Fishery Management Report No. 15-32

2014 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

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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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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 2014 Lower Cook Inlet (LCI) management area (all coastal waters and inland drainages entering waters north of Cape Douglas, west of Cape Fairfield, and south of Anchor Point) commercial salmon harvest was 616,554 salmon. The harvest was composed of 271,200 pink *Oncorhynchus gorbuscha*, 270,835 sockeye *O. nerka*, 73,498 chum *O. keta*, 663 coho *O. kisutch*, and 358 Chinook salmon *O. tshawytscha*. Approximately 72% of the harvest, 443,064 fish, was common property harvest, and 173,490 fish were sold for hatchery cost recovery. Homepack, educational permits, and donated fish accounted for less than 1% of the harvest. Based on fish ticket reporting of prices, the preliminary value of the commercial salmon harvest was $3.4 million, including hatchery sales. This amount does not include postseason adjustments, bonuses, etc. During the 2014 season, 18 set gillnet and 20 purse seine permit holders reported deliveries. Set gillnet harvest value was an estimated $469,000, setting average permit earnings at $26,100. Purse seine fishery exvessel harvest value was an estimated $1.2 million, setting average permit earnings at $58,900. Revenue generated by cost recovery for hatchery operations was approximately $1.8 million. An additional $691,000 was disbursed to Cook Inlet Aquaculture Association from a 2% salmon enhancement tax. The LCI management area personal use and subsistence fisheries harvested a total of 3,704 salmon. For these fisheries, approximately 200 subsistence and personal use permits were issued to Alaska residents. In addition, 606 coho salmon were landed by sport fish permit holders in a derby in Seward. Although these fish were subsequently sold commercially, they are not included in the total commercial harvest. The commercial Pacific herring *Clupea pallasii* fishery in the Kamishak Bay District remained closed in 2014 for the 13th 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) management area 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 (Figures 1–18). The management objective for all districts is the achievement of spawning escapement goals for major stocks, while allowing for orderly fisheries to harvest fish surplus to spawning requirements. In addition, Alaska Department of Fish and Game (ADF&G) follows regulatory guidelines to 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 (TLH) 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). ADF&G operates the Ship Creek Hatchery Complex near Anchorage that produces Chinook *O. tshawytscha* and coho salmon, which are released in the LCI area. In addition, the Tutka Bay Lagoon Hatchery began incubating pink salmon *O. gorbuscha* eggs in 2011 for release into 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 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

The 2014 LCI management area commercial salmon harvest was 616,554 fish. The harvest was composed of 271,200 pink, 270,835 sockeye, 73,498 chum *O. keta*, 663 coho, and 358 Chinook salmon (Table 1; Figure 19). Hatchery runs of sockeye salmon in general were above forecast in Resurrection Bay and below forecast at other hatchery release sites. Harvest of coho, pink, and chum salmon were below the 10-year (2004–2013) average (Table 2). Approximately 72% of the harvest, 443,064 fish, was attributed to the common property fishery and 173,490 fish to hatchery cost recovery. An additional 11,959 sockeye and 31,767 pink salmon were harvested by hatcheries for broodstock (Appendices F2 and F3). Homepack harvest (656 salmon) accounted for less than 1% of the commercial harvest from LCI districts (Table 1). The 2014 preliminary exvessel value estimates by gear group from the common property fishery, both wild and enhanced salmon, were $1.2 million (71.5%) for purse seine and $469,291 (28.5%) for set gillnet (Table 3; Figure 20). The average price per pound paid to fishermen was above the 10-year average for all species (Table 4). The overall harvest values for purse seine in 2014 was approximately 25% lower than the 10-year harvest average, whereas set gillnet harvest value was nearly double its 10-year average value (Table 5).

No commercial fisheries for herring occurred in 2014 in order to allow the population further opportunity to rebuild from historically low abundance (Figure 21).

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 (Figures 1–5). 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). 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: 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. Any Cook Inlet Area (Area H) commercial set gillnet permit holder may register to fish in these areas. This

registration, however, would preclude that permit holder from fishing in the Northern and Central districts in Cook Inlet 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, 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 added salmon production to sites within this district (Appendices F12, F13, and F14).

Preseason Outlook and Harvest Strategy

The 2014 commercial wild stock harvest forecast for the Southern District was 79,000 pink and 800 sockeye salmon (Table 6; Appendix H1). The enhanced sockeye salmon run to CIAA release sites was forecast to be 40,700 fish. A total of 559,000 hatchery-produced pink salmon were anticipated to return to the LCI Area in 2014 from the 2013 release of 4.4 million fry from Tutka Bay Lagoon and 14.2 million from Port Graham Bay (Appendices F7, F9, and F14).

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 specified 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 all returning hatchery sockeye and pink salmon were anticipated to be required to meet broodstock and cost recovery needs, hatchery special harvest areas (SHA) were anticipated to remain closed to common property commercial seine harvest. Considering recent irregular runs of sockeye salmon to the Port Graham Subdistrict, the commercial set gillnet fishery would remain closed in this area until observations at the English Bay River indicated sufficient escapement to achieve both the sustainable escapement goal (SEG) and hatchery broodstock requirements. Hatchery harvest for this and previous seasons is discussed fully in the *Cook Inlet Salmon Enhancement* section.

Early season management of the Southern District (excluding the Port Graham Subdistrict), is based on actual harvest versus anticipated harvest. Port Graham Subdistrict management is based on anticipated 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 are also taken into account. By early July, ground survey estimates of chum and early pink salmon escapement begin to weigh more heavily when scheduling commercial fishing periods. These surveys become primary tools in late July and August when management focus shifts to pink salmon in this district.

Season Summary

The total 2014 Southern District sockeye salmon commercial common property harvest was 56,098 fish, with 32,910 (58.7%) harvested by the set gillnet fleet and 23,188 harvested by seine permit holders (Appendices A1–A3). In addition, 30,404 sockeye salmon were reported harvested from the Tutka Bay Lagoon Hatchery SHA by CIAA for cost recovery, and 5,202 fish were harvested for broodstock purposes (Appendix F2). Total pink salmon harvest was 62,121

fish with 58,890 (95%) harvested by the seine fleet and 3,231 harvested by set gillnet permit holders. In addition, CIAA harvested 22,401 pink salmon from the Tutka Bay Lagoon Hatchery Special Harvest Area (SHA) and 1,740 from the Port Graham Hatchery SHA for use as broodstock (Appendix F3). An additional 4,598 were purchased from the common property commercial fleet in Port Graham for use as broodstock. A total of 338 Chinook salmon were harvested in the Southern District, with 320 fish harvested by set gillnet permit holders and the remaining by seine permit holders. Also, a total of 8,715 chum salmon were harvested, with 5,355 by set gillnet and 3,360 by seine permit holders. In addition, 662 coho salmon were landed, with 393 by set gillnet and 269 by seine permit holders (Appendices A1 and A2; Table 1). A total of 183 sockeye, 10 Chinook, 128 coho, 17 chum and 318 pink salmon were retained by 9 commercial permit holders for personal homepack use and not sold (Appendix E7; Table 1).

The Southern District set gillnet commercial fishing season was announced by EO on May 30 and opened on June 1 (Table 7). The first 48-hour commercial fishing period was also announced in this EO to begin at 6:00 AM on Monday, June 2. The harvest from this period was 2,492 sockeye, 33 Chinook, and 59 chum salmon with 9 permit holders reporting deliveries (Appendix A1). Processors paid approximately $3.20 per pound for sockeye, $0.35 per pound for chum, and $5.40 per pound for Chinook salmon. During this period, waters of the Port Graham Subdistrict remained closed to commercial set gillnet harvest as a precautionary measure due to irregular sockeye salmon runs in recent years. The English Bay weir began operation on May 21 and by June 1 had passed 10 sockeye salmon. Passage increased with a total of 279 sockeye salmon counted through June 8. This was below the anticipated SEG range of 420–945 fish for this period. The anticipated range was the SEG range apportioned out daily in accordance with the historic run timing that would be required to meet the SEG on July 31 (Appendices A4–A6; Table 8).

The second 48-hour period began the following Thursday on June 5 at 6:00 AM and had 7 permit holders reporting 904 sockeye, 22 Chinook, and 26 chum salmon harvested (Appendix A1). Weather was stormy during this period and likely had an effect on participation and harvest. During the following period on Monday, June 9, harvest increased with a total of 2,063 sockeye, 47 Chinook, and 88 chum salmon were harvested by 7 permit holders (Appendix A1). English Bay weir passage increased during the week of June 8–June 14, with a total of 1,033 sockeye salmon passed. A total of 1,141–2,567 fish were anticipated in order to fall within the final SEG range of 6,000–13,500 on July 31.

A commercial fishing period occurred beginning on Thursday, June 12, in the Southern District excluding the Port Graham Subdistrict with 4 permit holders reporting a harvest of 17 Chinook, 417 sockeye, and 22 chum salmon. Weather over the previous week had improved, with overcast skies and 15 knot winds. Harvest from the following period beginning on Monday, June 16, increased, with 8 permit holders delivering 27 Chinook, 1,504 sockeye, and 115 chum salmon (Appendix A1). Although sockeye salmon passage at the English Bay weir increased slightly, it continued to occur well below the daily SEG target during this time. During the week of June 15–June 21, passage increased with a total of 1,422 sockeye salmon passed versus an anticipated count of 642–1,444 fish during this time period. Cumulative passage on June 21 was 2,455 fish versus an anticipated cumulative count of 1,783–4,011 fish (Appendix A4). Historically, passage at the weir has been extremely sporadic with fish numbers influenced by rainfall and tides, as well as subsistence harvests by residents of Nanwalek and Port Graham. Consequently, staff elected to keep the common property commercial fishery in the Port Graham Subdistrict closed

until this run clearly demonstrated the ability to support that additional harvest, as well as subsistence harvest and escapement needs. Harvest from the Thursday, June 19, fishing period improved overall, with 52 Chinook, 2,596 sockeye, and 385 chum harvested by 8 permit holders (Appendix A1).

Weir passage over the next week (June 22–June 28) was 1,604 fish, which was within the SEG range anticipated for passage during that week of 1,532–3,446 fish. Total passage through June 28 was 4,059 sockeye salmon versus an anticipated total passage of 3,315–7,458 fish. Historically, approximately 55% of the English Bay weir escapement have been counted by this date (Appendix A4). Commercial set gillnet harvest in other portions of the Southern District during the week of June 22–June 28 was above the harvest in the previous week, with 9 permit holders reporting 59 Chinook, 4,381 sockeye, and 1,013 chum salmon landed from the Monday and Thursday periods combined (Appendix A1).

The Southern District commercial purse seine season was opened by EO on June 20 with a fishing schedule of 2 weekly 16 hour periods (6:00 AM to 10:00 PM) established on Mondays and Thursdays in portions of the district east of McDonald Spit (Table 8). No deliveries were reported from either the Monday June 23 or Thursday June 26 purse seine fishing periods. Harvest from the Monday and Thursday periods combined for this gear during the following week (June 29–July 5) was 1 Chinook, 429 sockeye, 1 coho, 63 pink, and 17 chum salmon, with 5 permit holders reporting deliveries (Appendix A2). Harvest the following week (sum of the harvests from the fishing periods that occurred that week) increased significantly for this gear group with 11 permit holders reporting 5,111 sockeye, 11 coho 1,075 pink, and 35 chum salmon. Similarly, set gillnet harvests also increased during the first 2 weeks of July, with 10 permit holders reporting 5,285 sockeye, 2 coho, 419 pink, and 1,511 chum salmon during the first week and 9 permit holders reporting 4,445 sockeye, 9 coho, 561 pink, and 1,019 chum salmon during the second. Passage at the English Bay weir remained steady but mediocre during the first half of July, with 1,641 passed during the first week versus an anticipated range of 1,447–3,256 during this time. Cumulative passage on July 5 was 5,700 toward an anticipated range of 4,762–10,714 sockeye salmon. Passage diminished during the following week (July 6–July 12), with 1,097 counted versus an apportioned SEG range of 845–1,901 fish. Cumulative passage on July 12 was 6,797 versus a corresponding SEG range of 5,607–12,615 fish by this date. At that time no broodstock was anticipated to be harvested from this system by CIAA other than 394 fish required for backstocking into the English Bay River system. On Thursday, July 10, ADF&G announced that the Port Graham Subdistrict would open on Monday, July 14, to commercial set gillnet harvest for regular 48 hour periods concurrent with the ongoing fishing schedule for that gear in the remainder of this district (Table 7; Appendices A1 and A2).

During the week of July 13–July 19, the purse seine fishing schedule was expanded to three 16-hour periods on Monday, Wednesday, and Friday as a result of significant harvests by this gear in waters east of the Homer Spit. In addition, fishing periods on this schedule were initiated at this time in the Outer District. Having multiple areas open at the same time spreads the fleet out and reduces the possibility of overharvest at any one location. During this week, 13 purse seine permit holders reported harvesting 10,125 sockeye, 71 coho, 6,136 pink, and 53 chum salmon. Set gillnet permit holders reported harvesting 5,948 sockeye, 124 coho, 819 pink, and 705 chum salmon during this week. Harvests the following week (July 20–July 26) diminished markedly for both gear types, with 15 seine permit holders reporting 7,429 sockeye, 161 coho, 17,261 pink, and 2,803 chum salmon (Appendix A1). A total of 10 set gillnet permit holders reported

2,006 sockeye, 147 coho, and 990 pink salmon harvested commercially (Appendix A2). Passage at the English Bay weir was robust for the second half of July until the weir was removed on July 31. A total of 7,995 sockeye salmon were counted. From these, 877 fish were beach seined from English Bay Lakes for use as broodstock to be backstocked into English Bay Lakes, as well as planted into other remote release locations in LCI. An additional 163 fish were sampled for their otoliths to determine the hatchery contribution to this run. The total spawning escapement into English Bay Lakes was total weir passage minus broodstock and otolith sampled fish harvested, or 6,955 sockeye salmon. This was within the SEG range for this system (6,000–13,500) (Appendices A4–A6).

Set gillnet harvests in the fifth week of July diminished significantly with the seasonal closure of Kachemak Bay Salmon Producers that happened at the end of the previous week. A total of 367 sockeye, 51 coho, 426 pink, and 33 chum salmon were harvested by 4 set gillnet permit holders during this week (Appendix A1). Purse seine pink salmon harvest was above the previous weeks with 4 permit holders harvesting 19,915 individuals of this species as well as 15 sockeye and 145 chum salmon. While there were set gillnet deliveries during the Monday fishing period in the first week of August, these remain confidential because fewer than 3 permit holders participated. Deliveries from fishing periods where fewer than 3 permit holders report deliveries are considered confidential per Alaska Statute 16.05.815. There was no reported set gillnet harvest from the Thursday, August 7 or any following fishing periods. However, 3 purse seine permit holders reported landing 74 sockeye, 23 coho, 1,218 pink, and 121 chum salmon during the first 2 fishing periods of this week (Appendix A2). There were no purse seine deliveries reported for the August 15 or any following fishing periods in the Southern District in 2014 (Appendix A2). The 2014 salmon season was closed to purse seine fishing on September 14 and to set gillnet fishing on October 1.

The final escapement index value for Southern District pink salmon stocks based on ground surveys was 127,700 fish and was within the cumulative SEG ranges of 59,700–178,500 fish (Appendices A7–A9). Over the last 10 years, this value has ranged from a low of 41,300 in 2009 to a high of 418,700 in 2005, with a 10-year average index of 166,900. Spawning escapement for chum salmon to the Port Graham River was 3,735 fish, as measured by ground surveys. This was within the SEG range of 1,450–4,800 fish for this system. Final spawning escapement for English Bay River was 6,995 sockeye salmon. This is within the SEG range of 6,000–13,500 fish. The 10-year average spawning escapement was 12,234 for this system (Appendix A6). While the Port Graham Subdistrict did open to commercial set gillnet harvest on July 14, no commercial harvests were reported this season for that area and gear.

The total 2014 Southern District common property commercial harvest of 56,098 sockeye salmon was above the 10-year average harvest of 53,314 fish (Table 6; Appendices A3 and H1). The pink salmon commercial common property harvest (62,121) was below the anticipated harvest of 79,000 fish; however, it was above the 10-year average harvest of 29,817 fish (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 6–9). 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 historically returned in large numbers to Rocky Bay, Port Dick, and Windy Bay, as well as several smaller systems. In addition, modest numbers of chum salmon are regularly harvested from Dogfish Lagoon and Port Dick. There have been no regular releases of hatchery salmon into this district (Appendix F12).

At the December 2013 BOF meeting, Dogfish Lagoon Creeks was added to the 8 pre-existing pink salmon index streams in the Outer District and an SEG of 1,200–8,400 pink salmon was created. This stream complex has been regularly surveyed for more than forty years.

Preseason Outlook and Harvest Strategy

The 2014 commercial wild stock harvest forecast for the Outer District was 9,900 sockeye and 102,000 pink salmon (Table 6; 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, sockeye, pink, and chum salmon commercial harvest management in this district has relied heavily on aerial and ground surveys of major spawning systems for those species. Beginning in 1997, daily monitoring of sockeye salmon returning to Delight Lake has been conducted using a picket weir staffed by ADF&G field personnel. Typically, sockeye salmon runs to this lake, as well as 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 total 2014 Outer District sockeye salmon commercial common property harvest was 24,264 fish (Appendices B1 and B2). A total of 22,289 sockeye salmon were counted at the Delight Lake weir in 2014. The first fishing periods targeting sockeye salmon returning to Delight and Desire lakes occurred on June 30 and July 1 in response to 12,271 sockeye salmon being observed during an aerial survey on June 27. On that date 2,971 fish were observed in Delight Lake, and 9,300 were observed in Desire Lake. Harvest from the two 16 hour fishing periods combined (June 30 and July 1) was 5,735 sockeye salmon with 5 permit holders reporting. The weir was installed on July 3 and passed no fish until July 9 when 1,368 fish were passed. Daily passage remained consistently strong over the next 2 weeks with a total of 22,104 counted as of July 22. Beginning on Monday, July 14 portions of the Outer District from the Petrof area westwards to Windy Bay were opened on a regular schedule of Monday, Wednesday, and Friday 16 hour fishing periods. Harvest from the week of July 13–July 19 was lackluster with 8 permit holders delivering 13,105 pink and 10,418 chum salmon. Waters of McCarty Fjord in the area of Delight and Desire lakes were reopened for two 16 hour fishing periods on July 15 and July 16 after reports of strong weir passage at Delight Lake. This area remained open on a regular Monday, Wednesday, and Friday schedule of 16 hour periods through August 15. Harvest from this area during this period of time are confidential because fewer than 3 permit holders reported deliveries Harvest from other areas the week of July 20–July 26 was confidential with no commercial effort occurring west of Gore Point because stormy weather hampered fishing

activity. Harvest from the western portion of this district improved during the week of July 27 through August 2 with 10 permit holders reporting 39,138 pink, and 31,634 chum salmon harvested. Regular escapement surveys of this area remained problematic in 2014. Low pressure systems moved through bringing rain and increased turbidity to streams, followed by days of sun where streams often remained high and muddy. In addition, pilot unavailability resulted in lost survey time, or in surveys conducted under non-optimal light conditions (e.g., morning, evening, or beneath overcast skies). Harvests during the 2 weeks from August 3 to August 16 were depressed due to poor weather, with only 11,479 pink and 8,524 chum salmon harvested during the first week and a confidential amount on the Monday period of the second week (August 10–August 16), with no deliveries on Wednesday or Friday of that week. The following week (August 17–August 23) saw the largest harvest of pink salmon in the 2014 season, with 10 permit holders harvesting 97,215 pink salmon in addition to 7,907 chum salmon. There were no further harvests from the Outer District in 2014 (Appendices B1–B7).

This district closed for the 2014 season on September 14. A total of 15 permits reported deliveries from the Outer District in 2014, which was above the 10-year annual average of 11 permits. Total harvest from this district was 24,264 sockeye, 163,938 pink, 59,702 chum, and no coho or Chinook salmon. Sockeye salmon harvest was above the anticipated harvest of 9,900 fish. Sockeye salmon escapement through the weir into Delight Lake was both earlier than anticipated and also the fourth largest since weir enumeration began in 1997. The chum salmon harvest was above the anticipated harvest of 36,700 fish. Pink salmon harvest was above the anticipated harvest of 102,000 fish (Appendices B1 and B2).

The final escapement index value for Outer District pink salmon stocks, based on air and ground surveys, was 162,700 and was within the sum of SEG ranges for individual stocks (55,700–245,600 fish; Appendix B10). Note that the newly created SEG for Dogfish Bay Creeks has been added to this cumulative total. In addition, for the sake of conformity, these creeks and this SEG range have been included in the historic subtotals listed in Appendix B10. Over the last 10 years, this value has ranged from a low of 84,000 in 2011, to a high of 565,400 in 2005 with a 10-year average index value of 309,500. Spawning escapement for chum salmon to this district was 22,600, within the sum of individual stream SEGs (12,850–34,600). Since 2004, this value has ranged from 12,400 to 44,500 and has a 10-year average value of 29,400 (Appendices B6–B10).

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 10). 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 in modest numbers occurring sporadically (Appendix C2). Harvests of chum salmon were larger in this district during the 1980s when hatchery runs of this species to neighboring Prince William Sound were also robust. The major natural producers of sockeye salmon in this district have been Bear and Aialik lakes. Sockeye salmon production in Aialik Lake is a relatively recent event, with this lake having been covered by the Pedersen Glacier as late as 1909 (Cook and Norris 1998, pages 8 and 9). Beginning in 1990, CIAA released up to 3.4 million sockeye salmon juveniles into Bear Lake, in addition to 1.3 million to 1.7 million into Resurrection Bay in some years since 2008 (Appendix F12).

Pink salmon production in the Eastern District has been the result of natural spawning, excluding 1999 and 2000, where 24,000 and 48,000 pink salmon were released by the Alaska Sea Life Center into Resurrection Bay (Appendix F14). The largest pink salmon producers in this district are Salmon Creek with a 10-year (1980–1989) average escapement of 4,500 pink salmon and Bear Creek with a 10-year (1997–2006) average escapement of 11,800 fish. In addition, Thumb and Humpy coves collectively produced an average of 10,500 pink salmon per year from 1997 to 2006 (Appendix C11). Ground surveys of this area in recent years have been curtailed due to budgetary constraints combined with historic low runs to this area (Appendix C11).

Since the early 1960s, coho salmon production has been the subject of enhancement efforts in Resurrection Bay. Historically, commercial harvest of this species in the Eastern District has been 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 F11), 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) has 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 eluded commercial fishing pressure. 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 fund raiser for that organization. These sales are listed separately from commercial common property harvests in Appendix C2.

Preseason Outlook and Harvest Strategy

The enhanced sockeye salmon run to CIAA release sites in Resurrection Bay was forecast to be 66,000 fish (Table 6; 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 all of the sockeye salmon anticipated to return to Resurrection Bay release sites would be required to meet corporate cost recovery, as well as 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. Beginning in July, management is based on aerial surveys of sockeye salmon runs to Aialik Lake. Historically, runs of pink salmon to this district have been below the level required to support consistent and sustainable commercial harvests.

Season Summary

The total 2014 Eastern District sockeye salmon commercial common property harvest was 5,306 fish (Appendices C1 and C2). An additional 753 pink and 354 chum salmon were also harvested. CIAA harvested 126,071 sockeye salmon for cost recovery from Resurrection Bay and at the Bear Lake weir.

The Bear Lake SHA opened by regulation to corporate cost recovery harvest and brood stock collection at 6:00 AM on May 15. While the first delivery did not occur until May 28, sockeye

salmon began arriving at the Bear Creek weir on May 17 with over 1,800 counted through May 31 versus an anticipated 18 fish past the weir by this date. Cost recovery harvests increased substantially with nearly 67,000 fish harvested during the first week of June, and an additional 32,000 harvested the following week (June 7–June 13). Weir passage remained significantly above anticipated with over 9,500 sockeye salmon counted through June 13 versus an anticipated range of 406–891 fish to achieve the final escapement goal of 6,370–13,970 fish. This range is the combination of the SEG for Bear Lake sockeye salmon (700–8,300) and the CIAA brood stock goal for this species (5,670) fish. The Eastern District opened to daily commercial common property harvest fishing periods beginning on Tuesday, June 24 after 112,143 sockeye salmon had been harvested by cost recovery purse seine vessels. Weir passage remained well ahead of anticipated with nearly 27,000 counted at the weir as of July 10. Of those fish, only 13,090 were passed through the weir into the lake, with 13,928 sold for cost recovery at the weir and 1,641 fish donated to members of the public. Final passage into Bear Lake was 13,090 with 3,857 fish harvested for broodstock. The remaining 9,233 fish were allowed to spawn naturally in the lake. This escapement was above the SEG range of 700–8,300 fish, and only slightly above the 10-year spawning escapement average of 9,055 sockeye salmon (Appendices C3, C4, C7, and F2).

A total of 534 coho salmon were passed through the weir. An additional 567 coho salmon were harvested at the weir for CIAA and ADF&G broodstock. Also, 671 coho salmon were donated to members of the public (Appendices C5–C7, F4).

Poor weather conditions in 2014 resulted in only 3 aerial surveys of Aialik Lake. Surveys were conducted on July 2, July 21, and July 28 with a peak count of 450 fish occurring on the last survey. As has been the case in the past 2 years, high levels of suspended silt and algae in the lake made aerial surveying of this system problematic. This is the fourth consecutive year where the SEG range of 3,700–8,000 fish was not met. As a result of this and recent mediocre runs to this system, no commercial fishing periods were announced targeting sockeye salmon runs to Aialik Lake in 2014 (Appendices C8–C11). A total of 606 coho salmon were harvested by sport users and sold to local processors by the Seward Chamber of Commerce during the annual silver salmon derby (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 11–13). 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 and pink salmon. From 1959 through 1980, the average harvest was 31,000 pink, 34,000 chum, and 2,000 sockeye salmon. However, after the release of hatchery sockeye salmon to systems in this district, this species became a major component of the harvest. From 1981 to 2010, the average harvest was 67,000 pink, 52,000 chum, and 55,000 sockeye salmon. In addition to sockeye releases, pink salmon were also released from 1980 to 1983 (Appendices F12 and F14). The major natural producers of pink salmon in this district have been the Bruin Bay 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. In addition, numerous other rivers and streams have periodically produced pink and chum salmon runs.

Prior to 1981, Mikfik Lake was the largest single producer of sockeye salmon in this district with an average run of 6,600 from 1970 to 1980. The second largest producer, Chenik Lake had an

average run of 3,800 during this period with Amakdedori Creek and Kamishak rivers having average runs of 1,200 and 1,300 sockeye salmon, respectively. Generally, runs to Chenik Lake increased significantly after enhancement (1978–1996) with average harvests of 55,900 per year during this period (Appendix F16). However, there were years when escapement dropped below 1,000 fish, possibly stemming from over-aggressive stocking resulting in an infectious hematopoietic necrosis (IHN) outbreak. Stocking of Chenik Lake was curtailed in 1996 and the population recovered quickly. The large runs experienced since 2002 have derived entirely from natural production. Average annual escapement to Mikfik Lake from 1981 to 2010 was 11,100 fish, with escapement to Chenik Lake at 8,700 fish and escapement to nearby Amekdedori Creek and Kamishak rivers increasing slightly to 2,700 and 1,800 respectively. Kirschner Lake has been stocked regularly with sockeye salmon since 1987. In addition, hatchery sockeye salmon were also released from 1986 to 1996 at several other smaller systems in this district (Appendix F12). In addition, at the 2013 BOF meeting, the SEG for Mikfik Lake was adjusted from 6,300 to 12,150 to 3,400–13,000 to reflect the change from aerial survey enumeration to video monitoring of this system.

Preseason Outlook and Harvest Strategy

The 2014 commercial wild stock harvest forecast for the Kamishak Bay District was 49,300 sockeye salmon. A commercial pink salmon harvest was not anticipated (Table 6; Appendix H1). The enhanced CIAA sockeye salmon run to Kirschner Lake was forecast to be 8,200 fish (Appendix F1; Table 6). As specified in regulation, the fishing season in the Kamishak Bay District opens from June 1 until closed by EO. Historically, this district has been opened for extended 7-day periods, with specific areas closed as needed by EO to address escapement shortfalls or to allow for hatchery cost recovery harvest. CIAA initially announced that all of the 8,200 sockeye salmon anticipated to return to the Kirschner Lake release site would be required to meet corporate cost recovery needs. Early season management of the Kamishak Bay District is based on actual harvest versus anticipated harvest as well as passage at the Mikfik and Chenik Lake video monitoring sites. In addition, aerial surveys are flown, weather permitting, to monitor sockeye and chum salmon escapement to index streams, as well as 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. Surveys are also flown in late August and September to monitor progress of coho salmon runs to select streams in this district.

Season Summary

The total 2014 Kamishak Bay District commercial common property harvest was 12,137 sockeye, 4,449 chum, and 44,227 pink salmon harvested by 8 seine permit holders (Appendices D1 and D2). Given the modest success of cost recovery in the Eastern District in 2014, commercial common property harvest in the Kirschner Lake SHA remained closed until early August to allow corporate harvest of this run.

The Kamishak Bay District was opened to commercial common property harvest on Sunday, June 1. Historically, ADF&G fishery managers have endeavored to avoid opening waters inside of McNeil Spit by having preemptive fishing periods in outside waters to prevent a buildup of sockeye salmon. With the poor runs in recent years for both Mikfik sockeye and McNeil chum salmon, managers have kept the McNeil and Paint River subdistricts closed to commercial harvest. Reports of sockeye salmon in McNeil Lagoon on Thursday, May 22 prompted ADF&G

to install video monitoring equipment at the outlet of Mikfik Lake the following day. Video was retrieved on Monday, May 26. While sockeye salmon were observed in Mikfik Creek on this flight, no fish were documented by the video system as having entered the lake. Escapement in recent years to this system has been extremely sporadic. In 2011, escapement was only 345 sockeye salmon. In 2012 and 2013, it was 3,131 and 4,042 fish, respectively. During these years, the SEG range was 6,300–12,150 fish and was calibrated for aerial survey indices. At the December 2013 BOF meeting, ADF&G changed the SEG to a metric calibrated to video escapement monitoring. The SEG range was changed to 3,400–8,200 fish. Video data were again recovered on June 3, with 674 sockeye counted as having entered the lake. Video recovered on Thursday, June 12 showed a preliminary cumulative estimate of 8,115 fish having entered Mikfik Lake. The following day, with escapement only slightly below the upper end of the SEG range and significant numbers of fish observed in fresh and salt water below the video site, two 2-hour fishing periods were announced for Sunday, June 15 and Monday, June 16, with those fishing periods occurring on the afternoon high tide. The areas opened was within McNeil Lagoon up to the freshwater of Mikfik and McNeil creeks using the definition of freshwater as specified in 5AAC 39.975(26). Historically, there has been concern that fishing boats could go dry in McNeil Cove and that brown bears could be attracted to them resulting in possible physical harm to the bears, or conditioning them to associate human activity with easily available fish. In 1988, the Division of Commercial Fisheries, working closely with staff in the Wildlife Division, developed the *Mikfik Creek–McNeil Lagoon Salmon Fishery Management Plan* to outline how fisheries will be managed in the McNeil Lagoon area to minimize the potential for conflict and enhance visitor safety. This commercial opening was within guidelines established by this management plan. A total of 3 permit holders reported delivering 1,728 sockeye salmon (with an average weight of 3 pounds) from the Sunday, June 15 two-hour fishing period.

There were no deliveries from the Monday fishing period due to stormy weather. Additionally, there were no further deliveries from the Kamishak District until the 3 weeks beginning on June 30 in which fewer than 3 permit holders reported per week. Daily escapements to Chenik Lake were modest in 2014 with the lower end of the SEG range of 3,500–14,000 exceeded by the July 3 passage of 4,235 sockeye salmon. Prior to this day, cumulative passage had been only 44 fish. Video showing this passage was not picked up until July 8 by which time an additional 1,719 fish had passed. After video review, a fishing period was announced for Saturday, July 12. Harvest numbers from this fishing period and the following period (Monday, July 14 to Sunday, July 20) are confidential because fewer than 3 permit holders reported deliveries.

There were indications of a larger run of pink salmon returning to the Bruin River when 35,600 fish were counted during an aerial survey on July 23. This compared to a final SEG range of 18,650–155,750 pink salmon. In light of the difficulty permit holders have in fishing this shallow and rocky bay, on July 24 closed waters restrictions were rescinded for this bay. There were a total of 7 permits that reported harvesting 2,343 sockeye, 34,555 pink, and 4,099 chum salmon from the Kamishak District during the July 21–July 27 fishing period (Appendix D1). Of these fish, 3,028 pink salmon caught in Bruin Bay were sold to Cook Inlet Aquaculture for incubation at the Tutka Bay Lagoon Hatchery (Appendix F3). While there were further deliveries during the week of July 28–August 3, and August 11–August 16, these deliveries were confidential because of low participation.

Video monitoring in 2014 of returning sockeye salmon to Mikfik and Chenik lakes occurred with only minimal technical difficulty at Mikfik Lake. An early breakup of ice allowed early

floatplane access for installation of the Mikfik Lake video system on May 23 with fish passage documented the following day. A total of 18,062 sockeye salmon were counted from video at Mikfik Lake through August 5. The count was above the SEG range of 3,400–13,000 and above the 10-year average of 9,009 fish (Appendix D7). A total of 17,797 sockeye salmon were documented in Chenik Lake from June 4 to August 20 with the camera operational for the entire period (Appendices D3–D6). This was above the SEG range of 3,500–14,000 fish and also above the 10-year average of 14,569 sockeye salmon (Appendix D7).

The peak aerial survey count for Amekdedori Creek was 4,280 sockeye salmon. This was above the SEG range of 1,250–2,600 fish and slightly below the 10-year average of 4,286 fish. Overall, 133,281 pink salmon were observed in index streams in the Kamishak Bay District (Appendices D8 and D9). Poor observational conditions due to stormy weather or excessive glacial silt resulted in an erratic aerial survey schedule that may have contributed to reduced counts of pink and chum salmon in this district.

The total 2014 Kamishak Bay District commercial common property harvest of 12,137 sockeye salmon was below the anticipated harvest of 49,300 wild sockeye and below the 10-year average harvest of 72,408 sockeye salmon (Appendix D2). Total pink salmon harvest from this district was 44,227 fish versus an anticipated harvest of no fish. The 10-year average harvest was 26,422 pink salmon. Total chum salmon harvest was 4,449 down from the 10-year average of 50,707 fish (Appendix D2). In addition, 16,555 sockeye salmon were harvested by CIAA for cost recovery purposes from the Kirschner Lake SHA (Appendix F2).

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 small portion of the LCI management area is outside the nonsubsistence areas, including the southwest tip of the Kenai Peninsula with the communities of Seldovia, Port Graham, and Nanwalek, as well as portions of the western shore of upper Cook Inlet near Tyonek in the Northern Cook Inlet management area. However, in order to provide harvest opportunity in addition to sport fishing to Alaska residents within these nonsubsistence areas, the BOF has defined 2 personal use salmon fisheries in LCI, and has defined seasons and gear types for personal use herring and smelt fisheries. In addition, both resident and nonresident commercial permit holders historically have been allowed to retain legally harvested fish from their commercial catch for their own use as homepacks.

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 as 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 has been identified since pre-statehood (Stanek 1985). Fishing in these areas has tended to focus primarily on salmon returning to English Bay Lakes as well as to the Port Graham River. Over the last 20 years, sockeye salmon runs to English Bay Lakes have been significantly depressed. This has reduced both local commercial and subsistence salmon harvests. Partially in response to this at the November 2001 BOF meeting, waters of the Port Chatham and Windy Bay subdistricts were added to regulation as areas available for salmon harvest to subsistence permit holders. 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 2014, 50 permits were sent to the Nanwalek Traditional Council and 40 permits were sent to the Port Graham Village Council. In addition, 10 permits were sent to the Anchorage ADF&G office, and 10 permits were kept at the Homer ADF&G office front counter for distribution. All permits were serially numbered and printed on Rite-in-the-Rain paper. Representatives from the village councils were asked to disperse these permits to residents of these villages who intended to harvest salmon for subsistence use. Prior to 2012, a village resident was paid to disperse and collect permits from both of these communities and provide ADF&G with a final harvest estimate. Permits were not actively distributed from ADF&G offices prior to 2012.

In 2014, sockeye salmon escapement past the English Bay River weir was generally at or above the minimum escapement goal for this system. Consequently subsistence fisheries were not restricted in 2014 as they had been in many previous years when escapement has been consistently below the SEG range (Appendices A4, A6, and E2).

In 2014, out of the 14 subsistence permits distributed, only 2 were returned from Nanwalek (English Bay). These permits reported a total harvest of 3 Chinook, 211 sockeye, and 4 chum salmon (Appendix E2). This compares to the 10-year average of 25 permits reporting 30 Chinook, 2,547 sockeye, 1,181 coho, 1,355 pink, and 225 chum salmon. Nanwalek residents have reported that this harvest is shared among the community. A total of 5 Port Graham permits were returned with a harvest of 16 Chinook, 136 sockeye, 10 coho, 164 pink, and 40 chum salmon reported (Appendix E1). This was below the 10-year average of 23 permits reporting 105 Chinook, 637 sockeye, 101 coho, 136 pink, and 66 chum salmon.

The combined total harvest from both the English Bay and Port Graham Sections was 584 salmon and was below the 10-year average of 6,433 salmon. This is below the customary and traditional use BOF finding of 4,800–7,200 salmon (5 AAC 01.566) for the Port Graham, Koyuktolik, Port Chatham, and Windy Bay subdistricts combined. This may be the result of under-reporting by residents of these 2 villages.

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. This fishery

was created in 1995 by the BOF. The intent of the BOF was for this fishery to avoid harvesting hatchery Chinook salmon that have been released annually into the Seldovia Harbor since 1987 (Appendix F15). These releases are funded under the federal Dingell–Johnson Sport Fish Restoration Fund. Allowing a subsistence harvest on these Chinook salmon would violate the intent of this federal program. Furthermore, there have been no significant historic 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 being 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 for this species. 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 deducted from the fall personal use coho salmon fishery guideline harvest level specified in 5 AAC 77.549(a).

In 2014, 40 permits for the spring fishery were sent to the Seldovia harbormaster's office, in addition to 10 permits retained at the Homer ADF&G office and 10 that were sent to the Anchorage ADF&G office. An additional 20 permits for the fall fishery were sent to the harbormaster's office, and a total of 15 permits were kept at both the Anchorage and Homer ADF&G offices. 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 fax a copy of the completed permit back to the Homer ADF&G office.

In 2014, out of 12 permits dispersed to Alaska residents for the early season, 8 permits were returned. Only 4 of the returned permits reported having fished. These 4 permits reported harvesting 3 Chinook, 69 sockeye, and 2 chum salmon. This compares to a 10-year average of 11 permits issued, 8 permits returned, and 4 reporting not fishing with a harvest of 19 Chinook, 34 sockeye, and 2 chum salmon by the remaining 4 permits. Nine permits were issued for the August weekend seasons with only 7 permits returned. These permit holders reported 2 Chinook, 47 sockeye, 5 pink, and 63 chum salmon harvested. This compares to a 10-year average of 4 permits issued, and 3 permits returned with a harvest of 25 sockeye, 11 coho, 44 pink, and 10 chum salmon (Appendix E3). Total harvest for both the early and late season was 191 salmon versus a 10-year harvest average of 105 salmon. Currently, there is no 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 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 fishery.

The China Poot dip net fishery dates back to 1980 when returns from the 1976 hatchery release of sockeye salmon began (Appendices F12 and F15). This fishery is managed by ADF&G, Division of Sport Fish. Prior to 1996, harvest from this fishery was documented as part of the annual *Statewide Harvest Survey* (http://www.adfg.alaska.gov/sf/sportfishingsurvey/). 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 fishery in the Southern District dates back 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 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 14). 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 in several locations in Kachemak Bay since the mid-1970s (Appendix F19). 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 15). Samples taken in 1999 and 2000 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% and 90%, respectively, 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, harvest effort has shifted away from the Homer Spit to waters between Fritz Creek and Swift Creek (Appendix E6; Figure 14). The wild stock components of this fishery are primarily bound for 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 in order to facilitate inseason management and assure that the 1,000–2,000 guideline harvest level specified in 5 AAC 77.549 is observed, while providing opportunity for harvest to reach at least the lower end of the goal. Harvest during the 2014 season was 2,273 coho, 310 sockeye, 13 Chinook, 20 pink, and 178 chum salmon, with 160 permits issued, 154 permits returned and 115 reported as actively fished (Appendix E4). Coho salmon in 2014 were fairly abundant with only 3 fishing days required to meet the guideline harvest goal. The first 48 hour fishing period occurred on Monday, August 18 beginning at 6:00 AM, and the second fishing period began at 6:00 AM on Thursday, August 18 and was closed by emergency order 24 hours later. The 10-year average has been 119 permits issued with 1,249 coho salmon harvested. Unlike recent years, this season started with a significant number of coho salmon available for harvest along the Homer Spit and in the Mud Bay area. Leading up to the season, sport fishermen and observers on the Homer Spit could see large concentrations of coho salmon transiting the area. This resulted in increased effort early in the season targeting coho salmon in this easily observable and accessible area. As might be expected, harvest by section shifted significantly from recent years, which had been dominated by catches from the Fritz Creek to Swift Creek section. While this section still reported the highest number of coho harvested (801),

harvest from the East Homer Spit section was not far behind at 570 coho. The area between these 2 sections (Mud Bay to Fritz Creek) reported a harvest of 574. In a year with high concentrations of coho salmon in the Mud Bay area, likely much of the harvest in this section could be attributed to the south west end, adjacent to Mud Bay and the Homer Spit. Harvest from other sections included 194 coho (Bear Cove to Neptune Bay), 82 coho (Neptune Bay to Jakolof Bay), and 52 coho salmon (Anchor River to Coal Point). Without a harvest sampling program in place it is difficult to tell what portion of the catch could be attributed to hatchery fish returning to the Nick Dudiak Fishing Lagoon on the Homer Spit. However with a strong run to that location this year and significant harvest in adjacent areas, it is likely that enhanced runs contributed significantly to this year's personal use harvest (Appendix E6). Aerial and ground surveys of an index system within the Fox River drainage indicated strong natural runs of coho salmon as well.

Of the 160 permits issued, 78% were held by Homer area residents, 8% by Anchorage area residents, and the remaining 14% 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)(10) requiring that the number of fish of any species retained by commercial fishermen for their own use be documented on a fish ticket. Previously these fish had been voluntarily noted on fish tickets by some permit holders.[1]

In 2014, 9 permit holders reported retaining 10 Chinook, 183 sockeye, 128 coho, 318 pink, and 17 chum salmon for their own personal use (Appendix E7). With the exception of 3 sockeye salmon, all of these homepacks were from set gillnet harvests reported from the Southern District. Of those, 6 permit holders were Homer residents, and 3 were residents of Seldovia (Appendix E8).

COOK INLET SALMON ENHANCEMENT

Fisheries enhancement and rehabilitation in Alaska began in earnest in the early 1970s with the creation by the Alaska State Legislature in 1971 of the Fisheries Rehabilitation, Enhancement and Development Division (FRED) to help build and stabilize fisheries production. Prior to and during this time, there were 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, which stated,

> "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."

[1] Statewide electronic fish ticket database [Internet]. 1985- . Juneau, AK: Alaska Department of Fish and Game, Division of Commercial Fisheries. (cited: March 2015). [URL not available as some information is confidential]. Hereafter referred to as "fish ticket(s)".

Shortly thereafter, CIAA was created in 1976. Tutka Bay Lagoon Hatchery (TBLH) was built by the state of Alaska in 1976 and began rearing sockeye and pink salmon that year (Appendix F7). In 1983, the TBLH began operations producing sockeye and coho salmon (Appendix F8). Also in 1983, the Eklutna Hatchery began producing chum and coho salmon. The Crooked Creek Hatchery (CCH) was built in 1975 and began producing sockeye and Chinook salmon 2 years later, with coho salmon production starting in 1979. In 1991, residents of Port Graham formed the Port Graham Hatchery Corporation (PGHC) and began producing sockeye and pink salmon at a converted cannery in the village of Port Graham (Appendix F9). Early in 2014 CIAA acquired the assets of the PGHC, including permitted egg capacity, and is currently restoring the hatchery to working condition after a lengthy 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 merging with PGHC in early 2014, CIAA is now the second largest hatchery nonprofit in Alaska in terms of overall egg capacity.

In 2014, CIAA contributed 78.6% (214,200) of the total LCI sockeye salmon harvest of 272,659 fish, and less than 1% of the total LCI pink salmon harvest of 271,518 fish (Table 1; Appendices F1 and F6). These numbers are based on harvest location and not on otolith sampling of commercially harvested fish. In addition to sockeye and pink salmon releases, CIAA also has released an average of 674,500 coho salmon over the last 10 years (Appendix F8), and the Ship Creek Hatchery Complex (operated by ADF&G) has released an average of 658,000 Chinook salmon into LCI where both of these species are primarily harvested by sport users (Appendix F11).

TUTKA BAY LAGOON HATCHERY

TBLH is located in Tutka Bay, approximately 23 kilometers (14 miles) south of Homer (Figure 17). TBLH, constructed in 1976, is owned by ADF&G and has been operated by CIAA under contract since 1992. The facility was originally constructed as a pink and sockeye salmon hatchery. However, it also produced chum salmon from 1979 to 1990. 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. The TBLH had an initial capacity of 10 million pink salmon eggs, but major renovation work in 1993–1994 increased the physical capacity to 150 million eggs. In addition, TBLH has 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 have plagued this facility and made for erratic sockeye salmon releases from 1977 to 1999 when this species was incubated (Appendix F7). Sockeye salmon produced at TBLH were released into Leisure Lake (1977), Tustumena Lake (1978), English Bay (1990), and Tutka Bay (1996, 1997, and 1999). Fish released into Tutka Bay in 1996, 1997, and 1999 were of Packers Lake stock. Beginning in 2005, sockeye salmon were incubated and reared at the Trail Lakes Hatchery using Hidden Lake broodstock and were transferred to Tutka Bay Lagoon for imprinting and release, which resulted in better survival rates. Discussion regarding sockeye salmon releases from this site is located in the *Remote Releases* portion of this section. Pink salmon were raised consistently at this facility from 1977 to 2004 with releases ranging in size from 318,000 (1977) to 105 million (1996) and an average release of 42.4 million fish. All pink salmon broodstock was derived locally from the adjacent Tutka Lagoon Creek. Pink salmon were not only released from the hatchery site directly but also remote released from Halibut Cove Lagoon (1975, 1977, 1986–1992), Paint River (1980–1983), Homer Spit (1987–1992), and

Ingram Creek (1987–1990) in Turnagain Arm (Appendices F7 and F14). Pink salmon production was halted in 2004 because of low prices for this species, which resulted 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 (1981) to 3.2 million in 1988, with an average release of 841,000 fish. The original broodstock for the chum salmon return was taken from Port Dick Creek (Appendix F7).

In 2013, CIAA resumed production of pink salmon, releasing 4.4 million fry into Tutka Bay Lagoon, and 14.3 million in Port Graham adjacent to the Port Graham Hatchery. Runs to both of these locations were disappointing in 2014 with an estimated 1,740 of a projected 428,000 returning to the Port Graham release site, and only 22,433 of a projected 131,000 returning to the Tutka Bay Lagoon Hatchery. From these fish CIAA harvested 22,400 pink salmon for broodstock from Tutka Bay Lagoon, yielding 13.5 million eggs. An additional 1,740 fish were harvested for broodstock from the Port Graham SHA. In addition, 4,598 pink salmon were purchased from the common property fishery in Port Graham. From these 6,338 fish, 3.2 million eggs were taken. The resulting fry will be released in the Port Graham SHA in the spring of 2015.

Currently, TBLH has a permitted capacity of 125 million pink and 660,000 sockeye salmon eggs. Prior to 2013, thermal marks were not applied to any fish cultured 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 as well as the 14.3 million pink salmon released in the Port Graham SHA in 2013.

