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Chignik Management Area Salmon Annual Management Report, 2018

by

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and

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

Symbols and Abbreviations

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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ABSTRACT

This report summarizes the 2018 commercial Pacific salmon *Oncorhynchus* spp. fisheries within the Chignik Management Area (CMA; Area L). All 5 species of North American Pacific salmon are commercially harvested in the CMA: Chinook *O. tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. The 2018 Chignik River Chinook salmon escapement of 825 fish was below the escapement goal range of 1,300 to 2,700 fish. The Chignik River early-run sockeye salmon escapement (263,979 fish) did not meet the early-run escapement goal range (350,000 to 450,000 fish) while the late-run sockeye salmon escapement (275,718 fish) was just within the lower bound of the escapement goal range (275,000 to 400,000 fish). Indexed peak pink salmon escapement was estimated at 41,900 fish, approximately 22% of the minimum required to achieve the lower bound of the even-year sustainable escapement goal (SEG) range of 170,000 to 280,000 fish. Indexed peak chum salmon escapement was well below average, with the peak escapement of 33,400 chum salmon falling below the SEG range of 45,000 to110,000 fish. A total of 128 sockeye, 1 coho, 6 pink, and 924 chum salmon were harvested. The overall 2018 CMA harvest was minimal and therefore below all recent averages. Sockeye salmon is the species that typically receives the most focus from the commercial fishing effort and the recent harvest has averaged approximately 1.4 million fish in the CMA. Harvest opportunity was limited in 2018 with 2 fishing periods of 48-hours confined to inner bays where effort targeted local stocks of coho, pink and chum salmon. There were no commercial openings targeting sockeye salmon in 2018. Of the 91 permits issued in the CMA, a total of 6 permit holders made deliveries. The exvessel value for commercial salmon harvest in the CMA totaled approximately $3,041.

Key words: Chignik Management Area (CMA), Chignik River, *Oncorhynchus*, salmon, Alaska Board of Fisheries, 2018 commercial fisheries management, Chignik Salmon Management Plan, harvest, escapement

INTRODUCTION

This report provides a summary of the 2018 commercial salmon management plan, fishing activity, escapements, and harvests in the Chignik Management Area (CMA). Most tables in this report have been verified against the Westward Region electronic fish ticket (1970 to present) and historical escapement databases (1960 to present). The salmon harvest estimates reported in this document were summarized from the fish ticket database on November 1, 2018. Data published in this report supersede any data previously published.

The Alaska Department of Fish and Game (ADF&G) manages all commercial Pacific salmon *Oncorhynchus* spp. fisheries within the Chignik Management Area (CMA; Area L). The CMA encompasses all coastal waters and inland drainages of the northwest Gulf of Alaska between Kilokak Rocks and Kupreanof Point (Figure 1). For management purposes, these waters are divided into 5 fishing districts: Eastern, Central, Chignik Bay, Western, and Perryville districts (Figure 2). There are over 100 salmon producing streams in the CMA. The Chignik River system, located in the Chignik Bay District, is the major sockeye salmon producer and supports two genetically distinct runs.

There are 5 species of Pacific salmon that are commercially harvested in the CMA: Chinook *Oncorhynchus tschawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. Sockeye salmon are the primary species targeted and the most important commercial and subsistence salmon species in the CMA although pink and chum salmon can contribute significantly to the CMA salmon harvest during certain years. Commercial salmon fishing is the economic mainstay for 5 villages: Chignik Bay, Chignik Lagoon, Chignik Lake, Perryville, and Ivanof Bay (Figure 1).

COMMERCIAL SALMON

OVERVIEW OF MANAGEMENT PLANS

The 2018 CMA commercial salmon fishery was managed based on the *Chignik Salmon Management Plan* (5 AAC 15.357)[1]. Sockeye salmon bound for the Chignik River watershed were also allocated under 2 additional management plans: The *Cape Igvak Salmon Management Plan* (5 AAC 18.360)[2] in the Kodiak Management Area (Area K) and the *Southeastern District Mainland (SEDM) Salmon Management Plan* (5 AAC 09.360)[1] in the Alaska Peninsula Management Area (Area M; Figure 1).

Chignik Salmon Management Plan

The *Chignik Salmon Management Plan* (5 AAC 15.357) was originally adopted in 1999. The goal of this plan is to allow traditional salmon fisheries in the CMA while achieving the established escapement goals for early-run (Black Lake) and late-run (Chignik Lake) sockeye salmon (Table 1) as well as local stocks of Chinook, pink, coho, and chum salmon. Purse seines and hand purse seines are the only legal commercial salmon fishing gear within the CMA. Legal seine gear ranges from 100 to 125 fathoms in length in the Chignik Bay District and from 100 to 225 fathoms in length in all other districts (5 AAC 15.332).

Cape Igvak Salmon Management Plan

The *Cape Igvak Salmon Management Plan* (5 AAC 18.360) was officially adopted in 1978 and has since undergone several amendments to change allocation criteria in the management plan (Jackson et al. 2015). The Cape Igvak Section is the westernmost section of Area K, located directly northeast of the CMA (Figure 1). Under the current plan criteria, from June 1 through July 25, 90% of the sockeye salmon harvested within the Cape Igvak Section are allocatively considered to be Chignik-bound (5 AAC 18.360(d)). If the harvestable surplus of sockeye salmon in the CMA is above or expected to be above certain thresholds (5 AAC 18.360 (a-c)), then 15% of the total Chignik sockeye salmon harvest (total includes sockeye salmon caught in the CMA, in the Cape Igvak Section, and within certain portions of SEDM) is allocated to Area K fishermen. After July 25, there are no allocative ties between the CMA and Area K.

Southeastern District Mainland Salmon Management Plan

The *Southeastern District Mainland Salmon Management Plan* (5 AAC 09.360) was formally adopted in 1980 and has undergone several amendments, mostly to allocation criteria (Fox et al. 2017). The SEDM is composed of a group of sections in the eastern end of Area M, located directly southwest of the CMA (Figure 1). Under the current plan criteria, from June 1 through July 25, 80% of the sockeye salmon harvested within certain SEDM sections during specific times are allocatively considered to be Chignik-bound. If the harvestable surplus of sockeye salmon in the CMA is above or expected to be above certain thresholds, then 7.6% of the total estimated CMA sockeye salmon harvest is allocated to SEDM fishermen (5 AAC 09.360 (a–g)). After July 25, there are no allocative ties between the CMA and Area M.

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[1] ADF&G. 2016. 2016–2019 Alaska Peninsula, Atka-Amlia Islands, Aleutian Islands, and Chignik Areas Commercial Salmon Fishing Regulations. Alaska Department of Fish and Game, Juneau.

[2] ADF&G. 2017–2020. Kodiak Area Commercial Salmon Fishing Regulations. Alaska Department of Fish and Game. Juneau.

INSEASON MANAGEMENT

ADF&G manages all CMA commercial salmon resources by emergency order based on inseason evaluation of local stock abundance and escapement objectives. A weir operated on the Chignik River, typically from late May through early September, provides daily escapement counts used to manage much of the commercial fisheries in the CMA. Aerial surveys from a fixed wing aircraft are used to enumerate local stocks of pink, chum, and coho salmon that return to systems in the CMA without weirs.

Inseason management of the CMA commercial salmon fishery is structured around 5 districts that are further broken down into 13 sections (Figure 2). These districts and sections are further subdivided into statistical reporting areas for harvest reporting and management purposes.

Chignik Bay and Central Districts Commercial Salmon Fishery

The first commercial fishing period may not open in the CMA until at least 20,000 sockeye salmon have escaped into the Chignik River, or if ADF&G determines that a strong buildup of sockeye salmon exists in the Chignik Lagoon and it is anticipated that 20,000 sockeye salmon will escape into the Chignik River. The purpose of this regulation is to allow subsistence fishing opportunity prior to the commercial fishing season and to avoid a large buildup of salmon in the lagoon.

Once the 20,000 sockeye salmon minimum has been achieved or is expected to be achieved, the Chignik Bay and Central districts (Figure 2) may open concurrently as long as the Chignik Lakes' sockeye salmon runs are meeting escapement objectives (5 AAC 15.357 (b)). Management action may also be taken for local stocks of Chinook, coho, pink, and chum salmon.

Eastern District Commercial Salmon Fishery

The Eastern District (Figure 2), by regulation (5 AAC 15.357 (c)(1)), must open concurrently with the Chignik Bay and Central districts during June. From approximately June 26 through July 8, commercial fishing may be restricted or disallowed while ADF&G evaluates the strength of the late-run sockeye salmon (5 AAC 15.357(c)(2)(B). For the remainder of the season, management of the Eastern District is based on local pink and chum salmon stocks as well as the strength of the Chignik River sockeye salmon runs (5 AAC 15.357 (c)(3)).

Western and Perryville Districts Commercial Salmon Fishery

By regulation, the Inner Castle Cape Subsection of the Western District opens concurrently with the Chignik Bay and Central districts throughout the commercial salmon fishing season (5 AAC 15.357 (b); Figures 2 and 3). Also by regulation (5 AAC 15.357 (e)), the Western District, excluding the Inner Castle Cape Subsection, may open to commercial salmon fishing for two 48-hour periods concurrently with the Chignik Bay and Central districts through July 5. There must be a minimum 48-hour closure between the two fishing periods.

Excluding the Inner Castle Cape Subsection of the Western District, and the 48-hour fishing periods, the Western and Perryville districts are closed to commercial salmon fishing through July 5 (5 AAC 15.357 (d)). Beginning July 6, these districts are managed based on the run strength of late-run sockeye salmon. After the transition period from predominantly early-run sockeye salmon to late-run sockeye salmon (usually mid-July), these districts are managed based

on local pink and chum salmon escapements, as well as late-run sockeye salmon escapement into the Chignik River.

ESCAPEMENT GOALS

In 2015, a salmon escapement goal review team, including staff from the Division of Commercial Fisheries and the Sport Fish Division, was formed to review salmon escapement goals in the CMA (Schaberg et al. 2015). The team recommended changing the areawide even-year and odd-year pink salmon sustainable escapement goals (SEG), as well as the areawide chum salmon SEG. These new goals were targeted beginning in the 2016 season.

The new areawide pink salmon escapement goals were developed based on 8 index systems distributed throughout 4 of the 5 fishing districts of the CMA. These 8 systems have consistently been surveyed and have represented approximately 53% of the annual pink salmon indexed escapement over the last 35 years. The new chum salmon goal was developed based on 6 index systems distributed throughout 4 of the 5 fishing districts that have represented approximately 57% of the annual chum salmon indexed escapement over the last 35 years. During past seasons, ADF&G has surveyed 49 pink salmon index streams and 42 chum salmon index streams in order to monitor the CMA salmon runs and to calculate an escapement estimate based on peak aerial surveys. These streams will continue to be monitored by ADF&G in season to evaluate the health and spatial distribution of the CMA pink and chum salmon runs. The new areawide pink salmon SEG in even years is 170,000–280,000 fish and in odd years 260,000–450,000 fish. The new chum salmon SEG is 45,000–110,000 fish.

There were no changes recommended to any of the other established CMA salmon escapement goals, which remained as follows: the Chignik River Chinook salmon biological escapement goal (BEG) range of 1,300–2,700 fish; the early-run sockeye salmon BEG of 350,000–450,000 fish (Table 1); and the late-run sockeye salmon SEG of 275,000–400,000 fish. The late-run SEG includes an Inriver Run Goal (IRRG) of 75,000 fish added to the lower bound of the goal range for late season subsistence needs. The IRRG was increased at the 2016 Board of Fisheries (BOF) meeting from 50,000 sockeye salmon (25,000 in August and 25,000 fish September 1–15) to 75,000 sockeye salmon (25,000 fish in August and 50,000 fish September 1–30; 5AAC 15.357(b)(3)(B)).

ESCAPEMENT AND HARVEST DATA

2018 ESCAPEMENT INFORMATION

In 2018, the majority of salmon escapements to the Chignik River were estimated through the use of the Chignik River weir. There were 2 gates in the weir, which were open 24 hours a day to allow for unrestricted fish passage. Underwater video equipment was used to count fish passing through the weir gates. At night, lights incorporated in the camera gates allowed fish to be counted. The number of fish passing the weir, by species, were counted for the first 10 minutes of each hour, and then multiplied by 6 to obtain hourly escapement estimates. Hourly estimates were summed to provide an estimate of daily fish passage. Video footage from each 10-minute escapement count was recorded and archived. Two Dual-frequency Identification Sonar (DIDSON) units were also deployed in the Chignik River from August 1 through September 6 to monitor escapement simultaneously with the Chignik River weir and to provide a comparison between the two methods. The DIDSONs were operated as part of an Alaska Sustainable Salmon Fund (AKSSF) grant project, which was in its third and final year.

All 5 species of North Pacific salmon were estimated through the weir in 2018. Since Dolly Varden *Salvelinus malma* are not commercially harvested or actively managed in the CMA, their escapement estimates are noted in the tables of this document for historical comparisons, but not discussed in detail in the escapement section below. Installation of the weir was completed on May 31 with the first escapement estimate of the 2018 season on June 1. The last full count through the weir was on August 18, after which the weir was removed due to a high-water event (Tables 2 and 3). Escapement continued to be monitored through September 6 with the use of the DIDSON. A post-weir/DIDSON sockeye salmon escapement estimate was produced using time series analysis for September 7–30.

DIDSON estimates were used this season and in 2015 due to the removal of the weir much earlier than normal. At the time of this report, ADF&G plans to perform an analysis comparing the weir estimates to DIDSON estimates after the completion of the final year of the AKSSF grant. The purpose of the analysis is to determine the accuracy of DIDSON and whether development of a correction factor is necessary to calibrate DIDSON estimates to weir estimates. Once the analysis is complete, ADF&G will determine if it is reasonable to apply the results to DIDSON escapement estimates from the past several years.

Aerial surveys were flown over the spawning grounds of the Chignik River watershed to assess sockeye salmon spawning escapement levels and distribution. Escapements to other CMA streams were also estimated via aerial surveys.

Chinook Salmon

The Chignik River is the only stream with substantial Chinook salmon escapement within the CMA. Chinook salmon began entering the Chignik River in mid-June. The run peaked by mid-July and was over by early August (Table 3; Figure 4). The Chinook salmon run was poor and did not have a single day of escapement over 60 fish. The 2018 escapement (825 Chinook salmon) was below the BEG range of 1,300–2,700 fish and well below all recent averages (Table 4; Figure 5; Schaberg et al. 2015). Escapement was the lowest recorded since 1980 (876 fish).

Sockeye Salmon

There are 2 genetically distinct sockeye salmon runs (an early and late run) that enter the Chignik River watershed and temporally overlap during late June and July (Templin et al. 1999). The early-run sockeye salmon mostly return to Black Lake and its tributaries while the late-run fish largely return to Chignik Lake and its tributaries. Commercial fishing time is regulated to reach interim escapement objectives for both runs therefore a method of estimating each stock in season is necessary.

From 1983 to 2004, scale pattern analysis (SPA) models were used to differentiate stock composition between early- and late-run fish, and the fishery was managed inseason based on the results of this analysis (Witteveen and Botz 2004). The Chignik SPA program was discontinued prior to the 2004 season due to funding limitations. However, examination of SPA data revealed that, on average, the number of early-run sockeye salmon that passed the Chignik River weir after July 4 was approximately equal to the number of late-run sockeye salmon that passed the weir prior to July 4. From 2004 through 2013, fishing periods were based on achievement of early-run escapement objectives through July 4, and then switched to late-run escapement objectives on July 5. Beginning in 2014, in-season management was based on results from genetic sampling of the sockeye salmon runs.

From 2010 through 2012, as part of an AKSSF project, sockeye salmon genetic samples were collected at the Chignik River weir approximately every 4–6 days before, during, and after the overlap period (11 sampling periods; Table 5). Genetic tissue (axillary process) was clipped from approximately 190 sockeye salmon each sampling event and was sent to ADF&G's Gene Conservation Lab where genomic DNA was extracted and assayed for 96 sockeye salmon single nucleotide polymorphisms from each fish. The goal was to provide quantifiable inseason estimates of the contribution of both Black Lake (early run) and Chignik Lake (late run) sockeye salmon stocks to Chignik River escapement estimates (Russell and Foster 2014). Beginning in 2013, sampling intensity was reduced, with effort focused during the critical overlap period (6 sampling periods; Table 5). In 2013 and 2014, funding was jointly provided by Chignik Regional Aquaculture Association (CRAA) and ADF&G. The 2015–2017 Chignik River sockeye salmon genetic sampling was again funded by AKSSF and genetic sampling in 2018 was funded by a Saltonstall-Kennedy Grant.

Samples during the 2014–2017 seasons were sent to the Gene Conservation Lab and analyzed with results available within 36–72 hours after sampling. Stock proportions obtained from each genetic sampling event were used in season by ADF&G to attribute escapement simultaneously to the early- and late-run sockeye salmon escapement objectives. Run timing for Black and Chignik lakes was modeled using methods similar to SPA modeling (Witteveen and Botz 2004).

Due to the lag time in receiving the genetic results, incorporating inseason genetic estimates effectively as an adaptive management tool often proved to be difficult. In all the years of inseason genetic sampling (2010–2017), three timing categories for the run transition have been discernible: early, mid, and late. The crossover between the categories can happen quickly and often be determined by one data point; however, that is not known until several days after the fish have passed the weir when sample results are received. This uncertainty leads to a conservative management style that will often result in over-escapement of Black Lake fish. Due to these difficulties, ADF&G decided that managing on a central tendency would lead to a greater chance of being within the range of both escapement goals. In 2018, the daily early- and late-run escapement during the transition period was initially determined by applying an average stock proportion curve developed from past inseason genetic information (2010–2017). There were 6 genetic sampling events during the traditional peak overlap period in 2018 however; the samples were not analyzed until after the final sample was taken on July 27 (Table 5). Once the samples were analyzed, the new model was applied to the 2018 escapement and the daily proportions for early- and late-run sockeye salmon from June 1 through July 31 were readjusted (Table 6). Figure 6 represents the late run timing into the Chignik River from 2010–2018.

