,556	4,117
1979	ND	483	34,367	7,595	69,368	5,266
1980	ND	225	29,922	8,038	26,613	2,576
1981	ND	222	53,665	6,735	68,794	8,524
1982	ND	894	42,389	5,557	15,838	7,113
1983	ND	822	41,707	1,799	20,553	4,377
1984	ND	643	45,806	2,979	20,764	5,412
1985	34	924	23,163	3,908	22,898	4,217
1986	34	745	21,807	2,827	14,244	2,426
1987	29	653	28,209	2,025	9,224	2,419
1988	27	1,145	14,758	2,819	29,268	4,423
1989	23	1,281	13,970	4,792	16,210	1,877
1990	20	1,361	15,863	1,046	12,646	1,938
1991	20	842	20,525	5,011	3,954	1,577
1992	20	1,288	17,002	848	15,958	1,687
1993	17	1,089	14,791	3,088	12,008	2,591
1994	16	1,103	14,004	1,073	23,621	2,419
1995	23	2,078	19,406	3,564	41,654	3,958
1996	24	1,054	69,338	5,779	14,813	2,792
1997	25	1,135	59,401	4,475	64,162	4,166
1998	24	952	26,131	1,057	24,403	3,754
1999	20	1,491	27,646	1,374	5,348	4,335
2000	24	1,019	26,503	621	21,845	5,214
2001	18	865	28,503	1,811	13,393	3,487
2002	24	1,513	46,812	2,393	6,741	4,681
2003	24	878	81,722	2,291	7,325	4,998
2004	19	1,400	16,087	1,164	834	1,234
2005	17	525	15,669	1,905	341	1,326
2006	22	580	14,219	2,426	12,288	2,019
2007	16	439	28,870	1,616	0	1,437
2008	18	148	26,819	599	1,884	1,394
2009	19	83	38,220	968	2,136	2,274
2010	21	29	14,765	171	3,106	1,503
2011	21	100	22,782	103	2,643	1,946
2012	15	86	10,260	33	10,305	928
2013	18	234	38,238	3,466	1,804	2,685
2014	19	320	32,910	393	3,231	5,355
2015	24	752	36,061	3,102	27,726	11,539
2016	23	731	19,427	687	21,872	2,124
2017	24	435	36,689	9,353	43,904	7,852
Previous 10-yr avg.	20	292	27,617	1,888	11,861	3,760
2018	24	185	15,157	3,067	56,638	4,232

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine			
1970	ND	64	665	2,390	189,554	6,298
1971	ND	0	5	1,702	41,502	1,505
1972	ND	0	5	960	2,823	2,117
1973	ND	5	102	152	77,352	1,214
1974	ND	7	33	44	37,778	12
1975	ND	46	805	702	844,125	1,408
1976	ND	266	1,287	584	86,405	164
1977	ND	7	259	386	118,961	3,969
1978	ND	459	54,154	1,265	240,205	1,408
1979	ND	716	2,975	3,251	917,541	2,955
1980	ND	189	13,007	3,530	451,406	2,029
1981	ND	802	24,215	1,241	1,385,188	12,396
1982	ND	32	1,044	1,608	280,718	11,353
1983	ND	36	91,964	1,634	669,701	9,904
1984	ND	18	117,438	436	316,021	4,186
1985	37	49	60,890	350	496,000	1,292
1986	43	31	15,031	268	528,277	3,134
1987	38	505	61,453	138	81,298	2,611
1988	49	510	90,544	168	823,114	3,319
1989	57	608	84,082	1,875	971,278	1,264
1990	56	185	66,549	506	148,198	495
1991	50	556	142,560	4,388	148,143	357
1992	53	564	82,455	429	125,106	193
1993	42	1,073	131,367	1,341	271,303	197
1994	25	126	47,494	299	612,724	211
1995	39	211	132,892	1,593	1,220,316	572
1996	29	126	269,553	3,795	10,293	719
1997	19	126	121,184	1,122	160,595	92
1998	35	118	143,350	1,186	498,090	201
1999	37	269	198,862	1,388	242,003	289
2000	29	165	78,072	147	4,515	125
2001	19	121	99,866	895	107,967	293
2002	19	40	121,054	1,376	5,342	122
2003	21	301	391,768	3,117	47,913	732
2004	19	256	21,621	267	2,273	138
2005	23	85	65,333	816	32,201	422
2006	16	47	52,020	610	3,446	163
2007	13	27	61,193	1,710	10,394	127
2008	13	40	62,675	720	4,941	66
2009[a]	0	0	0	0	0	0
2010[a]	0	0	0	0	0	0
2011	5	26	9,945	24	512	16
2012	11	39	6,396	44	175,770	439
2013	11	140	28,032	1,902	33,288	265
2014	16	18	23,188	269	58,890	3,360
2015	19	52	54,783	997	141,604	1,450
2016	19	112	47,235	169	44,637	165
2017	17	166	62,715	3,493	361,751	3,892
Previous 10-yr avg.	14	74	36,871	952	102,674	1,207
2018	20	131	55,246	1,747	472,204	1,166

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine and set gillnet combined			
1970	ND	90	12,120	3,544	208,066	7,873
1971	ND	41	18,403	3,151	50,066	2,857
1972	ND	69	31,345	1,283	9,126	4,936
1973	ND	139	24,072	1,241	97,574	3,588
1974	ND	182	27,029	3,054	48,875	2,725
1975	ND	142	27,393	3,039	893,615	5,428
1976	ND	442	35,280	1,905	99,817	1,517
1977	ND	182	54,663	1,255	157,025	6,734
1978	ND	1,511	141,088	4,318	251,761	5,525
1979	ND	1,199	37,342	10,846	986,909	8,221
1980	ND	414	42,929	11,568	478,019	4,605
1981	ND	1,024	77,880	7,976	1,453,982	20,920
1982	ND	926	43,433	7,165	296,556	18,466
1983	ND	858	133,671	3,433	690,254	14,281
1984	ND	661	163,244	3,415	336,785	9,598
1985	ND	973	84,053	4,258	518,898	5,509
1986	ND	776	36,838	3,095	542,521	5,560
1987	ND	1,158	89,662	2,163	90,522	5,030
1988	ND	1,655	105,302	2,987	852,382	7,742
1989	ND	1,889	98,052	6,667	987,488	3,141
1990	ND	1,546	82,412	1,552	160,844	2,433
1991	ND	1,398	163,085	9,399	152,097	1,934
1992	ND	1,852	99,457	1,277	141,064	1,880
1993	ND	2,162	146,158	4,429	283,311	2,788
1994	ND	1,229	61,498	1,372	636,345	2,630
1995	ND	2,289	152,298	5,157	1,261,970	4,530
1996	ND	1,180	338,891	9,574	25,106	3,511
1997	ND	1,261	180,585	5,597	224,757	4,258
1998	ND	1,070	169,481	2,243	522,493	3,955
1999	ND	1,760	226,508	2,762	247,351	4,624
2000	ND	1,184	104,575	768	26,360	5,339
2001	ND	986	128,369	2,706	121,360	3,780
2002	ND	1,553	167,866	3,769	12,083	4,803
2003	ND	1,179	473,490	5,408	55,238	5,730
2004	ND	1,656	37,708	1,431	3,107	1,372
2005	ND	610	81,002	2,721	32,542	1,748
2006	ND	627	66,239	3,036	15,734	2,182
2007	ND	466	90,063	3,326	10,394	1,564
2008	ND	188	89,494	1,319	6,825	1,460
2009 [a]	ND	83	38,220	968	2,136	2,274
2010 [a]	ND	29	14,765	171	3,106	1,503
2011	ND	126	32,727	127	3,155	1,962
2012	ND	125	16,656	77	186,075	1,367
2013	ND	374	66,270	5,368	35,092	2,950
2014	ND	338	56,098	662	62,121	8,715
2015	ND	804	90,844	4,099	169,330	12,989
2016	ND	601	99,404	12,846	405,655	11,744
2017	ND	366	64,488	2,840	114,535	4,967
Previous 10-yr avg.	ND	303	56,897	2,848	98,803	4,993
2018	ND	316	70,403	4,814	528,842	5,398

Source: ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

Note: ND = no data.

[a] No commercial common property purse seine fishing periods occurred in 2009 or 2010.

Appendix A4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement to the English Bay weir, 2018.

				Apportioned SEG				
	Actual		Anticipated	Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
6/1	0	0	0.4%	5	5	12	12	Weir installed 5/22
6/2	0	0	0.5%	7	12	16	28	
6/3	7	7	0.6%	3	15	7	35	
6/4	19	26	1.7%	67	82	150	185	
6/5	54	80	2.1%	24	106	54	238	
6/6	54	134	2.5%	27	133	61	300	
6/7	19	153	3.4%	49	182	110	410	
6/8	22	175	4.3%	57	240	129	539	
6/9	28	203	5.3%	58	298	131	670	
6/10	88	291	6.7%	87	385	195	865	
6/11	24	315	8.2%	90	474	202	1,068	
6/12	49	364	9.3%	62	536	139	1,207	
6/13	18	382	10.1%	51	587	114	1,321	
6/14	90	472	11.7%	96	683	215	1,536	
6/15	125	597	12.5%	50	732	112	1,648	
6/16	100	697	14.2%	102	835	230	1,878	
6/17	496	1,193	15.5%	78	913	176	2,053	
6/18	493	1,686	16.9%	82	994	184	2,237	
6/19	204	1,890	19.3%	145	1,140	327	2,564	Weir failure. Estimated passage.
6/20	167	2,057	22.2%	171	1,311	385	2,949	Weir failure. Estimated passage.
6/21	167	2,224	24.2%	124	1,435	278	3,228	Weir failure. Estimated passage.
6/22	39	2,263	26.5%	139	1,573	312	3,540	
6/23	27	2,290	29.0%	148	1,721	332	3,872	
6/24	84	2,374	32.9%	234	1,955	526	4,399	
6/25	93	2,467	35.5%	157	2,111	352	4,751	
6/26	14	2,481	38.4%	172	2,283	387	5,137	
6/27	91	2,572	41.5%	191	2,474	429	5,566	
6/28	128	2,700	46.8%	315	2,789	708	6,274	
6/29	168	2,868	51.7%	293	3,082	660	6,934	
6/30	113	2,981	55.2%	209	3,291	471	7,405	
7/1	300	3,281	57.9%	163	3,454	366	7,771	
7/2	1,063	4,344	61.1%	192	3,646	432	8,203	
7/3	1,399	5,743	63.8%	161	3,807	362	8,565	
7/4	987	6,730	65.6%	111	3,917	250	8,814	
7/5	324	7,054	69.2%	213	4,130	479	9,293	
7/6	854	7,908	71.7%	153	4,283	344	9,637	
7/7	435	8,343	74.3%	157	4,440	353	9,990	
7/8	552	8,895	76.2%	112	4,552	251	10,241	
7/9	453	9,348	77.6%	84	4,635	188	10,430	
7/10	427	9,775	79.5%	114	4,749	256	10,686	
7/11	925	10,700	81.6%	126	4,876	284	10,971	
7/12	712	11,412	84.2%	154	5,030	348	11,318	
7/13	167	11,579	85.9%	107	5,138	241	11,560	
7/14	175	11,754	88.7%	167	5,304	375	11,935	

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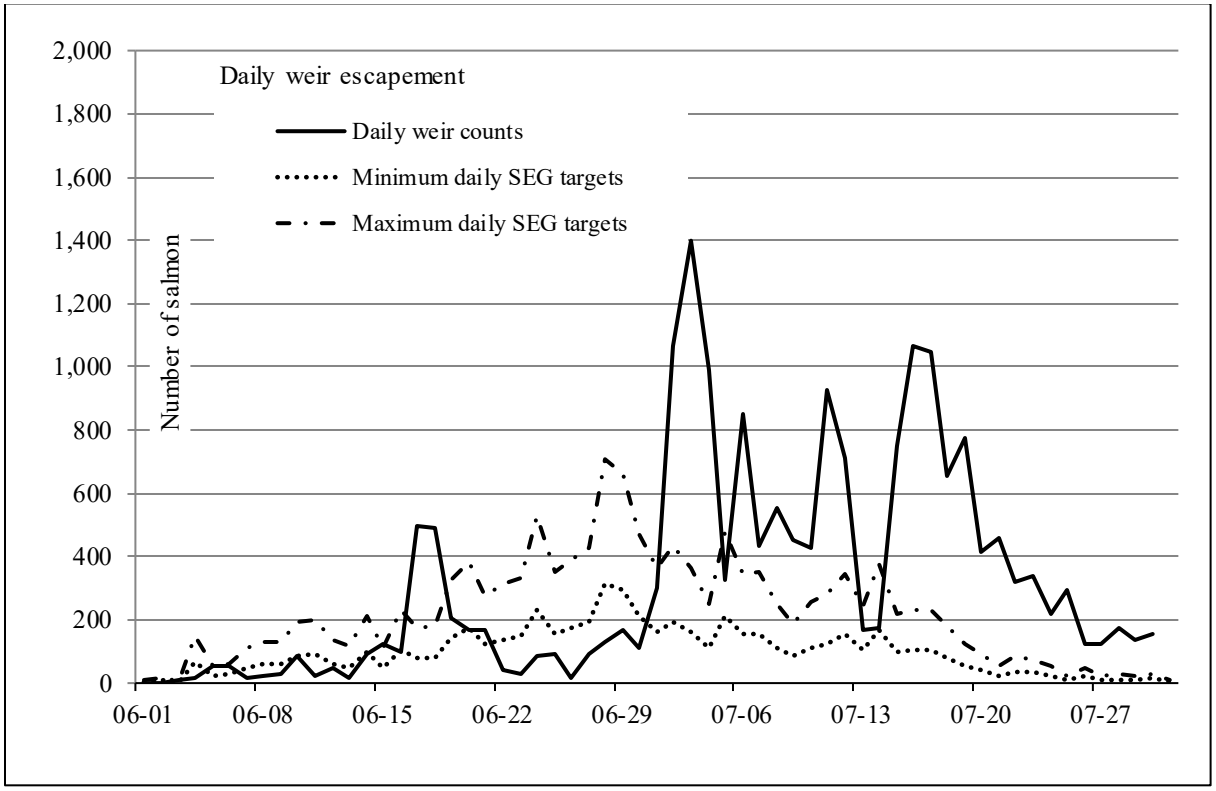
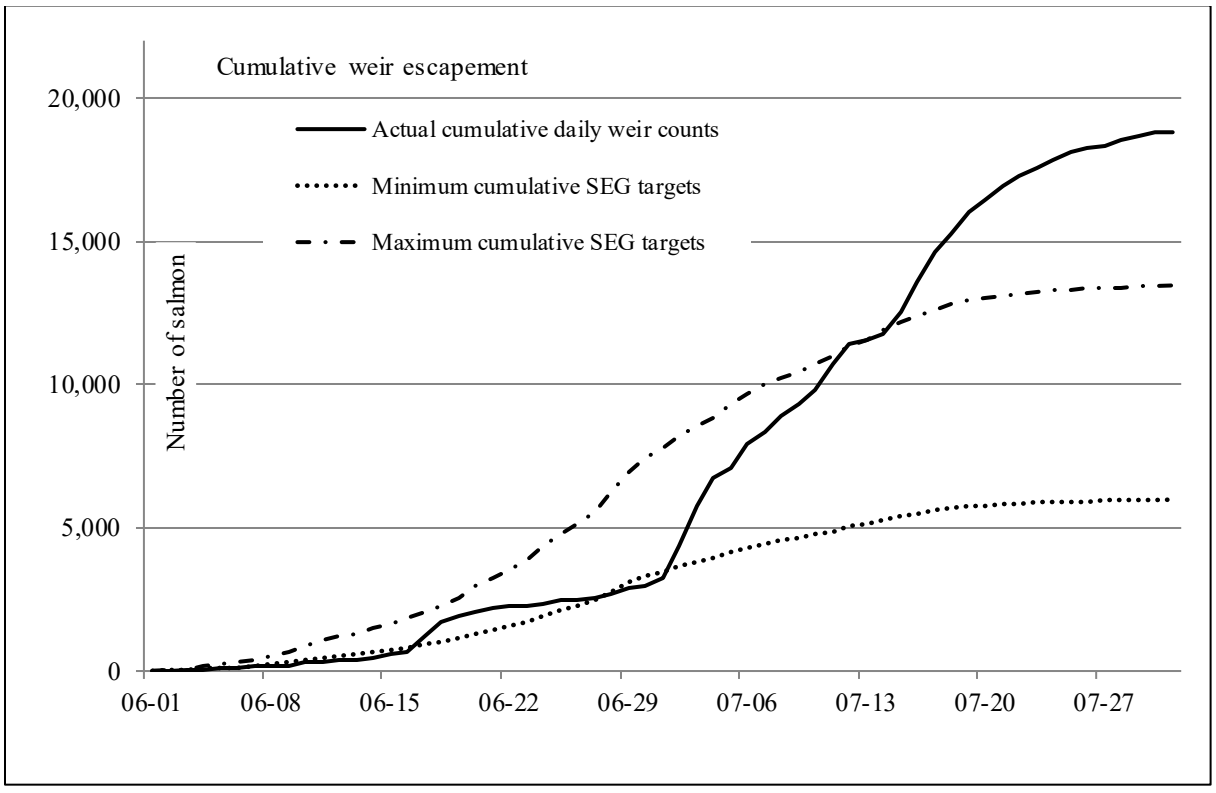
	Actual		Anticipated	Apportioned SEG				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/15	751	12,505	90.3%	97	5,401	218	12,153	
7/16	1,066	13,571	92.1%	104	5,505	233	12,386	
7/17	1,046	14,617	93.8%	104	5,609	234	12,621	
7/18	657	15,274	95.1%	79	5,689	179	12,799	
7/19	774	16,048	96.0%	54	5,743	122	12,921	
7/20	417	16,465	96.7%	40	5,783	90	13,011	
7/21	460	16,925	97.1%	23	5,805	51	13,062	
7/22	318	17,243	97.7%	37	5,842	83	13,145	
7/23	341	17,584	98.2%	33	5,875	75	13,220	
7/24	221	17,805	98.6%	24	5,899	53	13,273	
7/25	294	18,099	98.8%	9	5,908	20	13,293	
7/26	123	18,222	99.1%	21	5,929	48	13,340	
7/27	122	18,344	99.3%	11	5,940	25	13,365	
7/28	172	18,516	99.5%	13	5,953	29	13,394	
7/29	134	18,650	99.7%	11	5,963	24	13,418	
7/30	154	18,804	99.9%	13	5,977	30	13,447	
7/31	0	18,804	100.0%	4	5,981	10	13,457	Last report from weir crew.

Note: English Bay River sustainable escapement goal range is 6,000–13,500 sockeye salmon. Anticipated escapement derived using historical run timing.

Appendix A5.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement through the English Bay weir, 2018.





Appendix A6.–Sockeye salmon escapement past the English Bay weir, 1927–1941 and 1993–2018.

Year	Sustainable Escapement Goal	Total weir count	Broodstock harvested	Harvested for otoliths[a]	Spawning escapement
1927	[b]	19,197	0		19,197
1928	[b]	24,025	0		24,025
1929	[b]	15,407	0		15,407
1930	[b]	18,858	0		18,858
1931	[b]	18,878	0		18,878
1932	[b]	22,933	0		22,933
1933	[b]	NS	0		NS
1934	[b]	NS	0		NS
1935	[b]	15,851	0		15,851
1936	[b]	15,767	0		15,767
1937	[b]	14,857	0		14,857
1938	[b]	16,779	0		16,779
1939	[b]	48,777	0		48,777
1940	[b]	30,357	0		30,357
1941	[b]	26,905	0		26,905
No weir 1942–1992.					
1993	10,000–20,000	8,939	0		8,939
1994	10,000–20,000	13,800	0		13,800
1995	10,000–20,000	22,467	1,767		20,700
1996	10,000–20,000	12,335	1,230		11,105
1997	10,000–20,000	15,430	1,065		14,365
1998	10,000–20,000	15,432	1,296		14,136
1999	10,000–20,000	15,844	1,234		14,610
2000	10,000–20,000	12,613	1,376		11,237
2001	10,000–20,000	10,508	0		10,508
2002	6,000–13,500	16,550	1,573		14,977
2003	6,000–13,500	19,978	219		19,759
2004	6,000–13,500	16,435	1,390		15,045
2005	6,000–13,500	7,574	0		7,574
2006	6,000–13,500	16,533	0		16,533
2007	6,000–13,500	16,487	0		16,487
2008	6,000–13,500	11,993	0		11,993
2009	6,000–13,500	18,439	256		18,183
2010	6,000–13,500	12,253	0		12,253
2011	6,000–13,500	12,036	2,116		9,920
2012	6,000–13,500	3,855	411		3,444
2013	6,000–13,500	12,910	1,753	253	10,904
2014	6,000–13,500	7,995	877	163	6,955
2015	6,000–13,500	6,416	0	126	6,290
2016	6,000–13,500	7,673	0	123	7,550
2017	6,000–13,500	20,751	0	470	20,281
Previous 10-yr avg.		11,432	541	227	10,777
2018	6,000–13,500	18,804	0	0	18,804

[a] Otoliths were not harvested until 2013.

[b] No SEG in place.

Appendix A7.–Pink and chum salmon escapements, as measured by ground survey, using area-under-the-curve (AUC) estimation (and peak live plus carcass counts as noted) in the Southern District, 2018.

Location	Species	Survey number	Survey date (t_i)	Previous survey date	Days between surveys	Current live count (c_i)	Previous live count	Previous + current live count	Fish days[b] (A_b)	Accum. fish days	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Barabara	pink	[t]start	6/29												
Creek		1	7/17	6/29	17.5	561	0	561	4,909	4,909	281	281	4%	0	561
(index		2	7/30	7/17	13	1,991	561	2,552	16,588	21,497	948	1,228	17%	16	2,007
system)		3	8/8	7/30	9	2,662	1,991	4,653	20,939	42,435	1,196	2,425	34%	356	3,018
		4	8/21	8/8	13	3,687	2,662	6,349	41,269	83,704	2,358	4,783	66%	711	4,398
		5	9/13	8/21	23	26	3,687	3,713	42,700	126,403	2,440	7,223	100%	460	486
		[t]end	9/30		17.5				228	126,631	13	**7,236**	100%		
China	pink	[t]start	7/25												
Poot		1	7/25	7/25	0	0	0	0	0	0	0	0	0%	0	0
Creek		2	8/10	7/25	16	559	0	559	4,472	4,472	256	256	11%	0	559
(index		3	8/27	8/10	17	1,932	559	2,491	21,174	25,646	1,210	1,465	64%	96	2,028
system)		4	9/10	8/27	14	46	1,932	1,978	13,846	39,492	791	2,257	99%	427	473
		[t]end	9/27		17.5				403	39,894	23	**2,280**	100%		
Humpy	pink	[t]start	7/6												
Creek		1	7/24	7/6	17.5	8,801	0	8,801	77,009	77,009	4,401	4,401	8%	0	8,801
(index		2	8/3	7/24	10	22,605	8,801	31,406	157,030	234,039	8,973	13,374	24%	12	22,617
system)		3	8/20	8/3	17	24,793	22,605	47,398	402,883	636,922	23,022	36,396	66%	1,761	26,554
		5	9/12	8/20	23	1,839	24,793	26,632	306,268	943,190	17,501	53,897	98%	7,386	9,225
		[t]end	9/29		17.5				16,091	959,281	920	**54,816**	100%		
Humpy	chum	[t]start	7/6												
Creek		1	7/24	7/6	17.5	378	0	378	3,308	3,308	189	189	43%	3	0
(not an		2	8/3	7/24	10	121	378	499	2,495	5,803	143	332	75%	3	9
index		3	8/20	8/3	17	43	121	164	1,394	7,197	80	411	94%	3	204
system)		4	9/12	8/20	23	0	43	43	495	7,691	28	439	100%	3	28
		[t]end	9/12		0				0	7,691	0	**439**	100%		
Port	pink	[t]start	7/2												
Graham		1	7/20	7/2	17.5	74	0	74	648	648	37	37	0%	0	74
River		2	7/27	7/20	7	1,670	74	1,744	6,104	6,752	349	386	1%	0	1,670
(index		3	8/7	7/27	11	9,900	1,670	11,570	63,635	70,387	3,636	4,022	12%	330	10,230
system)		4	9/4	8/7	28	16,521	9,900	26,421	369,894	440,281	21,137	25,159	75%	6,708	23,229
		[t]end	9/21		17.5				144,559	584,839	8,261	**33,419**	100%		

-continued-

Appendix A7.–Page 2 of 2.

Location	Species	Survey number	Survey date (t_i)	Previous survey date	Days between surveys	Current live count (c_i)	Previous live count	Previous + current live count	Fish days[b] (A_b)	Accum. fish days	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Port	chum	[t]start	7/2												
Graham		1	7/20	7/2	17.5	2,504	0	2,504	21,910	21,910	1,252	1,252	34%	4	2,508
River		2	7/27	7/20	7	2,205	2,504	4,709	16,482	38,392	942	2,194	59%	146	2,351
(index		3	8/7	7/27	11	752	2,205	2,957	16,264	54,655	929	3,123	84%	640	1,392
system)		4	9/4	8/7	28	0	752	752	10,528	65,183	602	3,725	100%	52	52
		[t]end	9/4		0				0	65,183	0	**3,725**	100%		
Seldovia	pink	[t]start	7/5												
River		1	7/23	7/5	17.5	1,320	0	1,320	11,550	11,550	660	660	1%	0	1,320
(index		2	8/2	7/23	10	6,561	1,320	7,881	39,405	50,955	2,252	2,912	6%	33	6,594
system)		3	8/17	8/2	15	48,573	6,561	55,134	413,505	464,460	23,629	26,541	52%	1,181	49,754
		[t]end	9/3		17.5				425,014	889,474	24,287	**50,827**	100%		
Seldovia	chum	[t]start	7/5												
River		1	7/23	7/5	17.5	1,370	0	1,370	11,988	11,988	685	685	38%	8	1,378
(not an		2	8/2	7/23	10	854	1,370	2,224	11,120	23,108	635	1,320	74%	394	1,248
index		3	8/17	8/2	15	117	854	971	7,283	30,390	416	1,737	97%	663	780
system)		[t]end	9/3		17.5				1,024	31,414	59	**1,795**	100%		
Tutka	pink	[t]start	7/11												
Bay		1	7/11	7/11	0	0	0	0	0	0	0	0	0%	0	0
Lagoon		2	7/26	7/11	15	45	0	45	338	338	19	19	0%	0	45
Creek		3	8/9	7/26	14	24,810	45	24,855	173,985	174,323	9,942	9,961	16%	112	24,922
(index		4	8/28	8/9	19	35,730	24,810	60,540	575,130	749,453	32,865	42,826	71%	6,220	41,950
system)		[t]end	9/14		17.5				312,638	1,062,090	17,865	**60,691**	100%		

Note: The value used for the final escapement index for each stock is bold font. Final counts include fish observed in bays on the last survey of the season if no further harvest occurred.

[a] Fish days (A_b) = [Days between surveys × (prev. count + current count)] ÷ 2. AUC equations from Bue et al. 1998.

[b] Escapement index = A_b / 17.5-day stream-life estimate.

[c] Area-under-thea-curve (AUC) estimate equals the cumulative escapement index.

[d] Final escapement index.

Appendix A8.–Estimated pink and chum salmon escapements, in thousands of fish, for the major spawning systems in the Southern District of the Lower Cook Inlet Area, 1975–2018.

	Pink salmon							Chum salmon
Year	Humpy Creek	China Poot Creek	Tutka Lagoon Creek	Barabara Creek	Seldovia River	Port Graham River	Total pink salmon escapement	Port Graham River
1975	64.0	21.6	17.6	22.7	36.2	27.3	189.4	3.0
1976	27.2	2.0	11.5	0.2	25.6	6.5	73.0	0.4
1977	86.0	3.9	14.0	5.7	35.7	20.6	165.9	5.2
1978	46.1	11.2	15.0	1.4	24.6	6.7	105.0	4.8
1979	200.0	20.6	10.6	10.0	43.7	32.7	317.6	2.2
1980	64.4	12.3	17.3	5.8	65.5	40.2	205.5	1.1
1981	115.0	5.0	21.1	16.8	62.7	18.4	239.0	4.8
1982	31.9	3.1	18.5	2.1	38.4	28.9	122.9	2.5
1983	104.0	14.1	12.9	14.8	27.9	4.6	178.3	1.9
1984	84.2	8.4	10.5	1.0	14.2	10.9	129.2	2.1
1985	117.0	1.9	14.0	1.6	22.8	26.3	183.6	0.5
1986	49.7	11.5	13.4	1.8	28.2	17.5	122.1	0.6
1987	26.6	3.1	4.8	0.3	7.6	3.8	46.2	1.5
1988	21.4	3.9	11.2	0.7	16.9	7.9	62.0	3.0
1989	93.0	8.5	11.9	4.5	26.2	19.1	163.2	1.3
1990	27.0	4.2	38.5	3.9	27.8	20.1	121.5	2.6
1991	17.4	2.6	16.8	10.9	30.0	29.0	106.7	1.1
1992	14.9	4.1	26.7	2.2	14.7	5.4	68.0	1.4
1993	36.0	1.6	27.4	11.9	43.4	12.8	133.1	2.5
1994	14.1	5.7	14.5	4.5	24.4	7.6	70.8	5.2
1995	89.3	2.0	15.9	10.8	48.5	10.0	176.5	3.8
1996	9.0	2.8	3.5	2.4	17.8	7.0	42.5	3.7
1997	78.3	2.8	45.0	12.5	39.1	12.5	190.2	4.1
1998	17.5	5.7	17.5	2.8	31.5	12.6	87.6	5.1
1999	12.8	0.7	27.9	3.9	12.2	9.7	67.2	6.6
2000	22.4	7.5	19.0	5.6	53.5	15.6	123.6	11.4
2001	30.5	6.6	4.5	2.3	12.3	10.3	66.5	6.0
2002	37.1	6.5	15.9	3.2	26.9	58.5	148.1	5.3
2003	90.9	6.7	30.9	5.1	35.1	14.9	183.6	2.9
2004	28.9	3.3	17.8	5.4	56.8	44.0	156.2	1.2
2005	93.8	9.2	133.6	14.4	98.6	69.1	418.7	0.7
2006	48.4	7.2	25.8	3.6	70.0	31.2	186.2	2.2
2007	54.0	6.2	5.7	25.2	69.4	25.6	186.1	1.9
2008	90.9	5.1	14.1	16.6	53.5	24.7	204.9	1.8
2009	5.2	1.1	3.8	2.6	14.6	14.0	41.3	1.0
2010	70.7	2.2	2.1	13.9	25.9	16.6	131.5	1.4
2011	1.7	3.5	22.0	8.2	46.2	20.9	102.4	1.8
2012	67.9	8.4	10.4	1.4	44.7	34.5	167.3	0.7
2013	6.7	7.1	9.5	17.4	36.8	11.9	89.5	1.9
2014	44.4	1.4	10.2	3.6	35.9	32.3	127.7	3.7
2015	38.0	7.4	81.6	25.2	108.8	82.4	343.3	4.0
2016	89.7	0.7	33.2	2.8	15.7	14.6	156.7	2.4
2017	71.1	2.4	61.4	25.0	27.0	20.6	207.5	5.8
Prev. 10-yr avg.	48.6	3.9	24.8	11.7	40.9	27.2	157.2	2.5
2018	54.8	2.3	60.7	7.2	50.8	33.4	209.3	3.7

Note: Area-under-the-curve escapement indices are derived from periodic ground surveys with a 17.5-day stream-life factor applied.

APPENDIX B: OUTER DISTRICT

Appendix B1.–Outer District commercial purse seine salmon harvest (excluding homepacks) by period, 2018.

Period	Statistical week	Date	Hours	Permits Fished	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
1 [a]	28	7/14	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
2 [a]	29	7/15	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
3 [a,c]	29	7/16	16	3	0	0	4	13	0	0	527	2,105	1,870	16,903
4 [a,c,d]	29	7/18	16	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
5 [a,c,e]	29	7/20	16	4	0	0	648	3,200	0	0	1,138	4,546	9,568	84,224
6 [a,c,f]	30	7/23	16	4	0	0	4	22	1	6	2,338	8,435	9,006	77,847
7 [a,c,f]	30	7/25	16	5	1	29	3	9	0	0	1,466	5,847	1,885	17,433
8 [a,c,d,f]	30	7/27	16	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
9 [a,c,f,g]	31	7/30	16	7	1	11	2	8	3	16	3,626	13,973	2,717	22,060
10 [a,c,f,g]	31	8/1	16	3	0	0	2	12	1	6	2,083	8,334	27	212
11 [a,c,d,f,g]	31	8/3	16	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
12 [a,c,f,g]	32	8/6	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
13 [a,c,f,g]	32	8/8	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
14 [a,c,f,g]	32	8/10	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
15 [a,c,f,g]	33	8/13	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
16 [a,c,f,g]	33	8/15	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
17 [a,c,e,f,g]	33	8/17	16	5	0	0	0	0	0	0	17,626	68,504	6,936	49,223
18 [a,c,f,g]	34	8/20	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
19 [a,c,f,g]	34	8/22	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
20 [a,d]	34	8/24	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
21 [a,d]	35	8/27	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
22 [a,d]	35	8/29	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
23 [a,d]	35	8/31	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
24 [a,d]	36	9/3	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
25 [a,d]	36	9/5	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
26 [a,d]	36	9/7	16	0	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
Total				11	2	40	1,409	6,996	5	28	32,326	125,709	34,857	292,484
Average weight						20.00		4.97		5.60		3.89		8.39

Note: No deliveries after August 27. Unless otherwise noted, regular closed waters were in effect.

[a] Waters of East Nuka Subdistrict open daily to commercial salmon harvest.

[b] No permits fished.

[c] Waters of Dogfish Bay Subdistrict open to commercial harvest.

[d] Confidential data. Fewer than 3 permits reporting.

[e] Western half of Dogfish Bay Lagoon open to commercial salmon harvest.

[f] Waters of Rocky Bay Subdistrict open to commercial salmon harvest.

[g] Waters of Windy Bay Subdistrict open to commercial salmon harvest.

Appendix B2.–Total commercial common property salmon harvest (excluding homepacks) in Outer District, 1970–2018.