The 2014 pink salmon run to the TBLH was only the second year of returns since beginning production of this species after a 7 year hiatus. Of the 4.4 million BY2012 fry released last year, an estimated 131,000 (3%) were anticipated to return. The actual run was estimated at 22,433 fish. Harvest of these fish was complicated by several factors. The TBLH is located next to Tutka Lagoon Creek which is an index stream that is monitored by ground surveys throughout the season. During the harvest of sockeye salmon returning to the Tutka Bay Lagoon release site, it has become regular practice to store intercepted pink salmon returning to Tutka Lagoon Creek in a net pen until conclusion of the sockeye salmon harvest when the pink salmon would be released into the lagoon. This was done to reduce handling stress on the pink salmon as many of these fish would be caught and released repeatedly by the hatchery's seine boats that were targeting sockeye salmon. Frequently during this process, pink salmon would still find their way into Tutka Lagoon Creek resulting in a modest escapement level that once the penned fish were released would generally fall within the SEG. However, the winter of 2013–14 produced below normal snowpack, resulting in a diminished water level in Tutka Lagoon Creek. This was the case on July 17 when ADF&G surveyors tallied only 48 pink salmon in Tutka Creek and CIAA reported having 11,000 pink salmon in net pens. On that date the anticipated escapement into the creek needed to fall within the final SEG range was 3,640–9,520 pink salmon. At that time, Tutka Creek was nearly dry from inadequate rain combined with a minimal snowpack. The following week on July 25, ground surveyors counted 130 pink salmon in the near dry creek and CIAA had 25,000 pink salmon in net pens. With an anticipated escapement of 5,395–14,110 pink salmon to meet the SEG, and a run timing projected to be approximately 83% complete on that date, ADF&G directed CIAA to not retain any additional bycaught pink salmon and gave permission to harvest up to one half of the 25,000 penned pink salmon for broodstock when they became ripe. Later the following week, an aerial survey was flown of Tutka Bay Lagoon during

which at least 10,000 pink salmon were observed outside of the net pens. Following this on August 6, CIAA was given permission to harvest all of the 25,000 penned pink salmon for brood. By that time sockeye salmon harvest was complete, consequently there were no more bycaught pink salmon. A ground survey on August 18 counted 7,496 pink salmon in Tutka Creek. Given that this is within the SEG for that system, CIAA was again allowed to fish for and retain hatchery produced pink salmon in Tutka Lagoon. Final escapement for Tutka Lagoon Creek in 2014 was 10,152. This was within the SEG of 6,500–17,000 pink salmon and below the 10-year average escapement for this system of 24,500 fish. Total broodstock harvest from the pink salmon run to Tutka lagoon was 22,401 fish.

TRAIL LAKES HATCHERY

The TLH is located on the Seward Highway, approximately 47 kilometers (29 miles) north of Seward (Figure 10). ADF&G built this hatchery in 1982, and CIAA has operated it under contract since 1989. Initially, this facility produced sockeye, coho, and Chinook 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), with an average of 10.0 million fish per year from 2004 to 2013. 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. See the section *LCI Remote Releases* under *Cook Inlet Salmon Enhancement* for further information regarding specific remote release sites. 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 average release of 674,500 fish from 2004 to 2013. 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 in 1985 into Resurrection Bay systems. This hatchery has been consistently applying thermal marks to releases since 1991.

In 2014, the total run of adult sockeye salmon to remote release sites from this hatchery in Cook Inlet was 264,995 fish. The overall run was more than the CIAA forecast run of 155,600 sockeye salmon (Appendix F1). A total of 173,030 sockeye salmon were sold for hatchery cost recovery worth $1.8 million dollars (Table 3). A total of 11,959 sockeye salmon were collected for broodstock, and of those, no spawned or unusable carcasses were reported sold or donated (Appendix F2). The common property fishery harvested approximately 41,173 of the total TLH sockeye salmon run (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 6 million coho, 4 million Chinook, and 30 million sockeye salmon eggs.

In 2014, a total of 11.1 million sockeye salmon eggs composed of 3 stocks were collected from 4 sites in Cook Inlet.

Sockeye salmon were released at 7 locations in LCI as well as into Hidden Lake in 2014. Bear Lake stock was released into Resurrection Bay and stocked back into Bear Lake. English Bay stock smolt taken from adults that returned in 2012 (BY2012) were planted in Tutka Bay Lagoon. Shell Lake smolt (BY2012) were backstocked into Shell Lake. English Bay origin fry

(BY2012) were backstocked into Second Lake in the English Bay Lakes system. Hazel, Leisure, and Kirschner lakes were stocked with English Bay stock fry.

In 2014, a total of 1,772 adult coho salmon returned to the Bear Creek weir. CIAA collected 383 coho salmon for broodstock for a total of 581,279 green eggs, which is fewer than the 4.0 million eggs that CIAA is permitted for this species (Appendices F1, F4, and F5). ADF&G also harvested 184 fish for use as broodstock in the *Salmon in the Classroom* educational project. In addition, CIAA donated 671 excess coho salmon from the weir to members of the public. The remaining 534 fish were passed into Bear Lake to spawn naturally. The majority of the coho salmon run originated from the BY11 fry release (222,000). No coho salmon were commercially harvested from the Eastern or Outer districts in 2014. In the Southern District 790 coho salmon were harvested in the commercial common property fishery with 128 of those fish retained as homepack by the permit holder. Given that 132,000 BY11 smolt from the Ship Creek Hatchery Complex in Anchorage were stocked into the Nick Dudiak Fishing Lagoon on the Homer Spit, an unknown percentage of the Southern District commercial coho salmon harvest may have originated from that facility.

PORT GRAHAM HATCHERY

The Port Graham Hatchery (PGH) is in the village of Port Graham (Figures 1 and 18) and originally was located in a converted Whitney-Fidalgo salmon cannery. The hatchery was permitted in September 1992 and was actively operated by the Port Graham Hatchery Corporation until 2007. Ownership of this facility was transferred to Cook Inlet Aquaculture Association 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 in 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 during many years from 1991 to 2006 with releases ranging from 85,000 (1991) to 918,000 (1999) with an average release of 316,000 fish between 1991 and 2006 (Appendices F9 and F19). This facility provided sockeye salmon fry and smolt for the Nanwalek Salmon Enhancement Project (NSEP) from 1992 to 2008. See the NSEP section under *LCI Remote Releases* for further details on this project.

Pink salmon were released during most years from 1991 to 2007 with releases ranging from 255,000 (1991) up to 57.2 million (2003) and an average release of 11.6 million fry. In addition, 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. The coho salmon project was discontinued after this release. In January 1998 a fire completely destroyed the original Port Graham Hatchery 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 for 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 a hatchery manager, combined with financial troubles, resulted in sockeye and pink salmon releases ending in 2006 and 2007, respectively. Consequently, the PGHC contracted with the CIAA in 2007 to harvest 510,000 sockeye salmon eggs from returning PGH fish, incubate them

at the TLH, and then release them as fry in the English Bay Lakes (246,000; October 30, 2008) and as smolt in Port Graham (112,000; June 15, 2009).

For the first time since 2007, pink salmon fry were released into the Port Graham Hatchery SHA in 2013. Fry were released directly into the bay without a net pen and without being fed. A total of 14,250,000 fry were released with 428,000 adults anticipated to return in 2014 (Appendix F14). However, only 1,740 adult pink salmon were harvested from the Port Graham SHA in 2014. In addition to these, CIAA purchased 4,598 pink salmon caught in the Port Graham Subdistrict from a processor for use as broodstock. Some of the returning hatchery reared fish may have strayed into the nearby Port Graham River. Escapement into the Port Graham River was 32,295 pink salmon. This is above the 10-year average escapement for this system of 29,200 fish. Historically, many of the highest consecutive years of escapement for this system were also years when this hatchery was operational and releasing large numbers of pink salmon.

As was the case last year, broodstock for the Port Graham releases was transported to the TBLH where the eggs will be allowed to ripen and hatch, with the final imprinting and release occurring at the Port Graham Hatchery historic release site. See the Tutka Bay Lagoon Hatchery section under *Cook Inlet Salmon Enhancement* for further information regarding the Port Graham pink salmon harvested in 2014.

A total of 188,000 BY2013 pink salmon fry that were incubated at the TBLH were remote released directly into the Port Graham Hatchery SHA in 2014. No net pens were used and the fry were not fed.

LCI REMOTE RELEASES

Nanwalek Salmon Enhancement Project (NSEP)

The English Bay Lakes system is located approximately 1.6 kilometers (1 mile) southeast of the village of Nanwalek (formerly English Bay; Figures 1, 2, 5, and 18). The English Bay Lakes 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 stock of sockeye salmon native to the Southern 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 Fishery Research, Enhancement, and Development (FRED) Division conducted limnology studies and reported in 1992 that these lakes were nutrient poor, 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. Stocking at English Bay Lakes began in 1990 with a release of 855,000 fry that were grown from eggs collected the previous year in English Bay and reared at the Big Lake Hatchery facility near Wasilla. With the closure of Big Lake Hatchery in 1992, incubation and early rearing of sockeye salmon from English Bay Lakes occurred at the nearby PGH. The EBL system has received sockeye salmon releases in all but 7 years since 1990. These releases have varied significantly in number from 50,096 to 906,057 during that time, with an average of 207,000 fry per release over the last 4 years. In October 2014, CIAA released 209,000 fall fry (BY2013) into Second Lake in the English Bay Lake system (Appendices F12 and F20).

A total of 163 sockeye salmon were sampled for otoliths throughout the summer at the English Bay weir. Of the 163 that could be read, 14.7% were found to have hatchery thermal marks. Age

groups of the adult fish sampled at the weir were 15.2% age 1.2, 63.2% age 1.3, 9.1% age 2.2, and 12.8% age 2.3. In addition, a smolt weir was installed and maintained earlier in the season with otoliths collected from juvenile sockeye salmon. Of those, that were readable, 25.7% had a hatchery thermal mark. Overall, 78.7% of the outmigrating smolt were age 1, with the remaining being age 2. In addition, 3,171 coho salmon smolt migrated from English Bay Lakes (CIAA 2014b)

Leisure and Hazel Lakes

Leisure (also known as China Poot) Lake is located approximately 18 kilometers (11 miles) southeast of Homer (Figures 1, 2, and 16). 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 adult sockeye salmon. This lake has been stocked regularly with an average of 1.6 million sockeye salmon fry per year since 1976 (Appendix F12). Until the early 1990s, Leisure Lake was used experimentally to determine fry stocking densities that would produce optimum adult returns. Lake fertilization was initiated in 1984 to increase salmon production. The brood source for stocking from 1976 until 2004 was Tustumena Lake. A lawsuit by the Wilderness Society and the Alaska Center for the Environment challenging the permit to collect these eggs (provided by the United States Fish and Wildlife Service) 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 of similar timing to Tustumena Lake. This stock was first enhanced by ADF&G in 1976 and later by CIAA. From 2004 through 2011, Hidden Lake was the source of broodstock for Leisure Lake and Hazel Lake stocking. In 2012, fry from English Bay Lakes were planted into Hazel Lake, with Hidden Lake stock sockeye salmon planted into Leisure Lake. In 2014, English Bay stock fry were planted into both Leisure and Hazel 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 24 of the last 27 years with an average of 1.1 million sockeye salmon juveniles (Appendix F12).

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. Since 2013, ADF&G has collected 96 sockeye salmon per week from the Southern District set gillnet harvest and CIAA has examined their otoliths for thermal marks. Results from 2014 are not yet available, but in 2013 the proportion of hatchery fish in the sample increased from 0% the first week of July to 8.3% the last week of July. Overall, 4.3% of the set gillnet harvest was comprised of hatchery fish, with 2.9% coming from releases in Tutka Bay, 1.0% from Leisure/Hazel lakes, and 0.3% from English Bay Lakes. Estimated commercial harvest contributions by returning Leisure Lake and Hazel Lake sockeye salmon are shown in Appendix F15. These values are the total seine harvest of all sockeye salmon from the Southern District. Prior to returns of significant numbers of enhanced salmon to the Southern District in 1980, the seine harvest of sockeye salmon was minimal with a range of 5 to 5,232 fish and an average of 1,749 fish since 1959, excluding 1978, when 54,000 were harvested (Appendix A3). Prior to enhancement, the set gillnet harvest from 1959 to 1980 ranged from 6,148 to 54,404 fish with an average of 19,538 fish. After enhancement, the set gillnet harvest increased by half to 30,015 fish per year on average.

However, the average seine harvest since 1985 has increased more than 50 times over the previous amount to more than 96,000 fish per year.

Overall return to this site from 2010 (BY09) and 2011 (BY10) sockeye salmon releases (3.2 and 2.7 million respectively) was estimated at 13,059 fish. The 2010 release was derived from Hidden Lake stock, whereas the 2011 release was of English Bay stock (Appendices F1, F12, and F15; Figures 19 and 20).

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 12). 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 returning anadromous salmon. Kirschner Lake has been stocked for 24 of the last 28 years with an average of 291,000 fry. In 2014 CIAA released 217,000 sockeye salmon fed fry of English Bay stock into Kirschner Lake. Harvest in 2014 was above anticipated (8,200 fish) with 16,555 sockeye salmon harvested for cost recovery, followed by a common property harvest of 3,068 fish. This year's run is the result of 2010 (BY09 Hidden Lake) and 2011(BY10 English Bay) fry releases (Appendices F1, F12, and F17).

Tutka Bay Lagoon

In addition to pink salmon releases from the TBLH, the lagoon has also been a remote release site for sockeye salmon hatched at TLH since 2005. This is because of pathogen-related issues at the TBLH facility that are specific to sockeye salmon, which has hampered production of this species at this hatchery. Releases at this site historically have been of Hidden Lake stock since 2005 (with Packers Lake stock released during years of local TBLH production). However, beginning in 2011, all releases have been of English Bay Lake stock. The intent of this is to develop an independent English Bay stock brood source and not rely on annual runs to English Bay Lakes for brood. Sockeye salmon releases from this location are documented in Appendix F12.

The overall sockeye salmon adult run to this release site in 2014 was estimated at 35,609 fish (Appendices F1 and F18). Of these, 30,404 were reported on fish tickets as being harvested for cost recovery from the Tutka SHA, and 5,205 for broodstock and hatchery excess (Appendices F1 and F2). Commercial set gillnet permit users in the Tutka Bay and Barabara Creek Subdistricts likely also harvested a portion of this run. This assumption is supported by the increase in reported July harvests. However, otoliths collected from the 2014 set gillnet harvest are still being read for thermal marks, so hatchery contributions to this fishery are not yet available.

In 2014, CIAA remote released 599,500 sockeye salmon smolt (brood year [BY] 2012) into Tutka Lagoon. These fish were hatched and reared to smolt at the TLH before being transferred to net pens at TBLH for imprinting. Of those released, all were of English Bay Lakes stock. The sockeye salmon run to this facility in 2014 was of mixed Hidden Lake (BY09–197,100) English Bay origin (BY09–58,200, BY10–371,300) and Tutka Lagoon stock (combined Hidden Lake and English Bay stock) parentage (BY09–26,600).

Port Graham

Similar to the Tutka Bay Lagoon Hatchery SHA, in recent years the Port Graham Hatchery SHA has served as a remote release site for smolt and fry incubated at other locations. This occurred in 2009 with the release of 112,000 English Bay stock sockeye salmon, and again in 2013 with 102,000 BY2011 English Bay stock sockeye salmon. Also in 2013, CIAA released 14.3 million pink salmon fry into the PGH SHA, and 188,000 the following year. The intent of these pink salmon releases is that they can be used as a brood source for the PGH which CIAA acquired in 2014.

Paint River Fish Ladder

The Paint River system in the Kamishak Bay District contains at least 40 kilometers (25 miles) of potential salmon spawning and rearing habitat. Currently the Paint River system is barren of salmon because of a waterfall at tide line that was impassable prior to 1993. The former FRED Division and CIAA initiated feasibility studies for a fishway in 1979. CIAA received State and Federal grant funds to build the fishway, completing construction in the fall of 1991. 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 sockeye salmon return to the fish pass project site. 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 0.5 million pink salmon fry from 1980 to 1983. Returns from the pink salmon releases were documented by aerial survey with observations of a few dozen to 5,000 fish observed in saltwater below the fish ladder during the return years of 3 of the 4 years that pink salmon were released. While there were several sightings of sockeye salmon in the area of the fish ladder during return years of the releases, the only harvest that occurred was in 1991 where 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. Typically from 1991 to 2003, between 500 and1,000 sockeye salmon were observed in the Paint River Subdistrict with the peak observation occurring 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.

Modifications were made to the ladder in 2010, 2011, and 2012 to address concerns made by ADF&G 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 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 was reopened for similar periods of time in 2012, 2013, and 2014. No salmon were observed on aerial surveys in 2012 or 2013. On September 7, 2014, visiting CIAA staff found one live coho salmon and 3 unidentified salmon carcasses above the ladder. In addition, later that day when flying a survey upstream of the ladder, ADF&G and CIAA staff observed what appeared to be 6 to 10 coho (or possibly Chinook) salmon in Duneletak Creek 5 miles above the ladder.

Also in 2014, CIAA purchased 3,028 pink salmon caught in Bruin Bay from commercial fishermen. From these fish 1.4 million green eggs were harvested. These will be released as fry in the Paint River above the fish ladder early in 2015.

Bear Lake and Resurrection Bay

Bear Lake is located approximately 10 kilometers (6 miles) northeast of Seward. 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, as well as alleged competing species such as sockeye salmon. To accomplish this, the pesticide Rotenone was methodically applied to the lake on August 26, 1963, by ADF&G biologists. 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, page 148).

Coho salmon hatched from eggs collected in Bear Creek in the previous fall were reintroduced in November and December of 1963.

> "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." (Bandirola 1966, page 129)

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 (Family 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 species of salmon other than coho and sockeye are passed back to the downstream side of the weir. In addition to Dolly Varden char, weir operators have documented in annual reports returning steelhead trout (*Onchorhynchus mykiss*), Chinook salmon, and 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 in 1971 on July 21 and July 22. 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, 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 for the enhancement of sockeye salmon in this lake. Bear Lake has been stocked since 1963 with coho salmon. From 2004 through 2013, an average of 533,600 coho salmon smolt have been released annually (Appendix F13). 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 recent 10-year (2004–2013) average of 2.8 million released. Sockeye salmon

released into this lake from the Trail Lakes Hatchery from 1990 to 1992 came from the Upper Russian River and Big River, both of which drain into upper Cook Inlet. In addition, in 1998, 507,000 Tustumena Lake sockeye salmon smolt that had also been reared at the Trail Lakes Hatchery 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 (Appendix F14). In 2008, CIAA began releasing an average of 1.6 million sockeye salmon smolt annually from net pens anchored in Resurrection Bay.

The sockeye salmon runs to Resurrection Bay in 2014 primarily came from the 2.2 million BY09 Bear Lake fry released in 2010 and the 3.8 million BY10 Bear Lake fry released in 2011. There were no Resurrection Bay net pen releases that contributed to 2014 adult runs. While the anticipated run was 66,000 sockeye salmon, the actual run was more than double that amount with a total of 146,000 adults accounted for (Appendices F1 and F12).

In 2014, 1,772 adult coho salmon returned to the Bear Creek weir. CIAA collected 383 coho salmon for broodstock for a total of 581,000 green eggs, which is fewer than the 4.0 million eggs that CIAA is permitted for this species. In addition, CIAA donated 671 excess coho salmon from the weir to members of the public (Appendices F1 and F5). 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). Additional information regarding 2014 runs to Bear Lake may be found in the Eastern District section of this report.

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 pounds), 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 10). 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. After this time period, stocks sharply declined, apparently due to overexploitation.

The Kamishak Bay sac roe fishery began in 1973 and will be discussed in more detail in the following section.

HARVEST STRATEGY AND STOCK ASSESSMENT

The LCI herring management area 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 has 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 with legal gear at times including both gillnet and seine. All of these fisheries have suffered periods of stock depletion and extended closures (Appendix G2).

Currently, 2 separate herring management plans regulate fisheries in LCI, both adopted in 2001 by the BOF. The first management plan (5 AAC 27.463) renders waters of the Southern, Outer and Eastern Districts closed to commercial herring harvest, citing concerns for 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%, and a reduction in the biomass threshold (the minimum necessary in order to allow a fishery) from 8,000 short tons to 6,000 short tons. 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. Historical harvest and management information for the Kamishak Bay sac roe fishery can be found in Appendices G3 and G4.

The Kamishak Bay sac roe fishery began in 1973 when 8 permit holders harvested 243 short tons. 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. The stock recovered quickly, and the fishery reopened in 1985 with a harvest of 1,132 short tons. The fishery remained open seasonally from 1985 to 1998 with an average annual harvest of 2,878 short tons before being closed again beginning with the 1999 season due to low abundance levels. Management since that time has concentrated on assessment of the Kamishak Bay herring biomass to determine when commercial harvest can be sustainably resumed.

The primary method of herring biomass assessment in LCI is aerial survey. When adequate funding is available, aerial surveys are 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 has not occurred in the Outer and Eastern districts in many years and is not likely to occur in the near future, aerial surveys of these areas are no longer conducted. Even though no commercial fishery is expected in Southern District, fishermen do annually participate in a personal use herring fishery in Kachemak Bay. Aerial surveys of Kamishak Bay have been moderately consistent across seasons, with numbers and distribution of herring schools, location and extent of spawning events, and visibility factors affecting survey results recorded on index maps for each survey. Beginning in 2012, 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 are 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 provide 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 has been used since 1994 to forecast herring abundance for Kamishak Bay, as well as to hindcast previous years' total abundance (Appendix G5). This dynamic model incorporates 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 minimizes the differences between expected and observed values for each of its components, updates hindcasts of previous years' abundance, and produces a forecasted estimate of the following year's run. This tool is important both for management to help determine appropriate harvest levels and for research to revise previous biomass estimates with updated return data and gain a more accurate assessment of trends over time (Appendix G5).

When funding is available, ADF&G utilizes a chartered commercial seine vessel to aid in herring assessment in Kamishak Bay District and opportunistically in the Southern District. In years when no commercial fishery occurs, ADF&G is unable to utilize the fleet to collect samples for age, sex, and size composition analysis. By chartering a commercial purse seine vessel, age, sex, and size and disease samples together with additional related information can be collected and used to further aid in understanding the dynamics of the herring stock. When sufficient funding is available, separate sampling charters are conducted to sample different portions of the spawning migration (early and late). In years when a fishery occurs (traditionally in the early part of the migration), a single late season sampling charter is employed to obtain a more complete picture of the overall run. Hydroacoustic observations of herring schools and water temperature/depth parameters are concurrently documented during the charters. The information gathered during these sampling efforts provides age class data that 1) allows the staff to generate an age composition estimate of the overall biomass observed by aerial surveyors throughout the entire duration of the spawning migration; and 2) facilitates the evaluation of the relative strength of recruiting year classes. This is critical in generating the annual herring forecast. The charters further serve 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. Fortunately, temporary funding was identified in 2013 and 2014, enabling staff to resume use of this important stock assessment tool.

SEASON SUMMARY

In 2014, ADF&G completed 2 vessel charters from April 27 to May 4 and from May 12 to 18 to collect representative age composition and disease samples. These charters collected over 5,000 herring throughout Kamishak Bay District between Cape Douglas and Iniskin Bay. This allowed ADF&G staff to generate an age composition estimate of the observed spawning biomass. Additional hydroacoustic observations from the charters corroborated the relative abundance of herring observed by aerial surveyors. The ASA model was used to estimated age composition of the 2014 spawning biomass and the 2015 forecasted biomass (Appendix G1). The ASA model's

hindcast estimate of the 2014 biomass (6,214 short tons) was similar to the aerial survey index in 2014 (6,138 short tons) and also similar to the 2014 forecast (6,318). ADF&G uses standardized methods to quantify the surface area of observed herring schools and convert them into biomass estimates to scale the ASA model. However, repeat sightings of schools residing in the same areas on consecutive surveys make it difficult to estimate total season biomass. The fact that last years (2014) aerial survey index was similar to both the preseason forecast and postseason hindcast suggests the ASA model is performing well.

The forecasted herring biomass generated by the ASA model for 2015 in Kamishak Bay District is 5,699 short tons, which is below the Kamishak Bay District Herring Management Plan (KBDHMP) regulatory threshold of 6,000 short tons necessary to consider allowing a commercial harvest (Figure 21). Also, the second research charter in 2014, collecting age composition samples during the latter portion of the return (mid to late-May), documented another relatively weak recruitment of age-3 herring within the current spawning biomass. Despite the lack of a strong recruitment event, this population is showing signs of recovery, perhaps due to reduced disease-related mortality as evidenced by consistently low *Ichthyophonus* infection rates and the increased presence of older cohorts (> age-7) in the population. *Ichthyophonus* incidence has been demonstrated to increase with host size and age in Pacific herring (Herschberger et al. 2002; Herschberger et al. 2015).

ADF&G aerial survey staff observed a total of 6,138 short tons (1 short ton = 2,000 pounds) of herring in Kamishak Bay District in 2014; the eighth highest index in the last 25 years. Surveyors also documented 3.2 miles-of-spawn from 14 spawning events, the eleventh highest miles-of-spawn index since 1990. Management regulations governing commercial harvests in Kamishak Bay seek to target older, repeat spawners to protect recruit-class herring representing future productivity. Recent years' observations confirm that recruitment of younger fish into the Kamishak spawning population over the past 20 years has been relatively poor. Although there is no definitive explanation for this lack of a strong recruitment event, the prevailing hypothesis suggests that poor fitness of the fish, characterized by low average weights-at-age, has contributed to higher than normal over-winter mortality. The presence of Ichthyophonus, a protozoan pathogen linked to population declines of Atlantic herring, likely also contributed to the decline and suppressed productivity of the Kamishak herring population. Relatively high Ichthyophonus infection rates (20–52%) were observed in the mid-2000s, but have diminished to background levels (1–3%) the past 6 years. Diminished infection rates now appear to be contributing to stock recovery, as evidenced by the increased abundance of post-recruit aged herring (> age-5) observed in 2014. However, the mean weight at age of herring spawning in Kamishak Bay in 2014 was once again near the lowest observed over the past 30 years.

2015 HERRING SEASON OUTLOOK

The forecasted herring biomass generated by the ASA model for 2015 in Kamishak Bay District is 5,699 short tons. This is below the minimum regulatory threshold of 6,000 tons specified in the *Kamishak Bay District Herring Management Plan* (5 AAC 27.465). Given the low biomass and lack of recent strong recruitment events, ADF&G will not prosecute a commercial fishery in 2015.

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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
Marnee Beverage	F&G Prog. Tech, (Jan–Sept)	Office Administration
Carolyn Bunker	F&G Prog. Tech, (Sept–Dec)	Office Administration

Seasonal Employees with the Division of Commercial Fisheries

Name	Job Class	Project / Title
Carolyn Bunker	Admin. Clerk II (March–Aug.)	Office Administration
Genarita Grobarek	FWT II	Delight Lake Weir
Patrick Houlihan	FWT II	Stream Survey Technician
David Knight	Boat Officer I	R/V *Pandalus*
Joe Loboy	FWT III	Port Sampler/GIS Technician
Corrine Truesdale	FWT III	Delight Lake Weir
Ben Dubbe	FWT II	Delight Lake Weir
Tom Sigurdsson	FWT III	Stream Survey Technician

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FIGURES AND TABLES

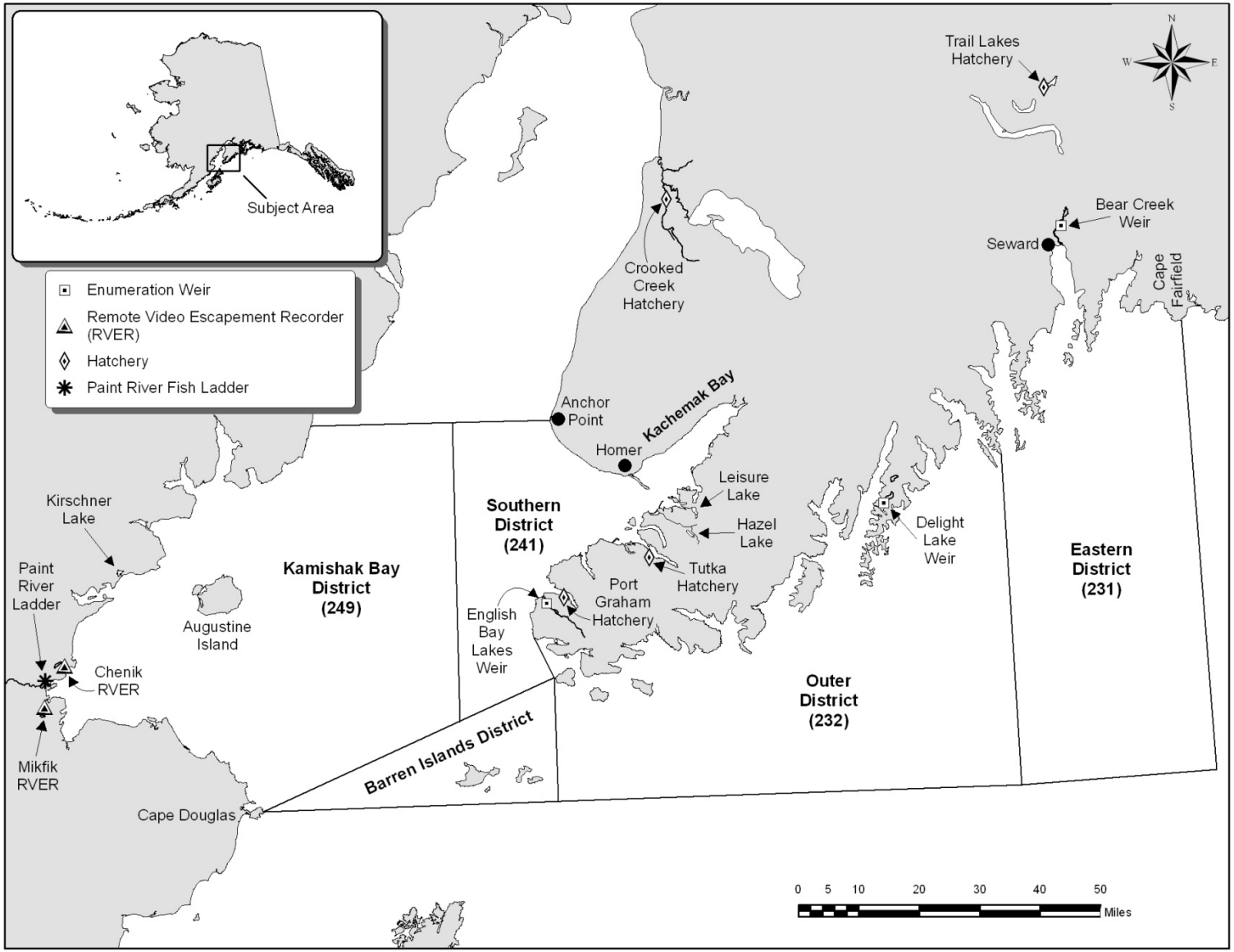

Figure 1.–Lower Cook Inlet management area showing commercial fishing districts, salmon hatcheries, weir and fish ladder locations and remote salmon video monitoring sites.

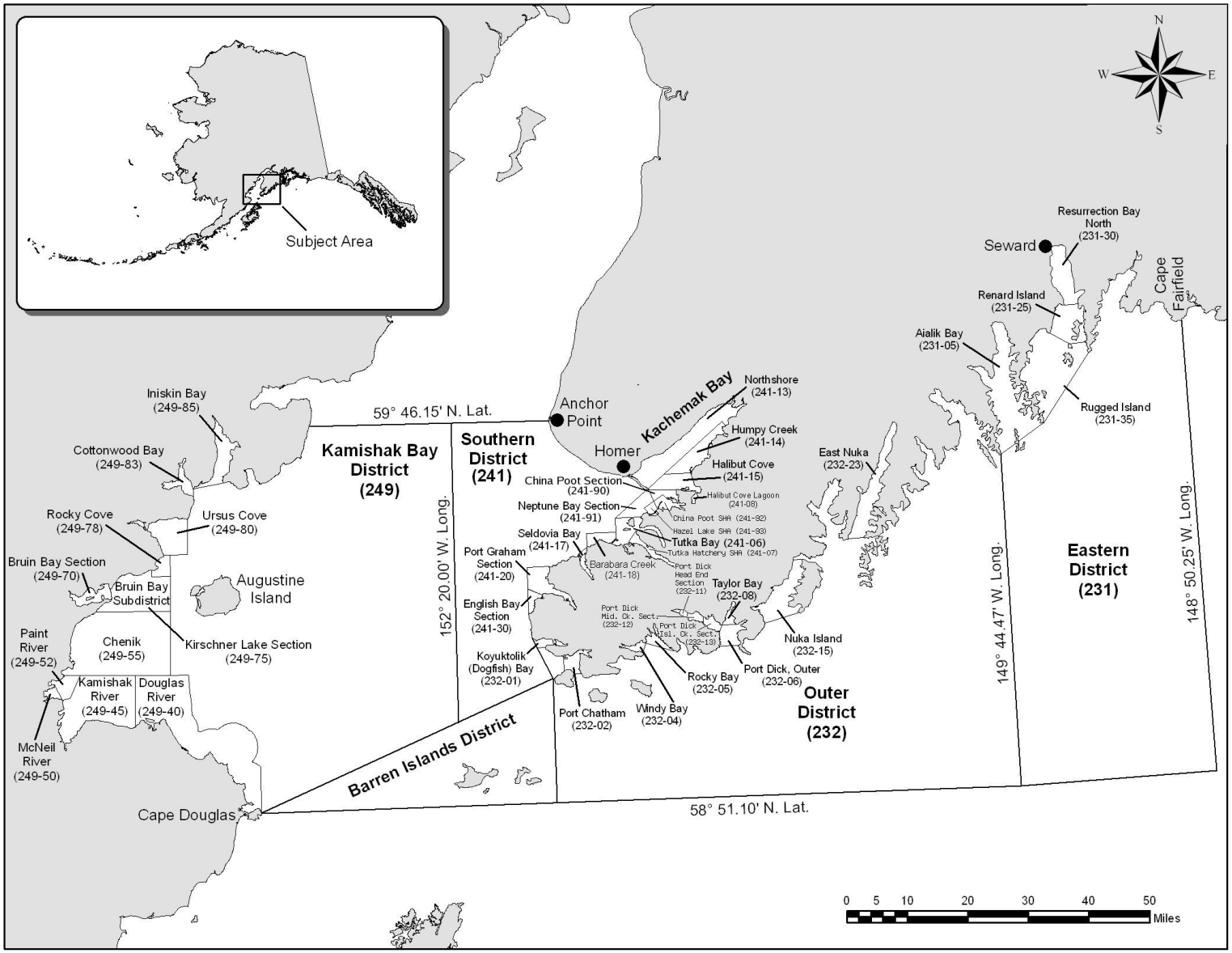

Figure 2.–Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts.

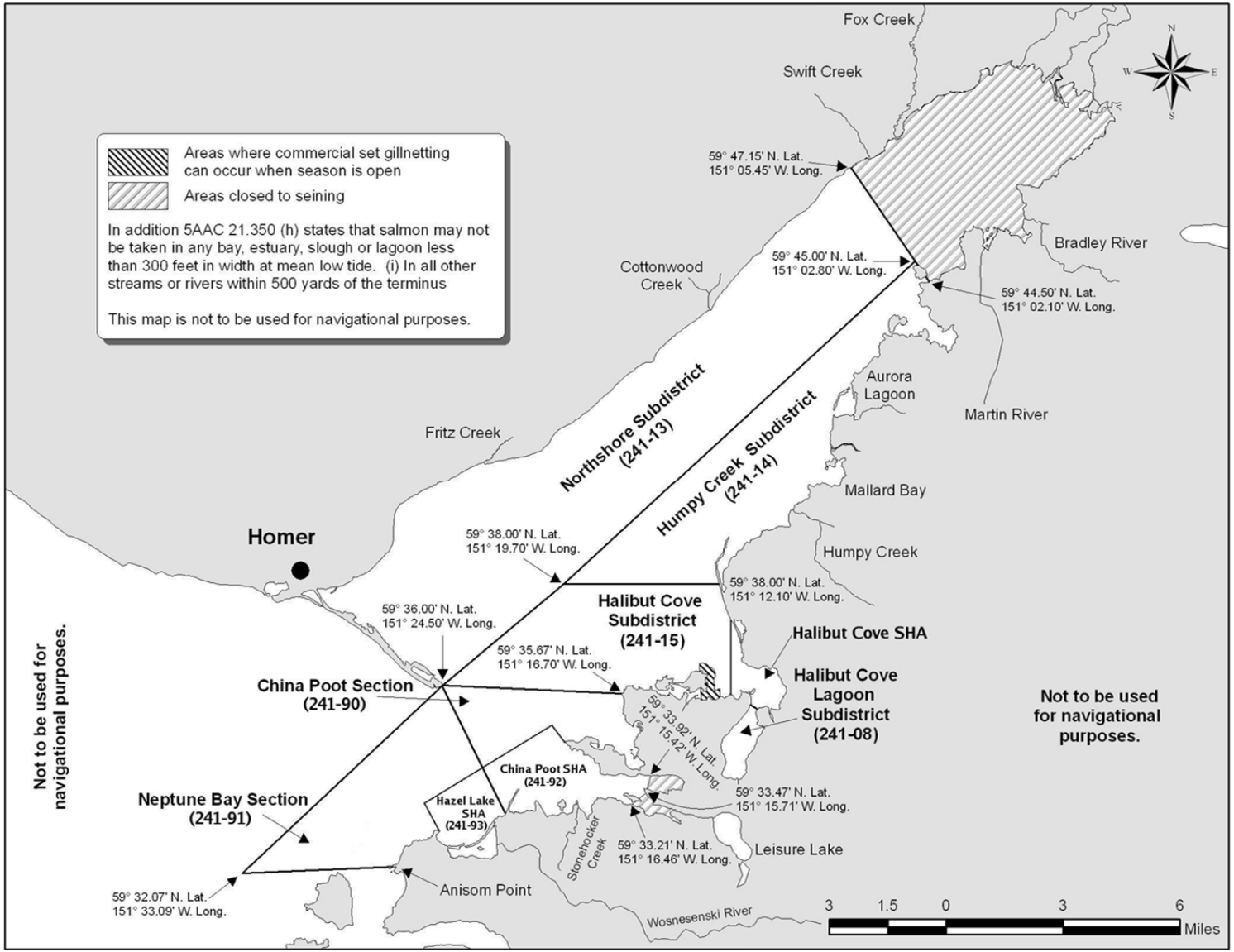

Figure 3.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Chugachik Island to Anisom Point.

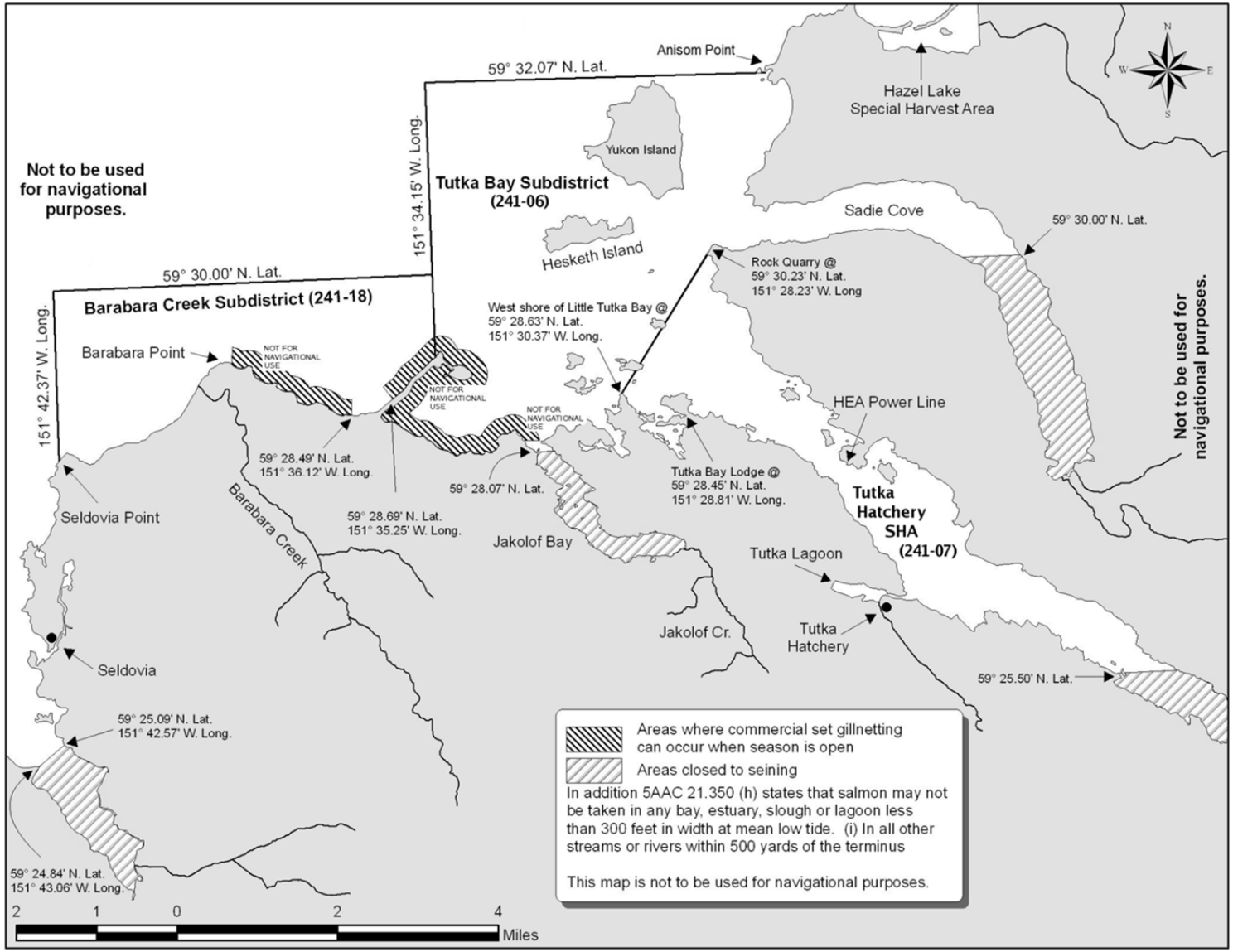

Figure 4.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Anisom Point to Seldovia Point.

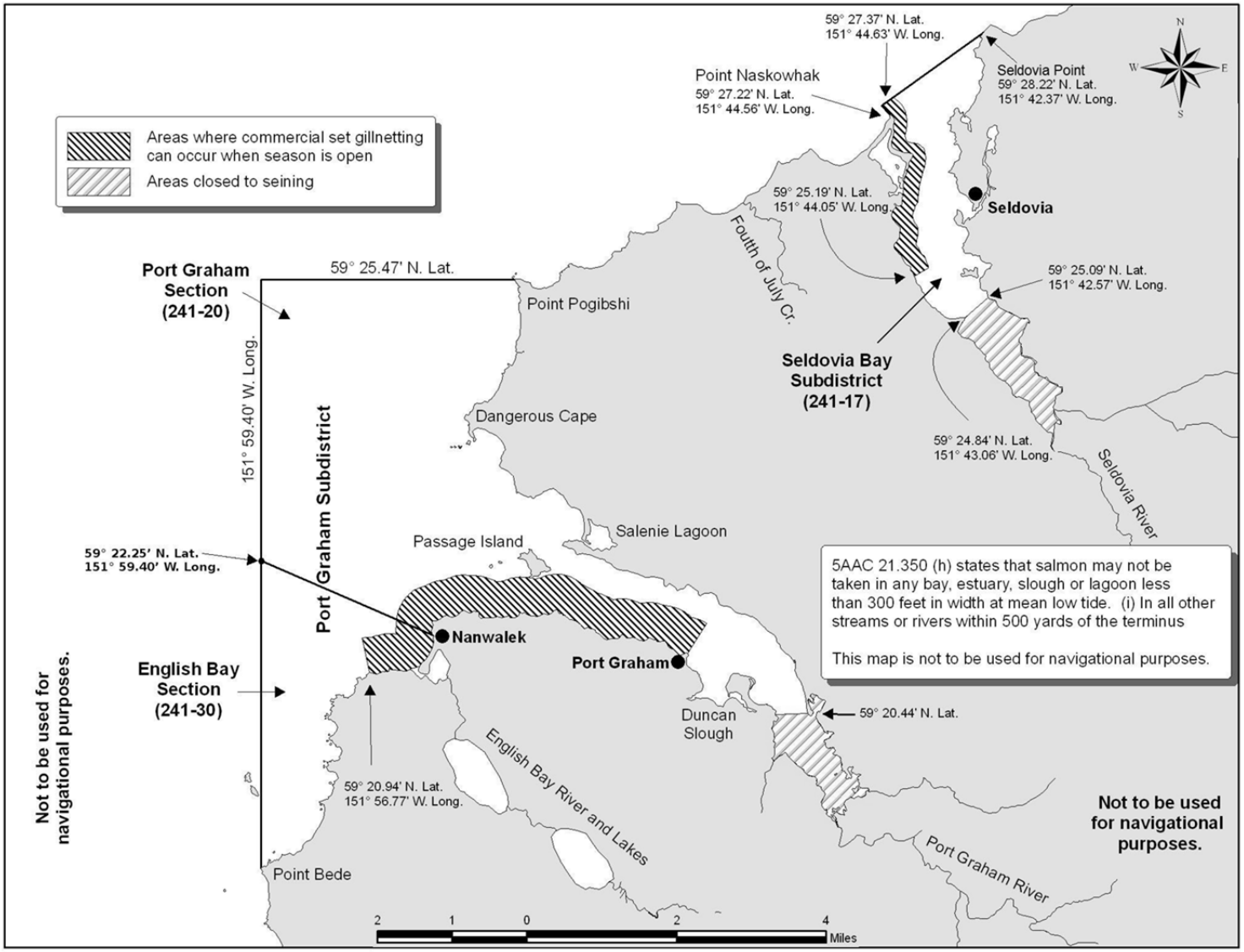

Figure 5.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Seldovia Point to Point Bede.

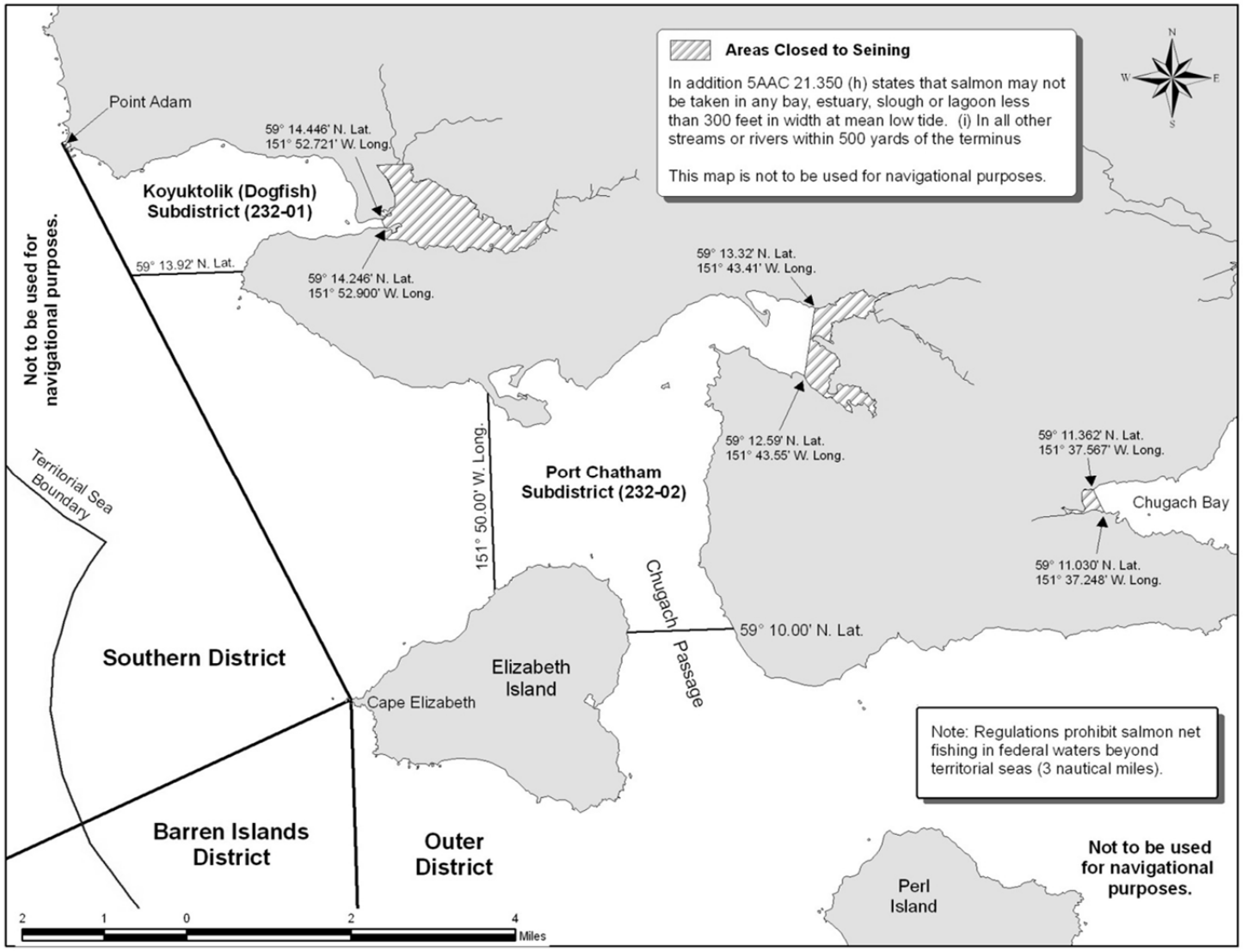

Figure 6.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Point Adam to Chugach Bay.