To estimate the amount of early- and late-run sockeye in the commercial harvest, daily commercial catch information was adjusted to the date when the harvested fish would have passed the weir and the appropriate stock composition estimate was applied to harvested fish. Stock-specific harvest estimates were added to daily escapement to create total daily run size estimates.

Sockeye salmon returning to the Chignik River watershed in 2018 were managed to achieve newly established interim escapement objectives by run (Table 1). The new interim objectives were developed by ADF&G based on historical run timing to ensure achievable goals. The 2018 estimated total Chignik River watershed sockeye salmon escapement (539,697 fish; Table 2) was the lowest final estimated escapement for the Chignik River sockeye salmon run since 1969 (485,144 fish; Pedersen 1969). Escapement for both runs was well below all recent averages

(Table 7). The early run peaked in late June and the late run peaked in late July (Table 6; Figure 7). The early-run escapement (263,979 sockeye salmon) lagged behind interim escapement objectives the entire season and did not achieve the early-run BEG range of 350,000–450,000 fish (Table 7; Figure 8). The late-run estimated escapement (275,718 sockeye salmon) met the lower bound of the late-run SEG range of 275,000–400,000 fish but did not achieve interim escapement objectives until near the end of August (Tables 1, and 7; Figure 8). The late-run escapement includes a post-weir estimate for September 7–30 (18,793; Table 2).

The late-run Chignik River sockeye salmon IRRG requires 25,000 fish be escaped past the Chignik River weir in August in addition to minimum escapement needs for the month of approximately 73,000 fish (Table 1). This requires that a minimum of 98,000 sockeye salmon escape past the weir in August. The IRRG also requires that 50,000 sockeye salmon be escaped during September. In 2018, the August component of the IRRG was met with approximately 145,136 sockeye salmon (Table 2). The 2018 September IRRG component was not met with an estimated 34,915 sockeye salmon escaping into the Chignik River. The total September Chignik River sockeye salmon estimate includes 6 days of DIDSON estimates (September 1–6; 16,122 fish) and the post weir analysis estimate of (September 7–30) of 18,793 fish.

Total peak aerial survey counts of spawning sockeye salmon in Black Lake tributaries were similar to recent averages (Table 8). Survey conditions were poor during peak aerial survey counts for Chignik Lake, likely reducing the total number of sockeye salmon that were counted. Total peak aerial survey counts of spawning sockeye salmon in the Chignik Lake and its tributaries were well below all recent averages (Table 9).

Sockeye salmon escapements are often documented, via aerial survey, in low numbers (generally fewer than 3,000 fish) in several other CMA streams. Due to small run sizes and limited effort, escapement goals for these streams have not been established (Witteveen et al. 2007).

Coho Salmon

Coho salmon enter CMA drainages in mid-August and generally continue through November. The 2018 Chignik River coho salmon escapement estimate through September 6 was 64,214 fish, well above recent averages (Table 3). Late season coho salmon stream surveys were not conducted in the CMA in 2018 due to inclement weather in September and departure of ADF&G staff from Chignik prior to the peak of the coho salmon runs.

Due to late season run timing and limited directed effort, escapement goals for coho salmon have not been established in the CMA (Schaberg et al. 2015).

Pink Salmon

Pink salmon began entering the Chignik River in late June and peaked in late August with a total escapement of 3,222 fish (Table 3). The 2018 Chignik River pink salmon escapement was well below the recent 5-, 10-, and 20-year average escapements (Table 4).

Escapements into other CMA streams were monitored via aerial surveys. In season, streams that have been historically monitored for pink salmon were surveyed and compared to historical run timing and distribution. Survey conditions were poor much of the season but early surveys in late July indicated that pink salmon returns were likely late or weak and most index streams continued to have low numbers of fish throughout the season. The 2018 overall combined peak escapement estimate for the CMA was approximately 144,627 pink salmon (Table 10) and was

well below all historical averages. The current even-year SEG of 170,000–280,000 pink salmon is composed of 8 index streams in 4 of the 5 districts in the CMA. The 2018 calculated peak escapement, based on aerial surveys of the 8 index streams, did not meet the lower bound of the even-year SEG with 41,900 fish (Table 11). More pink salmon may have been estimated if survey conditions had been better; however, it is likely that the lower bound of the escapement goal would still not have been met.

Chum Salmon

A limited number of chum salmon return to the Chignik River, mainly in late July and August (Table 3). The 2018 Chignik River chum salmon escapement was 54 fish, which was less than all recent average escapements (Table 4).

Escapements into other CMA streams were monitored via aerial surveys. In season, streams that have been historically monitored for chum salmon were surveyed and compared to historical run timing and distribution. The 2018 overall combined peak escapement estimate for the CMA was 80,454 chum salmon, which was well below all recent averages (Table 12). The current SEG of 45,000–110,000 is based on 6 index streams located in 4 of the 5 CMA districts. The peak aerial surveys from the index streams were summed and compared to the areawide aggregate SEG for chum salmon (Schaberg et al. 2015). The 2018 CMA chum salmon escapement estimate of 33,400 fish based on the 6 index streams was below the SEG and well below the 10-year average (Table 13). Surveys early in the season indicated local chum salmon stocks were arriving as expected and it is likely that the escapement goal would have been met if there had been better survey conditions.

2018 HARVEST INFORMATION

Commercial salmon harvest in the CMA is organized into 3 categories. The first category includes salmon that were commercially harvested but retained for private use (home pack). The second category includes salmon that were harvested and sold as part of ADF&G's test fishery program. The third category includes salmon commercially harvested and sold within the CMA. Additionally, sockeye salmon harvested under the Cape Igvak and SEDM management plans are reported separately in this report. For allocative purposes, the BOF has determined that specific portions of these harvests are considered bound for the Chignik River.

Salmon harvested under subsistence regulations, in ADF&G's Chignik Lagoon test fishery or retained as home pack from the commercial fishery, were not included in any of the harvest allocations. All harvest information in this report was calculated from the ADF&G fish ticket database and supersedes any previously published data. Confidentiality rules prohibit the release of any harvest information by district due to low participation in the 2018 Chignik fishery. A complete summary of 2018 CMA commercial salmon harvest and effort can be found in Table 14.

Chinook Salmon

No Chinook salmon were harvested during the limited commercial fishing periods in 2018 (Table 15). The most recent 10-year average harvest of Chinook salmon in the CMA is 7,062 fish. Tables 16 and 17 provide historical context and 2018 harvest information regarding Chinook salmon harvest in the CMA.

Sockeye Salmon

The 2018 CMA sockeye salmon harvest of 128 fish was incidental to the targeted pink and chum salmon fishery during early July in select bays of the CMA. Traditional sockeye salmon harvest areas remained closed the entire season throughout the CMA due to the poor runs. There was no ADF&G test fishery in 2018 (Table 18). Tables 18 and 19 provide historical context and 2018 harvest information for sockeye salmon in the CMA.

The Cape Igvak and SEDM fisheries were not opened during the allocation period (June 1–July 25) due to very little sockeye salmon harvest in the CMA. Therefore, no sockeye salmon allocatively considered Chignik-bound were harvested as part of the Cape Igvak or SEDM fisheries (Table 20).

The most recent 10-year average for Chignik-bound sockeye salmon harvest is approximately 1.7 million fish, while average escapement into the Chignik River is 772,000 fish (Table 21). The combined harvest and escapement for the most recent 10-year average is approximately 2.4 million fish. The total 2018 Chignik River sockeye salmon run (harvest and escapement) was 539,825 fish, approximately 22% of the 2008–2017 average annual run (Table 21; Figures 9, 10, and 11).

The 2018 Chignik River early sockeye salmon run was forecasted to be approximately 848,000 fish. The late sockeye salmon run was forecasted to be 901,000 fish. The early run return was approximately 590,000 sockeye salmon below the forecast, whereas the late run was approximately 630,000 fish below the forecast (Table 22).

Coho Salmon

One coho salmon was harvested in the CMA during the 48-hour fishing period in July (Tables 23 and 24). The most recent 10-year average harvest of coho salmon in the CMA is 110,927 fish. Tables 23 and 24 provide historical context and 2018 harvest information regarding coho salmon harvest in the CMA.

Pink Salmon

A total of 6 pink salmon were harvested during the 48-hour fishing period in early July. The even-year average harvest of pink salmon from 2008–2016 is 702,095 fish. Tables 25 and 26 provide historical context and 2018 harvest information regarding pink salmon harvest in the CMA.

Chum Salmon

A total of 924 chum salmon were harvested from the CMA during the 2018 season. The most recent 10-year average harvest of chum salmon in the CMA is 252,650 fish. Tables 27 and 28 provide historical context and 2018 harvest information regarding chum salmon harvest in the CMA.

2018 COMMERCIAL SALMON FISHERY SUMMARY

Initial sockeye salmon escapement through the Chignik River weir was exceedingly below average and continued to track below interim escapement objectives throughout the 2018 season. As mentioned previously in this report under *2018 Escapement Information*, in order to estimate the early- and late-run fish passing the weir in season, ADF&G applied an average stock proportion curve developed from genetic data collected during the 2010–2017 seasons. The

model from which the curve was developed assumed that early-run fish escape upriver through July 31. Late-run sockeye salmon begin escaping in mid-June and all fish passing the weir beginning August 1 were considered late run. Through July 31, the early run was estimated to be approximately 192,000 fish, far below the final early-run goal. The late-run sockeye salmon escapement was estimated to be approximately 168,000 fish through July 31 and was tracking slightly above the minimum escapement objectives for that time of year.

Genetic samples were collected every 4 or 5 days at the weir from approximately June 26 to July 27. The samples were sent to the genetics lab in Anchorage and analyzed after the final sampling period. Once the samples were analyzed, the new model was applied to the 2018 escapement and the daily proportions for early- and late-run sockeye salmon from June 1 through July 31 were readjusted. The estimated Chignik River early-run sockeye salmon escapement was adjusted to 263,979 fish which was still well below the final escapement goal and all recent averages. The late-run sockeye salmon estimated escapement through July 31 was adjusted to 95,667 fish, dropping the estimated escapement well below escapement objectives. The late-run escapement lagged behind escapement objectives most of the season; however, it did begin meeting the lower bound objectives at the end of August.

Due to the poor escapement and lack of a harvestable surplus of fish, there were no directed sockeye salmon fisheries this season. Areas where sockeye salmon were traditionally harvested remained closed; however, select inner bays in the CMA where pink and chum salmon are typically harvested did open for a short commercial fishing period in July (Figure 12). The 128 sockeye salmon harvested were incidentally harvested during this fishing period. The 2018 total Chignik run including escapement and harvest (593,825 fish; Table 21) was the lowest on record since statehood.

Between July 6 and July 15, ADF&G may conduct at least one 48-hour fishery in select bays of the Central, Western, and Perryville districts to provide early harvest opportunity on pink and chum salmon (Wilburn 2017). After July 15, management of these areas is based on inseason escapement information. One 48-hour fishery occurred on July 7–8 in portions of Kujulik Bay in the Central District, Dorner, Ivan and Fishrack bays of the Western District, and Humpback and Ivanoff bays of the Perryville District. Very few permit holders made deliveries during this fishing period and low harvest indicated that there were not many fish present (Table 14). Aerial surveys on July 8 confirmed that while chum salmon were beginning to arrive in some areas, pink salmon may have been late or weak. Additional surveys throughout the season confirmed that local pink salmon runs were weak and as a result, no other pink and chum salmon commercial fishing periods occurred.

A second commercial fishing period began on September 3 to target local stocks of coho salmon. Fishermen expressed interest to target coho salmon and had an available market. ADF&G documented coho salmon beginning to enter some local CMA streams via aerial survey on September 1. Based on this survey, ADF&G determined that a short fishing period would be appropriate in selected inner bays to provide opportunity on coho salmon and act as a test fishery to further assess the strength of the arriving coho salmon run. There were no deliveries during this fishing period and no further fishing periods were prosecuted in the CMA.

Out of 91 permits issued in the CMA for 2018, a total of 6 permits made deliveries (Table 14). For the first time since statehood, no commercial fishing periods targeting sockeye salmon

occurred during the commercial salmon fishing season in the CMA. A summary of emergency orders outlining the commercial salmon fishery is located in Appendix A.

Salmon were delivered to 3 processors in 2018: Trident Seafoods located in Chignik Bay, Ocean Beauty Seafoods in Alitak, and International Seafoods of Alaska in Kodiak. Processors filleted or headed and gutted the majority of Chignik salmon.

Due to the unprecedented poor returns of the 2018 Chignik River sockeye salmon early run, ADF&G took emergency order (EO) action under AS 16.05.060 Emergency Orders and reduced fishing time in the regularly scheduled fishing periods of the June South Unimak and Shumagin Islands fishery (Area M). In July, ADF&G again took action in the post-June fishery (mid-July) by leaving a portion of the "Dolgoi Island" area closed during regularly scheduled fishing periods. Past studies have indicated a strong presence of Chignik-bound sockeye salmon traversing the South Peninsula management area in June and the department determined that EO action was warranted in order to increase the number of sockeye salmon returning to the Chignik Area. The restrictions placed in effect by ADF&G were to help minimize harvesting of Chignik stocks in order to ensure future sustainability for Chignik Area sockeye salmon. Additionally, in early July, Chignik fishermen petitioned the BOF to take future emergency action in portions of Area M to protect the remainder of the 2018 Chignik River sockeye salmon run. During the Alaska Board of Fisheries Emergency Petitions Meeting in Anchorage on July 17, the BOF declared an emergency and established emergency regulatory action extending the department's existing closures in Area M through early August pending late run interim escapement objectives being met. For further information on actions taken in Area M for the conservation of the Chignik sockeye salmon runs, please refer to Fox et al. (2019).

ECONOMIC VALUE

In 2018, 6 CMA permit holders made deliveries (Table 29). The exvessel value of the 2018 CMA commercial salmon harvest was about $3,000, or approximately $500 per active permit holder (Table 29; Figure 14). Over the last 10 years, participation has averaged 66 active permits each year with an average exvessel value per active permit of approximately $193,000.

CHIGNIK LAGOON TEST FISHERY

ADF&G conducts test fisheries in Chignik Lagoon for multiple purposes. The main purpose of the Chignik Lagoon test fisheries is to assess sockeye salmon abundance in Chignik Lagoon during closures. Test fisheries are also used to offset the costs of operations at the Chignik weir (Wilburn 2015). No test fisheries were conducted in 2018.

SUBSISTENCE SALMON

State subsistence fishing was open for sockeye salmon the entire season in the CMA; however, the Federal Subsistence Board restricted fishing for sockeye salmon to only federally qualified subsistence users with a Social and Cultural Harvest permit from June 22 through July 31 in all federal public waters of the Chignik River Drainage. Subsistence fishing in the Chignik River for sockeye salmon reopened to all state subsistence users beginning August 1.

Beginning July 11, subsistence fishing for Chinook salmon was closed for the season in the Chignik River drainage.

The 2018 CMA subsistence harvest will not be available until after subsistence permits are returned and tabulated in the spring of 2019. Historical subsistence harvests can be found in Table 30.

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TABLES AND FIGURES

Table 1.–Chignik River sockeye salmon escapement objectives, 2018.

	Black Lake			Chignik Lake		
Date	Lower		Upper	Lower		Upper
6/5	12,000	–	17,000			
6/10	45,000	–	55,000			
6/15	95,000	–	125,000			
6/20	150,000	–	230,000	1,000	–	2,000
6/25	215,000	–	320,000	3,000	–	5,000
6/30	272,000	–	355,500	6,000	–	11,200
7/5	300,000	–	385,500	10,000	–	23,000
7/10	330,000	–	405,000	22,000	–	42,000
7/15	336,000	–	420,000	41,000	–	82,000
7/20	348,000	–	436,000	68,000	–	136,000
7/25	350,000	–	448,000	98,000	–	196,000
7/30	350,000	–	450,000	127,000	–	255,000
8/4				155,000	–	280,000
8/9				172,000	–	308,500
8/14				190,000	–	320,000
8/19				206,000	–	331,000
8/24				218,000	–	340,000
8/29				223,000	–	348,000
8/30				225,000	–	350,000
September				275,000	–	400,000
Escapement Goals						
Black Lake	350,000	–	450,000			
Chignik Lake[a]	275,000	–	400,000			

[a] The late-run escapement objective includes the late-run sockeye salmon sustainable escapement goal (SEG; 200,000–400,000) plus an additional 75,000 sockeye salmon inriver run goal (IRRG; 25,000 in August and 50,000 in September) to meet late-season subsistence needs. The IRRG (75,000 fish) is added to the lower bound escapement objectives beginning in August.

Table 2.–Estimated Chignik River sockeye salmon escapement, by day and management objective period, 2018.