Year	Fished	Chinook	Sockeye	Coho	Pink	Chum
1970	NA	5	1,037	243	434,700	137,408
1971	NA	0	1,625	174	310,706	118,995
1972	NA	7	26,092	17	963	43,466
1973	NA	1	2,006	31	195,342	76,286
1974	NA	1	206	21	1,300	11,924
1975	NA	0	124	7	159,908	11,348
1976	NA	7	18,886	0	93	412
1977	NA	34	33,733	78	1,129,250	70,167
1978	NA	236	10,695	45	70,080	19,224
1979	NA	30	25,297	135	1,945,536	180,558
1980	NA	10	22,514	16	154,041	32,246
1981	NA	61	18,133	485	1,714,115	238,393
1982	NA	129	66,781	92	67,523	63,075
1983	NA	14	16,835	54	199,794	27,203
1984	NA	3	28,411	90	89,068	3,077
1985	34	19	91,957	3,210	618,222	11,844
1986	40	6	48,472	5,052	401,755	11,701
1987	32	14	31,845	2,481	23,890	28,663
1988	32	5	9,501	2	6,094	71,202
1989	10	1	10,286	72	52,677	43
1990	47	2	17,404	74	191,320	614
1991	35	2	6,408	12	359,664	14,337
1992	5	0	572	1	146	181
1993	21	2	4,613	119	159,159	970
1994	6	0	5,930	993	13,200	32
1995	13	12	17,642	1,272	192,098	474
1996	3	0	14,999	96	7,199	3
1997	9	0	6,255	63	128,373	1,575
1998	10	0	15,991	45	102,172	611
1999	8	3	51,117	1,482	32,484	2,062
2000	11	2	21,623	20	306,555	302
2001	5	0	7,339	5	48,559	408
2002	11	0	21,154	74	569,955	3,810
2003	6	1	26,615	4	281,663	137
2004	9	2	11,082	13	42,636	27,911
2005	5	0	1	3	110,195	12,524
2006	11	3	3,198	1,139	1,121,892	12,883
2007	5	1	32,461	113	147,409	49
2008	16	0	1,704	0	467,592	100,819
2009	11	1	8	9	853,037	35,126
2010	10	0	3,003	16	272,427	22,463
2011	13	10	46,356	25	357,472	25,763
2012	15	8	77	98	69,359	51,313
2013	11	1	119	53	2,015,105	49,062
2014	15	0	24,264	0	163,938	59,702
2015	19	0	613	41	4,096,578	97,974
2016	13	1	7	2	5,369	60,800
2017	17	1	260	389	1,244,172	151,356
Previous 10-yr avg.	14	2	7,641	63	954,505	65,438
2018	11	2	1,409	5	32,326	34,857

Source: ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

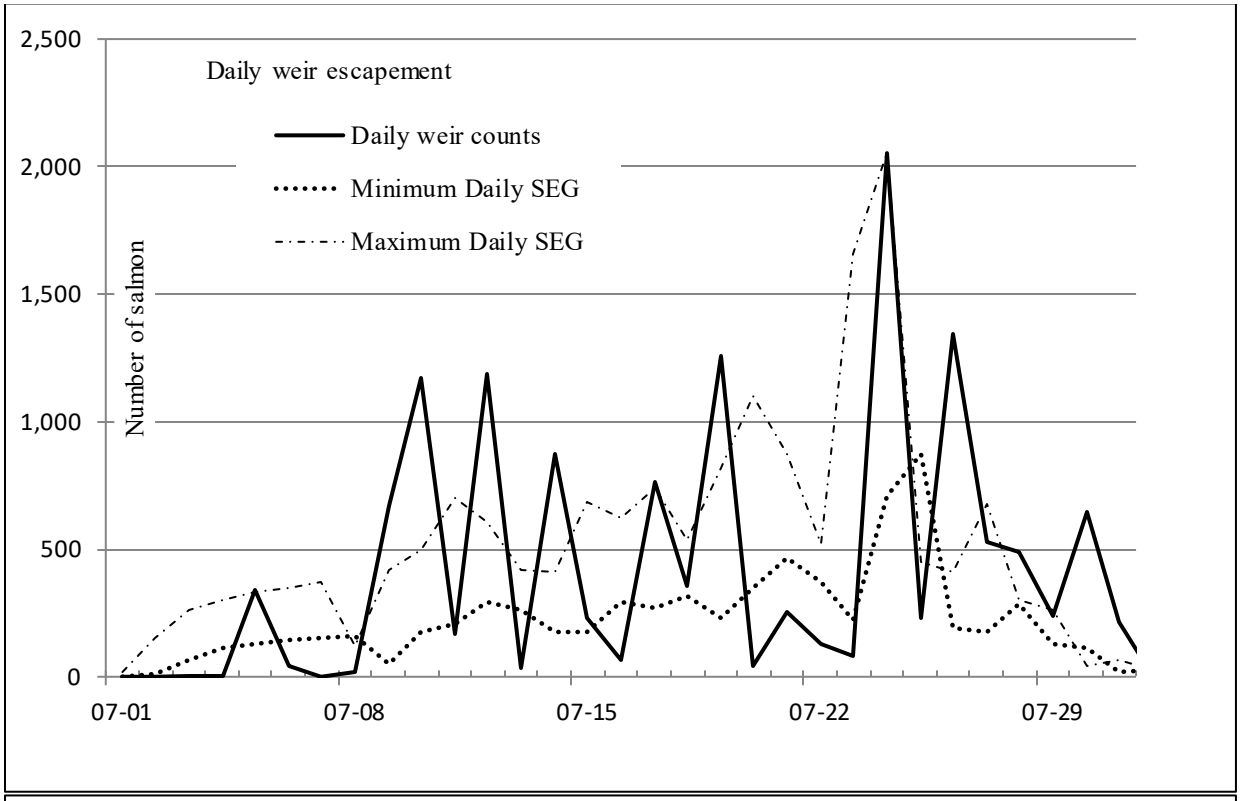
Appendix B3.–Anticipated daily and cumulative sockeye salmon escapement derived from weir-based SEG (7,500–17,650) apportioned using historical run timing versus actual escapement through the Delight Lake weir, 2018.

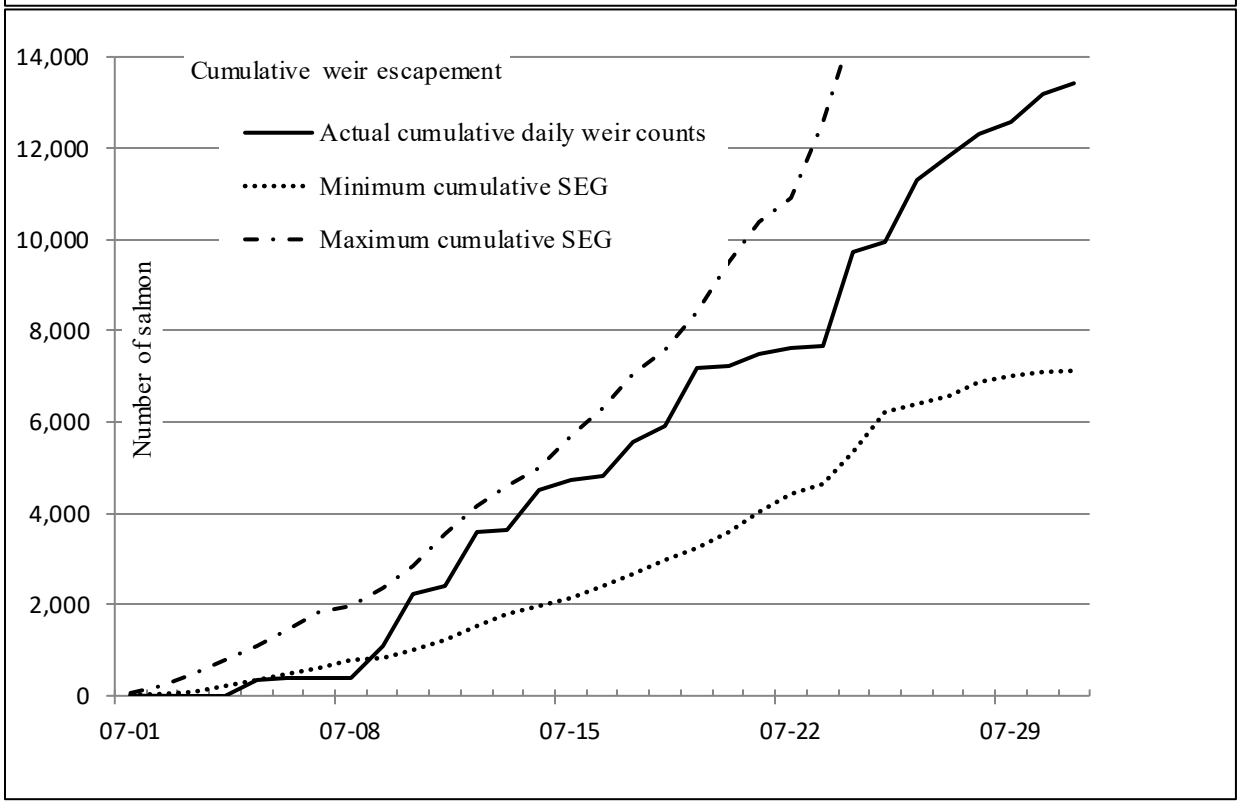
	Actual passage		Antic.	Apportioned SEG (7,500 – 17,650) Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/1	0	0	0.2%	0	18	18	62	
7/2	0	0	0.3%	8	26	149	210	
7/3	1	1	1.2%	63	89	261	471	Weir fish tight
7/4	3	4	2.7%	111	200	304	775	
7/5	337	341	4.4%	129	329	335	1,111	
7/6	44	385	6.3%	143	472	349	1,460	
7/7	0	385	8.3%	148	620	371	1,831	
7/8	15	400	10.4%	158	778	118	1,949	
7/9	673	1,073	11.0%	50	828	422	2,371	
7/10	1,169	2,242	13.4%	179	1,007	493	2,864	
7/11	167 [a]	2,409	16.2%	210	1,217	698	3,562	
7/12	1,188 [a]	3,597	20.2%	297	1,514	608	4,170	
7/13	32 [a]	3,629	23.6%	258	1,772	417	4,587	
7/14	876 [a]	4,505	26.0%	177	1,949	408	4,995	
7/15	234	4,739	28.3%	173	2,123	682	5,677	
7/16	69	4,808	32.2%	290	2,412	626	6,303	
7/17	763	5,571	35.7%	266	2,678	743	7,046	
7/18	356	5,927	39.9%	316	2,994	540	7,586	
7/19	1,257	7,184	43.0%	229	3,223	821	8,407	
7/20	39	7,223	47.6%	349	3,572	1,097	9,504	
7/21	251	7,474	53.8%	466	4,038	875	10,379	
7/22	127	7,601	58.8%	372	4,410	521	10,900	
7/23	78	7,679	61.8%	221	4,632	1,661	12,561	
7/24	2,053	9,732	71.2%	706	5,338	2,054	14,616	
7/25	230	9,962	82.8%	873	6,211	451	15,067	
7/26	1,344	11,306	85.4%	192	6,402	411	15,478	
7/27	527	11,833	87.7%	175	6,577	679	16,157	
7/28	490	12,323 [b]	91.5%	288	6,865	300	16,457	
7/29	235	12,558	93.2%	128	6,993	262	16,719	
7/30	648	13,206	94.7%	111	7,104	43	16,762	
7/31	217	13,423	95.0%	18	7,123	64	16,826	
8/1	5	13,428	95.3%	27	7,150	27	16,853	Weir removed

[a] 3,670 sockeye salmon observed on 7/16 aerial survey in Delight Lake. This is a difference of 1,694 above the cumulative count for that date. This difference is parsed out over the 75 hours of lost weir time and prorated counts applied to the daily counts during this period.

[b] A survey was flown on July 28 after the weir was removed and an additional 147 fish were counted downstream of the weir.

Appendix B4.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement through the Delight Lake weir, 2018.





Appendix B5.–Sockeye salmon escapement past the Desire Lake and Delight Lake weirs, 1997–2018.

Year	Desire Lake Sockeye salmon[a]	Delight Lake Sockeye salmon
1997 [b]	14,665	27,820
1998 [c]	7,880	9,154
1999 [d]	ND	13,431
2000 [e]	ND	ND
2001 [f]	ND	12,635
2002 [f]	ND	17,655
2003 [f]	ND	6,708
2004 [f]	ND	3,842
2005 [f]	ND	13,700
2006 [f]	ND	10,879
2007 [f]	ND	40,403
2008 [f]	ND	21,333
2009 [f]	ND	5,232
2010 [f]	ND	23,505
2011 [f,g]	ND	16,280
2012 [f,h]	ND	10,887
2013 [f]	ND	5,961
2014 [f]	ND	22,289
2015 [e]	ND	ND
2016 [e]	ND	ND
2017 [e]	ND	ND
2005–2014, 10-yr average		17,047
2018 [f]	ND	13,428

Note: ND = no data.

[a] Weir present for 2 years only at Desire Lake.

[b] Weir operated from June 7 to August 26.

[c] Weir operated from June 20 to August 18.

[d] Weir operated from June 26 to August 27.

[e] Weir not operated at Delight Lake.

[f] Weir operated for the month of July.

[g] An additional 400 fish were observed in the lake during an aerial survey prior to weir installation, and 2,310 were observed below the weir site after the weir was removed for the season. These 2,710 fish are not included in the 2011 weir total.

[h] Escapement includes 430 fish that were observed in the lake during an aerial survey prior to weir installation but does not include 147 that were observed below the weir site after the weir was removed for the season.

Appendix B6.–Pink and chum salmon escapements measured by aerial survey using area-under-the-curve (AUC) estimation (and peak aerial survey counts as noted) in Outer District, 2018.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Delight Lake	pink	[t]start	7/17											
(not an index		1	7/17	7/17	0	0	0	0	0	0	0	0	0%	
system)		2	8/4	7/17	18	1,000	0	1,000	9,000	9,000	514	514	51%	
		[t]end	8/21		17.5				8,750	17,750	500	**1,014**	100%	1,000
Desire Lake	pink	[t]start	7/17											
(index		1	7/17	7/17	0	0	0	0	0	0	0	0	0%	
system)		2	8/4	7/17	18	1,600	0	1,600	14,400	14,400	823	823	32%	
		3	9/2	8/4	29	300	1,600	1,900	27,550	41,950	1,574	2,397	94%	
		[t]end	9/19		17.5				2,625	44,575	150	**2,547**[d]	100%	1,600
Dogfish Lagoon	chum	[t]start	7/2											
Creeks		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
(index		2	7/12	7/2	10	3	0	3	15	15	1	1	0%	
system)		3	7/17	7/12	5	610	3	613	1,533	1,548	88	88	5%	
		4	7/29	7/17	12	620	610	1,230	7,380	8,928	422	510	28%	
		5	8/4	7/29	6	1,231	620	1,851	5,553	14,481	317	827	45%	
		6	9/2	8/4	29	0	1,231	1,231	17,850	32,330	1,020	1,847	100%	
		[t]end	9/2		0				0	32,330	0	**1,957**	100%	1,231
Dogfish Lagoon	pink	[t]start	7/19											
Creeks		1	7/19	7/19	0	0	0	0	0	0	0	0	0%	
(index		2	8/4	7/19	16	0	0	0	0	0	0	0	0%	
system)		3	9/2	8/4	29	6,020	0	6,020	87,290	87,290	4,988	4,988	62%	
		[t]end	9/19		17.5				52,675	139,965	3,010	**8,398**	100%	6,020

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
James Lagoon	chum	[t]start	7/17											
Creeks		1	8/4	7/17	17.5	100	0	100	875	875	50	50	50%	
(not an index system)		[t]end	8/21		17.5				875	1,750	50	**100**	100%	100
Petrof River	chum	[t]start	7/2											
(not an index		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
system)		2	7/12	7/2	10	10	0	10	50	50	3	3	1%	
		3	7/17	7/12	5	40	10	50	125	175	7	10	3%	
		4	8/4	7/17	18	280	40	320	2,880	3,055	165	175	55%	
		[t]end	8/21		17.5				2,450	5,505	140	**315**	100%	280
Port Dick-	chum	[t]start	7/2											
Headend														
Creek		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
(index		2	7/12	7/2	10	0	0	0	0	0	0	0	0%	
system)		3	7/17	7/12	5	50	0	50	125	125	7	7	1%	
		4	7/29	7/17	12	400	50	450	2,700	2,825	154	161	16%	
		5	8/4	7/29	6	1,200	400	1,600	4,800	7,625	274	436	42%	
		[t]end	8/21		17.5				10,500	18,125	600	1,036	100%	**1,200**
Port Dick-	pink	[t]start	7/2											
Headend														
Creek		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
(index		2	7/12	7/2	10	0	0	0	0	0	0	0	0%	
system)		3	7/17	7/12	5	0	0	0	0	0	0	0	0%	
		4	7/29	7/17	12	2,100	0	2,100	12,600	12,600	720	720	23%	
		5	8/4	7/29	6	3,000	2,100	5,100	15,300	27,900	874	1,594	52%	
		[t]end	8/21		17.5				26,250	54,150	1,500	**3,094**	100%	3,000
Port Dick-	chum	[t]start	7/2											
Island creek		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
(index		2	7/12	7/2	10	0	0	0	0	0	0	0	0%	
system)		3	7/17	7/12	5	10	0	10	25	25	1	1	0%	
		4	7/29	7/17	12	20	10	30	180	205	10	12	2%	
		5	8/4	7/29	6	540	20	560	1,680	1,885	96	108	19%	
		6	9/2	8/4	29	12	540	552	8,004	9,889	457	565	99%	
		[t]end	9/19		17.5				105	9,994	6	**571**	100%	540

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days, (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Port Dick-	pink	tstart	8/4											
Island creek		1	8/4	8/4	0	0	0	0	0	0	0	0	0%	
(index system)		2	9/2	8/4	29	1,800	0	1,800	26,100	26,100	1,491	1,491	62%	
		tend	9/19		17.5				15,750	41,850	900	**2,391**	100%	1,800
Port Dick-	chum	tstart	7/17											
Middle Creek		1	7/17	7/17	0	0	0	0	0	0	0	0	0%	
(not an index		2	8/4	7/17	18	200	0	200	1,800	1,800	103	103	26%	
system)		3	9/2	8/4	29	100	200	300	4,350	6,150	249	351	88%	
		tend	9/19		17.5				875	7,025	50	**501**	100%	200
Port Dick-	pink	tstart	7/17											
Middle Creek		1	8/4	7/17	17.5	100	0	100	875	875	50	50	13%	
(not an index		2	9/2	8/4	29	180	100	280	4,060	4,935	232	282	76%	
system)		tend	9/19		17.5				1,575	6,510	90	**372**	100%	180
Port Dick-	chum	tstart	7/11											
Slide Creek		1	7/29	7/11	17.5	40	0	40	350	350	20	20	9%	
(not an index		2	8/4	7/29	6	290	40	330	990	1,340	57	77	35%	
system)		tend	8/21		17.5				2,538	3,878	145	222	100%	**290**
Port Dick-	pink	tstart	7/17											
Slide Creek		1	8/4	7/17	17.5	211	0	211	1,846	1,846	106	106	50%	
(not an index		tend	8/21		17.5				1,846	3,693	106	**211**	100%	211
system)														
Rocky River	chum	tstart	7/2											
(index		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
system)		2	7/12	7/2	10	110	0	110	550	550	31	31	1%	
		3	7/17	7/12	5	290	110	400	1,000	1,550	57	89	2%	
		4	7/20	7/17	3	2,060	290	2,350	3,525	5,075	201	290	5%	
		5	7/29	7/20	9	1,720	2,060	3,780	17,010	22,085	972	1,262	22%	
		6	8/4	7/29	6	3,930	1,720	5,650	16,950	39,035	969	2,231	40%	
		7	9/2	8/4	29	100	3,930	4,030	58,435	97,470	3,339	5,570	99%	
		tend	9/19		17.5				875	98,345	50	**5,620**[d]	100%	3,930

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Rocky River	pink	[t]start	7/2											
(index		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
system)		2	7/12	7/2	10	0	0	0	0	0	0	0	0%	
		3	7/17	7/12	5	0	0	0	0	0	0	0	0%	
		4	7/20	7/17	3	0	0	0	0	0	0	0	0%	
		5	7/29	7/20	9	800	0	800	3,600	3,600	206	206	11%	
		6	8/4	7/29	6	1,000	800	1,800	5,400	9,000	309	514	27%	
		7	9/2	8/4	29	410	1,000	1,410	20,445	29,445	1,168	1,683	89%	
		[t]end	9/19		17.5				3,588	33,033	205	**2,088**[d]	100%	1,000
South Nuka	pink	[t]start	7/17											
Island Creek		1	8/4	7/17	17.5	400	0	400	3,500	3,500	200	200	37%	
(index		2	9/2	8/4	29	10	400	410	5,945	9,445	340	540	99%	
system)		[t]end	9/19		17.5				88	9,533	5	**545**[d]	100%	400
Taylor Bay	pink	[t]start	8/15											
Creek *(not an*		1	9/2	8/15	17.5	2,000	0	2,000	17,500	17,500	1,000	1,000	50%	
index stream)		[t]end	9/19		17.5				17,500	35,000	1,000	**2,310**	100%	2,000
Windy Bay-	pink	[t]start	6/29											
Left Creek		1	7/17	6/29	17.5	2,000	0	2,000	17,500	17,500	1,000	1,000	8%	
(index		2	7/29	7/17	12	3,100	2,000	5,100	30,600	48,100	1,749	2,749	22%	
system)		3	8/4	7/29	6	5,400	3,100	8,500	25,500	73,600	1,457	4,206	34%	
		4	9/2	8/4	29	2,900	5,400	8,300	120,350	193,950	6,877	11,083	88%	
		[t]end	9/19		17.5				25,375	219,325	1,450	**14,043**[d]	100%	5,400

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Windy Bay-	chum	tstart	6/24											
Right Creek		1	7/12	6/24	17.5	100	0	100	875	875	50	50	25%	
(not an index		2	7/17	7/12	5	220	100	320	800	1,675	46	96	49%	
system)		3	7/29	7/17	12	10	220	230	1,380	3,055	79	175	89%	
		4	8/4	7/29	6	30	10	40	120	3,175	7	181	92%	
		tend	8/21		17.5				263	3,438	15	196	100%	**220**
Windy Bay-	pink	tstart	7/12											
Right Creek		1	7/12	7/12	0	0	0	0	0	0	0	0	0%	
(index		2	7/17	7/12	5	0	0	0	0	0	0	0	0%	
system)		3	7/29	7/17	12	4,120	0	4,120	24,720	24,720	1,413	1,413	16%	
		4	8/4	7/29	6	2,700	4,120	6,820	20,460	45,180	1,169	2,582	29%	
		5	9/2	8/4	29	3,000	2,700	5,700	82,650	127,830	4,723	7,305	83%	
		tend	9/19		17.5				26,250	154,080	1,500	**8,925**[d]	100%	4,120

Note: The value used for the final escapement index for each stock is bold font. AUC equations from Bue et al. 1998. Final counts include fish observed in bays on the last survey of the season if no further harvest occurred.

[a] Fish days (A_b) = (Days between surveys × (prev. count + current count)) ÷ 2.

[b] Escapement index = A_b / 17.5 day stream-life estimate.

[c] Area-under-the-curve (AUC) estimate equals the cumulative escapement index.

[d] Final escapement index.

Appendix B7.–Pink and chum salmon escapements measured by ground survey using area-under-the-curve (AUC) estimation (and peak live plus carcass counts as noted) in the Outer District, 2018.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Dogfish Lagoon	chum	[t]start	7/1												
Creeks		1	7/19	7/1	17.5	474	0	474	4,148	4,148	237	237	3%	0	474
(Index		2	8/15	7/19	27	4,590	474	5,064	68,364	72,512	3,907	4,144	54%	1,237	5,827
system)		3	9/7	8/15	23	393	4,590	4,983	57,305	129,816	3,275	7,418	97%	3,695	4,088
		[t]end	9/24		17.5				3,439	133,255	197	**7,615**[d]	100%		
Dogfish Lagoon	pink	[t]start	7/1												
Creeks		1	7/19	7/1	17.5	4	0	4	35	35	2	2	0%	0	4
(Index system)		2	8/15	7/19	27	1,558	4	1,562	21,087	21,122	1,205	1,207	18%	40	1,598
		3	9/7	8/15	23	3,934	1,558	5,492	63,158	84,280	3,609	4,816	71%	4,100	**8,034**[d]
		[t]end	9/24		17.5				34,423	118,703	1,967	6,783	100%		
Port Chatham	chum	[t]start	7/13												
Creeks		1	7/31	7/13	17.5	38	0	38	333	333	19	19	20%	0	38
(not an		2	8/23	7/31	23	47	38	85	978	1,310	56	75	80%	44	91
index system)		3	9/6	8/23	14	0	47	47	329	1,639	19	94	100%	32	32
		[t]end	9/6		0				0	1,639	0	**94**	100%		
Port Chatham	pink	[t]start	7/13												
Creeks		1	7/31	7/13	17.5	1,014	0	1,014	8,873	8,873	507	507	3%	0	1,014
(Index			8/23	7/31	23	15,110	1,014	16,124	185,426	194,299	10,596	11,103	61%	1,631	16,741
system)		2	9/6	8/23	14	1,084	15,110	16,194	113,358	307,657	6,478	17,580	97%	8,791	9,875
		[t]end	9/23		17.5				9,485	317,142	542	**18,122**[d]	100%		
Port Dick-	chum	[t]start	6/24												
Headend Creek		1	7/12	6/24	17.5	110	0	110	963	963	55	55	8%	0	110
(Index		2	8/6	7/12	25	380	110	490	6,125	7,088	350	405	56%	55	435
system)		3	8/24	8/6	18	141	380	521	4,689	11,777	268	673	93%	56	197
		4	9/5	8/24	12	3	141	144	864	12,641	49	722	100%	9	12
		[t]end	9/22		17.5				26	12,667	2	**724**[d]	100%		
Port Dick-	pink	[t]start	6/24												
Headend Creek		1	7/12	6/24	17.5	6	0	6	53	53	3	3	0%	0	6
(Index		2	8/6	7/12	25	18,928	6	18,934	236,675	236,728	13,524	13,527	14%	3	18,931
system)		3	8/24	8/6	18	57,055	18,928	75,983	683,847	920,575	39,077	52,604	56%	1,267	58,322
		4	9/5	8/24	12	26,599	57,055	83,654	501,924	1,422,499	28,681	81,286	86%	9,555	36,154
		[t]end	9/22		17.5				232,741	1,655,240	13,300	**94,585**[d]	100%		

-continued-

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Port Dick-	chum	^{t}start	6/30												
Island Creek		1	7/18	6/30	17.5	14	0	14	123	123	7	7	1%	0	14
(Index system)		2	8/1	7/18	14	366	14	380	2,660	2,783	152	159	12%	0	366
		3	8/16	8/1	15	713	366	1,079	8,093	10,875	462	621	45%	38	751
		4	8/29	8/16	13	422	713	1,135	7,378	18,253	422	1,043	76%	156	578
		5	9/11	8/29	13	193	422	615	3,998	22,250	228	1,271	93%	288	481
		^{t}end	9/28		17.5				1,689	23,939	97	**1,368**[d]	100%		
Port Dick-	pink	^{t}start	7/18												
Island Creek		1	7/18	7/18	0	0	0	0	0	0	0	0	0%	0	0
(Index		2	8/1	7/18	14	5	0	5	35	35	2	2	0%	0	5
system)		3	8/16	8/1	15	1,269	5	1,274	9,555	9,590	546	548	10%	0	1,269
		4	8/29	8/16	13	4,129	1,269	5,398	35,087	44,677	2,005	2,553	46%	61	4,190
		5	9/11	8/29	13	1,689	4,129	5,818	37,817	82,494	2,161	4,714	85%	193	1,882
		^{t}end	9/28		17.5				14,779	97,273	845	**5,558**[d]	100%		
Port Dick-	chum	^{t}start	7/12												
Slide Creek		1	7/12	7/12	0	0	0	0	0	0	0	0	0%	0	0
(not an		2	8/6	7/12	25	250	0	250	3,125	3,125	179	179	59%	0	250
index system)		^{t}end	8/23		17.5				2,188	5,313	125	**304**	100%		
Port Dick-	pink	^{t}start	7/12												
Slide Creek		1	7/12	7/12	0	0	0	0	0	0	0	0	0%	0	0
(not an		2	8/6	7/12	25	5	0	5	63	63	4	4	59%	0	5
index system)		^{t}end	8/23		17.5				44	106	3	**6**	100%		

Note: The value used for the final escapement index for each stock is bold font. AUC equations from Bue et al. 1998. Final counts include fish observed in bays on the last survey of the season if no further harvest occurred.

[a] Fish days (A_b) = (Days between surveys × (prev. count + current count)) ÷ 2.

[b] Escapement index = A_b / 17.5-day stream-life estimate.

[c] Area-under-the-curve estimate equals the cumulative escapement index.

[d] Final escapement index.

Appendix B8.–Sockeye salmon aerial survey counts from the Outer District, 2018.

Location	Survey number	Survey date	Live count	Peak count
Delusion Lake	1	7/2	0	
	2	7/12	0	
	3	7/17	10	
	4	8/4	1,140	
	5	9/2	360	1,140
Desire Lake	1	6/14	0	
	2	7/2	1,050	
	3	7/12	5,020	
	4	7/17	4,390	
	5	8/4	9,840	
	6	9/2	4,880	9,840
Delight Lake	1	6/14	0	
	2	7/2	200	
	3	7/12	1,505	
	4	7/17	950	
	5	8/4	380	
	6	9/2	3,700	3,700

Appendix B9.–Estimated pink, chum, and sockeye salmon escapements in thousands of fish for the major spawning systems in the Outer District of the Lower Cook Inlet Area, 1980–2018. Blank cells indicate no data was collected.

	Pink salmon											Chum salmon					Sockeye salmon			
Year	Dogfish Lagoon	Port Chatham	Windy Right Creek	Windy Left Creek	Rocky River	Port Dick Creek	Island Creek	South Nuka Creek	Desire Lake Creek	James Lagoon[a]	Total index count	Dogfish Lagoon	Rocky River	Port Dick Creek	Island Creek	Total index count	Delusion Lake[a]	Delight Lake	Desire Lake	Total index count
1980	0.3	7.7	3.3	10.9	6.4	56.1	2.2	0.3	16.0	4.6	103.2	4	23	4.2	11	42.1		7.3 [d]	17.0	24.3
1981	2.6	11.2	4.7	31.3	25.0	106.0	25.0	16.0	5.0	14	226.8	12	13	4.1	18	45.6			12.0	12.0
1982	2.6	2.0	4.7	4.4	6.6	19.9	15.0	0.4	12.0	6	67.6	8.5	2.8	1.7	8.7	21.7		13.1 [d]	18.0	31.1
1983	1.0	3.5	4.3	11.9	16.6	64.1	15.3	22.2	8.5	5.1	147.4	5.3	4	4.5	36	50		5.1 [d]	12.0	17.1
1984	0.6	7.8	3.4	2.5	9.0	44.6	35.0	0.6	23.0	4	126.5	8.6	3.5	2.7	26	40.4		5.4 [d]	15.0	20.4
1985	0.2	8.9	5.4	8.9	12.1	65.3	27.9	3.6	62.5	9	194.8	4.9	2.5	1	9.1	17.5		16.3 [d]	18.0	34.3
1986	0.4	11.5	2.5	2.2	12.0	41.6	16.6	7.0	32.0	6.6	125.8	2.5	2	1.7	8.6	14.8		8.8 [d]	10.0	18.8
1987	1.2	10.2	2.0	5.6	4.5	4.5	0.1	2.8	11.0	1.1	41.9	2	0.2	6.1	13	21.5		8.1 [d]	13.4	21.5
1988	0.3	21.0	1.3	3.4	5.4	12.0	7.2	1.2	2.5	1.7	54.3	8.6	0.3	9	7.8	25.7		0.8 [d]	9.0	9.8
1989	0.2	31.7	6.6	25.2	10.3	55.4	6.7	7.3	47.0	4.9	190.4	1.8	1.2	3.3	4.8	15		4.8 [d]	9.0	13.8
1990	7.1	27.8	7.1	7.5	18.0	41.7	25.0	13.3	1.0	3.8	148.5	1	0.8	1.1	2.3	12			9.5	9.5
1991	9.3	23.8	20.7	34.5	26.1	54.2	24.4	16.4	1.3	4.4	210.7	3.1		7.4	17	12		4.1 [d]	8.2	12.3
1992		4.3	3.9	8.2	25.4	6.9	12.5	6.1	0.4	0.4	67.7	0.8	1.7	5.4	6.7	2.4		5.9 [d]	11.9	17.8
1993	0.3	22.2	13.6	25.9	70.0	37.0	12.1	34.3	19.3	3.3	234.7	5.4	0.1	2.5	3.6	34		5.0 [d]	11.0	16.0
1994	1.3	3.3	2.2	3.0	17.1	18.1	28.3	1.4		0.8	74.7	11	1.9	3.5	8.8	16.5		5.6 [d]	10.5	16.1
1995	13.3	14.0	11.4	31.6	56.3	6.6	10.6	6.2		0.6	150.0	4.2	5.1	3.3	7.7	21.9		15.8 [d]	15.8	31.6
1996	2.3	8.6	9.9	2.5	80.1	23.2	40.1	6.8			173.5	6.7	2	2.3	6.9	24.5		9.4 [d]	9.4	18.8
1997	20.0	42.7	13.9	64.6	48.1	36.9	71.1	9.3	6.2		312.8	13	1.1	1.9	5.2	47.2		27.8 [b]	14.7	42.5
1998	6.7	22.2	19.5	12.9	165.0	59.1	83.6	14.0	6.2		389.2	9.8	0.7	1.8	3.4	31.2		9.2 [b]	7.9	17.1
1999	12.4	10.7	5.2	24.0	17.2	8.5	8.6	2.4	6.8		95.8	19	5.4	2.9	16	28.1		17.0 [d]	14.6	31.6
2000	11.1	16.7	23.0	20.1	131.6	124.4	70.8	13.6	21.1	3.9	432.4	20	4.2	3.4	12	13		12.3 [c]	4.0	16.3
2001	2.0	17.9	10.3	61.8	73.0	44.7	81.8	20.7	67.5	2.3	379.7	6.1	3	1.8	6.3	17.2	2.8	10.1 [c]	5.5	15.6
2002	1.3	18.1	14.4	28.9	112.5	108.0	44.1	14.8	78.4	3.1	420.5	10	5.7	12	15	43.4	3.6	19.6 [c]	16.0	35.6
2003	5.2	35.0	23.3	82.8	287.4	107.7	118.6	41.4	34.8		736.2	13	5.5	5.6	16	40.7	2.0	7.5 [c]	8.4	15.9
2004	3.2	26.4	12.0	23.3	53.8	13.3	33.6	6.4	24.3		196.3	3.6	17	8.6	15	44.5	1.0	7.3 [c]	10.7	18.0
2005	22.3	44.4	22.2	72.0	198.7	122.2	26.4	11.2	46.0		565.4	2.7	6.1	4.8	21	34.3	1.1	15.2 [c]	4.8	20.0
2006	8.0	24.2	17.1	65.2	67.8	51.5	107.7	5.1	74.8		421.4	5.4	11	2.8	5.6	25	1.0	10.9 [c]	18.6	29.5
2007	4.1	14.5	18.3	37.3	190.0	44.2	87.2	6.6	11.8		414.0	4.9	1.6	2.8	3.1	12.4	2.1	44.0 [c]	10.0	54.0
2008	8.0	16.4	12.5	64.1	90.9	34.2	49.7	12.3	9.5		297.6	6.2	3.8	12	13	34.7	1.8	23.9 [c]	10.7	34.6
2009	9.2	25.3	15.0	57.3	173.6	41.7	44.5	19.9	73.9		460.4	4.4	2.5	5.6	9.3	21.8	1.3	12.7 [c]	16.0	28.7
2010	6.3	3.0	6.4	24.2	27.0	41.1	69.5		3.0		180.6	12.7	1.3	2.4	3.4	19.8	0.6	23.8 [c]	6.3	30.1
2011	3.9	15.8	1.7	12.2	22.7	16.9	10.2		0.6	0.3	84.0	12.9	4.5	7.1	11.8	36.3	1.8	20.2 [c]	9.6	29.8
2012	11.4	5.4	5.8	11.7	15.7	18.1	20.1	1.3	2.3	0.0	91.7	8.8	3.2	8.4	14.9	35.2		10.9 [c]	8.8	19.7
2013	26.4	57.4	11.7	47.8	75.8	55.8	26.0	8.4	56.9	24.4	366.4	9.3	8.1	4.1	8.8	30.4	1.7	6.0 [c]	8.4	14.4
2014	8.8	10.3	5.7	10.1	17.1	48.7	50.4	11.0	0.4	1.0	162.7	11.2	6.9	1.8	2.7	22.6	0.0	22.3 [c]	11.5	33.8
2015	50.1	42.6	17.0	33.6	107.9	98.0	50.4	8.9	46.3	30.3	454.8	13.3	3.1	13.2	18.5	48.2	0.1	3.2 [d]	2.8	6.1
2016	2.3	1.1	1.4	0.5	4.3	4.8	1.7	0.0	0.2	0.1	16.4	11.3	4.6	9.3	8.5	33.7	0.1	5.1 [d]	6.7	11.9
2017	13.3	44.3	5.1	17.4	31.2	62.1	22.6	0.5	4.4	2.7	200.8	13.2	6.9	2.6	5.5	28.3	1.0	5.4 [d]	9.5	14.8
10-yr avg.	14.0	22.2	8.2	27.9	56.6	42.1	34.5	7.8	19.7	8.4	233.1	10.3	4.5	6.6	9.6	31.1	0.9	13.3	9.0	22.4
2018	8.0	18.1	8.9	14.0	2.1	94.6	5.6	0.5	2.5	0.1	154.4	7.6	5.6	0.7	1.4	15.3	1.1	13.4 [c]	9.8	23.3

[a] Nonindex stream.
[b] Escapement derived from weir counts.
[c] Escapement derived from a combination of weir, video counts, and/or aerial counts.
[d] Escapement derived from aerial survey.