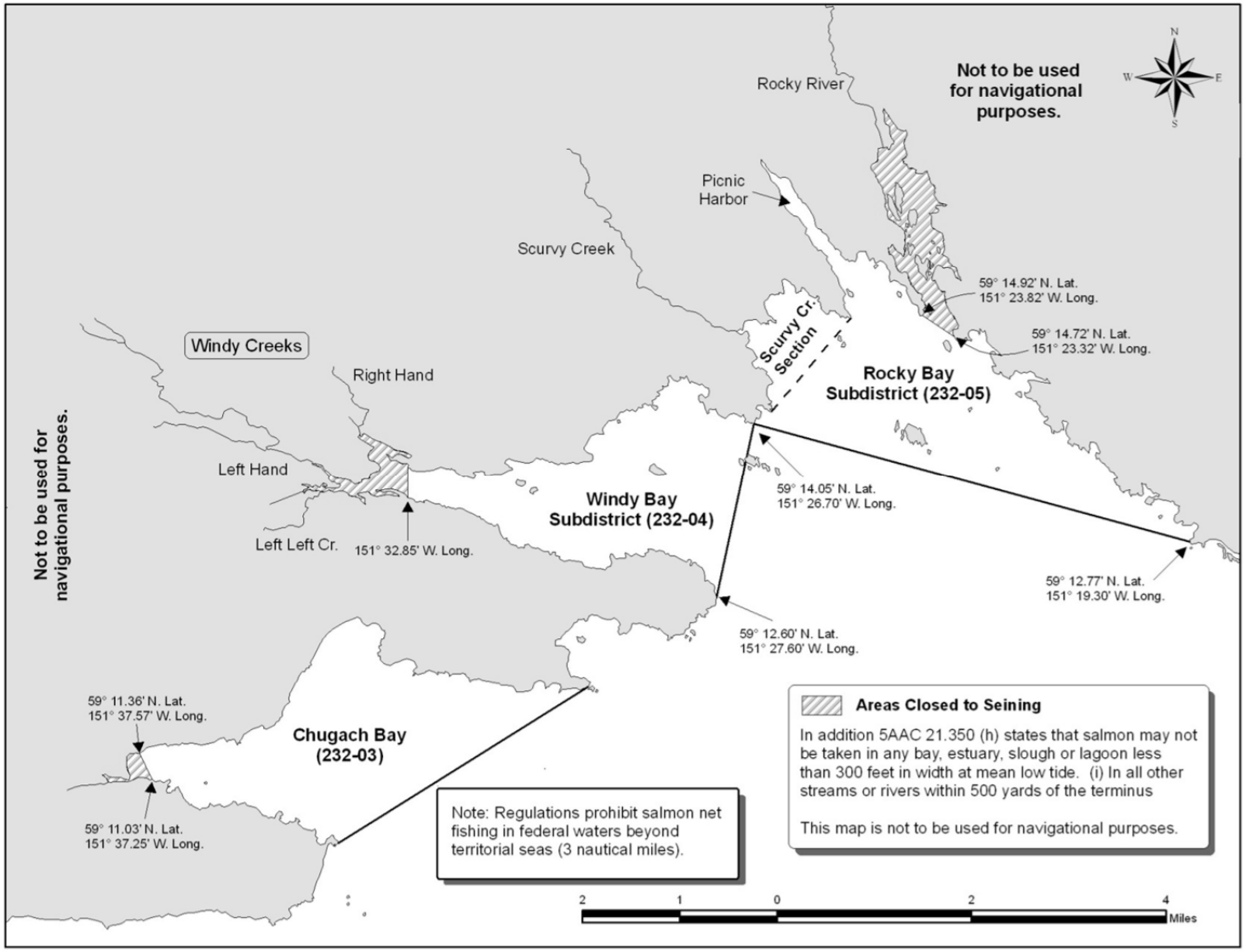

Figure 7.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Chugach Bay to Rocky Bay.

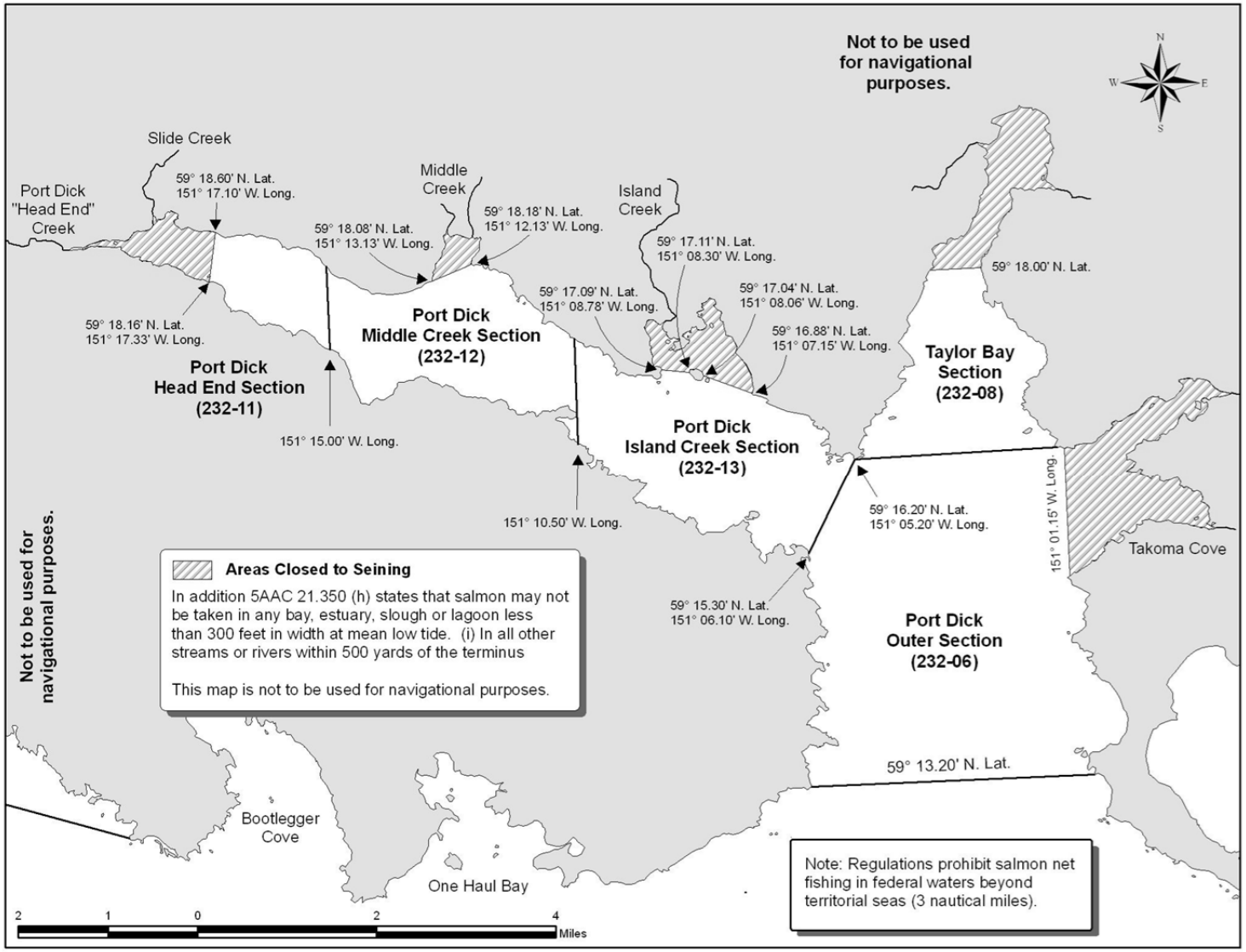

Figure 8.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Port Dick area.

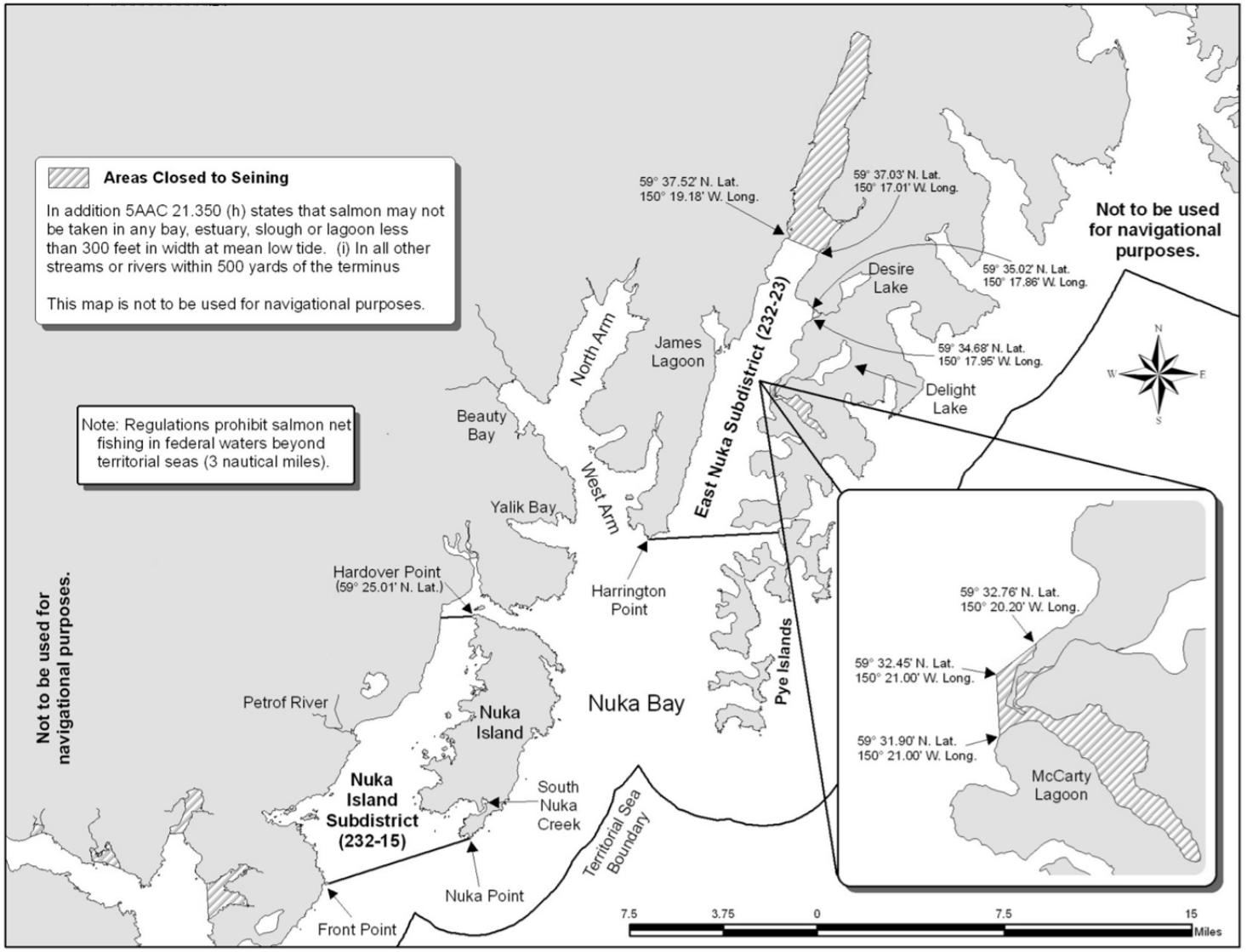

Figure 9.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Nuka Bay area.

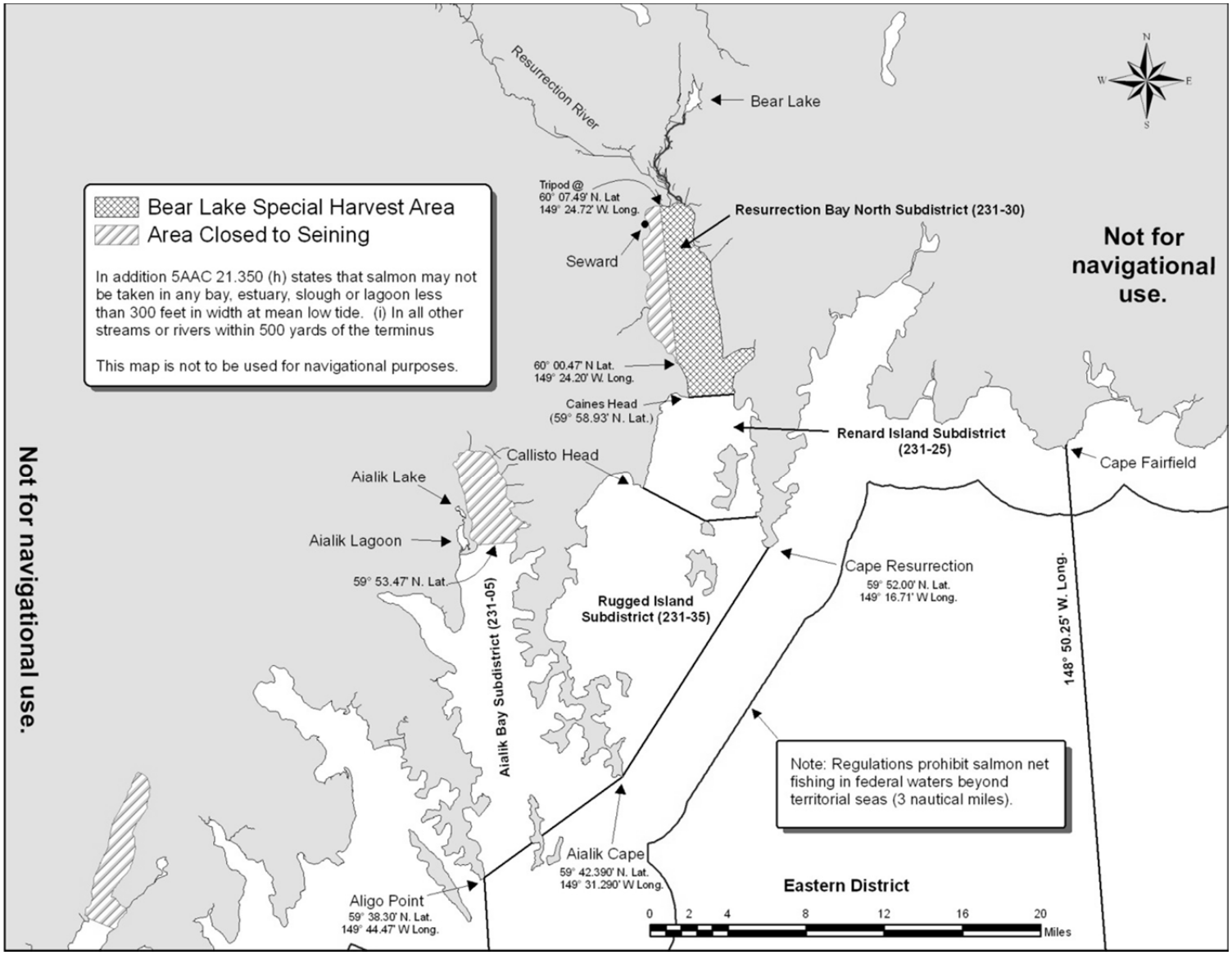

Figure 10.–Eastern District of Lower Cook Inlet management area showing commercial fishing districts, reporting subdistricts, and hatchery special harvest area (SHA), Aligo Point to Cape Fairfield.

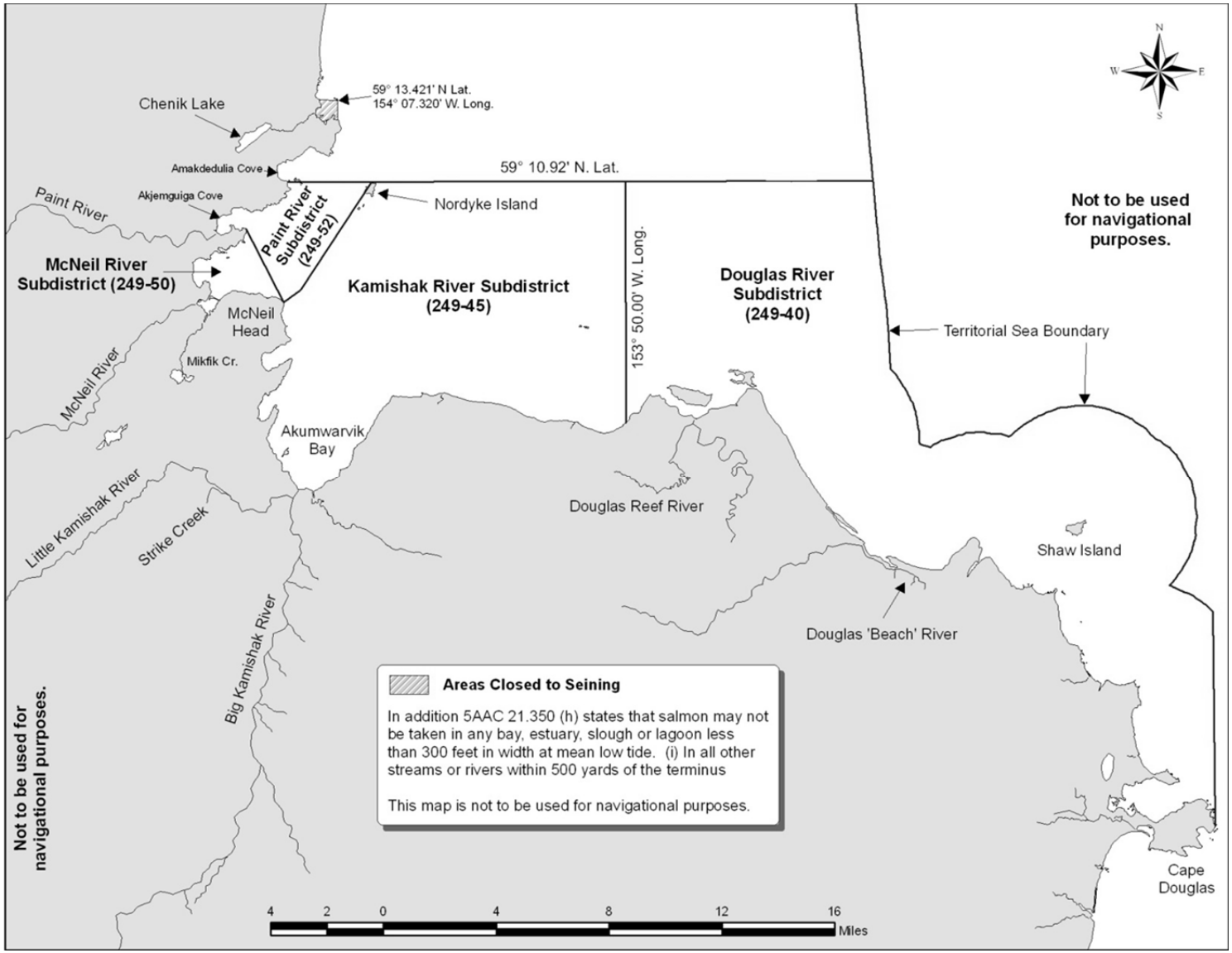

Figure 11.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Chenik Lake to Cape Douglas.

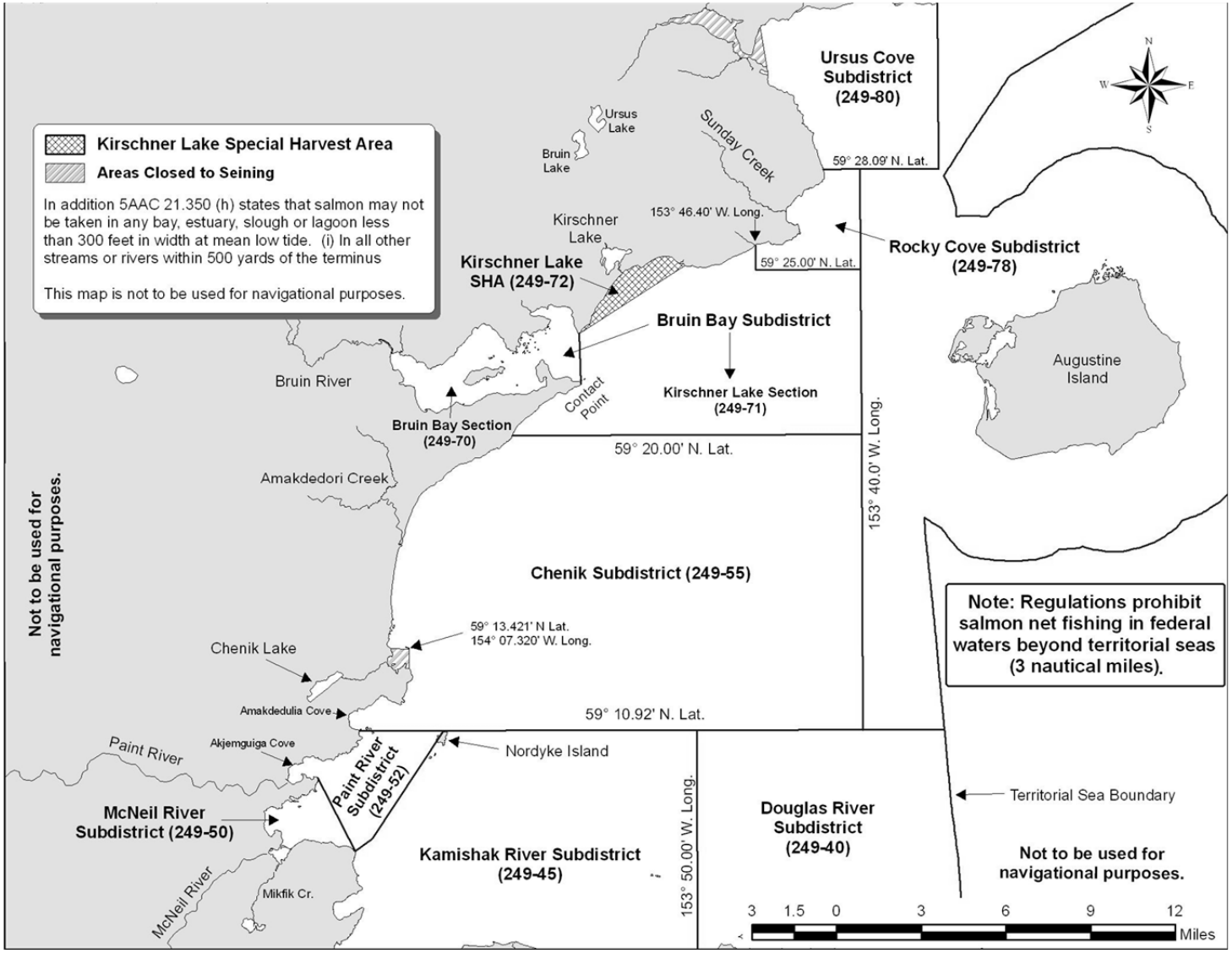

Figure 12.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts, reporting subdistricts, and hatchery special harvest area, McNeil River to Ursus Cove.

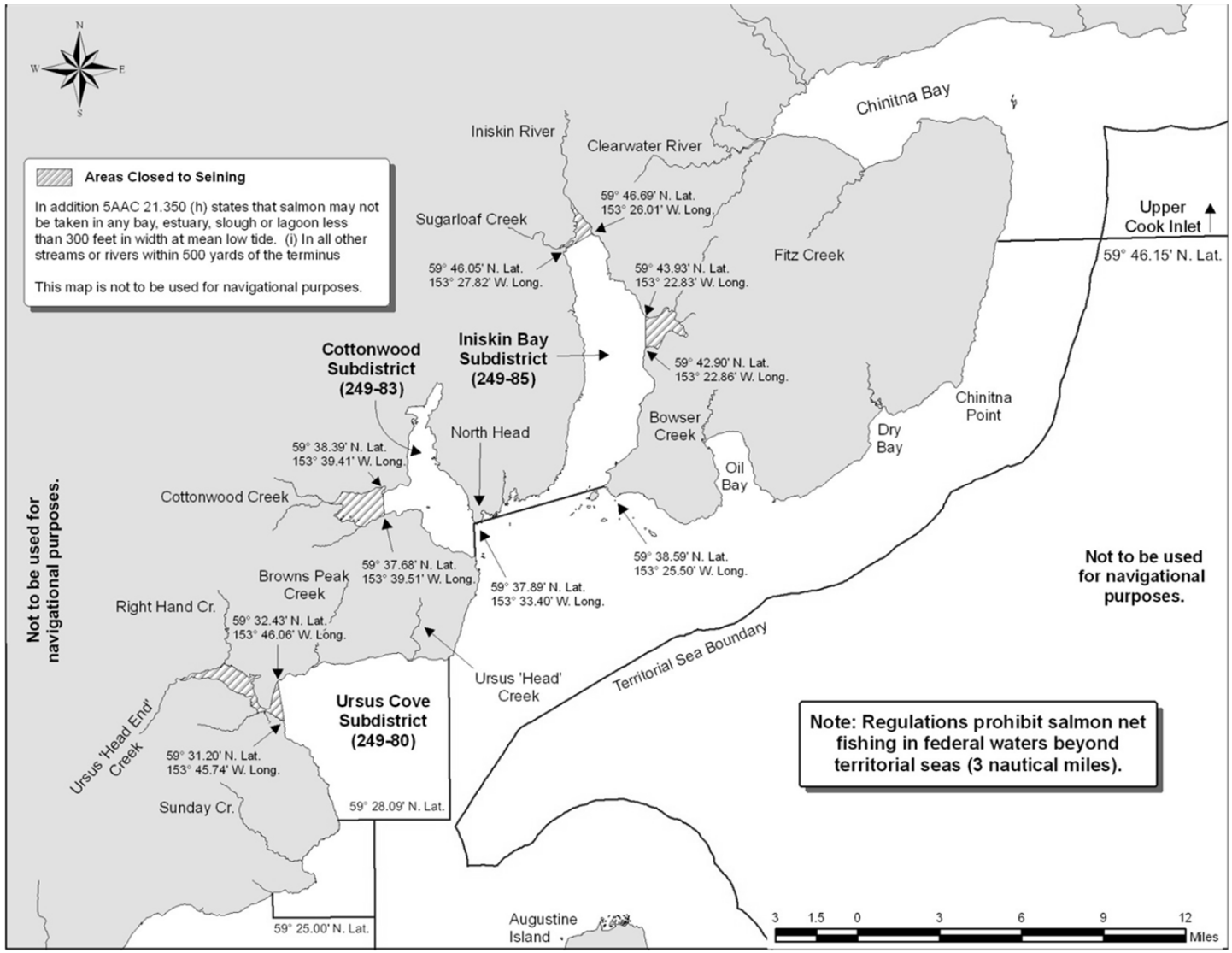

Figure 13.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts, Ursus Cove to Chinitna Point.

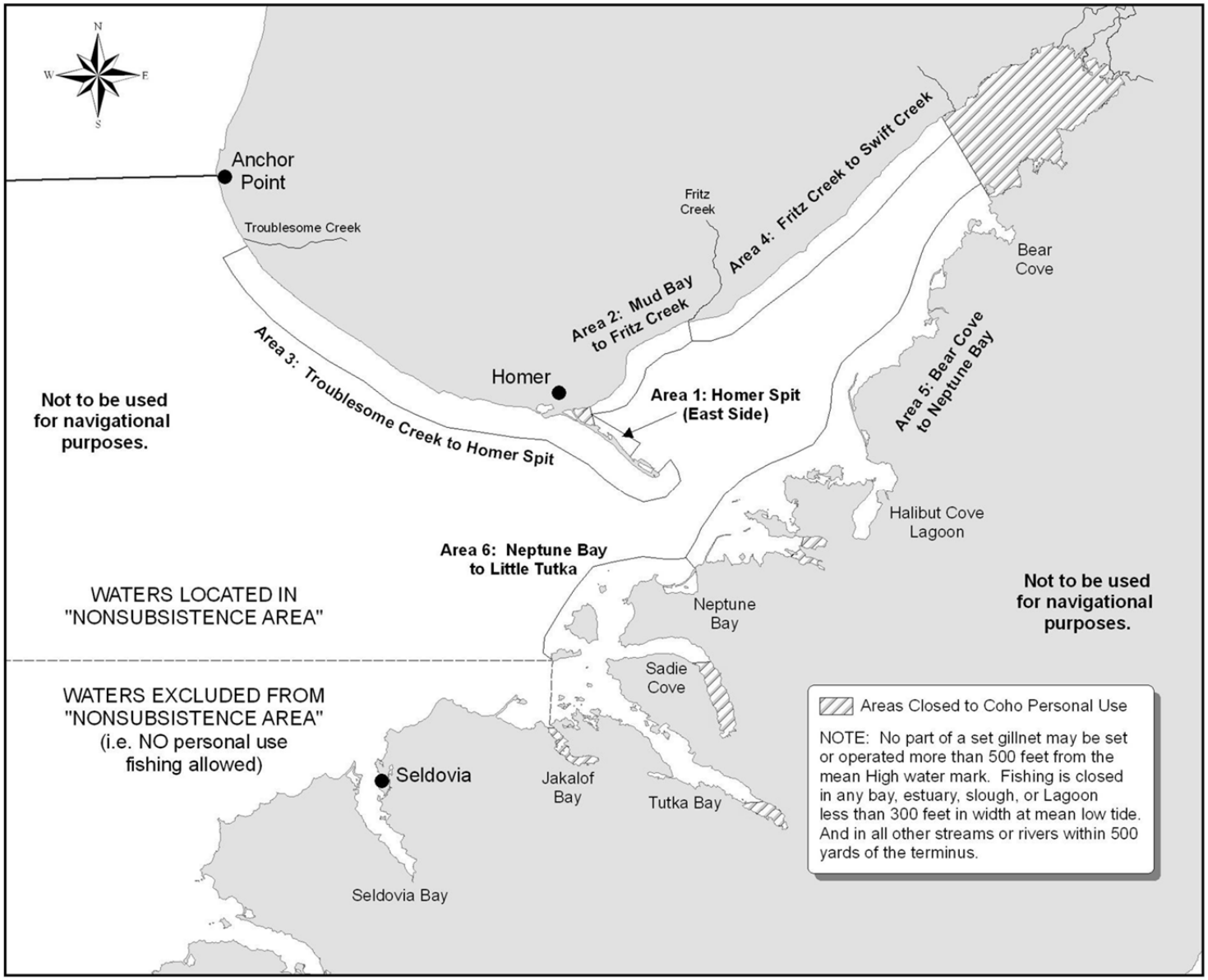

Figure 14.–Kachemak Bay personal use coho salmon fishery registration areas.

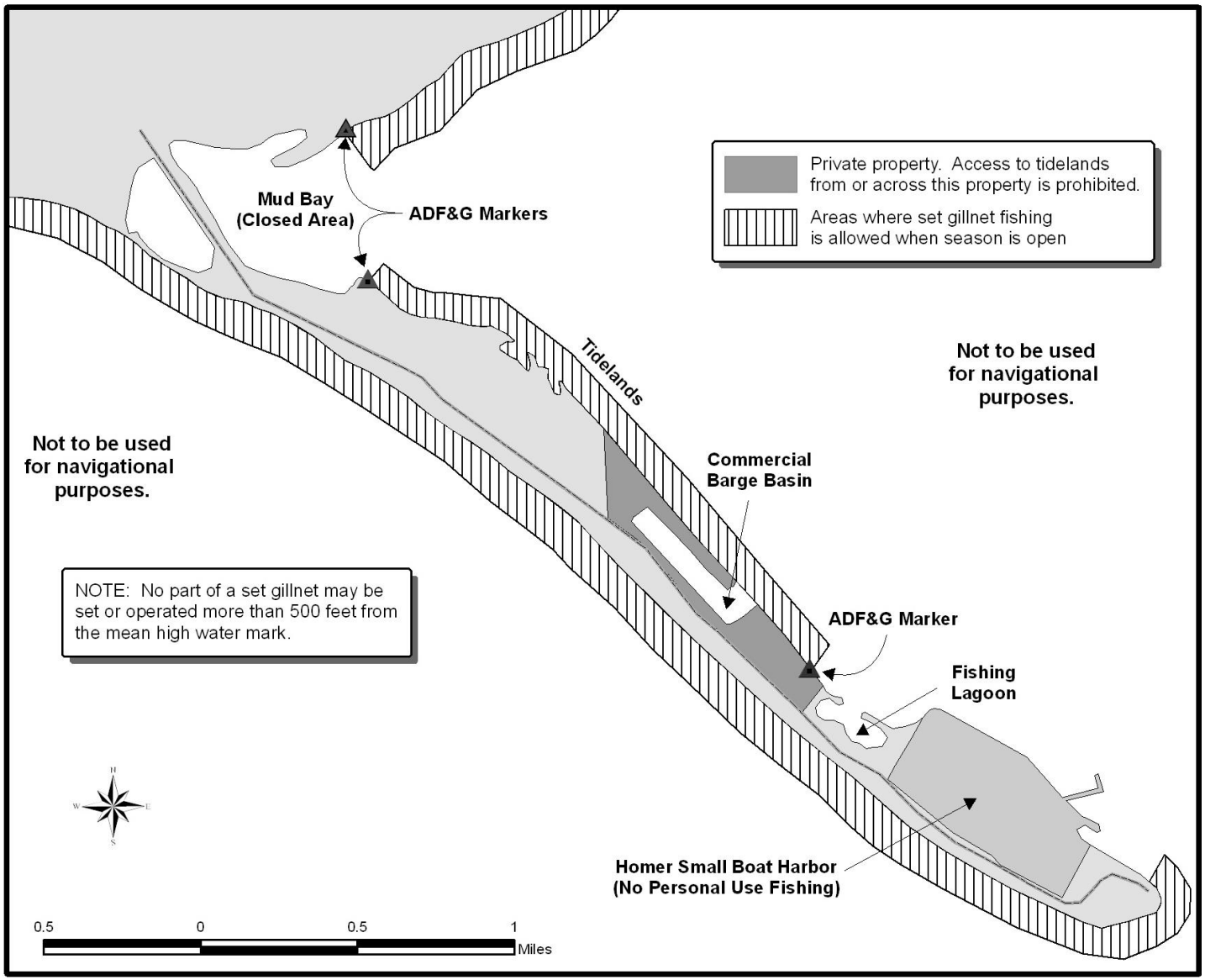

Figure 15.–Southern District personal use coho salmon fishery: Homer Spit area.

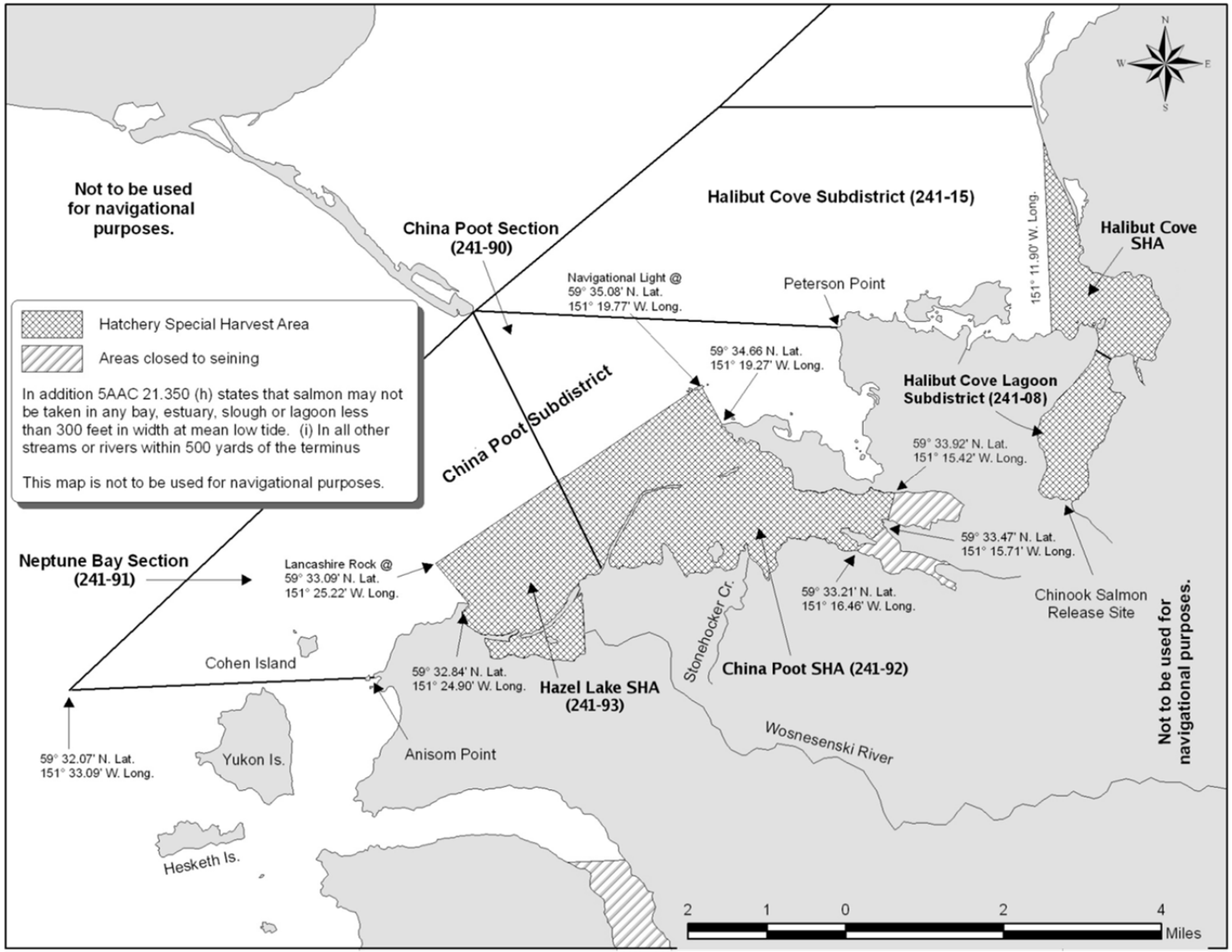

Figure 16.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Halibut Cove to Anisom Point.

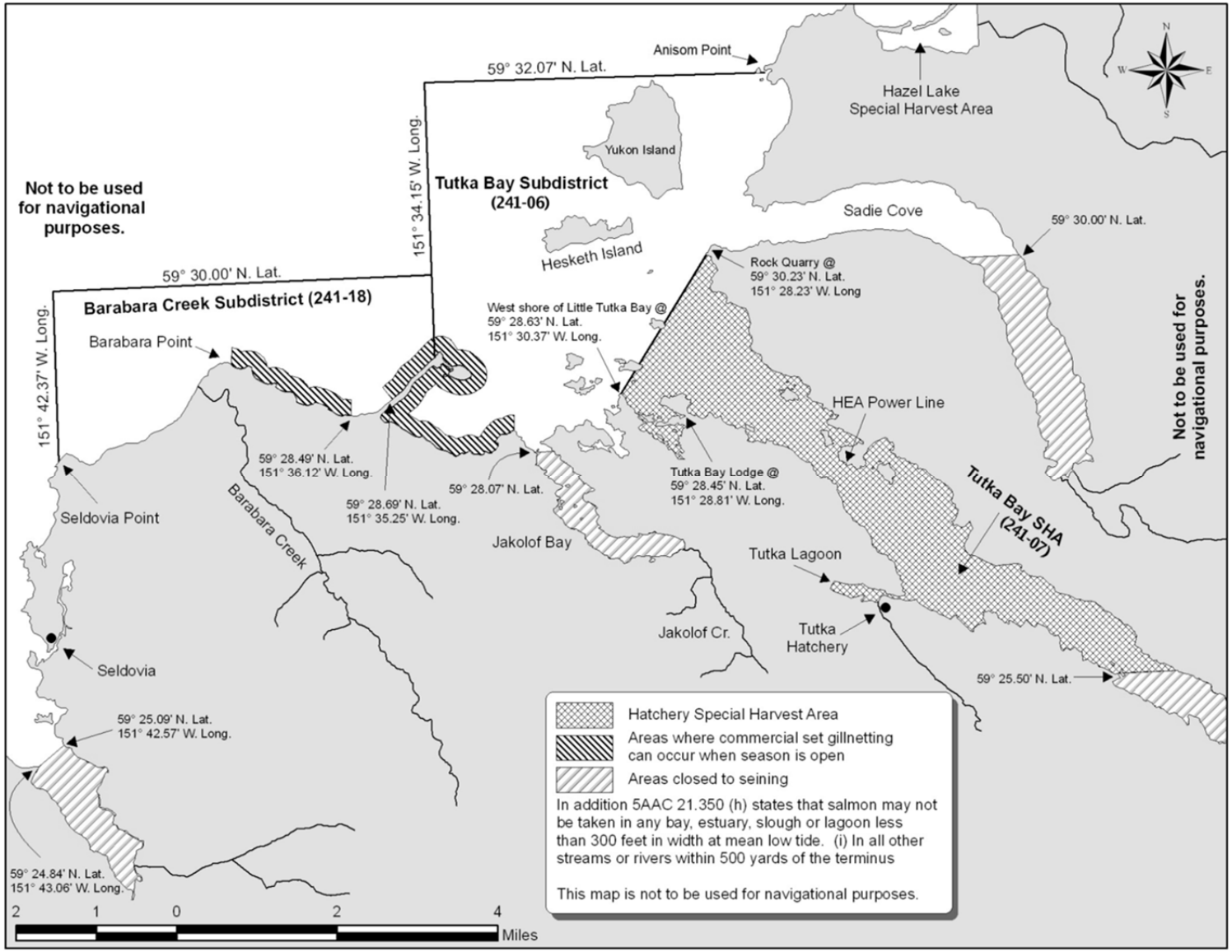

Figure 17.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Anisom Point to Seldovia Point.

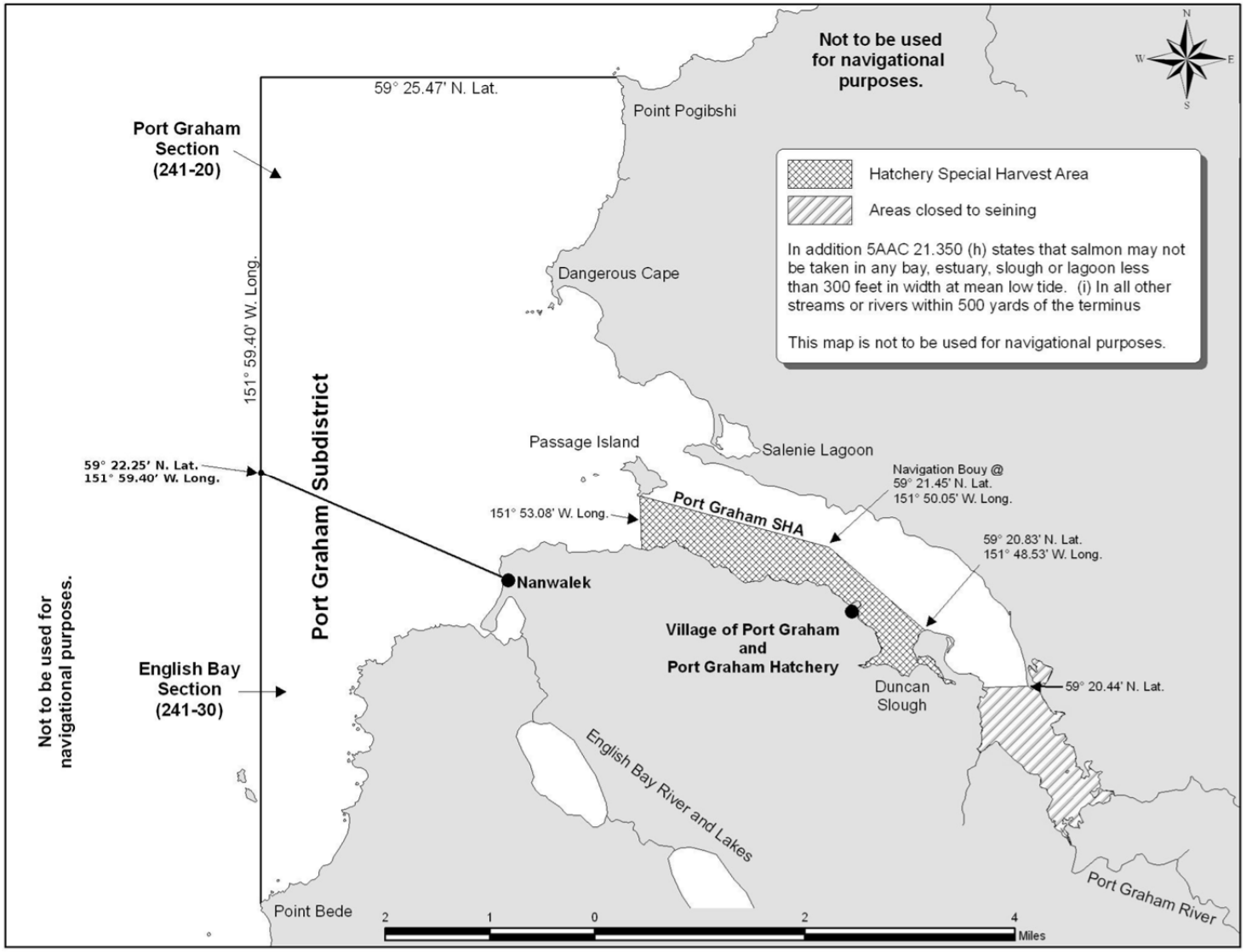

Figure 18.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Port Graham Area.

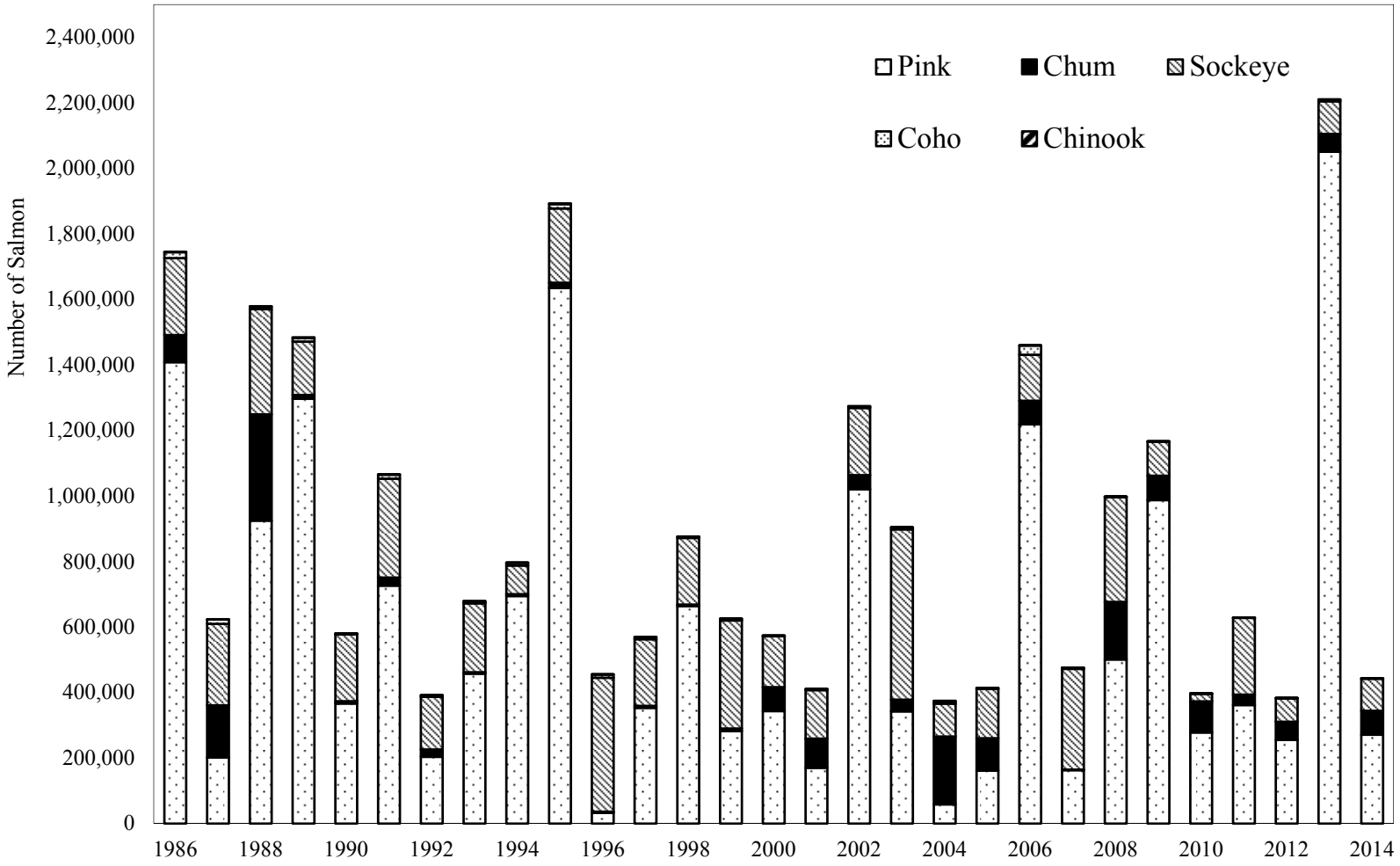

Figure 19.–Commercial common property salmon harvests in Lower Cook Inlet, 1986–2014.