June			July		
Date	Daily	Total	Date	Daily	Total
6/1	30	30	7/1	9,480	9,480
6/2	7	37	7/2	8,824	18,304
6/3	31	68	7/3	913	19,217
6/4	30	98	7/4	8,548	27,765
6/5	168	266	7/5	846	28,611
6/6	151	417	7/6	1,236	29,847
6/7	424	841	7/7	470	30,317
6/8	492	1,333	7/8	1,015	31,332
6/9	180	1,513	7/9	235	31,567
6/10	482	1,995	7/10	2,225	33,792
6/11	908	2,903	7/11	240	34,032
6/12	617	3,520	7/12	11,989	46,021
6/13	1,018	4,538	7/13	2,854	48,875
6/14	810	5,348	7/14	1,446	50,321
6/15	266	5,614	7/15	12,070	62,391
6/16	1,798	7,412	7/16	9,898	72,289
6/17	3,141	10,553	7/17	5,518	77,807
6/18	1,347	11,900	7/18	21,095	98,902
6/19	2,817	14,717	7/19	6,670	105,572
6/20	18,660	33,377	7/20	17,592	123,164
6/21	7,645	41,022	7/21	11,758	134,922
6/22	12,084	53,106	7/22	3,735	138,657
6/23	15,367	68,473	7/23	10,952	149,609
6/24	14,925	83,398	7/24	6,123	155,732
6/25	1,838	85,236	7/25	8,938	164,670
6/26	3,786	89,022	7/26	10,010	174,680
6/27	18,557	107,579	7/27	15,267	189,947
6/28	12,691	120,270	7/28	6,316	196,263
6/29	13,178	133,448	7/29	7,356	203,619
6/30	10,800	144,248	7/30	6,372	209,991
June total: 144,248			7/31	5,407	215,398
			July total: 215,398		

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August			September		
Date	Daily	Total	Date	Daily	Total
8/1	4,921	4,921	9/1	6,390	6,390
8/2	2,221	7,142	9/2	3,342	9,732
8/3	2,611	9,753	9/3	1,373	11,105
8/4	10,205	19,958	9/4	2,091	13,196
8/5	5,632	25,590	9/5	1,766	14,962
8/6	5,625	31,215	9/6	1,160	16,122
8/7	4,933	36,148	Post weir est: (9/7–9/30)		18,793
8/8	1,837	37,985	September total: 34,915		
8/9	6,243	44,228			
8/10	1,708	45,936			
8/11	2,249	48,185			
8/12	730	48,915	Early run total:[b]		263,979
8/13	3,494	52,409	Late run total:[b]		275,718
8/14	1,486	53,895	Season total:		539,697
8/15	2,328	56,223			
8/16	3,397	59,620			
8/17	542	60,162			
8/18[a]	249	60,411			
8/19	1,935	62,346			
8/20	13,485	75,831			
8/21	3,372	79,203			
8/22	2,473	81,676			
8/23	3,019	84,695			
8/24	6,117	90,812			
8/25	5,449	96,261			
8/26	9,208	105,469			
8/27	7,187	112,656			
8/28	8,230	120,886			
8/29	6,750	127,636			
8/30	9,485	137,121			
8/31	8,015	145,136			
August total: 145,136					

Note: Beginning in 2004, estimated total escapement for early-run sockeye salmon was based on Chignik River weir counts through July 4, based on scale pattern analysis studies. After July 4, sockeye salmon through the weir were considered late-run escapement. From 2014–2017, inseason genetic samples were used to determine the apportionment of the two runs during late June and mid-July when the runs overlap instead of the July 4 date. In 2018, an average stock proportion curve developed from inseason genetics data collected from 2010–2017 was used to define the run transition inseason and post season (after July 31) adjustments were made using the inseason genetic samples collect during the 2018 season.

[a] The weir was removed after the completion of the 8/18 count. DIDSON (Dual Identification Sonar) was used to enumerate sockeye salmon escapement through 9/6. A post-weir estimate was produced for 9/7–9/30 using a time series analysis based on the rate of decay of the run (Appendix B).

[b] The results of genetic samples collected inseason were used to determine the apportionment of the early- and late-run Chignik River sockeye salmon in 2018.

Table 3.–Estimated Chignik River Chinook, coho, pink, and chum salmon, and Dolly Varden escapement, by day, 2018.

	Chinook		Coho		Pink		Chum		Dolly Varden	
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
6/1	0	0	0	0	0	0	0	0	0	0
6/2	0	0	0	0	0	0	0	0	0	0
6/3	0	0	0	0	0	0	0	0	24	24
6/4	0	0	0	0	0	0	0	0	6	30
6/5	0	0	0	0	0	0	0	0	12	42
6/6	0	0	0	0	0	0	0	0	30	72
6/7	0	0	0	0	0	0	0	0	12	84
6/8	0	0	0	0	0	0	0	0	0	84
6/9	6	6	0	0	0	0	0	0	12	96
6/10	6	12	0	0	0	0	0	0	12	108
6/11	6	18	0	0	0	0	0	0	24	132
6/12	0	18	0	0	0	0	0	0	36	168
6/13	0	18	0	0	0	0	0	0	12	180
6/14	0	18	0	0	0	0	0	0	30	210
6/15	0	18	0	0	0	0	0	0	6	216
6/16	0	18	0	0	0	0	0	0	36	252
6/17	0	18	0	0	0	0	0	0	30	282
6/18	0	18	0	0	0	0	0	0	56	338
6/19	0	18	0	0	0	0	0	0	54	392
6/20	0	18	0	0	0	0	0	0	304	696
6/21	0	18	0	0	0	0	0	0	144	840
6/22	0	18	0	0	0	0	0	0	144	984
6/23	30	48	0	0	0	0	0	0	204	1,188
6/24	18	66	0	0	12	12	0	0	336	1,524
6/25	12	78	0	0	0	12	0	0	42	1,566
6/26	1	79	0	0	0	12	0	0	26	1,592
6/27	18	97	0	0	0	12	0	0	354	1,946
6/28	12	109	0	0	0	12	0	0	486	2,432
6/29	12	121	0	0	0	12	0	0	466	2,898
6/30	6	127	0	0	0	12	0	0	295	3,193
7/1	0	127	0	0	6	18	0	0	186	3,379
7/2	12	139	0	0	0	18	6	6	144	3,523
7/3	18	157	0	0	0	18	0	6	18	3,541
7/4	6	163	0	0	0	18	0	6	126	3,667
7/5	7	170	0	0	0	18	0	6	42	3,709
7/6	6	176	0	0	0	18	0	6	36	3,745
7/7	8	184	0	0	0	18	0	6	50	3,795
7/8	18	202	0	0	1	19	0	6	72	3,867
7/9	13	215	0	0	0	19	0	6	14	3,881
7/10	14	229	0	0	0	19	0	6	38	3,919

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	Chinook		Coho		Pink		Chum		Dolly Varden	
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/11	32	261	0	0	0	19	0	6	24	3,943
7/12	54	315	0	0	7	26	6	12	133	4,076
7/13	30	345	0	0	12	38	0	12	108	4,184
7/14	13	358	0	0	0	38	0	12	6	4,190
7/15	60	418	0	0	12	50	0	12	66	4,256
7/16	48	466	0	0	12	62	0	12	30	4,286
7/17	43	509	0	0	19	81	0	12	12	4,298
7/18	36	545	0	0	36	117	0	12	18	4,316
7/19	60	605	0	0	42	159	0	12	12	4,328
7/20	36	641	0	0	30	189	0	12	18	4,346
7/21	12	653	0	0	42	231	6	18	12	4,358
7/22	6	659	0	0	18	249	0	18	0	4,358
7/23	13	672	0	0	18	267	0	18	0	4,358
7/24	6	678	0	0	12	279	0	18	0	4,358
7/25	12	690	0	0	6	285	0	18	0	4,358
7/26	18	708	0	0	12	297	0	18	18	4,376
7/27	13	721	0	0	25	322	6	24	12	4,388
7/28	18	739	0	0	24	346	6	30	6	4,394
7/29	18	757	0	0	18	364	0	30	12	4,406
7/30	6	763	0	0	18	382	0	30	12	4,418
7/31	12	775	0	0	42	424	12	42	5	4,423
8/1	6	781	6	6	24	448	0	42	12	4,435
8/2	1	782	0	6	13	461	0	42	0	4,435
8/3	6	788	0	6	6	467	6	48	6	4,441
8/4	0	788	0	6	62	529	0	48	18	4,459
8/5	6	794	6	12	24	553	0	48	30	4,489
8/6	0	794	0	12	6	559	6	54	6	4,495
8/7	0	794	0	12	18	577	0	54	6	4,501
8/8	0	794	1	13	6	583	0	54	12	4,513
8/9	0	794	0	13	54	637	0	54	13	4,526
8/10	12	806	25	38	12	649	0	54	12	4,538
8/11	12	818	18	56	18	667	0	54	0	4,538
8/12	7	825	12	68	32	699	0	54	6	4,544
8/13	0	825	37	105	24	723	0	54	6	4,550
8/14	0	825	66	171	0	723	0	54	0	4,550
8/15	0	825	84	255	18	741	0	54	0	4,550
8/16	0	825	322	577	8	749	0	54	0	4,550
8/17	0	825	36	613	0	749	0	54	0	4,550
8/18	0	825	18	631	6	755	0	54	0	4,550
8/19[a]	0	825	58	689	17	772	0	54	0	4,550
8/20	0	825	415	1,104	104	876	0	54	0	4,550

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	Chinook		Coho		Pink		Chum		Dolly Varden	
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
8/21	0	825	272	1,376	58	934	0	54	0	4,550
8/22	0	825	338	1,714	69	1,003	0	54	0	4,550
8/23	0	825	604	2,318	121	1,124	0	54	0	4,550
8/24	0	825	1,292	3,610	121	1,245	0	54	0	4,550
8/25	0	825	1,211	4,821	0	1,245	0	54	0	4,550
8/26	0	825	2,558	7,379	0	1,245	0	54	0	4,550
8/27	0	825	3,514	10,893	160	1,405	0	54	0	4,550
8/28	0	825	3,559	14,452	222	1,627	0	54	0	4,550
8/29	0	825	1,841	16,293	614	2,241	0	54	0	4,550
8/30	0	825	1,963	18,256	0	2,241	0	54	0	4,550
8/31	0	825	3,883	22,139	168	2,409	0	54	0	4,550
9/1	0	825	6,035	28,174	355	2,764	0	54	0	4,550
9/2	0	825	10,026	38,200	0	2,764	0	54	0	4,550
9/3	0	825	7,781	45,981	458	3,222	0	54	0	4,550
9/4	0	825	6,693	52,674	0	3,222	0	54	0	4,550
9/5	0	825	5,740	58,414	0	3,222	0	54	0	4,550
9/6	0	825	5,800	64,214	0	3,222	0	54	0	4,550
Total		825		64,214		3,222		54		4,550

[a] The Chignik River weir was removed after August 18 due to a high-water event. Beginning August 19 DIDSON sonar units were used to estimate escapement.

Table 4.–Estimated Chignik River Chinook, coho, pink, and chum salmon, and Dolly Varden escapement, 1980–2018.

	Escapement [a]				
Year	Chinook[b]	Coho[c]	Pink[c]	Chum[c]	Dolly Varden[c]
1980	876	ND	ND	ND	ND
1981	1,603	ND	ND	ND	ND
1982	2,412	ND	ND	ND	ND
1983	1,943	ND	ND	ND	ND
1984	5,806	ND	ND	ND	ND
1985	3,144	ND	ND	ND	ND
1986	3,612	ND	ND	ND	ND
1987	2,624	ND	ND	ND	ND
1988	4,868	ND	ND	ND	ND
1989	3,316	ND	ND	ND	ND
1990	4,364	ND	ND	ND	ND
1991	4,531	ND	ND	ND	ND
1992	3,806	ND	ND	ND	ND
1993	1,946	ND	ND	ND	ND
1994	2,963	ND	ND	ND	ND
1995	4,288	ND	ND	ND	ND
1996	3,488	16,843	6,030	136	54,726
1997	3,824	10,810	4,880	483	26,657
1998	3,075	14,124	11,490	156	15,235
1999	3,728	2,414	2,524	48	15,025
2000	4,285	7,062	4,284	48	ND
2001	3,028	103	1,464	66	6,416
2002	3,541	9,262	3,417	67	8,179
2003	6,412	7,635	1,897	68	36,397
2004	7,840	18,810	2,243	276	20,086
2005	6,486	18,206	13,637	408	13,940
2006	3,535	37,113	18,401	99	2,031
2007	2,000	10,299	20,464	118	6,993
2008	1,730	13,958	22,341	124	14,776
2009	1,680	7,670	12,873	109	8,618
2010	3,679	5,152	3,670	95	17,578
2011	2,728	5,293	16,298	145	14,133
2012	1,449	2,663	2,849	73	18,032
2013	1,253	16,783	7,231	72	17,230
2014	2,895	15,572	3,171	58	44,899
2015[d]	2,054	60,209	4,269	54	16,346
2016	1,843	14,187	486	114	24,625
2017	1,137	33,270	123,531	615	7,664
2018[d]	825	64,214	3,222	54	4,550
Averages					
1998–2017	3,219	14,989	13,827	141	16,221
2008–2017	2,045	17,476	19,672	146	18,390
2013–2017	1,836	28,004	27,738	183	22,153

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[a] A video monitoring system was installed at the Chignik weir in 1994.

[b] No escapement adjustments are made for Chinook salmon that spawn below the weir, or those removed by the sport fishery. Only Chinook salmon larger than approximately 650 mm were enumerated for escapement estimates from 1980 to 1993.

[c] No reliable escapement (ND) estimates were generated for pink, chum, or coho salmon or Dolly Varden from 1980 to 1996. No post-weir estimates are reported in this table for pink and chum salmon or Dolly Varden.

[d] Due to early removal of the weir in 2015 (August 20) and 2018 (August 19), post-weir escapement estimates for coho salmon were produced using DIDSON.

Table 5.–Estimates of stock composition, with upper and lower 90% credibility intervals, and standard deviations for escapement through the Chignik River weir, by sample date, 2010–2018.

			Black Lake				Chignik Lake			
Year	Date	Sample size	Proportion	Lower	Upper	SD	Proportion	Lower	Upper	SD
	6/14	190	0.959	0.894	1.000	0.036	0.041	0.000	0.106	0.036
	6/21	189	0.995	0.966	1.000	0.014	0.005	0.000	0.034	0.014
	6/27	189	0.924	0.794	1.000	0.075	0.076	0.000	0.206	0.075
	7/1	189	0.823	0.724	0.912	0.057	0.177	0.088	0.276	0.057
	7/5	190	0.788	0.699	0.871	0.052	0.212	0.129	0.301	0.052
2010	7/8–7/9	190	0.784	0.687	0.870	0.056	0.216	0.13	0.313	0.056
	7/11	190	0.519	0.409	0.625	0.066	0.481	0.375	0.591	0.066
	7/14	188	0.227	0.154	0.306	0.046	0.773	0.694	0.846	0.046
	7/18–7/19	188	0.293	0.214	0.377	0.05	0.707	0.623	0.786	0.05
	7/23	186	0.108	0.052	0.173	0.037	0.892	0.827	0.948	0.037
	7/30	190	0.013	0.000	0.062	0.022	0.987	0.938	1.000	0.022
	6/10	188	0.998	0.988	1.000	0.005	0.002	0.000	0.012	0.005
	6/17	188	1.000	1.000	1.000	0.002	0.000	0.000	0.000	0.002
	6/24	188	0.976	0.888	1.000	0.040	0.024	0.000	0.112	0.04
	6/28	190	0.832	0.744	0.918	0.054	0.168	0.082	0.256	0.054
	7/2	190	0.953	0.886	1.000	0.036	0.047	0.000	0.114	0.036
2011	7/5	190	0.785	0.696	0.866	0.052	0.215	0.134	0.304	0.052
	7/9–7/10	187	0.719	0.625	0.807	0.055	0.281	0.193	0.375	0.055
	7/12–7/13	190	0.297	0.214	0.384	0.052	0.703	0.616	0.786	0.052
	7/14	190	0.308	0.217	0.402	0.056	0.692	0.598	0.783	0.056
	7/21	186	0.123	0.062	0.192	0.039	0.877	0.808	0.938	0.039
	7/28	189	0.036	0.000	0.088	0.029	0.964	0.912	1.000	0.029
	6/11	188	0.976	0.904	1.000	0.034	0.024	0.000	0.096	0.034
	6/18	190	0.964	0.882	1.000	0.042	0.036	0.000	0.118	0.042
	6/25	189	0.993	0.955	1.000	0.017	0.007	0.000	0.045	0.017
	7/1	190	0.644	0.544	0.733	0.058	0.356	0.267	0.456	0.058
	7/5	187	0.485	0.396	0.574	0.054	0.515	0.426	0.604	0.054
2012	7/8–7/9	187	0.099	0.005	0.235	0.071	0.901	0.765	0.995	0.071
	7/11	189	0.225	0.147	0.306	0.048	0.775	0.694	0.853	0.048
	7/14	190	0.070	0.011	0.132	0.036	0.930	0.868	0.989	0.036
	7/17	189	0.003	0.000	0.020	0.009	0.997	0.980	1.000	0.009
	7/21	190	0.006	0.000	0.049	0.018	0.994	0.951	1.000	0.018
	7/28	170	0.000	0.000	0.000	0.001	1.000	1.000	1.000	0.001
	6/27	188	0.911	0.838	1.000	0.045	0.089	0.000	0.162	0.024
	7/1	189	0.858	0.761	0.942	0.055	0.142	0.058	0.239	0.055
2013	7/5	169	0.612	0.515	0.705	0.058	0.388	0.295	0.485	0.058
	7/8–7/9	187	0.429	0.338	0.519	0.055	0.571	0.481	0.662	0.055
	7/14	190	0.288	0.196	0.384	0.057	0.712	0.616	0.804	0.057

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Table 5.–Page 2 of 2.