APPENDIX C: EASTERN DISTRICT

Appendix C1.–Eastern District common property commercial purse seine salmon harvest (excluding homepacks) by period, 2018.

Period	Statistical Week	Date	Hours	Permits Fished	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
1	25	6/18	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
2	25	6/19	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
3	25	6/20	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
4	25	6/21	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
5	25	6/22	16	3	0	0	2,859	10,525	0	0	0	0	3	31
6	26	6/25	16	3	0	0	4,336	17,746	0	0	0	0	4	36
7	26	6/26	16	3	0	0	4,087	14,865	0	0	0	0	28	282
8	26	6/27	16	3	0	0	1,955	7,167	0	0	0	0	12	128
9	26	6/28	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
10	26	6/29	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
11	27	7/2	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
12	27	7/5	16	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
Total				5	0	0	22,310	83,746	0	0	0	0	66	670
Average weight						0		0		0		0		0

[a] Confidential data. Fewer than 3 permits reporting.

Appendix C2.–Historic commercial common property and derby commercial sales harvest (excluding homepacks) by species in the Eastern District, 1970–2018.

		Commercial common property harvest					Derby sales
Year	Permits	Chinook	Sockeye	Coho	Pink	Chum	Coho
1970	ND	11	4,895	691	50,946	1,305	
1971	ND	32	2,203	1,115	5	423	
1972	ND	12	413	903	18,232	767	
1973	ND	5	3,057	801	1,919	55	
1974	ND	0	193	524	378	7	
1975	ND	0	596	124	383	2	
1976	ND	0	5	200	35,423	45	
1977	ND	0	5,776	360	1,349	3,229	
1978	ND	0	2	582	29,738	100	
1979	ND	0	0	296	0	0	
1980	ND	0	122	426	155,779	720	
1981	ND	0	9,270	470	44,989	3,279	
1982	ND	0	3,092	950	143,639	7,698	
1983	ND	0	25,932	594	36,154	7,934	
1984	ND	47	54,459	536	135,290	10,534	
1985	14	11	24,311	1	92,403	5,146	
1986	10	0	3,055	3	40,243	3,757	
1987	9	0	3,687	1	14,333	14,913	
1988	13	1	20,253	1	1,740	24,668	
1989	12	0	8,538	3,913	92	312	
1990	8	0	7,682	127	11,815	307	1,642
1991	6	1	4,703	331	167,250	80	917
1992	7	0	432	1,131	60,007	86	477
1993	6	0	171	247	10,616	9	1,428
1994	6	1	1,610	3,835	44,987	2,792	1,608
1995	19	0	25,626	918	12,000	330	2,960
1996	17	0	36,981	1	35	223	2,600
1997	9	0	11,044		1	66	2,167
1998	7	1	9,797	1,094	38,829	51	2,554
1999	11	1	22,682	3	1,930	1,232	1,289
2000	13	0	19,193	332	4,099	1,273	1,689
2001	3	0	2,629	0	0	6	2,155
2002	7	0	14,647	0	0	5	2,687
2003	10	0	7,341	0	0	19	3,821
2004	8	0	16,645	0	0	1	4,400
2005	15	0	19,297	3	13,072	385	4,788
2006	13	0	32,393	1	3,460	270	2,274
2007	11	0	15,407	0	0	53	2,850
2008	11	0	57,060	0	0	34	1,223
2009	0	0	0	0	0	0	1,570
2010	0	0	0	0	0	0	1,100
2011	16	0	56,111	0	24	112	1,207
2012	ND	0	0	0	0	0	1,400
2013	ND	0	0	0	0	0	1,380
2014	2	0	5,306	0	753	354	606
2015	3	0	4,633	0	155	115	1,408
2016	2	0	2,505	0	7	30	200
2017	ND	0	0	0	0	0	1,577
Prev. 10-yr avg.	6	0	17,628	0	235	116	1,294
2018	5	0	22,310	0	0	66	1,956

Source: ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

Note: ND = no data.

Appendix C3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the Bear Creek weir, 2018.

	Actual Escapement to Bear Lake			Anticipated SEG plus CIAA brood goal[a]				Actual weir donations[b]		Actual weir cost recovery		Actual Total sockeye at Bear Creek weir	
			Antic.	Minimum		Maximum							
Date	Daily	Total	percent	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total
5/20	0	0	0.0%	2	3	4	7	0	0	0	0	0	0
5/21	0	0	0.0%	1	4	2	10	0	0	0	0	0	0
5/22	0	0	0.0%	2	7	5	15	0	0	0	0	0	0
5/23	0	0	0.1%	6	13	12	27	0	0	0	0	0	0
5/24	0	0	0.3%	11	23	23	51	0	0	0	0	0	0
5/25	2	2	0.5%	11	34	24	75	0	0	0	0	2	2
5/26	0	2	0.8%	20	54	44	119	0	0	0	0	0	2
5/27	1	3	1.1%	21	76	46	166	0	0	0	0	1	3
5/28	2	5	1.5%	25	101	55	221	0	0	0	0	2	5
5/29	3	8	2.4%	54	155	118	340	0	0	0	0	3	8
5/30	12	20	3.5%	74	229	163	502	0	0	0	0	12	20
5/31	62	82	4.5%	63	292	138	640	0	0	0	0	62	82
6/1	246	328	5.5%	63	355	138	778	0	0	0	0	246	328
6/2	193	521	6.7%	76	430	166	944	0	0	0	0	193	521
6/3	444	965	7.9%	75	505	164	1,108	0	0	0	0	444	965
6/4	1,138	2,103	9.7%	114	619	250	1,358	0	0	0	0	1,138	2,103
6/5	555	2,658	11.9%	146	765	319	1,677	0	0	0	0	555	2,658
6/6	947	3,605	14.7%	174	939	382	2,059	0	0	0	0	947	3,605
6/7	1,055	4,660	17.4%	176	1,115	386	2,445	0	0	0	0	1,055	4,660
6/8	1,296	5,956	20.2%	179	1,294	394	2,838	0	0	0	0	1,296	5,956
6/9	1,815	7,771	23.7%	217	1,511	476	3,314	0	0	0	0	1,815	7,771
6/10	1,737	9,508	26.3%	168	1,679	369	3,683	0	0	0	0	1,737	9,508
6/11	592	10,100	28.9%	164	1,843	359	4,042	0	0	0	0	592	10,100
6/12	769	10,869	31.1%	143	1,986	313	4,355	0	0	0	0	769	10,869
6/13	382	11,251	33.7%	164	2,150	359	4,714	0	0	737	737	1,119	11,988
6/14	434	11,685	36.5%	183	2,332	400	5,115	0	0	864	1,601	1,298	13,286
6/15	374	12,059	38.8%	143	2,475	313	5,428	0	0	1,387	2,988	1,761	15,047
6/16	473	12,532	41.5%	173	2,648	380	5,807			939	3,927	1,412	16,459
6/17	221	12,753	44.1%	165	2,813	361	6,169	10	10	908	4,835	1,139	17,598
6/18	0	12,753	46.0%	119	2,931	260	6,429	0	10	0	4,835	0	17,598
6/19	0	12,753	48.4%	154	3,086	339	6,768	0	10	2,148	6,983	2,148	19,746
6/20	0	12,753	51.7%	215	3,300	471	7,238	0	10	1,781	8,764	1,781	21,527
6/21	0	12,753	54.5%	175	3,476	385	7,623	0	10	880	9,644	880	22,407
6/22	0	12,753	57.7%	202	3,677	442	8,065	0	10	1,472	11,116	1,472	23,879
6/23	0	12,753	60.7%	191	3,869	420	8,484	0	10	1,711	12,827	1,711	25,590
6/24	0	12,753	63.6%	186	4,054	407	8,891	0	10	1,688	14,515	1,688	27,278
6/25	0	12,753	66.8%	204	4,259	448	9,339	0	10	2,633	17,148	2,633	29,911
6/26	0	12,753	68.9%	136	4,394	298	9,637	0	10	2,615	19,763	2,615	32,526
6/27	0	12,753	71.7%	178	4,572	389	10,027	0	10	1,691	21,454	1,691	34,217
6/28	0	12,753	73.5%	117	4,689	257	10,284	0	10	1,742	23,196	1,742	35,959
6/29	0	12,753	75.4%	115	4,804	252	10,536	0	10	1,730	24,926	1,730	37,689
6/30	0	12,753	77.5%	137	4,941	300	10,837	0	10	789	25,715	789	38,478
7/1	0	12,753	79.3%	112	5,053	245	11,081	0	10	630	26,345	630	39,108
7/2	0	12,753	81.1%	115	5,168	253	11,334	0	10	375	26,720	375	39,483
7/3	0	12,753	82.4%	84	5,252	184	11,519	0	10		26,720	0	39,483
7/4	0	12,753	83.5%	69	5,322	152	11,671	0	10	652	27,372	652	40,135
7/5	0	12,753	84.5%	63	5,385	138	11,809	0	10	550	27,922	550	40,685
7/6	0	12,753	85.5%	67	5,452	148	11,957	0	10	136	28,058	136	40,821
7/7	0	12,753	86.6%	67	5,519	146	12,103	0	10		28,058	0	40,821

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	Actual Escapement to Bear Lake			Anticipated SEG plus CIAA brood goal [a]				Actual weir donations[b]		Actual weir cost recovery		Actual Total sockeye at Bear Creek weir	
			Antic.	Minimum		Maximum							
Date	Daily	Total	percent	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total
7/8	0	12,753	87.6%	64	5,583	140	12,243	0	10	0	28,058	0	40,821
7/9	0	12,753	89.1%	97	5,679	212	12,455	0	10	0	28,058	0	40,821
7/10	0	12,753	90.6%	98	5,777	215	12,670	0	10	426	28,484	426	41,247
7/11	0	12,753	91.7%	67	5,844	147	12,817	30	40	499	28,983	529	41,776
7/12	0	12,753	92.4%	47	5,891	102	12,919	196	236	0	28,983	196	41,972
7/13	0	12,753	93.3%	55	5,946	120	13,039	124	360	0	28,983	124	42,096
7/14	0	12,753	93.9%	40	5,985	87	13,127	192	552	0	28,983	192	42,288
7/15	0	12,753	94.3%	23	6,008	50	13,176	184	736	0	28,983	184	42,472
7/16	26	12,779	94.7%	29	6,037	63	13,239	269	1,005	0	28,983	295	42,767
7/17	0	12,779	95.2%	29	6,066	64	13,303	80	1,085	0	28,983	80	42,847
7/18	0	12,779	96.1%	63	6,129	137	13,441	685	1,770	0	28,983	685	43,532
7/19	0	12,779	96.8%	43	6,171	93	13,534	209	1,979	0	28,983	209	43,741
7/20	0	12,779	97.6%	52	6,223	113	13,647	357	2,336	0	28,983	357	44,098
7/21	0	12,779	98.1%	28	6,251	62	13,709	155	2,491	0	28,983	155	44,253
7/22	0	12,779	98.7%	42	6,293	92	13,801	113	2,604	0	28,983	113	44,366
7/23	0	12,779	98.9%	13	6,306	28	13,829	0	2,604	0	28,983	0	44,366
7/24	0	12,779	99.0%	8	6,314	18	13,847	0	2,604	0	28,983	0	44,366
7/25	0	12,779	99.1%	3	6,317	7	13,854	0	2,604	0	28,983	0	44,366
7/26	0	12,779	99.1%	0	6,317	0	13,854	0	2,604	0	28,983	0	44,366
7/27	0	12,779	99.2%	7	6,324	15	13,868	0	2,604	0	28,983	0	44,366
7/28	0	12,779	99.3%	5	6,329	12	13,880	0	2,604	0	28,983	0	44,366
7/29	0	12,779	99.3%	3	6,332	7	13,887	0	2,604	0	28,983	0	44,366
7/30	0	12,779	99.4%	1	6,334	3	13,890	0	2,604	0	28,983	0	44,366
7/31	0	12,779	99.4%	1	6,335	3	13,893	60	2,664	0	28,983	60	44,426
8/1	0	12,779	99.4%	1	6,336	3	13,896	10	2,674	0	28,983	10	44,436
8/2	0	12,779	99.4%	3	6,339	6	13,902	30	2,704	0	28,983	30	44,466
8/3	0	12,779	99.5%	2	6,341	5	13,906	166	2,870	0	28,983	166	44,632
8/4	0	12,779	99.5%	2	6,342	4	13,910	12	2,882	0	28,983	12	44,644
8/5	0	12,779	99.7%	12	6,355	27	13,936	22	2,904	0	28,983	22	44,666
8/6	0	12,779	99.7%	2	6,357	5	13,941	0	2,904	0	28,983	0	44,666
8/7	0	12,779	99.8%	2	6,359	5	13,947	0	2,904	0	28,983	0	44,666
8/8	0	12,779	99.8%	2	6,361	4	13,951	10	2,914	0	28,983	10	44,676
8/9	0	12,779	99.8%	1	6,362	2	13,952	0	2,914	0	28,983	0	44,676
8/10	0	12,779	99.8%	2	6,364	5	13,957	10	2,924	0	28,983	10	44,686
8/11	0	12,779	99.9%	1	6,365	2	13,959	0	2,924	0	28,983	0	44,686
8/12	0	12,779	99.9%	1	6,366	2	13,961	0	2,924	0	28,983	0	44,686
8/13	0	12,779	99.9%	3	6,369	8	13,968	0	2,924	0	28,983	0	44,686
8/14	0	12,779	99.9%	1	6,370	2	13,970	0	2,924	0	28,983	0	44,686
8/15	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/16	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/17	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/18	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/19	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/20	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/21	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/22	0	12,779	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686
8/23	0	12,779[c]	99.9%	0	6,370	0	13,970	0	2,924	0	28,983	0	44,686

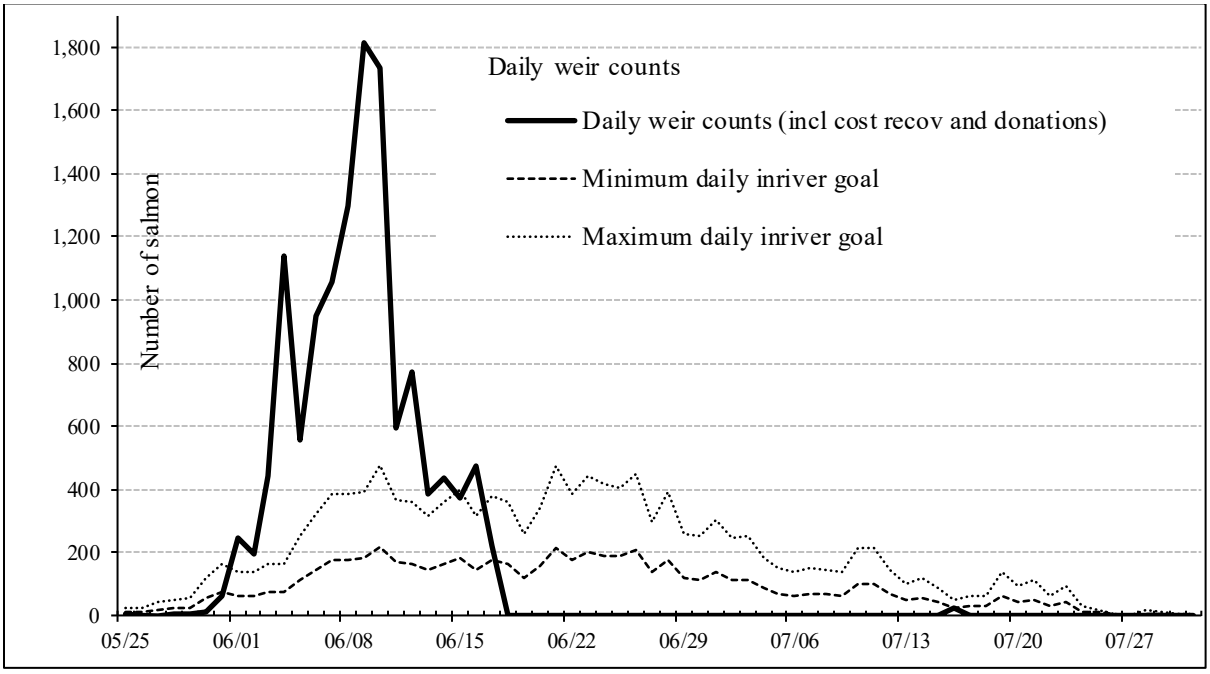
Note: Bear Creek sustainable escapement goal is 700–8,300 sockeye salmon. CIAA broodstock goal is 3,750 for a desired inriver run of 4,450–12,050 fish.

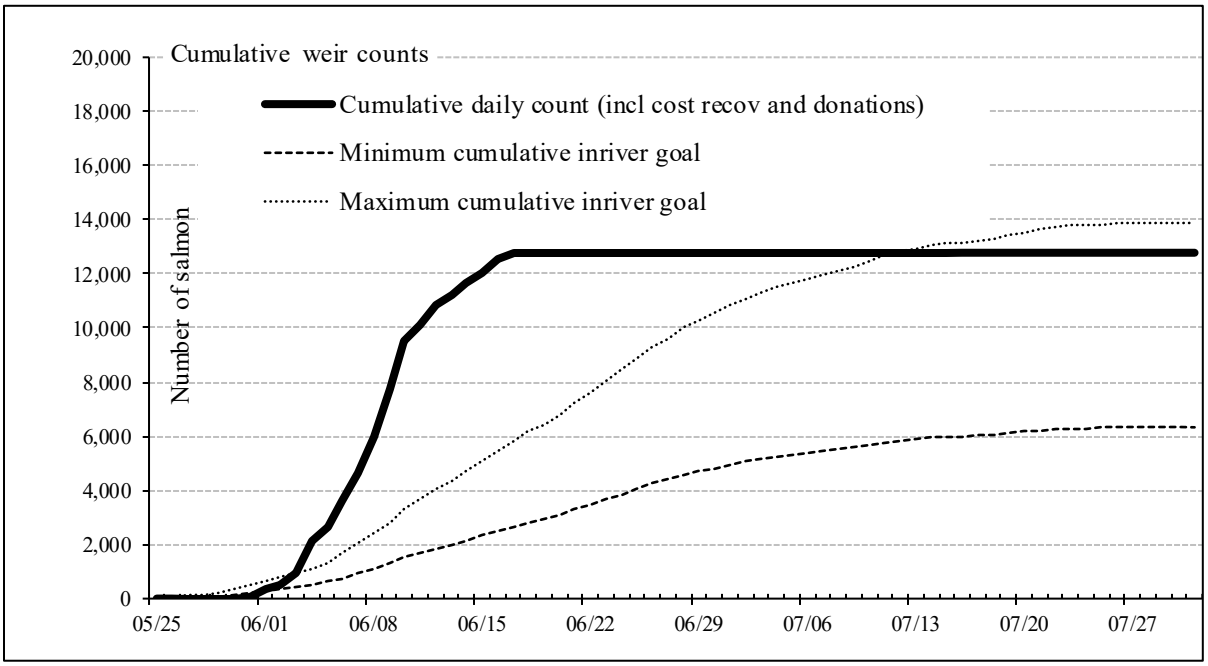
[a] Projected daily goal based on expected run timing applied to minimum and maximum cumulative goals at the end of the run.

[b] Weir harvest is cost recovery and donations of excess fish above daily SEG plus broodstock needs.

[c] A total of 2,211 sockeye salmon were beach seined from the lake for use as broodstock.

Appendix C4.–Sockeye salmon counts at the Bear Creek weir versus minimum and maximum desired inriver run, 2018.



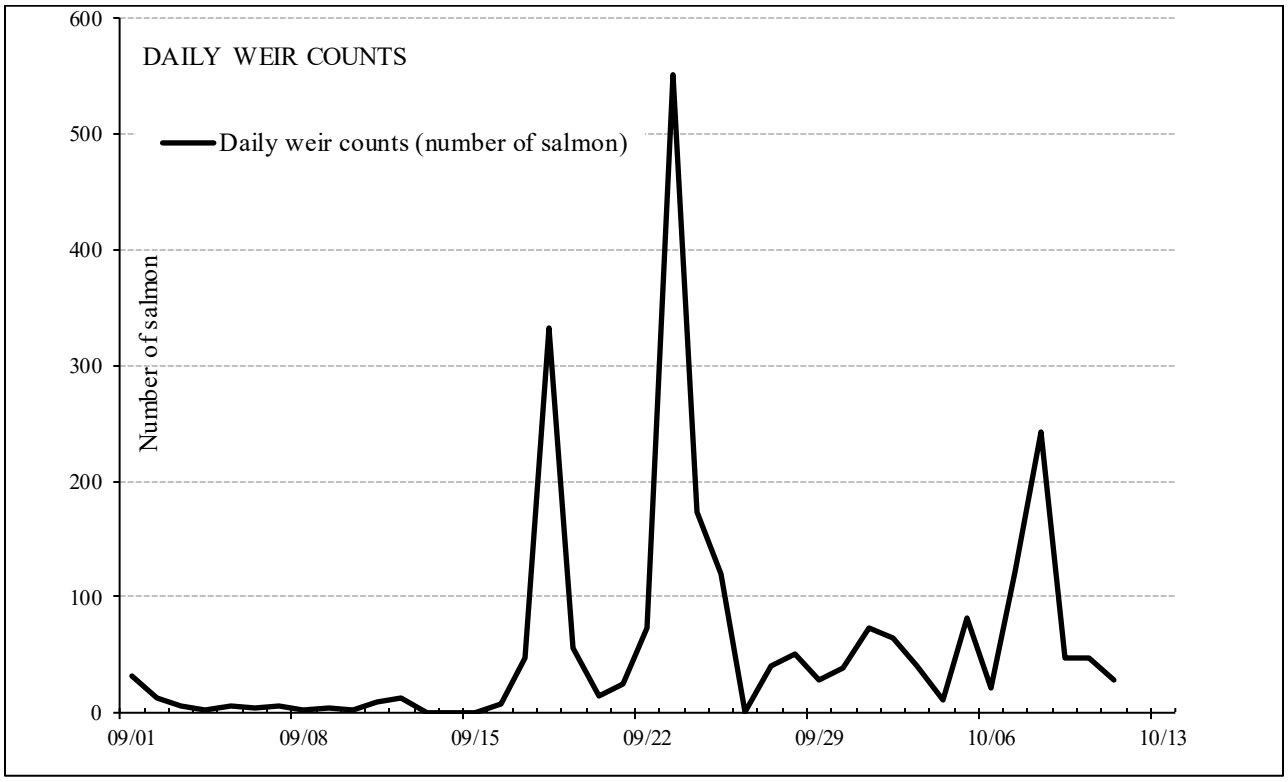


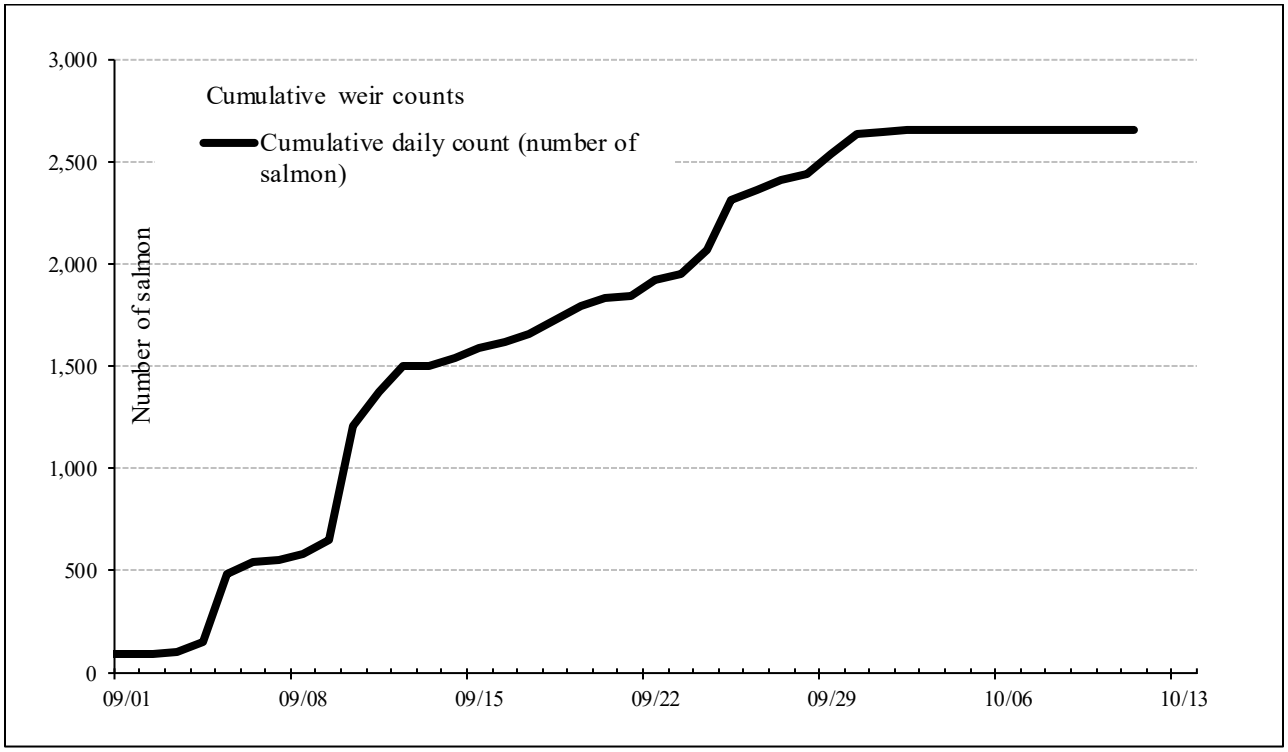
Note: A total of 44,686 sockeye salmon returned to the Bear Creek weir in 2018. Of those, 12,753 were passed through the weir into Bear Lake. An additional 28,983 were harvested at the weir for cost recovery and 2,924 were donated to the public. A total of 2,211 were harvested from Bear Lake for use as hatchery broodstock. Total estimated natural spawning escapement is estimated at 10,568 fish. The "desired inriver run" is the CIAA hatchery broodstock goal (3,750) added to the sustainable escapement goal range (700–8,300) for this species.

Appendix C5.–Coho salmon escapement through the Bear Creek weir, 2018.

	Escapement to Bear Lake		Antic.	Broodstock harvest		Weir donations		Cumulative coho at Bear Creek weir	
Date	Daily	Total	percent	Daily	Total	Daily	Total	Daily	Total
8/19	31	31	1.4%	0	0	0	0	31	31
8/20	12	43	1.7%	0	0	0	0	12	43
8/21	5	48	2.5%	0	0	0	0	5	48
8/22	3	51	2.6%	0	0	0	0	3	51
8/23	6	57	3.5%	0	0	0	0	6	57
8/24	4	61	3.7%	0	0	0	0	4	61
8/25	5	66	3.9%	0	0	0	0	5	66
8/26	2	68	4.1%	0	0	0	0	2	68
8/27	4	72	4.2%	0	0	0	0	4	72
8/28	3	75	4.5%	0	0	0	0	3	75
8/29	10	85	4.5%	0	0	0	0	10	85
8/30	12	97	4.7%	0	0	0	0	12	97
8/31	0	97	4.8%	0	0	0	0	0	97
9/1	0	97	5.6%	0	0	0	0	0	97
9/2	0	97	5.8%	0	0	0	0	0	97
9/3	7	104	6.1%	0	0	0	0	7	104
9/4	48	152	6.4%	0	0	0	0	48	152
9/5	106	258	6.8%	226	226	0	0	332	484
9/6	0	258	7.2%	56	282	0	0	56	540
9/7	0	258	7.8%	15	297	0	0	15	555
9/8	0	258	8.8%	25	322	0	0	25	580
9/9	16	274	9.8%	38	360	20	20	74	654
9/10	0	274	10.7%	296	656	255	275	551	1,205
9/11	5	279	11.9%	112	768	56	331	173	1,378
9/12	0	279	12.9%	69	837	51	382	120	1,498
9/13	0	279	15.8%	1	838	0	382	1	1,499
9/14	0	279	17.4%	34	872	6	388	40	1,539
9/15	0	279	19.1%	31	903	20	408	51	1,590
9/16	0	279	21.2%	28	931	0	408	28	1,618
9/17	11	290	23.4%	15	946	13	421	39	1,657
9/18	0	290	26.1%	60	1,006	13	434	73	1,730
9/19	0	290	28.6%	64	1,070	0	434	64	1,794
9/20	0	290	31.0%	40	1,110	0	434	40	1,834
9/21	0	290	32.6%	11	1,121	0	434	11	1,845
9/22	0	290	35.6%	81	1,202	0	434	81	1,926
9/23	0	290	37.8%	22	1,224	0	434	22	1,948
9/24	10	300	40.6%	112	1,336	0	434	122	2,070
9/25	0	300	43.3%	243	1,579	0	434	243	2,313
9/26	0	300	45.8%	47	1,626	0	434	47	2,360
9/27	0	300	48.5%	48	1,674	0	434	48	2,408
9/28	0	300	50.9%	29	1,703	0	434	29	2,437
9/29	0	300	53.1%	103	1,806	0	434	103	2,540
9/30	0	300	55.0%	93	1,899	0	434	93	2,633
10/1	0	300	57.8%	15	1,914	0	434	15	2,648
10/2	0	300	61.5%	9	1,923	0	434	9	2,657
10/3	0	300	64.4%	0	1,923	0	434	0	2,657
10/4	0	300	67.8%	0	1,923	0	434	0	2,657
10/5	0	300	70.4%	0	1,923	0	434	0	2,657
10/6	0	300	73.6%	0	1,923	0	434	0	2,657
10/7	0	300	75.9%	0	1,923	0	434	0	2,657
10/8	0	300	78.3%	0	1,923	0	434	0	2,657
10/9	0	300	81.0%	0	1,923	0	434	0	2,657
10/10	0	300	85.2%	0	1,923	0	434	0	2,657
10/11	0	300	87.1%	0	1,923	0	434	0	2,657

Appendix C6.–Coho salmon counts at the Bear Creek weir, 2018.





Appendix C7.–Adult sockeye and coho salmon escapement, and Dolly Varden char and smolt outmigrations past Bear Creek weir, 1992–2018.

	Upstream migration to Bear Lake								Downstream migration to Resurrection Bay			
	Sockeye				Coho							
Year	Weir harvest, (sold or donated)	Broodstock harvest	Spawning escapement	Total return at weir	Weir harvest, (sold or donated)	Broodstock harvest	Spawning escapement	Total return at weir	Sockeye (smolt)	Coho (smolt)	Dolly Varden (adult)	Comments
1992	0	0	1,925	1,925	1,234	689	1,132	3,055	133,787	112,852	2,186	Est. 800 coho below weir after closure.
1993	1,663	218	4,827	6,708	7,199	678	794	8,671	345,767	53,495	378	5,000 pink salmon below weir.
1994	8,047	1,370	7,335	16,752	4,927	1,038	475	6,440	253,886	54,422	627	Est. 300 coho below weir after closure.
1995	20,869	1,808	6,526	29,203	1,125	1,726	444	3,295	73,500	89,200	278	
1996	7,945	1,813	6,199	15,957	723	608	380	1,711	156,000	154,900	406	Est. 3,600 coho below weir after closure.
1997	10,051	720	7,225	17,996	2,711	594	276	3,581	276,000	114,100	630	Est. 750 coho below weir after closure.
1998	21,020	2,272	6,155	29,447	9,862	780	350	11,023	107,800	92,200	1,203	Coho reported below weir after closure.
1999	9,146	1,982	5,833	17,439	2,499	939	368	3,812	75,800	106,800	2,212	23 coho below weir after closure.
2000	1,670	3,984	7,844	13,716	5,390	719	597	6,765	175,000	70,900	2,195	Est. 200 coho below weir after closure.
2001	3,558	4,195	8,606	16,364	1,754	644	495	2,893	387,500	101,400	1,168	Est. 20 coho below weir after closure.
2002	2,722	4,226	8,278	15,227	1,745	864	875	3,484	107,200	94,200	1,168	
2003	2,776	3,735	9,498	16,010	2,065	1,021	395	3,506	1,326,476	208,120	231	
2004	0	3,725	8,198	11,923	1,224	876	572	2,672	123,213	73,397	158	
2005	31,905	3,122	10,285	45,312	1,536	808	546	2,947	1,420,428	65,448	51	
2006	30,651	4,060	8,338	43,049	681	892	516	2,089	1,962,415	49,980	95	
2007	7,250	4,265	8,575	20,090	0	727	386	1,113	1,347,874	78,891	64	
2008	3,706	4,172	9,264	17,142	403	697	368	1,467	308,459	63,943	60	
2009	32,515	2,954	10,364	45,833	138	571	535	1,245	241,106	54,829	44	181 coho below weir after closure.
2010	2,943	4,004	8,880	15,827	248	490	492	1,230	598,911	48,867	349	
2011	4,894	3,612	9,608	18,114	0	491	359	850	477,844	40,433	2,681	
2012	1,802	4,428	8,031	14,381	31	578	315	924	466,990	45,936	1,425	4,000 pink salmon below weir.
2013	3,162	3,606	9,004	15,772	1,997	1,074	300	3,371	791,705	36,219	759	
2014	15,569	3,857	9,233	28,659	671	567	534	1,772	393,553	21,113	191	
2015	37,821	3,945	9,560	51,326	1,013	705	261	1,979	728,764	91,657	263	
2016	62,915	3,764	9,011	75,690	0	250	150	400	904,494	71,199	181	
2017	4,701	3,746	9,202	17,649	864	764	858	2,486	1,196,158	98,192	1,784	
10-yr avg.	17,003	3,809	9,216	30,039	537	619	417	1,572	610,798	57,239	774	
2018	31,907	2,211	10,568	44,686	434	456	300	1,190	836,851	72,932	881	

Source: Data from CIAA and ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URLnot available as some information is confidential].

Appendix C8.–Sockeye salmon aerial survey counts from the Eastern District, 2018.

Location	Survey number	Survey date	Live count	Peak count
Aialik Lake and creek	1	6/14/18	0	
	2	7/2/18	203	
	3	7/17/18	30	
	4	8/4/18	2,620	
	5	9/2/18	1,000	2,620

Appendix C9.–Estimated sockeye and pink salmon escapements in thousands of fish for the major spawning systems in the Eastern District of the Lower Cook Inlet area, 1970–2018. Blank cells indicate no data was collected.