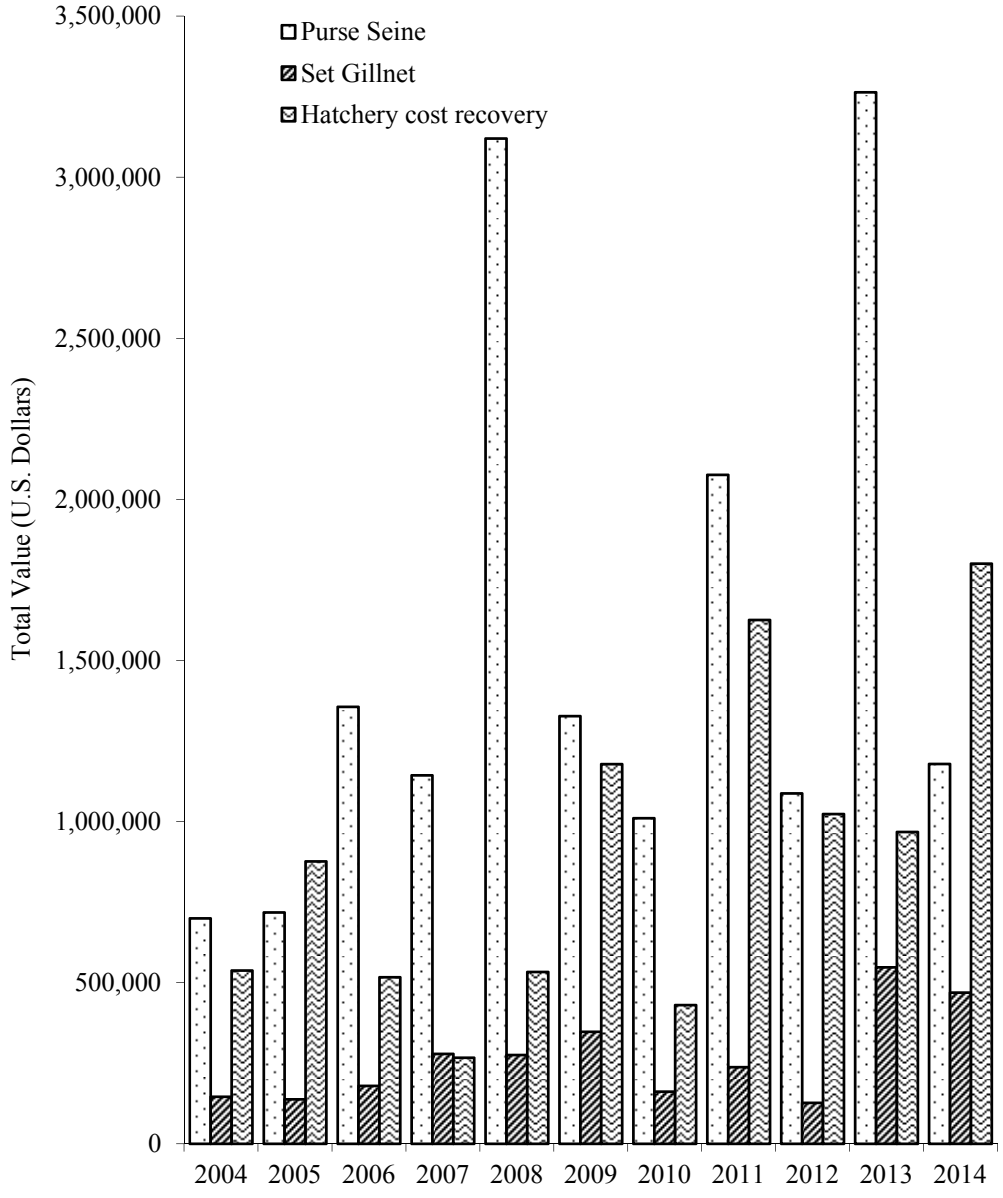

Figure 20.–Exvessel value of Lower Cook Inlet commercial salmon harvest, 2004–2014.

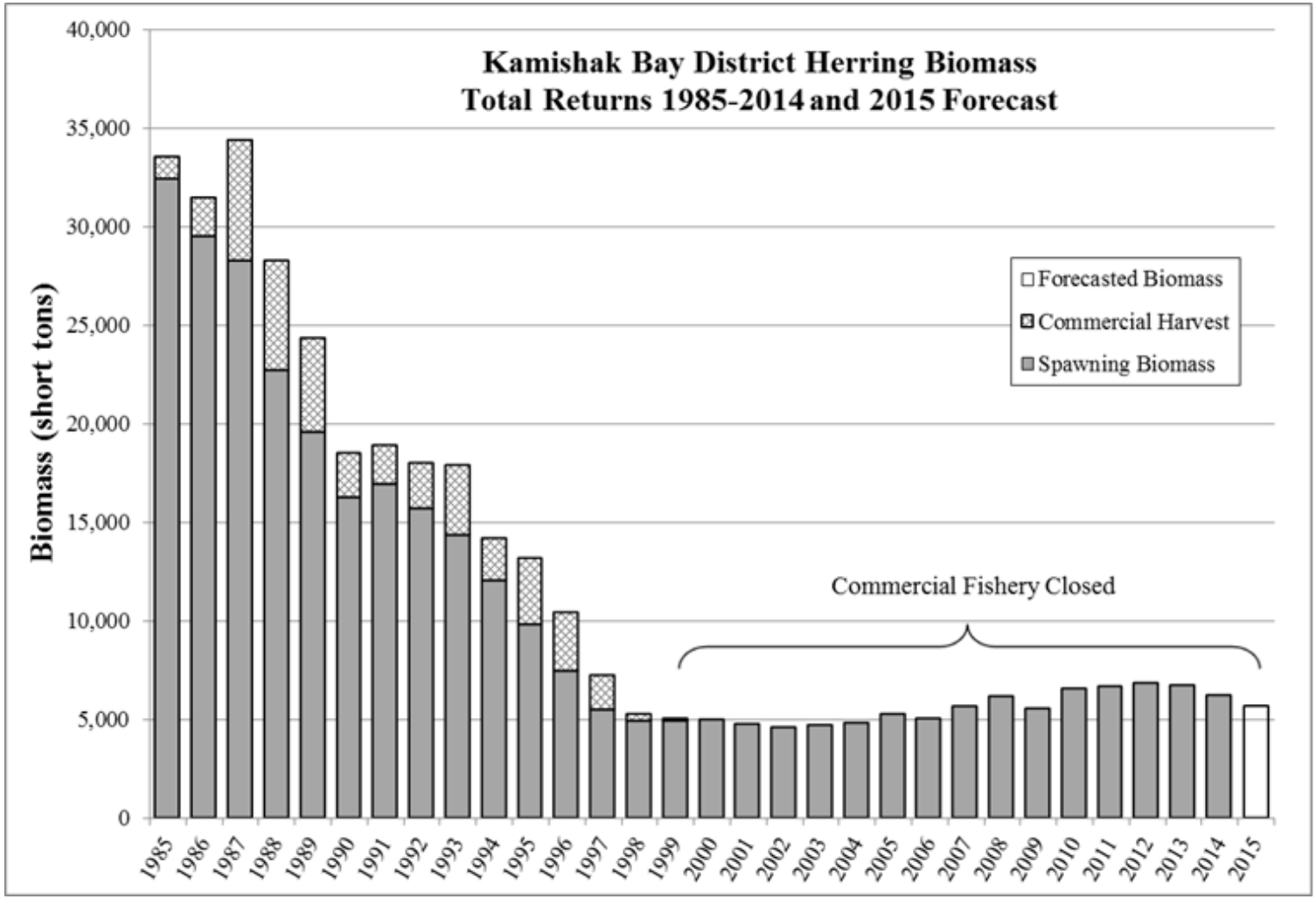

Figure 21.–Age structured assessment (ASA) biomass estimates and commercial harvests of Pacific herring in the sac roe seine fishery, Kamishak Bay District, Lower Cook Inlet, 1985–2014 and 2015 projection.

Note: All spawning biomass estimates derived from 2014 ASA calculations.

Table 1.–Lower Cook Inlet Management Area commercial salmon harvest by gear and district, 2014.

District	Permits [a]	Chinook [a]	Sockeye [a]	Coho [a, b]	Pink [a]	Chum [a]	Total
Southern	16	18	23,188	269	58,890	3,360	85,725
Kamishak Bay	8	0	12,137	0	44,227	4,449	60,813
Outer	11	0	24,264	0	163,938	59,702	247,904
Eastern	2	0	5,306	0	753	354	6,413
Purse seine total	20	18	64,895	269	267,808	67,865	400,855
Southern District	18	320	32,910	393	3,231	5,355	42,209
Set gillnet total	18	320	32,910	393	3,231	5,355	42,209
Port Graham Hatchery		0	0	0	0	0	0
Tutka Bay Hatchery		0	0	0	136	6	142
Trail Lakes Hatchery		20	173,030	1	25	272	173,348
Hatchery total [c]		20	173,030	1	161	278	173,490
Home Pack	9	10	183	128	318	17	656
Hatchery donated fish[d]	1	0	1,641	671	0	0	2,312
Misc. Total		10	1,824	799	318	17	2,968
Lower Cook Inlet total		368	272,659	1,462	271,518	73,515	619,522

[a] Numbers of fish and numbers of permit holders delivering are from ADF&G fish ticket database.

[b] 606 coho salmon were harvested in the Seward Salmon Derby. These were 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] Hatchery sales for hatchery operating costs.

[d] Primarily jack sockeye and coho salmon caught at the Bear Creek weir.

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, 1985–2014.

Year	Gear	n-permits [a]	Chinook [a]	Sockeye [a]	Coho [a]	Pink [a]	Chum [a]
1985	Purse Seine	51	85	255,234	5,585	1,206,819	26,421
1985	Set Gillnet	34	924	23,163	3,908	22,898	4,217
1985	Hatchery	0	0	0	0	0	0
	Total		1,009	278,397	9,493	1,229,717	30,638
1986	Purse Seine	61	51	213,054	15,258	1,394,049	80,262
1986	Set Gillnet	34	745	21,807	2,827	14,244	2,426
1986	Hatchery	0	0	0	0	0	0
	Total		796	234,861	18,085	1,408,293	82,688
1987	Purse Seine	67	526	220,648	10,970	192,207	156,965
1987	Set Gillnet	29	653	28,209	2,025	9,224	2,419
1987	Hatchery	0	0	0	0	0	0
	Total		1,179	248,857	12,995	201,431	159,384
1988	Purse Seine	72	549	306,309	4,742	895,420	319,768
1988	Set Gillnet	27	1,145	14,758	2,819	29,268	4,423
1988	Hatchery	0	0	0	0	0	0
	Total		1,694	321,067	7,561	924,688	324,191
1989	Purse Seine	65	612	149,301	5,864	1,280,716	9,428
1989	Set Gillnet	23	1,281	13,970	4,792	16,210	1,877
1989	Hatchery	0	0	0	0	0	0
	Total		1,893	163,271	10,656	1,296,926	11,305
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

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Table 2.–Page 2 of 3.

Year	Gear	n-permits [a]	Chinook [a]	Sockeye [a]	Coho [a]	Pink [a]	Chum [a]
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
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

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Table 2.–Page 3 of 3.

Year	Gear	n-permits [a]	Chinook [a]	Sockeye [a]	Coho [a]	Pink [a]	Chum [a]
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
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	2,685
2013	Hatchery	0	0	71,447	2,044	48,017	24
	Total		391	171,020	7,615	2,098,685	54,403
	Purse Seine	20	70	132,621	3,789	600,072	84,747
10-year	Set Gillnet	19	364	22,593	1,260	3,550	1,676
average	Hatchery	0	0	92,855	211	503,685	77
	Total		434	248,069	5,260	1,107,307	86,500
2014	Purse Seine	20	18	64,895	269	267,808	67,865
2014	Set Gillnet	18	320	32,910	393	3,231	5,355
2014	Hatchery	0	20	174,159	2,044	161	278
	Total		358	271,964	2,706	271,200	73,498

[a] Numbers of fish and numbers of permit holders delivering are from ADF&G fish ticket database. 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 homepacks by gear type, Lower Cook Inlet, 2014.

Purse seine			Average		
Species	Number [a]	Pounds [a]	Weight	Price [a]	Value
Chinook	18	154	8.56	$2.67	$411
Sockeye	64,895	319,055	4.92	$1.94	$618,967
Coho	269	1,752	6.51	$0.75	$1,314
Pink	267,808	943,311	3.52	$0.28	$264,127
Chum	67,865	498,491	7.35	$0.59	$294,110
	400,855	1,762,763			$1,178,929
Set gillnet			Average		
Species	Number [a]	Pounds [a]	Weight	Price [a]	Value
Chinook	320	2,942	9.19	$3.92	$11,533
Sockeye	32,910	194,229	5.90	$2.23	$433,131
Coho	393	2,597	6.61	$1.24	$3,220
Pink	3,231	12,867	3.98	$0.26	$3,345
Chum	5,355	38,429	7.20	$0.47	$18,062
	42,209	251,064			$469,291
Hatchery sales			Average		
Species	Number [a]	Pounds [a]	Weight	Price [a]	Value
Chinook	20	163	8.15	$1.50	$245
Sockeye	173,030	740,630	4.28	$2.43	$1,799,731
Coho	1	6	6.00	$0.00	$0
Pink	161	463	2.88	$0.28	$130
Chum	278	2,094	7.53	$0.30	$628
	173,490	743,356			$1,800,733
Total harvest			Average		
Species	Number [a]	Pounds [a]	Weight	Price [a]	Value
Chinook	358	3,259	9.10	$3.74	12,188
Sockeye	270,835	1,253,914	4.63	$2.27	2,851,828
Coho	663	4,355	6.57	$1.04	4,534
Pink	271,200	956,641	3.53	$0.28	267,602
Chum	73,498	539,014	7.34	$0.58	312,800
	616,554	2,757,183			$3,448,953

Gear Type	Value of Catch	No. of Permits [a]	Average Earnings
Purse Seine	$1,178,929	20	$58,946
Set Gillnet	$469,291	18	$26,072
Subtotal- Value of CPF Catch	$1,648,219		
Hatchery	$1,800,733		
Grand total	$3,448,953		

[a] Mean prices are based on weighted average prices from ADF&G fish ticket database. Pounds and numbers of fish are based on fish ticket reporting.

Table 4.–Average price paid to permit holders for salmon, Lower Cook Inlet, 1985–2014.

	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
1985	$1.53	$1.41	$1.41	$1.26	$1.28	$1.27	$0.81	$0.80	$0.80	$0.22	$0.22	$0.22	$0.43	$0.43	$0.43
1986	$1.10	$1.25	$1.25	$1.64	$1.42	$1.51	$0.84	$0.60	$0.62	$0.15	$0.16	$0.15	$0.34	$0.41	$0.38
1987	NA	NA	$1.25	NA	$1.82	$1.82	NA	NA	$1.00	NA	NA	$0.42	NA	NA	$0.84
1988	NA	NA	$1.25	NA	NA	$2.35	NA	NA	$1.80	NA	NA	$0.70	NA	NA	$0.46
1989	NA	$1.70	$1.70	NA	$1.96	$1.96	NA	NA	$0.70	NA	$0.30	$0.30	NA	$0.58	$0.58
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
2011	$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
10-year Average	$0.89	$3.13	$2.92	$1.22	$1.54	$1.30	$0.56	$0.75	$0.65	$0.21	$0.18	$0.21	$0.46	$0.31	$0.46
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

Note: These prices are based on weighted average prices from ADF&G fish ticket database 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 the 10-year average, Lower Cook Inlet, 2004–2014.

Purse seine												
	Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	10-yr Average	2014
	Chinook	628	889	344	305	228	34	15	648	483	689	426	411
	Sockeye	334,326	488,641	605,442	1,080,994	1,924,898	347,202	58,349	1,485,538	461,300	644,508	743,120	618,967
	Coho	17,659	1,842	96,927	5,112	2,183	41	4,131	157	706	9,366	13,812	1,314
	Pink	10,360	43,183	473,506	57,072	408,666	665,639	328,849	423,068	300,992	2,403,739	511,507	264,127
	Chum	336,883	183,716	180,231	443	784,343	314,421	619,305	166,691	323,923	205,517	311,547	294,110
		$699,857	$718,271	$1,356,450	$1,143,925	$3,120,319	$1,327,338	$1,010,648	$2,076,101	$1,087,404	$3,263,819	$1,580,413	$1,178,929
Set gillnet													
	Species												
	Chinook	31,371	12,921	19,100	19,991	14,408	5,412	1,792	8,032	4,847	15,135	13,301	11,533
	Sockeye	108,035	115,746	134,339	251,705	253,544	332,005	151,183	218,700	109,526	502,583	217,737	433,131
	Coho	4,391	6,864	16,475	4,724	3,406	4,953	1,458	488	200	20,959	6,392	3,220
	Pink	192	133	5,337	0	1,650	1,073	2,728	2,606	10,074	2,217	2,601	3,345
	Chum	1,898	2,287	4,350	2,508	2,678	4,216	4,972	7,975	2,528	6,842	4,025	18,062
		$145,888	$137,950	$179,600	$278,928	$275,685	$347,659	$162,132	$237,801	$127,176	$547,736	$244,055	$469,291
Hatchery sales													
	Species												
	Chinook	0	0	0	0	0	0	0	0	0	0	0	245
	Sockeye	110,464	291,395	419,805	222,175	528,507	1,177,187	430,230	1,625,199	1,021,125	910,285	673,637	1,799,731
	Coho	0	2	0	96	4	2	222	0	44	0	37	0
	Pink	427,339	585,235	97,059	44,580	3,867	1,249	280	487	1,074	57,622	121,879	130
	Chum	0	3	282	142	1,009	0	33	16	1,034	83	260	628
		$537,803	$876,635	$517,146	$266,993	$533,387	$1,178,437	$430,765	$1,625,702	$1,023,277	$967,990	$795,814	$1,800,733
Average earnings													
	Purse seine	$29,161	$24,768	$56,519	$60,207	$124,813	$102,103	$72,189	$90,265	$67,963	$296,711	92,470	$58,946
	Set gillnet	$7,678	$8,115	$8,164	$17,433	$15,316	$18,298	$7,721	$11,324	$8,478	$28,828	13,135	$26,072
Number of permits fished													
	Purse seine	24	29	24	19	25	13	14	23	16	11	20	20
	Set gillnet	19	17	22	16	18	19	21	21	15	19	19	18

Table 6.–Preseason harvest or total run projections for the 2014 commercial common property salmon fishery by district and species, Lower Cook Inlet Area.

District/facility	Forecast type	Chinook[a]	Sockeye[a]	Coho[a]	Pink[b]	Chum[a]
Southern District	Commercial harvest	167	800	700	79,000	226
Outer District	Commercial harvest	4	9,900	40	102,000	36,700
Eastern District	Commercial harvest	0	0	0	0	110
Kamishak Bay District	Commercial harvest	2	49,300	100	0	23,200
Total Wild Stock		173	60,000	840	181,000	60,236
Tutka Lagoon Hatchery	Total run	0	22,100	0	131,000	0
Port Graham Hatchery	Total run	0	0	0	428,000	0
Kirschner Lake	Total run	0	8,200	0	0	0
Leisure Lake	Total run	0	15,600	0	0	0
Hazel Lake	Total run	0		0	0	0
Resurrection Bay	Total run	0	66,000	0	0	0
Halibut Cove	Total run	0	0	0	0	0
English Bay Lakes	Total run	0	3,000	0	0	0
Total Hatchery[c]			114,900	0	559,000	0
Total Hatchery and Wild		173	174,900	840	740,000	60,236

[a] Chinook, coho, chum, and natural sockeye salmon harvests are 2009–2013 average commercial harvests.

[b] Pink salmon commercial harvests are projected total run minus anticipated escapement.

[c] Hatchery operators provide total run forecasts.

Table 7.–Emergency orders issued for the commercial, personal use, and subsistence salmon fisheries in Lower Cook Inlet, 2014.

E.O. number/ Issue date	Description
2-F-H-01-14/ Friday, May 2	**Identification of some salmon streams in Lower Cook Inlet pursuant to 5AAC 39.290(a)(2).**
2-F-H-02-14/ Friday, May 30	**Southern and Kamishak districts, set gillnet and purse seine.** Opens waters of the Southern District to commercial salmon harvest and establishes 2 weekly 48 hour set gillnet fishing periods in the Southern District excluding the Pt. Graham Subdistrict beginning at 6:00 A.M. on Mondays and Thursdays effective Sunday, June 1. Establishes 7 day per week purse seine fishing periods in the Kamishak Bay District excluding Chenik, Paint, and McNeil subdistricts.
2-F-H-03-14/ Friday, June 13	**Kamishak District, purse seine.** Established two 2 hour fishing periods in the McNeil and Paint River Subdistrict on June 15 and 16, in addition to opening the Chenik Subdistrict on a fishing schedule concurrent with remaining areas in this district outside of the McNeil area.
2-F-H-04-14/ Friday, June 20	**Kamishak and Southern districts, purse seine.** Closes waters of McNeil, Chenik and Paint River to commercial salmon harvest and opens Tutka Bay, China Poot, and Halibut Cove subdistricts excluding hatchery special harvest areas to commercial salmon purse seine harvest for 16 hour fishing periods from 6:00 AM to 10:00 PM on Mondays and Thursdays until further notice.
2-F-H-05-14/ Monday, June 23	**Eastern District, purse seine.** Opens portions of the Eastern District to daily Monday-Friday 16 hour 6:00 AM to 10:00 PM salmon purse seine fishing periods.
2-F-H-06-14/ Friday, June 27	**Eastern and Outer subdistricts, purse seine.** Closes the Eastern District to commercial purses seine fishing on Friday, July 4. Opens the Outer District to commercial purse seine harvest for the 2014 season and establishes two 16 hour fishing periods in the East Nuka Subdistrict on June 30 and July 1.
2-F-H-07-14/ Thursday, July 3	**Eastern District, purse seine.** Establishes Monday - Friday 16 hour fishing periods in the northern portion of Resurrection Bay from Monday, July 7 through Friday, July 11.
2-F-H-08-14/ Thursday, July 10	**Kamishak, Outer, Southern, and Eastern districts, purse seine.** Establishes Monday - Friday 16 hour fishing periods in the northern portion of Resurrection Bay from Monday, July 14 through Friday, July 18. Establishes a Monday, Wednesday, and Friday schedule of 6:00 AM to 10:00 PM fishing periods in portions of the Port Dick and Nuka Island areas in the Outer District. Opens the Chenik Subdistrict to commercial purse seine harvest concurrent with other areas in the Kamishak District. Changes the ongoing Monday and Thursday purse seine fishing schedule in the Southern District to a Monday, Wednesday, and Friday schedule of 6:00 AM to 10:00 PM periods and adds the Humpy Creek Subdistrict to the districts open to commercial purse seine salmon harvest.
2-F-H-09-14/ Thursday, July 10	**Port Graham Subdistrict, set gillnet.** Opens the Port Graham Subdistrict to commercial set gillnet harvest for regular 48 hour Monday and Thursday fishing periods beginning at 6:00 AM on those days.
2-F-H-10-14/ Monday, July 14	**Outer and Kamishak districts, purse seine.** Opens portions of the East Nuka Subdistrict near Delight Lake for two 16 hour fishing periods on July 15 and July 16. Opens Chenik Lagoon until 10:00 PM, Sunday, July 20.

-continued-

Table 7.–Page 2 of 2.

E.O. number/ Issue date	Description
2-F-H-11-14/ Friday, July 18	**Outer, Southern, and Kamishak districts, purse seine.** Establishes regular 6:00 AM - 10:00 PM commercial purse seine fishing periods 7 days per week in portions of the East Nuka Subdistrict near Delight and Desire lakes. Extends fishing in Chenik subdistrict up to the freshwater of Chenik Creek indefinitely. Portions of the Port Graham Subdistrict opened to commercial purse seine harvest on regular Monday, Wednesday, and Friday fishing periods concurrent with ongoing fishing periods for this gear in this district. Waters of Rocky Bay, and Humpy Creek subdistricts are closed as are waters of the Tutka Subdistrict south of the latitude of Quarry Point.
2-F-H-12-14/ Thursday, July 24	**Kamishak District, purse seine.** Rescinds closed waters restrictions above the "Pothole" of the Bruin River. Reestablishes historic closed waters in the Kamishak and Douglas river deltas.
2-F-H-13-14/ Friday, July 25	**Outer District, purse seine.** Opens portions of the Dogfish Bay and Rocky Bay subdistricts on a Monday, Wednesday, and Friday fishing schedule, and closes waters of the Nuka Island Subdistrict to commercial purse seine salmon harvest.
2-F-H-14-14/ Tuesday, July 29	**Kamishak Subdistrict, purse seine.** Opens a portion of the Kirschner SHA to facilitate harvest of pink salmon returning to the Bruin River.
2-F-H-15-14/ Friday, August 1	**Outer districts, purse seine.** Closes Port Dick to commercial salmon harvest effective Monday, August 4.
2-F-H-16-14/ Friday, August 1	**Southern District, personal use fishery.** Inserted language clarifying when the first fishing period occurs as well as open areas.
2-F-H-17-14/ Tuesday, August 5	**Southern District, purse seine fishery.** Adjusts areas open to commercial purse seine harvest in the Port Graham Subdistrict.
2-F-H-18-14/ Friday, August 8	**Southern District, purse seine.** Reinstates regulatory closed waters in the Dogfish Bay Subdistrict, opens hatchery SHAs in the Southern District excluding the Port Graham and Tutka SHAs.
2-F-H-19-14/ Tuesday, August 12	**Southern District, purse seine.** Opens portions of the Humpy Creek Subdistrict and closes the China Poot SHA to commercial common property salmon harvest.
2-F-H-20-14/ Friday, August 15	**Outer Districts, purse seine.** Reopens portions of the Port Dick and Dogfish subdistricts, and closes the East Nuka Subdistrict to commercial purse salmon harvest.
2-F-H-21-14/ Saturday, August 16.	**Southern Districts, hatchery harvest.** Allows Cook Inlet Aquaculture Association to harvest up to 10,000 pink salmon for broodstock from the Tutka SHA.
2-F-H-22-14/ Wednesday, August 20	**Southern District, personal use fishery.** Closes the personal use fishery on Friday, August 22.
2-F-H-23-14/ Friday, August 22	**Southern District, purse seine.** Opens waters south of Quarry Point excluding Tutka Lagoon to commercial common property harvest.
2-F-H-24-14/ Friday, August 29	**Outer District and general LCI, purse seine.** Opens waters of the East Nuka Subdistrict on a Monday, Wednesday, and Friday schedule of 6:00 AM to 10:00 PM fishing periods. Closes all waters of Lower Cook Inlet to commercial purse seine harvest for the 2014 season 12:01 AM on Sept 14.

Table 8.–Escapements relative to escapement goals and methods used to monitor escapements in 2014 for Chinook, chum, pink and sockeye salmon stocks in Cook Inlet, Alaska.

Stock	2014 Escapement	Escapement goal Type (BEG, SEG)	Range Lower	Midpoint	Upper	Monitoring method Aerial	Ground	Video	Weir	Sonar
Chum salmon (12 with goals)										
Port Graham River	3,735	SEG	1,450	3,125	4,800		X			
Dogfish Lagoon	11,205	SEG	3,350	6,250	9,150		X			
Rocky River	6,863	SEG	1,200	3,300	5,400	X	X			
Port Dick Creek	1,829	SEG	1,900	3,175	4,450	X	X			
Island Creek	2,699	SEG	6,400	11,000	15,600	X	X			
Big Kamishak River	5,676	SEG	9,350	16,675	24,000	X				
Little Kamishak River	15,069	SEG	6,550	15,175	23,800	X				
McNeil River	17,475	SEG	24,000	36,000	48,000	X				
Bruin River	3,583	SEG	6,000	8,125	10,250	X				
Ursus Cove	5,308	SEG	6,050	7,950	9,850	X				
Cottonwood Creek	7,079	SEG	5,750	8,875	12,000	X				
Iniskin Bay	13,020	SEG	7,850	10,775	13,700	X				
Pink salmon (18 with goals)										
Humpy Creek	44,369	SEG	21,650	53,600	85,550		X			
China Poot Creek	1,409	SEG	2,900	5,550	8,200		X			
Tutka Creek	10,152	SEG	6,500	11,750	17,000		X			
Barabara Creek	3,558	SEG	1,900	5,425	8,950		X			
Seldovia Creek	35,895	SEG	19,050	29,000	38,950		X			
Port Graham River	32,295	SEG	7,700	13,775	19,850		X			
Dogfish Lagoon Cks.	8,848	SEG	1,200	4,800	8,400		X			
Port Chatham	10,290	SEG	7,800	14,400	21,000		X			
Windy Creek Right	5,710	SEG	3,350	7,150	10,950		X			
Windy Creek Left	10,147	SEG	3,650	16,800	29,950		X			
Rocky River	17,114	SEG	9,350	31,800	54,250		X			
Port Dick Creek	48,732	SEG	18,550	38,425	58,300	X	X			
Island Creek	50,402	SEG	7,200	17,750	28,300	X	X			
S. Nuka Island Creek	11,000	SEG	2,700	8,475	14,250	X	X			
Desire Lake	443	SEG	1,900	11,050	20,200	X				
Bruin River	121,569	SEG	18,650	87,200	155,750	X				
Sunday Creek	7,665	SEG	4,850	16,850	28,850	X				
Brown's Peak Creek	4,048	SEG	2,450	10,625	18,800	X				
Sockeye salmon (8 with goals)										
English Bay	6,955	SEG	6,000	9,750	13,500	X			X	
Delight Lake	22,289	SEG	7,550	12,600	17,650	X		X	X	
Desire Lake	11,480	SEG	8,800	12,000	15,200	X				
Bear Lake	9,233	SEG	700	4,500	8,300				X	
Aialik Lake	450	SEG	3,700	5,850	8,000	X				
Mikfik Lake	18,062	SEG	3,400	8,200	13,000	X		X		
Chenik Lake	17,797	SEG	3,500	8,750	14,000	X		X		
Amakdedori Creek	4,280	SEG	1,250	1,925	2,600	X				

Note: SEG = sustainable escapement goal, BEG = biological escapement goal.

APPENDIX A: SOUTHERN DISTRICT

Appendix A1.–Southern District commercial set gillnet salmon harvest (excluding homepacks) by period, 2014.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period [a]	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	06/02–06/04	48	9	11	33	357	2,492	12,495	0	0	0	0	59	425
2 [a]	06/05–06/07	48	7	7	22	205	904	5,080	0	0	0	0	26	188
3 [a]	06/09–06/11	48	7	8	47	399	2,063	10,959	0	0	0	0	88	642
4 [a]	06/12–06/14	48	4	4	17	159	417	2,428	0	0	0	0	22	181
5 [a]	06/16–06/18	48	8	10	27	231	1,504	8,546	0	0	0	0	115	846
6 [a]	06/19–06/21	48	8	13	52	514	2,596	14,729	0	0	0	0	385	2,747
7 [a]	06/23–06/25	48	9	11	26	227	2,544	15,014	0	0	0	0	426	3,092
8 [a]	06/26–06/28	48	9	13	33	267	1,837	10,952	0	0	0	0	587	4,178
9 [a]	06/30–07/02	48	10	13	21	189	1,828	10,727	0	0	143	571	689	5,040
10 [a]	07/03–07/05	48	10	18	20	163	3,457	20,161	2	12	276	1,117	822	5,824
11 [a]	07/07–07/09	48	9	13	13	116	2,859	17,459	5	31	243	980	563	4,043
12 [a]	07/10–07/12	48	8	12	2	14	1,586	8,959	4	27	318	1,226	456	3,329
13 [a,b]	07/14–07/16	48	11	14	3	23	3,162	20,262	60	379	270	1,053	126	900
14 [a,b]	07/17–07/19	48	12	18	2	57	2,786	18,119	64	449	549	2,205	579	4,144
15 [a,b]	07/21–07/23	48	8	12	1	14	1,749	11,392	166	1,076	589	2,360	247	1,732
16 [a,b]	07/24–07/26	48	7	7	0	0	742	4,610	38	271	417	1,670	132	905
17 [a,b]	07/28–07/30	48	4	6	0	0	183	1,092	31	207	241	944	17	107
18 [a,b,c]	07/31–08/02	48												
19 [a,b,c]	08/04–08/06	48												
20 [a,b,d]	08/07–08/09	48												
34 [a,b,d]	09/25–09/27	48												
35 [a,b,d]	09/30–09/30	18												
Total			18	194	320	2,942	32,910	194,230	393	2,597	3,231	12,867	5,355	38,429
Average weight						9.23		5.90		6.61		3.98		7.18

[a] Set gillnet sections located in Halibut Cove, Tutka Bay, Barabara Creek, and Seldovia Bay Subdistricts open to commercial harvest.

[b] Set gillnet section in Port Graham Subdistrict open to commercial harvest concurrent with Halibut Cove, Tutka Bay, Barabara Creek, and Seldovia Bay Subdistricts.

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

[d] No deliveries during Periods 20–35 that occurred from August 7 through September 30.

Appendix A2.–Southern District commercial purse seine salmon harvest (excluding homepacks) by period, 2014.

Period [a,b]	Date	Hours	Permits Fished	Permits Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
1 [a]	6/23/2014	16												
2 [a]	6/26/2014	16												
3 [a,b]	6/30/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
4 [a]	7/3/2014	16	5	6	1	9	410	1,948	1	7	56	147	10	66
5 [a]	7/7/2014	16	11	11	0	0	1,684	8,303	0	0	418	1,364	5	41
6 [a]	7/10/2014	16	11	11	6	43	3,427	15,960	11	70	657	2,085	30	177
7 [a,c]	7/14/2014	16	8	9	0	0	3,565	18,201	5	33	1,036	3,337	6	43
8 [a,c]	7/16/2014	16	12	13	1	4	4,027	24,342	40	251	2,428	8,627	30	215
9 [a,c]	7/18/2014	16	11	12	3	27	2,533	15,466	26	168	2,672	9,826	17	128
10 [a,d,e]	7/21/2014	16	12	13	1	27	4,524	23,594	56	392	3,003	9,889	300	2,365
11 [a,d,e]	7/23/2014	16	14	15	3	29	2,100	12,038	73	485	2,777	10,446	102	885
12 [a,d,e]	7/25/2014	16	10	11	2	12	805	4,460	32	197	11,481	36,743	2,401	14,446
13 [a,b,d,e,f]	7/28/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
14 [a,b,d,e,f]	7/30/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
15 [a,b,d,e,f]	8/1/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
16 [a,d,e,f]	8/4/2014	16	4	4	[c]	[c]	[c]	[c]	[c]	[c]	11,742	38,311	106	703
17 [a,d,e,f]	8/6/2014	16	4	5	[c]	[c]	15	72	[c]	[c]	6,459	21,165	39	197
18 [a,b,d,e,f]	8/8/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
19 [b,d,e,g]	8/11/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
20 [b,d,e,g]	8/13/2014	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
21 [d,e,g,h]	8/15/2014	16												
33 [d,e,g,h,]	9/12/2014	16												
Total			16	120	18	154	23,188	124,776	269	1,752	58,890	192,527	3,360	21,380
Average weight						8.87		5.39		6.51		3.27		6.36

Note: Unless otherwise noted, regular closed waters were in effect.

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

[b] Waters of the Humpy Creek Subdistrict open to commercial salmon seine harvest for 16 hour periods.

[c] Waters of Seldovia Bay Subdistrict open to commercial salmon seine harvest for 16 hour periods.

[d] Portions of Port Graham Subdistrict open to commercial salmon seine harvest for 16 hour periods.

[e] Waters of the Tutka Bay Subdistrict south of the latitude of Quarry Point are closed to commercial purse seine salmon harvest.

[f] Waters of the Tutka Bay, China Poot, Neptune Bay and Halibut Cove subdistricts excluding waters south of the latitude of Quarry Point are open to commercial salmon seine harvest for regular 16 hour periods.

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

[h] No deliveries during 16 hour Periods 21–33 that occurred from August 15 through September 12.

Appendix A3.–Total commercial common property salmon harvest (excluding homepacks) in the Southern District, 1970–2014.

Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Set gillnet			
1970		26	11,455	1,154	18,512	1,575
1971		41	18,398	1,449	8,564	1,352
1972		69	31,340	323	6,303	2,819
1973		134	23,970	1,089	20,222	2,374
1974		175	26,996	3,010	11,097	2,713
1975	32	96	26,588	2,337	49,490	4,020
1976	27	176	33,993	1,321	13,412	1,353
1977	25	175	54,404	869	38,064	2,765
1978	26	1,052	86,934	3,053	11,556	4,117
1979	39	483	34,367	7,595	69,368	5,266
1980	38	225	29,922	8,038	26,613	2,576
1981	40	222	53,665	6,735	68,794	8,524
1982	40	894	42,389	5,557	15,838	7,113
1983	39	822	41,707	1,799	20,553	4,377
1984	24	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
10 yr avg.	19	362	22,593	1,245	3,534	1,675
2014	18	320	32,910	393	3,231	5,355

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine			
1970		64	665	2,390	189,554	6,298
1971		0	5	1,702	41,502	1,505
1972		0	5	960	2,823	2,117
1973		5	102	152	77,352	1,214
1974		7	33	44	37,778	12
1975		46	805	702	844,125	1,408
1976		266	1,287	584	86,405	164
1977		7	259	386	118,961	3,969
1978		459	54,154	1,265	240,205	1,408
1979		716	2,975	3,251	917,541	2,955
1980		189	13,007	3,530	451,406	2,029
1981		802	24,215	1,241	1,385,188	12,396
1982		32	1,044	1,608	280,718	11,353
1983		36	91,964	1,634	669,701	9,904
1984		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
10-yr avg.	11	66	30,722	609	26,283	164
2014	16	18	23,188	269	58,890	3,360

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine and set gillnet combined			
1970		90	12,120	3,544	208,066	7,873
1971		41	18,403	3,151	50,066	2,857
1972		69	31,345	1,283	9,126	4,936
1973		139	24,072	1,241	97,574	3,588
1974		182	27,029	3,054	48,875	2,725
1975		142	27,393	3,039	893,615	5,428
1976		442	35,280	1,905	99,817	1,517
1977		182	54,663	1,255	157,025	6,734
1978		1,511	141,088	4,318	251,761	5,525
1979		1,199	37,342	10,846	986,909	8,221
1980		414	42,929	11,568	478,019	4,605
1981		1,024	77,880	7,976	1,453,982	20,920
1982		926	43,433	7,165	296,556	18,466
1983		858	133,671	3,433	690,254	14,281
1984		661	163,244	3,415	336,785	9,598
1985		973	84,053	4,258	518,898	5,509
1986		776	36,838	3,095	542,521	5,560
1987		1,158	89,662	2,163	90,522	5,030
1988		1,655	105,302	2,987	852,382	7,742
1989		1,889	98,052	6,667	987,488	3,141
1990		1,546	82,412	1,552	160,844	2,433
1991		1,398	163,085	9,399	152,097	1,934
1992		1,852	99,457	1,277	141,064	1,880
1993		2,162	146,158	4,429	283,311	2,788
1994		1,229	61,498	1,372	636,345	2,630
1995		2,289	152,298	5,157	1,261,970	4,530
1996		1,180	338,891	9,574	25,106	3,511
1997		1,261	180,585	5,597	224,757	4,258
1998		1,070	169,481	2,243	522,493	3,955
1999		1,760	226,508	2,762	247,351	4,624
2000		1,184	104,575	768	26,360	5,339
2001		986	128,369	2,706	121,360	3,780
2002		1,553	167,866	3,769	12,083	4,803
2003		1,179	473,490	5,408	55,238	5,730
2004		1,656	37,708	1,431	3,107	1,372
2005		610	81,002	2,721	32,542	1,748
2006		627	66,239	3,036	15,734	2,182
2007		466	90,063	3,326	10,394	1,564
2008		188	89,494	1,319	6,825	1,460
2009 [a]		83	38,220	968	2,136	2,274
2010 [a]		29	14,765	171	3,106	1,503
2011		126	32,727	127	3,155	1,962
2012		125	16,656	77	186,075	1,367
2013		374	66,270	5,368	35,092	2,950
10 yr avg.		428	53,314	1,854	29,817	1,838
2014		338	56,098	662	62,121	8,715

Source: ADF&G fish ticket database.

[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 through the English Bay weir, 2014.

	Actual		Anticipated	Apportioned SEG				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
6/1	0	10	0.0%	1	1	3	3	Weir installed 5/21.
6/2	0	10	0.1%	3	5	8	11	
6/3	2	12	0.1%	1	6	2	13	
6/4	97	109	0.7%	34	40	77	90	
6/5	31	140	1.1%	23	63	52	142	
6/6	5	145	2.1%	63	126	142	285	
6/7	23	168	3.9%	107	234	241	526	
6/8	116	284	7.0%	186	420	419	945	
6/9	14	298	7.7%	42	462	95	1,041	
6/10	18	316	11.8%	247	710	556	1,596	
6/11	133	449	15.8%	239	949	538	2,134	
6/12	15	464	17.1%	78	1,027	176	2,311	
6/13	46	510	18.0%	50	1,077	112	2,423	
6/14	523	1,033	19.0%	64	1,141	144	2,567	
6/15	25	1,058	20.1%	66	1,207	148	2,715	
6/16	376	1,434	21.1%	56	1,262	125	2,840	
6/17	130	1,564	21.8%	46	1,309	104	2,945	
6/18	461	2,025	22.9%	67	1,375	150	3,094	
6/19	75	2,100	24.3%	83	1,458	186	3,280	
6/20	139	2,239	27.6%	199	1,657	448	3,728	
6/21	216	2,455	29.7%	126	1,783	284	4,011	
6/22	285	2,740	32.3%	156	1,939	350	4,362	
6/23	218	2,958	35.9%	216	2,155	487	4,849	
6/24	178	3,136	39.9%	239	2,394	538	5,386	
6/25	283	3,419	43.5%	212	2,606	478	5,864	
6/26	32	3,451	46.0%	150	2,757	338	6,202	
6/27	349	3,800	49.2%	196	2,952	440	6,643	
6/28	259	4,059	55.3%	362	3,315	815	7,458	
6/29	581	4,640	60.7%	324	3,639	730	8,187	
6/30	270	4,910	64.4%	225	3,864	507	8,695	
7/1	41	4,951	68.1%	220	4,084	494	9,189	
7/2	65	5,016	71.4%	199	4,283	447	9,636	
7/3	253	5,269	74.5%	185	4,467	415	10,051	
7/4	315	5,584	76.5%	119	4,587	269	10,320	
7/5	116	5,700	79.4%	175	4,762	394	10,714	
7/6	412	6,112	81.4%	122	4,884	274	10,988	
7/7	125	6,237	84.3%	175	5,058	394	11,382	
7/8	62	6,299	86.3%	121	5,179	271	11,653	
7/9	70	6,369	87.8%	90	5,269	202	11,855	
7/10	267	6,636	89.2%	84	5,353	189	12,044	
7/11	58	6,694	91.7%	151	5,503	339	12,383	
7/12	103	6,797	93.5%	103	5,607	232	12,615	

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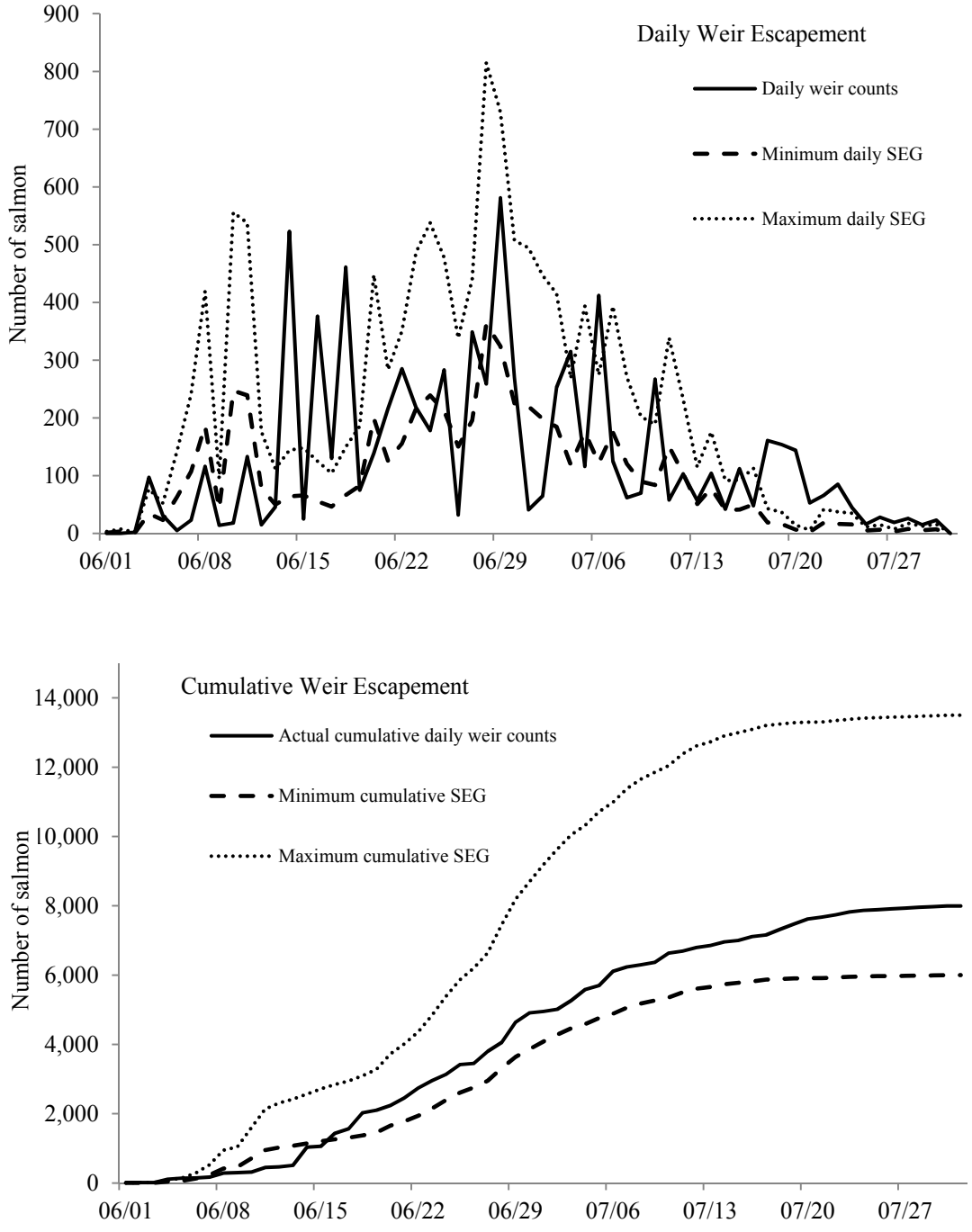
	Actual		Anticipated	Apportioned SEG				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/13	57	6,854	94.3%	51	5,658	115	12,730	
7/14	104	6,958	95.6%	78	5,736	176	12,906	
7/15	42	7,000	96.3%	41	5,777	92	12,998	
7/16	112	7,112	97.0%	41	5,818	93	13,090	
7/17	48	7,160	97.8%	50	5,868	113	13,203	
7/18	161	7,321	98.1%	19	5,887	43	13,246	
7/19	154	7,475	98.4%	16	5,903	37	13,283	
7/20	144	7,619	98.5%	7	5,910	15	13,297	
7/21	53	7,672	98.6%	3	5,913	6	13,303	
7/22	66	7,738	98.9%	19	5,931	42	13,345	
7/23	85	7,823	99.1%	17	5,948	37	13,382	
7/24	45	7,868	99.4%	16	5,963	35	13,417	
7/25	16	7,884	99.5%	5	5,968	11	13,429	
7/26	28	7,912	99.6%	7	5,975	15	13,444	
7/27	19	7,931	99.7%	3	5,978	8	13,451	
7/28	26	7,957	99.8%	8	5,986	18	13,469	
7/29	15	7,972	99.9%	6	5,992	13	13,482	
7/30	23	7,995	100.0%	7	5,999	16	13,498	
7/31	0	7,995	100.0%	0	5,999	0	13,498	Last report from weir crew.

Note: English Bay River sustainable escapement goal range is 6,000–13,500. 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, 2014.

Appendix A6.–Sockeye salmon escapement past the English Bay weir, 1927–1941 and 1993–2014.

Year	Sustainable escapement goal	Total weir passage	Broodstock harvested	Harvested for otoliths	Spawning escapement
1927		19,197	0		19,197
1928		24,025	0		24,025
1929		15,407	0		15,407
1930		18,858	0		18,858
1931		18,878	0		18,878
1932		22,933	0		22,933
1933		NS	0		NS
1934		NS	0		NS
1935		15,851	0		15,851
1936		15,767	0		15,767
1937		14,857	0		14,857
1938		16,779	0		16,779
1939		48,777	0		48,777
1940		30,357	0		30,357
1941		26,905	0		26,905
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
10 yr average		12,852	593		12,234
2014	6,000–13,500	7,995	877	163	6,955

Appendix A7.–Pink and chum salmon escapements, as measured by ground survey, using area under the curve estimation in the Southern District, 2014.