			Black Lake				Chignik Lake			
Year	Date	Sample size	Proportion	Lower	Upper	SD	Proportion	Lower	Upper	SD
2014	6/28	189	0.825	0.745	0.896	0.046	0.175	0.104	0.255	0.046
	7/2	189	0.785	0.690	0.874	0.056	0.215	0.126	0.310	0.056
	7/6	189	0.618	0.519	0.714	0.059	0.382	0.286	0.481	0.059
	7/10	188	0.357	0.258	0.460	0.062	0.643	0.540	0.742	0.062
	7/14	188	0.220	0.139	0.307	0.051	0.780	0.693	0.861	0.051
	7/18	189	0.143	0.064	0.227	0.050	0.857	0.773	0.936	0.05
2015	6/27	190	0.905	0.815	1.000	0.054	0.095	0.000	0.185	0.054
	7/1	188	0.932	0.856	0.996	0.042	0.068	0.004	0.144	0.042
	7/5	187	0.864	0.775	0.944	0.051	0.136	0.056	0.225	0.051
	7/12	190	0.894	0.790	0.995	0.061	0.106	0.005	0.210	0.061
	7/18	182	0.363	0.253	0.476	0.068	0.637	0.524	0.747	0.068
	7/25	187	0.383	0.284	0.485	0.061	0.617	0.515	0.716	0.061
2016	6/27	189	0.988	0.938	1.000	0.022	0.012	0.000	0.062	0.022
	7/2	156	0.799	0.694	0.895	0.061	0.201	0.105	0.306	0.061
	7/7	190	0.626	0.535	0.717	0.055	0.374	0.283	0.465	0.055
	7/12	180	0.422	0.338	0.506	0.051	0.578	0.494	0.662	0.051
	7/17	187	0.199	0.130	0.272	0.043	0.801	0.728	0.870	0.043
	7/26–7/27	190	0.135	0.076	0.202	0.038	0.865	0.798	0.924	0.038
2017	6/25–6/26	189	0.986	0.917	1.000	0.029	0.014	0.000	0.083	0.029
	7/1	190	0.855	0.779	0.922	0.044	0.145	0.078	0.221	0.044
	7/7–7/8	189	0.715	0.622	0.803	0.055	0.285	0.197	0.378	0.055
	7/13	189	0.317	0.229	0.408	0.055	0.683	0.592	0.771	0.055
	7/18	188	0.417	0.330	0.504	0.053	0.583	0.496	0.670	0.053
	7/23	188	0.429	0.332	0.526	0.059	0.571	0.474	0.668	0.059
2018	6/26-6/27	189	0.989	0.931	1.000	0.026	0.011	0.000	0.069	0.026
	7/2	188	0.754	0.629	0.871	0.073	0.246	0.129	0.371	0.073
	7/8-7/12	185	0.884	0.803	0.954	0.046	0.116	0.046	0.197	0.046
	7/17	189	0.636	0.532	0.735	0.062	0.364	0.265	0.468	0.062
	7/22-7/23	189	0.559	0.453	0.659	0.063	0.441	0.341	0.547	0.063
	7/27	186	0.309	0.212	0.410	0.060	0.691	0.590	0.788	0.060

Table 6.–Genetic stock proportions of estimated Chignik River sockeye salmon escapement by day, 2018.

Date	Daily escapement	Cumulative escapement	Early run	Late run
6/1	30	30	30	0
6/2	7	37	7	0
6/3	31	68	31	0
6/4	30	98	30	0
6/5	168	266	168	0
6/6	151	417	151	0
6/7	424	841	424	0
6/8	492	1,333	492	0
6/9	180	1,513	180	0
6/10	482	1,995	482	0
6/11	908	2,903	908	0
6/12	617	3,520	617	0
6/13	1,018	4,538	1,018	0
6/14	810	5,348	810	0
6/15	266	5,614	266	0
6/16	1,798	7,412	1,797	1
6/17	3,141	10,553	3,140	1
6/18	1,347	11,900	1,346	1
6/19	2,817	14,717	2,815	2
6/20	18,660	33,377	18,645	15
6/21	7,645	41,022	7,637	8
6/22	12,084	53,106	12,069	15
6/23	15,367	68,473	15,342	25
6/24	14,925	83,398	14,895	30
6/25	1,838	85,236	1,833	5
6/26	3,786	89,022	3,774	12
6/27	18,557	107,579	18,482	75
6/28	12,691	120,270	12,626	65
6/29	13,178	133,448	13,094	84
6/30	10,800	144,248	10,713	87
7/1	9,480	153,728	9,384	96
7/2	8,824	162,552	8,712	112
7/3	913	163,465	898	15
7/4	8,548	172,013	8,376	172
7/5	846	172,859	825	21

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Table 6.–Page 2 of 3.

Date	Daily escapement	Cumulative escapement	Early run	Late run
7/6	1,236	174,095	1,197	39
7/7	470	174,565	451	19
7/8	1,015	175,580	965	50
7/9	235	175,815	221	14
7/10	2,225	178,040	2,056	169
7/11	240	178,280	217	23
7/12	11,989	190,269	10,604	1,385
7/13	2,854	193,123	2,451	403
7/14	1,446	194,569	1,197	249
7/15	12,070	206,639	9,567	2,503
7/16	9,898	216,537	7,444	2,454
7/17	5,518	222,055	3,898	1,620
7/18	21,095	243,150	13,844	7,251
7/19	6,670	249,820	4,018	2,652
7/20	17,592	267,412	9,603	7,989
7/21	11,758	279,170	5,739	6,019
7/22	3,735	282,905	1,609	2,126
7/23	10,952	293,857	4,108	6,844
7/24	6,123	299,980	1,975	4,148
7/25	8,938	308,918	2,451	6,487
7/26	10,010	318,928	2,309	7,701
7/27	15,267	334,195	2,934	12,333
7/28	6,316	340,511	1,003	5,313
7/29	7,356	347,867	958	6,398
7/30	6,372	354,239	677	5,695
7/31	5,407	359,646	466	4,941
8/1	4,921	364,567	0	4,921
8/2	2,221	366,788	0	2,221
8/3	2,611	369,399	0	2,611
8/4	10,205	379,604	0	10,205
8/5	5,632	385,236	0	5,632
8/6	5,625	390,861	0	5,625
8/7	4,933	395,794	0	4,933
8/8	1,837	397,631	0	1,837
8/9	6,243	403,874	0	6,243
8/10	1,708	405,582	0	1,708

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Table 6.–Page 3 of 3.

Date	Daily escapement	Cumulative escapement	Early run	Late run
8/11	2,249	407,831	0	2,249
8/12	730	408,561	0	730
8/13	3,494	412,055	0	3,494
8/14	1,486	413,541	0	1,486
8/15	2,328	415,869	0	2,328
8/16	3,397	419,266	0	3,397
8/17	542	419,808	0	542
8/18	249	420,057	0	249
8/19	1,935	421,992	0	1,935
8/20	13,485	435,477	0	13,485
8/21	3,372	438,849	0	3,372
8/22	2,473	441,322	0	2,473
8/23	3,019	444,341	0	3,019
8/24	6,117	450,458	0	6,117
8/25	5,449	455,907	0	5,449
8/26	9,208	465,115	0	9,208
8/27	7,187	472,302	0	7,187
8/28	8,230	480,532	0	8,230
8/29	6,750	487,282	0	6,750
8/30	9,485	496,767	0	9,485
8/31	8,015	504,782	0	8,015
9/1	6,390	511,172	0	6,390
9/2	3,342	514,514	0	3,342
9/3	1,373	515,887	0	1,373
9/4	2,091	517,978	0	2,091
9/5	1,766	519,744	0	1,766
9/6	1,160	520,904	0	1,160

Note: The weir was removed after the completion of the 8/18 count. (Dual Identification Sonar) was used to enumerate sockeye salmon escapement through 9/6. A post weir estimate was produced for 9/7–9/30 using a time series analysis based on the rate of decay of the run (Appendix B). The post-weir estimate was 18,793 fish for a total sockeye salmon escapement of 539,697 fish.

Table 7.–Total Chignik River sockeye salmon escapement and escapement goals, based on postseason analysis, by run, 1980–2018.

Year	Early run	Late run	Total
1980	311,332	352,729	664,061
1981	438,540	392,909	831,449
1982	616,117	221,601	837,718
1983	426,177	409,458	835,635
1984	597,712	267,862	865,574
1985	376,576	369,262	745,838
1986	566,088	207,231	773,319
1987	589,291	214,452	803,743
1988	420,577	255,180	675,757
1989	384,004	557,171	941,175
1990	434,543	335,867	770,410
1991	672,871	367,227	1,040,098
1992	360,681	405,922	766,603
1993	364,261	333,116	697,377
1994	769,462	197,447	966,909
1995	366,163	373,757	739,920
1996	464,461	284,676	749,137
1997	396,667	378,951	775,618
1998	410,659	290,469	701,128
1999	457,429	258,537	715,966
2000	536,141	269,084	805,225
2001	744,013	392,905	1,136,918
2002	380,701	343,616	724,317
2003	350,004	334,119	684,123
2004	363,800	214,459	578,259
2005	355,091	225,366	580,457
2006	366,497	368,996	735,493
2007	361,091	293,883	654,974
2008	377,579	328,479	706,058
2009	391,476	328,586	720,062
2010	432,535	311,291	743,826
2011	488,930	264,887	753,817
2012	353,441	358,948	712,389
2013	386,782	369,319	756,101
2014	360,381	291,228	651,609
2015[a]	534,088	589,810	1,123,898
2016	418,290	348,023	766,313
2017	453,257	339,303	792,560
2018[a]	263,979	275,718	539,697
Year	Early run (BEG)	Late run (SEG)	Total
Goal	350,000–450,000	275,000–400,000	625,000–850,000
Averages			
1998–2017	426,109	326,065	752,175
2008–2017	419,676	352,987	772,663
2013–2017	430,560	387,537	818,096

[a] Due to early removal of the weir in 2015 (August 20) and 2018 (August 18), post-weir escapement estimates for sockeye salmon were produced using DIDSON. These are the only years that include a DIDSON estimate.

Table 8.–Estimated peak sockeye salmon escapement estimates for Black Lake tributaries, 1980– 2018.

Year	Fan Creek	Milk Creek	Boulevard Creek	Alec River	Conglomerate Creek	Broad Creek	Total
1980	127,000	16,000	75,000	70,500	1,500	68,000	358,000
1981	93,000	4,700	59,000	76,500	20,000	27,000	280,200
1982	50,000	5,500	60,000	43,000	20,000	32,000	210,500
1983	ND	ND	ND	ND	ND	ND	-
1984	50,000	22,200	70,000	30,500	31,000	36,000	239,700
1985	28,000	5,500	36,000	65,000	5,500	17,000	157,000
1986	60,000	15,300	47,000	76,000	39,000	27,000	264,300
1987	52,000	12,200	133,000	88,400	45,900	32,500	364,000
1988	54,000	71,000	83,700	106,500	2,300	26,500	344,000
1989	19,300	21,000	64,000	133,000	1,000	7,500	245,800
1990	32,600	7,400	35,900	49,800	2,200	18,000	145,900
1991	14,600	19,500	48,000	ND	2,000	13,000	97,100
1992	ND	ND	ND	392,000	ND	ND	392,000
1993	40,900	12,600	97,600	8,000	77,000	18,200	254,300
1994	70,000	25,000	125,000	350,000	20,000	51,000	641,000
1995	23,000	10,000	60,000	200,000	40,000	60,000	393,000
1996	40,000	24,000	51,000	100,000	50,000	45,000	310,000
1997	60,000	5,000	48,000	166,000	8,000	20,000	307,000
1998	90,000	14,000	100,000	50,000	9,000	62,000	325,000
1999	70,000	8,100	50,000	226,000	1,000	22,000	377,100
2000	41,000	29,000	126,000	210,000	26,000	93,000	525,000
2001	77,000	19,000	265,000	207,000	4,000	89,000	661,000
2002	43,000	ND	20,000	21,000	11,000	7,000	102,000
2003	17,600	400	2,500	188,000	ND	1,000	209,500
2004	4,290	1,490	15,560	137,700	200	ND	159,240
2005	4,300	ND	ND	ND	7,700	ND	12,000
2006	16,000	500	15,500	46,700	2,500	19,800	101,000
2007	40,200	8,800	23,600	199,000	4,000	1,000	276,600
2008	44,000	7,600	34,800	208,000	6,600	3,200	304,200
2009	34,500	11,500	40,500	182,500	5,000	2,100	276,100
2010	10,000	1,700	24,000	100,000	2,100	7,000	144,800
2011	45,000	5,000	65,000	215,000	12,000	ND	342,000
2012	47,000	4,000	55,000	80,000	5,000	5,000	196,000
2013	25,000	ND	3,000	250,000	0	0	278,000
2014	28,400	ND	41,000	210,000	6,600	41,000	327,000
2015	23,100	ND	39,400	185,700	4,600	5,000	257,800
2016	34,000	ND	9,300	ND	5,000	5,000	53,300
2017	109,000	ND	6,900	104,600	9,800	35,000	265,300
2018	4,500	ND	85,000	118,000	35,000	16,000	258,500
Averages							
1998–2017	40,170	8,545	49,319	156,733	6,426	23,418	259,647
2008–2017	40,000	5,960	31,890	170,644	5,670	11,478	244,450
2013–2017	43,900	ND	19,920	187,575	5,200	17,200	236,280

Note: No reliable escapement estimates (ND) were available for some years or streams within a year. All estimates were done via aerial surveys.

Table 9.–Estimated peak sockeye salmon escapement estimates for Chignik Lake and Black River tributaries, 1980–2018.

	Black River				Chignik Lake			
Year	Bearskin Creek	West Fork	Chiaktuak Creek	Total	Clark River	Home Creek	Hatchery Beach	Total
1980	3,600	33,000	40,400	77,000	ND	ND	ND	-
1981	950	1,500	18,700	21,150	ND	ND	ND	-
1982	1,066	10,791	5,000	16,857	ND	ND	ND	-
1983	ND	ND	6,000	6,000	ND	ND	ND	-
1984	ND	ND	8,200	8,200	ND	ND	ND	-
1985	350	450	1,200	2,000	ND	ND	ND	-
1986	ND	ND	8,300	8,300	ND	ND	ND	-
1987	ND	ND	1,000	1,000	ND	ND	ND	-
1988	ND	ND	4,600	4,600	ND	ND	ND	-
1989	ND	ND	2,100	2,100	ND	ND	ND	-
1990	300	0	50	350	ND	ND	ND	-
1991	ND	ND	ND	-	ND	ND	ND	-
1992	ND	ND	ND	-	ND	ND	ND	-
1993	ND	ND	16,000	16,000	ND	ND	ND	-
1994	5,000	ND	31,000	36,000	18,000	9,200	ND	27,200
1995	7,100	18,000	31,000	56,100	13,000	6,000	150,000	169,000
1996	1,800	22,000	22,000	45,800	13,000	5,500	70,000	88,500
1997	9,000	9,000	23,500	41,500	25,000	8,000	35,000	68,000
1998	4,700	71,000	27,500	103,200	21,000	6,000	62,000	89,000
1999	8,300	17,500	13,000	38,800	8,500	1,620	15,000	25,120
2000	2,600	3,700	10,600	16,900	18,000	19,700	2,000	39,700
2001	ND	ND	9,500	9,500	23,000	11,000	25,000	59,000
2002	ND	15,000	2,300	17,300	ND	ND	ND	-
2003	ND	ND	2,000	2,000	ND	ND	ND	-
2004	100	600	750	1,450	2,500	2,000	ND	4,500
2005	900	900	5,100	6,900	ND	ND	ND	-
2006	1,400	3,500	6,200	11,100	13,500	3,000	3,000	19,500
2007	400	14,500	30,300	45,200	59,000	9,800	65,000	133,800
2008	13,500	18,000	39,600	71,100	39,500	12,300	106,000	157,800
2009	600	11,100	21,800	33,500	13,000	3,500	ND	16,500
2010	1,700	3,500	5,800	11,000	7,600	0	31,000	38,600
2011	1,000	11,000	11,000	23,000	35,000	2,000	28,000	65,000
2012	150	750	7,500	8,400	57,000	2,500	170,000	229,500
2013	100	1,100	15,000	18,213	55,800	2,300	30,000	88,100
2014	3,100	12,400	41,200	56,700	24,900	3,800	102,000	130,700
2015	2,600	24,800	16,150	43,550	14,120	1,260	47,000	62,380
2016	900	7,290	10,640	18,830	16,760	500	57,300	74,560
2017	3,575	5,700	6,500	15,775	12,200	3,790	104,000	119,990
2018	1,500	12,100	1,650	15,250	9,300	4,500	13,700	27,500
Averages								
1998–2017	2,684	12,352	14,122	27,621	24,787	5,004	56,487	79,632
2008–2017	2,723	9,564	17,519	30,007	27,588	3,195	75,033	98,313
2013–2017	2,055	10,258	17,898	30,614	24,756	2,330	68,060	95,146

Note: No reliable escapement estimates (ND) were available for some years or streams within a year. All estimates were done via aerial surveys.

Table 10.–Estimated peak pink salmon escapement in the Chignik Management Area, by district and year, 1980–2018.