	Pink salmon							Sockeye salmon		
Year	Aialik Lagoon	Bear Creek	Salmon Creek	Tonsina Creek	Thumb Cove	Humpy Cove	Total	Aialik Lake	Bear Lake [a,b]	Total
1970									5.8	5.8
1971								3.0	0.4	3.4
1972		0.5					0.5	0.6	0.7	1.3
1973								1.5	0.2	1.7
1974	0.1	4.9		1.4	1.1	0.6	8.1	2.2	0.1	2.3
1975								8.0		8.0
1976	0.4	10.0	16.9	5.7	2.0	1.4	36.4	8.0	0.6	8.6
1977								5.0		5.0
1978		7.8	11.0	1.5	2.0	0.9	23.2	3.0		3.0
1979								5.0		5.0
1980		13.3	15.5	0.7	1.2	5.7	36.4	6.6	1.5	8.1
1981		0.4	0.1	0.2	1.0	0.4	2.1	1.8	0.7	2.5
1982	5.0	7.9	21.0	7.5	7.9	4.0	53.3	22.4	0.5	22.9
1983	3.0	0.8	0.5	5.4	4.9	2.0	16.6	20.0	0.7	20.7
1984	4.0	7.7	10.2	6.0	4.2	2.5	34.6	22.0	0.5	22.5
1985	9.4	4.1	2.1	48.2	14.5	5.0	83.3	8.0	1.1	9.1
1986	6.0	14.0	8.3	11.2	4.0	0.9	44.4	7.6	0.8	8.4
1987	1.5	3.5	1.7	3.4	2.7	0.3	13.1	9.2	0.3	9.5
1988	0.7	0.2	0.1	0.1	0.3	0.4	1.8	13.0	0.1	13.1
1989	0.8	1.7	1.6	0.5	4.2	1.0	9.8	6.5	0.1	6.6
1990		4.4		1.2		3.8	9.4	5.7	1.1	6.8
1991		15.4		0.3	3.4		19.1	3.7	0.7	4.4
1992		2.3			0.4		2.7	2.5	1.9	4.4
1993		6.6		3.2	5.5	0.9	16.2	3.0	4.8	7.8
1994		34.8		7.0	10.8	2.2	54.8	7.3	7.3	14.6
1995	1.1	38.6		0.5	9.3	1.8	51.3	2.6	6.5	9.1
1996		8.0		0.4	9.5	3.4	21.3	3.5	6.2	9.7
1997		6.3		0.4	4.7	2.2	13.6	11.4	7.2	18.6
1998	0.4	13.2		2.3	21.0	1.2	38.1	4.9	6.2	11.1
1999	0.9	7.8		0.5	9.2	4.0	22.4	3.8	5.8	9.6
2000		35.6		6.6	8.5	1.7	52.4	4.3	7.8	12.1
2001		3.0		2.8	3.1	0.3	9.2	5.1	8.6	13.7
2002		2.7		6.9	3.7	1.8	15.1	6.1	8.3	14.4
2003		4.4		5.2	5.1	2.6	17.3	5.4	9.5	14.9
2004		1.2		3.5	4.3	1.0	10.0	10.1	8.2	18.3
2005	0.8	34.5		9.9	8.7	14.6	68.5	5.3	10.3	15.6
2006		9.0		6.5	5.2	1.9	22.6	4.8	8.3	13.1
2007								5.4	8.6	13.9
2008								4.2	9.3	13.5
2009								3.1	10.4	13.5
2010								5.3	8.9	14.2
2011								3.5	9.6	13.1
2012		4.1						2.1	8.0	10.1
2013		8.1		5.3	0.6	1.8	15.8	3.5	9.0	12.5
2014								0.5	9.2	9.7
2015	0.8						0.8	3.2	9.6	12.7
2016							0.0	0.4	9.2	9.6
2017	1.8						1.8	4.9	9.2	13.9
10-yr avg.	0.7	6.1		5.3	0.6	1.8	3.7	3.1	9.2	12.3
2018	0.0						0.0	2.6	10.6	13.2

[a] Weir counts.

[b] Beginning in 1994, Bear Lake escapement figures are derived from total weir count minus number of fish collected for hatchery broodstock.

APPENDIX D: KAMISHAK BAY DISTRICT

Appendix D1.–Kamishak Bay District commercial salmon harvest (excluding homepacks) by period, 2018.

Period	Statistical Week	Date	Hours	Permits Fished	Chinook		Sockeye		Coho		Pink		Chum	
					Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	22	06/01–06/02	160	0	0	0	0	0	0	0	0	0	0	0
2 [a]	23	06/03–06/09	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
3 [b]	24	06/10–06/16	160	0	0	0	0	0	0	0	0	0	0	0
4 [a,b]	25	06/17–06/23	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
5 [a,b]	26	06/24–06/30	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
6 [a,b]	27	07/01–07/07	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
7 [a,b]	28	07/08–07/14	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
8 [a,b,d]	29	07/15–07/21	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
9 [a,b,d]	30	07/22–07/28	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
10 [a,b,d,e]	31	07/29–08/04	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
11 [a,b,d,e]	32	08/05–08/11	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
12 [b,d,e]	33	08/12–08/18	160	3	0	0	0	0	5,248	51,166	0	0	200	1,478
13 [a,b,d,e]	34	08/19–08/25	160	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
14 [b,d,e]	35	08/26–09/01	160	0	0	0	0	0	0	0	0	0	0	0
15 [b,d,e]	36	09/02–09/08	160	0	0	0	0	0	0	0	0	0	0	0
Total				7	0	0	33,699	150,451	9,077	84,101	5,226	24,129	8,298	72,496
Average weight								4.46		9.27		4.62		8.74

Note: Unless otherwise noted, all Kamishak Bay Subdistricts were open to commercial harvest beginning June 1, 2018, with regular closed waters in effect.

[a] Confidential data. Fewer than 3 permits reporting.

[b] Waters of McNeil Subdistrict, Paint River Subdistrict and Kirschner Lake SHA closed after June 17.

[c] Waters of Chenik Lagoon open up to the freshwater of Chenik Creek after June 17.

[d] Anadromous stream closures suspended for Bruin River after July 18.

[e] Waters of Chenik Lagoon open up to the freshwater of Chenik Creek after 6:00 AM on August 4.

Appendix D2.–Total commercial common property harvest (excluding homepacks) by species in the Kamishak Bay District 1970–2018. Blank cells indicate no data was collected.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum
1970			0	2,846	218	22,500	95,841
1971			0	3	121	32,094	26,327
1972			0	47	31	342	26,374
1973			0	1	28	12,568	35,584
1974			0	0	2,915	48	4,554
1975			0	29	3,041	9,432	4,868
1976			1	3,988	1,111	1,112	48,848
1977			1	7,425	105	6,308	65,659
1978			0	4,619	1,584	982	48,669
1979			9	1,778	1,116	58,484	28,711
1980			0	3,877	2,495	101,864	35,921
1981			1	4,972	1,845	66,097	73,501
1982			11	18,014	38,685	43,871	108,946
1983			1	11,207	7,138	1,405	142,901
1984			2	24,642	13,230	137,133	70,595
1985	10	72	6	78,076	2,024	194	8,139
1986	25	386	14	146,496	9,935	423,774	61,670
1987	32	439	7	123,663	8,079	72,686	110,565
1988	38	634	33	186,011	4,471	64,468	220,579
1989	20	144	3	46,395	4	256,669	7,809
1990	30	318	12	96,397	26	2,448	3,597
1991	33	479	17	127,579	2,337	47,478	7,849
1992	23	232	39	60,078	1,488	2,594	20,051
1993	14	89	4	59,745	3	4,205	600
1994	8	17	0	18,509	1,897	33	14
1995	7	27	2	31,077	6,084	169,039	10,300
1996	2	3	0	18,093	0	19	1
1997	3	6	0	5,608	0	0	3
1998	4	4	0	8,112	0	414	20
1999	6	8	0	29,409	0	325	23
2000	10	41	1	10,245	7	6,173	66,069
2001	7	40	2	9,972	9	131	84,766
2002	5	53	0	1,429	52	438,352	34,604
2003	2	13	0	12,512	0	5,571	29,737
2004	6	46	0	35,285	5,367	12,969	177,395
2005	8	37	0	50,018	92	5,787	83,943
2006	5	34	0	38,267	24,269	77,833	56,494
2007	4	24	0	169,509	4	4,959	37
2008	11	44	2	171,924	20	26,397	73,209
2009	9	81	0	65,763	0	132,414	36,574
2010	9	54	10	5,612	573	2,432	70,782
2011	5	38	0	99,288	0	1,050	3,850
2012	6	34	0	55,255	0	61	2,425
2013	5	15	0	33,154	0	314	2,357
2014	8	20	0	12,137	0	44,227	4,449
2015	2	3	0		00	33,735	626
2016	5	13	0	18,218	578	350	10,984
2017	5	47	0	102,810	185	254,440	34,275
10-yr avg.	7	35	1	56,416	136	49,542	23,953
2018	7	47	0	33,699	9,077	5,226	8,298

Source: ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

Appendix D3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Chenik Lake, 2018.

	Actual		Antic.	Apportioned sustainable escapement goals				
				Projected min.		Projected max.		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
6/6	0	0	0.0%	0	5	2	22	Camera installed on 6/6
6/7	0	0	0.0%	2	7	9	31	
6/8	0	0	0.0%	8	15	39	70	
6/9	0	0	0.0%	6	21	30	100	
6/10	0	0	0.0%	114	136	540	640	
6/11	0	0	0.0%	156	291	737	1,377	
6/12	0	0	0.0%	195	486	919	2,296	
6/13	0	0	0.0%	5	491	22	2,318	
6/14	0	0	0.0%	39	530	184	2,502	
6/15	15	15	0.1%	99	628	466	2,968	
6/16	0	15	0.1%	112	740	528	3,496	
6/17	0	15	0.2%	36	776	168	3,665	
6/18	0	15	0.2%	214	990	1,012	4,676	
6/19	0	15	0.3%	101	1,091	479	5,156	
6/20	0	15	0.3%	44	1,135	207	5,363	
6/21	0	15	0.3%	32	1,167	151	5,513	
6/22	0	15	0.4%	102	1,269	480	5,993	
6/23	0	15	0.6%	8	1,277	39	6,033	
6/24	0	15	0.9%	8	1,285	38	6,071	
6/25	0	15	4.8%	48	1,333	225	6,297	
6/26	3	18	10.2%	191	1,524	901	7,198	
6/27	5	23	16.9%	105	1,629	497	7,695	
6/28	0	23	17.1%	7	1,636	34	7,729	
6/29	232	255	18.4%	38	1,674	181	7,910	
6/30	7	262	21.8%	19	1,694	92	8,001	
7/1	0	262	25.7%	34	1,728	162	8,164	
7/2	2	264	26.9%	0	1,729	2	8,166	
7/3	0	264	34.3%	147	1,876	694	8,860	
7/4	0	264	37.8%	119	1,995	563	9,423	
7/5	2	266	39.3%	78	2,072	367	9,790	
7/6	0	266	40.4%	56	2,128	264	10,054	
7/7	0	266	43.9%	56	2,185	266	10,320	
7/8	0	266	44.2%	39	2,224	184	10,504	
7/9	0	266	44.5%	58	2,282	276	10,780	
7/10	32	298	46.1%	99	2,381	469	11,249	
7/11	6	304	52.7%	44	2,425	207	11,457	
7/12	9	313	56.3%	82	2,508	390	11,846	
7/13	35	348	56.6%	129	2,637	610	12,456	
7/14	544	892	57.9%	31	2,668	146	12,602	
7/15	433	1,325	58.5%	22	2,690	106	12,708	
7/16	404	1,729	59.7%	14	2,704	68	12,776	
7/17	2	1,731	59.7%	18	2,722	85	12,860	
7/18	4	1,735	64.8%	13	2,735	61	12,921	

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	Actual		Antic.	Apportioned sustainable escapement goals				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/19	3	1,738	68.9%	28	2,763	134	13,055	
7/20	135	1,873	71.6%	30	2,794	143	13,198	
7/21	287	2,160	73.5%	16	2,810	77	13,275	
7/22	928	3,088	75.5%	39	2,849	183	13,458	
7/23	285	3,373	76.8%	30	2,878	140	13,597	
7/24	181	3,554	78.8%	6	2,884	27	13,624	
7/25	46	3,600	82.2%	3	2,887	16	13,640	
7/26	127	3,727	83.8%	3	2,890	12	13,652	
7/27	124	3,851	86.6%	3	2,893	13	13,665	
7/28	163	4,014	91.1%	1	2,894	7	13,672	
7/29	74	4,088	92.1%	0	2,894	2	13,673	
7/30	78	4,166	92.9%	2	2,896	8	13,681	
7/31	3	4,169	93.4%	0	2,896	0	13,681	
8/1	380	4,549	94.0%	0	2,896	0	13,681	
8/2	7	4,556	94.5%	0	2,896	0	13,681	
8/3	210	4,766	95.4%	0	2,896	0	13,681	
8/4	183	4,949	96.5%	0	2,896	0	13,681	
8/5	840	5,789	97.0%	0	2,896	0	13,681	
8/6	257	6,046	98.4%	0	2,896	2	13,683	
8/7	267	6,313	99.4%	0	2,896	0	13,683	
8/8	86	6,399	99.6%	0	2,896	0	13,683	
8/9	106	6,505	99.7%	0	2,896	0	13,683	
8/10	33	6,538	99.8%	0	2,896	0	13,683	
8/11	47	6,585	99.9%	0	2,896	0	13,683	
8/12	34	6,619	99.9%	0	2,896	0	13,683	
8/13	6	6,625	99.9%	0	2,896	0	13,683	
8/14	0	6,625	100.0%	0	2,896	0	13,683	
8/15	0	6,625	100.0%	0	2,896	0	13,683	
8/16	9	6,634	100.0%	0	2,896	0	13,683	
8/17	0	6,634	100.0%	0	2,896	0	13,683	
8/18	0	6,634	100.0%	0	2,896	0	13,683	
8/19	0	6,634	100.0%	0	2,896	0	13,683	
8/20	0	6,634	100.0%	0	2,896	0	13,683	
8/21	0	6,634	100.0%	0	2,896	0	13,683	
8/22	2	6,636	100.0%	0	2,896	0	13,683	
8/23	4	6,640	100.0%	0	2,896	0	13,683	
8/24	2	6,642	100.0%	0	2,896	0	13,683	
8/25	9	6,651	100.0%	0	2,896	0	13,683	
8/26	0	6,651	100.0%	0	2,896	0	13,683	
8/27	0	6,651	100.0%	0	2,896	0	13,683	

Note: Anticipated escapement derived from run timing and Chenik Lake sockeye salmon sustainable escapement goal (2,900–13,700 fish).

Appendix D4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Mikfik Lake, 2018.

	Actual		Antic.	Apportioned sustainable escapement goal				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
6/1	0	0	1.5%	40	40	130	130	
6/2	0	0	3.6%	74	114	239	369	
6/3	0	0	7.5%	132	246	426	795	
6/4	0	0	9.0%	51	297	166	961	Camera installed, 6/4.
6/5	0	0	15.3%	213	510	690	1,651	
6/6	0	0	15.5%	6	516	19	1,670	
6/7	0	0	17.1%	54	570	174	1,844	
6/8	0	0	20.1%	102	672	330	2,174	
6/9	0	0	23.0%	101	773	328	2,502	
6/10	1	1	28.0%	169	942	546	3,048	
6/11	0	1	40.0%	409	1,351	1,324	4,372	
6/12	0	1	43.0%	103	1,454	332	4,704	
6/13	3	4	45.6%	87	1,541	282	4,986	
6/14	0	4	48.6%	101	1,642	327	5,313	
6/15	5	9	51.2%	90	1,732	292	5,604	
6/16	0	9	52.1%	31	1,763	100	5,704	
6/17	0	9	54.2%	68	1,832	221	5,925	
6/18	310	319	55.2%	34	1,866	111	6,036	
6/19	38	357	61.3%	208	2,074	673	6,709	
6/20	0	357	65.8%	154	2,227	498	7,206	
6/21	0	357	68.6%	95	2,322	307	7,513	
6/22	0	357	69.9%	44	2,367	144	7,657	
6/23	8	365	70.3%	15	2,381	48	7,704	
6/24	11	376	75.0%	159	2,541	515	8,220	
6/25	4	380	78.2%	108	2,649	350	8,569	
6/26	4	384	80.7%	87	2,735	280	8,849	
6/27	0	384	80.9%	6	2,741	19	8,869	
6/28	0	384	81.0%	3	2,744	8	8,877	
6/29	2	386	81.0%	0	2,744	1	8,877	
6/30	2,320	2,706	81.0%	0	2,744	0	8,877	
7/1	1,404	4,110	81.2%	6	2,750	20	8,897	
7/2	150	4,260	83.9%	91	2,841	296	9,193	
7/3	41	4,301	86.6%	94	2,935	304	9,496	
7/4	0	4,301	87.5%	31	2,967	102	9,598	

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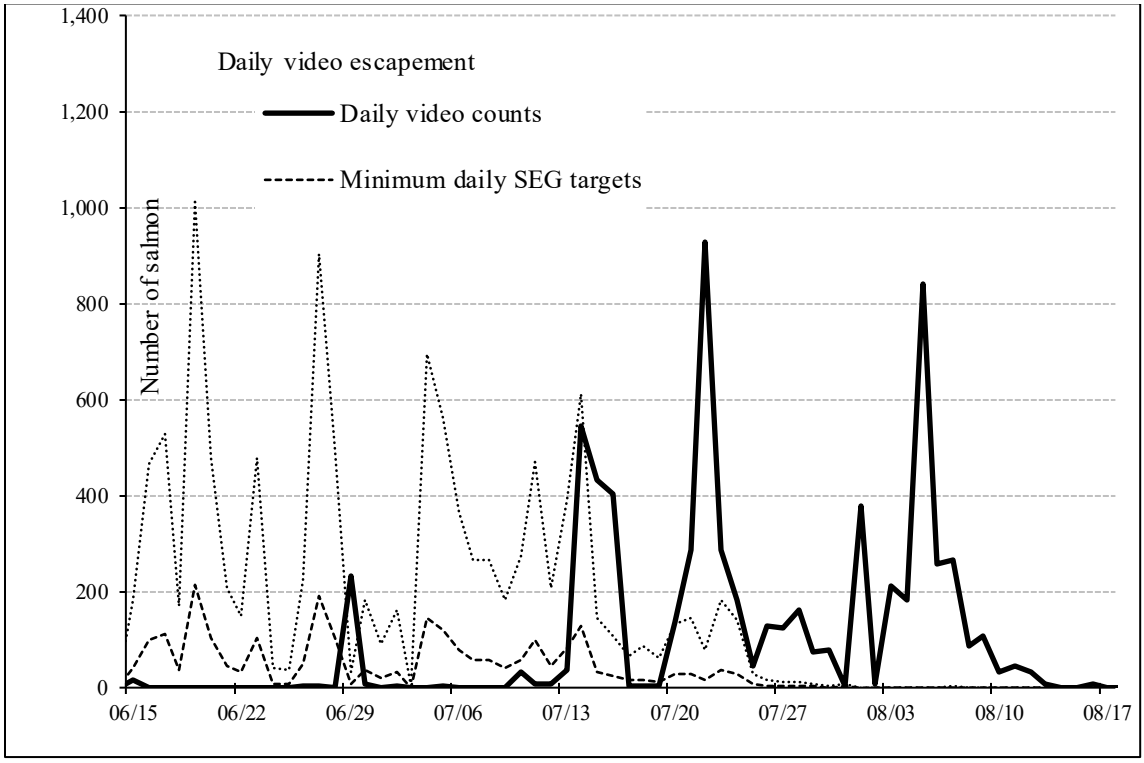
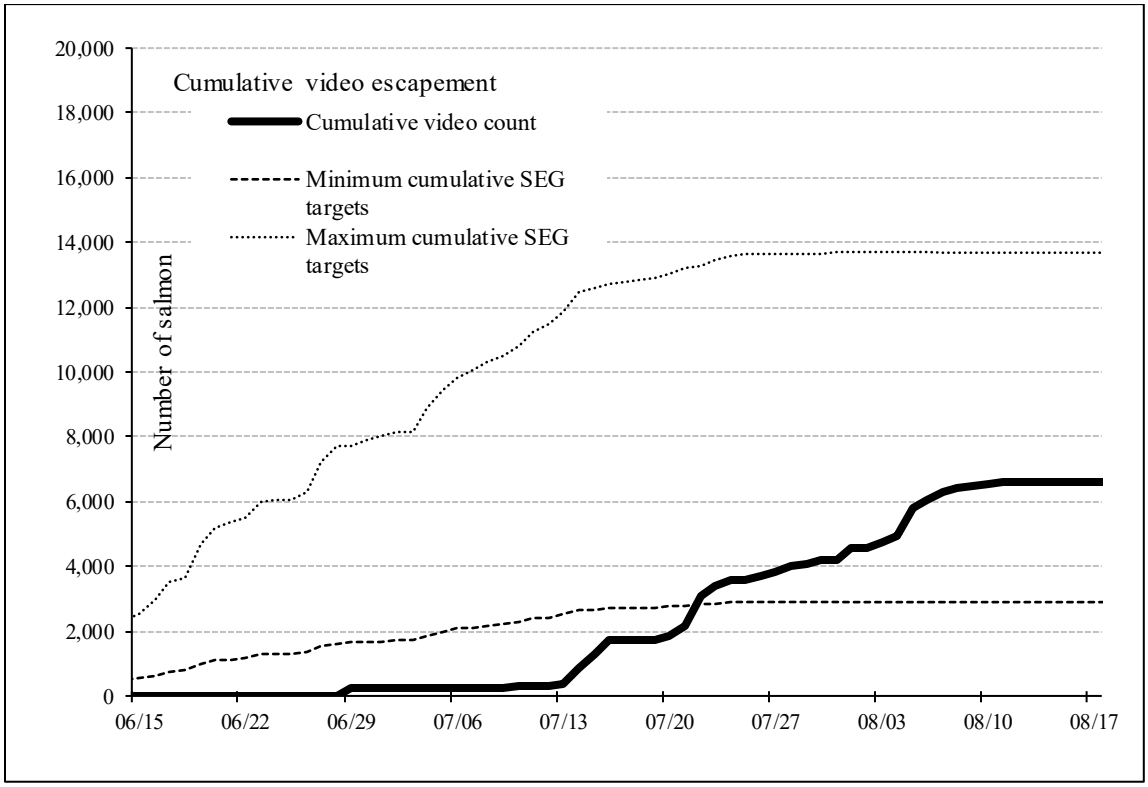
	Actual		Antic.	Apportioned sustainable escapement goal				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/5	0	4,301	88.4%	28	2,995	90	9,689	
7/6	3	4,304	90.3%	65	3,060	210	9,898	
7/7	4	4,308	91.3%	36	3,096	117	10,016	
7/8	2	4,310	92.2%	29	3,124	93	10,109	
7/9	0	4,310	92.4%	9	3,133	28	10,137	
7/10	3	4,313	92.8%	13	3,146	43	10,180	
7/11	54	4,367	92.9%	3	3,149	9	10,189	
7/12	34	4,401	93.0%	3	3,152	9	10,198	
7/13	0	4,401	93.0%	1	3,153	4	10,202	
7/14	49	4,450	93.0%	0	3,154	0	10,203	
7/15	125	4,575	93.2%	4	3,157	13	10,215	
7/16	14	4,589	93.2%	2	3,159	5	10,221	
7/17	11	4,600	93.2%	0	3,159	0	10,221	
7/18	1	4,601	94.4%	40	3,199	128	10,349	
7/19	0	4,601	94.9%	18	3,216	57	10,406	
7/20	3	4,604	95.4%	19	3,235	60	10,466	
7/21	1	4,605	95.8%	12	3,247	38	10,505	
7/22	0	4,605	96.4%	22	3,269	71	10,576	
7/23	100	4,705	96.7%	11	3,280	34	10,610	
7/24	72	4,777	97.2%	14	3,294	46	10,657	
7/25	20	4,797	97.5%	10	3,304	31	10,688	
7/26	51	4,848	98.0%	20	3,323	64	10,752	
7/27	73	4,921	98.7%	22	3,345	71	10,823	
7/28	7	4,928	99.3%	23	3,368	73	10,896	
7/29	7	4,935	99.7%	11	3,379	36	10,932	
7/30	9	4,944	99.9%	6	3,385	20	10,952	
7/31	7	4,951	99.9%	0	3,385	1	10,953	
8/1	15	4,966	99.9%	1	3,386	3	10,955	End of season. Grass over solar panel.

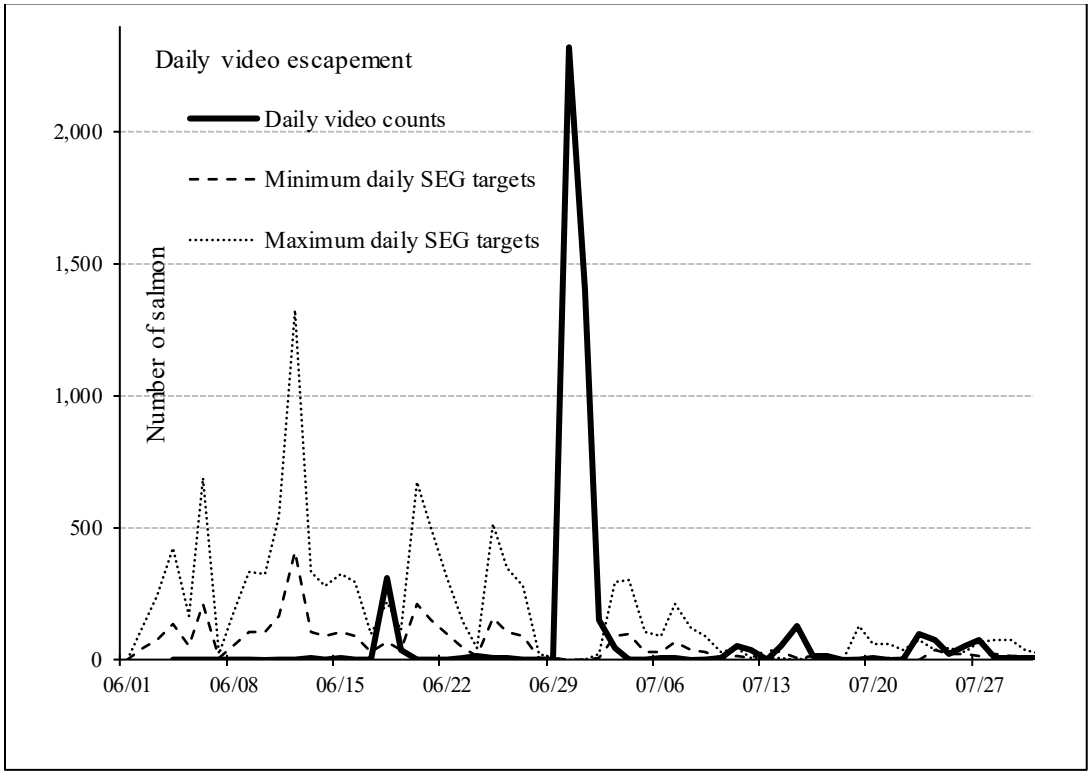
Note: Anticipated escapement derived from run timing and Mikfik Lake sockeye salmon sustainable escapement goal of 3,400–11,000 fish.

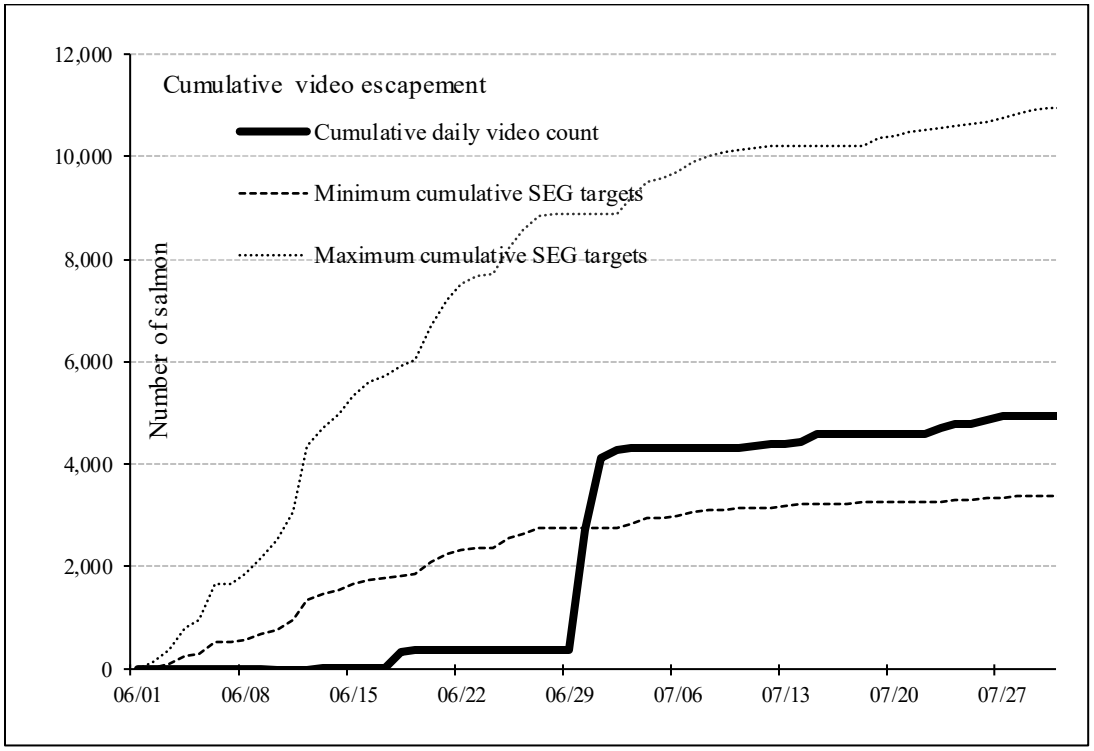
Appendix D5.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement past the video monitoring station at Chenik Lake, 2018.





Appendix D6.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement past the video monitoring station at Mikfik Lake, 2018.





Appendix D7.–Sockeye salmon escapement into Chenik Lake and Mikfik Lake, 1927–2018. Blank cells indicate no data was collected.

Year	Chenik	Mikfik [a]
1927	7,069 [b]	
1928	31,007 [b]	
1929	30,440 [b]	
1930	23,638 [b]	
1931	33,514 [b]	
1932	53,012 [b]	
1933	39,222 [b]	
1934	35,778 [b]	
1935	16,041 [b]	
1936	19,349 [b]	
1937	8,256 [b]	
1938	3,804 [b]	
1939	4,076 [b]	
No weir from 1940–1988		
1989	12,000 [b]	
1990	17,000 [b]	
1991	10,200 [b]	
1992	9,269 [b]	7,800 [c]
1993	4,000 [b]	6,400 [c]
1994	808 [b]	9,500 [c]
1995	1,086 [b]	10,100 [c]
1996	2,990 [b]	10,500 [c]
1997	2,338 [b]	8,500 [c]
1998	1,880 [c]	12,600 [c]
1999	2,850 [c]	15,700 [c]
2000	4,800 [c]	10,386
2001	250 [c]	5,400 [c]
2002	4,650 [c]	16,700 [c]
2003	13,825 [c]	8,009
2004	17,000 [c]	14,829
2005	14,507 [d]	6,499
2006	13,868 [d]	14,983
2007	18,288 [d]	10,975
2008	11,284 [d]	9,104
2009	15,264 [d]	20,965
2010	17,312 [d]	5,221 [c]
2011	10,330 [d]	345 [c]
2012	16,505 [d]	3,131 [d]
2013	11,333 [d]	4,042 [d]
2014	17,774 [d]	17,802 [d]
2015	19,073 [d]	3,502 [d]
2016	19,510 [d]	10,180 [d]
2017	21,468 [d]	7,495 [d]
10-yr avg.	15,985	8,179
2018	6,651 [d]	4,966 [d]

[a] Count started in 1992.
[b] Escapement derived from weir counts.
[c] Escapement derived from aerial surveys.
[d] Escapement derived from video counts.

Appendix D8.–Pink and chum salmon escapements as measured by aerial survey using area-under-the-curve (AUC) estimation (and peak aerial survey counts as noted) in the Kamishak Bay District, 2018.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Amakdedori	pink	[t]start	7/12											
Creek		1	7/12	7/12	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/18	7/12	6	0	0	0	0	0	0	0	0%	
system)		3	7/31	7/18	13	1,400	0	1,400	9,100	9,100	520	520	11%	
		4	8/22	7/31	22	1,130	1,400	2,530	27,830	36,930	1,590	2,110	43%	
		5	8/29	8/22	7	3,600	1,130	4,730	16,555	53,485	946	3,056	63%	
		[t]end	9/15		17.5				31,500	84,985	1,800	4,856	100%	3,600
Big	chum	[t]start	6/30											
Kamishak		1	7/18	6/30	17.5	1,722	0	1,722	15,068	15,068	861	861	11%	
River		2	8/1	7/18	14	3,950	1,722	5,672	39,704	54,772	2,269	3,130	41%	
(index		3	8/29	8/1	28	1,080	3,950	5,030	70,420	125,192	4,024	7,154	93%	
system)		[t]end	9/15		17.5				9,450	134,642	540	7,694[d]	100%	3,950
Brown's	chum	[t]start	6/30											
Peak Creek		1	7/18	6/30	17.5	2	0	2	18	18	1	1	0%	
(not an index		2	7/31	7/18	13	750	2	752	4,888	4,906	279	280	30%	
system)		3	8/29	7/31	29	30	750	780	11,310	16,216	646	927	98%	
		[t]end	9/15		17.5				263	16,478	15	942	100%	750
Brown's	pink	[t]start	6/30											
Peak Creek		1	7/18	6/30	17.5	180	0	180	1,575	1,575	90	90	7%	
(index		2	7/31	7/18	13	400	180	580	3,770	5,345	215	305	23%	
system)		3	8/29	7/31	29	530	400	930	13,485	18,830	771	1,076	80%	
		[t]end	9/15		17.5				4,638	23,468	265	1,341[d]	100%	530

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Bruin River	chum	[t]start	6/30											
(index		1	7/18	6/30	17.5	11,524	0	11,524	100,835	100,835	5,762	5,762	20%	
system)		2	7/31	7/18	13	14,050	11,524	25,574	166,231	267,066	9,499	15,261	54%	
		3	8/29	7/31	29	1,200	14,050	15,250	221,125	488,191	12,636	27,897	98%	
		[t]end	9/15		17.5				10,500	498,691	600	28,497[d]	100%	14,050
Bruin River	pink	[t]start	7/18											
(index		1	7/18	7/18	0	0	0	0	0	0	0	0	0%	
system)		2	7/31	7/18	13	0	0	0	0	0	0	0	0%	
		3	8/22	7/31	22	54,743	0	54,743	602,173	602,173	34,410	34,410	36%	
		4	8/29	8/22	7	70,510	54,743	125,253	438,386	1,040,559	25,051	59,460	63%	
		[t]end	9/15		17.5				616,963	1,657,521	35,255	94,715[d]	100%	54,743
Cottonwood	chum	[t]start	7/3											
Creek		1	7/3	7/3	0	0	0	0	0	0	0	0	0%	
(index		2	7/12	7/3	9	0	0	0	0	0	0	0	0%	
system)		3	7/18	7/12	6	21	0	21	63	63	4	4	0%	
		4	7/31	7/18	13	188	21	209	1,359	1,422	78	81	6%	
		5	8/29	7/31	29	820	188	1,008	14,616	16,038	835	916	69%	
		[t]end	9/15		17.5				7,175	23,213	410	1,326[d]	100%	820
Douglas River	chum	[t]start	7/14											
(not an index		1	8/1	7/14	17.5	1,440	0	1,440	12,600	12,600	720	720	23%	
system)		2	8/22	8/1	21	1,373	1,440	2,813	29,537	42,137	1,688	2,408	76%	
		3	8/29	8/22	7	700	1,373	2,073	7,256	49,392	415	2,822	89%	
		[t]end	9/15		17.5				6,125	55,517	350	3,172	100%	1,440

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Douglas	chum	[t]start	7/14											
Reef River		1	8/1	7/14	17.5	20	0	20	175	175	10	10	17%	
		2	8/22	8/1	21	34	20	54	567	742	32	42	71%	
		[t]end	9/8		17.5				298	1,040	17	59	100%	21
Douglas Reef R.	pink	[t]start	7/14											
(*not an index system)*		1	8/1	7/14	17.5	400	0	400	3,500	3,500	200	200	50%	
		[t]end	8/18		17.5				3,500	7,000	200	400	100%	400
Iniskin River	chum	[t]start	6/24											
(index		1	7/12	6/24	17.5	290	0	290	2,538	2,538	145	145	2%	
system)		2	7/18	7/12	6	324	290	614	1,842	4,380	105	250	3%	
		3	7/31	7/18	13	3,330	324	3,654	23,751	28,131	1,357	1,607	18%	
		4	8/29	7/31	29	3,600	3,330	6,930	100,485	128,616	5,742	7,349	80%	
		[t]end	9/15		17.5				31,500	160,116	1,800	9,149[d]	100%	3,600
Little	chum	[t]start	6/25											
Kamishak		1	6/25	6/25	0	0	0	0	0	0	0	0	0%	
River		2	7/3	6/25	8	0	0	0	0	0	0	0	0%	
(index		3	7/12	7/3	9	2,930	0	2,930	13,185	13,185	753	753	5%	
system)		4	7/18	7/12	6	742	2,930	3,672	11,016	24,201	629	1,383	10%	
		5	8/1	7/18	14	10,290	742	11,032	77,224	101,425	4,413	5,796	40%	
		6	8/22	8/1	21	1,641	10,290	11,931	125,276	226,701	7,159	12,954	90%	
		7	8/29	8/22	7	1,620	1,641	3,261	11,414	238,114	652	13,607	94%	
		[t]end	9/15		17.5				14,175	252,289	810	14,417[d]	100%	10,290

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a] (A_b)	Accum. fish days (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Little	pink	[t]start	8/4											
Kamishak R.		1	8/22	8/4	17.5	13	0	13	114	114	7	7	40%	
(not an index		2	8/29	8/22	7	10	13	23	81	194	5	11	69%	
stream)		[t]end	9/15		17.5				88	282	5	16	100%	13
McNeil	chum	[t]start	6/11											
River[c]		1	6/25	6/11	13.8	6,400	0	6,400	44,160	44,160	3,200	3,200	11%	
(index		2	7/3	6/25	8	8,020	6,400	14,420	57,680	101,840	4,180	7,380	24%	
system)		3	7/12	7/3	9	14,160	8,020	22,180	99,810	201,650	7,233	14,612	48%	
		4	7/18	7/12	6	9,827	14,160	23,987	71,961	273,611	5,215	19,827	65%	
		5	8/1	7/18	14	5,570	9,827	15,397	107,779	381,390	7,810	27,637	91%	
		[t]end	8/14		13.8				38,433	419,823	2,785	30,422	100%	14,160
North Head	pink	[t]start	8/11											
Creek, *(not an*		1	8/29	8/11	17.5	1,400	0	1,400	12,250	12,250	700	700	50%	
index system)		[t]end	9/15		17.5				12,250	24,500	700	1,400	100%	1,400
Sugarloaf	chum	[t]start	6/24											
Creek		1	7/12	6/24	17.5	20	0	20	175	175	10	10	1%	
(not an index		2	7/18	7/12	6	43	20	63	189	364	11	21	2%	
system)		3	7/31	7/18	13	820	43	863	5,610	5,974	321	341	26%	
		4	8/29	7/31	29	210	820	1,030	14,935	20,909	853	1,195	92%	
		[t]end	9/15		17.5				1,838	22,746	105	1,300	100%	820

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[b] (A_b)	Accum. fish days (A_b)	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escape.	Peak count
Sunday	chum	[t]start	8/11											
Creek, *(not an*		1	8/29	8/11	17.5	50	0	50	438	438	25	25	50%	
index system)		[t]end	9/15		17.5				438	875	25	50	100%	50
Sunday	pink	[t]start	8/11											
Creek, *(index*		1	8/29	8/11	17.5	3,400	0	3,400	29,750	29,750	1,700	1,700	50%	
system)		[t]end	9/15		17.5				29,750	59,500	1,700	3,400[d]	100%	3,400
Ursus	chum	[t]start	7/13											
Lagoon Creeks		1	7/31	7/13	17.5	133	0	133	1,164	1,164	67	67	2%	
(index system)		2	8/29	7/31	29	2,620	133	2,753	39,919	41,082	2,281	2,348	64%	
		[t]end	9/15		17.5				22,925	64,007	1,310	3,718[d]	100%	2,753
Ursus	pink	[t]start	8/11											
Lagoon creeks		1	8/29	8/11	17.5	100	0	100	875	875	50	50	50%	
(not an index system)		[t]end	9/15			17.5				875	1,750	50	100	100%

Note: The value used as the final escapement index if underlined. *Source*: Bue et al. 1998.