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[a], (A_b)	Accum. fish days	Escape. index[b]	Accum. escape. index[c]	Accum. percent escapment	Carcass count	Live plus carcass
Barabara	pink	[t]start	7/3												
Creek		1	7/21	7/3	17.5	909	0	909	7,954	7,954	455	455	13%	2	911
(index		2	8/7	7/21	17	566	909	1,475	12,538	20,491	716	1,171	33%	242	808
system)		3	8/26	8/7	19	1,525	566	2,091	19,865	40,356	1,135	2,306	65%	49	1,574
		4	9/8	8/26	13	787	1,525	2,312	15,028	55,384	859	3,165	89%	547	1,334
		[t]end	9/25		17.5				6,886	62,270	394	3,558	100%		
China	pink	[t]start	7/9												
Poot Creek		1	7/9	7/9	0	0	0	0	0	0	0	0	0%	0	0
(index		2	8/8	7/9	30	116	0	116	1,740	1,740	99	99	7%	0	116
system)		3	8/21	8/8	13	1,015	116	1,131	7,352	9,092	420	520	37%	1	1,016
		4	8/28	8/21	7	903	1,015	1,918	6,713	15,805	384	903	64%	89	992
		5	9/5	8/28	8	411	903	1,314	5,256	21,061	300	1,203	85%	209	620
		[t]end	9/22		17.5				3,596	24,657	206	1,409	100%		
Humpy	pink	[t]start	6/28												
Creek		1	7/16	6/28	17.5	851	0	851	7,446	7,446	426	426	1%	0	851
(index		2	7/30	7/16	14	16,057	851	16,908	118,356	125,802	6,763	7,189	16%	28	16,085
system)		3	8/11	7/30	12	29,481	16,057	45,538	273,228	399,030	15,613	22,802	51%	757	30,238
		4	9/4	8/11	24	1,140	29,481	30,621	367,452	766,482	20,997	43,799	99%	7,538	8,678
		[t]end	9/21		17.5				9,975	776,457	570	44,369	100%		
Humpy	chum	[t]start	6/28												
Creek		1	7/16	6/28	17.5	687	0	687	6,011	6,011	344	344	27%	0	687
(not an		2	7/30	7/16	14	562	687	1,249	8,743	14,754	500	843	66%	12	574
index		3	8/11	7/30	12	242	562	804	4,824	19,578	276	1,119	87%	344	586
system)		4	9/4	8/11	24	0	242	242	2,904	22,482	166	1,285	100%	29	29
		[t]end	9/4		0				0	22,482	0	1,285	100%		

-continued-

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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[a], (A_b)	Accum. fish days	Escape. index[b]	Accum. escape. index[c]	Accum. percent escapment	Carcass count	Live plus carcass
Port	pink	tstart	6/26												
Graham		1	7/14	6/26	17.5	6,209	0	6,209	54,329	54,329	3,105	3,105	10%	0	6,209
River		2	7/24	7/14	10	17,178	6,209	23,387	116,935	171,264	6,682	9,787	30%	236	17,414
(index		3	8/4	7/24	11	11,487	17,178	28,665	157,658	328,921	9,009	18,796	58%	4,568	16,055
system)		4	8/25	8/4	21	6,007	11,487	17,494	183,687	512,608	10,496	29,292	91%	1,138	7,145
		tend	9/11		17.5				52,561	565,170	3,004	32,295	100%		
Port	chum	tstart	6/26												
Graham		1	7/14	6/26	17.5	1,584	0	1,584	13,860	13,860	792	792	21%	0	1,584
River		2	7/24	7/14	10	2,031	1,584	3,615	18,075	31,935	1,033	1,825	49%	423	2,454
(index		3	8/4	7/24	11	1,359	2,031	3,390	18,645	50,580	1,065	2,890	77%	967	2,326
system)		4	8/25	8/4	21	27	1,359	1,386	14,553	65,133	832	3,722	100%	68	95
		tend	9/11		17.5				236	65,369	14	3,735	100%		
Seldovia	pink	tstart	6/29												
River		1	7/17	6/29	17.5	14,706	0	14,706	128,678	128,678	7,353	7,353	20%	2	14,708
(index		2	8/1	7/17	15	11,856	14,706	26,562	199,215	327,893	11,384	18,737	52%	2,380	14,236
system)		3	8/27	8/1	26	6,719	11,856	18,575	241,475	569,368	13,799	32,535	91%	1,581	8,300
		tend	9/13		17.5				58,791	628,159	3,360	35,895	100%		
Seldovia	chum	tstart	6/29												
River		1	7/17	6/29	17.5	3,171	0	3,171	27,746	27,746	1,586	1,586	37%	14	3,185
(not an		2	8/1	7/17	15	1,162	3,171	4,333	32,498	60,244	1,857	3,443	80%	1,135	2,297
index		3	8/27	8/1	26	16	1,162	1,178	15,314	75,558	875	4,318	100%	78	94
system)		tend	9/13		17.5				140	75,698	8	4,326	100%		
Tutka	pink	tstart	6/29												
Bay		1	7/17	6/29	17.5	48	0	48	420	420	24	24	0%	0	48
Lagoon		2	7/25	7/17	8	130	48	178	712	1,132	41	65	1%	0	130
Creek		3	8/18	7/25	24	7,496	130	7,626	91,512	92,644	5,229	5,294	52%	258	7,754
(index		4	9/8	8/18	21	328	7,496	7,824	82,152	174,796	4,694	9,988	98%	4,033	4,361
system)		tend	9/25		17.5				2,870	177,666	164	10,152	100%		

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.

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

Appendix A8.–Escapement indices and harvests by subdistricts in the Southern District, Lower Cook Inlet, 2014.

	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
Location	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
North Shore Subdistrict (241-13)	310	2,273	20	178					310	2,273	20	178
Humpy Creek Subdistrict (241-14)	86	3	97	1			44,369	1,285	86	3	44,466	1,286
Halibut Cove Subdistrict (241-15, -08)	6,358	302	4,906	236					6,358	302	4,906	236
China Poot Subdistrict (241-90, -92)	2,041	45	792	20			1,409		2,041	45	2,201	20
Neptune Bay Subdistrict (241-91, -93)	5,239	37	1,957	131					5,239	37	1,957	131
Tutka Bay Subdistrict (241-06, -07)	63,147	545	33,440	2,024			10,152		63,147	545	43,592	2,024
Barabara Creek Subdistrict (241-18)	3,908	54	240	512			3,558		3,908	54	3,798	512
Seldovia Bay Subdistrict (241-17)	11,279	18	195	3,020			35,895	4,326	11,279	18	36,090	7,346
Port Graham Subdistrict (241-20/-30)	42	8	45,182	2,847	6,955 [c]		32,295	3,735	6,997	8	77,477	6,582
Southern District total[d]	92,410	3,285	86,829	8,969	6,955		127,678	9,346	99,365	3,285	214,507	18,315

[a] Harvests include all commercial, subsistence, personal use and hatchery harvests.

[b] Unexpanded aerial or ground survey index count.

[c] Escapement from weir count minus broodstock harvest.

[d] Additional non-index streams where salmon were observed are also included. Therefore, cumulative escapement values in this table are greater than escapement indices that historically contribute to sustainable escapement goal ranges as shown for index streams only.

Appendix A9.–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, 1970–2014.

	Pink salmon							Chum salmon
	Humpy Creek	China Poot Creek	Tutka Lagoon Creek	Barabara Creek	Seldovia River	Port Graham River	Total pink salmon escapement	Port Graham River
1970	55.2	1.5	6.5	0.4	23.0	16.6	103.2	0.9
1971	45.0	2.1	16.7	4.0	31.1	13.2	112.1	1.0
1972	13.8	1.0	1.5	0.6	5.8	2.4	25.1	1.5
1973	36.9	6.0	6.5		14.5	7.0	70.9	2.0
1974	17.4	5.2	2.6	0.2	13.7	2.8	41.9	0.5
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	0.0	44.7	34.5	165.9	0.7
2013	6.7	7.1	9.5	4.1	36.8	11.9	76.2	1.9
10-yr average	46.8	5.3	24.5	9.4	51.7	29.2	166.9	1.5
2014	44.4	1.4	10.2	3.6	35.9	32.3	127.7	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 A10.–Pink salmon with hatchery thermal marks in Southern District index streams, 2014.

Location, collection date	AFH	CCH	SGH	WNH	PGH	TBLH	PWS hatcheries combined	LCI hatcheries combined	Hatchery total	Wild	Total fish (wild + hatchery)	Total % hatchery	Total % PWS	Total % LCI	% wild
Barabara Creek, 8/26/2014	6		2	3	2	1	11	3	14	2	16	87.5%	68.8%	18.8%	12.5%
Barabara Creek, 9/8/2014	25	25	1	21	2		72	2	74	5	79	93.7%	91.1%	2.5%	6.3%
Barabara Creek - combined	31	25	3	24	4	1	83	5	88	7	95	92.6%	87.4%	5.3%	7.4%
China Poot Creek, 8/28/2014				2			2	0	2	49	51	3.9%	3.9%	0.0%	96.1%
China Poot Creek, 9/5/2014				1			1	0	1	41	42	2.4%	2.4%	0.0%	97.6%
China Poot Creek - combined	0	0	0	3	0	0	3	0	3	90	93	3.2%	3.2%	0.0%	96.8%
Humpy Creek, 8/11/2014							0	0	0	94	94	0.0%	0.0%	0.0%	100.0%
Humpy Creek, 9/4/2014				1			1	0	1	94	95	1.1%	1.1%	0.0%	98.9%
Humpy Creek - combined	0	0	0	1	0	0	1	0	1	188	189	0.5%	0.5%	0.0%	99.5%
Port Graham River, 8/25/2014	1	1	1	1	50		4	50	54	41	95	56.8%	4.2%	52.6%	43.2%
Port Graham River, 9/11/2014	10	8		8	38		26	38	64	33	97	66.0%	26.8%	39.2%	34.0%
Port Graham River - combined	11	9	1	9	88	0	30	88	118	74	192	61.5%	15.6%	45.8%	38.5%
Seldovia River, 8/14/2014					5		0	5	5	102	107	4.7%	0.0%	4.7%	95.3%
Seldovia River, 8/27/2014	5	3		4	40		12	40	52	41	93	55.9%	12.9%	43.0%	44.1%
Seldovia River - combined	5	3	0	4	45	0	12	45	57	143	200	28.5%	6.0%	22.5%	71.5%
Tutka Lagoon 8/18/2014			1		2	85	1	87	88	7	95	92.6%	1.1%	91.6%	7.4%
Tutka Lagoon, 9/8/2014	2	5		5	4	70	12	74	86	6	92	93.5%	13.0%	80.4%	6.5%
Tutka Lagoon - combined	2	5	1	5	6	155	13	161	174	13	187	93.0%	7.0%	86.1%	7.0%
Dogfish Lagoon Creeks, 9/9/2014	14	5		10	8	1	29	9	38	55	93	40.9%	31.2%	9.7%	59.1%
English Bay River, 8/26/2014	14	5	1	8	1		28	1	29	64	93	31.2%	30.1%	1.1%	68.8%
Total	77	52	6	64	152	157	199	309	508	634	1,142				
Percent of total fish in creeks	6.7%	4.6%	0.5%	5.6%	13.3%	13.7%	17.4%	27.1%	44.5%	55.5%					
Percent of hatchery fish in creeks	15.2%	10.2%	1.2%	12.6%	29.9%	30.9%	39.2%	60.8%							
Percent of PWS hatchery fish by facility	38.7%	26.1%	3.0%	32.2%											
Percent of LCI hatchery fish by facility					49.2%	50.8%									

Note: AFH = Armin F. Koernig Hatchery; CCH = Cannery Creek Hatchery; SGH = Solomon Gulch Hatchery; WNH = Wally Noerenberg Hatchery; PGH = Port Graham Hatchery; TBLH = Tutka Bay Lagoon Hatchery.

APPENDIX B: OUTER DISTRICT

Appendix B1.–Outer District commercial purse seine salmon harvest (excluding homepacks) by period, 2014.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	6/30/2014	16	4	4	0	0	3,753	22,531	0	0	0	0	0	0
2 [a]	7/1/2014	16	5	7	0	0	1,982	11,273	0	0	4	12	3	25
3 [b,c,d,e,]	7/14/2014	16	7	9	0	0	30	150	0	0	7,274	22,292	6,929	59,943
4 [a,f]	7/15/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
5 [a,b,c,d,e]	7/16/2014	16	4	4	0	0	4	22	0	0	4,706	15,648	2,838	21,648
6 [b,c,d,e,f]	7/18/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
7 [a,b,d,e]	7/21/2014	16												
8 [a,b,d,e,f]	7/23/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
9 [a,b,d,e]	7/25/2014	16												
10 [a,b,c,d,g]	7/28/2014	16	9	11	0	0	4,210	17,279	0	0	10,599	37,725	21,006	160,485
11 [a,b,c,d,g]	7/30/2014	16	9	11	0	0	3,761	22,190	0	0	10,765	39,261	7,010	42,204
12 [a,b,c,d,g]	8/1/2014	16	10	11	0	0	5,811	31,883	0	0	17,774	59,198	3,618	29,903
13 [a,c,d,g]	8/4/2014	16	6	8	0	0	2,969	17,818	0	0	6,998	24,834	5,389	40,266
14 [a,c,d,g]	8/6/2014	16	3	3	0	0	0	0	0	0	3,255	11,073	2,031	13,005
15 [a,c,d,f,g]	8/8/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
16 [a,c,d,f,g]	8/11/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
17 [a,c,d,g]	8/13/2014	16												
18 [a,c,d,g]	8/15/2014	16												
19 [b,c,d,g]	8/18/2014	16	10	15	0	0	1	4	0	0	72,322	265,842	5,229	32,057
20 [b,c,d,g]	8/20/2014	16	7	7	0	0	0	0	0	0	24,397	91,499	2,103	13,307
21 [b,c,d,f,g]	8/22/2014	16	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]	[f]
22 [b,c,d,g,h]	8/25/2014	16												
30 [b,c,d,g,h]	9/12/2014	16												
Total			15	99	0	0	24,264	133,571	0	0	163,938	588,266	59,702	438,951
Average weight						NA		5.44		NA		3.59		7.36

Note: Unless otherwise noted, regular closed waters were in effect.

[a] Portions of the East Nuka Subdistrict near Delight and Desire lakes open to commercial harvest for 16 hour period.

[b] Portions of the Port Dick Subdistrict excluding the Outer and Taylor Bay sections open to commercial harvest for 16 hour period.

[c] Waters of Rocky Bay Subdistrict open to commercial harvest for 16 hour periods.

[d] Waters of Windy Bay Subdistrict open to commercial harvest for 16 hour periods.

[e] Portions of the Nuka Island Subdistrict open to commercial harvest for 16 hour periods.

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

[g] Portions of the Koyuktolik (Dogfish) Bay Subdistrict open to commercial harvest for 16 hour periods

[h] No deliveries during 16 hour fishing periods from August 25 through September 12.

Appendix B2.–Total commercial common property salmon harvest (excluding homepacks) in Outer District 1970–2014.

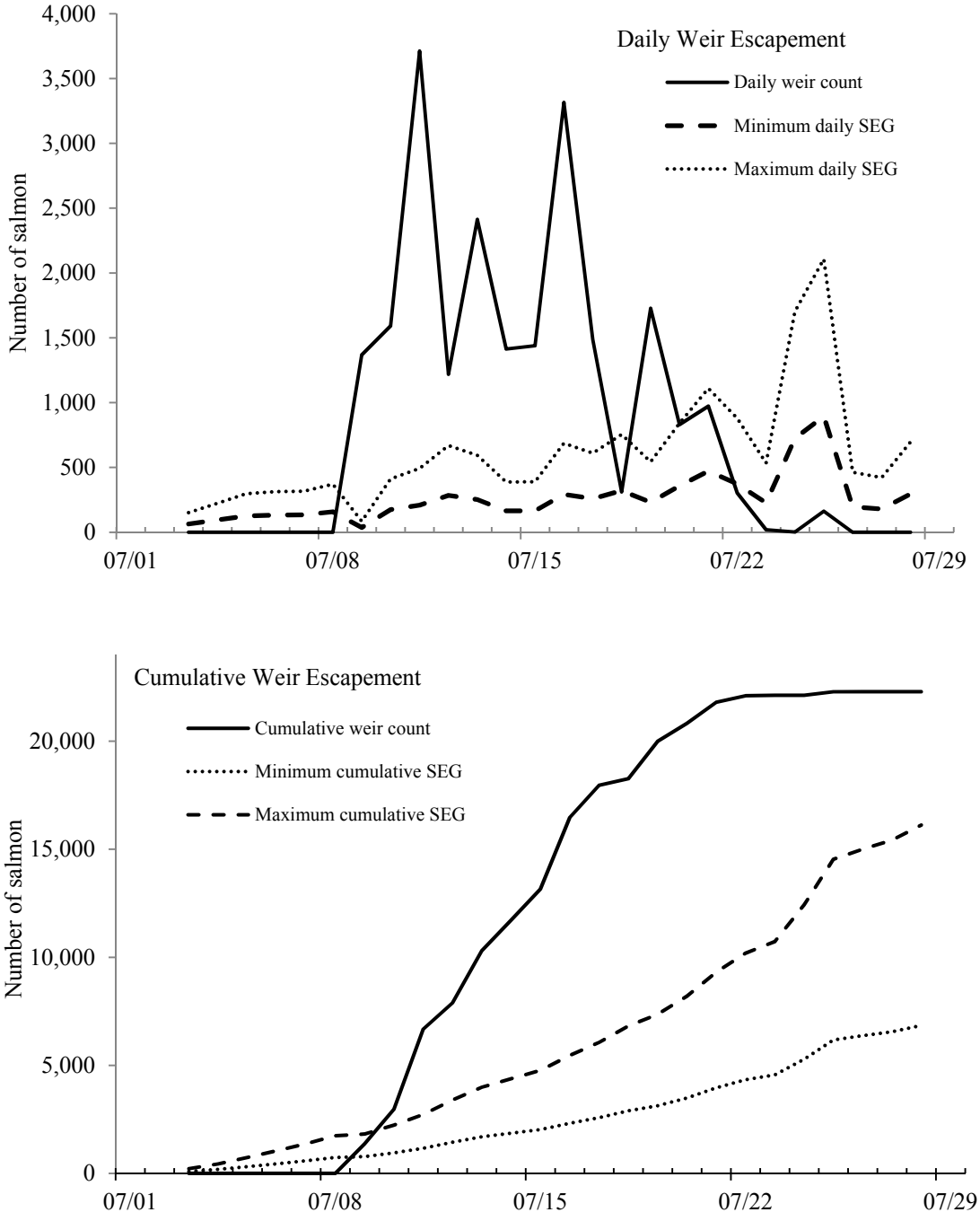
Year	Fished	Landings	Chinook	Sockeye	Coho	Pink	Chum
1970			5	1,037	243	434,700	137,408
1971			0	1,625	174	310,706	118,995
1972			7	26,092	17	963	43,466
1973			1	2,006	31	195,342	76,286
1974			1	206	21	1,300	11,924
1975			0	124	7	159,908	11,348
1976			7	18,886	0	93	412
1977			34	33,733	78	1,129,250	70,167
1978			236	10,695	45	70,080	19,224
1979			30	25,297	135	1,945,536	180,558
1980			10	22,514	16	154,041	32,246
1981			61	18,133	485	1,714,115	238,393
1982			129	66,781	92	67,523	63,075
1983			14	16,835	54	199,794	27,203
1984			3	28,411	90	89,068	3,077
1985	34	632	19	91,957	3,210	618,222	11,844
1986	40	539	6	48,472	5,052	401,755	11,701
1987	32	396	14	31,845	2,481	23,890	28,663
1988	32	185	5	9,501	2	6,094	71,202
1989	10	66	1	10,286	72	52,677	43
1990	47	265	2	17,404	74	191,320	614
1991	35	255	2	6,408	12	359,664	14,337
1992	5	6	0	572	1	146	181
1993	21	143	2	4,613	119	159,159	970
1994	6	17	0	5,930	993	13,200	32
1995	13	78	12	17,642	1,272	192,098	474
1996	3	12	0	14,999	96	7,199	3
1997	9	27	0	6,255	63	128,373	1,575
1998	10	41	0	15,991	45	102,172	611
1999	8	29	3	51,117	1,482	32,484	2,062
2000	11	72	2	21,623	20	306,555	302
2001	5	23	0	7,339	5	48,559	408
2002	11	86	0	21,154	74	569,955	3,810
2003	6	21	1	26,615	4	281,663	137
2004	9	25	2	11,082	13	42,636	27,911
2005	5	20	0	1	3	110,195	12,524
2006	11	162	3	3,198	1,139	1,121,892	12,883
2007	5	31	1	32,461	113	147,409	49
2008	16	146	0	1,704	0	467,592	100,819
2009	11	150	1	8	9	853,037	35,126
2010	10	101	0	3,003	16	272,427	22,463
2011	13	106	10	46,356	25	357,472	25,763
2012	15	70	8	77	98	69,359	51,313
2013	11	229	1	119	53	2,015,105	49,062
10-yr avg.	11	104	3	9,801	147	545,712	33,791
2014	15	99	0	24,264	0	163,938	59,702

Source: ADF&G fish ticket database.

Appendix B3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the Delight Lake weir, 2014.

				Apportioned SEG (7,550–17,650)				
	Actual passage		Antic.	Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/3	0	0	1.2%	64	91	151	214	Weir fish tight
7/4	0	0	2.5%	95	186	223	437	
7/5	0	0	4.2%	127	312	298	735	
7/6	0	0	5.9%	133	446	313	1,048	
7/7	0	0	7.7%	135	580	317	1,366	
7/8	0	0	9.8%	158	738	371	1,737	
7/9	1,368	1,368	10.3%	36	774	85	1,822	
7/10	1,592	2,960	12.7%	175	949	412	2,234	
7/11	3,712	6,672	15.4%	209	1,158	492	2,726	
7/12	1,219	7,891	19.2%	284	1,443	669	3,395	
7/13	2,413	10,304	22.6%	252	1,695	594	3,989	
7/14	1,414	11,718	24.8%	165	1,860	388	4,376	
7/15	1,439	13,157	27.0%	166	2,025	390	4,767	
7/16	3,315	16,472	30.9%	292	2,317	687	5,453	
7/17	1,487	17,959	34.4%	259	2,576	610	6,063	
7/18	311	18,270	38.6%	321	2,897	754	6,818	
7/19	1,727	19,997	41.7%	231	3,128	544	7,362	
7/20	831	20,828	46.5%	357	3,485	841	8,203	
7/21	973	21,801	52.8%	472	3,957	1,110	9,312	
7/22	303	22,104	57.7%	374	4,331	879	10,192	
7/23	20	22,124	60.8%	227	4,558	534	10,726	
7/24	2	22,126	70.4%	724	5,282	1,704	12,430	
7/25	163	22,289	82.4%	896	6,177	2,107	14,537	
7/26	0	22,289	85.0%	197	6,374	463	15,001	
7/27	0	22,289	87.4%	179	6,553	422	15,422	
7/28	0	22,289	91.3%	296	6,849	696	16,118	
7/29	0	22,289	0.0%	131	6,980	308	16,426	Weir removed for the season.

Note: SEG = sustainable escapement goal.



Appendix B4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Delight Lake weir, 2014.

Appendix B5.–Sockeye salmon escapement past the Delight and Desire Lake weirs, 1997–2014.

Year	Desire Lake sockeye salmon	Delight Lake sockeye salmon
1997 [a]	14,665	27,820
1998 [b]	7,880	9,154
1999 [c]		13,431
2000 [d]		NA
2001 [e]		12,635
2002 [e]		17,655
2003 [e]		6,708
2004 [e]		3,842
2005 [e]		13,700
2006 [e]		10,879
2007 [e]		40,403
2008 [e]		21,333
2009 [e]		5,232
2010 [e]		23,505
2011 [e,f]		16,280
2012 [e,g]		10,887
2013 [e]		5,961
10 yr average		15,202
2014 [e]		22,289

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

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

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

[d] Weir not operated at Delight Lake.

[e] Weir operated for the month of July.

[f] 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.

[g] Escapement includes 430 fish that were observed in the lake during an aerial survey prior to weir installation but does not include 147 fish 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 estimation in Outer District, 2014.

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 escapment	Peak count
Delight Lake	pink	[t]start	6/27											
(not an index		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
system)		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
		3	7/16	7/2	14	100	0	100	700	700	40	40	22%	
		4	7/21	7/16	5	200	100	300	750	1,450	43	83	45%	
		[t]end	8/7		17.5				1,750	3,200	100	183	100%	200
Desire Lake	pink	[t]start	6/27											
(index		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
system)		2	7/16	6/27	19	20	0	20	190	190	11	11	2%	
		3	7/21	7/16	5	430	20	450	1,125	1,315	64	75	17%	
		4	7/30	7/21	9	340	430	770	3,465	4,780	198	273	62%	
		[t]end	8/16		17.5				2,975	7,755	170	443	100%	430
Dogfish Lagoon	chum	[t]start	6/28											
Creeks		1	7/16	6/28	17.5	5,900	0	5,900	51,625	51,625	2,950	2,950	31%	
(index		2	7/21	7/16	5	3,290	5,900	9,190	22,975	74,600	1,313	4,263	45%	
system)		3	7/30	7/21	9	3,260	3,290	6,550	29,475	104,075	1,684	5,947	63%	
		4	8/19	7/30	20	1,520	3,260	4,780	47,800	151,875	2,731	8,679	92%	
		[t]end	9/5		17.5				13,300	165,175	760	9,439	100%	5,900
Dogfish Lagoon	pink	[t]start	7/16											
Creeks		1	7/16	7/16	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/21	7/16	5	0	0	0	0	0	0	0	0%	
system)		3	7/30	7/21	9	1,400	0	1,400	6,300	6,300	360	360	8%	
		4	8/19	7/30	20	3,300	1,400	4,700	47,000	53,300	2,686	3,046	65%	
		[t]end	9/5		17.5				28,875	82,175	1,650	4,696	100%	3,300
James Lagoon	chum	[t]start	7/3											
Creeks		1	7/21	7/3	17.5	200	0	200	1,750	1,750	100	100	66%	
(not an index		2	7/30	7/21	9	0	200	200	900	2,650	51	151	100%	
system)		[t]end	7/30		0				0	2,650	0	151	100%	200
James Lagoon	pink	[t]start	7/21											
Creeks		1	7/21	7/21	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/30	7/21	9	1,000	0	1,000	4,500	4,500	257	257	34%	
system)		[t]end	8/16		17.5				8,750	13,250	500	757	100%	1,000

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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 escapment	Peak count
Petrof River	chum	[t]start	6/27											
(not an index		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
system)		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
		3	7/4	7/2	2	0	0	0	0	0	0	0	0%	
		4	7/16	7/4	12	20	0	20	120	120	7	7	1%	
		5	7/21	7/16	5	10	20	30	75	195	4	11	2%	
		6	7/30	7/21	9	920	10	930	4,185	4,380	239	250	35%	
		[t]end	8/16		17.5				8,050	12,430	460	710	100%	920
Petrof River	pink	[t]start	6/21											
(not an index		1	7/1	6/21	10	100	0	100	500	500	50	50	8%	
system)		2	7/11	7/1	10	100	100	200	1,000	1,500	100	150	25%	
		3	7/21	7/11	10	100	100	200	1,000	2,500	100	250	42%	
		4	7/31	7/21	10	100	100	200	1,000	3,500	100	350	58%	
		5	8/10	7/31	10	100	100	200	1,000	4,500	100	450	75%	
		6	8/20	8/10	10	100	100	200	1,000	5,500	100	550	92%	
		[t]end	8/30		10				500	6,000	50	600	100%	100
Port Chatham	chum	[t]start	7/6											
(index		1	7/24	7/6	17.5	30	0	30	263	263	15	15	2%	
system)		2	8/5	7/24	12	1,200	30	1,230	7,380	7,643	422	437	56%	
		3	8/15	8/5	10	0	1,200	1,200	6,000	13,643	343	780	100%	
		4	8/19	8/15	4	0	0	0	0	13,643	0	780	100%	
		[t]end	8/19		0				0	13,643	0	780	100%	1,200
Port Chatham	pink	[t]start	7/6											
(index		1	7/24	7/6	17.5	3,110	0	3,110	27,213	27,213	1,555	1,555	17%	
system)		2	8/5	7/24	12	4,200	3,110	7,310	43,860	71,073	2,506	4,061	45%	
		3	8/15	8/5	10	2,410	4,200	6,610	33,050	104,123	1,889	5,950	66%	
		4	8/19	8/15	4	4,500	2,410	6,910	13,820	117,943	790	6,740	75%	
		[t]end	9/5		17.5				39,375	157,318	2,250	10,290	100%	4,500

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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 escapment	Peak count
Port Dick-	chum	[t]start	6/27											
Headend Creek		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
(index		2	7/4	6/27	7	30	0	30	105	105	6	6	0%	
system)		3	7/13	7/4	9	200	30	230	1,035	1,140	59	65	2%	
		4	7/21	7/13	8	1,200	200	1,400	5,600	6,740	320	385	12%	
		5	7/24	7/21	3	2,700	1,200	3,900	5,850	12,590	334	719	23%	
		6	8/5	7/24	12	1,900	2,700	4,600	27,600	40,190	1,577	2,297	73%	
		7	8/15	8/5	10	410	1,900	2,310	11,550	51,740	660	2,957	94%	
		[t]end	9/1		17.5				3,588	55,328	205	3,162	100%	2,700
Port Dick-	pink	[t]start	6/27											
Headend Creek		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
(index		2	7/4	6/27	7	3,000	0	3,000	10,500	10,500	600	600	3%	
system)		3	7/13	7/4	9	4,700	3,000	7,700	34,650	45,150	1,980	2,580	11%	
		4	7/21	7/13	8	6,400	4,700	11,100	44,400	89,550	2,537	5,117	22%	
		5	7/24	7/21	3	4,200	6,400	10,600	15,900	105,450	909	6,026	26%	
		6	8/5	7/24	12	14,520	4,200	18,720	112,320	217,770	6,418	12,444	54%	
		7	8/15	8/5	10	8,300	14,520	22,820	114,100	331,870	6,520	18,964	82%	
		[t]end	9/1		17.5				72,625	404,495	4,150	23,114	100%	14,520
Port Dick-	chum	[t]start	6/27											
Island creek		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
(index		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
system)		3	7/4	7/2	2	3	0	3	3	3	0	0	0%	
		4	7/13	7/4	9	0	3	3	14	17	1	1	0%	
		5	7/16	7/13	3	40	0	40	60	77	3	4	0%	
		6	7/21	7/16	5	510	40	550	1,375	1,452	79	83	4%	
		7	7/24	7/21	3	100	510	610	915	2,367	52	135	7%	
		8	7/30	7/24	6	300	100	400	1,200	3,567	69	204	10%	
		9	8/5	7/30	6	1,500	300	1,800	5,400	8,967	309	512	25%	
		10	8/15	8/5	10	1,450	1,500	2,950	14,750	23,717	843	1,355	65%	
		[t]end	9/1		17.5				12,688	36,404	725	2,080	100%	1,500

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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 escapment	Peak count
Port Dick-	pink	[t]start	6/27											
Island creek		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
(index		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
system)		3	7/4	7/2	2	0	0	0	0	0	0	0	0%	
		4	7/13	7/4	9	210	0	210	945	945	54	54	1%	
		5	7/16	7/13	3	0	210	210	315	1,260	18	72	1%	
		6	7/21	7/16	5	0	0	0	0	1,260	0	72	1%	
		7	7/24	7/21	3	460	0	460	690	1,950	39	111	2%	
		8	7/30	7/24	6	300	460	760	2,280	4,230	130	242	4%	
		9	8/5	7/30	6	5,000	300	5,300	15,900	20,130	909	1,150	19%	
		10	8/15	8/5	10	4,400	5,000	9,400	47,000	67,130	2,686	3,836	64%	
		[t]end	9/1		17.5				38,500	105,630	2,200	6,036	100%	5,000
Port Dick-	chum	[t]start	7/4											
Middle Creek		1	7/4	7/4	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/13	7/4	9	100	0	100	450	450	26	26	7%	
system)		3	7/21	7/13	8	200	100	300	1,200	1,650	69	94	27%	
		4	7/24	7/21	3	400	200	600	900	2,550	51	146	42%	
		[t]end	8/10		17.5				3,500	6,050	200	346	100%	400
Port Dick-	pink	[t]start	7/4											
Middle Creek		1	7/4	7/4	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/13	7/4	9	0	0	0	0	0	0	0	0%	
system)		3	7/21	7/13	8	40	0	40	160	160	9	9	13%	
		4	7/24	7/21	3	100	40	140	210	370	12	21	30%	
		[t]end	8/10		17.5				875	1,245	50	71	100%	100
Port Dick-	chum	[t]start	7/4											
Slide Creek		1	7/4	7/4	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/21	7/4	17	310	0	310	2,635	2,635	151	151	51%	
system)		3	7/24	7/21	3	200	310	510	765	3,400	44	194	66%	
		[t]end	8/10		17.5				1,750	5,150	100	294	100%	310

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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	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. index[b]	Accum. escape. index[c]	Accum. percent escapment	Peak count
Port Dick-	pink	[t]start	7/4											
Slide Creek		1	7/4	7/4	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/21	7/4	17	10	0	10	85	85	5	5	2%	
system)		3	7/24	7/21	3	400	10	410	615	700	35	40	17%	
		[t]end	8/10		17.5				3,500	4,200	200	240	100%	400
Rocky River	chum	[t]start	6/27											
(index		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
system)		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
		3	7/13	7/2	11	20	0	20	110	110	6	6	0%	
		4	7/16	7/13	3	220	20	240	360	470	21	27	0%	
		5	7/21	7/16	5	920	220	1,140	2,850	3,320	163	190	3%	
		6	7/24	7/21	3	910	920	1,830	2,745	6,065	157	347	5%	
		7	7/30	7/24	6	2,370	910	3,280	9,840	15,905	562	909	13%	
		8	8/19	7/30	20	4,200	2,370	6,570	65,700	81,605	3,754	4,663	69%	
		[t]end	9/5		17.5				36,750	118,355	2,100	6,863	100%	4,200
Rocky River	pink	[t]start	6/27											
(index		1	6/27	6/27	0	0	0	0	0	0	0	0	0%	
system)		2	7/2	6/27	5	0	0	0	0	0	0	0	0%	
		3	7/13	7/2	11	10	0	10	55	55	3	3	0%	
		4	7/16	7/13	3	200	10	210	315	370	18	21	0%	
		5	7/21	7/16	5	800	200	1,000	2,500	2,870	143	164	1%	
		6	7/24	7/21	3	7,200	800	8,000	12,000	14,870	686	850	5%	
		7	7/30	7/24	6	6,300	7,200	13,500	40,500	55,370	2,314	3,164	19%	
		8	8/19	7/30	20	9,100	6,300	15,400	154,000	209,370	8,800	11,964	72%	
		[t]end	9/5		17.5				79,625	288,995	4,550	16,514	100%	9,100
South Nuka	pink	[t]start	6/16											
Island Creek		1	7/4	6/16	17.5	200	0	200	1,750	1,750	100	100	4%	
(index		2	7/13	7/4	9	310	200	510	2,295	4,045	131	231	9%	
system)		3	7/16	7/13	3	30	310	340	510	4,555	29	260	10%	
		4	7/21	7/16	5	4,600	30	4,630	11,575	16,130	661	922	35%	
		5	7/30	7/21	9	700	4,600	5,300	23,850	39,980	1,363	2,285	87%	
		[t]end	8/16		17.5				6,125	46,105	350	2,635	100%	4,600

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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 escapment	Peak count
Taylor Bay	chum	[t]start	7/21											
Creek		1	7/21	7/21	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/30	7/21	9	400	0	400	1,800	1,800	103	103	34%	
system)		[t]end	8/16		17.5				3,500	5,300	200	303	100%	400
Taylor Bay	pink	[t]start	7/3											
Creek		1	7/21	7/3	17.5	3,100	0	3,100	27,125	27,125	1,550	1,550	32%	
(not an index		2	7/30	7/21	9	3,310	3,100	6,410	28,845	55,970	1,648	3,198	66%	
system)		[t]end	8/16		17.5				28,963	84,933	1,655	4,853	100%	3,310
Windy Bay-	chum	[t]start	7/13											
Left Creek		1	7/13	7/13	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/16	7/13	3	0	0	0	0	0	0	0	0%	
system)		3	7/21	7/16	5	130	0	130	325	325	19	19	10%	
		4	7/24	7/21	3	200	130	330	495	820	28	47	26%	
		5	7/30	7/24	6	140	200	340	1,020	1,840	58	105	58%	
		6	8/15	7/30	16	0	140	140	1,120	2,960	64	169	93%	
		7	8/19	8/15	4	20	0	20	40	3,000	2	171	94%	
		[t]end	9/5		17.5				175	3,175	10	181	100%	200
Windy Bay-	pink	[t]start	7/13											
Left Creek		1	7/13	7/13	0	0	0	0	0	0	0	0	0%	
(index		2	7/16	7/13	3	2,900	0	2,900	4,350	4,350	249	249	3%	
system)		3	7/21	7/16	5	5,500	2,900	8,400	21,000	25,350	1,200	1,449	15%	
		4	7/24	7/21	3	3,900	5,500	9,400	14,100	39,450	806	2,254	23%	
		5	7/30	7/24	6	5,230	3,900	9,130	27,390	66,840	1,565	3,819	39%	
		6	8/15	7/30	16	4,300	5,230	9,530	76,240	143,080	4,357	8,176	83%	
		7	8/19	8/15	4	1,920	4,300	6,220	12,440	155,520	711	8,887	90%	
		[t]end	9/5		17.5				16,800	172,320	960	9,847	100%	5,500

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays 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.

Appendix B7.–Pink and chum salmon escapements measured by ground survey using area under the curve estimation in Outer District, 2014.

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 Creeks (Index system)	chum	[t]start	7/5												
		1	7/23	7/5	17.5	3,785	0	3,785	33,119	33,119	1,893	1,893	17%	354	4,139
		2	8/6	7/23	14	4,620	3,785	8,405	58,835	91,954	3,362	5,255	47%	4,256	8,876
		3	9/9	8/6	34	994	4,620	5,614	95,438	187,392	5,454	10,708	96%	917	1,911
		[t]end	9/26		17.5				8,698	196,089	497	11,205	100%		
Dogfish Lagoon Creeks (not an index system)	pink	[t]start	7/5												
		1	7/23	7/5	17.5	2,158	0	2,158	18,883	18,883	1,079	1,079	12%	22	2,180
		2	8/6	7/23	14	3,291	2,158	5,449	38,143	57,026	2,180	3,259	37%	1,521	4,812
		3	9/9	8/6	34	1,626	3,291	4,917	83,589	140,615	4,777	8,035	91%	2,848	4,474
		[t]end	9/26		17.5				14,228	154,842	813	8,848	100%		
Port Chatham Creeks (not an index system)	chum	[t]start	7/11												
		1	7/29	7/11	17.5	356	0	356	3,115	3,115	178	178	17%	23	379
		2	8/20	7/29	22	517	356	873	9,603	12,718	549	727	70%	130	647
		3	9/10	8/20	21	1	517	518	5,439	18,157	311	1,038	100%	6	7
		[t]end	9/27		17.5				9	18,166	1	1,038	100%		
Port Chatham Creeks (Index system)	pink	[t]start	7/11												
		1	7/29	7/11	17.5	1,108	0	1,108	9,695	9,695	554	554	7%	122	1,230
		2	8/20	7/29	22	5,293	1,108	6,401	70,411	80,106	4,023	4,577	59%	1,196	6,489
		3	9/10	8/20	21	5	5,293	5,298	55,629	135,735	3,179	7,756	100%	1,507	1,512
		[t]end	9/27		17.5				44	135,779	3	7,759	100%		
Port Dick-Headend Creek (Index system)	chum	[t]start	6/27												
		1	7/15	6/27	17.5	762	0	762	6,668	6,668	381	381	21%	0	762
		2	7/28	7/15	13	885	762	1,647	10,706	17,373	612	993	54%	401	1,286
		3	8/29	7/28	32	19	885	904	14,464	31,837	827	1,819	99%	165	184
		[t]end	9/15		17.5				166	32,003	10	1,829	100%		
Port Dick-Headend Creek (Index system)	pink	[t]start	6/27												
		1	7/15	6/27	17.5	12,444	0	12,444	108,885	108,885	6,222	6,222	13%	0	12,444
		2	7/28	7/15	13	18,728	12,444	31,172	202,618	311,503	11,578	17,800	37%	98	18,826
		3	8/29	7/28	32	9,764	18,728	28,492	455,872	767,375	26,050	43,850	90%	2,231	11,995
		[t]end	9/15		17.5				85,435	852,810	4,882	48,732	100%		

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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	7/13												
Island Creek		1	7/31	7/13	17.5	1,376	0	1,376	12,040	12,040	688	688	25%	7	1,383
(Index system)		2	8/19	7/31	19	752	1,376	2,128	20,216	32,256	1,155	1,843	68%	135	887
		3	9/3	8/19	15	575	752	1,327	9,953	42,209	569	2,412	89%	543	1,118
		[t]end	9/20		17.5				5,031	47,240	288	2,699	100%		
Port Dick-	pink	[t]start	7/13												
Island Creek		1	7/31	7/13	17.5	322	0	322	2,818	2,818	161	161	0%	0	322
(Index		2	8/19	7/31	19	24,751	322	25,073	238,194	241,011	13,611	13,772	27%	38	24,789
system)		3	9/3	8/19	15	28,024	24,751	52,775	395,813	636,824	22,618	36,390	72%	2,612	30,636
		[t]end	9/20		17.5				245,210	882,034	14,012	50,402	100%		
Port Dick-	chum	[t]start	6/27												
Slide Creek		1	7/15	6/27	17.5	202	0	202	1,768	1,768	101	101	8%	0	202
(not an		2	7/28	7/15	13	545	202	747	4,856	6,623	277	378	30%	16	561
index system)		3	8/29	7/28	32	283	545	828	13,248	19,871	757	1,135	89%	226	509
		[t]end	9/15		17.5				2,476	22,347	142	1,277	100%		
Port Dick-	pink	[t]start	6/27												
Slide Creek		1	7/15	6/27	17.5	13	0	13	114	114	7	7	0%	0	13
(not an		2	7/28	7/15	13	196	13	209	1,359	1,472	78	84	1%	0	196
index system)		3	8/29	7/28	32	6,496	196	6,692	107,072	108,544	6,118	6,203	66%	320	6,816
		[t]end	9/15		17.5				56,840	165,384	3,248	9,451	100%		

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays 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.

Appendix B8.–Sockeye salmon aerial survey counts from the Outer District, 2014.

Location	Survey number	Survey date	Live count	Peak count
Delusion Lake	1	06/27/14	10	
	2	07/16/14	0	10
Desire Lake	1	06/27/14	9,300	
	2	07/16/14	1,070	
	3	07/21/14	11,480	
	4	07/30/14	10	11,480
Delight Lake	1	06/27/14	2,971	
	2	07/02/14	1,010	
	3	07/16/14	1,340	
	4	07/21/14	300	2,971

Appendix B9.–Escapement indices and harvests by subdistricts in the Outer District, Lower Cook Inlet, 2014.

	Harvest [a]				Escapement index [b]				Combined harvest and escapement index counts			
Location	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Dogfish Bay Subdistrict (232-01)	4		25,679	42,468			8,848	11,205	4		34,527	53,673
Port Chatham Subdist. (232-02)							10,290	1,200			10,290	1,200
Chugach Bay Subdistrict (232-03)												
Windy Bay Subdistrict (232-04)							15,857	400			15,857	400
Rocky Bay Subdistrict (232-05)	3		4,744	4,807			17,114	6,863	3		21,858	11,670
Outer Port Dick Subdist. (232-06)	14		8,281	364					14		8,281	364
Pt. Dick Headend Sect. (232-11)	1		3,449	1,690			48,732	1,829	1		52,181	3,519
Pt. Dick Mid. Ck. Sect. (232-12)	2		16,667	5,073			100	400	2		16,767	5,473
Pt. Dick Island Ck. Sect. (232-13)	13		101,715	4,767			50,402	2,699	13		152,117	7,466
Taylor Bay Subdistrict (232-08)							4,853	400			4,853	400
Port Dick area subtotal	33		134,856	16,701			104,087	5,328	33		238,943	22,029
E. Side Gore Pt. Subdist. (232-10)												
Nuka Island Subdistrict (232-15)	30		2,598	529			11,900	920	30		14,498	1,449
East Nuka Subdistrict (232-23)	24,197		805	4	33,779		1,643	200	57,976		2,448	204
Outer District total [c]	24,264		163,938	59,702	33,779		169,739	26,116	58,043		333,677	85,818

[a] Harvests include all commercial and subsistence harvests.

[b] Unexpanded aerial or ground survey index count, or weir count. Also includes non-index streams.

[c] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to sustainable escapement goal ranges as shown for index streams only.

Appendix B10.–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, 1975–2014.