	Districts					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	3,000	99,400	425,500	139,500	74,800	742,200
1981	1,400	76,500	154,700	249,300	116,000	597,900
1982	2,400	26,100	301,500	45,900	13,400	389,300
1983	1,000	11,000	46,300	36,000	64,500	158,800
1984	1,790	67,890	328,150	153,450	84,700	635,980
1985	ND	6,500	129,450	29,850	186,650	352,450
1986	ND	79,750	535,600	39,100	13,100	667,550
1987	ND	103,350	137,600	31,400	38,900	311,250
1988	1,640	139,800	578,620	194,000	160,700	1,074,760
1989	9,820	174,600	558,100	52,900	250,200	1,045,620
1990	1,850	72,100	496,800	33,300	63,400	667,450
1991	10,200	129,850	82,900	95,400	260,300	578,650
1992	11,600	117,900	907,325	35,435	92,225	1,164,485
1993	900	130,600	122,200	37,700	407,440	698,840
1994	23,000	136,000	620,000	92,300	127,300	998,600
1995	85,000	301,000	1,069,000	303,000	420,300	2,178,300
1996	15,000	118,000	572,700	144,000	238,800	1,088,500
1997	17,000	322,000	827,000	185,000	161,700	1,512,700
1998	7,050	115,200	762,700	101,500	177,000	1,163,450
1999	2,375	259,100	357,900	63,050	145,000	827,425
2000	4,800	85,050	557,950	41,600	48,420	737,820
2001	14,400	279,600	777,100	108,600	75,300	1,255,000
2002	10,500	109,100	603,650	73,600	32,120	828,970
2003	46,500	375,500	842,700	58,550	79,800	1,403,050
2004	27,300	257,000	601,900	94,340	134,320	1,114,860
2005	160,000	473,400	512,350	257,500	188,600	1,591,850
2006	27,401	36,175	195,950	31,800	83,500	374,826
2007	62,464	291,800	565,800	113,000	184,000	1,217,064
2008	69,841	117,650	402,880	99,460	173,200	863,031
2009	28,973	130,700	462,840	130,100	116,450	869,063
2010	8,020	52,650	228,500	22,000	19,400	330,570
2011	32,348	223,500	504,000	86,650	139,750	986,248
2012	11,849	63,950	155,500	35,700	35,700	302,699
2013	24,131	223,900	411,060	63,200	141,700	863,991
2014	7,669	30,500	132,050	46,850	18,090	235,159
2015	11,329	232,650	702,400	80,200	105,950	1,132,529
2016	1,386	20,800	70,970	24,790	21,530	139,476

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Table 10.–Page 2 of 2.

	Districts					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
2017	141,331	312,100	526,300	118,720	165,100	1,263,551
2018	3,222	8,800	70,000	27,505	35,100	144,627
Averages						
1998–2017	34,983	184,516	468,725	82,561	104,247	875,032
2008–2017	33,688	167,320	424,904	91,386	122,780	862,493
2013–2017	37,169	163,990	368,556	66,752	90,474	726,941
Even-year Averages						
1998–2016	17,582	88,808	371,205	57,164	74,328	609,086
2008–2016	19,753	57,110	197,980	45,760	53,584	374,187
2012–2016	6,968	38,417	119,507	35,780	25,107	225,778

Note: All escapement estimates were via peak aerial survey, with the exception of Chignik River, which was included in the Chignik Bay District estimate. No reliable escapement estimates (ND) were available for some years or streams within a year. This table reflects the total peak escapement of 49 streams in the CMA that are monitored for in-season management, not just the 8 index streams used to compute the escapement index.

Table 11.–Estimated Chignik Management Area peak pink salmon combined escapement of index streams, and escapement objectives, 2006–2018.

Year	Total estimated peak escapement
2006	163,800
2007	384,500
2008	260,800
2009	344,050
2010	98,400
2011	272,000
2012	111,000
2013	231,800
2014	87,240
2015	404,000
2016	68,100
2017	586,000
2018	41,900
Even-year SEG	170,000–280,000
Even-year average 2008–2017	125,108

Note: Peak escapements were calculated using peak aerial surveys from the 8 index streams established in Schaberg et al. 2015.

Table 12.–Estimated peak chum salmon escapement in the Chignik Management Area, by district and year, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	300	34,200	107,000	56,500	29,100	227,100
1981	500	26,100	126,000	70,300	19,300	242,200
1982	1,400	49,400	145,400	35,400	23,600	255,200
1983	100	17,000	50,200	20,100	8,200	95,600
1984	0	15,100	170,700	48,100	39,700	273,600
1985	0	7,509	7,110	14,500	12,850	41,969
1986	0	12,215	7,200	6,500	6,700	32,615
1987	0	4,900	25,990	10,300	5,820	47,010
1988	2,400	39,100	142,700	20,920	27,220	232,340
1989	8,410	15,500	59,400	5,200	12,900	101,410
1990	1,500	2,200	110,800	7,550	21,750	143,800
1991	0	28,100	48,800	28,300	177,500	282,700
1992	0	105,700	197,435	43,465	25,885	372,485
1993	100	21,700	25,670	8,900	33,060	89,430
1994	500	35,200	121,800	14,500	12,200	184,200
1995	10,000	18,000	85,700	16,100	67,300	197,100
1996	3,000	21,570	107,000	39,400	67,055	238,025
1997	500	12,200	197,530	51,000	115,706	376,936
1998	500	11,500	164,850	9,100	68,225	254,175
1999	0	11,020	45,300	3,410	14,055	73,785
2000	0	18,300	124,800	5,300	7,031	155,431
2001	0	5,400	204,050	1,700	53,900	265,050
2002	0	8,010	121,200	9,200	12,970	151,380
2003	700	45,000	67,250	7,700	28,550	149,200
2004	376	30,310	277,240	3,100	38,492	349,518
2005	30,000	159,100	36,350	22,000	61,250	308,700
2006	1,099	3,450	53,940	6,000	29,000	93,489
2007	6,118	25,200	58,000	26,500	122,280	238,098
2008	17,624	17,850	57,120	21,240	83,425	197,259
2009	10,809	23,750	138,900	9,200	35,500	218,159
2010	1,095	17,000	60,525	19,400	79,200	177,220
2011	4,145	32,500	177,000	9,000	55,500	278,145
2012	1,173	35,000	103,000	25,500	46,300	210,973
2013	672	53,600	63,935	20,200	197,500	335,907
2014	658	21,100	27,620	11,800	40,200	101,378
2015	554	28,700	152,800	13,810	42,350	238,214
2016	514	12,500	62,890	9,400	32,300	117,604

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Table 12.–Page 2 of 2.

Year	District					Total
	Chignik Bay	Central	Eastern	Western	Perryville	
2017	3,115	41,100	107,500	15,500	35,500	202,715
2018	654	22,600	25,500	6,400	25,300	80,454
Averages						
1998–2017	3,958	30,020	105,214	12,453	54,176	205,820
2008–2017	4,036	28,310	95,129	15,505	64,778	207,757
2013–2017	1,103	31,400	82,949	14,142	69,570	199,164

Note: All estimates were via aerial survey, with the exception of Chignik River, which was included in the Chignik Bay District estimate. This table reflects the total peak escapement of 49 streams in the CMA that are monitored for inseason management, not just the 6 index streams used to compute the escapement index.

Table 13.–Estimated Chignik Management Area peak chum salmon combined escapement of index streams, and escapement objectives, 2006–2018.

Year	Total estimated peak escapement
2006	41,420
2007	132,200
2008	116,240
2009	108,300
2010	102,625
2011	119,000
2012	93,800
2013	109,900
2014	46,720
2015	123,400
2016	69,900
2017	96,900
2018	33,400
SEG	45,000–110,000
Average 2008–2017	98,679

Note: Peak escapements were calculated using peak aerial surveys from the 6 index streams established in Schaberg et al. 2015.

Table 14.–Commercial salmon fishing effort and harvest (including home pack), by day in the Chignik Management Area, 2018.

	Effort		Chinook		Sockeye		Coho		Pink		Chum		Total	
Date	Permits	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
6/1–7/5							Fishery Closed							
7/6[a]														
7/7	6	6	0	0	128	593	1	4	6	15	924	7,120	1,059	7,732
7/7–9/2							Fishery Closed							
9/3–9/4[a]														
Total	6	6	0	0	128	593	1	4	6	15	924	7,120	1,059	7,732

[a] No deliveries were made.

Table 15.–Total Chignik Management area commercial salmon harvests (including home pack and the ADF&G test fishery harvests) by species and year, 1980–2018.

Year	Number of permits	Landings	Harvest					
			Chinook	Sockeye	Coho	Pink	Chum	Total
1980	104	3,134	2,344	859,966	119,573	1,093,184	252,521	2,327,588
1981	105	4,222	2,694	1,839,469	78,805	1,162,613	580,332	3,663,913
1982	103	3,606	5,236	1,521,686	300,273	873,384	390,096	3,090,675
1983	102	4,357	5,488	1,824,175	61,927	321,178	159,412	2,372,180
1984	100	3,927	4,318	2,660,619	110,128	444,804	63,303	3,283,172
1985	107	3,392	1,887	921,502	191,162	160,128	22,805	1,297,484
1986	102	4,178	3,037	1,645,834	116,633	647,125	176,640	2,589,269
1987	104	3,856	2,651	1,898,838	150,414	246,775	127,261	2,425,939
1988	102	3,895	7,296	795,841	370,420	2,997,159	267,775	4,438,491
1989	101	3,183	3,542	1,159,287	68,233	27,712	1,624	1,260,398
1990	102	5,405	9,901	2,093,650	130,131	550,008	270,004	3,053,694
1991	103	3,856	3,157	1,895,665	165,625	1,169,248	261,096	3,494,791
1992	102	4,172	10,832	1,277,449	310,943	1,554,073	222,134	3,375,431
1993	103	4,241	19,515	1,697,351	229,459	1,648,377	122,360	3,717,062
1994	100	3,707	3,919	1,618,973	237,204	431,063	227,276	2,518,435
1995	101	5,113	5,493	1,724,045	281,518	2,057,998	380,954	4,450,008
1996	101	4,565	3,145	1,958,393	193,246	189,068	120,891	2,464,743
1997	100	3,394	3,120	770,347	90,908	844,431	155,905	1,864,711
1998	86	3,348	4,503	1,054,439	129,539	776,988	128,996	2,094,465
1999	91	4,382	3,507	3,116,527	89,610	1,698,651	140,597	5,048,892
2000	100	3,268	2,612	1,775,225	123,222	428,064	120,957	2,450,080
2001	93	2,906	2,939	1,511,587	131,448	1,281,767	199,003	3,126,744
2002	42	2,432	1,521	1,050,553	49,372	66,050	54,559	1,222,055
2003	44	2,073	3,068	1,100,297	103,896	502,638	64,044	1,773,943
2004	33	1,346	2,520	704,652	37	2,380	505	710,094
2005	98	1,681	3,408	1,152,133	6,956	194,045	8,821	1,365,363
2006	49	2,066	2,256	902,709	39,221	383,574	61,630	1,389,390
2007	56	2,101	1,773	834,547	73,277	2,019,748	78,553	3,007,898
2008	55	2,217	970	687,270	161,536	2,389,958	209,325	3,449,059
2009	56	2,172	3,319	1,198,105	110,373	1,408,339	256,425	2,976,561
2010	66	2,532	10,380	1,379,785	159,198	489,781	581,329	2,620,473
2011	65	2,617	6,586	2,497,004	76,792	905,166	269,503	3,755,051
2012	70	2,915	3,687	1,800,121	33,316	137,706	171,112	2,145,942
2013	77	3,153	2,962	2,405,151	32,312	871,871	154,965	3,467,261
2014	71	1,525	8,846	620,339	132,459	352,115	55,152	1,168,911
2015	72	2,276	9,204	1,552,495	82,054	1,978,211	101,017	3,722,981
2016	70	2,554	20,719	1,394,091	94,397	140,913	118,435	1,768,555
2017	68	2,408	3,946	897,489	226,829	7,077,924	609,236	8,815,424
2018	6	6	0	128	1	6	924	1,059
Averages								
1998–2017	68	2,499	4,936	1,381,726	92,792	1,155,294	169,208	2,803,957
2008–2017	67	2,437	7,062	1,443,185	110,927	1,575,198	252,650	3,389,022
2013–2017	72	2,383	9,135	1,373,913	113,610	2,084,207	207,761	3,788,626

Table 16.–Annual Chignik Management Area Chinook salmon harvest, 1980–2018.

	Test fish		Commercial catch		Home pack		Total	
Year	Number	Pounds	Number	Pounds	Number	Pounds[a]	Number	Pounds
1980	ND	ND	2,344	32,255	ND	ND	2,344	32,255
1981	ND	ND	2,694	50,832	ND	ND	2,694	50,832
1982	ND	ND	5,236	59,753	ND	ND	5,236	59,753
1983	ND	ND	5,488	96,159	ND	ND	5,488	96,159
1984	ND	ND	4,318	99,567	ND	ND	4,318	99,567
1985	10	249	1,877	44,625	ND	ND	1,887	44,874
1986	ND	ND	3,037	66,772	ND	ND	3,037	66,772
1987	0	0	2,651	49,482	ND	ND	2,651	49,482
1988	0	0	7,296	128,880	ND	ND	7,296	128,880
1989	0	0	3,542	76,698	ND	ND	3,542	76,698
1990	0	0	9,901	134,265	ND	ND	9,901	134,265
1991	3	37	3,154	66,666	ND	ND	3,157	66,703
1992	2	8	10,830	138,082	ND	ND	10,832	138,090
1993	14	65	19,501	234,188	ND	ND	19,515	234,253
1994	16	245	3,903	71,620	ND	ND	3,919	71,865
1995	0	0	5,261	111,187	232	4,903	5,493	116,090
1996	0	0	3,105	62,603	40	806	3,145	63,409
1997	7	149	3,025	47,075	88	1,369	3,120	48,593
1998	21	450	4,374	66,080	108	1,632	4,503	68,162
1999	0	0	3,296	56,706	211	3,630	3,507	60,336
2000	0	0	2,592	34,757	20	268	2,612	35,025
2001	4	120	2,845	39,252	90	1,242	2,939	40,614
2002	3	25	1,441	13,725	77	733	1,521	14,483
2003	2	13	2,757	39,716	309	4,451	3,068	44,180
2004	4	57	2,337	43,652	179	3,343	2,520	47,052
2005	1	23	3,136	55,638	271	6,157	3,408	61,818
2006	1	21	2,187	38,015	68	1,536	2,256	39,572
2007	11	228	1,746	29,745	16	308	1,773	30,281
2008	0	0	955	14,463	15	227	970	14,690
2009	0	0	3,244	30,791	75	1,166	3,319	31,957
2010	0	0	10,262	102,684	118	1,708	10,380	104,392
2011	4	45	6,440	72,305	142	2,486	6,586	74,836
2012	0	0	3,636	48,850	51	1,053	3,687	49,903
2013	2	25	2,872	35,587	85	1,644	2,959	37,256
2014	2	6	8,809	75,747	35	417	8,846	76,170
2015	15	160	9,105	71,722	84	1,045	9,204	72,927
2016	0	0	20,684	155,088	35	474	20,719	155,562
2017	0	0	3,908	36,604	38	651	3,946	37,255
2018	0	0	0	0	0	0	0	0
Averages								
1998–2017	4	59	4,831	53,056	101	1,709	4,936	54,824
2008–2017	2	24	6,992	64,384	68	1,087	7,062	65,495
2013–2017	4	38	9,076	74,950	55	846	9,135	75,834

Note: No reliable estimates (ND) were available for some years.

[a] Weights of home pack fish are not reported on fish tickets; therefore, they were calculated from the average weight of the commercial harvest.

Table 17.–Chignik Management Area Chinook salmon harvest (including home pack and the ADF&G test fishery catches), by district and year, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	929	148	169	739	359	2,344
1981	2,006	302	188	99	99	2,694
1982	3,269	41	38	1,354	534	5,236
1983	3,560	161	260	1,390	117	5,488
1984	3,696	63	72	487	0	4,318
1985	1,809	50	7	21	0	1,887
1986	2,592	58	14	350	23	3,037
1987	1,931	60	6	512	142	2,651
1988	4,331	1,094	190	1,216	465	7,296
1989	3,532	9	1	0	0	3,542
1990	3,719	2,175	175	3,190	642	9,901
1991	1,996	775	165	197	24	3,157
1992	3,181	2,010	181	4,300	1,160	10,832
1993	5,240	6,865	2,568	3,113	1,729	19,515
1994	1,808	1,303	43	452	313	3,919
1995	3,219	845	108	897	424	5,493
1996	1,590	1,022	263	162	108	3,145
1997	1,384	1,609	60	60	7	3,120
1998	1,805	1,798	79	567	254	4,503
1999	2,270	852	147	216	22	3,507
2000	598	530	53	1,421	10	2,612
2001	1,235	770	302	627	5	2,939
2002	920	17	0	584	0	1,521
2003	2,834	189	0	45	0	3,068
2004	2,520	0	0	0	0	2,520
2005	2,714	391	0	297	6	3,408
2006	2,009	165	3	79	0	2,256
2007	667	421	152	532	1	1,773
2008	219	195	16	503	37	970
2009	552	552	199	1,987	29	3,319
2010	1,564	2,420	834	5,476	86	10,380
2011	1,462	2,154	639	2,118	213	6,586
2012	330	1,878	185	1,284	10	3,687
2013	592	1,249	398	668	52	2,959
2014	363	4,302	75	4,054	52	8,846
2015	1,648	3,172	115	4,249	20	9,204
2016	693	15,865	413	2,446	1,302	20,719
2017	447	1,125	534	1,594	246	3,946
2018	0	0	0	0	0	0
Averages						
1998–2017	1,272	1,902	207	1,437	117	4,936
2008–2017	787	3,291	341	2,438	205	7,062
2013–2017	749	5,143	307	2,602	334	9,135

Table 18.–Total harvest of sockeye salmon considered by regulation to be Chignik-bound in the Chignik, Cape Igvak, and Southeastern District Mainland (SEDM) commercial salmon fisheries, 1970–2018.