[a] Fish days (A_b) = [Days between surveys × (prev. count + current count)] ÷ 2.

[b] Escapement index = A_b / 17.5-day stream-life estimate (except McNeil River chum calculations use a 13.8-day stream-life estimate plus a run-timing adjustment).

[c] The McNeil River chum salmon area-under-the-curve (AUC) index is not the final escapement index. After applying a run-timing expansion factor, the final escapement index was 37,331. For all other stocks, the AUC estimate equals the cumulative escapement index.

[d] Final escapement index.

Appendix D9.–Sockeye salmon aerial survey counts from the Kamishak Bay District, 2018.

Location	Survey number	Survey date	Live count	Peak count
Amakdedori Creek	1	7/12	300	
	2	7/18	333	
	3	7/31	341	
	4	8/22	86	
	5	8/29	1,916	1,916
Big Kamishak	1	7/18	1,720	
	2	8/1	780	
	3	8/29	10	1,720
Douglas River	1	8/1	210	
	2	8/22	157	
	3	8/29	200	210
Douglas Reef River	1	8/1	181	
	2	8/22	41	181
Little Kamishak River	1	8/22	13	
	2	8/29	10	13

Appendix D10.–Estimated pink, chum, and sockeye salmon escapements in thousands of fish for the major spawning systems in the Kamishak Bay District of the Lower Cook Inlet Area, 1980–2018. Blank cells indicate no data was collected.

	Pink salmon							Chum salmon								Sockeye salmon				
Year	Big Kamishak River	Little Kamishak River	Amakdedori Creek	Bruin Bay River	Sunday Creek	Brown's Peak Creek	Total of index streams	Big Kamishak River	Little Kamishak River	McNeil River	Bruin Bay	Ursus Cove[d]	Cottonwood Creek	Iniskin Bay	Total of index streams	Mikfik Lake	Chenik Lake	Amakdedori Creek	Kamishak Rivers	Total of index streams
1980	2.0	0.6	3.8	400.0	5.2	2.3	407.5	10.0	13.0	10.0	15.0	8.0	4.2	9.3	69.5	6.5[e]	3.5	2.6	0.1	12.7
1981			1.5	95.0	14.2	17.7	126.9	11.0	6.0	44.6	10.0	10.0	9.0	9.0	99.6	5.3[e]	2.5	1.9	0.8	10.5
1982	5.0	2.2	6.3	75.0	12.0	3.5	90.5	25.0	18.0	36.6	10.0	9.0	7.0	12.8	118.4	35.0[e]	8.0	3.2	10.0	56.2
1983			0.2	4.0	4.7	1.7	10.4	25.0	25.0	56.3	5.5	7.7	8.3	12.0	139.8	7.0[e]	11.0	1.2	5.0	24.2
1984		0.1		110.0	12.0	6.8	128.8	19.0	12.0	26.6	8.0	7.0	6.5	9.8	88.9	6.0[e]	13.0	1.4	2.5	22.9
1985		1.6	1.0	3.5	11.4	7.0	21.9	6.0	4.5	10.5	2.0	3.0	3.0	5.0	34.0	20.0[e]	3.5	0.9	0.8	25.2
1986	5.0	2.0	6.0	1,200.0	109.0	28.0	1,337.0	24.0	17.0	31.9	1.0	11.0	11.0	5.9	101.8	7.8[e]	7.0	1.9	5.0	21.7
1987			0.4	24.0	29.7	40.2	93.9	12.0	18.0	40.5	10.0	9.9	17.0	9.1	116.5	9.0[e]	10.0	1.1		20.1
1988	1.0	0.5	1.0	29.0	18.0	17.0	64.0	15.0	13.0	59.8	7.0	9.4	16.0	9.5	129.7	10.1[e]	9.0	0.4	0.5	20.0
1989			2.0	350.0	103.0	120.0	573.0	30.0	12.0	48.9	8.0	6.3	8.0	5.9	119.1	11.5[e]	12.0	1.2	0.5	25.2
1990			0.1	19.0	2.8	1.0	22.8	2.5	7.9	13.9	4.0	3.8	4.3	8.4	44.8	8.8[e]	17.0	1.8	0.2	27.8
1991		0.9	0.7	74.9	20.9	16.7	112.5	8.7	8.4	6.8	6.0	1.3	7.7	8.3	47.2	9.7[e]	10.2[a]	1.9	0.7	22.5
1992			3.2	3.2	2.9	5.0	11.1	4.5	7.1	23.3	8.5	1.7	6.1	3.4	54.6	7.8[e]	9.3[a]	1.9	4.9	23.9
1993			1.7	86.4	57.8	41.6	185.8	9.1	6.3	19.3	6.0	7.7	12.0	8.0	68.4	6.4[e]	4.0[a]	2.0		12.4
1994			0.7	5.9	3.1	1.3	10.3		9.0	15.7	6.1	6.2	10.2	18.9	66.1	9.5[e]	0.8[a]	0.8		11.1
1995			4.5	307.3	95.9	96.7	499.9			12.1	6.6	11.1	15.4	22.7	67.9	10.1[e]	1.1[a]	2.4		13.6
1996	16.7			27.5	2.8	2.4	32.7	11.1	4.4	24.4	14.9	7.6	16.1	7.8	86.3	6.5[e]	3.0[a]	2.9	1.8	14.2
1997			1.7	162.7	52.5	42.3	257.5			32.2	8.8	6.2	5.6	15.4	68.2	8.5[e]	2.3[a]	1.5		12.3
1998	2.0			134.9	24.0	7.9	166.8	7.1	9.7	19.9	9.4	4.6	2.3	18.6	71.6	9.5[b]	1.9[e]	4.1		15.5
1999	5.7	4.2		2.9	5.3	2.6	10.8	11.6	8.9	10.2	10.3	21.0	12.0	23.3	97.3	20.0[b]	2.9[e]	8.8	2.2	33.9
2000	14.9	13.0		176.7	39.8	9.8	226.3	45.3	26.9	17.7	13.6	41.7	24.1	23.6	192.9	10.4[b]	4.8[e]	3.3	1.5	20.0
2001			6.0	18.5	26.2	19.2	63.9	36.3	27.2	16.9	21.8	37.7	15.9	13.8	169.6	3.3[b]	0.3[e]	2.7	2.5	8.8
2002		3.4	0.9	1,598.5	81.9	27.5	1,707.9	17.4	16.4	17.5	9.9	17.1	42.2	28.5	149.1	16.7[e]	4.7[e]	3.2	3.3	27.9
2003				138.7	346.7	285.0	770.4	16.4	22.2	30.1	13.1	30.4	72.8	18.7	203.7	11.0[b]	13.8[e]	11.8	2.6	39.2
2004		3.0		66.5	31.5	18.1	116.1	57.9	45.3	14.6	15.9	16.0	16.3	22.0	188.0	16.0[b]	17.0[e]	7.2	0.8	41.0
2005				98.3	116.2	61.0	275.5	25.7	12.1	22.5	21.2	12.2	17.9	16.5	128.1	6.5[b]	14.5[c]	1.7	3.9	26.6
2006		77.0		515.1	70.0	35.7	620.9	58.2	42.9	19.3	7.0	15.7	13.2	15.6	172.0	15.0[b]	13.5[c]	0.3		28.8
2007		5.1		350.4	394.8	249.4	994.6	14.8	15.6	22.3	3.1	20.9	12.5	5.3	94.5	11.0[b]	18.1[c]	3.8	0.1	33.1
2008		34.3		150.7	20.4	17.4	188.5	4.5	21.3	10.8	17.5	6.5	11.6	20.0	92.2	10.0[b]	10.6[b]	3.2	0.2	24.0
2009	10.4	0.8	9.2	1,067.4	106.3	63.6	1,237.3	15.0	4.2	18.4	10.1	12.9	19.4	30.8	110.9	21.0[b]	15.3[b]	2.2	0.1	38.6
2010			0.7	40.3	6.6	3.1	50.0		18.4	13.8	6.2	11.8	15.8	19.3	85.2	5.2[b]	17.3[b]	1.2	0.1	23.8
2011	9.3	13.1	4.2	4.5	0.8	2.0	7.4	5.5	19.3	31.0	3.5	10.6	4.7	16.5	91.2	0.4[b]	10.3[b]	3.4	1.6	15.8
2012	2.7	9.3	3.0	31.8	1.3	2.8	35.9	12.4	30.3	10.4	16.8	2.8	4.1	3.0	79.8	3.1[b]	16.5[b]	0.8	1.1	21.5
2013		0.5	8.0	15.0	6.1	4.1	25.2	3.3	6.7	9.5	8.9	10.3	5.2	5.9	49.9	4.0[b]	11.3[b]	1.5	0.1	17.0
2014		4.8	2.4	121.6	7.7	4.0	133.3	5.7	15.1	17.5	3.6	5.3	7.1	13.0	67.2	18.1[b]	17.8[b]	4.3	0.2	40.3
2015	0.7	1.5	24.9	40.8	60.4	29.1	130.3	7.0	14.4	20.5	11.0	14.8	17.0	7.5	92.1	3.5[b]	19.1[b]	2.9	1.2	26.7
2016	0.7	0.0	2.2	86.6	2.2	1.4	118.9	9.6	12.0	26.3	26.6	7.0	1.6	1.1	84.2	10.2[b]	19.5[b]	2.2	0.1	32.0
2017	3.8	1.4	43.8	71.1	22.2	39.2	132.5	32.3	19.3	38.7	38.5	22.0	6.2	15.6	172.5	7.5	21.5[b]	1.7	3.7	34.3
10-yr avg.	4.6	7.3	10.9	163.0	23.4	16.7	203.1	10.6	16.1	19.7	14.3	10.4	9.3	13.3	93.6	8.2	15.9	2.3	0.8	26.6
2018	0.0	0.0	4.9	94.7	3.4	1.3	99.5	7.7	14.4	37.3	28.5	3.7	1.3	9.1	102.1	5.0	6.7[b]	1.9	1.7	13.5

Note: Unless otherwise noted, estimated escapements are derived from aerial surveys.

[a] Escapement derived from weir counts.

[b] Escapement derived from video counts.

[c] Escapement derived from a combination of weir, video counts, and/or aerial counts.

[d] "Ursus Cove" is the sum of Ursus Lagoon RH Creek and Ursus Lagoon Creek.

[e] Escapement is derived from aerial counts.

APPENDIX E: SUBSISTENCE, PERSONAL USE AND HOMEPACK HARVESTS

Appendix E1.–Subsistence net and rod and reel salmon harvest in numbers of fish by species for the village of Port Graham, Lower Cook Inlet, 1979–2018.

		Reported harvest[a]						
Year	Households Reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1979	ND	222	777	506	1,170	494	0	3,169
1980	0	0	0	0	0	0	0	0
1981	ND	116	1,694	625	298	150	0	2,883
1982	34	107	820	602	858	183	15	2,570
1983	30	67	1,026	431	174	95	1	1,793
1984	23	27	2,037	125	269	6	0	2,464
1985	23	141	481	91	32	24	0	769
1986	27	123	274	179	237	13	12	826
1987	33	20	219	575	230	70	20	1,114
1988	27	96	411	459	542	75	18	1,583
1989	20	51	94	460	640	58	159	1,303
1990	32	211	524	803	1,013	102	666	2,653
1991	33	155	58	541	1,494	185	257	2,433
1992	36	129	98	475	745	178	398	1,625
1993	31	253	154	346	997	135	214	1,885
1994	42	273	260	859	866	461	1,133	2,719
1995	49	486	379	369	786	376	66	2,396
1996	48	255	684	341	312	251	161	1,843
1997	25	202	324	203	497	152	57	1,378
1998	16	164	271	243	459	240	20	1,377
1999	21	383	382	427	150	214	64	1,556
2000	35	241	784	252	355	483	0	2,115
2001	15	104	176	57	20	32	0	389
2002	23	250	417	90	150	74	0	981
2003	16	321	1,991	425	266	150	87	3,153
2004[b]	50	283	572	514	363	130	0	1,862
2005	46	265	192	51	349	52	0	909
2006	14	192	31	1	26	24	207	274
2007	24	92	552	0	74	63	12	781
2008[c]	18	77	550	0	36	22	37	685
2009	25	33	1,982	132	49	69	40	2,265
2010	16	30	116	124	24	37	0	331
2011	15	35	684	107	132	150	0	1,108
2012	7	24	661	14	282	26	0	1,007
2013	10	15	1,034	66	27	86	0	1,228
2014	7	19	1,089	166	410	922	0	2,606
2015	4	36	842	47	539	872	0	2,336
2016	12	2	0	20	10	40	0	72
2017	3	1	794	7	63	211	0	1,076
10-year avg.	12	27	775	68	151	244	11	1,271
2018[a]	1	0	11	7	30	2	0	50

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.

Note: ND = no data.

[a] Harvest recorded on permits that are received after December 31 will be reported in the following year's annual management report as harvested in the previous year.

[b] ADF&G Division of Subsistence estimate.

[c] Harvest reports for 2008 incomplete.

Appendix E2.–Subsistence net and rod and reel salmon harvest in numbers of fish by species for the village of Nanwalek (formerly English Bay), Lower Cook Inlet, 1978–2018.

		Reported harvest [a]						
Year	Households reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1978	0	0	0	0	0	0	0	0
1979	ND	137	1,545	2,437	2,186	305	0	6,610
1980	0	0	0	0	0	0	0	0
1981	ND	24	1,075	314	621	19	0	2,053
1982	27	17	1,534	891	2,074	37	75	4,553
1983	16	0	1,454	40	13	0	0	1,507
1984	1	18	1,225	385	404	0	0	2,032
1985	1	5	696	530	313	2	0	1,546
1986	17	2	373	302	825	1	144	1,503
1987	22	1	682	339	484	44	20	1,550
1988	21	8	610	385	1,214	35	70	2,252
1989	24	0	63	695	855	16	523	1,629
1990	28	54	638	614	1,947	49	2,833	3,302
1991	30	8	630	1,512	3,093	36	848	5,279
1992	35	71	437	675	676	58	1,331	1,917
1993	25	24	994	567	1,666	122	577	3,373
1994	28	27	570	511	1,113	43	473	2,264
1995	38	99	1,416	169	487	0	465	2,171
1996	27	55	1,060	598	437	25	221	2,175
1997	1	0	1	0	14	1	0	16
1998	3	5	18	0	0	0	31	23
1999	32	102	2,775	1,320	1,873	890	631	6,960
2000	32	18	3,880	1,579	1,251	471	0	7,199
2001	34	29	909	1,238	1,434	196	0	3,806
2002	56	96	10,203	967	1,681	414	230	13,361
2003	35	144	3,221	513	1,306	381	102	5,565
2004	24	52	2,968	842	1,277	95	291	5,234
2005	23	27	1,934	1,142	1,259	128	605	4,490
2006	39	111	2,215	1,179	2,038	207	679	5,750
2007	0	0	0	0	0	0	0	0
2008	53	46	3,615	1,345	2,646	76	315	7,728
2009	19	11	1,515	396	865	71	420	2,858
2010	20	0	1,514	1,324	1,030	271	365	4,139
2011	41	18	5,009	1,381	2,499	362	0	9,269
2012[b]	1	0	300	400	200	5	50	905
2013	4	2	3,854	2,619	383	811	500	7,669
2014	3	3	377	0	4	143	0	527
2015	1	0	35	0	0	0	0	35
2016	20	15	620	677	12	199	0	1,523
2017	1	00	215	0	1	36	0	252
10-yr avg.	16	10	1,705	814	764	197	183	3,491
2018	1	3	65	0	0	0	0	68

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.
Note: ND = no data.

[a] Harvest recorded on permits that are received after December 31 will be reported in the following year's annual management report as harvested in the previous year.

[b] Limited reporting from Nanwalek residents in 2012–2017 may have resulted in a conservative estimate of harvest.

Appendix E3.–Salmon set gillnet harvest in numbers of fish by species and permit/effort information for the Seldovia area subsistence fishery, Lower Cook Inlet, 1996–2018.

	Permits				Reported harvest					
Year	Issued	Returned	Fished	Not Fished	Chinook	Sockeye	Coho	Pink	Chum	Total
Early Season: April–May[a]										
1998	20	19	10	9	132	61	0	8	0	201
1999	16	15	12	3	150	130	0	0	38	318
2000	28	21	17	4	189	249	0	0	14	452
2001	19	17	14	3	134	124	0	0	0	258
2002	20	18	12	6	123	222	0	0	3	348
2003	19	13	10	3	67	210	0	1	54	332
2004	13	10	9	1	91	63	0	0	15	169
2005	15	13	4	9	46	0	0	0	0	46
2006	15	12	6	6	12	10	0	1	0	23
2007	15	12	5	7	19	27	0	0	0	46
2008	10	8	3	5	3	15	0	0	0	18
2009	6	5	1	4	14	0	0	0	0	14
2010	11	8	2	6	0	54	0	0	0	54
2011	4	2	1	1	0	49	0	0	0	49
2012	16	6	2	4	3	26	0	0	0	29
2013	7	5	4	1	1	93	0	0	0	93
2014	12	8	4	4	3	69	0	0	2	74
2015	6	4	4	0	16	70	0	4	0	90
2016	3	3	3	0	7	53	0	2	1	63
2017	8	5	5	0	7	61	0	0	0	68
10 yr avg	8	5	3	3	5	49	0	1	0	55
2018	7	5	3	2	11	9	0	1	0	21
Late Season: August[b]										
1998	3	2	1	1	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0
2002	1	1	1	0	0	9	13	31	6	59
2003	1	1	1	0	0	10	1	12	1	24
2004	1	1	1	0	0	0	4	0	0	4
2005	3	2	2	0	0	70	13	93	12	188
2006	2	2	1	1	0	0	0	21	0	21
2007	4	4	3	1	0	24	9	80	27	140
2008	2	2	2	0	0	16	41	65	5	127
2009	12	9	8	1	0	78	10	44	14	146
2010	5	4	3	1	2	46	31	66	35	180
2011	3	2	1	1	0	6	0	10	0	16
2012	4	1	1	0	0	3	0	20	0	23
2013	5	3	3	0	1	5	1	45	10	62
2014	9	7	6	1	2	47	0	5	63	117
2015	2	2	0	2	0	0	0	0	0	0
2016	1	1	0	1	0	0	0	0	0	0
2017	5	3	1	2	0	0	0	0	2	2
10-yr avg.	5	3	3	1	1	20	8	26	13	67
2018	2	1	1	--	0	2	0	52	1	55

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.

[a] Early season dates in 1996 and 1997 from April 1 to May 20; subsequent years were from April 1 to May 30.

[b] Late season dates are restricted to the first 2 weekends in August.

Appendix E4.–Personal use/subsistence set gillnet salmon harvest in numbers of fish by species and effort, Southern District (excluding the Port Graham/Nanwalek subsistence fishery and the Seldovia subsistence fishery), Lower Cook Inlet, 1975–2018.

	Permits				Reported harvest						
Year	Issued	Returned	Fished	Not fished	Chinook	Sockeye	Coho	Pink	Chum	Other	Total
1975	292	276	221	55	4	47	1,960	632	61	95	2,799
1976	242	221	138	83	16	46	1,962	1,513	56	75	3,668
1977	197	179	137	42	12	46	2,216	639	119	84	3,116
1978	311	264	151	113	4	35	2,482	595	34	89	3,239
1979	437	401	238	163	6	37	2,118	2,251	41	130	4,583
1980	533	494	299	195	43	32	3,491	1,021	25	153 [a]	4,765
1981	403	383	283	100	15	73	4,370	718	68	0	5,244
1982	395	372	301	71	41	49	7,398	956	154	0	8,598
1983	344	328	210	118	5	17	2,701	305	44	2	3,074
1984	368	346	219	127	3	25	3,639	804	105	27	4,603
1985	328	302	205	97	5	49	3,317	138	34	3	3,546
1986	349	310	247	63	7	68	3,831	3,132	56	0	7,094
1987	363	339	250	89	5	50	3,979	279	61	0	4,374
1988	439	417	300	117	14	73	5,007	1,445	75	0	6,614
1989	477	453	333	120	41	156	7,219	883	53	49	8,401
1990	578	543	420	123	12	200	8,323	1,846	69	0	10,450
1991	472	459	295	164	8	47	4,931	366	23	0	5,375
1992	365	350	239	111	5	63	2,277	643	21	0	3,009
1993	326	317	215	102	6	44	1,992	463	18	0	2,523
1994	286	284	224	60	66	80	4,097	1,178	18	0	5,439
1995	235	232	178	54	118	108	2,916	343	7	0	3,492
1996	299	293	213	80	302	102	3,347	1,022	24	0	4,797
1997	276	264	186	78	384	191	1,817	257	12	0	2,661
1998	227	214	142	72	135	20	1,461	167	5	0	1,788
1999	146	141	111	30	276	119	1,803	168	3	0	2,369
2000	213	206	151	55	104	28	2,064	304	4	0	2,504
2001	154	148	112	34	86	27	1,579	150	16	0	1,858
2002	122	113	93	20	61	33	1,521	251	12	0	1,878
2003	104	96	72	24	17	57	1,071	170	9	0	1,324
2004	91	83	65	18	7	56	1,554	172	16	0	1,805
2005	108	96	69	27	8	57	833	296	13	0	1,207
2006	89	82	62	20	15	41	1,295	221	5	0	1,577
2007	141	133	95	38	10	113	1,431	641	34	0	2,229
2008	146	142	107	35	2	92	1,844	687	14	0	2,639
2009	145	142	90	52	9	273	646	101	4	1	1,034
2010	128	122	82	41	14	149	875	251	17	0	1,306
2011	119	112	81	31	15	223	806	145	5	3	1,197
2012	98	95	69	26	5	137	1,471	275	6	0	1,894
2013	123	118	89	29	9	122	1,732	135	3	0	2,001
2014	160	154	115	39	13	310	2,273	198	4	0	2,794
2015	136	131	91	40	10	509	1,373	152	22	6	2,072
2016	170	169	118	50	18	166	2,033	335	8	0	2,560
2017	148	145	108	37	6	298	2,388	212	11	0	2,915
10-yr avg.	137	133	95	38	10	228	1,544	249	9	1	2,041
2018	192	187	132	55	6	259	1,947	161	11	0	2,384

Note: Figures after 1991 include information from both returned permits and inseason oral reports.

[a] Steelhead trout *Oncorhynchus mykiss*.

Appendix E5.–Summary of personal use/subsistence salmon gillnet permit holders in the Southern District of Lower Cook Inlet (excluding the Port Graham/Nanwalek subsistence fishery and the Seldovia subsistence fishery) by area of residence, 1990–2018.

	Homer/ Fritz Cr.		Anchorage Area[a]		Halibut Cove		Anchor Pt./ Ninilchik		Seldovia		Pt. Graham/ Nanwalek		Kenai/ Soldotna		Other		Total Permits
Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Issued
1990	441	76.3%	36	6.2%	5	0.9%	65	11.2%	12	2.1%	0	0.0%	6	1.0%	13	2.2%	578
1991	384	81.4%	27	5.7%	8	1.7%	41	8.7%	6	1.3%	0	0.0%	4	0.8%	2	0.4%	472
1992	302	82.7%	21	5.8%	5	1.4%	32	8.8%	3	0.8%	0	0.0%	1	0.3%	1	0.3%	365
1993	242	74.2%	25	7.7%	5	1.5%	44	13.5%	3	0.9%	0	0.0%	5	1.5%	2	0.6%	326
1994	235	82.2%	20	7.0%	4	1.4%	21	7.3%	1	0.3%	0	0.0%	1	0.3%	4	1.4%	286
1995	191	81.3%	15	6.4%	7	3.0%	20	8.5%	1	0.4%	0	0.0%	0	0.0%	1	0.4%	235
1996	241	80.6%	16	5.4%	7	2.3%	26	8.7%	3	1.0%	1	0.3%	2	0.7%	3	1.0%	299
1997	232	84.1%	13	4.7%	3	1.1%	20	7.2%	4	1.4%	0	0.0%	1	0.4%	3	1.1%	276
1998	175	77.1%	18	7.9%	2	0.9%	24	10.6%	5	2.2%	0	0.0%	2	0.9%	1	0.4%	227
1999	96	65.8%	18	12.3%	1	0.7%	23	15.8%	3	2.1%	0	0.0%	4	2.7%	1	0.7%	146
2000	168	78.9%	15	7.0%	2	0.9%	21	9.9%	4	1.9%	0	0.0%	1	0.5%	2	0.9%	213
2001	109	70.8%	10	6.5%	3	1.9%	20	13.0%	5	3.2%	0	0.0%	4	2.6%	3	1.9%	154
2002	85	70.2%	7	5.8%	3	2.5%	14	11.6%	6	5.0%	0	0.0%	5	4.1%	1	0.8%	121
2003	74	71.2%	9	8.7%	2	1.9%	11	10.6%	4	3.8%	0	0.0%	4	3.8%	0	0.0%	104
2004	70	76.9%	9	9.9%	2	2.2%	7	7.7%	2	2.2%	0	0.0%	1	1.1%	0	0.0%	91
2005	80	74.1%	12	11.1%	2	1.9%	8	7.4%	1	0.9%	0	0.0%	3	2.8%	2	1.9%	108
2006	74	84.1%	6	6.8%	1	1.1%	4	4.5%	0	0.0%	0	0.0%	2	2.3%	1	1.1%	88
2007	116	82.3%	11	7.8%	3	2.1%	7	5.0%	0	0.0%	0	0.0%	1	0.7%	3	2.1%	141
2008	121	82.9%	3	2.1%	2	1.4%	13	8.9%	2	1.4%	0	0.0%	3	2.1%	2	1.4%	146
2009	107	73.8%	11	7.6%	1	0.7%	19	13.1%	2	1.4%	0	0.0%	5	3.4%	0	0.0%	145
2010	103	80.5%	8	6.3%	1	0.8%	9	7.0%	2	1.6%	0	0.0%	5	3.9%	0	0.0%	128
2011	87	68.0%	13	10.2%	2	1.6%	9	7.0%	2	1.6%	0	0.0%	6	4.7%	0	0.0%	119
2012	75	76.5%	7	7.1%	1	1.0%	10	10.2%	0	0.0%	0	0.0%	5	5.1%	0	0.0%	98
2013	102	82.9%	9	7.3%	0	0.0%	7	5.7%	0	0.0%	0	0.0%	5	4.1%	0	0.0%	123
2014	125	78.1%	13	8.1%	1	0.6%	11	6.9%	1	0.6%	0	0.0%	8	5.0%	1	0.6%	160
2015	112	82.4%	12	8.8%	0	0.0%	9	6.6%	0	0.0%	0	0.0%	3	2.2%	0	0.0%	136
2016	139	81.8%	12	7.1%	1	0.6%	10	5.9%	2	1.2%	0	0.0%	6	3.5%	0	0.0%	170
2017	122	82.4%	9	6.1%	0	0.0%	11	7.4%	0	0.0%	0	0.0%	6	4.1%	0	0.0%	148
10-year avg.	109	78.9%	9.7	7.1%	0.9	0.7%	11	7.9%	1	0.8%	0	0.0%	5	3.8%	0	0.2%	137.3
2018	158	82.3%	9	4.7%	0	0.0%	14	7.3%	0	0.0%	0	0.0%	9	4.7%	2	1.0%	192

[a] After 1989, "Anchorage Area" includes Mat-Su Valley, Eagle River, Chugiak, and/or Fort Richardson.

Appendix E6.–Historical harvest and numbers of permits actively fished by area for the Southern District personal use coho salmon set gillnet fishery, 1981–2018.

	Troublesome Creek to tip of Homer Spit		East side of Homer Spit		Mud Bay to Fritz Creek		Fritz Creek to Swift Creek		Bear Cove to Neptune Bay		Neptune Bay to Little Tutka Bay	
Year	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon
1981		68		419		1,239		2,382		259		3
1982		118		471		3,307		3,260		237		5
1983		18		126		944		1,319		202		92
1984		25		274		1,686		1,517		102		35
1985		119		87		1,218		1,681		261		51
1986		36		490		1,415		1,651		166		73
1987		101		590		1,103		1,953		180		52
1988		78		472		1,248		2,769		384		56
1989		234		1,259		1,591		3,455		616		74
1990		287		2,117		1,748		3,478		465		228
1991		328		1,585		798		1,873		245		51
1992		37		938		464		719		116		18
1993		86		881		295		627		74		29
1994		211		1,413		596		1,558		314		5
1995		414		1,124		372		769		202		35
1996	16	220	85	1,871	39	364	38	603	32	272	3	17
1997	19	149	81	1,294	36	133	32	134	13	83	5	24
1998	10	86	77	1,062	29	162	10	39	13	75	3	37
1999	4	25	67	1,225	11	123	4	43	16	286	9	101
2000	11	210	84	1,372	18	169	15	126	16	120	7	67
2001	12	94	55	920	10	90	8	185	19	189	10	101
2002	11	212	38	624	13	99	8	195	13	201	10	190
2003	7	81	29	627	10	57	7	43	12	135	7	128
2004	2	75	23	610	8	131	9	228	15	365	8	145
2005	4	23	27	305	4	43	8	126	16	190	10	146
2006	1	20	20	388	9	179	9	248	18	375	5	85
2007	0	0	24	179	11	153	32	885	20	170	8	44
2008	1	28	23	322	30	368	25	776	16	259	12	91
2009	5	29	12	39	15	52	32	310	18	187	8	29
2010			15	118	18	65	38	466	28	194	13	32
2011	3	31	15	54	10	49	44	536	27	103	14	33
2012	3		11	72	13	32	42	1,202	19	140	7	25
2013	2		11	38	22	137	56	1,252	21	219	11	86
2014	5	52	27	591	22	574	37	780	13	194	10	82
2015	3	34	23	246	19	297	28	647	13	117	4	32
2016	7	115	28	382	30	550	30	780	14	124	9	82
2017	3	58	32	898	29	473	22	672	17	245	5	42
10-yr avg.	3	35	20	276	21	260	35	742	19	178	9	53
2018	5	40	40	484	30	442	35	777	16	159	6	45

Appendix E7.–Salmon retained from the commercial harvest for personal use (homepack) by species and gear type from Lower Cook Inlet districts, 1996–2018.

	Permits deliv.		Chinook salmon		Sockeye salmon		Coho salmon		Pink salmon		Chum salmon	
Year	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine
1996	1	2	6	0	19	32	5	0	0	0	0	0
1997	1	0	1	0	11	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0
2002	1	0	0	0	20	0	0	0	100	0	3	0
2003	2	0	3	0	2	0	0	0	750	0	0	0
2004	1	0	2	0	38	0	10	0	9	0	4	0
2005	3	1	7	0	79	10	38	0	121	0	8	0
2006	4	3	9	0	58	169	73	17	72	0	13	7
2007	4	0	1	0	204	0	76	0	3	0	0	0
2008	2	0	0	0	39	0	7	0	40	0	6	0
2009	3	0	1	0	35	0	14	0	23	0	9	0
2010	2	0	2	0	29	0	4	0	0a	0	3	0
2011	3	1	2	3	62	0	3	0	487	0	27	0
2012	7	0	4	0	63	0	61	0	323	0	31	0
2013	6	0	16	0	155	0	150	0	157	0	13	0
2014	8	1	10	0	180	3	128	0	318	0	17	0
2015	16	4	60	7	158	120	417	62	99	302	28	0
2016	14	11	35	40	115	269	171	25	205	79	41	5
2017	15	6	36	23	513	140	189	12	121	71	110	0
10-year avg.	8	4	17	12	135	89	114	17	177	75	29	1
2018	10	12	11	50	102	671	108	27	71	1	26	2

Note: No homepacks from commercial harvest reported before 1996. Regulations requiring reporting of fish harvested but not sold (5 AAC 39.130(c)(10)) on fish tickets established in 2008.

Appendix E8.–Lower Cook Inlet commercial homepack and personal use harvest by permit holder community of residence, 2018.