	Pink 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
1975	2.3	7.7	18.7	9.7	4.4	62.8	0.1	28.0	0.4		134.1
1976			0.2	0.2	2.7	12.7			0.6		16.4
1977	8.1	14.2	11.1	47.3	36.7	109.3	0.6	12.0	0.8		240.1
1978	0.6	0.3	0.3	1.1	8.2	44.9	0.4		1.0		56.8
1979	7.3	20.8	10.4	74.8	85.0	116.0	0.6	15.0	3.0		332.9
1980	0.3	7.7	3.3	10.9	6.4	56.1	2.2	0.3	16.0	4.6	103.2
1981	2.6	11.2	4.7	31.3	25.0	106.0	25.0	16.0	5.0	14	226.8
1982	2.6	2.0	4.7	4.4	6.6	19.9	15.0	0.4	12.0	6	67.6
1983	1.0	3.5	4.3	11.9	16.6	64.1	15.3		8.5	5.1	125.2
1984	0.6	7.8	3.4	2.5	9.0	44.6	35.0	0.6	23.0	4	126.5
1985	0.2	8.9	5.4	8.9	12.1	65.3	27.9	3.6	62.5	9	194.8
1986	0.4	11.5	2.5	2.2	12.0	41.6	16.6	7.0	32.0	6.6	125.8
1987	1.2	10.2	2.0	5.6	4.5	4.5	0.1	2.8	11.0	1.1	41.9
1988	0.3	21.0	1.3	3.4	5.4	12.0	7.2	1.2	2.5	1.7	54.3
1989	0.2	31.7	6.6	25.2	10.3	55.4	6.7	7.3	47.0	4.9	190.4
1990	7.1	27.8	7.1	7.5	18.0	41.7	25.0	13.3	1.0	3.8	148.5
1991	9.3	23.8	20.7	34.5	26.1	54.2	24.4	16.4	1.3	4.4	210.7
1992		4.3	3.9	8.2	25.4	6.9	12.5	6.1	0.4	0.4	67.7
1993	0.3	22.2	13.6	25.9	70.0	37.0	12.1	34.3	19.3	3.3	234.7
1994	1.3	3.3	2.2	3.0	17.1	18.1	28.3	1.4		0.8	74.7
1995	13.3	14.0	11.4	31.6	56.3	6.6	10.6	6.2		0.6	150.0
1996	2.3	8.6	9.9	2.5	80.1	23.2	40.1	6.8			173.5
1997	20.0	42.7	13.9	64.6	48.1	36.9	71.1	9.3	6.2		312.8
1998	6.7	22.2	19.5	12.9	165.0	59.1	83.6	14.0	6.2		389.2
1999	12.4	10.7	5.2	24.0	17.2	8.5	8.6	2.4	6.8		95.8
2000	11.1	16.7	23.0	20.1	131.6	124.4	70.8	13.6	21.1	3.9	432.4
2001	2.0	17.9	10.3	61.8	73.0	44.7	81.8	20.7	67.5	2.3	379.7
2002	1.3	18.1	14.4	28.9	112.5	108.0	44.1	14.8	78.4	3.1	420.5
2003	5.2	35.0	23.3	82.8	287.4	107.7	118.6	41.4	34.8		736.2
2004	3.2	26.4	12.0	23.3	53.8	13.3	33.6	6.4	24.3		196.3
2005	22.3	44.4	22.2	72.0	198.7	122.2	26.4	11.2	46.0		565.4
2006	8.0	24.2	17.1	65.2	67.8	51.5	107.7	5.1	74.8		421.4
2007	4.1	14.5	18.3	37.3	190.0	44.2	87.2	6.6	11.8		414.0
2008	8.0	16.4	12.5	64.1	90.9	34.2	49.7	12.3	9.5		297.6
2009	9.2	25.3	15.0	57.3	173.6	41.7	44.5	19.9	73.9		460.4
2010	6.3	3.0	6.4	24.2	27.0	41.1	69.5		3.0		180.6
2011	3.9	15.8	1.7	12.2	22.7	16.9	10.2		0.6	0.3	84.0
2012	11.4	5.4	5.8	11.7	15.7	18.1	20.1	0.5	2.2	0.0	90.8
2013	26.4	57.4	11.7	47.8	75.8	55.8	26.0	8.4	56.9	24.4	366.4
10-yr avg.	10.3	23.3	12.3	41.5	91.6	43.9	47.5	8.8	30.3	8.2	309.5
2014	8.8	10.3	5.7	10.1	17.1	48.7	50.4	11.0	0.4	1.0	162.7

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Year	Chum salmon					Sockeye salmon			
1975	Dogfish Lagoon	Rocky River	Port Dick Creek	Island Creek	Total index count	Delusion Lake [a]	Delight Lake	Desire Lake	Total index count
1976	5	25	4	7.4	41.4		2.0	6.5	8.5
1977	3	12	1.5	1	17.5		6.0	11.0	17.0
1978	6.4	11	5	11	33		5.2	10.7	15.9
1979	9.3	6.3	8.9	17	41.4		8.0	10.0	18.0
1980	8.2	35	4	17	64		8.0	12.0	20.0
1981	4	23	4.2	11	42.1		10.0	17.0	27.0
1982	12	13	4.1	18	45.6		7.3	12.0	19.3
1983	8.5	2.8	1.7	8.7	21.7		25.0	18.0	43.0
1984	5.3	4	4.5	36	50		7.0	12.0	19.0
1985	8.6	3.5	2.7	26	40.4		10.5	15.0	25.5
1986	4.9	2.5	1	9.1	17.5		26.0	18.0	44.0
1987	2.5	2	1.7	8.6	14.8		13.0	10.0	23.0
1988	2	0.2	6.1	13	21.5		10.5	13.4	23.9
1989	8.6	0.3	9	7.8	25.7		1.2	9.0	10.2
1990	1.8	1.2	3.3	4.8	11.1		7.7	9.0	16.7
1991	1	0.8	1.1	2.3	5.2		5.2	9.5	14.7
1992	3.1		7.4	17	27.8		4.1	8.2	12.3
1993	0.8	1.7	5.4	6.7	14.6		5.9	11.9	17.8
1994	5.4	0.1	2.5	3.6	11.6		5.6	11.0	16.6
1995	11	1.9	3.5	8.8	25.5		5.6	10.5	16.1
1996	4.2	5.1	3.3	7.7	20.3		15.8	15.8	31.6
1997	6.7	2	2.3	6.9	17.9		7.7	9.4	17.1
1998	13	1.1	1.9	5.2	20.9		27.8 [b]	14.7	42.5
1999	9.8	0.7	1.8	3.4	15.7		9.2 [b]	7.9	17.1
2000	19	5.4	2.9	16	43.5		17.0 [d]	14.6	31.6
2001	20	4.2	3.4	12	39.3		12.3	4.0	16.3
2002	6.1	3	1.8	6.3	17.2	2.8	10.1	5.5	15.6
2003	10	5.7	12	15	43.4	3.6	19.6 [c]	16.0	35.6
2004	13	5.5	5.6	16	40.7	2.0	7.5 [c]	8.4	15.9
2005	3.6	17	8.6	15	44.5	1.0	7.3 [c]	10.7	18.0
2006	2.7	6.1	4.8	21	34.3	1.1	15.2 [c]	4.8	20.0
2007	5.4	11	2.8	5.6	25	1.0	10.9 [c]	18.6	29.5
2008	4.9	1.6	2.8	3.1	12.4	2.1	44.0 [c]	10.0	54.0
2009	6.2	3.8	12	13	34.7	1.8	23.9 [c]	10.7	34.6
2010	4.4	2.5	5.6	9.3	21.8	1.3	12.7 [c]	16.0	28.7
2011	12.7	1.3	2.4	3.4	19.8	0.6	23.8 [c]	6.3	30.1
2012	12.9	4.5	7.1	11.8	36.3	1.8	20.2 [c]	9.6	29.8
2013	8.8	3.1	8.4	14.9	35.2		10.9 [c]	8.8	19.7
10-yr avg.	9.3	8.1	4.1	8.8	30.4	1.7	6.0 [c]	8.4	14.4
2014	7.1	5.9	5.8	10.6	29.4	1.4	17.5	10.4	27.9
Year	11.2	6.9	1.8	2.7	22.6	0.0	22.3 [c]	11.5	33.8

[a] Non-index stream.

[b] Escapement derived from weir counts.

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

APPENDIX C: EASTERN DISTRICT

Appendix C1.–Eastern District common property commercial purse seine salmon harvest (excluding homepacks) by period, 2014.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1	6/24	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
2	6/25	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
3	6/26	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
4	6/27	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
5	6/30	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
6	7/1	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
7	7/2	16	0											
8	7/3	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
9	7/7	16	0											
10	7/8	16	0											
11	7/9	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
12	7/10	16	0											
13	7/11	16	<3	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]
14	7/14	16	0											
15	7/15	16	0											
16	7/16	16	0											
17	7/17	16	0											
18	7/18	16	0											
Total			2		0	0	5,306	20,350	0	0	753	2,871	354	3,328
Average weight						0.00		3.83		0.00		3.81		9.40

[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, 1970–2014.

		Commercial common property harvest					Derby sales
Year	Permits	Chinook	Sockeye	Coho	Pink	Chum	Coho
1970		11	4,895	691	50,946	1,305	
1971		32	2,203	1,115	5	423	
1972		12	413	903	18,232	767	
1973		5	3,057	801	1,919	55	
1974		0	193	524	378	7	
1975		0	596	124	383	2	
1976		0	5	200	35,423	45	
1977		0	5,776	360	1,349	3,229	
1978		0	2	582	29,738	100	
1979		0	0	296	0	0	
1980		0	122	426	155,779	720	
1981		0	9,270	470	44,989	3,279	
1982		0	3,092	950	143,639	7,698	
1983		0	25,932	594	36,154	7,934	
1984		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	0	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	0	0	0	0	0	0	1,400
2013	0	0	0	0	0	0	1,380
10 year avg.	7	0	19,691	0	1,656	86	2,219
2014	2	0	5,306	0	753	354	606

Source: ADF&G fish ticket database.

Appendix C3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the Bear Creek weir, 2014

	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
5/17	1	1	0.0%	0	0	0	0					1	1
5/18	0	1	0.0%	0	0	0	0					0	1
5/19	0	1	0.0%	0	0	0	0					0	1
5/20	0	1	0.0%	0	0	0	0					0	1
5/21	0	1	0.0%	0	0	0	0					0	1
5/22	2	3	0.0%	0	0	0	0					2	3
5/23	4	7	0.0%	0	0	0	0					4	7
5/24	16	23	0.0%	0	0	0	0					16	23
5/25	14	37	0.0%	0	0	0	0					14	37
5/26	8	45	0.0%	2	2	4	4					8	45
5/27	13	58	0.1%	2	3	4	8					13	58
5/28	168	226	0.1%	0	4	1	8					168	226
5/29	569	795	0.1%	2	6	4	13					569	795
5/30	696	1,491	0.2%	9	15	20	33					696	1,491
5/31	343	1,834	0.3%	3	18	7	40					343	1,834
6/1	389	2,223	0.4%	10	28	21	61					389	2,223
6/2	59	2,282	0.8%	21	49	45	107					59	2,282
6/3	154	2,436	0.8%	3	52	7	113					154	2,436
6/4	318	2,754	1.1%	18	70	40	154					318	2,754
6/5	254	3,008	1.4%	19	89	41	195					254	3,008
6/6	952	3,960	1.7%	21	110	46	241					952	3,960
6/7	1,253	5,213	2.2%	30	140	66	307					1,253	5,213
6/8	1,295	6,508	2.6%	23	162	50	356					1,295	6,508
6/9	1,095	7,603	3.3%	46	209	101	457					1,095	7,603
6/10	534	8,137	3.9%	41	249	89	547					534	8,137
6/11	543	8,680	4.7%	51	301	112	659			897	897	1,440	9,577
6/12	537	9,217	5.5%	50	350	109	768			856	1,753	1,393	10,970
6/13	297	9,514	6.4%	56	406	123	891			732	2,485	1,029	11,999
6/14	196	9,710	7.6%	76	482	167	1,058			524	3,009	720	12,719
6/15	112	9,822	9.2%	102	584	223	1,281			390	3,399	502	13,221
6/16	411	10,233	10.9%	109	693	240	1,520			170	3,569	581	13,802
6/17	327	10,560	13.3%	154	847	338	1,858			346	3,915	673	14,475
6/18	241	10,801	15.4%	132	979	290	2,148			0	3,915	241	14,716
6/19	371	11,172	17.4%	132	1,111	289	2,437			341	4,256	712	15,428
6/20	597	11,769	20.4%	188	1,299	413	2,849			0	4,256	597	16,025
6/21	648	12,417	22.9%	158	1,457	347	3,196			595	4,851	1,243	17,268
6/22	558	12,975	25.6%	175	1,632	384	3,580			0	4,851	558	17,826
6/23	115	13,090	28.5%	186	1,819	408	3,988			1,328	6,179	1,443	19,269
6/24	0	13,090	31.4%	181	2,000	398	4,386			715	6,894	715	19,984
6/25	0	13,090	34.1%	174	2,174	382	4,768			1,241	8,135	1,241	21,225
6/26	0	13,090	36.2%	131	2,305	287	5,054	34	34	926	9,061	960	22,185
6/27	0	13,090	39.1%	186	2,490	407	5,461	12	46	509	9,570	521	22,706
6/28	0	13,090	41.9%	178	2,668	390	5,851		46	0	9,570	0	22,706
6/29	0	13,090	45.2%	213	2,881	467	6,318		46	873	10,443	873	23,579
6/30	0	13,090	49.1%	245	3,126	537	6,855	28	74	0	10,443	28	23,607
7/1	0	13,090	53.2%	261	3,387	572	7,428		74	926	11,369	926	24,533
7/2	0	13,090	57.6%	281	3,668	616	8,044		74	0	11,369	0	24,533

-continued-

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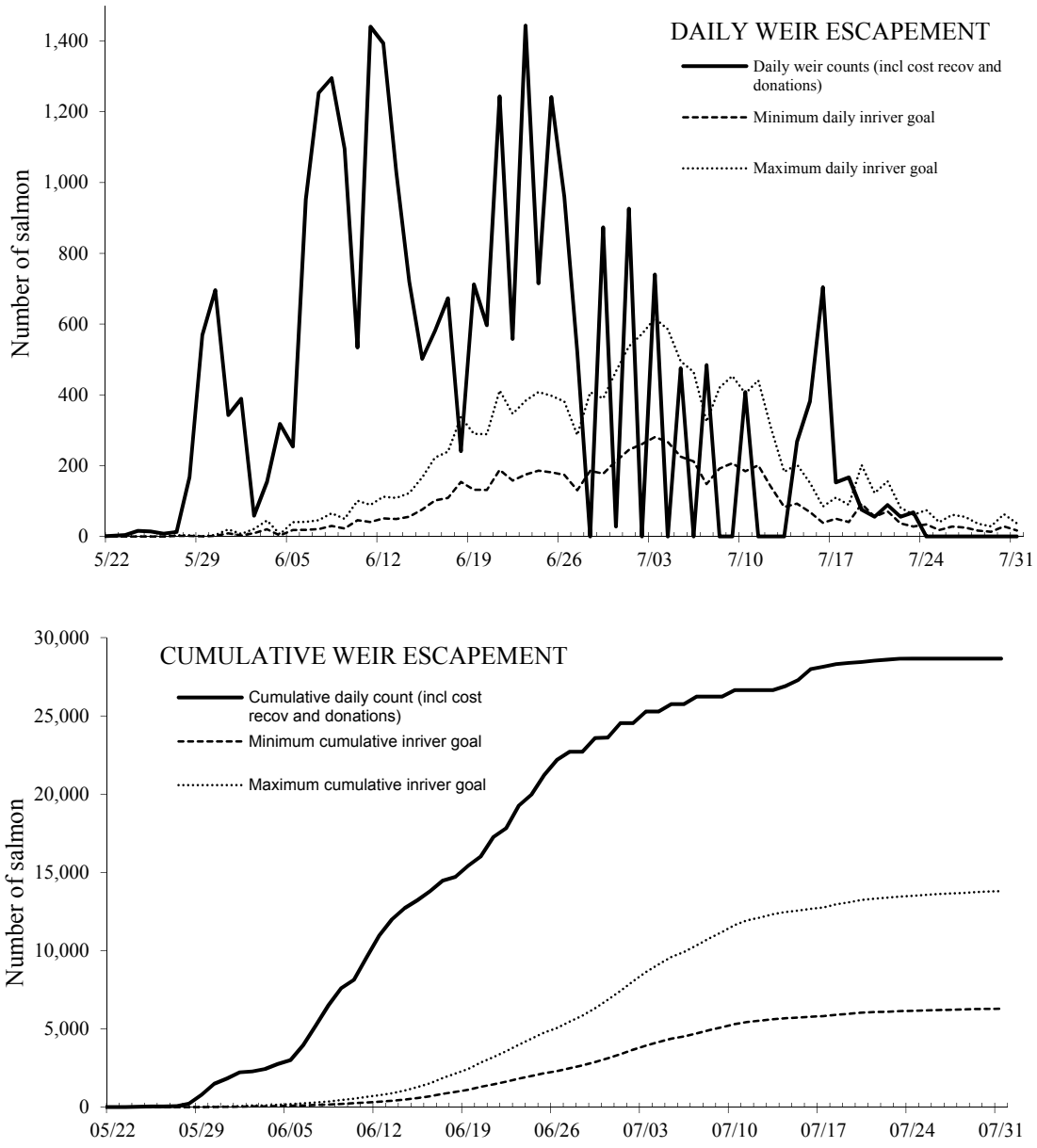
	Actual Escapement to Bear Lake			Anticipated SEG plus CIAA brood goal [a]				Actual weir donations[b]		Actual weir cost recovery		Actual total sockeye at Bear Creek weir	
			Antic.	Minimum		Maximum							
Date	Daily	Total	percent	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total
7/3	0	13,090	61.8%	267	3,935	585	8,629	30	104	710	12,079	740	25,273
7/4	0	13,090	65.3%	226	4,160	495	9,124		104	0	12,079	0	25,273
7/5	0	13,090	68.6%	212	4,372	465	9,589		104	475	12,554	475	25,748
7/6	0	13,090	71.0%	148	4,520	325	9,914		104	0	12,554	0	25,748
7/7	0	13,090	74.0%	192	4,712	421	10,335		104	484	13,038	484	26,232
7/8	0	13,090	77.2%	207	4,919	453	10,788		104	0	13,038	0	26,232
7/9	0	13,090	80.1%	184	5,103	404	11,192		104	0	13,038	0	26,232
7/10	0	13,090	83.3%	201	5,304	441	11,633		104	408	13,446	408	26,640
7/11	0	13,090	85.5%	139	5,443	304	11,937		104	0	13,446	0	26,640
7/12	0	13,090	86.8%	83	5,527	183	12,120		104	0	13,446	0	26,640
7/13	0	13,090	88.2%	93	5,619	204	12,324		104	0	13,446	0	26,640
7/14	0	13,090	89.3%	69	5,688	152	12,475	268	372	0	13,446	268	26,908
7/15	0	13,090	89.9%	39	5,727	85	12,560	382	754	0	13,446	382	27,290
7/16	0	13,090	90.7%	50	5,777	110	12,670	222	976	482	13,928	704	27,994
7/17	0	13,090	91.3%	41	5,818	89	12,759	153	1,129		13,928	153	28,147
7/18	0	13,090	92.8%	92	5,910	202	12,961	167	1,296		13,928	167	28,314
7/19	0	13,090	93.7%	56	5,966	123	13,084	76	1,372		13,928	76	28,390
7/20	0	13,090	94.8%	71	6,037	156	13,240	56	1,428		13,928	56	28,446
7/21	0	13,090	95.4%	37	6,074	82	13,322	89	1,517		13,928	89	28,535
7/22	0	13,090	95.8%	28	6,103	61	13,383	56	1,573		13,928	56	28,591
7/23	0	13,090	96.3%	34	6,137	75	13,458	68	1,641		13,928	68	28,659
7/24	0	13,090	96.6%	18	6,155	40	13,499		1,641		13,928	0	28,659
7/25	0	13,090	97.1%	28	6,183	62	13,560		1,641		13,928	0	28,659
7/26	0	13,090	97.5%	25	6,208	56	13,616		1,641		13,928	0	28,659
7/27	0	13,090	97.7%	17	6,225	36	13,652		1,641		13,928	0	28,659
7/28	0	13,090	97.9%	13	6,238	29	13,681		1,641		13,928	0	28,659
7/29	0	13,090	98.4%	29	6,267	63	13,744		1,641		13,928	0	28,659
7/30	0	13,090	98.6%	17	6,284	37	13,781		1,641		13,928	0	28,659
7/31	0	13,090	98.8%	9	6,292	19	13,800		1,641		13,928	0	28,659

Note: Bear Creek sustainable escapement goal is 700–8,300 sockeye salmon. CIAA broodstock goal is 5,670 for a desired inriver run of 6,370–13,970 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 sustainable escapement goal (SEG) plus broodstock needs.



Appendix C4.–Sockeye salmon passage past Bear Creek weir versus minimum and maximum inriver goals, 2014.

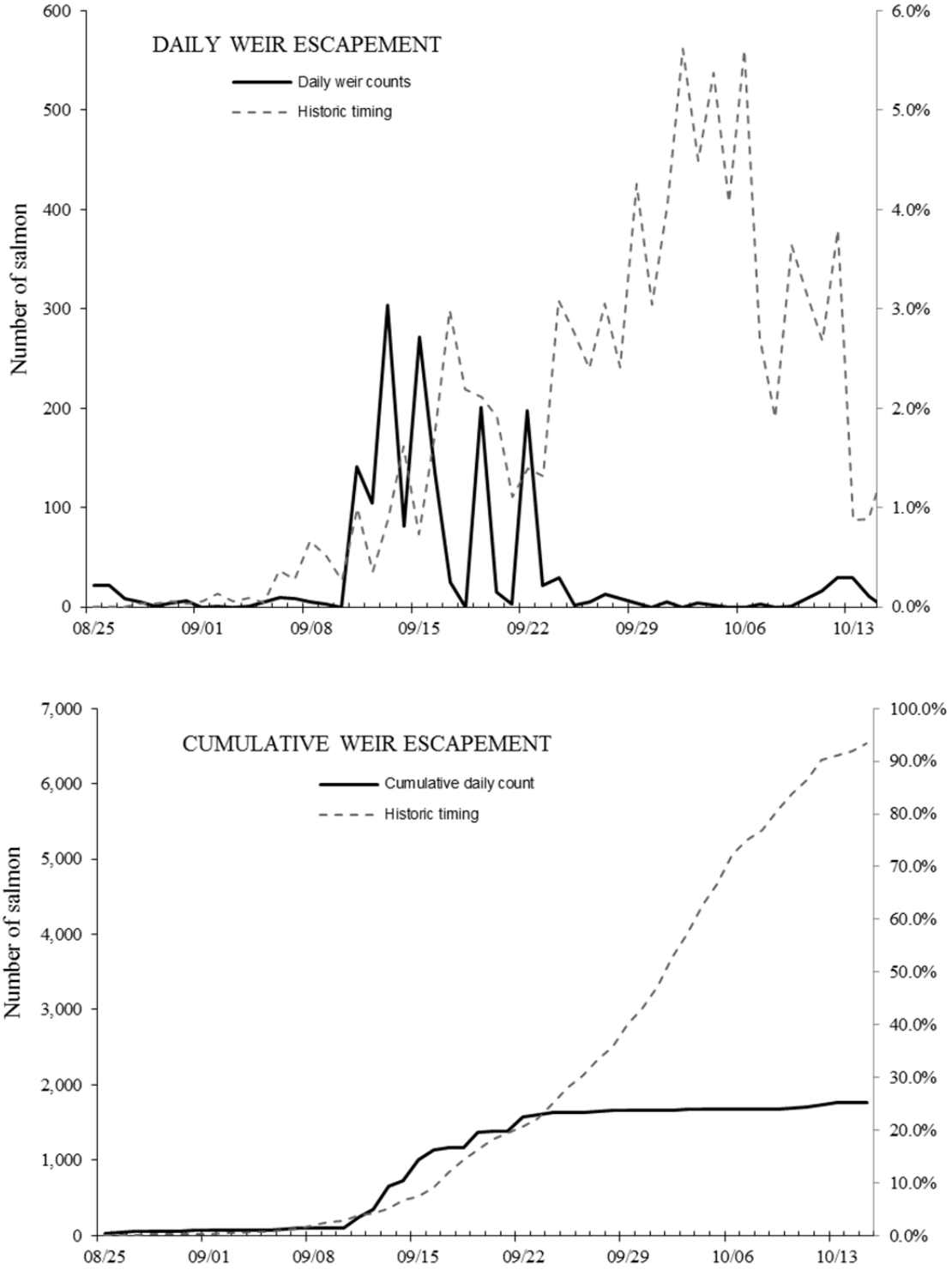
Note: A total of 28,659 sockeye salmon returned to the Bear Creek weir in 2014. Of those, 13,090 were passed through the weir into Bear Lake. An additional 15,569 were harvested at the weir for cost recovery or donated (jacks) to the public. A total of 3,857 were harvested from Bear Lake for use as hatchery broodstock. Total estimated natural spawning escapement is estimated at 9,233 fish. Inriver goal is the sustainable escapement goal range (700–8,300) added to the CIAA hatchery broodstock goal (4,258) for this species.

Appendix C5.–Coho salmon escapement through the Bear Creek weir, 2014.

	Escapement to Bear Lake		Antic.	Broodstock harvest[a]		Weir donations		Cumulative coho at Bear Creek weir	
Date	Daily	Total	percent	Daily	Total	Daily	Total	Daily	Total
8/25	22	22	0.1%					22	22
8/26	22	44	0.2%					22	44
8/27	8	52	0.2%					8	52
8/28	5	57	0.2%					5	57
8/29	1	58	0.2%					1	58
8/30	4	62	0.3%					4	62
8/31	6	68	0.3%					6	68
9/2	1	69	0.5%					1	69
9/4	1	70	0.7%					1	70
9/5	5	75	0.7%					5	75
9/6	10	85	1.1%					10	85
9/7	8	93	1.4%					8	93
9/8	5	98	2.0%					5	98
9/9	3	101	2.5%					3	101
9/11	13	114	3.8%	128	128			141	242
9/12	0	114	4.1%	105	233			105	347
9/13	64	178	5.0%	240	473			304	651
9/14	0	178	6.6%	81	554			81	732
9/15	63	241	7.4%	52	606	157	157	272	1,004
9/16	70	311	9.1%	0	606	66	223	136	1,140
9/17	10	321	12.1%	15	621	0	223	25	1,165
9/18	0	321	14.3%	0	621	0	223	0	1,165
9/19	0	321	16.4%	0	621	201	424	201	1,366
9/20	0	321	18.3%	0	621	15	439	15	1,381
9/21	0	321	19.4%	0	621	3	442	3	1,384
9/22	0	321	20.8%	0	621	197	639	197	1,581
9/23	0	321	22.1%	0	621	22	661	22	1,603
9/24	0	321	25.2%	29	650	0	661	29	1,632
9/25	0	321	27.9%	2	652	0	661	2	1,634
9/26	0	321	30.3%	0	652	5	666	5	1,639
9/27	0	321	33.4%	8	660	5	671	13	1,652
9/28	0	321	35.8%	8	668	0	671	8	1,660
9/29	0	321	40.1%	4	672	0	671	4	1,664
10/1	0	321	47.2%	5	677	0	671	5	1,669
10/3	0	321	57.3%	4	681	0	671	4	1,673
10/4	0	321	62.6%	2	683	0	671	2	1,675
10/7	0	321	75.0%	3	686	0	671	3	1,678
10/8	0	321	76.9%	0	686	0	671	0	1,678
10/9	0	321	80.6%	1	687	0	671	1	1,679
10/10	0	321	83.7%	8	695	0	671	8	1,687
10/11	0	321	86.4%	16	711	0	671	16	1,703
10/12	0	321	90.2%	29	740	0	671	29	1,732
10/13	202	523	91.0%	-173[b]	567	0	671	29	1,761
10/14	11	534	91.9%	0	567	0	671	11	1,772
10/15	0	534	93.3%	0	567	0	671	0	1,772

[a] A total of 383 fish were harvested for broodstock by CIAA, 184 fish were used by ADF&G as broodstock for educational programs.

[b] A total of 173 coho salmon were removed from the raceways on October 13 and released into Bear Lake.



Appendix C6.–Coho salmon passage past the Bear Creek weir, 2014.

Appendix C7.–Adult sockeye and coho salmon escapement, and Dolly Varden char and smolt outmigrations past Bear Creek weir, 1992–2014.

	Upstream migration to Bear Lake								Downstream migration to Resurrection Bay			
	Sockeye				Coho							
Year	Weir harvest, (sold or donated)	Brood stock harvest	Spawning escapement	Total run at weir	Weir harvest, (sold or donated)	Brood stock harvest	Spawning escapement	Total run at weir	Sockeye (smolt)	Coho (smolt)	Dolly Varden (adult)	Comments
1992			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		598	276	874	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		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		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		529	535		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		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	2,044	1,103	300	3,447	791,705	36,219	759	
10yr average	11,883	3,795	9,055	24,744	617	719	439	1,860	773,895	55,794	569	
2014	15,569	3,857	9,233	28,659	671	567	534	1,772	393,553	21,113	191	

Source: Data from CIAA (1992–2014).

Appendix C8.–Sockeye salmon aerial survey counts from the Eastern District, 2014.

Location	Survey number	Survey date	Live count	Peak count
Aialik Lake and creek	1	7/2/14	0	
	2	7/21/14	260	
	3	7/30/14	450	450

Appendix C9.–Pink and chum salmon escapements using area under the curve estimation in the Eastern District, 2014.

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
Aialik Lake	pink	[t]start	7/2											
		1	7/2	7/2	0	0	0	0	0	0	0	0	0%	
		2	7/21	7/2	19	0	0	0	0	0	0	0	0%	
		3	7/30	7/21	9	0	0	0	0	0	0	0	0%	
		[t]end	8/16		18				0	0	0	0	100%	**0**

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays 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.

Appendix C10.–Escapement indices and harvests by subdistrict in the Eastern District of Lower Cook Inlet, 2014.

	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
Location	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Aialik Bay Subdistrict (231-05)					450				450			
Harding Entrance Subdistrict (231-10)												
Outer Resurrection Bay Subdist. (231-25)												
Resurrection Bay Subdistrict (231-30)	133,018	2,354	778	614	13,090	1,101			146,108	3,455	778	614
Humpy Cove Subdistrict (231-40)												
Day Harbor Subdistrict (231-60)								255				255
Eastern District total[a]	133,018	2,354	778	614	13,540	1,101	0	255	146,558	3,455	778	869

[a] Harvests include all commercial, sport derby, and hatchery harvests.

[b] Unexpanded aerial or ground survey index counts or weir counts.

Appendix C11.–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, 1975–2014.

	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
1975								8.0	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	0	5.0
1978		7.8	11.0	1.5	2.0	0.9	23.2	3.0	0	3.0
1979								5.0	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	0.0	4.1						2.1	8.0	10.1
2013	0.0	8.1		5.3	0.6	1.8	15.8	3.5	9.0	12.5
10-yr avg.	0.3	11.4		6.3	4.7	4.8	29.2	4.7	9.1	13.8
2014							0.0	0.5	9.2	9.7

[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, 2014.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period [a]	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	06/02–06/08	160												
2 [a,b]	06/09–06/15	160	3	3	0	0	1,728	5,186	0	0	0	0	0	0
3 [c,]	06/16–06/22	160												
4 [a,d]	06/23–06/29	160												
5 [a,d,e]	06/30–07/06	160	e	e	e	e	e	e	e	e	e	e	e	e
6 [a,d,e,f]	07/07–07/13	160	e	e	e	e	e	e	e	e	e	e	e	e
7 [a,c,d,e,f]	07/14–07/20	160	e	e	e	e	e	e	e	e	e	e	e	e
8 [a,d,f]	07/21–07/27	160	7	11	0	0	2,343	9,716	0	0	34,555	122,902	4,099	32,341
9 [a,d,e,f]	07/28–08/03	160	e	e	e	e	e	e	e	e	e	e	e	e
10 [a,d,e,f]	08/04–08/10	160												
11 [a,e,f]	08/11–08/17	160	e	e	e	e	e	e	e	e	e	e	e	e
12 [a,e,f]	08/18–08/24	160												
13 [a,e,f]	08/25–08/31	160												
14 [a,e,f]	09/01–09/07	160												
15 [a,e,f]	09/08–09/14	160												
Total			8	20	0	0	12,137	40,358	0	0	44,227	159,647	4,449	34,832
	Average weight							3.34				3.61		7.83

Note: Unless otherwise noted, all Kamishak Bay Subdistricts were open to commercial harvest from June 2, 2014, to September 14, 2014, with regular closed waters in effect.

[a] Waters of Kamishak Bay District excluding Chenik, McNeil River and Paint River Subdistricts open to commercial purse seine harvest.

[b] Effective at 6:00 AM, June 15 Paint, McNeil, and Chenik subdistricts open to CPF. Waters inside McNeil Spit open 2 hours, 4:30 to 6:30 PM on Sunday, June 15.

[c] Waters inside of McNeil Spit open to commercial salmon harvest on Monday, June 16 from 5:15 to 7:15 PM.

[d] Waters of Kirschner Lake SHA (special harvest area) closed.

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

[f] Portions of Chenik Subdistrict opened to commercial harvest beginning 6:00 AM on Saturday, July 12.

Appendix D2.–Total commercial common property harvest (excluding homepacks) by species in the Kamishak Bay District 1970–2014.

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
10-yr avg.	7	41	1	72,408	3,033	26,422	50,707
2014	8	20	0	12,137	0	44,227	4,449

Source: ADF&G fish ticket database.

Appendix D3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Chenik Lake, 2014.

	Actual		Antic.	Apportioned sustainable escapement goals				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
6/4	0	0	0.0%	6	6	22	23	Camera installed on 6/4.
6/5	0	0	0.0%	1	6	3	26	
6/6	0	0	0.0%	0	7	0	26	
6/7	0	0	0.0%	0	7	1	27	
6/8	0	0	0.0%	0	7	0	27	
6/9	0	0	0.0%	5	12	20	47	
6/10	0	0	0.0%	1	12	3	49	
6/11	0	0	0.0%	5	17	21	70	
6/12	0	0	0.0%	6	24	24	94	
6/13	0	0	0.0%	3	26	11	105	
6/14	0	0	0.0%	38	64	151	257	
6/15	0	0	0.0%	69	133	274	531	
6/16	19	19	0.0%	109	242	437	968	
6/17	3	22	0.0%	312	555	1,250	2,218	
6/18	1	23	0.0%	72	627	290	2,508	
6/19	0	23	0.2%	209	836	835	3,343	
6/20	0	23	0.2%	123	959	492	3,835	
6/21	4	27	0.2%	265	1,223	1,059	4,894	
6/22	0	27	0.2%	216	1,440	865	5,758	
6/23	0	27	0.2%	150	1,589	598	6,357	
6/24	0	27	0.3%	83	1,672	331	6,688	
6/25	0	27	0.4%	16	1,688	63	6,751	
6/26	0	27	0.5%	42	1,729	166	6,917	
6/27	0	27	0.7%	109	1,838	435	7,353	
6/28	0	27	0.8%	201	2,039	804	8,157	
6/29	8	35	1.8%	193	2,232	772	8,929	
6/30	1	36	3.8%	141	2,373	564	9,494	
7/1	0	36	6.9%	194	2,567	774	10,268	
7/2	8	44	15.8%	88	2,655	350	10,618	
7/3	4,235	4,279	17.9%	16	2,671	65	10,683	
7/4	1,701	5,980	23.9%	61	2,732	244	10,927	
7/5	15	5,995	27.4%	109	2,841	435	11,362	
7/6	3	5,998	35.0%	54	2,895	216	11,578	
7/7	0	5,998	41.1%	40	2,935	161	11,739	
7/8	0	5,998	45.4%	26	2,960	103	11,841	
7/9	15	6,013	47.8%	27	2,987	106	11,947	
7/10	1,248	7,261	48.2%	119	3,105	474	12,422	
7/11	4,145	11,406	49.4%	35	3,140	138	12,560	
7/12	2,466	13,872	52.5%	57	3,197	229	12,789	
7/13	139	14,011	58.3%	31	3,229	125	12,914	
7/14	3	14,014	63.8%	30	3,258	118	13,032	
7/15	1	14,015	67.8%	5	3,263	20	13,052	
7/16	0	14,015	73.3%	39	3,302	155	13,207	
7/17	3	14,018	75.8%	10	3,311	39	13,245	
7/18	1,951	15,969	76.3%	17	3,328	69	13,314	
7/19	490	16,459	78.1%	22	3,350	87	13,401	
7/20	74	16,533	81.2%	12	3,362	48	13,449	

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	Actual		Antic.	Apportioned sustainable escapement goals				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/21	182	16,715	82.7%	8	3,370	32	13,480	
7/22	15	16,730	83.8%	16	3,387	66	13,546	
7/23	83	16,813	84.6%	20	3,407	80	13,627	
7/24	351	17,164	85.3%	14	3,421	57	13,684	
7/25	0	17,164	88.7%	12	3,433	49	13,733	
7/26	146	17,310	89.7%	17	3,451	69	13,803	
7/27	50	17,360	91.4%	20	3,471	81	13,884	
7/28	73	17,433	92.2%	5	3,476	21	13,905	
7/29	87	17,520	93.1%	10	3,486	39	13,944	
7/30	58	17,578	93.2%	6	3,492	26	13,970	
7/31	64	17,642	94.3%	6	3,498	22	13,992	
8/1	64	17,706	94.6%	1	3,499	3	13,994	
8/2	8	17,714	95.1%	0	3,499	1	13,996	
8/3	15	17,729	95.7%	1	3,500	3	13,998	
8/4	25	17,754	96.1%	0	3,500	0	13,998	
8/5	6	17,760	96.3%	0	3,500	0	13,998	
8/6	29	17,789	96.8%	0	3,500	2	14,000	
8/7	8	17,797	97.3%	0	3,500	0	14,000	
8/8	0	17,797	97.7%	0	3,500	0	14,000	
8/9	0	17,797	98.1%	0	3,500	0	14,000	
8/10	0	17,797	98.6%	0	3,500	0	14,000	
8/11	0	17,797	99.2%	0	3,500	0	14,000	
8/12	0	17,797	99.3%	0	3,500	0	14,000	
8/13	0	17,797	99.6%	0	3,500	0	14,000	
8/14	0	17,797	99.8%	0	3,500	0	14,000	
8/15	0	17,797	99.9%	0	3,500	0	14,000	
8/16	0	17,797	100.0%	0	3,500	0	14,000	
8/17	0	17,797	100.0%	0	3,500	0	14,000	
8/18	0	17,797	100.0%	0	3,500	2	14,002	
8/19	0	17,797	100.0%	0	3,500	0	14,002	
8/20	0	17,797	100.0%	0	3,500	0	14,002	Hard drive filled 8/20 afternoon.

Note: Anticipated escapement derived from run timing and Chenik Lake sockeye salmon sustainable escapement goal (3,500–14,000 fish).

Appendix D4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Mikfik Lake, 2014.

	Actual		Antic	Apportioned sustainable escapement goal				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
5/27	0	0	0.0%	0	0	0	0	Camera installed, 5/27.
5/28	133	133	0.0%	0	0	0	0	
5/29	2	135	0.0%	0	0	0	0	
5/30	0	135	0.0%	0	0	0	0	
5/31	125	260	0.0%	0	0	0	0	
6/1	400	660	0.0%	0	0	0	0	
6/2	14	674	0.0%	0	0	0	0	
6/3	0	674	0.0%	0	0	0	0	
6/4	248	922	0.0%	0	0	0	0	
6/5	944	1,866	0.0%	0	0	0	0	
6/6	159	2,025	0.0%	0	0	0	0	
6/7	200	2,225	0.0%	0	0	0	0	
6/8	873	3,098	0.0%	0	0	0	0	
6/9	2,244	5,342	0.3%	9	9	23	23	
6/10	2,046	7,388	0.3%	0	9	0	23	
6/11	2,723	10,111	0.3%	0	9	0	23	
6/12	894	11,005	0.3%	1	10	2	25	
6/13	1,020	12,025	12.9%	428	439	1,033	1,058	
6/14	719	12,744	21.9%	307	746	741	1,798	
6/15	694	13,438	24.4%	85	831	205	2,003	
6/16	640	14,078	24.4%	1	831	2	2,005	
6/17	1,817	15,895	28.0%	120	952	291	2,295	
6/18	508	16,403	32.2%	144	1,096	348	2,644	
6/19	54	16,457	32.2%	0	1,096	1	2,644	
6/20	104	16,561	38.2%	203	1,300	490	3,134	
6/21	179	16,740	55.5%	586	1,886	1,414	4,548	
6/22	64	16,804	67.1%	397	2,282	956	5,505	
6/23	83	16,887	71.5%	149	2,432	360	5,865	
6/24	51	16,938	75.0%	117	2,549	282	6,147	
6/25	14	16,952	78.4%	116	2,665	279	6,427	
6/26	408	17,360	79.4%	35	2,700	85	6,512	
6/27	80	17,440	83.1%	126	2,826	305	6,817	
6/28	67	17,507	84.4%	43	2,869	103	6,920	
6/29	3	17,510	85.1%	24	2,893	59	6,978	
6/30	0	17,510	85.1%	0	2,893	0	6,978	
7/1	0	17,510	85.1%	0	2,894	1	6,979	
7/2	25	17,535	85.2%	1	2,895	3	6,983	
7/3	21	17,556	85.2%	1	2,896	3	6,985	
7/4	20	17,576	85.2%	1	2,897	3	6,988	
7/5	56	17,632	85.4%	6	2,903	14	7,002	
7/6	0	17,632	89.3%	133	3,036	320	7,322	
7/7	91	17,723	91.0%	59	3,095	142	7,464	
7/8	59	17,782	93.4%	79	3,174	191	7,656	
7/9	0	17,782	93.4%	3	3,177	6	7,662	
7/10	180	17,962	93.5%	1	3,178	3	7,665	
7/11	29	17,991	93.5%	0	3,178	0	7,665	
7/12	46	18,037	93.6%	5	3,183	11	7,676	

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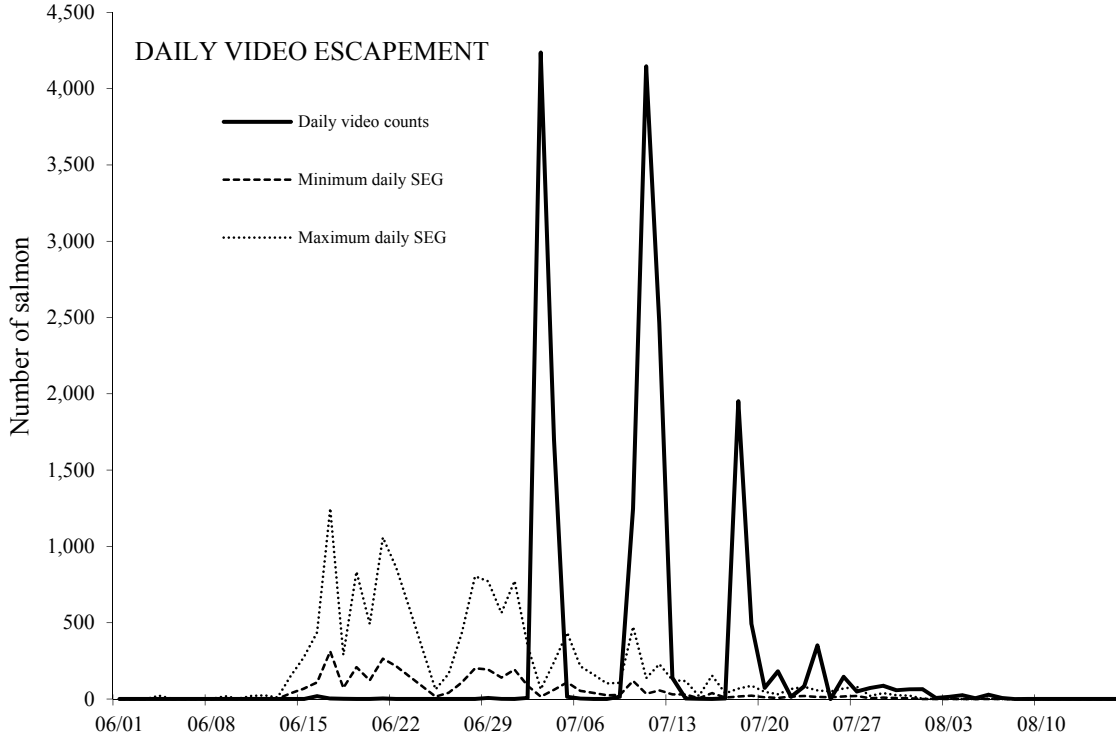
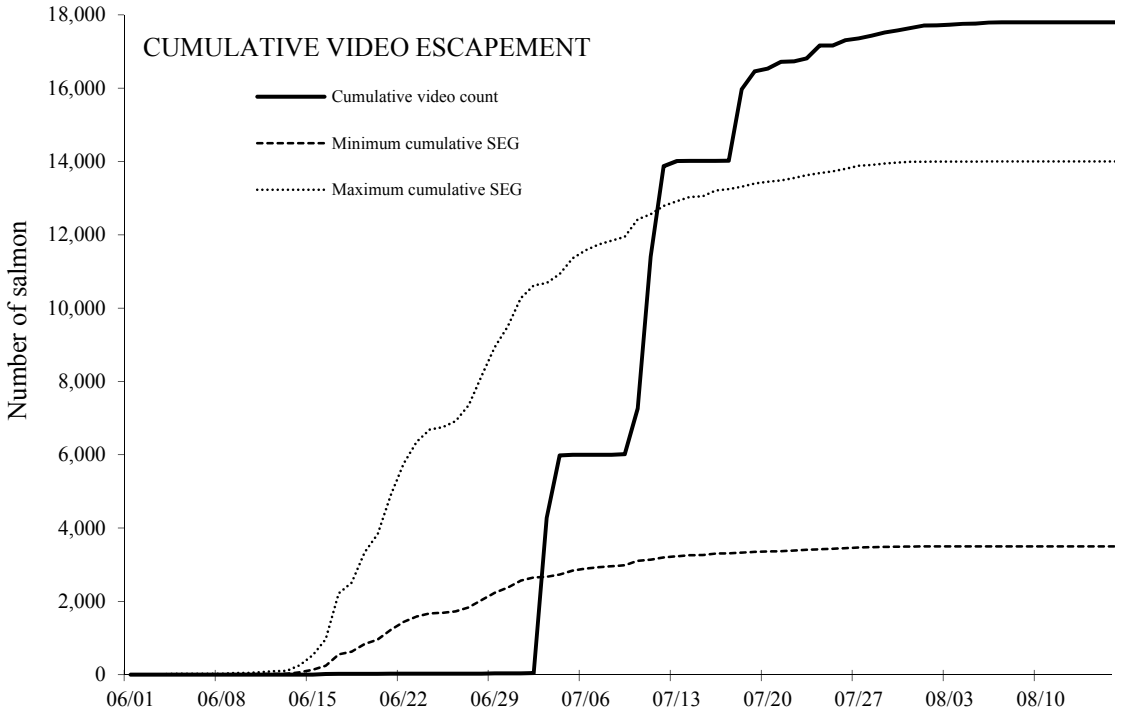
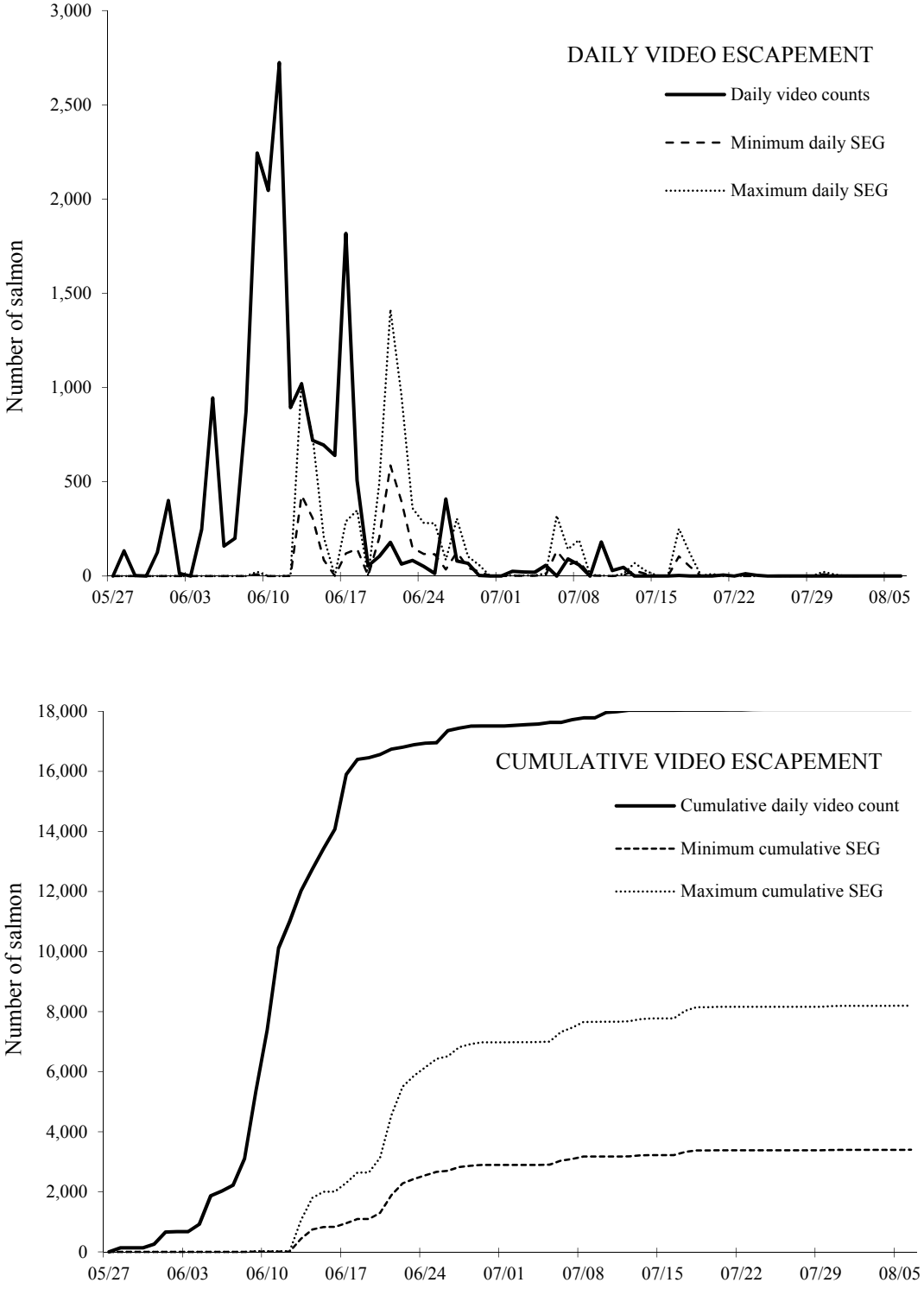
	Actual		Antic	Apportioned sustainable escapement goal				
				Projected minimum		Projected maximum		
Date	Daily	Cumulative	percent	Daily	Cumulative	Daily	Cumulative	Comments
7/13	0	18,037	94.4%	29	3,211	69	7,745	
7/14	0	18,037	94.8%	12	3,223	28	7,773	
7/15	0	18,037	94.8%	1	3,224	3	7,776	
7/16	0	18,037	94.8%	0	3,224	0	7,776	
7/17	3	18,040	97.9%	104	3,328	251	8,027	
7/18	0	18,040	99.3%	50	3,378	120	8,147	
7/19	0	18,040	99.4%	1	3,379	2	8,149	
7/20	0	18,040	99.5%	4	3,383	11	8,159	
7/21	6	18,046	99.5%	0	3,383	1	8,160	
7/22	0	18,046	99.5%	0	3,384	1	8,161	
7/23	12	18,058	99.5%	0	3,384	0	8,161	
7/24	4	18,062	99.5%	0	3,384	0	8,161	
7/25	0	18,062	99.5%	0	3,384	0	8,161	
7/26	0	18,062	99.5%	0	3,384	0	8,161	
7/27	0	18,062	99.5%	0	3,384	0	8,161	
7/28	0	18,062	99.6%	1	3,385	2	8,163	
7/29	0	18,062	99.6%	0	3,385	0	8,163	
7/30	0	18,062	99.8%	9	3,394	22	8,185	
7/31	0	18,062	99.9%	4	3,397	8	8,194	
8/1	0	18,062	99.9%	0	3,397	0	8,194	
8/2	0	18,062	99.9%	0	3,398	0	8,194	
8/3	0	18,062	99.9%	0	3,398	1	8,195	
8/4	0	18,062	99.9%	0	3,398	1	8,196	
8/5	0	18,062	100.0%	1	3,399	2	8,198	
8/6	0	18,062	100.0%	1	3,400	1	8,199	Hard drive filled 8/6 afternoon.