	Test fish		Commercial catch		Home pack		Total CMA harvest		Cape Igvak[a]		SEDM[b]		Total Chignik-bound	
Year	Number	Pounds	Number	Pounds	Number	Pounds[c]	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1970	ND	ND	1,325,734	9,210,127	ND	ND	1,325,734	9,210,127	ND	ND	ND	ND	1,325,734	9,210,127
1971	ND	ND	1,016,136	7,534,367	ND	ND	1,016,136	7,534,367	ND	ND	ND	ND	1,016,136	7,534,367
1972	ND	ND	378,218	2,863,742	ND	ND	378,218	2,863,742	ND	ND	ND	ND	378,218	2,863,742
1973	ND	ND	870,354	7,023,294	ND	ND	870,354	7,023,294	ND	ND	ND	ND	870,354	7,023,294
1974	ND	ND	662,905	4,756,653	ND	ND	662,905	4,756,653	ND	ND	ND	ND	662,905	4,756,653
1975	ND	ND	399,593	2,773,725	ND	ND	399,593	2,773,725	ND	ND	ND	ND	399,593	2,773,725
1976	ND	ND	1,163,728	8,562,989	ND	ND	1,163,728	8,562,989	ND	ND	ND	ND	1,163,728	8,562,989
1977	ND	ND	1,972,207	17,247,659	ND	ND	1,972,207	17,247,659	ND	ND	ND	ND	1,972,207	17,247,659
1978	ND	ND	1,576,283	12,451,982	ND	ND	1,576,283	12,451,982	225,078	1,583,809	ND	ND	1,801,361	14,035,791
1979	ND	ND	1,049,691	7,862,600	ND	ND	1,049,691	7,862,600	13,950	96,507	ND	ND	1,063,641	7,959,107
1980	ND	ND	859,966	5,795,098	ND	ND	859,966	5,795,098	32	147	63,724	442,601	923,722	6,237,846
1981	ND	ND	1,839,469	13,486,031	ND	ND	1,839,469	13,486,031	282,727	1,876,246	122,198	888,410	2,244,394	16,250,687
1982	ND	ND	1,521,686	11,340,439	ND	ND	1,521,686	11,340,439	166,756	1,162,053	62,789	463,729	1,751,231	12,966,221
1983	ND	ND	1,824,175	11,926,829	ND	ND	1,824,175	11,926,829	318,048	1,926,770	227,392	1,631,668	2,369,615	15,485,267
1984	ND	ND	2,660,619	18,536,287	ND	ND	2,660,619	18,536,287	449,372	2,820,646	423,292	3,053,430	3,533,283	24,410,363
1985	4,875	30,480	916,627	5,415,817	ND	ND	921,502	5,446,297	123,627	637,207	51,421	337,919	1,096,550	6,421,423
1986	ND	ND	1,645,834	11,254,860	ND	ND	1,645,834	11,254,860	188,017	1,153,092	118,006	841,446	1,951,857	13,249,398
1987	679	4,637	1,898,159	13,997,077	ND	ND	1,898,838	14,001,714	321,506	2,146,841	146,886	1,121,094	2,367,230	17,269,649
1988	3,425	24,287	792,416	5,690,165	ND	ND	795,841	5,714,452	10,520	63,641	19,320	140,708	825,681	5,918,801
1989	6,433	46,532	1,152,854	7,922,748	ND	ND	1,159,287	7,969,280	0	0	4,485	32,262	1,163,772	8,001,542
1990	5,522	33,915	2,088,128	13,775,854	ND	ND	2,093,650	13,809,769	107,706	665,309	117,065	783,670	2,318,421	15,258,748
1991	8,106	54,892	1,887,559	12,889,560	ND	ND	1,895,665	12,944,452	324,195	1,886,494	152,714	1,037,726	2,372,574	15,868,672
1992	12,423	80,326	1,265,026	8,292,576	ND	ND	1,277,449	8,372,902	150,434	896,108	93,845	608,765	1,521,728	9,877,775
1993	5,444	34,231	1,691,907	10,228,401	ND	ND	1,697,351	10,262,632	300,055	1,639,082	128,608	847,879	2,126,014	12,749,593
1994	9,139	54,433	1,609,834	10,091,402	ND	ND	1,618,973	10,145,835	250,230	1,423,150	142,350	934,493	2,011,553	12,503,478
1995	9,023	57,674	1,715,022	11,464,647	0	0	1,724,045	11,522,321	169,530	899,572	89,086	547,563	1,982,661	12,969,456
1996	4,317	36,511	1,954,036	14,866,234	40	304	1,958,393	14,903,049	308,327	1,954,430	127,201	884,305	2,393,921	17,741,784
1997	11,299	77,874	758,384	4,782,715	664	4,187	770,347	4,864,776	0	0	0	0	770,347	4,864,776
1998	12,374	66,040	1,041,798	6,372,010	267	1,633	1,054,439	6,439,683	8,813	39,133	66,893	408,902	1,130,145	6,887,718
1999	5,994	42,216	3,110,507	20,527,837	26	172	3,116,527	20,570,225	456,039	2,469,213	173,621	1,086,186	3,746,187	24,125,624
2000	11,604	88,790	1,763,621	13,577,434	0	0	1,775,225	13,666,224	271,344	1,703,875	103,419	737,462	2,149,988	16,107,561

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Table 18.–Page 2 of 2.

	Testfish		Commercial catch		Home pack		Total CMA harvest		Cape Igvak[a]		SEDM[b]		Total Chignik-bound	
Year	Number	Pounds	Number	Pounds	Number	Pounds[c]	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
2001[d]	14,011	98,197	1,497,359	10,972,234	217	1,590	1,511,587	11,072,021	215,214	1,287,154	51,141	368,970	1,777,942	12,728,145
2002	9,101	61,656	1,040,081	7,176,261	1,371	9,460	1,050,553	7,247,377	136,488	727,894	63,026	502,353	1,250,067	8,477,624
2003	5,582	36,334	1,092,304	7,137,591	2,411	15,755	1,100,297	7,189,680	121,887	599,342	70,044	466,153	1,292,228	8,255,175
2004	5,919	38,317	697,043	4,460,437	1,690	10,998	704,652	4,509,752	160,665	781,265	55,123	355,703	920,440	5,291,017
2005	7,076	43,988	1,143,693	7,468,609	1,364	8,702	1,152,133	7,521,299	274,328	1,681,630	170,662	1,088,207	1,597,123	10,291,136
2006	6,641	42,420	895,801	5,804,939	267	1,625	902,709	5,848,984	41,834	266,483	62,010	398,724	1,006,553	6,514,191
2007	5,152	38,112	829,110	5,769,736	285	1,346	834,547	5,809,194	52,527	325,619	0	0	887,074	6,134,813
2008	5,166	35,271	682,104	4,734,436	0	0	687,270	4,769,707	0	0	0	0	687,270	4,769,707
2009	1,687	12,833	1,196,325	8,248,669	93	631	1,198,105	8,262,133	126,968	811,617	48,322	314,210	1,373,395	9,387,960
2010	6,545	34,237	1,372,267	8,940,207	973	6,490	1,379,785	8,980,934	185,193	1,035,324	85,267	559,226	1,650,245	10,575,484
2011	6,556	48,184	2,490,125	17,841,056	323	1,977	2,497,004	17,891,217	494,538	3,224,966	156,637	1,123,768	3,148,179	22,239,951
2012	2,089	15,102	1,797,519	12,247,564	513	3,564	1,800,121	12,266,230	324,895	1,884,391	126,083	838,838	2,251,099	14,989,459
2013	4,970	35,474	2,399,594	17,707,011	587	3,928	2,405,151	17,055,904	354,179	2,326,956	169,029	1,109,867	2,928,359	20,532,129
2014	3,454	20,637	616,879	4,120,133	6	40	620,339	4,140,810	0	0	0	0	620,339	4,140,810
2015	12,107	59,336	1,540,310	8,469,717	78	459	1,552,495	8,529,512	5,936	31,568	98,473	559,063	1,656,904	9,120,143
2016	8,073	45,419	1,385,673	8,208,491	345	1,939	1,394,091	8,255,849	298,470	1,674,233	94,790	559,190	1,787,351	10,489,272
2017	2,448	15,639	894,933	5,483,094	108	599	897,489	5,499,332	118,101	678,384	43,730	253,186	1,059,320	6,430,902
2018	0	0	128	593	0	0	128	593	0	0	0	0	128	593
Averages[e]														
1998–2017	6,827	43,910	1,374,352	9,230,818	546	3,545	1,381,726	9,276,303	202,634	1,197,169	96,369	631,177	1,646,010	10,874,441
2008–2017	5,310	32,213	1,437,573	9,534,094	303	1,963	1,443,185	9,565,163	238,535	1,458,430	102,791	664,669	1,716,246	11,267,582
2013–2017	6,210	35,301	1,367,478	8,667,468	225	1,393	1,373,913	8,696,281	194,172	1,177,785	101,506	620,327	1,610,455	10,142,651

Note: No reliable estimates (ND) were available for some years.

[a] The Cape Igvak allocation began in 1978. From 1978 to 2002, 80% of the Cape Igvak sockeye salmon harvest was considered Chignik River-bound. Beginning in 2002, that percentage was changed to 90%.

[b] Beginning in 1980, 80% of the SEDM harvest in specific areas during specific times was considered Chignik River-bound.

[c] Weights of home pack are not reported on fish tickets; therefore, the weights were calculated from the average weight of the commercial harvest for that year.

[d] Due to a strike by Alaska Peninsula fishermen, foregone harvest of 27,896 sockeye salmon harvested in 2001 was added to the SEDM catch for management purposes; this foregone harvest is not included in this table.

Table 19.– Total annual Chignik Management Area sockeye salmon harvest (including home pack and the ADF&G test fishery catches), by district, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	708,828	74,628	60,947	9,227	6,336	859,966
1981	1,355,524	426,159	36,618	14,751	6,417	1,839,469
1982	1,413,806	66,278	10,209	30,279	1,114	1,521,686
1983	1,597,059	123,590	73,824	25,246	4,456	1,824,175
1984	1,942,822	517,653	184,495	15,470	179	2,660,619
1985	811,956	77,314	18,720	13,175	337	921,502
1986	1,389,172	182,884	6,424	44,362	22,992	1,645,834
1987	1,559,757	255,118	14,498	56,524	12,941	1,898,838
1988	529,540	124,103	25,699	93,070	23,429	795,841
1989	1,156,782	2,473	32	0	0	1,159,287
1990	1,400,069	566,601	51,443	53,192	22,345	2,093,650
1991	1,487,421	315,570	59,751	19,766	13,157	1,895,665
1992	792,889	332,860	12,327	30,004	109,369	1,277,449
1993	762,730	557,020	186,364	54,051	137,186	1,697,351
1994	908,042	573,484	20,041	64,325	53,081	1,618,973
1995	1,083,707	415,436	48,842	79,874	96,186	1,724,045
1996	1,003,683	743,658	145,668	47,529	17,855	1,958,393
1997	407,427	295,084	20,650	44,768	2,418	770,347
1998	622,005	286,643	30,555	87,940	27,296	1,054,439
1999	2,356,146	612,589	79,717	57,859	10,216	3,116,527
2000	1,327,249	358,985	71,572	15,034	2,385	1,775,225
2001	1,082,291	382,172	28,377	17,673	1,074	1,511,587
2002	993,756	44,368	2,835	9,425	169	1,050,553
2003	1,000,247	64,440	1,701	29,069	4,840	1,100,297
2004	704,471	181	0	0	0	704,652
2005	1,039,076	84,879	2	27,927	249	1,152,133
2006	726,749	103,272	3,118	69,570	0	902,709
2007	545,438	138,922	29,882	119,489	816	834,547
2008	527,026	83,111	2,279	68,257	6,597	687,270
2009	869,906	191,611	29,900	102,803	3,885	1,198,105
2010	846,823	371,090	102,587	56,736	2,549	1,379,785
2011	1,649,846	670,348	113,760	40,252	22,798	2,497,004
2012	1,122,595	522,184	61,922	93,270	150	1,800,121
2013	1,607,269	584,848	150,560	56,248	6,226	2,405,151
2014	208,056	100,375	86	302,614	9,208	620,339
2015	702,707	364,934	5,542	433,221	46,091	1,552,495
2016	741,932	328,749	38,629	204,058	80,723	1,394,091
2017	351,049	180,039	122,798	151,644	91,959	897,489
2018	[a]	[a]	[a]	[a]	[a]	128
Averages						
1998–2017	951,232	273,687	43,791	97,154	15,862	1,381,726
2008–2017	862,721	339,729	62,806	150,910	27,019	1,443,185
2013–2017	722,203	311,789	63,523	229,557	46,841	1,373,913

[a] Confidentiality requirements prevent the release of this information

Table 20.–Harvest of sockeye salmon considered by regulation to be Chignik-bound in the Chignik, Cape Igvak, and Southeastern District Mainland (SEDM) commercial salmon fisheries from June 1 through July 25, 1980–2018.

	Chignik[a]		Cape Igvak[a]		SEDM[a]		
Year	Catch	Percent	Catch[b]	Percent	Catch[c]	Percent	Total
1980	670,001	91.3	32	0.0	63,724	8.7	733,757
1981	1,606,300	79.9	282,727	14.1	122,198	6.1	2,011,225
1982	1,250,768	84.5	166,756	11.3	62,789	4.2	1,480,313
1983	1,450,832	72.7	318,048	15.9	227,392	11.4	1,996,272
1984	2,474,405	73.9	449,372	13.4	423,292	12.6	3,347,069
1985	690,698	79.8	123,627	14.3	51,421	5.9	865,746
1986	1,456,729	82.6	188,017	10.7	118,006	6.7	1,762,752
1987	1,659,236	78.0	321,506	15.1	146,886	6.9	2,127,628
1988	675,487	95.8	10,520	1.5	19,320	2.7	705,327
1989	496,044	99.1	0	0.0	4,485	0.9	500,529
1990	1,205,575	84.3	107,706	7.5	117,065	8.2	1,430,346
1991[d]	1,962,583	80.5	324,195	13.3	152,714	6.3	2,439,492
1992	1,054,309	81.2	150,434	11.6	93,845	7.2	1,298,588
1993	1,495,098	77.7	300,055	15.6	128,608	6.7	1,923,761
1994[e]	1,632,435	80.6	250,230	12.4	142,350	7.0	2,025,015
1995	1,024,785	79.8	169,530	13.2	89,086	6.9	1,283,401
1996	1,710,249	79.7	308,327	14.4	127,201	5.9	2,145,777
1997	443,892	100.0	0	0.0	0	0.0	443,892
1998[f]	786,466	91.2	8,813	1.0	66,893	7.8	862,172
1999	2,326,811	78.7	456,039	15.4	173,621	5.9	2,956,471
2000	1,509,652	80.1	271,344	14.4	103,419	5.5	1,884,415
2001[g]	1,134,991	79.4	215,214	15.1	79,037	5.5	1,429,242
2002	849,980	81.0	136,488	13.0	63,026	6.0	1,049,494
2003	855,179	81.7	121,887	11.6	70,044	6.7	1,047,110
2004	681,120	75.9	160,665	17.9	55,123	6.1	896,908
2005	1,098,718	70.8	274,328	17.7	177,906	11.5	1,550,952
2006	741,887	87.7	41,834	4.9	62,010	7.3	845,731
2007	601,213	92.0	52,527	8.0	0	0.0	653,740
2008	445,199	100.0	0	0.0	0	0.0	445,199
2009	871,890	83.3	126,968	12.1	48,322	5.5	1,047,180
2010	1,125,135	80.6	185,193	13.3	85,267	7.6	1,395,595
2011	2,277,681	77.8	494,538	16.9	156,637	6.9	2,928,856
2012	1,640,517	78.4	324,895	15.5	126,083	7.7	2,091,495
2013	2,246,339	81.1	354,179	12.8	169,029	7.5	2,769,547
2014	330,302	100.0	0	0.0	0	0.0	330,302

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Table 20.–Page 2 of 2.

	Chignik[a]		Cape Igvak[a]		SEDM[a]		
Year	Catch	Percent	Catch[b]	Percent	Catch[c]	Percent	Total
2015	1,014,550	90.7	5,936	0.5	98,473	9.7	1,118,959
2016	1,167,326	74.8	298,470	19.1	94,790	8.1	1,560,586
2017	679,435	80.8	118,101	14.0	43,730	6.4	841,266
2018	128	100.0	0	0.0	0	0.0	128
Averages[h]							
1998–2017	1,119,220	81.4	202,634	12.4	98,436	7.2	1,545,646
2008–2017	1,179,837	80.9	238,535	13.0	102,791	7.4	1,719,186
2013–2017	1,087,590	81.9	194,172	11.6	101,506	7.9	1,324,132

[a] Through 2001, the Cape Igvak and Southeastern District Mainland figures represent 80% of the total sockeye salmon catch for those areas through July 25, based on the regulations in effect during those years. In 2002 the Alaska Board of Fisheries increased the percentage of sockeye salmon harvest considered Chignik-bound from 80% to 90% in the Cape Igvak fishery. The figures reported in this table are the portion of the catches considered Chignik-bound. These figures do not include Chignik test fishery harvests or fish retained for home pack because they are not included in the allocation scheme.

[b] Beginning in 1978, the *Cape Igvak Salmon Management Plan* allocated up to 15% of the total catch of Chignik-bound sockeye salmon to the Cape Igvak fishery.