Commercial homepack[a]

Community	Permits	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon
Anchor Point	1	0	2	1	0	0	3
Anchorage	2	0	50	1	0	0	51
Halibut Cove	2	5	0	0	0	0	5
Homer	7	41	580	17	13	2	653
Ninilchik	1	3	80	16	0	0	99
Seldovia	6	8	24	27	42	23	124
USA balance	3	4	37	73	17	3	134
Total	22	61	773	135	72	28	1,069

Southern District personal use set gillnet fishery[b]

Community	Permits issued	Permits returned	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon
Anchorage area	9	9	2	23	105	4	1	135
Anchor Pt./Ninilchik/Nikolaevsk	14	13	0	8	151	11	0	170
Fairbanks	1	1	0	1	16	0	0	17
Halibut Cove	0	0	00	0	0	0	0	0
Homer	158	153	4	224	1,639	144	10	2,021
Kenai/Soldotna	9	9	0	3	36	2		41
Pt. Graham/Nanwalek	0	0	0	0	0	0	0	0
Seward	1	1	0	0	0	0	0	0
Total	192	186	6	259	1,947	161	11	2,384

Port Graham/Nanwalek subsistence fishery[c]

Community	Permits issued	Permits returned	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon
Anchorage area	0	0	0	0	0	0	0	0
Homer	0	0	0	0	0	0	0	0
Nanwalek	4	1	3	65	0	0	0	68
Port Graham	10	1	0	11	7	2	30	50
Valdez	0	0	0	0	0	0	0	0
Total	14	2	3	76	7	2	30	118

Seldovia subsistence fishery[d,e]

Community	Permits issued	Permits returned	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Total salmon
Anchorage area	1	0	0	0	0	0	0	0
Homer	0	0	0	0	0	0	0	0
Nanwalek	0	0	0	0	0	0	0	0
Ninilchik	0	0	0	0	0	0	0	0
Pt. Graham/Nanwalek	0	0	0	0	0	0	0	0
Seldovia	8	6	11	11	0	1	53	76
Total	9	6	11	11	0	1	53	76

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

[b] As defined in 5 AAC 77.549 *Personal Use Coho Salmon Fishery Management Plan*.

[c] Defined as subsistence harvest from the Port Graham and Nanwalek Sections of the Port Graham Subdistrict in the Southern District.

[d] Defined as subsistence harvest from the Seldovia Subdistrict in the Southern District.

[e] Includes harvests from both early and late season Seldovia subsistence fisheries.

APPENDIX F: HATCHERY PRODUCTION AND RETURNS

Appendix F1.–Summary of salmon runs to Lower Cook Inlet private nonprofit hatchery release sites, 2018.

SOCKEYE SALMON

Hatchery or release site (hatchery [a])	BY 2013 Release	BY 2014 Release	2018 Forecast Run	Estimated CPF Contribution[b]	Estimated Sales Harvest Contribution[c]	Broodstock & Unharvested Contribution	Estimated Total Run	2018 Eggs Collected
Bear Lake and Resurrection Bay (TLH)	4,163,000	4,095,165	199,727	22,310	161,351	14,963	198,624	2,770,000
Hidden Lake (TLH)	1,540,000	1,497,000	19,704	53,263	993	88,540	142,796	1,258,000
Leisure and Hazel lakes (TLH)	2,576,000	1,672,000	39,483	6,453	6,590	112	13,155	0
Kirschner Lake (TLH)	217,000	237,000	44,600	7,837	11,536	0	19,373	0
English Bay Lakes (TLH)	211,000	200,200	4,650	ukwn	0	18,804	ukwn	0
Tutka Bay Lagoon (TLH)[d]	523,500	531,625	79,256	20,751	62,389	3,412	86,552	3,913,000
Port Graham Hatchery (TLH)	0	0	0	0	0	0	0	0
Shell Lake	0	0	0	0	0	0	0	0
Total Sockeye Salmon	9,230,500	8,232,990	387,420	110,614	242,859	125,831	460,500	7,941,000

COHO SALMON

Hatchery or release site, (hatchery)	BY 2015 Release	2018 Forecast Run	Estimated CPF Contribution	Estimated Sales Harvest Contribution	Broodstock & Unharvested Contribution	Estimated Total Run	Eggs Collected
Bear Lake and Resurrection Bay (TLH)	501,600	10,500	NA	1,277	1,165	NA	640,000
Total Coho Salmon	501,600	10,500	NA	1,277	1,165	NA	640,000

PINK SALMON

Hatchery or release site, (hatchery)	BY 2016 Release	2018 Forecast Run	Estimated CPF Contribution	Estimated Sales Harvest Contribution	Broodstock & Unharvested Contribution	Estimated Total Run	Eggs Collected
Tutka Bay Lagoon Hatchery (TBLH)	54,245,411	1,735,853	151,348	939,967	237,113	1,328,428	122,144,501
Port Graham Hatchery (PGH)	6,059,800	181,794	101,395	57,549	94,000	252,944	18,385,026
Bruin Bay (PGH)							0
Total Pink Salmon	60,305,211	1,917,647	252,743	997,516	331,113	1,581,372	140,529,527
Total: All Salmon			363,357	1,241,652	458,109	2,041,872	149,110,527

[a] TLH = Trail Lakes Hatchery, TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery.

[b] Common Property Fisheries (CPF) include commercial, sport, personal use, and subsistence harvests. Harvest estimate based on harvest location, not on otolith sampling.

[c] Hatchery cost-recovery sales in number of fish. Also includes donated fish that could not be sold due to quantity or quality available.

[d] Includes hatchery donated fish. Tutka Bay Lagoon Hatchery has not produced sockeye salmon since 2004. Returns of this species are from remote releases from the Trail Lakes Hatchery. Sockeye salmon eggs collected at this facility were taken back to the Trail Lakes Hatchery for incubation.

Appendix F2.–Daily sockeye salmon sales, donations, and broodstock collection in numbers of fish for Cook Inlet Aquaculture Association, 2018.

			Sales harvest[a]		Donated		Broodstock	
Date	Gear	Location	Daily	Cum.	Daily	Cum.	Daily	Cum.
5/27	Purse seine	Bear Lake SHA	2,315	2,315				
5/28	Purse seine	Bear Lake SHA	6,815	9,130				
5/29	Purse seine	Bear Lake SHA	1,609	10,739				
5/30	Purse seine	Bear Lake SHA	7,282	18,021				
5/31	Purse seine	Bear Lake SHA	8,145	26,166				
6/1	Purse seine	Bear Lake SHA	13,311	39,477				
6/2	Purse seine	Bear Lake SHA	8,009	47,486				
6/3	Purse seine	Bear Lake SHA	12,269	59,755				
6/4	Purse seine	Bear Lake SHA	6,527	66,282				
6/5	Purse seine	Bear Lake SHA	13,242	79,524				
6/6	Purse seine	Bear Lake SHA	7,401	86,925				
6/7	Purse seine	Bear Lake SHA	6,392	93,317				
6/9	Purse seine	Bear Lake SHA	9,865	103,182				
6/10	Purse seine	Bear Lake SHA	2,163	105,345				
6/12	Purse seine	Bear Lake SHA	7,068	112,413				
6/13	Purse seine	Bear Lake SHA	7,134	119,547				
6/14	Purse seine	Bear Lake SHA	5,996	125,543				
6/15	Purse seine	Bear Lake SHA	1,665	127,208				
6/16	Purse seine	Bear Lake SHA	505	127,713				
6/17	Purse seine	Bear Lake SHA	1,731	129,444				
6/13	Weir or beach seine	Bear Lake SHA	737	737				
6/14	Weir or beach seine	Bear Lake SHA	864	1,601				
6/15	Weir or beach seine	Bear Lake SHA	1,387	2,988				
6/16	Weir or beach seine	Bear Lake SHA	939	3,927				
6/17	Weir or beach seine	Bear Lake SHA	908	4,835	10	10		
6/19	Weir or beach seine	Bear Lake SHA	2,148	6,983		10		
6/20	Weir or beach seine	Bear Lake SHA	1,781	8,764		10		
6/21	Weir or beach seine	Bear Lake SHA	880	9,644		10		
6/22	Weir or beach seine	Bear Lake SHA	1,472	11,116		10		
6/23	Weir or beach seine	Bear Lake SHA	1,711	12,827		10		
6/24	Weir or beach seine	Bear Lake SHA	1,688	14,515		10		
6/25	Weir or beach seine	Bear Lake SHA	2,633	17,148		10		
6/26	Weir or beach seine	Bear Lake SHA	2,615	19,763		10		
6/27	Weir or beach seine	Bear Lake SHA	1,691	21,454		10		
6/28	Weir or beach seine	Bear Lake SHA	1,742	23,196		10		
6/29	Weir or beach seine	Bear Lake SHA	1,730	24,926		10		
6/30	Weir or beach seine	Bear Lake SHA	789	25,715		10		
7/1	Weir or beach seine	Bear Lake SHA	630	26,345		10		
7/2	Weir or beach seine	Bear Lake SHA	375	26,720		10		
7/4	Weir or beach seine	Bear Lake SHA	652	27,372		10		
7/5	Weir or beach seine	Bear Lake SHA	550	27,922		10		
7/6	Weir or beach seine	Bear Lake SHA	136	28,058		10		
7/9	Weir or beach seine	Bear Lake SHA	426	28,484		10		
7/10	Weir or beach seine	Bear Lake SHA	499	28,983		10		
7/11	Weir or beach seine	Bear Lake SHA			30	40		
7/12	Weir or beach seine	Bear Lake SHA			196	236		
7/13	Weir or beach seine	Bear Lake SHA			124	360		
7/14	Weir or beach seine	Bear Lake SHA			192	552		
7/15	Weir or beach seine	Bear Lake SHA			184	736		

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Date	Gear	Location	Sales harvest[a] Daily	Sales harvest[a] Cum.	Donated Daily	Donated Cum.	Broodstock Daily	Broodstock Cum.
7/16	Weir or beach seine	Bear Lake SHA			269	1,005		
7/17	Weir or beach seine	Bear Lake SHA			80	1,085		
7/18	Weir or beach seine	Bear Lake SHA			685	1,770		
7/19	Weir or beach seine	Bear Lake SHA			209	1,979		
7/21	Weir or beach seine	Bear Lake SHA			357	2,336		
7/23	Weir or beach seine	Bear Lake SHA			155	2,491		
7/24	Weir or beach seine	Bear Lake SHA			113	2,604		
7/27	Weir or beach seine	Bear Lake SHA					157	157
7/28	Weir or beach seine	Bear Lake SHA					165	322
7/31	Weir or beach seine	Bear Lake SHA			60	2,664	306	628
8/1	Weir or beach seine	Bear Lake SHA			10	2,674		628
8/2	Weir or beach seine	Bear Lake SHA			30	2,704	160	788
8/3	Weir or beach seine	Bear Lake SHA			166	2,870		788
8/4	Weir or beach seine	Bear Lake SHA			12	2,882	159	947
8/5	Weir or beach seine	Bear Lake SHA			22	2,904	160	1,107
8/6	Weir or beach seine	Bear Lake SHA					153	1,260
8/8	Weir or beach seine	Bear Lake SHA			10	2,914	320	1,580
8/10	Weir or beach seine	Bear Lake SHA			10	2,924		1,580
8/11	Weir or beach seine	Bear Lake SHA					328	1,908
8/15	Weir or beach seine	Bear Lake SHA					185	2,093
8/18	Weir or beach seine	Bear Lake SHA					86	2,179
8/23	Weir or beach seine	Bear Lake SHA					32	2,211
7/5	Purse seine	Tutka Bay SHA	6,935	6,935				
7/8	Purse seine	Tutka Bay SHA	1,664	8,599				
7/10	Purse seine	Tutka Bay SHA	1,731	10,330				
7/12	Purse seine	Tutka Bay SHA	4,356	14,686				
7/15	Purse seine	Tutka Bay SHA	15,445	30,131				
7/17	Purse seine	Tutka Bay SHA	12,907	43,038				
7/18	Purse seine	Tutka Bay SHA	3,112	46,150				
7/19	Purse seine	Tutka Bay SHA	3,086	49,236				
7/21	Purse seine	Tutka Bay SHA	2,455	51,691				
7/22	Purse seine	Tutka Bay SHA	1,595	53,286				
7/23	Purse seine	Tutka Bay SHA	390	53,676				
7/26	Purse seine	Tutka Bay SHA	1,266	54,942				
7/27	Purse seine	Tutka Bay SHA	294	55,236				
7/29	Purse seine	Tutka Bay SHA	620	55,856				
7/30	Purse seine	Tutka Bay SHA	3,001	58,857				
7/31	Purse seine	Tutka Bay SHA	611	59,468				
8/2	Purse seine	Tutka Bay SHA	1,163	60,631				
8/7	Purse seine	Tutka Bay SHA	113	60,744				
8/19	Purse seine	Tutka Bay SHA	399	61,143				
8/28	Purse seine	Tutka Bay SHA	1,246	62,389				
7/3	Purse seine	China Poot SHA	2,338	2,338				
7/10	Purse seine	China Poot SHA	3,157	5,495				
7/15	Purse seine	China Poot SHA	1,095	6,590				
9/28	Purse seine	Tutka Bay SHA					164	164
10/3	Purse seine	Tutka Bay SHA					292	456
10/4	Purse seine	Tutka Bay SHA					541	997

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			Sales harvest[a]		Donated		Broodstock	
Date	Gear	Location	Daily	Cum.	Daily	Cum.	Daily	Cum.
10/6	Purse seine	Tutka Bay SHA					330	1,327
10/7	Purse seine	Tutka Bay SHA					336	1,663
10/8	Purse seine	Tutka Bay SHA					326	1,989
10/11	Purse seine	Tutka Bay SHA					490	2,479
10/13	Purse seine	Tutka Bay SHA					341	2,820
10/17	Purse seine	Tutka Bay SHA					188	3,008
7/3	Purse seine	Kirschner SHA	3,827	3,827				
7/10	Purse seine	Kirschner SHA	2,896	6,723				
7/16	Purse seine	Kirschner SHA	4,813	11,536				
8/6	Weir	Hidden Lake[b]	199	199				
8/15	Weir	Hidden Lake[b]	200	399				
8/21	Weir	Hidden Lake[b]	200	599				
8/24	Weir	Hidden Lake[b]	200	799				
8/29	Weir	Hidden Lake[b]	194	993				
9/18	Weir	Hidden Lake[b]					554	554
9/20	Weir	Hidden Lake[b]					584	1,138

Hatchery escapement summary in numbers of fish[c]	
Donated fish (Harv code 37)	2,924
Raceway harvest (Harvest code 22)	0
Viable broodstock (spawned, eggs in incubators)	6,042
Unviable broodstock (green/over-ripe/bad)	154
Unspawned fish (e.g. excess males/females)	483
Holding mortalities (raceway, pen mortalities)	1,815
Estimated unharvested return	0
Total hatchery harvest	11,418

Sales summary	
Whole fish sales (Harv code 21)	239,935
Broodstock carcass sales (Harv code 22)	0
Total sales	239,935

[a] ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

[b] CIAA projects conducted in Upper Cook Inlet.

[c] Data from CIAA and ADF&G fish ticket database (above).

Appendix F3.–Daily pink salmon sales, donations, and broodstock collection in numbers of fish for Cook Inlet Aquaculture Association, 2018.

			Sales harvest[a]		Donated		Broodstock[b]	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/5	purse seine	Tutka SHA	5,598	5,598				
7/8	purse seine	Tutka SHA	6,717	12,315				
7/10	purse seine	Tutka SHA	7,320	19,635				
7/12	purse seine	Tutka SHA	17,313	36,948				
7/15	purse seine	Tutka SHA	82,072	119,020				
7/17	purse seine	Tutka SHA	85,064	204,084				
7/18	purse seine	Tutka SHA	40,964	245,048				
7/19	purse seine	Tutka SHA	71,319	316,367				
7/21	purse seine	Tutka SHA	75,959	392,326				
7/22	purse seine	Tutka SHA	43,481	435,807				
7/23	purse seine	Tutka SHA	12,555	448,362				
7/26	purse seine	Tutka SHA	51,361	499,723				
7/27	purse seine	Tutka SHA	9,980	509,703				
7/29	purse seine	Tutka SHA	24,108	533,811				
7/30	purse seine	Tutka SHA	77,810	611,621				
7/31	purse seine	Tutka SHA	52,243	663,864				
8/2	purse seine	Tutka SHA	80,218	744,082				
8/7	purse seine	Tutka SHA	128,642	872,724				
8/19	purse seine	Tutka SHA	32,324	905,048				
8/28	purse seine	Tutka SHA	34,919	939,967				
8/10	weir	Tutka SHA					761	761
8/13	weir	Tutka SHA					3,735	4,496
8/14	weir	Tutka SHA					1,771	6,267
8/16	weir	Tutka SHA					5,637	11,904
8/17	weir	Tutka SHA					2,756	14,660
8/18	weir	Tutka SHA					6,886	21,546
8/19	weir	Tutka SHA					8,456	30,002
8/20	weir	Tutka SHA					12,906	42,908
8/21	weir	Tutka SHA					9,618	52,526
8/22	weir	Tutka SHA					10,185	62,711
8/24	weir	Tutka SHA					7,763	70,474
8/25	weir	Tutka SHA					8,046	78,520
8/26	weir	Tutka SHA					9,671	88,191
8/27	weir	Tutka SHA					9,418	97,609
8/28	weir	Tutka SHA					11,066	108,675
8/29	weir	Tutka SHA					8,660	117,335
8/30	weir	Tutka SHA					10,318	127,653
8/31	weir	Tutka SHA					11,265	138,918
9/1	weir	Tutka SHA					7,390	146,308
9/2	weir	Tutka SHA					8,518	154,826
9/3	weir	Tutka SHA					8,107	162,933
9/4	weir	Tutka SHA					7,459	170,392
9/5	weir	Tutka SHA					6,158	176,550

-continued-

			Sales harvest[a]		Donated		Broodstock[b]	
Date	gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
8/9	purse seine	Port Graham SHA	18,047	18,047				
8/16	purse seine	Port Graham SHA	20,754	38,801				
8/18	purse seine	Port Graham SHA	18,748	57,549				
9/1	purse seine	Port Graham SHA					989	989
9/2	purse seine	Port Graham SHA					2,201	3,190
9/3	purse seine	Port Graham SHA					2,649	5,839
9/4	purse seine	Port Graham SHA					3,061	8,900
9/5	purse seine	Port Graham SHA					1,091	9,991
9/6	purse seine	Port Graham SHA					4,112	14,103
9/7	purse seine	Port Graham SHA					1,514	15,617
9/8	purse seine	Port Graham SHA					1,594	17,211
9/10	purse seine	Port Graham SHA					2,298	19,509
9/12	purse seine	Port Graham SHA					2,733	22,242
9/13	purse seine	Port Graham SHA					2,925	25,167
9/14	purse seine	Port Graham SHA					1,396	26,563
9/15	purse seine	Port Graham SHA					1,416	27,979
7/3	purse seine	Kirschner SHA	20	20				
7/10	purse seine	Kirschner SHA	27	47				
7/16	purse seine	Kirschner SHA	48	95				
7/16	purse seine	China Poot SHA	2	2				

Hatchery escapement summary in numbers of fish[b]	
Donated fish (Harv code 37)	0
Raceway harvest	0
Viable broodstock (spawned, eggs in incubators)	160,032
Unviable broodstock (green/over-ripe/bad)	20,200
Unspawned fish (e.g. excess males/females)	20,767
Holding mortalities (raceway, pen mortalities)	69,479
Estimated unharvested return	60,691
Total hatchery harvest	331,169

Sales summary	
Whole fish sales (Harv code 21)	997,613
Broodstock carcass sales (Harv code 22)	0
Total sales	997,613

[a] ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential].

[b] Data from CIAA.

Appendix F4.–Daily coho sales, broodstock collection, and donations in numbers of fish for Cook Inlet Aquaculture Association, 2018.

			Sales harvest		Broodstock		Weir donations	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/15	purse seine	Tutka SHA	4	4				
7/17	purse seine	Tutka SHA	3	7				
7/18	purse seine	Tutka SHA	2	9				
7/19	purse seine	Tutka SHA	10	19				
7/21	purse seine	Tutka SHA	8	27				
7/23	purse seine	Tutka SHA	17	44				
7/30	purse seine	Tutka SHA	1	45				
7/30	purse seine	Tutka SHA	1	46				
8/2	purse seine	Tutka SHA	6	52				
8/7	purse seine	Tutka SHA	3	55				
8/19	purse seine	Tutka SHA	20	75				
8/28	purse seine	Tutka SHA	4	79				
9/9	weir	Bear Lake SHA					20	20
9/10	weir	Bear Lake SHA					255	275
9/11	weir	Bear Lake SHA					56	331
9/12	weir	Bear Lake SHA					48	379
9/13	weir	Bear Lake SHA					3	382
9/14	weir	Bear Lake SHA					6	388
9/15	weir	Bear Lake SHA					20	408
9/16	weir	Bear Lake SHA					21	429
9/17	weir	Bear Lake SHA					26	455
9/18	weir	Bear Lake SHA					46	501
9/19	weir	Bear Lake SHA					38	539
9/20	weir	Bear Lake SHA					35	574
9/21	weir	Bear Lake SHA					6	580
9/22	weir	Bear Lake SHA					68	648
9/24	weir	Bear Lake SHA					87	735
9/25	weir	Bear Lake SHA					229	964
9/26	weir	Bear Lake SHA					39	1,003
9/27	weir	Bear Lake SHA					35	1,038
9/28	weir	Bear Lake SHA					22	1,060
9/29	weir	Bear Lake SHA					100	1,160
9/30	weir	Bear Lake SHA					83	1,243
10/1	weir	Bear Lake SHA			94	94		1,243
10/2	weir	Bear Lake SHA			165	259	4	1,247
10/14	weir	Bear Lake SHA					30	1,277

Hatchery escapement summary in numbers of fish	
Donated fish (Harvest code 37)	1,277
Raceway harvest (Harvest code 22)	0
Viable broodstock (spawned, eggs in incubators)	240
Unviable broodstock (green/over-ripe/bad)	1
Holding mortalities (raceway, pen mortalities)	18
Escapement for hatchery watershed	300
Broodstock for ADF&G Salmon in the Classroom project	24
Broodstock for Anchorage ADF&G hatchery	173
Total hatchery return	2,033

Sales and donation summary	
Whole fish sales (Harvest code 21)	79
Carcass sale (Harvest code 22)	0
Total sales	79

Appendix F5.–Tutka Bay Lagoon Hatchery salmon releases, 1977–2018.

Year released	Sockeye	Pink	Chum
1977	91,347 [a]	318,280 [a]	
1978	400,000 [a]	4,820,937 [a]	
1979	0	9,243,717 [a]	732,000 [a]
1980	0	6,795,244 [a]	5,872 [a]
1981	0	10,268,753 [a]	7,992 [a]
1982	0	15,475,435 [a]	15,440 [a]
1983	0	15,232,750 [a]	1,117,745 [a]
1984	0	18,142,463 [a]	140,500 [a]
1985	0	23,537,000 [a]	9,777 [a]
1986	0	26,234,600 [a]	18,000 [a]
1987	0	8,240,700 [a]	445,700 [a]
1988	0	15,589,360 [a]	3,211,200 [a]
1989	0	36,977,190 [a]	2,164,393 [a]
1990	355,347 [a]	36,684,662 [a]	1,508,557 [a]
1991	0	30,000,000 [a]	0
1992	0	31,950,000 [a]	0
1993	0	48,700,000 [a]	0
1994	0	61,100,000 [a]	0
1995	0	63,000,000 [a]	0
1996	75,000 [a]	105,000,000 [a]	0
1997	245,000 [a]	89,000,000 [a]	0
1998	0	90,000,000 [a]	0
1999	100,000 [a]	60,132,000 [a]	0
2000	0	65,120,870 [a]	0
2001	0	99,336,410 [a]	0
2002	0	99,371,000 [a]	0
2003	0	67,967,000 [a]	0
2004	0	47,964,360 [a]	0
2005	[b]	0	0
2006	[b]	0	0
2007	[b]	0	0
2008	[b]	0	0
2009	[b]	0	0
2010	[b]	0	0
2011	[b]	0	0
2012	[b]	11,246,399 [a]	0
2013	0	18,603,000 [c]	0
2014	0	51,298,000 [c]	0
2015	0	12,274,240 [c]	0
2016	0	11,433,515 [c]	0
2017	0	54,245,411 [c]	0
2018	0	50,040,000 [c]	0

[a] No thermal marking.

[b] Sockeye salmon fry reared and thermally marked at Trail Lakes Hatchery, remote released as smolt at Tutka Bay Hatchery. Release numbers are included in releases for Trail Lakes Hatchery.

[c] Thermally marked.

Appendix F6.–Trail Lakes Hatchery salmon releases, 1983–2018.

Year released	Chinook	Sockeye	Coho	Chum
1983	0	2,310,751	1,039,673	0
1984	406,755	1,236,864	1,283,815	0
1985	398,586	1,805,792	1,538,361	455,809
1986	217,648	516,000	1,530,116	0
1987	268,399	3,718,311	1,702,446	0
1988	98,429	9,074,486	945,999	0
1989	0	5,690,000	1,337,340	0
1990	0	7,679,698	840,585	0
1991	0	6,345,252 [a]	390,841	0
1992	0	7,575,637 [a]	255,533	0
1993	0	7,979,820 [a]	620,588	0
1994	0	6,640,000 [a]	320,000	0
1995	0	6,339,485 [a]	516,400	0
1996	0	4,110,638 [a]	75,000	0
1997	0	10,857,470 [a]	601,700	0
1998	0	7,653,000 [a]	409,000	0
1999	0	9,923,500 [a]	357,000	0
2000	0	12,521,000 [a]	418,000 [b]	0
2001	0	1,140,000 [a]	432,000 [b]	0
2002	0	18,907,200 [a]	528,500 [b]	0
2003	0	16,128,000 [a]	761,000 [b]	0
2004	0	17,272,000 [a]	996,000 [b]	0
2005	0	9,959,000 [a]	988,000 [b]	0
2006	0	5,785,000 [a]	1,146,000 [b]	0
2007	0	12,668,800 [a]	956,000 [b]	0
2008	0	13,203,000 [a]	685,000 [b]	0
2009	0	7,953,000 [a]	382,000 [b]	0
2010	0	8,616,000 [a]	435,000 [b]	0
2011	0	9,324,200 [a]	437,000 [b]	0
2012	0	7,636,300 [a]	315,000 [b]	0
2013	0	7,482,000 [a]	405,000 [b]	0
2014	0	9,368,500 [a]	523,000 [b]	0
2015	0	8,302,700 [a]	546,000 [b]	0
2016	0	6,001,790 [a]	546,600 [b]	0
2017	0	7,207,000 [a]	180,000 [b]	0
2018	0	8,883,000 [a]	536,000 [b]	0

[a] Thermal marking of sockeye salmon releases began in 1991 (BY 1990).

[b] Thermal marking of coho salmon releases began in 2000 (BY 1999).

Appendix F7.–Port Graham Hatchery salmon releases, 1991–2018.

Year	Sockeye	Coho	Pink
1991	84,757	0	255,000
1992	144,982	0	1,810,487
1993	194,700	0	0
1994	830,159	0	1,295,000
1995	0	0	358,000
1996	292,134	0	6,469,975
1997	199,000	29,963	918,000
1998	0	0	0
1999	918,348	0	4,617,362[a]
2000	906,057	0	1,142,726[a]
2001	0	0	27,298,797[a]
2002	0	0	6,600,985[a]
2003	694,647[a]	0	57,200,000[a]
2004	159,616[a]	0	36,282,671[a]
2005	203,000[a]	0	26,567,983[a]
2006	422,060[a]	0	13,883,682[a]
2007	0	0	13,282,049[a]
2008	0	0	0
2009	[b]	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0
2013	[b]	0	[c]
2014	0	0	[c]
2015	0	0	2,200,060[a]
2016	0	0	1,310,762[a]
2017	0	0	6,059,800[a]
2018	0	0	21,155,000[a]

[a] Thermally marked.
[b] Remote releases from Trail Lakes Hatchery.
[c] Remote releases from Tutka Bay Lagoon Hatchery.

Appendix F8.–Ship Creek Hatchery Complex (Fort Richardson, Elmendorf, and William Jack Hernandez hatcheries combined) salmon releases, 1966–2018.

Year released	Chinook	Coho
1966	166,874	0
1967	538,356	38,200
1968	82,400	199,700
1969	95,900	264,000
1970	45,700	225,400
1971	217,390	92,343
1972	71,814	87,700
1973	166,134	683,685
1974	212,540	210,300
1975	91,100	281,800
1976	513,400	895,200
1977	351,952	775,803
1978	747,629	617,822
1979	1,088,542	1,471,899
1980	770,235	602,394
1981	391,950	1,553,864
1982	0	1,096,569
1983	578,441	424,542
1984	1,021,553	831,147
1985	1,727,379	660,854
1986	1,474,079	1,991,102
1987	869,520	731,202
1988	1,624,351	1,333,453
1989	3,008,315	1,970,126
1990	2,256,778	1,281,500
1991	1,693,355	1,215,136
1992	1,765,804	1,329,869
1993	1,863,391	1,194,994
1994	1,709,950	994,250
1995	1,695,164	1,121,768
1996	1,899,284	1,042,477
1997	1,801,410	1,136,845
1998	1,531,021	1,249,781
1999	1,340,334	1,113,016
2000	2,289,290	0
2001	1,353,660	1,226,342
2002	1,451,227 [a]	1,273,443 [a]
2003	5,635,091 [a]	1,117,566 [a]
2004	1,958,790 [a]	1,308,038 [a]

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Year released	Chinook		Coho	
2005	2,369,684	[a]	1,442,233	[a]
2006	1,922,667	[a]	1,235,317	[a]
2007	1,849,714	[a]	1,193,374	[a]
2008	1,309,790	[a]	989,853	[a]
2009	1,205,594	[a]	1,168,549	[a]
2010	2,006,157	[a]	1,336,861	[a]
2011	1,741,377	[a]	1,050,001	[a]
2012	1,853,150	[a]	968,716	[a]
2013	1,428,414	[a]	1,079,549	[a]
2014	2,102,235	[a]	947,363	[a]
2015	2,301,946	[a]	1,107,838	[a]
2016	2,291,484	[a]	1,240,626	[a]
2017	2,192,812	[a]	1,118,428	[a]
2018	NA	[a]	NA	[a]

[a] Thermally marked.

Appendix F9.–Historic releases of Chinook salmon from hatcheries to Lower Cook Inlet, 1924–2018. Blank cells indicate no releases that year.

	Southern District (241)						Eastern District (231)					
Year	Halibut Cove Lagoon	Homer Spit	Tutka Bay	Kasitsna Bay	Seldovia Harbor	English Bay Lakes	Resurrection Bay	Alaska Sea Life Center	Thumb Cove	Box Canyon	Lowell Creek	Spring Creek
1924[a]												1,387,000
1972				33,800								
1975	3,463											
1976	16,183		26,000							25,100		
1977	49,947									50,036		
1978	126,306									150,488		
1979	224,708									257,530		
1980	155,054											
1981	101,861											
1983	200,900									54,521		
1984	84,000	88,753							71,427		39,206	
1985	98,000	152,226					53,587				132,708	
1986	101,331	103,946									100,900	
1987	94,100	103,860			80,420						95,963	
1988	93,874	219,572			111,435		109,020				95,673	
1989	115,682	212,737			108,300		109,464				122,800	75,063
1990	112,458	210,087			98,525	109,465	112,831				216,220	
1991	92,363	190,915			91,592		373,165				93,200	
1992	117,850	353,255			112,935		261,803				108,390	
1993	100,228	312,292			106,497		193,742				104,870	
1994	98,872	320,836			107,246		165,596				104,477	
1995	37,577	339,074			116,165		220,146				95,256	
1996	97,729	312,289			118,274		300,000				115,000	
1997	78,133	318,706			103,757		203,932				219,355	
1998	65,893	289,830			69,461		205,133				101,992	
1999	79,221	222,781			74,057		88,066				85,502	
2000	83,277	219,984			68,114		212,873				109,461	
2001	106,719	208,062			102,793		113,147				114,748	
2002	106,279	190,026			83,045		100,314				93,296	
2003	106,844	206,292			107,521		109,976				110,331	
2004	103,771	168,743			88,682		126,280	30,066			89,388	
2005	112,521	220,822			114,984		211,549	218,759			100,088	
2006	117,549	224,053			113,974		303,217	120,000				
2007	54,560	226,972			54,276		117,842	115,716				
2008	58,674	212,141			54,464		142,469					
2009	35,065	164,234			44,487							
2010	111,134	213,503			114,421		110,671				109,779	
2011	107,338	219,787			103,382		223,881					
2012	110,253	221,547			95,800		219,743					
2013	60,666	216,292			63,311		141,550					
2014	85,856	206,254			74,259		183,464					
2015	102,718	210,543			72,233		298,542	100				
2016	110,546	214,139			102,552		320,711	150				
2017	94,196	202,358			104,806		328,337					
2018		327,914			104,890		324,509					

[a] Grouse Lake Hatchery burned March 9, 1927.

Appendix F10.–Historic releases of sockeye salmon from hatcheries to Lower Cook Inlet, 1925–2018. Blank cells indicate no releases that year.

	Southern District (241)						Outer (232)	Kamishak District (249)					Eastern District (231)		
Year	Leisure Lake	Hazel Lake	Halibut Cove Lagoon	Tutka Bay Lagoon	English Bay Lakes	Pt Graham Subdist.	Port Dick Lake	Chenik Lake	Paint River Lakes	Kirschner Lake	Bruin Lake	Ursus Lake	Bear Lake	Resurrection Bay	Grouse Lake
1925															846,360
1926[a]															4,085,727
1976	1,085		7,777												
1977	91,347														
1978	83,422							98,082							
1979								256,525							
1980	532,650														
1981	1,094,713							1,096,718							
1982	1,527,876														
1983	2,113,239														
1984	2,110,000														
1985	2,018,000														
1986	2,250,303							839,000	820,026						
1987	2,022,000							1,005,000		866,700					
1988	2,100,000	783,000					221,700	2,601,000	2,207,300	521,000					
1989	2,000,000	1,000,000					430,000	3,500,000	2,000,000	250,000					
1990	2,000,000	1,500,000			855,347			3,250,000	2,000,000	250,000			2,577,962		
1991	2,000,000	1,300,000			255,071	84,757		2,100,000	750,000	250,000	250,000		1,604,922		
1992	2,000,000	1,000,000			290,298	144,982		2,750,000	750,000	250,000	250,000	250,000	1,482,489		
1993	2,000,000	1,000,000			755,692			1,400,000	750,000	250,000	250,000	250,000	1,810,261		
1994					820,174	9,985				208,000			170,000		570,000
1995	1,632,000	1,061,000						1,129,000	588,000	251,000	251,000	252,000	330,000		993,000
1996	1,490,000	1,030,000		75,000	292,134			951,000	500,000	250,000	250,000	250,000	780,638		217,605
1997	2,000,000	1,000,000		245,000	199,000					250,000			788,000		2,428,000
1998	1,877,000	1,218,000								234,000			772,000		1,514,000
1999	265,400	453,100		100,000	918,348					172,700			1,380,000		
2000	1,708,000	1,248,000			906,057					249,000			1,796,000		
2001	89,000												145,000		
2002	2,246,200	1,280,100							507,700	301,500			3,210,300		
2003	2,240,000	1,547,000			694,647					298,000			1,801,000		

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	Southern District (241)						Outer (232)	Kamishak District (249)					Eastern District (231)		
Year	Leisure Lake	Hazel Lake	Halibut Cove Lagoon	Tutka Bay Lagoon	English Bay Lakes	Pt Graham Subdist.	Port Dick Lake	Chenik Lake	Paint River Lakes	Kirschner Lake	Bruin Lake	Ursus Lake	Bear Lake	Resurrection Bay	Grouse Lake
2004	2,002,000	351,000			50,096	109,520				251,000			3,012,000		
2005	2,252,000	1,558,000		96,000	203,000					316,000			3,422,000		
2006	680,000			260,000		422,060							3,393,000		
2007	2,315,000	1,411,000		143,800						254,000			3,056,000		
2008	2,053,000	1,161,000		483,000	246,000					300,000			2,400,000	1,600,000	
2009	1,225,000	1,186,000		301,000		112,000							2,543,000	1,675,000	
2010	1,933,000	1,218,000		278,000	202,000					255,000			2,200,000	1,650,000	
2011	1,415,000	1,244,000		281,900	203,300					160,000			2,488,000		
2012	2,074,000	1,240,000		371,300	213,000					300,000			2,490,000	1,305,000	
2013	1,800,000	1,450,000		511,000	211,000	102,000							2,548,000	2,090,000	
2014	1,353,000	1,223,000		599,500	209,000					217,000			2,405,000	1,742,000	
2015	1,051,000	621,000		523,500	200,200					237,000			2,415,000	1,758,000	
2016				531,625						185,000			2,374,000	1,680,165	
2017	1,387,000	834,000		356,000		86,000				260,000			2,468,000	1,816,000	
2018	1,948,000	813,000		518,000						244,000			2,555,000	1,488,000	

Source: Historic hatchery annual reports.