Note: Anticipated escapement derived from run timing and Mikfik Lake sockeye salmon sustainable escapement goal of 6,300–12,150 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, 2014.



Appendix D6.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement past the Mikfik Lake video monitoring station, 2014.

Appendix D7.–Sockeye salmon escapement into Chenik Lake and Mikfik Lake, 1927–2014.

Year	Chenik	Mikfik
1927	7,069 [a]	
1928	31,007 [a]	
1929	30,440 [a]	
1930	23,638 [a]	
1931	33,514 [a]	
1932	53,012 [a]	
1933	39,222 [a]	
1934	35,778 [a]	
1935	16,041 [a]	
1936	19,349 [a]	
1937	8,256 [a]	
1938	3,804 [a]	
1939	4,076 [a]	
…	(No weir from 1940–1991)	
1992	9,269 [a]	7,800 [b]
1993	4,000 [a]	6,400 [b]
1994	808 [a]	9,500 [b]
1995	1,086 [a]	10,100 [b]
1996	2,990 [a]	10,500 [b]
1997	2,338 [a]	8,500 [b]
1998	1,880 [b]	12,600 [b]
1999	2,850 [b]	15,700 [b]
2000	4,800 [b]	10,386 [d]
2001	250 [b]	5,400 [b]
2002	4,650 [b]	16,700 [b]
2003	13,825 [b]	8,009 [d]
2004	17,000 [b]	14,829 [d]
2005	14,507 [c]	6,499 [d]
2006	13,868 [c]	14,983 [d]
2007	18,288 [c]	10,975 [d]
2008	11,284 [c]	9,104 [d]
2009	15,264 [d]	20,965 [d]
2010	17,312 [d]	5,221 [b]
2011	10,330 [d]	345 [b]
2012	16,505 [d]	3,131 [d]
2013	11,333 [d]	4,042 [d]
10-yr average	14,569	9,009
2014	17,797 [d]	17,802 [d]

[a] Escapement derived from weir counts.

[b] Escapement derived from aerial surveys.

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

[d] Escapement derived from video counts.

Appendix D8.–Pink and chum salmon escapements using area under the curve estimation in the Kamishak Bay District, 2014.

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	6/11											
Creek		1	6/11	6/11	0	0	0	0	0	0	0	0	0%	
(not an index		2	6/18	6/11	7	0	0	0	0	0	0	0	0%	
system)		3	6/24	6/18	6	0	0	0	0	0	0	0	0%	
		4	6/29	6/24	5	0	0	0	0	0	0	0	0%	
		5	7/8	6/29	9	0	0	0	0	0	0	0	0%	
		6	7/14	7/8	6	0	0	0	0	0	0	0	0%	
		7	7/23	7/14	9	300	0	300	1,350	1,350	77	77	3%	
		8	8/20	7/23	28	1,600	300	1,900	26,600	27,950	1,520	1,597	67%	
		[t]end	9/6		17.5				14,000	41,950	800	2,397	100%	1,600
Big	chum	[t]start	7/5											
Kamishak		1	7/23	7/5	17.5	3,360	0	3,360	29,400	29,400	1,680	1,680	30%	
River		2	7/28	7/23	5	2,703	3,360	6,063	15,158	44,558	866	2,546	45%	
(index		3	8/20	7/28	23	1,170	2,703	3,873	44,540	89,097	2,545	5,091	90%	
system)		[t]end	9/6		17.5				10,238	99,335	585	5,676	100%	3,360
Brown's	chum	[t]start	7/4											
Peak Creek		1	7/22	7/4	17.5	100	0	100	875	875	50	50	14%	
(not an index		2	7/31	7/22	9	10	100	110	495	1,370	28	78	22%	
system)		3	8/20	7/31	20	250	10	260	2,600	3,970	149	227	64%	
		[t]end	9/6		17.5				2,188	6,158	125	352	100%	250
Brown's	pink	[t]start	7/4											
Peak Creek		1	7/22	7/4	17.5	910	0	910	7,963	7,963	455	455	11%	
(index		2	7/31	7/22	9	950	910	1,860	8,370	16,333	478	933	23%	
system)		3	8/20	7/31	20	2,400	950	3,350	33,500	49,833	1,914	2,848	70%	
		[t]end	9/6		17.5				21,000	70,833	1,200	4,048	100%	2,400

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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
Bruin River	chum	[t]start	7/8											
(index		1	7/8	7/8	0	0	0	0	0	0	0	0	0%	
system)		2	7/14	7/8	6	30	0	30	90	90	5	5	0%	
		3	7/23	7/14	9	400	30	430	1,935	2,025	111	116	3%	
		4	7/31	7/23	8	1,490	400	1,890	7,560	9,585	432	548	15%	
		5	8/20	7/31	20	900	1,490	2,390	23,900	33,485	1,366	1,913	53%	
		6	9/7	8/20	18	1,190	900	2,090	18,810	52,295	1,075	2,988	83%	
		[t]end	9/24		17.5				10,413	62,708	595	3,583	100%	9,360
Bruin River	pink	[t]start	6/20											
(index		1	7/8	6/20	17.5	1,000	0	1,000	8,750	8,750	500	500	0%	
system)		2	7/14	7/8	6	7,040	1,000	8,040	24,120	32,870	1,378	1,878	2%	
		3	7/23	7/14	9	35,600	7,040	42,640	191,880	224,750	10,965	12,843	11%	
		4	7/31	7/23	8	47,510	35,600	83,110	332,440	557,190	18,997	31,839	26%	
		5	8/20	7/31	20	57,640	47,510	105,150	1,051,500	1,608,690	60,086	91,925	76%	
		6	9/7	8/20	18	0	57,640	57,640	518,760	2,127,450	29,643	121,569	100%	
		[t]end	9/7		0				0	2,127,450	0	121,569	100%	57,640
Cottonwood	chum	[t]start	7/4											
Creek		1	7/22	7/4	17.5	150	0	150	1,313	1,313	75	75	1%	
(index		2	7/31	7/22	9	520	150	670	3,015	4,328	172	247	3%	
system)		3	8/20	7/31	20	600	520	1,120	11,200	15,528	640	887	13%	
		4	9/7	8/20	18	5,800	600	6,400	57,600	73,128	3,291	4,179	59%	
		[t]end	9/24		17.5				50,750	123,878	2,900	7,079	100%	5,800
Douglas River	chum	[t]start	7/10											
(not an index		1	7/28	7/10	17.5	230	0	230	2,013	2,013	115	115	43%	
system)		2	8/20	7/28	23	0	230	230	2,645	4,658	151	266	100%	
		[t]end	8/20		0				0	4,658	0	266	100%	230

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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 River	pink	[t]start	7/10											
(not an index		1	7/28	7/10	0	0	0	0	0	0	0	0	0%	
system)		2	8/20	7/28	0	0	0	0	0	0	0	0	0%	
		[t]end	8/20		0				0	0	0	0	100%	0
Douglas	chum	[t]start	6/26											
Beach River		1	7/14	6/26	17.5	270	0	270	2,363	2,363	135	135	3%	
(not an index		2	7/23	7/14	9	60	270	330	1,485	3,848	85	220	5%	
system)		3	7/28	7/23	5	520	60	580	1,450	5,298	83	303	7%	
		4	8/20	7/28	23	2,970	520	3,490	40,135	45,433	2,293	2,596	64%	
		[t]end	9/6		17.5				25,988	71,420	1,485	4,081	100%	2,970
Douglas	chum	[t]start	7/5											
Reef River		1	7/23	7/5	17.5	30	0	30	263	263	15	15	1%	
(not an index		2	7/28	7/23	5	870	30	900	2,250	2,513	129	144	9%	
system)		3	8/20	7/28	23	820	870	1,690	19,435	21,948	1,111	1,254	75%	
		[t]end	9/6		17.5				7,175	29,123	410	1,664	100%	870
Douglas	pink	[t]start	7/23											
Reef River		1	7/23	7/23	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/28	7/23	5	0	0	0	0	0	0	0	0%	
system)		3	8/20	7/28	23	370	0	370	4,255	4,255	243	243	57%	
		[t]end	9/6		17.5				3,238	7,493	185	428	100%	370
Iniskin River	chum	[t]start	7/4											
(index		1	7/22	7/4	17.5	970	0	970	8,488	8,488	485	485	4%	
system)		2	7/31	7/22	9	1,900	970	2,870	12,915	21,403	738	1,223	9%	
		3	8/20	7/31	20	4,980	1,900	6,880	68,800	90,203	3,931	5,154	40%	
		4	9/7	8/20	18	5,230	4,980	10,210	91,890	182,093	5,251	10,405	80%	
		[t]end	9/24		17.5				45,763	227,855	2,615	13,020	100%	5,230

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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	chum	[t]start	6/26											
Kamishak		1	7/14	6/26	17.5	293	0	293	2,564	2,564	147	147	1%	
River		2	7/23	7/14	9	6,330	293	6,623	29,804	32,367	1,703	1,850	12%	
(index		3	7/28	7/23	5	7,120	6,330	13,450	33,625	65,992	1,921	3,771	25%	
system)		4	8/20	7/28	23	5,720	7,120	12,840	147,660	213,652	8,438	12,209	81%	
		[t]end	9/6		17.5				50,050	263,702	2,860	15,069	100%	7,120
Little	pink	[t]start	7/14											
Kamishak		1	7/14	7/14	0	0	0	0	0	0	0	0	0%	
River		2	7/23	7/14	9	1,500	0	1,500	6,750	6,750	386	386	8%	
(not an index		3	7/28	7/23	5	2,100	1,500	3,600	9,000	15,750	514	900	19%	
system)		4	8/20	7/28	23	2,200	2,100	4,300	49,450	65,200	2,826	3,726	77%	
		[t]end	9/6		17.5				19,250	84,450	1,100	4,826	100%	2,200
McNeil	chum	[t]start	6/5											
River		1	6/5	6/5	0	0	0	0	0	0	0	0	0%	
(index		2	6/11	6/5	6	0	0	0	0	0	0	0	0%	
system)		3	6/18	6/11	7	0	0	0	0	0	0	0	0%	
		4	6/24	6/18	6	4,513	0	4,513	13,539	13,539	774	774	7%	
		5	6/29	6/24	5	5,670	4,513	10,183	25,458	38,997	1,455	2,228	21%	
		6	7/8	6/29	9	2,530	5,670	8,200	36,900	75,897	2,109	4,337	41%	
		7	7/14	7/8	6	2,122	2,530	4,652	13,956	89,853	797	5,134	49%	
		8	7/23	7/14	9	7,280	2,122	9,402	42,309	132,162	2,418	7,552	72%	
		9	7/28	7/23	5	2,410	7,280	9,690	24,225	156,387	1,384	8,936	85%	
		10	8/20	7/28	23	21	2,410	2,431	27,957	184,343	1,598	10,534	100%	
		[t]end	9/6		17.5				184	184,527	11	17,475	100%	7,280
North Head	chum	[t]start	7/13											
Creek		1	7/31	7/13	17.5	460	0	460	4,025	4,025	230	230	28%	
(not an index		2	8/20	7/31	20	320	460	780	7,800	11,825	446	676	81%	
system)		[t]end	9/6		17.5				2,800	14,625	160	836	100%	460

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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
North Head	pink	[t]start	7/13											
Creek		1	7/31	7/13	0	0	0	0	0	0	0	0	0%	
(not an index		2	8/20	7/31	0	0	0	0	0	0	0	0	0%	
system)		[t]end	9/6		0				0	0	0	0	100%	0
Sugarloaf	chum	[t]start	7/4											
Creek		1	7/22	7/4	17.5	530	0	530	4,638	4,638	265	265	13%	
(not an index		2	8/20	7/22	29	560	530	1,090	15,805	20,443	903	1,168	56%	
system)		3	9/7	8/20	18	620	560	1,180	10,620	31,063	607	1,775	85%	
		[t]end	9/24		17.5				5,425	36,488	310	2,085	100%	460
Sugarloaf	pink	[t]start	7/4											
Creek		1	7/22	7/4	0	0	0	0	0	0	0	0	0%	
(not an index		2	8/20	7/22	29	10	0	10	145	145	8	8	62%	
system)		3	9/7	8/20	18	0	10	10	90	235	5	13	100%	
		[t]end	9/24		0				0	235	0	13	100%	10
Sunday	chum	[t]start	7/8											
Creek		1	7/8	7/8	0	0	0	0	0	0	0	0	0%	
(not an index		2	7/14	7/8	6	110	0	110	330	330	19	19	4%	
system)		3	7/23	7/14	9	330	110	440	1,980	2,310	113	132	27%	
		4	7/31	7/23	8	310	330	640	2,560	4,870	146	278	57%	
		5	8/20	7/31	20	30	310	340	3,400	8,270	194	473	97%	
		[t]end	9/6		17.5				263	8,533	15	488	100%	330
Sunday	pink	[t]start	7/8											
Creek		1	7/8	7/8	0	0	0	0	0	0	0	0	0%	
(index		2	7/14	7/8	6	760	0	760	2,280	2,280	130	130	2%	
system)		3	7/23	7/14	9	2,300	760	3,060	13,770	16,050	787	917	12%	
		4	7/31	7/23	8	4,340	2,300	6,640	26,560	42,610	1,518	2,435	33%	
		5	8/20	7/31	20	2,380	4,340	6,720	67,200	109,810	3,840	6,275	84%	
		[t]end	9/6		17.5				20,825	130,635	1,190	7,665	100%	4,340

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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
Ursus	chum	[t]start	7/4											
Lagoon		1	7/22	7/4	17.5	200	0	200	1,750	1,750	100	100	2%	
Creeks		2	7/23	7/22	1	110	200	310	155	1,905	9	109	2%	
(index		3	7/31	7/23	8	460	110	570	2,280	4,185	130	239	5%	
system)		4	8/20	7/31	20	2,670	460	3,130	31,300	35,485	1,789	2,028	38%	
		5	9/7	8/20	18	1,880	2,670	4,550	40,950	76,435	2,340	4,368	82%	
		[t]end	9/24		17.5				16,450	92,885	940	5,308	100%	2,840
Ursus	pink	[t]start	7/22											
Lagoon		1	7/22	7/22	0	0	0	0	0	0	0	0	0%	
Creeks		2	7/23	7/22	1	20	0	20	10	10	1	1	4%	
(not an index		3	7/31	7/23	8	10	20	30	120	130	7	7	57%	
system)		4	8/20	7/31	20	0	10	10	100	230	6	13	100%	
		5	9/7	8/20	18	0	0	0	0	230	0	13	100%	
		[t]end	9/7		0				0	230	0	13	100%	20

Source: Bue et al. 1998.

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

[b] Escapement index = Ab / 17.5 day stream-life estimate (except McNeil River chum calculations use a 13.8 day stream-life estimate)

[c] The McNeil River chum salmon AUC index is not the final escapement index. After applying a run-timing expansion factor, the final escapement index was 9,783 under the curve estimate equals the cumulative escapement index.

Appendix D9.–Sockeye salmon aerial survey counts from the Kamishak Bay District, 2014.

Location	Survey number	Survey date	Live count	Peak count
Amakdedori Creek	1	06/11/14	0	
	2	06/18/14	170	
	3	06/24/14	10	
	4	06/29/14	100	
	5	07/08/14	1,140	
	6	07/14/14	1,510	
	7	07/23/14	4,280	
	8	08/20/14	520	4,280
Big Kamishak	1	07/23/14	1,811	
	2	07/28/14	1,400	
	3	08/20/14	60	1,811
Bruin River	1	07/08/14	0	
	2	07/14/14	10	
	3	07/23/14	0	
	4	07/31/14	0	
	5	08/20/14	10	
	6	09/07/14	9	10
Douglas Beach River	1	07/14/14	0	
	2	07/23/14	0	
	3	07/28/14	20	
	4	08/20/14	0	20
Douglas Reef River	1	07/23/14	290	
	2	07/28/14	292	
	3	08/20/14	90	292
Douglas River	1	07/28/14	1,425	
	2	08/20/14	0	1,425
Little Kamishak River	1	07/14/14	0	
	2	07/23/14	200	
	3	07/28/14	0	
	4	08/20/14	2	200
Mikfik Lake [a]	1	6/5/2014	1,531	
	2	6/11/2014	5,920	
	3	6/18/2014	3,680	
	4	6/24/2014	163	
	5	6/29/2014	0	
	6	7/8/2014	0	
	7	7/14/2014	0	
	8	7/23/2014	0	
	9	7/28/2014	0	
	10	8/20/2014	0	5,920

[a] Final video counts of 18,062 sockeye salmon was used for final escapement estimate in 2014.

Appendix D10.–Escapement indices and harvests by subdistricts in the Kamishak Bay District, Lower Cook Inlet, 2014.

Location	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Augustine Subdistrict (249-30)												
Douglas River Subdistrict (249-40)	100		300	2,250	1,737	401	370	5,975	1,837	650	670	8,225
Kamishak River Subdistrict (249-45)			20	438	2,011	30	4,826	20,745	2,011		4,846	21,183
McNeil Cove Subdistrict (249-50)	1,728				18,062			17,475	19,790			17,475
Chenik/Amakdedori Subdistrict (249-55)	7,241		50		22,077		2,397		29,318		2,447	
Bruin Bay Subdistrict (249-70)			43,857	1,761	10	50	121,569	3,583	10		165,426	5,344
Kirschner Lake Section (249-71)												
Kirschner Lake SHA (249-72)	19,623		104	6					19,623			
Rocky Cove Subdistrict (249-78)							7,665	488			7,665	488
Ursus Cove Subdistrict (249-80)							4,048	5,660			4,048	5,660
Cottonwood Bay Subdistrict (249-83)					20			7,915	20			7,915
Iniskin Bay Subdistrict (249-85)							10	15,105			10	15,105
Kamishak Bay District total[c]	28,692		44,331	4,455	43,917	481	140,885	76,946	72,609	650	185,112	81,395

[a] Harvests include all commercial and subsistence harvests.

[b] Unexpanded aerial or ground survey index count, or weir count. Also includes non-index streams.

[c] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to SEG ranges as shown for index streams only.

Appendix D11.–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, 1975–2014.

	Pink salmon						
Year	Big Kamishak River	Little Kamishak River	Amakdedori Creek	Bruin Bay River	Sunday Creek	Brown's Peak Creek	Total of index streams
1975			5.0	20.0	20.0	10.0	50.0
1976	8.0	6.0		13.5	0.3	1.2	15.0
1977				60.0	9.0	13.0	82.0
1978	12.0	0.4	0.9	33.0	0.2	0.9	34.1
1979	10.0	3.5	6.0	200.0	12.0	15.0	227.0
1980	2.0	0.6	3.8	400.0	5.2	2.3	407.5
1981			1.5	95.0	14.2	17.7	126.9
1982	5.0	2.2	6.3	75.0	12.0	3.5	90.5
1983			0.2	4.0	4.7	1.7	10.4
1984		0.1		110.0	12.0	6.8	128.8
1985		1.6	1.0	3.5	11.4	7.0	21.9
1986	5.0	2.0	6.0	1,200.0	109.0	28.0	1,337.0
1987			0.4	24.0	29.7	40.2	93.9
1988	1.0	0.5	1.0	29.0	18.0	17.0	64.0
1989			2.0	350.0	103.0	120.0	573.0
1990			0.1	19.0	2.8	1.0	22.8
1991		0.9	0.7	74.9	20.9	16.7	112.5
1992			3.2	3.2	2.9	5.0	11.1
1993			1.7	86.4	57.8	41.6	185.8
1994			0.7	5.9	3.1	1.3	10.3
1995			4.5	307.3	95.9	96.7	499.9
1996	16.7			27.5	2.8	2.4	32.7
1997			1.7	162.7	52.5	42.3	257.5
1998	2.0			134.9	24.0	7.9	166.8
1999	5.7	4.2		2.9	5.3	2.6	10.8
2000	14.9	13.0		176.7	39.8	9.8	226.3
2001			6.0	18.5	26.2	19.2	63.9
2002		3.4	0.9	1,598.5	81.9	27.5	1,707.9
2003				138.7	346.7	285.0	770.4
2004		3.0		66.5	31.5	18.1	116.1
2005				98.3	116.2	61.0	275.5
2006		77.0		515.1	70.0	35.7	620.9
2007		5.1		350.4	394.8	249.4	994.6
2008		34.3		150.7	20.4	17.4	188.5
2009	10.4	0.8	9.2	1,067.4	106.3	63.6	1,237.3
2010			0.7	40.3	6.6	3.1	50.0
2011	9.3	13.1	4.2	4.5	0.8	2.0	7.4
2012	2.7	9.3	3.0	31.8	1.3	2.8	35.9
2013		0.5	8.0	15.0	6.0	4.1	25.1
10-yr avg.	7.4	17.9	5.0	234.0	75.4	45.7	355.1
2014		4.8	2.4	121.6	7.7	4.0	133.3

-continued-

	Chum salmon							
Year	Big Kamishak River	Little Kamishak River	McNeil River	Bruin Bay	Ursus Cove[a]	Cottonwood Creek	Iniskin Bay	Total of index streams
1975	1.1	1.9	1.5	1.5	5.0	8.0	7.0	26.0
1976	24.0	21.0	10.0	4.0	6.0	5.0	13.5	83.5
1977			20.0	18.0	9.3	10.0	4.4	61.7
1978	23.0	30.0	45.0	4.0	9.7	12.5	11.4	135.6
1979	15.0	15.0	8.0	15.0	5.0	2.5	4.0	64.5
1980	10.0	13.0	8.0	15.0	8.0	4.2	9.3	67.5
1981	11.0	6.0	30.0	10.0	10.0	9.0	9.0	85.0
1982	25.0	18.0	25.0	10.0	9.0	7.0	12.8	106.8
1983	25.0	25.0	48.0	5.5	7.7	8.3	12.0	131.5
1984	19.0	12.0	21.0	8.0	7.0	6.5	9.8	83.3
1985	6.0	4.5	9.5	2.0	3.0	3.0	5.0	33.0
1986	24.0	17.0	22.0	1.0	11.0	11.0	5.9	91.9
1987	12.0	18.0	26.0	10.0	9.9	17.0	9.1	102.0
1988	15.0	13.0	49.0	7.0	9.4	16.0	9.5	118.9
1989	30.0	12.0	34.0	8.0	6.3	8.0	5.9	104.2
1990	2.5	7.9	8.0	4.0	3.8	4.3	8.4	38.9
1991	8.7	8.4	10.0	6.0	1.3	7.7	8.3	50.4
1992	4.5	7.1	19.2	8.5	1.7	6.1	3.4	50.5
1993	9.1	6.3	17.4	6.0	7.7	12.0	8.0	66.5
1994		9.0	15.0	6.1	6.2	10.2	18.9	65.4
1995			14.4	6.6	11.1	15.4	22.7	70.2
1996	11.1	4.4	16.1	14.9	7.6	16.1	7.8	78.0
1997			27.5	8.8	6.2	5.6	15.4	63.5
1998	7.1	9.7	23.5	9.4	4.6	2.3	18.6	75.2
1999	11.6	8.9	13.5	10.3	21.0	12.0	23.3	100.6
2000	45.3	26.9	18.6	13.6	41.7	24.1	23.6	193.8
2001	36.3	27.2	17.0	21.8	37.7	15.9	13.8	169.7
2002	17.4	16.4	11.3	9.9	17.1	42.2	28.5	142.8
2003	16.4	22.2	23.3	13.1	30.4	72.8	18.7	196.9
2004	57.9	45.3	11.2	15.9	16.0	16.3	22.0	184.6
2005	25.7	12.1	17.4	21.2	12.2	17.9	16.5	123.0
2006	58.2	42.9	28.2	7.0	15.7	13.2	15.6	180.8
2007	14.8	15.6	13.6	3.1	20.9	12.5	5.3	85.8
2008	4.5	21.3	9.8	17.5	6.5	11.6	20.0	91.2
2009	15.0	4.2	18.8	10.1	12.9	19.4	30.8	111.2
2010		18.4	10.5	6.2	11.8	15.8	19.3	82.0
2011	5.5	19.3	31.0	3.5	10.6	4.7	16.5	91.2
2012	12.4	30.3	9.8	16.1	2.8	2.8	3.0	77.2
2013	3.3	6.7	9.5	8.8	10.3	5.2	5.9	49.8
10-yr avg.	21.9	21.6	16.0	10.9	12.0	12.0	15.5	109.9
2014	5.7	15.1	17.5	3.6	5.3	7.1	13.0	67.2

-continued-

	Sockeye salmon				
Year	Mikfik Lake	Chenik Lake	Amakdedori Creek	Kamishak River	Total of index streams
1975	6.0	0.1	0.8		6.9
1976	10.0	0.9	1.6		12.5
1977	9.8	0.2	2.6		12.6
1978	12.0	0.1	2.6	1.0	15.7
1979	6.0	0.0	1.0	0.4	7.4
1980	6.5	3.5	2.6	0.1	12.7
1981	5.3	2.5	1.9	0.8	10.5
1982	35.0	8.0	3.2	10.0	56.2
1983	7.0	11.0	1.2	5.0	24.2
1984	6.0	13.0	1.4	2.5	22.9
1985	20.0	3.5	0.9	0.8	25.2
1986	7.8	7.0	1.9	5.0	21.7
1987	9.0	10.0	1.1		20.1
1988	10.1	9.0	0.4	0.5	20.0
1989	11.5	12.0	1.2	0.5	25.2
1990	8.8	17.0	1.8	0.2	27.8
1991	9.7	10.2[b]	1.9	0.7	22.5
1992	7.8	9.3[b]	1.9	4.9	23.9
1993	6.4	4.0[b]	2.0		12.4
1994	9.5	0.8[b]	0.8		11.1
1995	10.1	1.1[b]	2.4		13.6
1996	6.5	3.0[b]	2.9	1.8	14.2
1997	8.5	2.3[b]	1.5		12.3
1998	12.6	1.9	4.1		18.6
1999	15.7	2.9	8.8	2.2	29.6
2000	10.9	4.8	3.3	1.5	20.5
2001	5.4	0.3	2.7	2.5	10.9
2002	16.7	4.7	3.2	3.3	27.9
2003	12.8	13.8	11.8	2.6	41.0
2004	14.0	17.0	7.2	0.8	39.0
2005	6.0	14.5[c]	1.7	3.9	26.1
2006	17.7	13.9[c]	0.3		31.9
2007	11.2	18.3[c]	3.8	0.1	33.5
2008	5.6	11.3[c]	3.2	0.2	20.3
2009	15.1	15.3[c]	2.2	0.1	32.7
2010	11.3	17.3[c]	1.2	0.1	29.9
2011	0.4	10.3[c]	3.4	1.6	15.8
2012	3.1	16.5[c]	0.8	1.1	21.5
2013	4.0	11.3[c]	1.5	0.1	17.0
10-yr avg.	8.8	14.6	2.5	0.9	26.8
2014	18.1	17.8[c]	4.3	0.2	40.3

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

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

[b] Escapement derived from weir counts.

[c] Escapement derived from a combination of weir, video counts, and/or 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, 1979–2014.

		Reported harvest						
Year	Households reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1979		222	777	506	1,170	494	0	3,169
1980								
1981		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 [a]	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
10-year Average	23	105	637	101	136	66	49	1,045
2014	5	16	136	10	164	40	0	366

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

[a] Salmon totals and permits include 3 reports from nonresidents of Port Graham Village.

[b] ADF&G Division of Subsistence estimate.

[c] Harvest reports for 2008 are 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, 1978–2014.

Year	Households reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1978								
1979		137	1,545	2,437	2,186	305	0	6,610
1980								
1981		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		7,199
2001	34	29	909	1,238	1,434	196		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								
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		9,269
2012[a]	1	0	300	400	200	5	50	905
2013[a]	4	2	3,854	2,619	383	811	500	7,669
10-yr average	25	30	2,547	1,181	1,355	225	403	5,338
2014[a]	2	3	211	0	0	4	0	218

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

[a] Limited reporting from Nanwalek residents in 2012 - 2014 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, 1996–2014.

	Permits				Reported harvest					
Year	Issued	Returned	Fished	Not Fished	Chinook	Sockeye	Coho	Pink	Chum	Total
Early season: April–May[a]										
1996	41	41	13	28	51	7	0	0	0	58
1997	19	16	12	4	44	19	0	0	0	63
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
10-yr average	11	8	4	4	19	34	0	0	2	54
2014	12	8	4	4	3	69	0	0	2	74
Late season: August[b]										
1996	4	3	1	2	0	1	0	0	0	1
1997	1	1	0	1	0	0	0	0	0	0
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
10-yr average	4	3	3	1	0	25	11	44	10	91
2014	9	7	6	1	2	47	0	5	63	117

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, 1975–2014.

	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
10-year Avg.	119	113	81	32	9	126	1,249	292	12	0	1,689
2014	160	154	115	39	13	310	2,273	20	178	0	2,794

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, 1990–2014.

	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
10-year Average	91	77.0	8.9	7.7	1.7	1.5	9.7	8.1	2	1.3	0	0	4	3.0	1	0.6	116.8
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

[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, 1981–2014.

	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	Permits	Coho	Permits	Coho	Permits	Coho	Permits	Coho	Permits	Coho
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	0	0	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	0	11	72	13	32	42	1,202	19	140	7	25
2013	2	0	11	38	22	137	56	1,252	21	219	11	86
10-year Average	3	50	23	327	13	120	21	381	18	218	10	92
2014	5	52	27	591	22	574	37	780	13	194	10	82

Appendix E7.–Salmon retained from the commercial harvest for personal use (homepack) by species and gear type from Lower Cook Inlet districts, 1996–2014.

	Permits deliv.		Chinook		Sockeye		Coho		Pink		Chum	
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		19	32	5					
1997	1		1		11							
1998												
1999												
2000												
2001												
2002	1				20				100		3	
2003	2		3		2				750			
2004	1		2		38		10		9		4	
2005	3	1	7		79	10	38		121		8	
2006	4	3	9		58	169	73	17	72		13	7
2007	4		1		204		76		3			
2008	2				39		7		40		6	
2009	3		1		35		14		23		9	
2010	2		2		29		4				3	
2011	3	1	2	3	62		3		487		27	
2012	7		4		63		61		323		31	
2013	6		16		155		150		157		13	
10-year average	4	1	4	1	76	45	44	4	124		11	2
2014	8	1	10		180	3	128		318		17	

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, 2014.

	Commercial homepack[a]						
Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Homer	6	7	107	108	75	8	305
Seldovia	3	3	76	20	243	9	351
USA balance	0	0	0	0	0	0	0
Total	9	10	183	128	318	17	656

	Southern District personal use set gillnet fishery [b]							
	Permits							
Community	issued	returned	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchorage area	13	13	2	54	182	16	42	296
Anchor Pt./Ninilchik/Nikolaevsk	11	10	1	4	93	0	0	98
Fairbanks	1	1	0	0	0	0	0	0
Halibut Cove	1	1	0	0	0	0	0	0
Homer	125	123	8	183	1,935	1	116	2,243
Kenai/Soldotna	8	6	2	69	63	3	20	157
Pt.Graham/Nanwalek	0	0	0	0	0	0	0	0
Seldovia	1	1	0	0	0	0	0	0
Total	160	155	13	310	2,273	20	178	2,794

	Port Graham/Nanwalek subsistence fishery [c]							
	Permits							
Community	issued	returned	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchorage area	1	1	0	6	0	48	22	76
Homer	0	0	0	0	0	0	0	0
Nanwalek	14	2	3	211	0	0	4	218
Port Graham	4	4	16	136	10	164	49	375
Valdez	1	1	0	20	0	30	0	50
Total	20	7	19	373	10	242	75	719

	Seldovia subsistence fishery [d,e]							
	Permits							
Community	issued	returned	Chinook	Sockeye	Coho	Pink	Chum	Total
Anchorage area	3	1	0	0	0	0	0	0
Homer	2	1	0	0	0	0	0	0
Nanwalek	0	0	0	0	0	0	0	0
Ninilchik	1	1	0	0	0	0	0	0
Pt.Graham/Nanwalek	0	0	0	0	0	0	0	0
Seldovia	15	12	5	116	0	5	65	191
Total	18	7	5	116	0	5	65	191

[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 hatcheries, 2014.

Sockeye salmon

Hatchery or release site, (hatchery [a])	BY 2009 release	BY 2010 release	2014 forecast run	Estimated CPF[b] contribution	Estimated sales harvest[c] contribution	Broodstock & unharvested contribution	Estimated total run	2014 eggs collected
Bear Lake and Resurrection Bay, (TLH)	2,200,000	3,794,000	66,000	5,306	126,071	13,090	144,467	5,292,800
Hidden Lake, (TLH)	880,000	1,044,000	40,700	20,106	0	23,259	43,365	1,647,601
Leisure and Hazel lakes, (TLH)	3,151,000	2,659,000	15,600	12,693	0	366	13,059	0
Kirschner Lake, (TLH)	255,000	160,000	8,200	3,068	16,555		19,623	0
English Bay Lakes, (TLH)	202,000	203,300	3,000	ukwn	0	8,872	ukwn	1,093,154
Tutka Bay Lagoon, (TLH)[d]	281,900	371,300	22,100	0	30,404	5,205	35,609	3,067,700
Port Graham Hatchery, (TLH)	0	0	0	0	0	0	0	0
Total Sockeye Salmon	6,969,900	8,231,600	155,600	41,173	173,030	50,792	264,995	11,101,255

Coho salmon

Hatchery or release site, (hatchery)	BY 2011 Release	2014 Forecast Run	Estimated CPF contribution	Estimated sales harvest contribution	Broodstock & unharvested contribution	Estimated total run	eggs collected
Bear Lake, (TLH)	222,000	3,300	NA	1,053	534	NA	581,279
Total Coho Salmon	222,000	3,300	NA	0	534	NA	581,279

Pink salmon

Hatchery or release site, (hatchery)	BY 2012 release	2014 forecast run	Estimated CPF contribution	Estimated sales harvest contribution	Broodstock & unharvested contribution	Estimated total run	eggs collected
Tutka Bay Lagoon Hatchery (TBLH)	4,353,000	131,000	0	32	22,401	22,433	13,495,065
Port Graham hatchery site (TBLH)	14,250,000	453,500	0	0	6,338	6,338	3,195,649
Total Pink Salmon	18,603,000	584,500	0	32	24,014	28,771	16,690,714
Total-All Salmon			41,173	173,062	75,340	293,766	28,373,248

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

[b] Common Property Fisheries (CPF) include commercial, sport, personal use, and subsistence harvests.

[c] Hatchery cost recovery sales in number of fish.

[d] 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 and broodstock collection; sales and broodstock summary in numbers of fish for Cook Inlet Aquaculture Association, 2014.

			Sales harvest[a]		Donated		Broodstock harvest	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
5/28	Purse seine	Resurrection Bay	1,969	1,969				
5/30	Purse seine	Resurrection Bay	3,108	5,077				
6/1	Purse seine	Resurrection Bay	5,967	11,044				
6/3	Purse seine	Resurrection Bay	16,067	27,111				
6/5	Purse seine	Resurrection Bay	3,348	30,459				
6/5	Purse seine	Resurrection Bay	7,227	37,686				
6/5	Purse seine	Resurrection Bay	8,817	46,503				
6/7	Purse seine	Resurrection Bay	20,350	66,853				
6/9	Purse seine	Resurrection Bay	14,907	81,760				
6/11	Purse seine	Resurrection Bay	11,722	93,482				
6/13	Purse seine	Resurrection Bay	5,746	99,228				
6/15	Purse seine	Resurrection Bay	6,059	105,287				
6/18	Purse seine	Resurrection Bay	3,358	108,645				
6/20	Purse seine	Resurrection Bay	2,626	111,271				
6/22	Purse seine	Resurrection Bay	872	112,143				
6/11	Weir or beach seine	Bear Lake	897	897				
6/12	Weir or beach seine	Bear Lake	856	1,753				
6/13	Weir or beach seine	Bear Lake	732	2,485				
6/14	Weir or beach seine	Bear Lake	524	3,009				
6/15	Weir or beach seine	Bear Lake	390	3,399				
6/16	Weir or beach seine	Bear Lake	170	3,569				
6/17	Weir or beach seine	Bear Lake	346	3,915				
6/19	Weir or beach seine	Bear Lake	341	4,256				
6/21	Weir or beach seine	Bear Lake	595	4,851				
6/23	Weir or beach seine	Bear Lake	1,328	6,179				
6/24	Weir or beach seine	Bear Lake	715	6,894				
6/25	Weir or beach seine	Bear Lake	1,241	8,135				
6/26	Weir or beach seine	Bear Lake	926	9,061	34	34		
6/27	Weir or beach seine	Bear Lake	509	9,570	12	46		
6/29	Weir or beach seine	Bear Lake	873	10,443		46		
6/30	Weir or beach seine	Bear Lake		10,443	28	74		
7/1	Weir or beach seine	Bear Lake	926	11,369		74		
7/3	Weir or beach seine	Bear Lake	710	12,079	30	104		
7/5	Weir or beach seine	Bear Lake	475	12,554		104		
7/7	Weir or beach seine	Bear Lake	484	13,038		104		
7/10	Weir or beach seine	Bear Lake	408	13,446		104		
7/14	Weir or beach seine	Bear Lake		13,446	268	372		
7/15	Weir or beach seine	Bear Lake		13,446	382	754		
7/16	Weir or beach seine	Bear Lake	482	13,928	222	976		
7/17	Weir or beach seine	Bear Lake		13,928	153	1,129		
7/18	Weir or beach seine	Bear Lake		13,928	167	1,296		
7/19	Weir or beach seine	Bear Lake		13,928	76	1,372		
7/20	Weir or beach seine	Bear Lake		13,928	56	1,428		
7/21	Weir or beach seine	Bear Lake		13,928	89	1,517		
7/22	Weir or beach seine	Bear Lake		13,928	56	1,573		
7/24	Weir or beach seine	Bear Lake		13,928	68	1,641		

-continued-

			Sales harvest		Donated		Broodstock	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/27	Weir or beach seine	Bear Lake		13,928		1,641	412	412
7/29	Weir or beach seine	Bear Lake		13,928		1,641	374	786
7/31	Weir or beach seine	Bear Lake		13,928		1,641	182	968
8/1	Weir or beach seine	Bear Lake		13,928		1,641	293	1,261
8/2	Weir or beach seine	Bear Lake		13,928		1,641	196	1,457
8/4	Weir or beach seine	Bear Lake		13,928		1,641	278	1,735
8/5	Weir or beach seine	Bear Lake		13,928		1,641	337	2,072
8/6	Weir or beach seine	Bear Lake		13,928		1,641	279	2,351
8/7	Weir or beach seine	Bear Lake		13,928		1,641	180	2,531
8/8	Weir or beach seine	Bear Lake		13,928		1,641	193	2,724
8/10	Weir or beach seine	Bear Lake		13,928		1,641	192	2,916
8/11	Weir or beach seine	Bear Lake		13,928		1,641	177	3,093
8/12	Weir or beach seine	Bear Lake		13,928		1,641	187	3,280
8/13	Weir or beach seine	Bear Lake		13,928		1,641	179	3,459
8/14	Weir or beach seine	Bear Lake		13,928		1,641	194	3,653
8/15	weir or beach seine	Bear Lake		13,928		1,641	204	3,857
6/26	Purse seine	Tutka Bay					944	944
6/29	Purse seine	Tutka Bay					1,666	2,610
6/30	Purse seine	Tutka Bay					650	3,260
7/4	Purse seine	Tutka Bay					1,942	5,202
7/9	Purse seine	Tutka Bay	3,487	3,487				5,202
7/19	Purse seine	Tutka Bay	8,846	12,333				5,202
7/24	Purse seine	Tutka Bay	12,728	25,061				5,202
8/1	Purse seine	Tutka Bay	5,343	30,404				5,202
7/19	Purse seine	Kirschner Lake	4,752	4,752				
7/22	Purse seine	Kirschner Lake	5,561	10,313				
8/1	Purse seine	Kirschner Lake	6,242	16,555				
9/9	Beach seine	English Bay Lakes					397	397
9/15	Beach seine	English Bay Lakes					274	671
9/20	Beach seine	English Bay Lakes					206	877
9/17	Weir or beach seine	Hidden Lake[b]					446	446
9/19	Weir or beach seine	Hidden Lake[b]					503	949
9/22	Weir or beach seine	Hidden Lake[b]					493	1,442

-continued-

Hatchery escapement summary in numbers of fish[c]	
Donated fish (Harvest code 37)	1,641
Raceway harvest	0
Viable broodstock (spawned,eggs in incubators)	8,063
Unviable broodstock (green/over-ripe/bad)	303
Unspawned fish (e.g. excess males/females)	0
Holding mortalities (raceway, pen mortalities)	1,952
Estimated unharvested return	0
Total hatchery harvest	11,959

Sales summary	
Whole fish sales (Harvest code 21)	170,518
Carcass sales (Harvest code 22)	0
Total sales	170,518

[a] Source: ADF&G fish ticket database.

[b] CIAA projects conducted in Upper Cook Inlet.

[c] Data from CIAA (2013a-b) and ADF&G fish ticket database.

Appendix F3.–Daily pink salmon sales and broodstock collection; sales and broodstock summary in numbers of fish for Cook Inlet Aquaculture Association, 2014.

			Sales harvest[a]		Broodstock harvest[b]		
Date	Gear	Location	Daily	Cumulative	Daily		Cumulative
6/22	seine	Resurrection Bay	25	25			
7/19	seine	Kirschner Lake	81	81			
7/22	seine	Kirschner Lake	23	104			
7/9	seine	Tutka Bay Lagoon	32	32			
8/11	seine	Tutka Bay Lagoon			681		681
8/12	seine	Tutka Bay Lagoon			4,745		5,426
8/14	seine	Tutka Bay Lagoon			3,198		8,624
8/15	seine	Tutka Bay Lagoon			3,146		11,770
8/17	seine	Tutka Bay Lagoon			3,200		14,970
8/23	seine	Tutka Bay Lagoon			1,845		16,815
8/28	seine	Tutka Bay Lagoon			579		17,394
9/2	seine	Tutka Bay Lagoon			2,778		20,172
9/4	seine	Tutka Bay Lagoon			2,229		22,401
8/4	seine	Port Graham			870		870
8/5	seine	Port Graham			870		1,740
8/13	seine	Port Graham			1,130	[c]	2,870
8/14	seine	Port Graham			1,244	[c]	4,114
8/15	seine	Port Graham			1,244	[c]	5,358
8/16	seine	Port Graham			980	[c]	6,338
8/1	seine	Bruin Bay			3,028	[c]	3,028

Hatchery escapement summary in numbers of fish	
Donated fish (Harvest code 37)	0
Raceway harvest	0
Viable broodstock (spawned,eggs in incubators)	21,112
Unviable broodstock (green/over-ripe/bad)	5,788
Unspawned fish (e.g. excess males/females)	67
Holding mortalities (raceway, pen mortalities)	4,800
Estimated unharvested return	0
Subtotal	31,767
Minus broodstock purchased from common property fishery (Harvest code 11)[c]	7,626
Total hatchery harvest	24,141

Sales summary	
Whole fish sales (Harvest code 21)	161
Carcass sales (Harvest code 22)	0
Total sales	161

[a] From ADF&G fish ticket database.

[b] Data from CIAA (2014a-b).

[c] Broodstock harvested by common property permit holder. This is not included in total hatchery harvest.

Appendix F4.–Daily coho salmon sales and broodstock collection; sales and broodstock summary in numbers of fish for Cook Inlet Aquaculture Association, 2014.

			Escapement to Bear Lake		Broodstock harvest		Weir donations		Total coho	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
8/25	weir	Bear Lake	22	22	0	0	0	0	22	22
8/26	weir	Bear Lake	22	44	0	0	0	0	22	44
8/27	weir	Bear Lake	8	52	0	0	0	0	8	52
8/28	weir	Bear Lake	5	57	0	0	0	0	5	57
8/30	weir	Bear Lake	4	62	0	0	0	0	4	62
8/31	weir	Bear Lake	6	68	0	0	0	0	6	68
9/5	weir	Bear Lake	5	75	0	0	0	0	5	75
9/6	weir	Bear Lake	10	85	0	0	0	0	10	85
9/7	weir	Bear Lake	8	93	0	0	0	0	8	93
9/8	weir	Bear Lake	5	98	0	0	0	0	5	98
9/9	weir	Bear Lake	3	101	0	0	0	0	3	101
9/11	weir	Bear Lake	13	114	128	128	0	0	141	242
9/12	weir	Bear Lake	0	114	105	233	0	0	105	347
9/13	weir	Bear Lake	64	178	240	473	0	0	304	651
9/14	weir	Bear Lake	0	178	81	554	0	0	81	732
9/15	weir	Bear Lake	63	241	52	606	157	157	272	1,004
9/16	weir	Bear Lake	70	311	0	606	66	223	136	1,140
9/17	weir	Bear Lake	10	321	15	621	0	223	25	1,165
9/19	weir	Bear Lake	0	321	0	621	201	424	201	1,366
9/20	weir	Bear Lake	0	321	0	621	15	439	15	1,381
9/22	weir	Bear Lake	0	321	0	621	197	639	197	1,581
9/23	weir	Bear Lake	0	321	0	621	22	661	22	1,603
9/24	weir	Bear Lake	0	321	29	650	0	661	29	1,632
9/28	weir	Bear Lake	0	321	8	668	0	671	8	1,660
9/29	weir	Bear Lake	0	321	4	672	0	671	4	1,664
10/1	weir	Bear Lake	0	321	5	677	0	671	5	1,669
10/3	weir	Bear Lake	0	321	4	681	0	671	4	1,673
10/7	weir	Bear Lake	0	321	3	686	0	671	3	1,678
10/10	weir	Bear Lake	0	321	8	695	0	671	8	1,687
10/11	weir	Bear Lake	0	321	16	711	0	671	16	1,703
10/12	weir	Bear Lake	0	321	29	740	0	671	29	1,732
10/13	weir	Bear Lake	202	523	-173	567	0	671	29	1,761
10/14	weir	Bear Lake	11	534	0	567	0	671	11	1,772

Hatchery escapement summary in numbers of fish[c]	
Donated fish (Harv code 37)	671
Raceway harvest	0
Viable broodstock (spawned,eggs in incubators)	240
Unviable broodstock (green/over-ripe/bad)	4
Unspawned fish (e.g. excess males/females)	0
Holding mortalities (raceway, pen mortalities)	139
Broodstock taken by ADF&G for "Salmon in the Classroom" program	184
Estimated escapement into Bear Lake	534
Total return to Bear Lake	1,772
Sales and donation summary	
Whole fish sales (Harv code 21)	0
Carcass sale (Harv code 22)	0
Total sales	0

[a] Donated to public at weir by CIAA. Source: ADF&G fish ticket database.

[b] A total of 173 coho salmon were removed from the raceways on October 13 and released into Bear Lake.

[c] ADF&G fish ticket database.

Appendix F5.–Historical harvest contributions, and total run of sockeye and coho salmon to Cook Inlet hatchery release sites, 1978–2014.