[c] Beginning in 1985 the Southeastern District Mainland was allowed an allocation of 6.2% of the total harvest of Chignik-bound sockeye salmon through July 25. Certain areas (which changed frequently) were excluded from the allocation and managed for local (Orzinski Lake) stocks (see regulations from the individual years). After July 25 the entire Southeast District Mainland was managed based on local stock abundance. The allocation level changed to 6.0% beginning in 1988. Beginning in 1992, the allocation of Chignik-bound sockeye to the Southeastern District Mainland fishery was increased to 7.0%. Prior to the 1996 season, the Alaska Board of Fisheries decreased the allocation from 7.0% to 6.0%. The allocation was increased from 6.0% to 7.6% prior to the 2007 season and was applied to the total sockeye salmon harvested in the CMA during the allocation period instead of Chignik-bound sockeye salmon harvested.

[d] Includes a foregone harvest of 278,305 sockeye salmon during a Chignik area strike (June 23–July 4).

[e] Includes a foregone harvest of 208,921 sockeye salmon during a Chignik area strike (June 2–June 25).

[f] Includes a foregone harvest of 52,131 sockeye salmon during a Chignik area strike (June 16–June 29).

[g] Includes a foregone harvest of 389,887 sockeye salmon in Chignik during a Chignik area strike (June 16–29), and foregone harvest of 27,896 sockeye salmon in the SEDM during a strike on the South Peninsula (June 14–July 2).

[h] Recent averages (excluding Chignik catch) do not include years in which the Cape Igvak and SEDM remained closed.

Table 21.–Chignik sockeye salmon escapement, total harvest considered Chignik-bound, and total run, 1970–2018.

	Early run			Late Run			Total run [a,b,c]		
Year	Esc.	Harvest	run	Esc.	Harvest	run	Esc.	Harvest	run
1970	536,257	1,566,065	2,102,322	119,952	262,244	382,196	656,209	1,828,309	2,484,518
1971	671,668	555,832	1,227,500	232,501	709,190	941,691	904,169	1,265,022	2,169,191
1972	326,320	43,220	369,540	231,270	386,615	617,885	557,590	429,835	987,425
1973	533,047	610,488	1,143,535	249,144	355,195	604,339	782,191	965,683	1,747,874
1974	351,701	204,722	556,423	326,245	648,283	974,528	677,946	853,005	1,530,951
1975	308,914	7,873	316,787	268,734	417,560	686,294	577,648	425,433	1,003,081
1976	551,254	599,341	1,150,595	279,509	727,043	1,006,552	830,763	1,326,384	2,157,147
1977	482,247	534,198	1,016,445	251,753	1,602,363	1,854,116	734,000	2,136,561	2,870,561
1978	458,660	940,188	1,398,848	223,887	885,173	1,109,060	682,547	1,825,361	2,507,908
1979	385,694	186,537	572,231	352,122	933,788	1,285,910	737,816	1,120,325	1,858,141
1980	311,332	73,742	385,074	352,729	849,980	1,202,709	664,061	923,722	1,587,783
1981	438,540	800,364	1,238,904	392,909	1,444,030	1,836,939	831,449	2,244,394	3,075,843
1982	616,117	1,324,396	1,940,513	221,601	426,835	648,436	837,718	1,751,231	2,588,949
1983	426,177	1,128,246	1,554,423	409,458	1,241,369	1,650,827	835,635	2,369,615	3,205,250
1984	597,712	2,919,984	3,517,696	267,862	613,299	881,161	865,574	3,533,283	4,398,857
1985	376,576	654,431	1,031,007	369,262	442,119	811,381	745,838	1,096,550	1,842,388
1986	566,088	1,364,295	1,930,383	207,231	587,562	794,793	773,319	1,951,857	2,725,176
1987	589,291	1,947,088	2,536,379	214,452	420,142	634,594	803,743	2,367,230	3,170,973
1988	420,577	271,377	691,954	255,180	554,304	809,484	675,757	825,681	1,501,438
1989	384,004	234,237	618,241	557,171	929,535	1,486,706	941,175	1,163,772	2,104,947
1990	434,543	582,520	1,017,063	335,867	1,735,901	2,071,768	770,410	2,318,421	3,088,831
1991	662,660	1,711,549	2,384,420	377,438	661,025	1,028,252	1,040,098	2,372,574	3,412,672
1992	360,681	744,417	1,105,098	403,755	777,311	1,183,233	764,436	1,521,728	2,288,331
1993	364,261	926,892	1,291,153	333,116	1,199,122	1,532,238	697,377	2,126,014	2,823,391
1994	769,462	1,595,176	2,364,638	197,447	416,377	613,824	966,909	2,011,553	2,978,462
1995	366,496	666,799	1,032,962	373,425	1,315,862	1,689,619	739,921	1,982,661	2,722,581
1996	464,748	1,688,264	2,152,725	284,389	705,657	990,333	749,137	2,393,921	3,143,058
1997	396,667	234,824	631,491	378,951	535,523	914,474	775,618	770,347	1,545,965
1998	410,659	313,158	723,817	290,469	816,987	1,107,456	701,128	1,130,145	1,831,273
1999	457,429	2,022,272	2,479,701	258,537	1,723,915	1,982,452	715,966	3,746,187	4,462,153
2000	536,141	1,574,391	2,110,532	269,084	575,597	844,681	805,225	2,149,988	2,955,213
2001	744,013	563,539	1,307,552	392,905	1,214,403	1,607,308	1,136,918	1,777,942	2,914,860
2002	380,701	684,728	1,065,428	343,616	565,339	908,955	724,317	1,250,067	1,974,383
2003	384,088	640,084	1,024,172	341,132	652,144	993,276	725,220	1,292,228	2,017,448
2004	363,800	727,975	1,091,775	214,459	192,465	406,924	578,259	920,440	1,498,700
2005	355,091	1,109,881	1,464,972	225,366	487,242	712,608	580,457	1,597,123	2,177,580
2006	366,497	436,028	802,525	368,996	570,525	939,521	735,493	1,006,553	1,742,046
2007	361,091	267,805	628,896	293,883	619,269	913,152	654,974	887,074	1,542,048
2008	377,579	253,490	631,069	328,479	433,780	762,259	706,058	687,270	1,393,328
2009	391,476	520,630	912,106	328,586	852,765	1,181,351	720,062	1,373,395	2,093,457
2010	432,535	833,713	1,266,248	311,291	816,532	1,127,823	743,826	1,650,245	2,394,071

-continued-

Table 21.–Page 2 of 2.

	Early Run			Late Run			Total Run [a,b,c]		
Year	Esc.	Harvest	Run	Esc.	Harvest	Run	Esc.	Harvest	Run
2011	488,930	2,594,291	3,083,221	264,887	553,888	818,775	753,817	3,148,179	3,901,996
2012	353,441	1,283,858	1,637,299	358,948	967,241	1,326,189	712,389	2,251,099	2,963,488
2013	386,782	2,030,579	2,417,361	369,319	890,695	1,260,014	756,101	2,921,274	3,677,375
2014[d]	360,381	49,753	410,134	291,228	570,586	861,814	651,609	620,339	1,271,948
2015	534,088	627,827	1,161,915	589,810	1,029,077	1,618,887	1,123,898	1,656,904	2,780,802
2016	418,290	968,018	1,386,308	348,023	819,333	1,167,356	766,313	1,787,351	2,553,664
2017	453,257	695,497	1,148,754	339,303	363,823	703,126	792,560	1,059,320	1,851,880
2018	263,979	128	264,107	275,718	0	275,718	539,697	128	539,825
Averages									
1998–2017	427,813	909,876	1,337,689	326,416	735,780	1,062,196	754,230	1,645,656	2,399,886
2008–2017	419,676	985,766	1,405,442	352,987	729,772	1,082,759	772,663	1,715,538	2,488,201
2013–2017	430,560	874,335	1,304,894	387,537	734,703	1,122,239	818,096	1,609,038	2,427,134

[a] Includes Cape Igvak and SEDM harvests considered Chignik-bound as defined in regulation. However, portions of the harvests from Cape Igvak and SEDM from 1970 to 1979 were not considered Chignik bound by regulation but were included in this table.

[b] Does not include subsistence-caught fish.

[c] Includes catches from the Chignik Lagoon test fishery and fish retained for personal use.

[d] Beginning in 2014, in season genetic samples were collected at the weir to determine the proportion of the early and late run during the overlap period from late June to mid-July instead of the traditional date of July 4. These results were also applied to the harvest numbers using time delays.

Table 22.–Chignik sockeye salmon forecasts and actual runs, by run and year, 1994–2018, in millions of fish.

	Early run			Late run			Total run		
Year	Forecast	Actual	Difference	Forecast	Actual	Difference	Forecast	Actual	Difference
1994	1.80	2.36	0.56	1.30	0.61	-0.69	3.10	2.98	-0.12
1995	1.90	1.03	-0.87	0.90	1.69	0.79	2.80	2.72	-0.08
1996	1.40	2.15	0.75	1.60	0.99	-0.61	3.00	3.14	0.14
1997	1.00	0.63	-0.37	1.60	0.91	-0.69	2.60	1.55	-1.05
1998	0.90	0.72	-0.18	1.10	1.11	0.01	2.00	1.83	-0.17
1999	1.05	2.48	1.43	1.29	1.98	0.69	2.34	4.46	2.12
2000	3.90	2.11	-1.79	1.09	0.84	-0.25	4.99	2.96	-2.03
2001	1.00	1.31	0.31	0.91	1.61	0.70	1.91	2.91	1.00
2002	1.03	1.06	0.03	1.09	0.91	-0.18	2.12	1.97	-0.15
2003	1.64	0.99	-0.65	1.19	1.00	-0.19	2.83	1.99	-0.84
2004	1.26	1.09	-0.17	1.08	0.41	-0.67	2.34	1.50	-0.84
2005	1.84	1.46	-0.38	0.55	0.71	0.16	2.39	2.17	-0.22
2006	1.21	0.78	-0.43	0.28	0.96	0.68	1.49	1.74	0.25
2007	1.02	0.60	-0.42	0.90	0.95	0.05	1.92	1.55	-0.37
2008	1.07	0.60	-0.47	0.65	0.79	0.14	1.72	1.39	-0.33
2009	0.85	0.87	0.02	0.54	1.23	0.69	1.39	2.10	0.71
2010	1.08	1.20	0.12	1.11	1.19	0.08	2.19	2.39	0.20
2011	1.30	3.08	1.78	1.02	0.82	-0.20	2.32	3.90	1.58
2012	1.08	1.64	0.56	1.20	1.33	0.13	2.28	2.96	0.68
2013	2.77	2.42	-0.35	1.05	1.26	0.21	3.82	3.68	-0.14
2014	0.79	0.41	-0.38	0.91	0.86	-0.05	1.70	1.27	-0.43
2015	1.32	1.16	-0.16	1.22	1.62	0.40	2.54	2.78	0.24
2016	1.80	1.39	-0.41	1.11	1.17	0.06	2.91	2.56	-0.35
2017	1.26	1.15	-0.11	0.94	0.70	-0.24	2.20	1.85	-0.35
2018	0.85	0.26	-0.59	0.90	0.28	-0.63	1.75	0.54	-1.22
Averages									
2008–2017	1.33	1.39	0.06	0.97	1.10	0.12	2.31	2.49	0.18
2013–2017	1.59	1.31	-0.28	1.05	1.12	0.08	2.63	2.43	-0.21

Table 23.–Chignik Management Area coho salmon harvest, by year, 1980–2018.

	Test fish		Commercial catch		Home pack		Total	
Year	Number	Pounds	Number	Pounds	Number	Pounds[a]	Number	Pounds
1980	ND	ND	119,573	771,392	ND	ND	119,573	771,392
1981	ND	ND	78,805	602,603	ND	ND	78,805	602,603
1982	ND	ND	300,273	2,373,268	ND	ND	300,273	2,373,268
1983	ND	ND	61,927	488,203	ND	ND	61,927	488,203
1984	ND	ND	110,128	949,965	ND	ND	110,128	949,965
1985	0	0	191,162	1,709,637	ND	ND	191,162	1,709,637
1986	ND	ND	116,633	867,195	ND	ND	116,633	867,195
1987	0	0	150,414	1,189,803	ND	ND	150,414	1,189,803
1988	0	0	370,420	2,889,427	ND	ND	370,420	2,889,427
1989	0	0	68,233	559,140	ND	ND	68,233	559,140
1990	0	0	130,131	933,745	ND	ND	130,131	933,745
1991	42	253	165,583	1,182,704	ND	ND	165,625	1,182,957
1992	1	8	310,942	2,362,683	ND	ND	310,943	2,362,691
1993	356	2,024	229,103	1,459,220	ND	ND	229,459	1,461,244
1994	103	506	237,101	1,996,320	ND	ND	237,204	1,996,826
1995	0	0	280,605	2,062,086	913	6,709	281,518	2,068,795
1996	0	0	193,226	1,485,947	20	154	193,246	1,486,101
1997	0	0	90,908	756,509	0	0	90,908	756,509
1998	0	0	129,512	1,045,823	27	218	129,539	1,046,041
1999	0	0	89,410	617,320	200	1,381	89,610	618,701
2000	0	0	123,222	943,536	0	0	123,222	943,536
2001	0	0	131,441	1,012,153	7	54	131,448	1,012,207
2002	0	0	49,208	360,781	164	1,202	49,372	361,983
2003	44	287	103,778	857,097	74	611	103,896	857,995
2004	0	0	37	283	0	0	37	283
2005	0	0	6,951	46,970	5	30	6,956	47,000
2006	0	0	39,046	290,720	175	1,312	39,221	292,032
2007	0	0	73,221	543,761	56	416	73,277	544,177
2008	0	0	161,536	1,290,277	0	0	161,536	1,290,277
2009	0	0	110,373	732,346	0	0	110,373	732,346
2010	0	0	159,198	1,137,878	0	0	159,198	1,137,878
2011	0	0	76,776	519,422	16	147	76,792	519,569
2012	0	0	33,316	225,799	0	0	33,316	225,799
2013	0	0	32,284	226,235	28	277	32,312	226,512
2014	0	0	132,459	1,091,310	0	0	132,459	1,091,310
2015	0	0	82,049	523,519	5	31	82,054	523,550
2016	0	0	94,397	658,376	0	0	94,397	658,376
2017	0	0	226,730	1,561,675	99	766	226,829	1,562,441
2018	0	0	1	4	0	0	1	4
Averages								
1998–2017	2	14	92,747	684,264	43	322	92,792	684,601
2008–2017	0	0	110,912	796,684	15	122	110,927	796,806
2013–2017	0	0	113,584	812,223	26	215	113,610	812,438

Note: No reliable estimates (ND) were available for some years.

[a] Weights of home pack fish are not reported on fish tickets; therefore, the weights were calculated from the average weight of the commercial harvest for that year.

Table 24.–Chignik Management Area coho salmon harvest (including home pack and the ADF&G test fishery catches), by district and year, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	49,784	7,167	13,872	34,631	14,119	119,573
1981	35,578	8,693	6,222	22,047	6,265	78,805
1982	132,262	6,564	31,476	122,707	7,264	300,273
1983	29,519	330	441	27,173	4,464	61,927
1984	72,722	1,705	403	33,263	2,035	110,128
1985	156,553	7,111	3,203	23,357	938	191,162
1986	60,197	3,027	1,033	33,726	18,650	116,633
1987	77,333	3,806	7	58,688	10,580	150,414
1988	94,292	21,628	6,167	207,086	41,247	370,420
1989	68,231	2	0	0	0	68,233
1990	61,260	27,659	32	23,422	17,758	130,131
1991	56,574	9,294	1,187	57,373	41,197	165,625
1992	80,946	19,612	4,260	140,560	65,565	310,943
1993	48,808	36,421	4,240	84,056	55,934	229,459
1994	70,541	19,794	176	110,476	36,217	237,204
1995	54,646	46,975	458	88,116	91,323	281,518
1996	45,361	35,440	33	91,587	20,825	193,246
1997	32,847	45,878	1,801	9,139	1,243	90,908
1998	23,070	32,743	1,227	55,359	17,140	129,539
1999	23,144	24,308	3,095	36,405	2,658	89,610
2000	11,620	37,943	2,555	69,599	1,505	123,222
2001	10,007	31,062	2,303	86,580	1,496	131,448
2002	8,461	4,442	0	36,283	186	49,372
2003	37,800	7,632	0	55,225	3,239	103,896
2004	37	0	0	0	0	37
2005	510	730	12	5,045	659	6,956
2006	7,057	2,170	1	29,993	0	39,221
2007	11,790	12,830	420	47,525	712	73,277
2008	46,400	7,647	1,052	97,153	9,284	161,536
2009	9,570	13,276	2,888	80,395	4,244	110,373
2010	17,469	27,982	3,109	104,886	5,752	159,198
2011	1,801	12,915	354	50,504	11,218	76,792
2012	6,545	4,667	36	22,037	31	33,316
2013	4,146	8,238	521	16,770	2,637	32,312
2014	6,550	17,584	653	98,345	9,327	132,459
2015	712	27,257	454	48,950	4,681	82,054
2016	4,604	41,515	55	26,940	21,283	94,397
2017	5,488	11,677	1,626	164,510	43,528	226,829
2018[a]	[a]	[a]	[a]	[a]	[a]	1
Averages						
1998–2017	11,839	16,331	1,018	56,625	6,979	92,792
2008–2017	10,329	17,276	1,075	71,049	11,199	110,927
2013–2017	4,300	21,254	662	71,103	16,291	113,610

[a] Confidentiality requirements prohibit the release of this information

Table 25.–Chignik Management Area pink salmon harvest, by year, 1980–2018.