[a] Grouse Lake Hatchery burned March 9, 1927.

Appendix F11.–Historical releases of coho salmon from hatcheries to Lower Cook Inlet, 1963–2018. Blank cells indicate no releases that year.

	Southern District (241)							Eastern District (231)						
Year	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia	Port Graham Subdistr.	Resurrection Bay	Seward Lagoon	Bear Lake	Grouse Lake	Lowell Creek	misc. small releases combined	Total coho salmon released
1963										148,057				148,057
1964										43,000				43,000
1965										69,800				69,800
1966										360,100				360,100
1967										246,400				246,400
1968									42,400					42,400
1969									27,100	47,900				75,000
1970									38,600	6,400			3,200	45,000
1971									10,900	50,983				61,883
1972					241,400				66,500	606,100				914,000
1973			326,800						30,200	443,300				800,300
1974			755,279						100,000	450,800				1,306,079
1975	141,217		475,600						100,700	449,900				1,167,417
1976	155,700		461,244			112,661			100,600	260,200	35,200			1,125,605
1977			7,253			99,380			100,456	45,902	35,003			287,994
1978		66,545							148,999	254,394	53,455			523,393
1979		44,717	47,810	23,015					98,566	265,963	44,010			524,081
1980		21,315							100,757	150,011	50,286			322,369
1981		55,006							109,958	246,545	54,953			466,462
1982									53,970	227,800	13,238			295,008
1983									82,506	248,801				331,307
1984	119,071					59,840			67,722	220,000	53,100			519,733
1985	139,789	31,242				81,924			50,256	300,446	56,134			659,791
1986	137,951					71,496			212,812	445,693			53,607	867,952
1987	150,000					45,000			66,525	223,300		57,232	257,461	542,057
1988	150,000			62,547		80,000			118,741	347,155		63,806		822,249
1989				153,869					272,346	490,000		66,606		982,821
1990	180,000			122,945		50,000			145,619	426,911		63,733		989,208
1991	180,000			100,236		50,000			119,057	390,060		30,400	4,000	869,753
1992	150,000			100,570					154,219	255,533		59,492		719,814
1993	150,000			116,129					159,091	620,588		64,361	8,000	1,110,169

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	Southern District (241)							Eastern District (231)						
Year	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia	Port Graham Subdistr.	Resurrection Bay	Seward Lagoon	Bear Lake	Grouse Lake	Lowell Creek	misc. small releases combined	Total coho salmon released
1994	63,600			156,213					221,577	320,000		38,000		799,390
1995				110,701					133,700	516,400		50,698		811,499
1996				149,000					182,000	425,000		69,000		825,000
1997				120,242			29,963		144,112	601,700		61,687		957,704
1998				148,410			30,000		74,365	409,000		65,687		727,462
1999				129,602					109,142	357,000		62,580		658,324
2000				122,338					145,693	418,000		54,184		740,215
2001				225,042					124,703	432,000		125,618		907,363
2002				216,355					121,743	528,500		119,512		986,110
2003				325,735					123,718	658,000		124,225		1,231,678
2004				243,243				192,000	323,798	691,000		131,989		1,582,030
2005				220,707					132,229	893,000		132,276		1,378,212
2006				449,216		114,000			131,326	562,000		277,261		1,533,803
2007				228,244		97,000			132,811	758,000		130,892		1,346,947
2008				217,843		88,000			233,365	502,000				1,041,208
2009				157,696					91,979	338,000		91,833		679,508
2010				130,206					134,008	435,000		133,947		833,161
2011				129,080					255,252	437,000				821,332
2012				107,250					249,309	315,000				671,559
2013				132,027					216,444	405,000				753,471
2014				76,535					97,675	523,000				697,210
2015				122,963					279,546	546,000				948,509
2016				122,602					272,212	546,600				941,414
2017				135,713					264,935	180,000				580,648
2018				236,604					28,000	508,000				772,604

Appendix F12.–Historical releases of pink salmon from hatcheries to greater Cook Inlet, 1975–2018. Blank cells indicate no releases that year.

	Southern District (241)					Eastern District (231)	Kamishak Bay District (249)	Upper Cook Inlet (247-50, 247-60)		
Year	Tutka Bay	Halibut Cove Lagoon	Halibut Cove-bight	Homer Spit	Port Graham Subdistrict	Resurrection Bay	Paint River	Eklutna River	Ingram Creek	Total pink salmon released
1975		50,916								50,916
1976										
1977		318,280								318,280
1978	4,820,937									4,820,937
1979	9,243,717									9,243,717
1980	6,245,103						550,141			6,795,244
1981	9,759,144						509,609			10,268,753
1982	15,070,927						404,508			15,475,435
1983	14,730,794						501,956			15,232,750
1984	18,142,463									18,142,463
1985	23,537,000							281,500		23,818,500
1986	22,228,600	4,006,000						30,576		26,265,176
1987	4,385,600	3,001,400		594,500				38,267	259,200	8,278,967
1988	12,003,878	3,022,491		310,016					252,975	15,589,360
1989	30,091,053	6,229,062		331,695					325,380	36,977,190
1990	23,689,702	6,000,000		603,845					311,101	36,974,370
1991	23,657,112	6,039,062		303,826	255,000					30,602,576
1992	25,700,000	5,950,000		300,000	1,810,487					33,760,487
1993	48,700,000									48,700,000
1994	61,100,000				1,295,000					62,395,000
1995	63,000,000				358,000					63,358,000
1996	105,000,000				6,469,975					111,469,975
1997	89,000,000				918,000					89,918,000
1998	90,000,000									90,000,000
1999	60,132,000				4,617,362	48,329				64,797,691
2000	65,120,870				1,142,726	24,216				66,287,812
2001	99,336,410				27,298,797					126,635,207
2002	99,371,000				6,600,985					105,971,985
2003	67,967,000				57,200,000					125,167,000
2004	47,964,360				36,282,671					84,247,031
2005					26,567,983					26,567,983
2006					13,883,682					13,883,682
2007					13,282,049					13,282,049
2008										
2009										
2010										
2011										
2012	8,100,399		3,146,000[a]							11,246,399
2013	4,353,000				14,250,000					18,603,000
2014	51,110,000				188,000					51,298,000
2015	11,249,240				2,200,060		1,025,000			14,474,300
2016	11,433,515				1,310,762					12,744,277
2017	54,245,411				6,059,800					60,305,211
2018	50,040,000				20,850,000		305,000			71,195,000

[a] Released outside of Halibut Cove Lagoon, 1 kilometer east.

Appendix F13.–Historical releases of chum salmon from hatcheries to greater Cook Inlet, 1974–2018. Blank cells indicate no releases that year.

	Southern District, (241)		Eastern District, (231)		Upper Cook Inlet, (247-41, 247-50)			
Year	Halibut Cove	Tutka Bay	Jap Creek	Spring Creek	Eklutna River	Indian River	Susitna River	Total chum salmon released
1974	7,782							7,782
1975	595							595
1976								
1977								
1978								9,666
1979		597,377						597,377
1980								
1981		7,992						7,992
1982		15,440						15,440
1983		1,117,745			1,536,892		24,848	2,679,485
1984		140,500			928,143	10,278	19,797	1,098,718
1985		25,977	282,622	173,187			14,312	496,098
1986		18,000			1,693,382			1,711,382
1987		445,700			2,740,773			3,186,473
1988		3,211,200			2,697,860			5,909,060
1989		2,164,393			6,121,337			8,285,730
1990		1,508,557			3,209,773			4,718,330
1991					2,535,335			2,535,335
1992					3,114,793			3,114,793
1993								
1994								
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2018								

Appendix F14.–Harvest of sockeye salmon returning to China Poot and Neptune Bays in the Southern District of Lower Cook Inlet, 1979–2018.

Return year	Sport harvest[a]	Personal use dip net harvest[b]	Commercial harvest[c]	Hatchery cost recovery[d]	Unharvested[e]	Total run
1979	650	0	0	0	0	650
1980	1,000	953	58	0	0	2,011
1981	1,500	0	81	0	0	1,581
1982	450	1,320	1	0	1,430	3,201
1983	480	5,466	81	0	10	6,037
1984	500	1,794	263	0	500	3,057
1985	500	796	6	0	920	2,222
1986	100	1,815	83	0	200	2,198
1987	200	1,231	0	0	0	1,431
1988	500	1,910	63,550	0	470	66,430
1989	1,000	5,416	35,795	0	0	42,211
1990	500	5,835	49,900	0	0	56,235
1991	1,000	1,528	109,625	0	0	112,153
1992	300	3,468	68,643	7,336	0	79,747
1993	400	4,551	114,002	0	0	118,953
1994	500	5,715	35,704	3,025	0	44,944
1995	1,000	8,605	120,590	12,497	450	143,142
1996	1,000	4,773	211,716	14,235	441	232,165
1997	650	4,773	116,094	0	1,130	122,647
1998	640	4,773	79,642	20,579	380	106,014
1999	640	4,773	154,424	16,188	522	176,547
2000	640	4,773	60,199	18,103	256	83,971
2001	640	4,773	90,649	27,037	57	123,156
2002	640	4,773	96,996	29,517	51	131,977
2003	640	4,773	330,642	35,557	121	371,733
2004	640	4,773	20,379	12,991	448	39,231
2005	640	4,773	60,848	29,737	1	95,999
2006	640	4,773	50,643	23,283	820	80,159
2007	640	4,773	61,193	22,586	501	89,693
2008	640	4,773	62,175	1,907	103	69,598
2009	640	4,773	0	205	223	5,841
2010	640	4,773	0	1,007	45	6,465
2011	640	4,773	6,553	0	18	11,984
2012	640	4,773	5,559	11,938	45	22,955
2013	640	4,773	15,554	8,755	13	29,735
2014	640	4,773	7,280	0	366	13,059
2015	640	4,773	16,644	0	36	22,093
2016	640	4,773	35,528	10,575	214	51,730
2017	640	4,773	38,068	2,929	100	46,510
2018	640	4,773	39,577	6,590	100	51,680

[a] Sport harvest figures for 1997–2017 represent the estimated previous (1987–1996) 10-year average.

[b] Personal use harvest data for 1979–1981 from permits issued from the Homer office. Data from 1983 to 1995 is from historical sport fish harvest reports (e. g., Mills 1984). Data from 1996 to current is an average of the last 5 years that the data was collected specifically for this fishery.

[c] The final commercial harvest figures are the total common property seine harvest in the Neptune and China Poot subdistricts.

[d] From cost recovery conducted in China Poot and Neptune Bays.

[e] Unharvested fish are the total count by ADF&G ground survey staff of sockeye salmon remaining in China Poot Creek.

Appendix F15.–Commercial harvest and escapement of sockeye salmon at Chenik Lake in the Kamishak Bay District of Lower Cook Inlet, 1976–2018.

Return year	Commercial harvest	Cost recovery	Escapement[a]	Total run
1976	[b]	0	900	900
1977	[b]	0	200	200
1978	[b]	0	100	100
1979	[b]	0	[c]	[c]
1980	[b]	0	3,500	3,500
1981	[b]	0	2,500	2,500
1982	[b]	0	8,000	8,000
1983	2,800	0	11,000	13,800
1984	16,500	0	13,000	29,500
1985	10,624	0	3,500	14,124
1986	111,348	0	7,000	118,348
1987	97,411	0	10,000	107,411
1988	161,936	0	9,000	170,936
1989	38,905	0	12,000	50,905
1990	70,347	0	17,000	87,347
1991	51,773	0	10,189	61,962
1992	5,609	8,769	9,269	14,878
1993	19,988	0	4,000	23,988
1994	[b]	0	808	808
1995	[b]	0	1,086	1,086
1996	[b]	0	2,990	2,990
1997	[b]	0	2,338	2,338
1998	[b]	0	1,880	1,880
1999	[b]	0	2,850	2,850
2000	[b]	0	4,800	4,800
2001	[b]	0	250	250
2002	[b]	0	4,650	4,650
2003	[b]	0	13,825	13,825
2004	33,177	0	17,000	50,177
2005	47,013	0	13,037 [d]	60,050
2006	11,783	0	13,493 [d]	25,276
2007	161,630	0	18,230 [e]	179,860
2008	171,255	0	10,647 [e]	181,902
2009	65,727	0	15,264 [e]	80,991
2010	5,471	0	17,460 [e]	22,931
2011	82,826	0	10,330 [e]	93,156
2012	55,255	0	16,505 [e]	71,760
2013	33,154	0	11,333 [e]	44,487
2014	7,241	0	17,774 [e]	25,015
2015		0	19,073 [e]	19,073
2016	8,779	0	19,510 [e]	28,289
2017	97,537	0	21,468 [e]	119,005
2018	25,489	0	6,640 [e]	32,129

[a] Estimated from aerial surveys between 1976–1990 and 1998–2004, weir counts between 1991 and 1997, and remote video from 2005–present, unless otherwise noted.

[b] Closed to fishing.

[c] No data.

[d] Estimated from a combination of weir, video counts, and/or aerial counts.

[e] Estimated from video counts.

Appendix F16.–Commercial harvest of sockeye salmon at Kirschner Lake in the Kamishak Bay District of Lower Cook Inlet, 1989–2018.

Return year	Common property commercial harvest	Cost recovery	Broodstock	Unharvested[a]	Total run
1989	190	0	0	0	190
1990	14,465	0	0	0	14,465
1991	42,654	0	0	0	42,654
1992	40,043	0	0	0	40,043
1993	36,322	0	0	0	36,322
1994	14,465	16,787	0	0	31,252
1995	8,772	5,350	0	0	14,122
1996	18,093	13,511	0	0	31,604
1997	2,842	6,125	0	0	8,967
1998	8,112	19,390	0	0	27,502
1999	22,256	17,504	0	0	39,760
2000	10,236	21,391	0	0	31,627
2001	9,198	29,740	0	0	38,938
2002	0	32,492	0	0	32,492
2003	11,671	38,741	0	0	50,412
2004	0	16,372	0	0	16,372
2005	0	14,969	0	0	14,969
2006	24,130	26,310	0	0	50,440
2007	7,725	27,719	0	0	35,444
2008	0	11,588	0	0	11,588
2009	0	18,771	0	0	18,771
2010	0	8,858	0	0	8,858
2011	12,732	0	0	210	12,942
2012	0	1,260	0	1,300	2,560
2013	0	8,288	0	0	8,288
2014	3,068	16,555	0	0	19,623
2015	0	23,571	3,666	0	27,237
2016	5,893	44,765	0	0	50,658
2017	3,352	24,001	0	0	27,353
2018	7,837	11,536	0	0	19,373

[a] A barrier falls at the outlet of Kirschner Lake immediately above the intertidal zone precludes any escapement from entering this lake.

Appendix F17.–Commercial catch and broodstock harvest of sockeye salmon in the Tutka Bay Subdistrict in the Southern District of Lower Cook Inlet, 1975–2018.

	Sockeye salmon[a]			
Return year	Commercial harvest (purse seine and set gillnet, no homepack)	Cost recovery	Broodstock	Total run
1999	18,711[a]	88	0	18,799
2000	6,602	896	0	7,498
2001	16,500	5	0	16,505
2002	14,318	0	0	14,318
2003	24,090	2	0	24,092
2004	5,827	0	0	5,827
2005	6,252	0	0	6,252
2006	5,865	0	0	5,865
2007	8,272	0	0	8,272
2008	6,414	14,604	150	21,168
2009	9,185	11,584	3,067	23,836
2010	6,307	38,087	4,894	49,288
2011	10,516	7,836	0	18,352
2012	4,839	17,756	2,590	25,185
2013	16,171	9,707	0	25,878
2014	27,295	30,404	5,202	62,901
2015	46,889	32,455	6,769	86,113
2016	14,328	18,570	2,961	35,859
2017	34,144	34,709	5,957	74,810
2018	20,550	62,389	3,412	86,351

[a] First return of enhanced BY 1995 sockeye salmon.

Appendix F18.–Commercial catch and escapement of pink salmon in the Tutka Bay Subdistrict in the Southern District of Lower Cook Inlet, 1975–2018.

Return year	Brood year	Fry release	Commercial harvest, (seine and gillnet)	Cost recovery	Broodstock	Tutka Creek escapement	Sport catch[a]	Estimated total run
1975	1973	0	89,200	0	0	17,600	0	106,800
1976	1974	0	73,100	0	10,800[b]	11,500	0	95,400
1977	1975	0	21,900	0	6,528	14,000	0	42,428
1978	1976	0	167,862	0	21,100	15,000	0	203,962
1979	1977	4,820,937	421,816	0	21,200	10,600	2,000	455,616
1980	1978	9,243,717	312,457	0	26,897	17,300	5,000	361,654
1981	1979	6,245,103	1,026,574	0	22,000	28,000	6,000	1,082,574
1982	1980	9,759,144	184,876	0	41,200	18,500	2,000	246,576
1983	1981	15,070,927	615,459	0	53,800	12,900	5,000	687,159
1984	1982	14,730,794	262,046	0	41,000	10,500	8,000	321,546
1985	1983	18,142,463	491,181	0	43,000	14,000	8,000	556,181
1986	1984	23,537,000	400,150	0	43,000	13,400	8,000	464,550
1987	1985	22,228,600	56,465	0	22,000	4,800	500	83,765
1988	1986	4,385,600	723,929	0	65,000	11,200	8,500	808,629
1989	1987	12,003,878	632,147	0	5,100	11,900	10,000	659,147
1990	1988	30,091,053	20,183	17,243	62,000	38,500	2,000	139,926
1991	1989	23,689,702	14,691	101,837	103,100	16,820	2,000	238,448
1992	1990	23,657,112	41,642	275,897	67,324	25,921	2,500	413,284
1993	1991	25,700,000	128,347	409,431	107,242	27,403	2,000	674,423
1994	1992	48,700,000	498,436	953,231	154,000	14,546	2,000	1,622,213
1995	1993	61,100,000	1,212,342	1,213,322	166,052	15,899	3,000	2,610,615
1996	1994	63,000,000	6,941	420,411	138,021	3,456	1,000	569,829
1997	1995	105,000,000	130,406	2,375,653	216,786	45,000	2,100	2,769,945
1998	1996	89,000,000	504,764	792,542	153,580	17,473	2,000	1,470,359
1999	1997	90,000,000	222,228	857,902	151,903	27,947	2,000	1,261,980
2000	1998	60,132,000	8,580	1,043,705	179,970	19,048	1,500	1,252,803
2001	1999	65,120,870	109,682	421,408	179,006	4,451	1,500	716,047
2002	2000	99,336,410	4,825	703,205	161,864	15,884	1,500	887,278
2003	2001	99,371,000	5,074	507,215	207,285	30,866	1,500	751,940
2004	2002	67,967,000	1,523	1,175,326	0[c]	17,846	1,500	1,196,195
2005	2003	47,964,360	4,789	1,631,806	0	133,600	1,500	1,771,695
2006	2004	0	11,223	0	0	25,800	1,500	38,523
2007	2005	0	3	0	0	5,700	1,500	7,203
2008	2006	0	1,924	377	0	14,100	1,500	17,901
2009	2007	0	2,139	0	0	3,800	1,500	7,439
2010	2008	0	2,536	161	0	2,100	1,500	6,297
2011	2009	0	2,394	5	12,665[d]	21,974	1,500	38,538
2012	2010	0	4,681	171	8,140	10,436	1,500	24,928
2013	2011	8,100,399	866	39,153	143,884	9,541	1,500	194,944
2014	2012	4,353,000	11,004	32	22,401	10,152	1,500	45,089
2015	2013	51,110,000	111,957	2,087,024	165,008	82,400	1,500	2,447,889
2016	2014	11,249,240	51,403	23,776	127,771	33,242	1,500	237,692
2017	2015	11,433,515	291,902	110,152	267,913	61,369	1,500	732,836
2018	2016	54,245,411	184,320	939,967	176,550	60,691	1,500	1,363,028

[a] Data from CIAA.

[b] Start of enhancement at Tutka Lagoon Hatchery.

[c] CIAA announced suspension of operations at Tutka Lagoon Hatchery.

[d] CIAA resumed operations at Tutka Lagoon Hatchery.

Appendix F19.–Harvest of pink salmon from the Port Graham Section of the Port Graham Subdistrict in the Southern District of Lower Cook Inlet and escapement to Port Graham River, 1992–2018.

Return year	Brood year	Fry release	Commercial Harvest	Subsist. Harvest[a]	Cost Recovery	Broodstock (plus excess)	Escapement	Total Return
1992	1990	255,000	0	745	0	0	5,400	6,145
1993	1991	1,810,487	0	997	0	0	12,800	13,797
1994	1992	0	0	866	0	0	7,600	8,466
1995	1993	1,295,000	0	786	0	16,224	10,000	27,010
1996	1994	358,000	821	312	0	2,131	7,000	10,264
1997	1995	6,469,975	46,854	497	85,354	21,888	12,500	167,093
1998	1996	918,000	598	459	0	21,888	12,600	35,545
1999	1997	0	0	150	0	0	9,700	9,850
2000	1998	4,617,362	0	355	0	89,838	15,600	105,793
2001	1999	1,142,726	0	20	0	34,773	10,300	45,093
2002	2000	27,298,797	14	150	238,672	146,433	58,500	443,769
2003	2001	6,600,985	0	266	0	78,241	14,900	93,407
2004	2002	57,200,000	0	363	1,283,517	99,376	44,000	1,427,256
2005	2003	36,282,671	0	349	510,802	84,088	69,100	664,339
2006	2004	26,567,983	0	26	247,990	27,741	31,200	306,957
2007	2005	13,883,682	0	74	117,962	0	25,600	143,636
2008	2006	13,282,049	0	36	2,670	0	24,700	27,406
2009	2007	0	0	49	866	0	14,000	14,915
2010	2008	0	0	24	0	0	16,600	16,624
2011	2009	0	0	132	0	0	20,883	21,015
2012	2010	0	21,645	282	0	[b]	34,486	56,413
2013	2011	0	13,188	27	0	[c]	11,893	25,108
2014	2012	14,250,000	43,442	164	0	1,740 [d]	32,295	77,641
2015	2013	188,000	34,522	539	0	[e]	82,356	117,417
2016	2014	2,200,060	1,000	10	2,647	11,342	14,629	29,628
2017	2015	1,310,762	72,529	3	0	69,249	20,642	162,423
2018	2016	6,059,800	305,995	30	57,549	94,000	33,419	490,993

[a] Harvest as reported by Port Graham subsistence permit holders. The preponderance of harvest reported on the Port Graham permits are from the Port Graham section of the Port Graham Subdistrict.

[b] Commercial common property pink salmon; 19,918 fish of the 21,645 harvested commercially were sold alive to processor for resale to hatchery as broodstock.

[c] Commercial common property pink salmon; 11,800 fish of the 13,188 harvested commercially were sold alive to processor for resale to hatchery as broodstock.

[d] Commercial common property pink salmon; 21,408 fish of the 34,522 harvested commercially were sold alive to processor for resale to hatchery as broodstock.

[e] Commercial common property pink salmon; 17,795 fish of the 34,522 harvested commercially were sold alive to processor for resale to hatchery as broodstock.

Appendix F20.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2013. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery thermal marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)					0	2	6	8						16
TLH-LCI (%)					0.0%	2.2%	6.7%	9.2%						4.2%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	0	0	2	6	8	0	0	0	0	0	16
Hatchery total (%)					0.0%	2.1%	6.3%	8.4%						4.2%
Unmarked (#)					96	93	90	87						366
Unmarked (%)					100.0%	97.9%	93.8%	91.6%						95.8%
Sample *n*	0	0	0	0	96	95	96	95	0	0	0	0	0	382
Sample events	0	0	0	0	1	1	1	1	0	0	0	0	0	4

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Samples from each statistical week in 2014 were mixed and included fish from Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), and Seldovia Bay Subdistrict (241-17).

Appendix F21.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2014. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)	17	10	4	27	44	38	13	8						161
TLH-LCI (%)	18.9%	10.8%	4.4%	28.7%	46.3%	39.6%	13.8%	8.4%						21.5%
MBH-PWS (#)		1	2				1							4
MBH-PWS (%)		1.1%	2.2%				1.1%							0.5%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	17	11	6	27	44	38	14	8	0	0	0	0	0	165
Hatchery total (%)	18.9%	11.8%	6.6%	28.7%	46.3%	39.6%	14.9%	8.4%						22.1%
Unmarked (#)	73	82	85	67	51	58	80	87						583
Unmarked (%)	81.1%	88.2%	93.4%	71.3%	53.7%	60.4%	85.1%	91.6%						77.9%
Sample *n*	90	93	91	94	95	96	94	95	0	0	0	0	0	748
Sample events	1	1	1	1	1	1	1	1	0	0	0	0	0	8

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Samples from each statistical week in 2014 were mixed and included fish from Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), and Seldovia Bay Subdistrict (241-17).

Appendix F22.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2015. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)	30	37	35	20	12	19	7	14	17	11				202
TLH-LCI (%)	31.3%	40.2%	37.2%	21.3%	12.1%	19.4%	7.1%	14.4%	17.3%	11.2%				21.0%
MBH-PWS (#)		2	3	6	1	2		1						15
MBH-PWS (%)		2.2%	3.2%	6.4%	1.0%	2.0%		1.0%						1.6%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	30	39	38	26	13	21	7	15	17	11	0	0	0	217
Hatchery total (%)	31.3%	42.4%	40.4%	27.7%	13.1%	21.4%	7.1%	15.5%	17.3%	11.2%				22.5%
Unmarked (#)	66	53	56	68	86	77	91	82	81	87				747
Unmarked (%)	68.8%	57.6%	59.6%	72.3%	86.9%	78.6%	92.9%	84.5%	82.7%	88.8%				77.5%
Sample *n*	96	92	94	94	99	98	98	97	98	98	0	0	0	964
Sample events	1	1	1	1	1	1	1	1	1	1	0	0	0	10

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Samples from each statistical week in 2014 were mixed and included fish from Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), and Seldovia Bay Subdistrict (241-17).

Appendix F23.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2016. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)			72	49	45	74	34	19	42					335
TLH-LCI (%)			38.7%	19.0%	28.1%	27.2%	11.9%	6.7%	25.9%					20.9%
MBH-PWS (#)			6	26	18	15	32	32	2					131
MBH-PWS (%)			3.2%	10.1%	11.3%	5.5%		11.3%						8.2%
PCH-KOD (#)						1		2						3
PCH-KOD (%)						0.4%		0.7%						0.2%
Hatchery total (#)	0	0	78	75	63	90	66	53	44	0	0	0	0	469
Hatchery total (%)			41.9%	29.1%	39.4%	33.1%	23.2%	18.8%	27.2%					29.2%
Unmarked (#)			108	183	97	182	219	229	118					1,136
Unmarked (%)			58.1%	70.9%	60.6%	66.9%	76.8%	81.2%	72.8%					70.8%
Sample *n*	0	0	186	258	160	272	285	282	162	0	0	0	0	1,605
Sample events	0	0	2	3	2	3	3	3	2	0	0	0	0	18

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:

25 Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

26 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

27 Halibut Cove Subdistrict (241-15), Seldovia Bay Subdistrict (241-17)

28 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

29 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

30 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

31 Tutka Bay Subdistrict (241-06), Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

Appendix F24.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2017. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)	4	6	18	50	36	22	20	29	17	11				213
TLH-LCI (%)	2.0%	3.1%	9.7%	21.6%	13.0%	7.9%	7.1%	10.3%	5.9%	11.5%				9.2%
MBH-PWS (#)	2	2			6	4			7	1				22
MBH-PWS (%)	1.0%	1.0%			2.2%	1.4%			2.4%	1.0%				1.0%
PCH-KOD (#)			2	2	13	17	1	3	1					39
PCH-KOD (%)			1.1%	0.9%	4.7%	6.1%	0.4%	1.1%	0.3%					1.7%
Hatchery total (#)	6	8	20	52	55	43	21	32	25	12	0	0	0	274
Hatchery total (%)	3.0%	4.2%	10.8%	22.4%	19.9%	15.4%	7.4%	11.3%	8.7%	12.5%				11.9%
Unmarked (#)	196	183	166	180	221	236	261	250	261	84				2,038
Unmarked (%)	97.0%	95.8%	89.2%	77.6%	80.1%	84.6%	92.6%	88.7%	91.3%					88.1%
Sample *n*	202	191	186	232	276	279	282	282	286	96	0	0	0	2,312
Sample events	3	3	2	3	3	3	3	3	3	1	0	0	0	27

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:

23 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

24 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

25 Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17)

26 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

27 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

28 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

29 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

30 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

31 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

32 Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18).

Appendix F25.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the set gillnet commercial common property harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)	36	33	45	43	35	60	17	43	16					328
TLH-LCI (%)	30.0%	12.6%	16.5%	14.9%	16.8%	17.1%	6.2%	27.0%	12.8%					15.9%
MBH-PWS (#)		4	1	4	8	2	2		2					23
MBH-PWS (%)	0.0%	1.5%	0.4%	1.4%	3.8%	0.6%	0.7%		1.6%					1.1%
PCH-KOD (#)			2	5	2	1	2		3					15
PCH-KOD (%)			0.7%	1.7%	1.0%	0.3%	0.7%		2.4%					0.7%
Hatchery total (#)	36	37	48	52	45	63	21	43	21					366
Hatchery total (%)	30.0%	14.1%	17.6%	18.0%	21.6%	18.0%	7.7%	27.0%	16.8%					17.8%
Unmarked (#)	84	225	225	237	163	287	253	116	104					1,694
Unmarked (%)	70.0%	85.9%	82.4%	82.0%	78.4%	82.0%	92.3%	73.0%	83.2%					82.2%
Sample *n*	120	262	273	289	208	350	274	159	125	0	0	0	0	2,060
Sample events	2	3	4	4	3	3	3	2	2	0	0	0	0	26

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:

23 Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

24 Port Graham Subdistrict (241-20), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

25 Halibut Cove Subdistrict (241-15), Port Graham Subdistrict (241-20), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

26 Halibut Cove Subdistrict (241-15), Port Graham Subdistrict (241-20), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

27 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

28 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

29 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18), Seldovia Bay Subdistrict (241-17).

30 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18).

31 Halibut Cove Subdistrict (241-15), Tutka Bay Subdistrict (241-06)/Barabara Creek Subdistrict (241-18).

Appendix F26.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine commercial common property harvest by statistical week, 2015. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)					82	58		14	6					160
TLH-LCI (%)					92.1%	61.7%		15.1%	6.5%					43.4%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	0	82	58	0	14	6	0	0	0	0	160
Hatchery total (%)					92.1%	61.7%		15.1%	6.5%					43.4%
Unmarked (#)					7	36		79	87					209
Unmarked (%)					7.9%	38.3%		84.9%	93.5%					56.6%
Sample *n*	0	0	0	0	89	94	0	93	93	0	0	0	0	369
Sample events	0	0	0	0	1	1	0	1	1	0	0	0	0	4

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:

27 and 28 Tutka Bay Subdistrict (241-06).

30 and 31 Neptune Bay Section (241-91).

Appendix F27.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine commercial common property harvest by statistical week, 2016. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)				92	149	136	39	40						456
TLH-LCI (%)				96.8%	81.0%	77.7%	14.0%	21.5%						49.6%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	92	149	136	39	40	0	0	0	0	0	456
Hatchery total (%)				96.8%	81.0%	77.7%	14.0%	21.5%						49.6%
Unmarked (#)				3	35	39	240	146						463
Unmarked (%)				3.2%	19.0%	22.3%	86.0%	78.5%						50.4%
Sample *n*	0	0	0	95	184	175	279	186	0	0	0	0	0	919
Sample events	0	0	0	1	2	2	3	2	0	0	0	0	0	10

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:

26 Tutka Bay Subdistrict (241-06).

27 Tutka Bay Subdistrict (241-06), China Poot SHA (241-92).

28 Tutka Bay Subdistrict (241-06), Neptune Bay Section (241-91).

29 Halibut Cove Subdistrict (241-15), China Poot Section (241-90), China Poot SHA (241-92).

30 Tutka Bay Subdistrict (241-06), Neptune Bay Section (241-91).

Appendix F28.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine commercial common property harvest by statistical week, 2017. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)			170	143	193	84	78	40	18					726
TLH-LCI (%)			91.9%	77.3%	68.2%	29.9%	27.4%	25.5%	27.3%					50.3%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	170	143	193	84	78	40	18	0	0	0	0	726
Hatchery total (%)			91.9%	77.3%	68.2%	29.9%	27.4%	25.5%	27.3%					50.3%
Unmarked (#)			15	42	90	197	207	117	48					716
Unmarked (%)			8.1%	22.7%	31.8%	70.1%	72.6%	74.5%	72.7%					49.7%
Sample *n*	0	0	185	185	283	281	285	157	66	0	0	0	0	1,442
Sample events	0	0	2	2	3	3	3	2	1	0	0	0	0	16

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:
25 Hazel Lake SHA (241-93).
26 Neptune Bay Section (241-91).
27 Halibut Cove (241-15), China Poot Section (241-90).
28 China Poot Section (241-90), Neptune Bay Section (241-91).
29 China Poot Section (241-90), Neptune Bay Section (241-91), Halibut Cove (241-15).
30 Tutka Bay Subdistrict (241-06), China Poot Section (241-90).
31 Neptune Bay Section (241-91).

Appendix F29.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine commercial common property harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)			67	125	222	187	134	6						741
TLH-LCI (%)			58.3%	81.7%	78.2%	53.1%	54.0%	31.6%						63.3%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)						1								1
PCH-KOD (%)						0.3%								0.1%
Hatchery total (#)			67	125	222	129	134	6						742
Hatchery total (%)			58.3%	81.7%	78.2%	44.0%	54.0%	31.6%						66.7%
Unmarked (#)			48	28	62	163	114	13						428
Unmarked (%)			41.7%	18.3%	21.8%	55.6%	46.0%	68.4%						38.5%
Sample *n*	0	0	115	153	284	293	248	19	0	0	0	0	0	1,112
Sample events	0	0	3	5	4	4	3	1	0	0	0	0	0	20

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical weekwere as follows:

25 Halibut Cove Subdistrict (241-15), China Poot SHA (241-92), Tutka Bay Subdistrict (241-07).
26 China Poot Section (241-90), Neptune Bay Section (241-91), China Poot SHA (241-92).
27 China Poot Section (241-90), Neptune Bay Section (241-91).
28 Tutka Bay Subdistrict (241-06), Halibut Cove (241-15), China Poot Section (241-90), Neptune Bay Section (241-91).
29 Tutka Bay Subdistrict (241-06), China Poot Section (241-90), Neptune Bay Section (241-91).
30 China Poot Section (241-90).

Appendix F30.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2015. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)						91	51							142
TLH-LCI (%)						97.8%	92.7%							95.9%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	0	0	91	51	0	0	0	0	0	0	142
Hatchery total (%)						97.8%	92.7%							95.9%
Unmarked (#)						2	4							6
Unmarked (%)						2.2%	7.3%							4.1%
Sample *n*	0	0	0	0	0	93	55	0	0	0	0	0	0	148
Sample events	0	0	0	0	0	1	1	0	0	0	0	0	0	2

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:
28 Tutka Hatchery SHA-Inside Lagoon (241-07).
29 Tutka Hatchery SHA-Outside Lagoon (241-07).