	Sockeye salmon					Coho salmon[a]			
Return Year	Hatchery contrib. to the CCPF	Hatchery contrib. to broodstock esc.	Hatchery contrib. to cost recov.	Hatchery donated	Total hatchery run	Hatchery contrib. to broodstock esc.	Hatchery contrib. to cost recov.	Hatchery donated	Total hatchery run
1978	0	0	0		0	100	0		100
1979	299,858	3,974	0		303,833	7,089	0		7,089
1980	638,058	30,927	0		668,985	6,376	0		6,376
1981	358,726	9,700	0		368,460	0	0		0
1982	23,990	19,283	0		45,218	0	0		0
1983	151,400	16,103	0		173,903	–	–		
1984	231,444	50,800	0		287,758	4,620	0		4,620
1985	415,493	179,400	0		608,252	5,335	0		5,335
1986	808,503	12,020	0		841,552	1,938	0		1,938
1987	521,349	34,600	0		572,648	300	0		300
1988	676,669	594	0		686,184	0	0		0
1989	251,532	12,000	78,731		356,263	0	0		0
1990	370,195	2,708	8,513		389,059	0	5,855		5,855
1991	479,910	86,650	3,604		590,136	0	6,035		6,035
1992	378,823	24,103	9,198		420,374	689	1,234		1,923
1993	459,756	38,231	37,620		551,457	678	7,199		7,877
1994	205,837	17,655	51,140		277,632	731	4,967		5,698
1995	260,844	6,010	63,404		344,048	–	–		
1996	348,846	5,455	76,272		445,157	608	723		1,331
1997	184,409	1,645	90,464		284,310	594	2,690		3,284
1998	110,659	3,561	81,889		211,166	780	9,905		10,685
1999	968,473	16,317	182,311		1,236,748	939	2,499		3,438
2000	216,149	17,681	94,666	13,690	356,263	976	5,370	5,146	11,492
2001	656,309	17,773	67,786	7,343	840,524	644	1,754	1,758	4,156
2002	754,609	19,744	85,830	1,364	966,783	1,044	2,352	1,436	4,832
2003	1,080,584	20,311	124,388	2,275	1,306,299	1,234	2,228	1,816	5,278
2004	1,112,259	11,167	29,943	0	1,251,938	972	1,224	1,215	3,411
2005	924,377	7,379	74,673	1,302	1,104,598	953	1,536	1,518	4,007
2006	382,433	14,600	77,590	784	514,373	754	600	1,511	2,865
2007	345,027	12,754	57,305	271	450,136	608	0	0	608
2008	134,226	7,658	88,836	201	245,704	525	350	402	1,277

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Return Year	Sockeye salmon					Coho salmon			
	Hatchery contrib. to the CCPF	Hatchery contrib. to broodstock esc.	Hatchery contrib. to cost recov.	Hatchery donated	Total hatchery run	Hatchery contrib. to broodstock esc.	Hatchery contrib. to cost recov.	Hatchery donated	Total hatchery run
2009	26,798	10,403	174,980	782	235,419	483	0	138	621
2010	78,645	10,214	69,833	465	194,834	452	0	220	672
2011	94,153	7,572	159,860	211	261,585	454	0	385	839
2012	0	12,035	114,593	254	126,628	578	0	321	899
2013	10,732	9,364	71,913	1,129	93,138	354	0	2,044	2,398
10-yr avg.	310,865	10,315	91,953	540	447,835	613	371	775	984
2014	8,374	10,318	172,400	1,671	192,763	383	0	671	1,054

Note: Harvest estimates of hatchery fish are from CIAA (2014a-b).

[a] Historic return locations documented were Bear Lake, Fritz Creek, Halibut Cove Lagoon, Grouse Lake, Caribou Lake, Homer Spit, Resurrection Bay, and Seldovia. Releases of hatchery coho salmon in LCI began in 1966. No returns were documented prior to 1978. Includes CIAA Trail Lake Hatchery production and ADF&G Ship Creek Complex production.

Appendix F6.–Estimated historical harvest contributions and total runs of pink salmon to greater Cook Inlet hatchery release sites, 1978–2014.

Return year	Brood year	Fry release	Hatchery contribution to the CCPF	Hatchery contribution cost recovery	Hatchery contribution broodstock esc.	Hatchery donated	Total hatchery run	Estimated marine survival
1978	1976	318,280			3,700		3,700	1.16%
1979	1977	4,820,937			369,000		369,000	7.65%
1980	1978	9,243,717			315,000		315,000	3.41%
1981	1979	6,795,244	963,350		47,279		1,010,629	14.87%
1982	1980	10,268,753	181,400		4,400		185,800	1.81%
1983	1981	15,475,435	577,200				577,200	3.73%
1984	1982	15,232,750	230,000				230,000	1.51%
1985	1983	18,142,463	463,600				463,600	2.56%
1986	1984	23,818,500	380,135	55	50		380,240	1.60%
1987	1985	26,265,176	84,500				84,500	0.32%
1988	1986	8,278,967	836,000				836,000	10.10%
1989	1987	15,589,360	877,600				877,600	5.63%
1990	1988	36,977,190	167,400				167,400	0.45%
1991	1989	36,974,370	204,800				204,800	0.55%
1992	1990	30,602,576	97,577	276,000	69,000		442,577	1.45%
1993	1991	33,760,487	228,376	409,431	102,000		739,807	2.19%
1994	1992	48,700,000	604,037	959,064	153,966		1,717,067	3.53%
1995	1993	62,395,000	1,210,572	1,213,322	182,348		2,606,242	4.18%
1996	1994	63,358,000	19,510	423,306	140,152		582,968	0.92%
1997	1995	111,469,975	172,262	2,465,108	188,197		2,825,567	2.53%
1998	1996	89,918,000	507,850	787,538	175,468		1,470,856	1.64%
1999	1997	90,000,000	222,228	857,902	151,903		1,232,033	1.37%
2000	1998	64,797,691	8,580	1,043,705	269,808		1,322,093	2.04%
2001	1999	66,287,812	108,735	421,530	198,148		728,413	1.10%
2002	2000	126,635,207	9,791	1,041,529	252,777		1,304,097	1.03%
2003	2001	105,971,985	2,924	616,155	261,457	590	881,126	0.83%
2004	2002	125,167,000	1,523	2,459,189	117,222		2,577,934	2.06%
2005	2003	84,247,031	4,779	2,138,538	84,088		2,227,405	2.64%
2006	2004	26,567,983	5,000	246,781	27,741		279,522	1.05%
2007	2005	13,883,682		112,801			112,801	0.81%
2008	2006	13,282,049						
2009	2007							
2010	2008							
2011	2009							
2012	2010							
2013	2011	11,246,399		48,017	143,884		191,901	1.71%
2014	2012	18,603,000		32	28,739		28,771	0.15%

Note: Harvest estimates of hatchery fish are from CIAA (2014 a and b). CCPF = Commercial Common Property Fleet.

Appendix F7.–Tutka Bay Lagoon Hatchery salmon releases, 1977–2014.

Year released	Sockeye	Pink	Chum
1977	91,347 [a]	318,280 [a]	
1978	400,000 [a]	4,820,937 [a]	
1979		9,243,717 [a]	597,377 [a]
1980		6,795,244 [a]	
1981		10,268,753 [a]	7,992 [a]
1982		15,475,435 [a]	15,440 [a]
1983		15,232,750 [a]	1,117,745 [a]
1984		18,142,463 [a]	140,500 [a]
1985		23,537,000 [a]	25,977 [a]
1986		26,234,600 [a]	18,000 [a]
1987		8,240,700 [a]	445,700 [a]
1988		15,589,360 [a]	3,211,200 [a]
1989		36,977,190 [a]	2,164,393 [a]
1990	355,347 [a]	36,684,662 [a]	1,508,557 [a]
1991		30,000,000 [a]	
1992		31,950,000 [a]	
1993		48,700,000 [a]	
1994		61,100,000 [a]	
1995		63,000,000 [a]	
1996	75,000 [a]	105,000,000 [a]	
1997	245,000 [a]	89,000,000 [a]	
1998		90,000,000 [a]	
1999	100,000 [a]	60,132,000 [a]	
2000		65,120,870 [a]	
2001		99,336,410 [a]	
2002		99,371,000 [a]	
2003		67,967,000 [a]	
2004		47,964,360 [a]	
2005	[b]		
2006	[b]		
2007	[b]		
2008	[b]		
2009	[b]		
2010	[b]		
2011	[b]		
2012	[b]	11,246,399 [a]	
2013		18,603,000 [c]	
2014		51,298,000 [c]	

[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 F8.–Trail Lakes Hatchery salmon releases, 1983–2014.

Year released	Chinook	Sockeye		Coho		Chum
1983		2,310,751		1,039,673		
1984	406,755	1,236,864		1,283,815		
1985	398,586	1,805,792		1,538,361		455,809
1986	217,648	516,000		1,530,116		
1987	268,399	3,718,311		1,702,446		
1988	98,429	9,074,486		945,999		
1989		5,690,000		1,337,340		
1990		7,679,698		840,585		
1991		6,345,252	[a]	390,841		
1992		7,575,637	[a]	255,533		
1993		7,979,820	[a]	620,588		
1994		6,640,000	[a]	320,000		
1995		6,339,485	[a]	516,400		
1996		4,110,638	[a]	75,000		
1997		10,857,470	[a]	601,700		
1998		7,653,000	[a]	409,000		
1999		9,923,500	[a]	357,000		
2000		12,521,000	[a]	418,000	[b]	
2001		1,140,000	[a]	432,000	[b]	
2002		18,907,200	[a]	528,500	[b]	
2003		16,128,000	[a]	761,000	[b]	
2004		17,272,000	[a]	996,000	[b]	
2005		9,959,000	[a]	988,000	[b]	
2006		5,785,000	[a]	1,146,000	[b]	
2007		12,668,800	[a]	956,000	[b]	
2008		13,203,000	[a]	685,000	[b]	
2009		7,953,000	[a]	382,000	[b]	
2010		8,616,000	[a]	435,000	[b]	
2011		9,324,200	[a]	437,000	[b]	
2012		7,636,300	[a]	315,000	[b]	
2013		7,482,000	[a]	405,000	[b]	
10-year average		9,989,930		674,500		
2014		9,368,500	[a]	523,000	[b]	

[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 F9.–Port Graham Hatchery salmon releases, 1991–2014.

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

[a] No thermal marks.

Appendix F10.–Ship Creek Hatchery Complex, (Fort Richardson, Elmendorf, and William Jack Hernandez combined) hatchery salmon fry releases, 1966–2014.

Year released	Chinook		Coho	
1966	166,874	[a]	0	
1967	538,356	[a]	38,200	[a]
1968	82,400	[a]	199,700	[a]
1969	95,900	[a]	264,000	[a]
1970	45,700	[a]	225,400	[a]
1971	217,390	[a]	92,343	[a]
1972	71,814	[a]	87,700	[a]
1973	166,134	[a]	683,685	[a]
1974	212,540	[a]	210,300	[a]
1975	91,100	[a]	281,800	[a]
1976	513,400	[a]	895,200	[a]
1977	351,952	[a]	775,803	[a]
1978	747,629	[a]	617,822	[a]
1979	1,088,542	[a]	1,471,899	[a]
1980	770,235	[a]	602,394	[a]
1981	391,950	[a]	1,553,864	[a]
1982			1,096,569	[a]
1983	578,441	[a]	424,542	[a]
1984	1,021,553	[a]	831,147	[a]
1985	1,727,379	[a]	660,854	[a]
1986	1,474,079	[a]	1,991,102	[a]
1987	869,520	[a]	731,202	[a]
1988	1,624,351	[a]	1,333,453	[a]
1989	3,008,315	[a]	1,970,126	[a]
1990	2,256,778	[a]	1,281,500	[a]
1991	1,693,355	[a]	1,215,136	[a]
1992	1,765,804	[a]	1,329,869	[a]
1993	1,863,391	[a]	1,194,994	[a]
1994	1,709,950	[a]	994,250	[a]
1995	1,695,164	[a]	1,121,768	[a]
1996	1,899,284	[a]	1,042,477	[a]
1997	1,801,410	[a]	1,136,845	[a]
1998	1,531,021	[a]	1,249,781	[a]
1999	1,340,334	[a]	1,113,016	[a]
2000	2,173,708	[a]		
2001	1,353,660	[a]	1,226,342	[a]
2002	1,080,114		1,273,443	
2003	2,203,046		944,706	
2004	1,958,790		1,221,608	
2005	2,334,649		1,457,233	
2006	1,922,667		1,235,317	
2007	2,067,938		1,193,374	
2008	1,309,790		989,853	
2009	1,205,594		1,168,549	
2010	2,006,157		1,336,861	
2011	1,741,377		1,050,001	
2012	1,853,150		968,716	
2013	1,428,414		1,079,549	
10-year average	1,782,853		1,170,106	
2014	2,102,235		603,017	

[a] No thermal marks.

Appendix F11.–Historic releases of Chinook salmon from hatcheries to Lower Cook Inlet, 1972–2014.

	Southern District (241)					
Year	Halibut Cove Lagoon	Homer Spit	Tutka Bay	Kasitsna Bay	Seldovia Harbor	English Bay Lakes
1972				33,800		
1975	3,463					
1976	16,183		26,000			
1977	49,947					
1978	126,306					
1979	224,708					
1980	155,054					
1981	101,861					
1983	200,900					
1984	84,000	88,753				
1985	98,000	152,226				
1986	101,331	103,946				
1987	94,100	103,860			80,420	
1988	93,874	219,572			111,435	
1989	115,682	212,737			108,300	
1990	112,458	210,087			98,525	109,465
1991	92,363	190,915			91,592	
1992	117,850	353,255			112,935	
1993	100,228	312,292			106,497	
1994	98,872	320,836			107,246	
1995	37,577	339,074			116,165	
1996	97,729	312,289			118,274	
1997	78,133	318,706			103,757	
1998	65,893	289,830			69,461	
1999	79,221	222,781			74,057	
2000	83,277	219,984			68,114	
2001	106,719	208,062			102,793	
2002	106,279	190,026			83,045	
2003	106,844	206,292			107,521	
2004	103,771	168,743			88,682	
2005	112,521	220,822			114,984	
2006	117,549	224,053			113,974	
2007	54,560	226,972			54,276	
2008	58,674	212,141			54,464	
2009	35,065	164,234			44,487	
2010	111,134	213,503			114,421	
2011	107,338	219,787			103,382	
2012	110,253	221,547			95,800	
2013	60,666	216,292			63,311	
10-yr avg.	87,153	208,809			84,778	
2014	85,856	206,254			74,259	

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	Eastern District (231)					
Year	Resurrection Bay	Alaska Sea-Life Center	Thumb Cove	Box Canyon	Lowell Creek	Spring Creek
1972						
1975						
1976				25,100		
1977				50,036		
1978				150,488		
1979				257,530		
1980						
1981						
1983				54,521		
1984			71,427		39,206	
1985	53,587				132,708	
1986					100,900	
1987					95,963	
1988	109,020				95,673	
1989	109,464				122,800	75,063
1990	112,831				216,220	
1991	373,165				93,200	
1992	261,803				108,390	
1993	193,742				104,870	
1994	165,596				104,477	
1995	220,146				95,256	
1996	300,000				115,000	
1997	203,932				219,355	
1998	205,133				101,992	
1999	88,066				85,502	
2000	212,873				109,461	
2001	113,147				114,748	
2002	100,314				93,296	
2003	109,976				110,331	
2004	126,280	30,066			89,388	
2005	211,549	218,759			100,088	
2006	303,217	120,000				
2007	117,842	115,716				
2008	142,469					
2009						
2010	110,671				109,779	
2011	223,881					
2012	219,743					
2013	141,550					
10-yr avg.	177,467				99,752	
2014	183,464					

Appendix F12.–Historic releases of sockeye salmon from hatcheries to Lower Cook Inlet, 1976–2014.

	Southern District (241)						Outer District (232)
Year	Leisure Lake	Hazel Lake	Halibut Cove Lagoon	Tutka Bay Lagoon	English Bay Lakes	Port Graham Subdist.	Port Dick Lake
1976	1,085		7,777				
1977	91,347						
1978	83,422						
1979							
1980	532,650						
1981	1,094,713						
1982	1,527,876						
1983	2,113,239						
1984	2,110,000						
1985	2,018,000						
1986	2,250,303						
1987	2,022,000						704,900
1988	2,100,000	783,000					221,700
1989	2,000,000	1,000,000					430,000
1990	2,000,000	1,500,000			855,347		
1991	2,000,000	1,300,000			255,071	84,757	
1992	2,000,000	1,000,000			290,298	144,982	
1993	2,000,000	1,000,000			755,692		
1994					820,174	9,985	
1995	1,632,000	1,061,000					
1996	1,490,000	1,030,000		75,000	292,134		
1997	2,000,000	1,000,000		245,000	199,000		
1998	1,877,000	1,218,000					
1999	265,400	453,100		100,000	918,348		
2000	1,708,000	1,248,000			906,057		
2001	89,000						
2002	2,246,200	1,280,100					
2003	2,240,000	1,547,000			694,647		
2004	2,002,000	351,000			50,096	109,520	
2005	2,252,000	1,558,000		96,000	203,000		
2006	680,000			260,000		422,060	
2007	2,315,000	1,411,000		143,800			
2008	2,053,000	1,161,000		483,000	246,000		
2009	1,225,000	1,186,000		301,000		112,000	
2010	1,933,000	1,218,000		278,000	202,000		
2011	1,415,000	1,244,000		281,900	203,300		
2012	2,074,000	1,240,000		371,300	213,000		
2013	1,800,000	1,450,000		511,000	211,000	102,000	
2014	1,353,000	1,223,000		599,500	209,000		

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Appendix F12.–Page 2 of 2.

	Kamishak District (249)					Eastern District (231)		
Year	Chenik Lake	Paint River Lakes	Kirschner Lake	Bruin Lake	Ursus Lake	Bear Lake	Resurrection Bay	Grouse Lake
1976								
1977								
1978	98,082							
1979	256,525							
1980								
1981	1,096,718							
1982								
1983								
1984								
1985								
1986	839,000	820,026						
1987	1,005,000		866,700					
1988	2,601,000	2,207,300	521,000					
1989	3,500,000	2,000,000	250,000					
1990	3,250,000	2,000,000	250,000			2,577,962		
1991	2,100,000	750,000	250,000	250,000		1,604,922		
1992	2,750,000	750,000	250,000	250,000	250,000	1,482,489		
1993	1,400,000	750,000	250,000	250,000	250,000	1,810,261		
1994			208,000			170,000		570,000
1995	1,129,000	588,000	251,000	251,000	252,000	330,000		993,000
1996	951,000	500,000	250,000	250,000	250,000	780,638		217,605
1997			250,000			788,000		2,428,000
1998			234,000			772,000		1,514,000
1999			172,700			1,380,000		
2000			249,000			1,796,000		
2001						145,000		
2002		507,700	301,500			3,210,300		
2003			298,000			1,801,000		
2004			251,000			3,012,000		
2005			316,000			3,422,000		
2006						3,393,000		
2007			254,000			3,056,000		
2008			300,000			2,400,000	1,600,000	
2009						2,543,000	1,675,000	
2010			255,000			2,200,000	1,650,000	
2011			160,000			2,488,000	0	
2012			300,000			2,490,000	1,305,000	
2013						2,548,000	2,090,000	
2014			217,000			2,405,000	1,742,000	

Appendix F13.–Historical releases of coho salmon from hatcheries to Lower Cook Inlet, 1963–2014.

	Southern District, (241)						
	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia	Port Graham Subdistrict
1963							
1964							
1965							
1966							
1967							
1968							
1969							
1970							
1971							
1972					241,400		
1973			326,800				
1974			755,279				
1975	141,217		475,600				
1976	155,700		461,244			112,661	
1977			7,253			99,380	
1978		66,545					
1979		44,717	47,810	23,015			
1980		21,315					
1981		55,006					
1982							
1983							
1984	119,071					59,840	
1985	139,789	31,242				81,924	
1986	137,951					71,496	
1987	150,000					45,000	
1988	150,000			62,547		80,000	
1989				153,869			
1990	180,000			122,945		50,000	
1991	180,000			100,236		50,000	
1992	150,000			100,570			

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	Eastern District, (231)					
	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	0				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		66,500	606,100				914,000
1973		30,200	443,300				800,300
1974		100,000	450,800				1,306,079
1975		100,700	449,900				1,167,417
1976		100,600	260,200	35,200			1,125,605
1977		100,456	45,902	35,003			287,994
1978		148,999	254,394	53,455			523,393
1979		98,566	265,963	44,010			524,081
1980		100,757	150,011	50,286			322,369
1981		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		67,722	220,000	53,100			519,733
1985		50,256	300,446	56,134			659,791
1986		212,812	445,693			53,607	867,952
1987		66,525	223,300		57,232	257,461	542,057
1988		118,741	347,155		63,806		822,249
1989		272,346	490,000		66,606		982,821
1990		145,619	426,911		63,733		989,208
1991		119,057	390,060		30,400	4,000	869,753
1992		154,219	255,533		59,492		719,814

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	Southern District, (241)						
	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia	Port Graham
1993	150,000			116,129			
1994	63,600			156,213			
1995				110,701			
1996				149,000			
1997				120,242			29,963
1998				148,410			30,000
1999				129,602			
2000				122,338			
2001				225,042			
2002				216,355			
2003				325,735			
2004				243,243			
2005				220,707			
2006				449,216		114,000	
2007				228,244		97,000	
2008				217,843		88,000	
2009				157,696			
2010				130,206			
2011				129,080			
2012				107,250			
2013				132,027			
10-year avg.				201,551			
2014				76,535			

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	Eastern District, (231)					
	Resurrection Bay	Seward Lagoon	Bear Lake	Grouse Lake	Lowell Creek	Total coho salmon released
1993		159,091	620,588		64,361	1,110,169
1994		221,577	320,000		38,000	799,390
1995		133,700	516,400		50,698	811,499
1996		182,000	425,000		69,000	825,000
1997		144,112	601,700		61,687	957,704
1998		74,365	409,000		65,687	727,462
1999		109,142	357,000		62,580	658,324
2000		145,693	418,000		54,184	740,215
2001		124,703	432,000		125,618	907,363
2002		121,743	528,500		119,512	986,110
2003		123,718	658,000		124,225	1,231,678
2004	192,000	323,798	691,000		131,989	1,582,030
2005		132,229	893,000		132,276	1,378,212
2006		131,326	562,000		277,261	1,533,803
2007		132,811	758,000		130,892	1,346,947
2008		233,365	502,000			1,041,208
2009		91,979	338,000		91,833	679,508
2010		134,008	435,000		133,947	833,161
2011		255,252	437,000			821,332
2012		249,309	315,000			671,559
2013		216,444	405,000			753,471
10-year avg.		190,052	533,600		149,700	1,064,123
2014		97,675	523,000			697,210

Appendix F14.–Historical releases of pink salmon from hatcheries to greater Cook Inlet, 1975–2014.

	Tutka Bay	Halibut Cove Lagoon	Halibut Cove-bight	Homer Spit	Port Graham Subdistrict
1975		50,916			
1976					
1977		318,280			
1978	4,820,937				
1979	9,243,717				
1980	6,245,103				
1981	9,759,144				
1982	15,070,927				
1983	14,730,794				
1984	18,142,463				
1985	23,537,000				
1986	22,228,600	4,006,000			
1987	4,385,600	3,001,400		594,500	
1988	12,003,878	3,022,491		310,016	
1989	30,091,053	6,229,062		331,695	
1990	23,689,702	6,000,000		603,845	
1991	23,657,112	6,039,062		303,826	255,000
1992	25,700,000	5,950,000		300,000	1,810,487
1993	48,700,000				
1994	61,100,000				1,295,000
1995	63,000,000				358,000
1996	105,000,000				6,469,975
1997	89,000,000				918,000
1998	90,000,000				
1999	60,132,000				4,617,362
2000	65,120,870				1,142,726
2001	99,336,410				27,298,797
2002	99,371,000				6,600,985
2003	67,967,000				57,200,000
2004	47,964,360				36,282,671
2005					26,567,983
2006					13,883,682
2007					13,282,049
2008					
2009					
2010					
2011					
2012	8,100,399		3,146,000[a]		
2013	4,353,000				14,250,000
2014	51,110,000				188,000

-continued-

	Alaska Sea-Life Center (Seward)	Paint River	Eklutna River	Ingram Creek	Total pink salmon released
1975					50,916
1976					
1977					318,280
1978					4,820,937
1979					9,243,717
1980		550,141			6,795,244
1981		509,609			10,268,753
1982		404,508			15,475,435
1983		501,956			15,232,750
1984					18,142,463
1985			281,500		23,818,500
1986			30,576		26,265,176
1987			38,267	259,200	8,278,967
1988				252,975	15,589,360
1989				325,380	36,977,190
1990				311,101	36,974,370
1991					30,602,576
1992					33,760,487
1993					48,700,000
1994					62,395,000
1995					63,358,000
1996					111,469,975
1997					89,918,000
1998					90,000,000
1999	48,329				64,797,691
2000	24,216				66,287,812
2001					126,635,207
2002					105,971,985
2003					125,167,000
2004					84,247,031
2005					26,567,983
2006					13,883,682
2007					13,282,049
2008					
2009					
2010					
2011					
2012					11,246,399
2013					18,603,000
2014					51,298,000

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

Appendix F15.–Harvest of sockeye salmon returning to China Poot and Neptune Bays in the Southern District of Lower Cook Inlet, 1979–2014.

Return year	Sport harvest [a]	Personal use dip net harvest [b]	Commercial harvest [c]	Hatchery cost recovery [d]	Unharvested [e]	Total run
1979	650		2,975			3,625
1980	1,000	953	13,007			14,960
1981	1,500		24,215			25,715
1982	450	1,320	1,044		1,430	4,244
1983	480	5,466	91,946		10	97,902
1984	500	1,794	117,438		500	120,232
1985	500	796	60,890		920	63,106
1986	100	1,815	15,031		200	17,146
1987	200	1,231	61,453			62,884
1988	500	1,910	90,544		470	93,424
1989	1,000	5,416	84,082			90,498
1990	500	5,835	66,549			72,884
1991	1,000	1,528	142,560			145,088
1992	300	3,468	82,455	7,336		93,559
1993	400	4,551	131,367			136,318
1994	500	5,715	47,494	3,025		56,734
1995	1,000	8,605	132,892	12,497	450	155,444
1996	1,000	4,773	269,553	14,235	441	290,002
1997	650	4,773	121,184		1,130	127,737
1998	640	4,773	143,350	20,579	380	169,722
1999	640	4,773	187,207	16,188	522	209,330
2000	640	4,773	77,462	18,103	256	101,234
2001	640	4,773	99,866	27,037	57	132,373
2002	640	4,773	114,639	29,517	51	149,620
2003	640	4,773	391,768	35,557	121	432,859
2004	640	4,773	21,621	12,991	448	40,473
2005	640	4,773	65,333	29,737	1	100,484
2006	640	4,773	52,020	23,283	820	81,536
2007	640	4,773	61,193	22,586	501	89,693
2008	640	4,773	62,675	1,907	103	70,098
2009	640	4,773		205	223	5,841
2010	640	4,773		1,007	45	6,465
2011	640	4,773	9,945		18	15,376
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

[a] Sport harvest figures for 1997–2014 represent the estimated 10-year average.

[b] Personal use harvest data for 1979–1981 from permits issued from the Homer office. Data from 1983 to 1995 are from *Alaska statewide sport fish harvest studies* report series (ex. 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 Southern District except for 1999, 2000 and 2002 that only include harvests east of the Tutka District due to returning Tutka hatchery sockeye salmon in those years.

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

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

Appendix F16.–Commercial harvest and escapement of sockeye salmon at Chenik Lake in the Kamishak Bay District of Lower Cook Inlet, 1976–2014.

Return year	Commercial harvest	Cost recovery	Escapement [a]	Total run
1976	[b]		900	900
1977	[b]		200	200
1978	[b]		100	100
1979	[b]		[c]	[c]
1980	[b]		3,500	3,500
1981	[b]		2,500	2,500
1982	[b]		8,000	8,000
1983	2,800		11,000	13,800
1984	16,500		13,000	29,500
1985	10,624		3,500	14,124
1986	111,348		7,000	118,348
1987	97,411		10,000	107,411
1988	161,936		9,000	170,936
1989	38,905		12,000	50,905
1990	70,347		17,000	87,347
1991	51,773		10,189	61,962
1992	5,609	8,769	9,269	14,878
1993	19,988		4,000	23,988
1994	[b]		808	808
1995	[b]		1,086	1,086
1996	[b]		2,990	2,990
1997	[b]		2,338	2,338
1998	[b]		1,880	1,880
1999	[b]		2,850	2,850
2000	[b]		4,800	4,800
2001	[b]		250	250
2002	[b]		4,650	4,650
2003	[b]		13,825	13,825
2004	33,177		17,000	50,177
2005	47,013		14,507 [d]	61,520
2006	11,783		13,868 [d]	25,651
2007	161,630		18,230 [d]	179,860
2008	171,255		11,284 [d]	182,539
2009	65,727		15,264 [d]	80,991
2010	5,471		17,312 [d]	22,783
2011	82,826		10,330 [d]	93,156
2012	55,255		16,505 [d]	71,760
2013	33,154		11,333 [d]	44,487
2014	7,241		17,774 [d]	25,015

[a] Estimated from aerial surveys between 1976 and 1990 from 1998 to present, weir counts between 1991 and 1997, unless otherwise noted.

[b] Closed to fishing.

[c] No data.

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

Appendix F17.–Commercial harvest of sockeye salmon at Kirschner Lake in the Kamishak Bay District of Lower Cook Inlet, 1989–2014.

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

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

Appendix F18.–Commercial harvest and escapement of pink and sockeye salmon in the Tutka Bay Subdistrict in the Southern District of Lower Cook Inlet, 1975–2014.

Return year	Sockeye salmon [a]			Pink salmon [a]					
	Commercial harvest	Cost recovery	Total run	Commercial harvest	Cost recovery	Brood stock	Escapement	Sport catch	Total run
1975	12,600		12,600	89,200			17,600		106,800
1976	14,200		14,200	73,100		10,800[b]	11,500		95,400
1977	21,300		21,300	21,900		6,528	14,000		42,428
1978	92,100		92,100	167,862		21,100	15,000		203,962
1979	15,600		15,600	421,816		21,200	10,600	2,000	455,616
1980	13,200		13,200	321,513		26,897	17,300	5,000	370,710
1981	41,000		41,000	1,026,574		22,000	28,000	6,000	1,082,574
1982	15,800		15,800	184,876		41,200	18,500	2,000	246,576
1983	35,900		35,900	615,459		53,800	12,900	5,000	687,159
1984	26,700		26,700	241,054		41,000	10,500	8,000	300,554
1985	14,886		14,886	491,181		43,000	14,000	8,000	556,181
1986	16,340		16,340	400,150		43,000	13,400	8,000	464,550
1987	14,659		14,659	56,465		22,000	4,800	500	83,765
1988	12,900		12,900	723,929		65,000	11,200	8,500	808,629
1989	13,461		13,461	632,147		5,100	11,900	10,000	659,147
1990	7,922		7,922	20,183	17,243	62,000	38,500	2,000	139,926
1991	7,039	34	7,073	14,691	101,837	103,100	16,820	2,000	238,448
1992	8,578		8,578	41,642	275,897	67,324	25,921	2,500	413,284
1993	5,797	8	5,805	128,347	409,431	107,242	27,403	2,000	674,423
1994	9,129	8	9,137	498,436	953,231	154,000	14,546	2,000	1,622,213
1995	12,323	3	12,326	1,212,342	1,213,322	166,052	15,899	3,000	2,610,615
1996	20,226	74	20,300	6,941	420,411	138,021	3,456	1,000	569,829
1997	9,686		9,686	130,406	2,375,653	216,786	45,000	2,100	2,769,945
1998	8,480		8,480	504,764	792,542	153,580	17,473	2,000	1,470,359
1999	18,711[c]	88	18,799	222,228	857,902	151,903	27,947	2,000	1,261,980
2000	6,602	896	7,498	8,580	1,043,705	179,970	19,048	1,500	1,252,803
2001	16,500	5	16,505	109,682	421,408	179,006	4,451	1,500	716,047
2002	14,318		14,318	4,725	703,205	161,864	15,884	1,500	887,178
2003	24,090	2	24,092	4,324	507,215	207,285	30,866	1,500	751,190
2004	5,827		5,827	1,523	1,175,326	0[d]	17,846	1,500	1,196,195
2005	6,252		6,252	4,779	1,631,806		133,600	1,500	1,771,685
2006	5,865		5,865	11,223			25,800	1,500	38,523
2007	8,272		8,272				5,700	1,500	7,200
2008	6,414	14,604	21,018	1,884	377		14,100	1,500	17,861
2009	9,185	11,584	20,769	2,136			3,800	1,500	7,436
2010	6,307	38,087	44,394	2,536	161		2,100	1,500	6,297
2011	10,516	7,836	18,352	1,911	5	12,665[e]	21,974	1,500	38,055
2012	4,839	17,756	22,595	4,434	171	8,140	10,436	1,500	24,681
2013	16,285	9,707	25,992	866	39,153	143,884	9,541	1,500	194,944
2014	27,425	30,404	57,829	11,004	32	22,401	10,152	1,500	45,089

[a] Data from CIAA (2014 a and b).

[b] Start of enhancement at Tutka Lagoon Hatchery.

[c] First return of enhanced BY95 sockeye salmon. Previous year's harvest is intercepted China Poot runs and wild production.

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

[e] CIAA resumed operations at Tutka Lagoon Hatchery.

Appendix F19.–Harvest of salmon from the Port Graham Section of the Port Graham Subdistrict in the Southern District of Lower Cook Inlet, 1985–2014.

	Sockeye salmon			Pink salmon					
Return year	Commercial harvest	Subsist. harvest[a]	Cost recovery	Commercial harvest	Subsist. harvest[a]	Cost recovery	Broodstock (plus excess)	Escapement	Total run
1985	787	481		3,668	32			26,300	30,000
1986	363	274		4,658	237			17,500	22,395
1987	246	219		359	230			3,800	4,389
1988	103	411		126	542			7,900	8,568
1989		94			640			19,100	19,740
1990		524			1,013			20,100	21,113
1991		58			1,494			29,000	30,494
1992		98			745			5,400	6,145
1993		154			997			12,800	13,797
1994		260			866			7,600	8,466
1995		379			786		16,224	10,000	27,010
1996	5,203	684		821	312		2,131	7,000	10,264
1997	8,597	324		46,854	497	85,354	21,888	12,500	167,093
1998	3,652	271		598	459		21,888	12,600	35,545
1999		382			150			9,700	9,850
2000	1,153	784			355		89,838	15,600	105,793
2001		176			20		34,773	10,300	45,093
2002	3,576	417		14	150	238,672	146,433	58,500	443,769
2003	5,034	1,991			266		78,241	14,900	93,407
2004	1,032	572			363	1,283,517	99,376	44,000	1,427,256
2005		192			349	510,802	84,088	69,100	664,339
2006		31			26	247,990	27,741	31,200	306,957
2007		552	23		74	117,962		25,600	143,636
2008	2,971	550	26,274		36	2,670		24,700	27,406
2009	9,057	1,982	8,292		49	866		14,000	14,915
2010	740	116			24			16,600	16,624
2011	59	687			132			20,883	21,015
2012	30	661	30	21,645	282		[b]	34,486	56,413
2013	463	1,034		13,188	27		[c]	11,893	25,108
2014	42	136		43,442	164		1,740	32,295	77,641

[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.

Appendix F20.–Harvest of salmon in the English Bay Section of the Port Graham Subdistrict of the Southern District of Lower Cook Inlet, 1985–2014.

	Sockeye salmon			Coho salmon			Pink salmon		
Return year	Commercial harvest	Subsist. harvest [a]	Cost recovery	Commercial harvest	Subsist. harvest [a]	Cost recovery	Commercial harvest	Subsist. harvest [a]	Cost recovery
1985	2,712	696		2,250	530		8,830	313	
1986	1,592	373		1,475	302		4,106	825	
1987	2,114	682		1,352	339		1,985	484	
1988	1,254	610		1,384	385		10,562	1,214	
1989		63			695			855	
1990		638			614			1,947	
1991		630			1,512			3,093	
1992		437			675			676	
1993		994			567			1,666	
1994		570			511			1,113	
1995	2,580	1,416		1,823	169		10,168	487	
1996	6,981	1,060	5,934	1,553	598		658	437	
1997	16,657	1	7,817	1,414			12,940	14	
1998	8,080	18	6,202	23			760		1
1999		2,775	660		1,320			1,873	
2000	984	3,880			1,579			1,251	
2001		909			1,238			1,434	
2002	10,912	10,203	20,245	1	967		6	1,681	
2003	16,525	3,221	45,011	2	513		82	1,306	
2004	1,537	2,968		3	842			1,277	
2005		1,934			1,142			1,259	
2006		2,215			1,179			2,038	
2007	4,270	[b]		3	[b]			[b]	
2008	2,421	3,615			1,345			2,646	
2009	491	1,515			396			865	
2010	1,157	1,514			1,324			1,030	
2011	1,375	5,009			1,381		702	2,499	200
2012		300			400			200	
2013		3,854			2,619			383	
2014		211							

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

[b] No data available.

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, 2014, and 2015 forecast.

Age	2014 Spawning biomass[a]	Percent by weight	2014 Commercial harvest	Percent by weight	2014 Total biomass	Percent by weight	2015 Forecast biomass	Percent by weight
1								
2								
3	164	2.6%	0	0.0%	164	2.6%	305	5.4%
4	805	13.0%	0	0.0%	805	13.0%	264	4.6%
5	987	15.9%	0	0.0%	987	15.9%	1,003	17.6%
6	986	15.9%	0	0.0%	986	15.9%	1,003	17.6%
7	1,744	28.1%	0	0.0%	1,744	28.1%	868	15.2%
8	294	4.7%	0	0.0%	294	4.7%	1,350	23.7%
9	510	8.2%	0	0.0%	510	8.2%	210	3.7%
10	460	7.4%	0	0.0%	460	7.4%	309	5.4%
11	118	1.9%	0	0.0%	118	1.9%	274	4.8%
12	63	1.0%	0	0.0%	63	1.0%	71	1.2%
13+	83	1.3%	0	0.0%	83	1.3%	40	0.7%
Totals	6,214	100.0%	0	0.0%	6,214	100.0%	5,699	100.0%

Note: st = short ton = 2,000 lbs.

[a] The commercial herring fishery in Kamishak Bay did not open in 2014.

Appendix G2.–Catch of Pacific herring in short tons (st) and effort in number of permits making deliveries by district in the commercial sac roe seine fishery, Lower Cook Inlet, 1961–2014.

	Southern		Kamishak		Eastern		Outer		Total	
Year	ST	Permits	ST	Permits	ST	Permits	ST	Permits	ST	Permits
1961										
1962										
1963	1								1	
1964										
1965	2								2	
1966					7				7	
1967										
1968	20								20	
1969	551				758		38		1,347	
1970	2,709				2,100				4,809	
1971	[a]	[a]			831	22			844	24
1972	[a]	[a]			[a]	[a]			[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			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			[a]	[a]	5,605	76
1989	170	6	4,801	75					4,971	81
1990		Closed	2,264	75		Closed		Closed	2,264	75
1991		Closed	1,992	58					1,992	58
1992		Closed	2,282	56					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
2000-2013		Closed		Closed		Closed		Closed		Closed
1961-1999 Average [d]	295		2,520	49	556		146		2,205	

Source: ADF&G fish ticket database. Commercial Fisheries Entry Commission License Statistics, 1974–2015, 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.

[d] Averages based only on years with reported harvest.

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, 1978–2013.

Year	Preseason		Actual commercial harvest (st)[a]	Average roe %	No. of permits w/landings	Exvessel value[b] (in millions)
	Forecasted biomass (st)	Projected harvest (st)[a]				
1978	[c]	[d]	402	33.4	44	[e]
1979	[c]	[d]	415	12.5	[e]	[e]
1980	[c]	[d]	Closed			
1981	[c]	[d]	Closed			
1982	[c]	[d]	Closed			
1983	[c]	[d]	Closed			
1984	[c]	[d]	Closed			
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]		Closed[h]			
2000	6,330		Closed			
2001	11,352		Closed			
2002	9,020		Closed			
2003	4,771		Closed			
2004	3,554		Closed			
2005	3,058		Closed			
2006	2,650		Closed			
2007	2,286		Closed			
2008	2,069		Closed			
2009	[i]		Closed			
2010	2,963		Closed			
2011	3,830		Closed			
2012	[i]		Closed			
2013	[i]		Closed			
2014	6,318		Closed			

[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, and 2013 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, 1969–2014.

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]	–
1999–2014	Closed		100[e]		

[a] Management by emergency order 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 and exploitation rate in Kamishak Bay District, Lower Cook Inlet, 1990–2014.

Year	Preseason		Actual commercial harvest (st)[a]	Estimated exploitation rate (%)[b]	ASA Hindcast total biomass estimate (st)[c,d,e]	Hindcast exploitation rate (%)[c,f]
	Forecasted biomass (st)	Projected harvest (st)[a]				
1990	28,658	2,292	2,264	7.9	19,841	11.4
1991	17,256	1,554	1,992	11.5	20,369	9.8
1992	16,431	1,479	2,282	13.9	18,257	12.5
1993	28,805	2,592	3,570	12.4	16,176	22.1
1994	25,300	3,421	2,167	8.6	13,203	16.4
1995	21,998	2,970	3,378	15.4	10,220	33.1
1996	20,925	2,250	2,984	14.3	6,950	42.9
1997	25,300	3,420	1,746	6.9	4,742	36.8
1998	19,800	1,780	331	1.7	4,137	8.0
1999	[g]		Closed[h]		4,015	
2000	6,330		Closed		3,904	
2001	11,352		Closed		3,643	
2002	9,020		Closed		3,296	
2003	4,771		Closed		3,233	
2004	3,554		Closed		2,906	
2005	3,058		Closed		3,162	
2006	2,650		Closed		3,193	
2007	2,286		Closed		3,641	
2008	2,069		Closed		4,087	
2009	[i]		Closed		3,790	
2010	2,963		Closed		3,942	
2011	3,830		Closed		[i]	
2012	[i]		Closed		[i]	
2013	[i]		Closed		[i]	
1990 - 2011 Average[j]	12,818	2,418	2,302	10.3%	7,462	21.4%
2014	6,318		Closed		6,214	

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 in 2010.

[f] Estimated exploitation rate based on ASA hindcast estimates of biomass combined with 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 hindcasted abundance estimate possible due to lack of age composition samples.

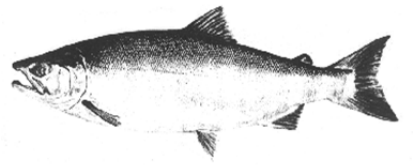
[j] Averages based only on years with data presented.

APPENDIX H: 2014 OUTLOOK

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

Cora Campbell, Commissioner

Jeff Regnart, Director



Contact:
Glenn Hollowell, Area Finfish Management Biologist
Ethan Ford, Fishery Biologist I
Phone: (907) 235-8191
Fax: (907) 235-2448

Homer Area Office
3298 Douglas Place
Homer, AK 99603
Date Issued: April 18, 2014,
Time: 2:00 PM

2014 LOWER COOK INLET SALMON FISHERY OUTLOOK

General Information

This outlook is provided to assist the commercial salmon industry in planning for the 2014 season in the Lower Cook Inlet (LCI) Management Area. Preseason forecasts and previous 5 year commercial common property harvest averages are the basis for the information provided. Forecasts for LCI can be found on ADF&G's web site:

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

Cook Inlet Aquaculture Association (CIAA) manages the Trail Lakes Hatchery (TLH), and the Tutka Bay Lagoon Hatchery (TBLH). Hatchery forecasts can be found 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. Hatchery Annual Management Plans (AMP) are used to provide guidelines to the department when managing enhanced fisheries to achieve cost recovery and broodstock objectives. CIAA AMPs underwent Regional Planning Team (RPT) review on April 16, and are being submitted for commissioner's approval.

The forecasts for commercial common property fishery (CCPF) harvests by species are summarized in Table 1. The pink salmon forecast is derived from a spawner-recruit analysis, whereas run projections for other species and districts are based on average historical production. Projected returns of hatchery-origin salmon are provided by CIAA. These projections of hatchery and wild stock returns 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 harvest being used as the season progresses.

Management of the LCI commercial salmon fisheries is based in the Homer area office. All emergency order (EO) announcements of fishery openings and closures are broadcast on VHF channel 10. As was done last year, fishery announcements from the Homer ADF&G office will

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routinely occur on Friday's at 2:00 PM, 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 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 PM, Friday, May 2.

CIAA anticipates a total of 114,900 hatchery produced sockeye, and 559,000 pink salmon to return to LCI release sites in 2014. All of these fish are anticipated to be required for either broodstock or cost recovery purposes.

The overall commercial common property harvest from Lower Cook Inlet is anticipated to be 305,000 salmon nearly all of which are anticipated to be of wild stock origin (Table 1).

Set Gillnet Fishery

The **Southern District** is anticipated to open for the 2014 season on Monday, June 2 at 6:00 AM for a 48 hour period. Following periods will likely be 48 hours in length beginning at 6:00 AM on Monday and Thursday, as specified in regulation. The 5-year harvest averages for this area and gear are 110 Chinook, 1,000 coho and 1,900 chum salmon. The 5-year commercial harvest average for the wild sockeye salmon harvested in the English Bay Section is 800 fish. Harvests for 2014 are anticipated to be similar to the historic average. The department's preliminary pink salmon forecast estimated a harvestable surplus of 79,000 fish from the Southern District; which is to be shared by commercial set gillnet and purse seine permit holders. Sockeye salmon returns to subdistricts outside of the English Bay Section are comprised significantly of fish returning to hatchery release sites at Leisure Lake, Hazel Lake, and Tutka Bay Lagoon. CIAA anticipates a return of 15,600 sockeye salmon to Leisure and Hazel lakes combined Fishing time in the Port Graham Subdistrict will be closely linked to escapement levels to English Bay Lakes. Management priority will be to provide for the subsistence needs of those immediate communities at the level prescribed in the Customary and Traditional Use finding in 5 AAC 01.566(d) of 4,800–7,200 salmon. The Port Graham Subdistrict is anticipated to remain closed to commercial harvest until English Bay River escapement is tracking to meet the overall spawning escapement goal (6,000–13,500) and hatchery broodstock goals. Further information regarding previous year's 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 returns to Leisure and Hazel lakes. Historically this return peaks from July 13–19 (week 29). CIAA anticipates a return of 15,600 sockeye salmon to Leisure and Hazel lakes combined, as well as 22,100 sockeye salmon to Tutka Bay. All hatchery returns are anticipated to be needed by CIAA for cost recovery and broodstock purposes.

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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 559,000 hatchery produced pink salmon are anticipated to return to release sites in the Southern District.

Hatchery sockeye salmon returns to the **Eastern District** are forecast by CIAA to be 66,000 fish, all of which will be required for cost recovery and broodstock purposes. Wild stock harvest opportunity in the Eastern 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 index systems in Resurrection Bay and Day Harbor will be flown weather permitting.

Portions of the **Outer District** may open to commercial harvest in mid-July focusing on sockeye returns to McCarty Fjord lakes. Escapement to these systems is monitored by aerial survey (Desire and Delusion lakes), as well as a weir at the outlet of Delight Lake. In addition, waters in the western portion of this district may be open by this time focusing on pink and chum salmon returns 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 returning chum and pink salmon. In the far west end of this district, systems with the latest return 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 harvest average for this district is 9,900 sockeye and 36,700 chum salmon. The department has forecast a harvestable surplus of 102,000 pink salmon from this district. Last year's harvest was 2.0 million pink and 49,000 chum salmon.

Portions of the **Kamishak Bay District** open by regulation to commercial harvest on June 1. Previous 5-year average harvests for this district (excluding the Kirschner Subdistrict) are 49,300 sockeye and 23,200 chum salmon with the majority of the sockeye salmon harvest attributed to Chenik Lake runs and the chum salmon harvest spread throughout the district. Due to poor pink salmon escapement in 2012, the department has forecast that there will not be a significant commercial harvest of pink salmon from this district. Returns of hatchery released sockeye salmon to the Kirschner Lake outfall remote release site are anticipated to be 8,200 fish. The Kirschner Lake SHA will be closed to CCPF until the conclusion of hatchery cost recovery efforts. 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 returns for Lower Cook Inlet, 2014.

SOCKEYE SALMON			Total anticipated harvest =	**60,000**
Natural stocks, (5-yr average commercial harvest)				
Southern District, (English Bay Section only)				800
Eastern District, (Aialik Bay)				0
Outer District				9,900
Kamishak Bay District, (excluding Kirschner Lake Subdistrict)				49,300
Sockeye salmon hatchery stocks	**Hatchery**	**Broodstock**	**Cost**	**Commercial**
Resurrection Bay	66,000	4,452	61,548	0
China Poot and Hazel lakes	15,600	0	15,600	0
Tutka Bay Lagoon	22,100	4,720	17,380	0
Kirschner Lake	8,200	0	8,200	0
Port Graham Bay	0	0	0	0
English Bay Lakes	3,000	394 – 5,026	0	0

PINK SALMON, ADF&G Preliminary Pink Salmon Forecast[a]			Total anticipated harvest =	**181,000**
Southern District (combined gear)				79,000
Eastern District				0
Outer District				102,000
Kamishak Bay District				0
Pink salmon hatchery stocks[b]	**Hatchery**	**Broodstock**	**Cost**	**Commercial**
Tutka Bay Lagoon	131,000	143,000 – 161,000	0	0
Port Graham Bay	428,000	13,000 – 108,000	320,000 – 415,000	0

CHUM SALMON - 5-year average harvest	Total anticipated harvest =	**62,136**
Southern District (purse seine)		226
Southern District (set gillnet)		1,900
Eastern District		110
Outer District		36,700
Kamishak Bay District		23,200

COHO SALMON - 5-year average harvest	Total anticipated harvest =	**1,840**
Southern District (purse seine)		700
Southern District (set gillnet)		1,000
Eastern District		0
Outer District		40
Kamishak Bay District		100

CHINOOK SALMON – 5-year average harvest	Total anticipated harvest =	**172**
Southern District (purse seine)		57
Southern District (set gillnet)		110
Eastern District		0
Outer District		4
Kamishak Bay District		2
Total LCI anticipated commercial common property harvest- all salmon species =		**305,148**

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

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