Appendix F31.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2016. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)						85								85
TLH-LCI (%)						94.4%								94.4%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	0	0	85	0	0	0	0	0	0	0	85
Hatchery total (%)						94.4%								94.4%
Unmarked (#)						5								5
Unmarked (%)						5.6%								5.6%
Sample *n*	0	0	0	0	0	90	0	0	0	0	0	0	0	90
Sample events	0	0	0	0	0	1	0	0	0	0	0	0	0	1

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:
28 Tutka Hatchery SHA (241-07).

Appendix F32.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2017. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)						92								92
TLH-LCI (%)						97.9%								97.9%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)	0	0	0	0	0	92	0	0	0	0	0	0	0	92
Hatchery total (%)						97.9%								97.9%
Unmarked (#)						2								2
Unmarked (%)						2.1%								2.1%
Sample *n*	0	0	0	0	0	94	0	0	0	0	0	0	0	94
Sample events	0	0	0	0	0	1	0	0	0	0	0	0	0	1

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:
28 Kirschner Lake SHA (249-72).

Appendix F33.–Count and relative percentage of marked/unmarked sockeye salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]													Grand
(# and %)	23	24	25	26	27	28	29	30	31	32	33	34	35	total
TLH-LCI (#)						58								58
TLH-LCI (%)						98.3%								98.3%
MBH-PWS (#)														0
MBH-PWS (%)														0.0%
PCH-KOD (#)														0
PCH-KOD (%)														0.0%
Hatchery total (#)						58								58
Hatchery total (%)						98.3%								98.3%
Unmarked (#)						1								1
Unmarked (%)						1.7%								1.7%
Sample *n*	0	0	0	0	0	59	0	0	0	0	0	0	0	59
Sample events	0	0	0	0	0	1	0	0	0	0	0	0	0	1

[a] TLH-LCI = Trail Lakes Hatchery-Lower Cook Inlet; MBH-PWS = Main Bay Hatchery-Prince William Sound; PCH-KOD = Pillar Creek Hatchery-Kodiak.

[b] Sample locations by statistical week were as follows:
28 China Poot SHA (241-92).

Appendix F34.–Count and relative percentage of marked/unmarked pink salmon sampled from the set gillnet commercial common property harvest by statistical week, 2017. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)							19	11				30
PGH-LCI (#)							1					1
LCI total (%)							20.8%	11.5%				16.1%
AFKH-PWS (#)								8				8
CCH-PWS (#)								1				1
SGH-PSW (#)							4	8				12
WNH-PWS (#)								2				2
PWS total (%)							4.2%	19.8%				12.0%
Hatchery total (#)	0	0	0	0	0	0	24	30	0	0	0	54
Hatchery total (%)							25.0%	31.3%				28.1%
Unmarked (#)							72	66				138
Unmarked (%)							75.0%	68.8%				71.9%
Sample *n*	0	0	0	0	0	0	96	96	0	0	0	192
Sample events	0	0	0	0	0	0	1	1	0	0	0	2

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
31 and 32 mixed Barabara Creek (241-18) and Tutka Bay subdistricts (241-06).

Appendix F35.–Count and relative percentage of marked/unmarked pink salmon sampled from the set gillnet commercial common property harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery Marks[a]	Statistical Week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)					67	89	31					187
PGH-LCI (#)					7	26	50					83
LCI Total (%)					38.5%	60.8%	42.6%					47.3%
AFKH-PWS (#)							1					1
CCH-PWS (#)							2					2
SGH-PSW (#)					2	4	8					14
WNH-PWS (#)												
PWS Total (%)					1.0%	2.1%	5.8%					3.0%
Hatchery Total (#)	0	0	0	0	76	119	92	0	0	0	0	287
Hatchery Total (%)					39.6%	63.0%	48.4%					50.3%
Unmarked (#)					116	70	98					284
Unmarked (%)					60.4%	37.0%	51.6%					49.7%
Sample *n*	0	0	0	0	192	189	190	0	0	0	0	571
Sample events	0	0	0	0	2	2	2		0	0	0	6

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:

29–31 Seldovia (241-17), mixed Barabara Creek (241-18), and Tutka Bay subdistricts (241-06).

Appendix F36.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine commercial common property harvest by statistical week, 2015. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)			79	75	79	53	34					320
PGH-LCI (#)							3					3
LCI total (%)			82.3%	78.9%	84.9%	55.2%	38.9%					68.0%
AFKH-PWS (#)												0
CCH-PWS (#)												0
SGH-PSW (#)						1	3					4
WNH-PWS (#)												0
PWS total (%)			0.0%	0.0%	0.0%	1.0%	3.2%					0.8%
Hatchery total (#)	0	0	79	75	79	54	40	0	0	0	0	327
Hatchery total (%)			82.3%	78.9%	84.9%	56.3%	42.1%					68.8%
Unmarked (#)			17	20	14	42	55					148
Unmarked (%)			17.7%	21.1%	15.1%	43.8%	57.9%					31.2%
Sample *n*	0	0	96	95	93	96	95	0	0	0	0	475
Sample events	0	0	1	1	1	1	1	0	0	0	0	5

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
27 Tutka Bay Subdistrict (241-06).
28 Tutka Bay Subdistrict (241-06).
29 Tutka Bay Subdistrict (241-06).
30 Neptune Bay Subdistrict (241-91).
31 Neptune Bay Subdistrict (241-91).

Appendix F37.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine commercial common property harvest by statistical week, 2016. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)					76	72		73	105			326
PGH-LCI (#)						1		2				3
LCI total (%)					80.0%	83.0%		79.8%	88.2%			83.1%
AFKH-PWS (#)												0
CCH-PWS (#)												0
SGH-PSW (#)												0
WNH-PWS (#)												0
PWS total (%)					0.0%	0.0%		0.0%	0.0%			0.0%
Hatchery total (#)	0	0	0	0	76	73	0	75	105	0	0	329
Hatchery total (%)					80.0%	83.0%		79.8%	88.2%			83.1%
Unmarked (#)					19	15		19	14			67
Unmarked (%)					20.0%	17.0%		20.2%	11.8%			16.9%
Sample *n*	0	0	0	0	95	88	0	94	119	0	0	396
Sample events	0	0	0	0	1	1	0	1	1	0	0	4

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
29 Tutka Bay Subdistrict (241-06).
30 Tutka Bay Subdistrict (241-06).
32 Tutka Hatchery SHA (241-07).
33 Tutka Hatchery SHA (241-07).

Appendix F38.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine commercial common property harvest by statistical week, 2017. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)				37	41	30	25	122	45	12	1	313
PGH-LCI (#)						1					11	12
LCI total (%)				38.9%	32.8%	16.6%	26.3%	47.1%	23.8%	12.8%	12.6%	28.5%
AFKH-PWS (#)											7	7
CCH-PWS (#)											6	6
SGH-PSW (#)					1		3	1	3	1		9
WNH-PWS (#)											2	2
PWS total (%)				0.0%	0.8%	0.0%	3.2%	0.4%	1.6%	1.1%	15.8%	2.1%
Hatchery total (#)	0	0	0	37	42	31	28	123	48	13	27	349
Hatchery total (%)				38.9%	33.6%	16.6%	29.5%	47.5%	25.4%	13.8%	28.4%	30.6%
Unmarked (#)				58	83	156	67	136	141	81	68	790
Unmarked (%)				61.1%	66.4%	83.4%	70.5%	52.5%	74.6%	86.2%	71.6%	69.4%
Sample *n*	0	0	0	95	125	187	95	259	189	94	95	1,139
Sample events	0	0	0	1	2	2	1	3	2	1	1	13

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:

28 Tutka Bay Subdistrict (241-06).

29 and 30 Tutka Bay Subdistrict (241-06) and Neptune Bay Section (241-91).

31 Neptune Bay Section (241-91).

32 Tutka Hatchery SHA (241-07).

33 Tutka Hatchery SHA (241-07).

34 Tutka Hatchery SHA (241-07).

35 Port Graham Section (241-20).

Appendix F39.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine commercial common property harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery Marks[a]	Statistical Week[b]												Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	36	total
TBLH-LCI (#)				26	226	253	309	140	232			88	1,274
PGH-LCI (#)							2	57	1				60
LCI Total (%)				81.3%	86.6%	87.2%	86.4%	49.9%	83.8%			94.6%	78.1%
AFKH-PWS (#)									1				1
CCH-PWS (#)									1				1
SGH-PSW (#)					1	2		1					4
WNH-PWS (#)							2	1					3
PWS Total (%)				0.0%	0.4%	0.7%	0.6%	0.5%	0.7%			0.0%	0.5%
Hatchery Total (#)	0	0	0	26	227	255	313	199	235	0	0	88	1343
Hatchery Total (%)				81.3%	87.0%	87.9%	86.9%	50.4%	84.5%			94.6%	78.6%
Unmarked (#)				6	34	35	47	196	43			5	366
Unmarked (%)				18.8%	13.0%	12.1%	13.1%	49.6%	15.5%			5.4%	21.4%
Sample *n*	0	0	0	32	261	290	360	395	278	0	0	93	1,709
Sample events	0	0	0	1	3	4	4	5	4			1	22

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
28 Tutka Bay Subdistrict (241-06).
29 Tutka Bay Subdistrict (241-06).
30 Tutka Bay Subdistrict (241-06), and China Poot Section (241-90).
31 Tutka Bay Subdistrict (241-06).
32 Tutka Bay Subdistrict (241-06), Port Graham Subdistrict (241-20), and Humpy Creek Subdistrict (241-14).
33 Tutka Hatchery SHA (241-07) and China Poot Section (241-90).
36 Tutka Hatchery SHA (241-07).

Appendix F40.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2015. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)				94	90	90	88					362
PGH-LCI (#)					1		1					2
LCI total (%)				100.0%	94.8%	94.7%	92.7%					95.5%
AFKH-PWS (#)						1						1
CCH-PWS (#)												0
SGH-PSW (#)							1					1
WNH-PWS (#)												0
PWS total (%)				0.0%	0.0%	1.1%	1.0%					0.5%
Hatchery total (#)	0	0	0	94	91	91	90	0	0	0	0	366
Hatchery total (%)				100.0%	94.8%	95.8%	93.8%					96.1%
Unmarked (#)				0	5	4	6					15
Unmarked (%)				0.0%	5.2%	4.2%	6.3%					3.9%
Sample *n*	0	0	0	94	96	95	96	0	0	0	0	381
Sample events	0	0	0	1	1	1	1	0	0	0	0	4

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
28 Tutka Bay Hatchery SHA (241-07; inside the lagoon).
29 Tutka Bay Hatchery SHA (241-07; outside the lagoon).
30 Tutka Bay Hatchery SHA (241-07; outside the lagoon).
31 Tutka Bay Hatchery SHA (241-07; inside the lagoon).

Appendix F41.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2016. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery marks[a]	Statistical week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)				96						3		99
PGH-LCI (#)										67		67
LCI total (%)				100.0%						83.3%		92.2%
AFKH-PWS (#)												0
CCH-PWS (#)												0
SGH-PSW (#)										1		1
WNH-PWS (#)												0
PWS total (%)				0.0%						1.2%		0.6%
Hatchery total (#)	0	0	0	96	0	0	0	0	0	71	0	167
Hatchery total (%)				100.0%						84.5%		92.8%
Unmarked (#)				0						13		13
Unmarked (%)				0.0%						15.5%		7.2%
Sample *n*	0	0	0	96	0	0	0	0	0	84	0	180
Sample events	0	0	0	1	0	0	0	0	0	1	0	2

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
28 Tutka Bay Hatchery SHA (241-07; inside lagoon).
34 Port Graham Net pens (241-20).

Appendix F42.–Count and relative percentage of marked/unmarked pink salmon sampled from the purse seine hatchery cost-recovery harvest by statistical week, 2018. In statistical weeks where samples were taken, blank cells equal 0.

Hatchery Marks[a]	Statistical Week[b]											Grand
(# and %)	25	26	27	28	29	30	31	32	33	34	35	total
TBLH-LCI (#)						82						82
PGH-LCI (#)												0
LCI Total (%)						92.1%						82
AFKH-PWS (#)												0
CCH-PWS (#)												0
SGH-PSW (#)												0
WNH-PWS (#)												0
PWS Total (%)						0.0%						0
Hatchery Total (#)	0	0	0	0	0	82	0	0	0	0	0	82
Hatchery Total (%)						92.1%						92.1%
Unmarked (#)						7						7
Unmarked (%)						7.9%						7.9%
Sample *n*	0	0	0	0	0	89	0	0	0	0	0	89
Sample events						1						1

[a] Hatcheries: TBLH = Tutka Bay Lagoon Hatchery, PGH = Port Graham Hatchery, AFKH = Armin F. Koernig Hatchery, CCH = Cannery Creek Hatchery, SGH = Solomon Gulch Hatchery, WNH = Wally Noerenberg Hatchery.

[b] Sample locations by statistical week were as follows:
28 Tutka Bay Hatchery SHA (241-07; outside lagoon).

APPENDIX G: HERRING

Appendix G1.–Total biomass estimates and commercial catch of Pacific herring in short tons by age class, Kamishak Bay District, Lower Cook Inlet, 2015, and 2016 forecast.

Age	2015 Est. spawning biomass	Percent by weight	2015 commercial harvest[a]	Percent by weight	2015 total biomass	Percent by weight	2016 forecast biomass	Percent by weight
1								
2								
3	0	0.0%	0	0	0	0.0%	267	16.7%
4	15	0.8%	0	0	15	0.8%	0	0.0%
5	136	6.7%	0	0	136	6.7%	17	1.1%
6	158	7.8%	0	0	158	7.8%	124	7.7%
7	176	8.8%	0	0	176	8.8%	134	8.4%
8	706	35.1%	0	0	706	35.1%	126	7.9%
9	169	8.4%	0	0	169	8.4%	483	30.1%
10	301	14.9%	0	0	301	14.9%	102	6.4%
11	260	12.9%	0	0	260	12.9%	168	10.5%
12	67	3.3%	0	0	67	3.3%	141	8.8%
13+	27	1.3%	0	0	27	1.3%	40	2.5%
TOTALS	2,015	100.0%	0	0	2,015	100.0%	1,603	100.0%

Note: short ton = 2,000 lb. Funding was not available for herring stock assessment after 2015; the 2016 forecast was the last one produced.

[a] The commercial herring fishery in Kamishak Bay did not open in 2015.

Appendix G2.–Catch of Pacific herring in short tons and effort, and number of permits making deliveries by district in the commercial sac roe seine fishery, Lower Cook Inlet, 1969–2018.

	Southern		Kamishak		Eastern		Outer		Total	
Year	Tons	Permits	Tons	Permits	Tons	Permits	Tons	Permits	Tons	Permits
1969	551	2	0	0	758	3	38	4	1,347	5
1970	2,709	6	0	0	2,100	7	0	0	4,809	8
1971	[a]	[a]	0	0	831	22	0	0	844	24
1972	[a]	[a]	0	0	[a]	[a]	0	0	[a]	[a]
1973	204	16	243	14	831	25	301	12	1,579	37
1974	110	7	2,114	26	47	5	384	26	2,655	45
1975	24	5	4,119	40	CLOSED		CLOSED		4,143	41
1976	0	0	4,842	66	CLOSED		CLOSED		4,842	66
1977	291	13	2,908	57	CLOSED		CLOSED		3,199	58
1978	17	7	402	44	CLOSED		CLOSED		419	44
1979	13	3	415	35	CLOSED		CLOSED		428	36
1980	CLOSED		CLOSED		CLOSED		CLOSED		CLOSED	
1981	CLOSED		CLOSED		CLOSED		CLOSED		CLOSED	
1982	CLOSED		CLOSED		CLOSED		CLOSED		CLOSED	
1983	CLOSED		CLOSED		CLOSED		CLOSED		CLOSED	
1984	CLOSED		CLOSED		CLOSED		CLOSED		CLOSED	
1985	CLOSED		1,132	23	204	7	[a]	[a]	1,348	29
1986	CLOSED		1,959	54	167	4	28	3	2,154	57
1987	CLOSED		6,132	63	584	4	202	9	6,918	69
1988	CLOSED		5,548	75		0	[a]	[a]	5,605	76
1989	170	6	4,801	75	CLOSED				4,971	81
1990	CLOSED		2,264	75	CLOSED		CLOSED		2,264	75
1991	CLOSED		1,992	58	0	0	0	0	1,992	58
1992	CLOSED		2,282	56	0	0	0	0	2,282	56
1993	CLOSED		3,570	60	CLOSED		CLOSED		3,570	60
1994	CLOSED		2,167	61	CLOSED		CLOSED		2,167	61
1995	CLOSED		3,378	60	CLOSED		CLOSED		3,378	60
1996	CLOSED		2,984	62	CLOSED		CLOSED		2,984	62
1997	CLOSED		1,746[b]	45[b]	CLOSED		CLOSED		1,746	45
1998	CLOSED		331[b]	20[b]	CLOSED		CLOSED		331	20
1999	CLOSED		100[c]	1[c]	CLOSED		CLOSED		100	1

Source: ADF&G statewide electronic fish ticket database [Internet]. 1985– . Juneau, AK. [URL not available as some information is confidential]. Commercial Fisheries Entry Commission License Statistics, 1974–2017, Juneau.

[a] Confidential data. Fewer than 3 permits reporting.

[b] Includes both commercial harvest and ADF&G test fishery harvest.

[c] Commercial fishery closed, ADF&G test fishery harvest only.

Appendix G3.–Preseason estimates of biomass and projected commercial sac roe seine harvests versus actual harvests for Pacific herring in short tons (st), average roe recovery, numbers of permits making landings, and exvessel value in millions of dollars, Kamishak Bay District, Lower Cook Inlet, 1978–2018.

	Preseason					
Year	Forecasted biomass (st)	Projected harvest (st)[a]	Actual commercial harvest (st)[a]	Average roe %	No. of permits w/landings	Exvessel value (in millions)
1978	[c]	[d]	402	33.4	44	[e]
1979	[c]	[d]	415	12.5	[e]	[e]
1980	[c]	[d]	CLOSED	NA	NA	NA
1981	[c]	[d]	CLOSED	NA	NA	NA
1982	[c]	[d]	CLOSED	NA	NA	NA
1983	[c]	[d]	CLOSED	NA	NA	NA
1984	[c]	[d]	CLOSED	NA	NA	NA
1985	[c]	[d]	1,132	11.3	23	1
1986	[c]	[d]	1,959	10.4	54	2.2
1987	[c]	3,833	6,132	11.3	63	8.4
1988	[c]	5,190	5,548	11.1	75	9.3
1989	37,785	5,000	4,801	9.5	75	3.5[f]
1990	28,658	2,292	2,264	10.8	75	1.8
1991	17,256	1,554	1,992	11.3	58	1.3
1992	16,431	1,479	2,282	9.7	56	1.4
1993	28,805	2,592	3,570	10.2	60	2.2
1994	25,300	3,421	2,167	10.6	61	1.5
1995	21,998	2,970	3,378	9.8	60	4.0
1996	20,925	2,250	2,984	10.1	62	6.0[f]
1997	25,300	3,420	1,746	9.3	45	0.4
1998	19,800	1,780	331	8.5	20	0.1
1999	[g]	NA	CLOSED[h]	NA	NA	NA
2000	6,330	NA	CLOSED	NA	NA	NA
2001	11,352	NA	CLOSED	NA	NA	NA
2002	9,020	NA	CLOSED	NA	NA	NA
2003	4,771	NA	CLOSED	NA	NA	NA
2004	3,554	NA	CLOSED	NA	NA	NA
2005	3,058	NA	CLOSED	NA	NA	NA
2006	2,650	NA	CLOSED	NA	NA	NA
2007	2,286	NA	CLOSED	NA	NA	NA
2008	2,069	NA	CLOSED	NA	NA	NA
2009	[i]	NA	CLOSED	NA	NA	NA
2010	2,963	NA	CLOSED	NA	NA	NA
2011	3,830	NA	CLOSED	NA	NA	NA
2012	[i]	NA	CLOSED	NA	NA	NA
2013	[i]	NA	CLOSED	NA	NA	NA
2014	6,318	NA	CLOSED	NA	NA	NA
2015	5,699	NA	CLOSED	NA	NA	NA
2016	1,603	NA	CLOSED	NA	NA	NA
2017	[i]	NA	CLOSED	NA	NA	NA
2018	[i]	NA	CLOSED	NA	NA	NA

Note: NA = not available; st = short ton = 2,000 lb.

[a] Kamishak Bay allocation only; does not include Shelikof Strait food/bait allocation.

[b] Exvessel values exclude any postseason retroactive adjustments (except where noted).

[c] Prior to 1989, preseason forecasts of biomass were not generated.

[d] Prior to 1987, preseason harvest projections were not generated.

[e] Data not available.

[f] Includes retroactive adjustment.

[g] 1999 preseason biomass calculated as a range of 6,000 to 13,000 st.

[h] ADF&G test fishing harvested 100 st.

[i] No forecast of abundance generated for 2009, 2012, 2013, 2017 and 2018 due to lack of samples in previous year(s).

Appendix G4.–Summary of herring sac roe seine fishery openings and commercial harvests in the Kamishak Bay District of Lower Cook Inlet, 1969–2018.

Year	Dates of openings	Total hours open	Harvest (short tons)	Catch Rate (short tons/ hour open)	Number of permits w/landings
1969–1972	No closed periods				
1973	No closed periods		243		8
1974	1/1–5/20		2,114		26
1975	1/1–6/6	Closed Iniskin Bay, 5/17	4,119		40
1976	1/1–5/21	Closed Iniskin Bay, 5/17. Reopened Kamishak, 6/2.	4,824		66
1977	1/1–5/31	(Closed Kamishak Dist. 5/12 reopened 5/14–5/17; reopened 5/29–5/31)	2,908		57
1978[a]	4/16–5/31	96	402	4	44
1979	5/12–5/24	112	415	4	36
1980–1984	CLOSED				
1985	4/20–6/15	1,350	1,132	1	23
1986	4/20–6/13	1,303	1,959	2	54
1987	4/21–4/23	65	6,132	94	63
1988	4/22–4/29	42	5,548	132	74
1989	4/17–4/30	24.5	4,801	196	74
1990	4/22–4/23	8	2,264	283	75
1991	4/26	1	1,992	1,992	58
1992	4/24	0.5	2,282	4,564	56
1993	4/21	0.75	3,570	4,760	60
1994	4/25	0.5	778	1,556	35
	4/29	1	1,338	1,338	53
1995	4/27	0.5	1,685	3,370	45
	4/28	1	1,693	1,693	44
1996	4/24	0.5	2,984	5,968	62
	4/25[b]	0.5			
	4/29	1.5	1,580	1,053	42
1997	4/30	[c]	[c]	[c]	[c]
	5/1	12	51	4	4
	5/22[d]	[d]	54	[d]	–
	4/21	0.5	160	320	12
1998	4/22	2	136	68	11
	5/14[d]	[d]	10	[d]	–
	5/22[d]	[d]	23	[d]	–
1999–2018	CLOSED		100[e]		

[a] Management by EO began (closed until opened).

[b] Despite the open fishing period, the entire fleet collectively agreed not to fish due to ongoing price negotiations with processors.

[c] Confidential data. Fewer than 3 permits reporting.

[d] ADF&G test fishery harvest.

[e] ADF&G test fishery harvest in 1999.

Appendix G5.–Comparison of preseason biomass forecast/projected harvest and actual commercial herring sac roe seine harvest versus hindcast (age-structured-assessment) estimates of total biomass in short tons (st) and exploitation rate in Kamishak Bay District, Lower Cook Inlet, 1990–2018.

	Preseason		Actual	Estimated	ASA Hindcast	Hindcast
Year	Forecasted biomass (st)	Projected harvest (st)[a]	commercial harvest (st)[a]	exploitation rate (%)[b]	total biomass estimate (st)[c,d,e]	exploitation rate (%)[c,f]
1990	28,658	2,292	2,264	7.9	17,102	13.2
1991	17,256	1,554	1,992	11.5	18,108	11.0
1992	16,431	1,479	2,282	13.9	16,583	13.8
1993	28,805	2,592	3,570	12.4	14,777	24.2
1994	25,300	3,421	2,167	8.6	12,183	17.8
1995	21,998	2,970	3,378	15.4	9,805	34.5
1996	20,925	2,250	2,984	14.3	7,559	39.5
1997	25,300	3,420	1,746	6.9	5,710	30.6
1998	19,800	1,780	331	1.7	5,074	6.5
1999	[g]		CLOSED[h]		5,030	
2000	6,330		CLOSED		5,074	
2001	11,352		CLOSED		4,751	
2002	9,020		CLOSED		4,548	
2003	4,771		CLOSED		4,666	
2004	3,554		CLOSED		4,825	
2005	3,058		CLOSED		5,245	
2006	2,650		CLOSED		5,143	
2007	2,286		CLOSED		5,979	
2008	2,069		CLOSED		6,652	
2009	[i]		CLOSED		5,852	
2010	2,963		CLOSED		6,327	
2011	3,830		CLOSED		5,619	
2012	[i]		CLOSED		4,810	
2013	[i]		CLOSED		3,743	
2014	6,318		CLOSED		2,778	
2015	5,699		CLOSED		2,015	
2016	1,603		CLOSED		[i]	
1990–2016 avg[j]	11,738	2,418	2,302	10	7,306	21.2
2017–2018	[i]		CLOSED		[i]	

Note: st = short ton.

Sources: Otis 2004; Otis and Cope 2004; Yuen 1994.

[a] Kamishak Bay allocation only; does not include Shelikof Strait food/bait allocation.

[b] Estimated exploitation rate based on preseason forecasted biomass and actual commercial harvest for each year.

[c] Figures are based on the best available data at the time of publishing and are subject to change as new data is incorporated into the model; therefore, all figures herein supersede those previously reported.

[d] Age-structured-assessment (ASA) model integrates heterogeneous data sources and simultaneously minimizes differences between observed and expected return data to forecast the following year's biomass as well as hindcast previous years' biomass.

[e] ASA estimates based on the most recent available hindcast, run after the 2015 survey season.

[f] Estimated exploitation rate based on ASA hindcast estimates of biomass divided by actual commercial harvest.

[g] 1999 preseason biomass calculated as a range of 6,000 to 13,000 short ton.

[h] ADF&G test fishing harvested 100 short ton.

[i] No ASA forecasted or hind-casted abundance estimate possible due to lack of age composition samples.

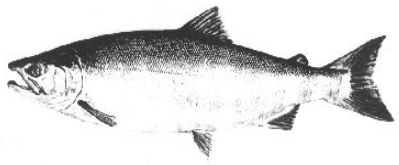
[j] Averages based only on years with data presented.

APPENDIX H: 2018 OUTLOOK

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Sam Cotten, Commissioner

Scott Kelley, Director



Contact:
Glenn Hollowell, Area Finfish Management Biologist
Ted Otis, Area Finfish Research Biologist
Ethan Ford, Fisheries
Phone: (907) 235-8191

Homer Area Office
3298 Douglas Place
Homer, AK 99603
Date Issued: March 16, 2018,
Time: 2:00 PM

2018 LOWER COOK INLET SALMON FISHERY OUTLOOK

General Information

This outlook is provided to assist the commercial salmon industry in planning for the 2018 season in the Lower Cook Inlet (LCI) Management Area. Preseason forecasts and recent 5-year commercial common property harvest averages are the basis for the information provided. Forecasts for LCI can be found on the Alaska Department of Fish and Game (ADF&G) web site:

http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon#forecasts

Cook Inlet Aquaculture Association (CIAA) manages the Trail Lakes Hatchery (TLH), Port Graham Hatchery (PGH), and Tutka Bay Lagoon Hatchery (TBLH). Hatchery forecasts can be found by contacting CIAA directly or through the CIAA web site:

http://www.ciaanet.org

Inseason modifications to harvest projections, season opening dates, and strategies for weekly fishing periods may occur as fisheries develop.

The forecasts for commercial common property fishery (CCPF) harvests by species are summarized in Table 1. The wild stock pink salmon forecast was derived from a 2-year running average harvest model based on log-transformed historical even-year harvests (1960–2016), whereas projections for other wild stock species were based on the recent 5-year average commercial harvest. Projected runs of hatchery-origin salmon were provided by CIAA. These projections of hatchery and wild stock runs will provide the basis for early-season management in all districts, with other management tools such as aerial survey estimates, weir counts, remote video monitoring and anticipated run strength used as the season progresses.

Management of LCI commercial salmon fisheries is based in the Homer area office. Fishery announcements from the Homer ADF&G office will routinely occur on Fridays at 2:00 p.m., or earlier if possible. Announcement recordings will be available for commercial fisheries at 907-235-7307. Emergency order announcement information is also transmitted by email to all

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registered processors, local radio stations, news media and interested members of the public. Harvest information and fisheries announcements are located on the ADF&G web site: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon

In addition, interested individuals may sign up to receive email announcements:

http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main

The first announcement is anticipated to be released at 2:00 p.m., Friday, April 27.

CIAA anticipates a total of 367,700 hatchery-produced sockeye and 1.9 million pink salmon to return to LCI release sites in 2018, valued at 4.5 million dollars, excluding broodstock. CIAA anticipates harvesting 2.7 million dollars of hatchery-produced salmon with the remainder available to commercial common property fisheries. The overall commercial common property harvest from Lower Cook Inlet is anticipated to be 519,600 salmon, of which, 31.9% are anticipated to be of hatchery origin harvested from SHAs. Additional hatchery-origin fish are harvested with wild fish outside of SHAs (Table 1).

Set Gillnet Fishery

The Southern District is anticipated to open for the 2018 season on Friday, June 1 at 6:00 a.m. for a 24-hour period. Following periods will likely be 48-hours in length beginning at 6:00 a.m. on Monday and Thursday, as specified in regulation. Harvests for 2018 are anticipated to be similar to the historic average. The 5-year average harvest for this area and gear are 500 Chinook, 3,400 coho and 5,900 chum salmon. The 5-year commercial harvest average for wild sockeye salmon is 32,700 fish. The department's preliminary pink salmon forecast estimated a harvestable surplus of 4,000 fish from the Southern District. The Port Graham Subdistrict is anticipated to open to commercial set gillnet harvest on June 1 and remain on a schedule concurrent with other areas in the Southern District for this gear. Fishing time in the Port Graham Subdistrict will be closely linked to escapement levels in English Bay and Port Graham rivers. Management priority will be to provide for subsistence needs (4,800–7,200 salmon). Further information regarding previous years' hatchery releases and commercial harvests may be found in Annual Management Reports for this area at:

http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon#management

Purse Seine Fishery

Portions of the Southern District are anticipated to open to purse seine harvest in mid-June, coinciding with enhanced runs to Leisure and Hazel lakes. Historically, this run peaks from July 15–21 (week 29). CIAA anticipates a return of 39,500 sockeye salmon to Leisure and Hazel lakes combined, as well as 79,300 sockeye salmon to Tutka Bay.

Commercial fishing time after mid-July will be correlated to pink salmon escapement at Humpy Creek, Seldovia Bay, Port Graham and other locations in this district. A total of 1.9 million hatchery-produced pink salmon are anticipated to return to release sites in the Southern District.

Hatchery sockeye salmon runs to the **Eastern District** are forecasted by CIAA to be 200,000 fish. Of those, 52,500 may be available for commercial common property harvest with the balance required for broodstock and cost-recovery purposes. Wild stock harvest opportunity in the Eastern

-continued-

District will be linked to aerial survey observations of wild sockeye and pink salmon escapements to Aialik Lake and other spawning systems in this district. In addition, surveys of chum salmon systems in Resurrection Bay and Day Harbor will be flown, weather and time permitting.

Portions of the **Outer District** may open to commercial harvest in mid-July focusing on sockeye salmon runs to McCarty Fjord lakes. In recent years, escapement to these systems has been monitored by aerial survey (Delight, Desire, and Delusion lakes). Sockeye salmon escapement into Delight Lake may be monitored using a weir in 2018. In addition, waters in the western portion of this district may be open by mid-July, focusing on pink and chum salmon runs to Port Dick, as well as Windy and Rocky bays. There are numerous other smaller systems in the Nuka Passage area that are also monitored for chum and pink salmon. In the far west end of this district, systems with the latest run timing: Dogfish Bay, Chugach Bay and Port Chatham will be evaluated for chum and pink salmon harvest potential from August to early September. The previous 5-year average harvest for this district is 5,100 sockeye and 83,800 chum salmon. The department forecasts a harvestable surplus of 95,800 pink salmon from this district. The 2 most recent pink salmon even-year harvests for this district in 2014 and 2016 were 164,000 and 5,369 fish.

Portions of the **Kamishak Bay District** typically open by regulation to commercial harvest on June 1. Previous 5-year average harvests for this district (excluding the Kirschner Subdistrict) were 38,500 sockeye and 10,500 chum salmon, with the majority of the sockeye salmon harvest attributed to Chenik Lake runs and the chum salmon harvest spread throughout the district. Chenik Lagoon is anticipated to open in mid-June and remain open throughout the season. Last year 97,500 sockeye salmon were harvested from the Chenik area. Commercial harvest of pink salmon from this district is anticipated to be 7,200 fish. Hatchery-released sockeye salmon to the Kirschner Lake outfall remote release site are anticipated to be 44,600 fish, all of which will likely be required for hatchery cost recovery. The department tracks salmon escapement in this district using remote video monitoring sites at Chenik and Mikfik lakes, as well as regular aerial survey observations of index streams.

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Table 1.–Projected commercial common property harvests and hatchery runs for Lower Cook Inlet, 2018.

SOCKEYE SALMON	Total anticipated harvest =	**226,500**
Natural stocks, (5-yr average commercial harvest)		
Southern District, (purse seine, excluding hatchery SHAs)		31,400
Southern District, (set gillnet)		32,700
Eastern District, (Aialik Bay)		0
Outer District		5,100
Kamishak Bay District, (excluding Kirschner Lake Subdistrict)		38,500

Sockeye salmon hatchery programs[a]	**Hatchery return**	**Broodstock harvest**	**Cost recovery harvest**	**Commercial common property harvest**
Resurrection Bay	199,727	12,750	134,500	52,500
China Poot and Hazel lakes	39,483	1,000	18,200	20,300
Tutka Bay Lagoon	79,256	6,330	31,600	41,300
Kirschner Lake	44,600	1,500	43,100	0
Port Graham Bay	0	0	0	0
English Bay Lakes	4,650	0	0	4,700

PINK SALMON, ADF&G Preliminary Pink Salmon Forecast[b]	Total anticipated harvest =	**186,700**
Southern District (purse seine, excluding hatchery SHAs)		33,000
Southern District (set gillnet, excluding hatchery SHAs)		4,000
Eastern District		0
Outer District		95,800
Kamishak Bay District		7,200

Pink salmon hatchery programs[a]	**Hatchery return**	**Broodstock harvest**	**Cost recovery harvest**	**Commercial common property harvest**
Tutka Bay Lagoon	1,735,853	300,000	1,402,000	33,900
Port Graham Bay	181,794	90,000	79,000	12,800

CHUM SALMON - 5-year average harvest	Total anticipated harvest =	**101,400**
Southern District (purse seine)		1,100
Southern District (set gillnet)		5,900
Eastern District		120
Outer District		83,800
Kamishak Bay District		10,500

COHO SALMON - 5-year average harvest	Total anticipated harvest =	**4,400**
Southern District (purse seine)		700
Southern District (set gillnet)		3,400
Eastern District		0
Outer District		100
Kamishak Bay District		200

CHINOOK SALMON – 5-year average harvest	Total anticipated harvest =	**600**
Southern District (purse seine)		100
Southern District (set gillnet)		500
Eastern District		0
Outer District		0
Kamishak Bay District		0
Total LCI anticipated commercial common property harvest- all salmon species =		**519,600**

[a] Provided by Cook Inlet Aquaculture Association, based on parent year releases and recent ocean survival.

[b] Available online at: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon#forecasts.