	Test fish		Commercial catch		Home pack		Total	
Year	Number	Pounds	Number	Pounds	Number	Pounds[a]	Number	Pounds
1980	ND	ND	1,093,184	3,635,145	ND	ND	1,093,184	3,635,145
1981	ND	ND	1,162,613	4,479,368	ND	ND	1,162,613	4,479,368
1982	ND	ND	873,384	2,916,671	ND	ND	873,384	2,916,671
1983	ND	ND	321,178	1,200,888	ND	ND	321,178	1,200,888
1984	ND	ND	444,804	1,651,249	ND	ND	444,804	1,651,249
1985	0	0	160,128	643,731	ND	ND	160,128	643,731
1986	ND	ND	647,125	2,374,311	ND	ND	647,125	2,374,311
1987	0	0	246,775	899,560	ND	ND	246,775	899,560
1988	0	0	2,997,159	10,723,505	ND	ND	2,997,159	10,723,505
1989	0	0	27,712	94,269	ND	ND	27,712	94,269
1990	0	0	550,008	1,675,644	ND	ND	550,008	1,675,644
1991	2,660	9,237	1,166,588	3,348,394	ND	ND	1,169,248	3,357,631
1992	114	536	1,553,959	5,798,623	ND	ND	1,554,073	5,799,159
1993	1,826	5,539	1,646,551	5,308,258	ND	ND	1,648,377	5,313,797
1994	14	55	431,049	1,494,604	ND	ND	431,063	1,494,659
1995	0	0	2,057,998	7,350,386	0	0	2,057,998	7,350,386
1996	0	0	183,806	536,218	5,262	15,351	189,068	551,569
1997	0	0	844,431	2,784,333	0	0	844,431	2,784,333
1998	0	0	776,988	2,586,026	0	0	776,988	2,586,026
1999	0	0	1,698,651	4,845,435	0	0	1,698,651	4,845,435
2000	0	0	428,064	1,183,004	0	0	428,064	1,183,004
2001	0	0	1,281,760	4,077,814	7	22	1,281,767	4,077,836
2002	66	276	65,984	206,385	0	0	66,050	206,661
2003	570	2,167	501,661	1,951,928	407	1,584	502,638	1,955,679
2004	0	0	2,380	7,589	0	0	2,380	7,589
2005	8	48	193,803	611,023	234	813	194,045	611,884
2006	0	0	383,574	1,403,428	0	0	383,574	1,403,428
2007	0	0	2,019,748	7,388,012	0	0	2,019,748	7,388,012
2008	0	0	2,389,958	8,192,350	0	0	2,389,958	8,192,350
2009	0	0	1,408,339	4,502,661	0	0	1,408,339	4,502,661
2010	0	0	489,774	1,663,961	7	24	489,781	1,663,985
2011	58	154	905,108	2,882,546	0	0	905,166	2,882,700
2012	0	0	137,684	452,160	22	65	137,706	452,225
2013	3	6	871,868	2,610,880	0	0	871,871	2,610,886
2014	16	60	352,099	1,138,241	0	0	352,115	1,138,301
2015	77	195	1,978,134	5,843,570	0	0	1,978,211	5,843,765
2016	18	69	140,895	563,390	0	0	140,913	563,459
2017	184	551	7,077,740	25,305,344	0	0	7,077,924	25,305,895
2018	0	0	6	15	0	0	6	15
Even-year averages								
1998–2016	10	41	516,740	1,739,653	3	9	516,753	1,739,703
2008–2016	7	26	702,082	2,402,020	6	18	702,095	2,402,064
2012–2016	11	43	210,226	717,930	7	22	210,245	717,995

Note: No reliable estimates (ND) were available for some years.

[a] Weights of home pack fish are not reported on fish tickets; therefore, they were calculated from the average weight of the commercial harvest.

Table 26.–Chignik Management Area pink salmon harvest (including home pack and the ADF&G test fishery catches), by district and year, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	180,912	108,682	472,510	216,460	114,620	1,093,184
1981	121,380	210,023	173,293	433,605	224,312	1,162,613
1982	82,973	80,606	89,074	602,408	18,323	873,384
1983	27,284	7,861	7,817	164,338	113,878	321,178
1984	165,178	47,250	57,715	173,820	841	444,804
1985	14,429	16,087	6,570	80,577	42,465	160,128
1986	191,264	44,127	49,635	200,793	161,306	647,125
1987	13,887	7,769	2,079	187,701	35,339	246,775
1988	119,794	318,370	1,006,366	1,141,382	411,247	2,997,159
1989	27,691	21	0	0	0	27,712
1990	94,528	233,677	40,574	135,810	45,419	550,008
1991	76,163	173,967	27,979	419,264	471,875	1,169,248
1992	178,105	205,750	183,119	628,900	358,199	1,554,073
1993	55,909	205,037	52,755	685,605	649,071	1,648,377
1994	59,425	99,149	12,952	174,641	84,896	431,063
1995	106,939	469,745	8,572	791,718	681,024	2,057,998
1996	1,804	20,717	7,201	100,871	58,475	189,068
1997	39,461	603,575	72,347	118,003	11,045	844,431
1998	26,054	233,732	66,725	343,187	107,290	776,988
1999	59,001	664,208	40,571	771,411	163,460	1,698,651
2000	28,067	271,417	10,500	106,147	11,933	428,064
2001	75,142	641,438	97,438	424,537	43,212	1,281,767
2002	10,253	17,580	0	36,918	1,299	66,050
2003	56,042	88,736	267	326,239	31,354	502,638
2004	2,378	2	0	0	0	2,380
2005	71,438	99,491	21	20,952	2,143	194,045
2006	62,419	79,726	79,465	161,964	0	383,574
2007	187,670	612,921	43,379	1,152,331	23,447	2,019,748
2008	232,444	369,298	416,520	1,062,482	309,214	2,389,958
2009	77,569	317,085	275,791	711,890	26,004	1,408,339
2010	30,683	183,008	43,264	225,716	7,110	489,781
2011	30,707	225,307	54,288	368,351	226,513	905,166
2012	10,096	55,030	4,946	67,523	111	137,706
2013	76,473	218,685	197,293	192,861	186,559	871,871
2014	11,663	98,984	2,964	226,008	12,496	352,115
2015	81,541	686,374	13,783	993,349	203,164	1,978,211
2016	3,110	85,346	10,142	25,000	17,315	140,913
2017	432,898	728,427	574,879	2,930,711	2,411,009	7,077,924
2018	[a]	[a]	[a]	[a]	[a]	6
Even-year averages						
1998–2016	41,717	139,412	63,453	225,495	46,677	516,753
2008–2016	57,599	158,333	95,567	321,346	69,249	702,095
2012–2016	8,290	79,787	6,017	106,177	9,974	210,245

[a] Confidentiality requirements prohibit the release of this information.

Table 27.–Chignik Management Area chum salmon harvest, by year, 1980–2018.

	Test fish		Commercial catch		Home pack		Total	
Year	Number	Pounds	Number	Pounds	Number	Pounds[a]	Number	Pounds
1980	ND	ND	252,521	1,765,287	ND	ND	252,521	1,765,287
1981	ND	ND	580,332	4,502,632	ND	ND	580,332	4,502,632
1982	ND	ND	390,096	3,231,403	ND	ND	390,096	3,231,403
1983	ND	ND	159,412	1,205,266	ND	ND	159,412	1,205,266
1984	ND	ND	63,303	485,967	ND	ND	63,303	485,967
1985	0	0	22,805	145,276	ND	ND	22,805	145,276
1986	ND	ND	176,640	1,304,418	ND	ND	176,640	1,304,418
1987	0	0	127,261	943,941	ND	ND	127,261	943,941
1988	0	0	267,775	2,196,377	ND	ND	267,775	2,196,377
1989	0	0	1,624	11,888	ND	ND	1,624	11,888
1990	0	0	270,004	1,757,019	ND	ND	270,004	1,757,019
1991	607	4,260	260,489	1,671,939	ND	ND	261,096	1,676,199
1992	16	140	222,118	1,592,186	ND	ND	222,134	1,592,326
1993	57	300	122,303	735,747	ND	ND	122,360	736,047
1994	521	3,437	226,755	1,627,574	ND	ND	227,276	1,631,011
1995	0	0	380,949	2,814,987	5	37	380,954	2,815,024
1996	0	0	99,791	779,840	21,100	164,891	120,891	944,731
1997	0	0	155,905	1,196,999	0	0	155,905	1,196,999
1998	0	0	128,841	917,648	155	1,104	128,996	918,752
1999	0	0	140,594	1,064,433	3	0	140,597	1,064,433
2000	0	0	120,957	1,033,665	0	0	120,957	1,033,665
2001	0	0	198,874	1,609,533	129	1,044	199,003	1,610,577
2002	46	334	54,513	406,382	0	0	54,559	406,716
2003	137	1,394	63,907	447,921	0	0	64,044	449,315
2004	0	0	505	3,803	0	0	505	3,803
2005	2	15	8,704	63,379	115	825	8,821	64,219
2006	0	0	61,630	450,686	0	0	61,630	450,686
2007	0	0	78,552	648,355	1	8	78,553	648,363
2008	0	0	209,325	1,726,108	0	0	209,325	1,726,108
2009	0	0	256,424	1,922,522	1	9	256,425	1,922,531
2010	0	0	581,329	4,437,042	0	0	581,329	4,437,042
2011	11	91	269,492	1,857,512	0	0	269,503	1,857,603
2012	0	0	170,872	1,533,079	240	1,780	171,112	1,534,859
2013	0	0	154,965	1,196,565	0	0	154,965	1,196,565
2014	3	24	55,149	458,475	0	0	55,152	458,499
2015	16	113	101,001	656,047	0	0	101,017	656,160
2016	17	139	118,418	805,140	0	0	118,435	805,279
2017	66	495	609,105	4,643,283	65	514	609,236	4,644,292
2018	0	0	924	7,121	0	0	924	7,121
Averages								
1998–2017	15	130	169,158	1,294,079	35	264	169,208	1,294,473
2008–2017	11	86	252,608	1,923,577	31	230	252,650	1,923,894
2013–2017	20	154	207,728	1,551,902	13	103	207,761	1,552,159

Note: No reliable estimates (ND) were available for some years.

[a] Weights of home pack fish are not reported on all fish tickets; therefore, they were calculated from the average weight of the commercial harvest.

Table 28.–Chignik Management Area chum salmon harvest (including home pack and the ADF&G test fishery catches), by district and year, 1980–2018.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1980	19,944	38,902	56,805	91,868	45,002	252,521
1981	38,061	160,730	108,668	221,579	51,294	580,332
1982	16,034	33,669	64,513	253,299	22,581	390,096
1983	16,747	9,815	8,250	101,959	22,641	159,412
1984	8,173	8,150	21,134	25,364	482	63,303
1985	4,905	5,242	864	10,704	1,090	22,805
1986	18,167	29,502	17,880	74,070	37,021	176,640
1987	5,163	9,437	8,890	86,898	16,873	127,261
1988	7,013	39,316	77,511	102,730	41,205	267,775
1989	1,587	34	3	0	0	1,624
1990	11,460	113,741	27,463	91,603	25,737	270,004
1991	17,545	51,429	4,925	98,603	88,594	261,096
1992	12,711	45,569	61,209	65,466	37,179	222,134
1993	8,116	43,306	21,157	25,045	24,736	122,360
1994	25,250	69,552	4,333	94,116	34,025	227,276
1995	14,588	107,066	8,074	158,273	92,953	380,954
1996	782	46,993	19,837	36,303	16,976	120,891
1997	20,978	104,259	11,397	16,280	2,991	155,905
1998	7,352	43,191	5,180	41,425	31,848	128,996
1999	12,150	75,495	11,332	37,089	4,531	140,597
2000	8,389	66,904	8,045	34,823	2,796	120,957
2001	11,534	84,132	50,911	37,466	14,960	199,003
2002	3,949	9,643	513	40,337	117	54,559
2003	10,891	11,304	50	39,883	1,916	64,044
2004	499	6	0	0	0	505
2005	2,370	5,329	2	1,054	66	8,821
2006	2,303	9,455	776	49,096	0	61,630
2007	3,829	19,595	7,851	46,943	335	78,553
2008	13,453	40,130	58,925	88,078	8,739	209,325
2009	14,553	62,149	59,800	116,231	3,692	256,425
2010	27,388	226,501	116,336	204,911	6,193	581,329
2011	9,077	116,580	51,989	75,363	16,494	269,503
2012	5,523	88,120	21,227	56,125	117	171,112
2013	9,202	57,356	45,268	38,237	4,902	154,965
2014	4,329	20,750	610	26,578	2,885	55,152
2015	5,683	39,373	2,768	48,080	5,113	101,017
2016	5,141	57,563	21,654	26,992	7,085	118,435
2017	16,879	102,373	141,406	265,306	83,272	609,236
2018	[a]	[a]	[a]	[a]	[a]	924
Averages						
1998–2017	8,725	56,797	30,232	63,701	9,753	169,208
2008–2017	11,123	81,090	51,998	94,590	13,849	252,650
2013–2017	8,247	55,483	42,341	81,039	20,651	207,761

[a] Confidentiality requirements prohibit the release of this information.

Table 29.–Value of the commercial salmon harvest, by species, and average value per active permit, in dollars, in the Chignik Management Area, 1970–2018.

	Chinook		Sockeye		Coho		Pink		Chum			Number of	Value per
Year	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]	Total value	permits[c]	permit
1970	6,129	77	2,190,272	27,378	18,397	230	635,673	7,946	376,025	4,700	3,226,496	80	40,331
1971	6,472	84	2,034,279	26,419	23,240	302	366,693	4,762	326,760	4,244	2,757,444	77	35,811
1972	2,028	25	825,498	10,319	35,699	446	48,401	605	87,759	1,097	999,385	80	12,492
1973	5,255	67	3,030,057	38,355	73,663	932	20,610	261	10,180	129	3,139,765	79	39,744
1974	2,941	31	3,618,781	38,498	31,933	340	64,069	682	51,125	544	3,768,849	94	40,094
1975	6,561	76	1,384,271	16,096	213,539	2,483	104,115	1,211	61,704	717	1,770,190	86	20,584
1976	13,800	179	4,751,000	61,701	138,000	1,792	568,300	7,381	183,600	2,384	5,654,700	77	73,438
1977	18,828	214	14,553,720	165,383	104,819	1,191	920,881	10,465	368,066	4,183	15,966,314	88	181,435
1978	56,700	597	15,653,500	164,774	116,400	1,225	1,131,500	11,911	404,500	4,258	17,362,600	95	182,764
1979	32,050	311	11,345,503	110,151	710,192	6,895	2,622,269	25,459	126,866	1,232	14,836,880	103	144,047
1980	67,657	651	5,532,290	53,195	520,655	5,006	1,477,060	14,203	1,061,963	10,211	8,659,625	104	83,266
1981	75,231	716	17,262,119	164,401	439,900	4,190	1,881,334	17,917	2,431,421	23,156	22,090,005	105	210,381
1982	75,276	731	13,038,510	126,587	1,782,027	17,301	578,184	5,613	1,356,597	13,171	16,830,594	103	163,404
1983	96,159	943	10,728,088	105,177	219,650	2,153	240,171	2,355	421,713	4,134	11,705,781	102	114,763
1984	114,502	1,145	20,402,076	204,021	759,972	7,600	330,916	3,309	146,024	1,460	21,753,490	100	217,535
1985	67,088	633	7,997,834	75,451	1,471,418	13,881	140,076	1,321	59,475	561	8,735,891	106	82,414
1986	84,800	831	16,882,290	165,513	667,740	6,546	356,147	3,492	456,546	4,476	18,447,523	102	180,858
1987	72,739	706	24,783,033	240,612	1,035,129	10,050	269,868	2,620	339,819	3,299	26,500,588	103	257,287
1988	286,740	2,839	14,350,354	142,083	4,153,424	41,123	6,771,266	67,042	2,189,293	21,676	27,751,077	101	274,763
1989	78,999	790	13,047,378	130,474	436,892	4,369	32,994	330	4,745	47	13,601,008	100	136,010
1990	185,256	1,834	22,509,923	222,871	700,309	6,934	502,693	4,977	878,510	8,698	24,776,691	101	245,314
1991	50,027	490	11,002,784	107,870	650,626	6,379	402,916	3,950	502,860	4,930	12,609,213	102	123,620
1992	193,326	1,914	12,552,025	124,277	1,323,107	13,100	811,882	8,038	414,005	4,099	15,294,345	101	151,429
1993	175,690	1,722	8,210,106	80,491	730,622	7,163	637,666	6,252	184,012	1,804	9,938,096	102	97,432
1994	38,096	385	10,046,245	101,477	1,094,415	11,055	226,504	2,288	430,888	4,352	11,836,148	99	119,557
1995	60,174	602	11,969,210	119,692	834,337	8,343	977,811	9,778	634,780	6,348	14,476,312	100	144,763
1996	25,041	250	12,640,560	126,406	447,228	4,472	24,827	248	32,279	323	13,169,935	100	131,699
1997	20,642	211	4,860,589	49,598	453,905	4,632	348,042	3,551	239,400	2,443	5,922,577	98	60,434
1998	31,934	376	6,631,192	78,014	397,413	4,675	310,323	3,651	137,647	1,619	7,508,509	85	88,335

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Table 29.–Page 2 of 2.

Year	Chinook Total[a]	Chinook Average[b]	Sockeye Total[a]	Sockeye Average[b]	Coho Total[a]	Coho Average[b]	Pink Total[a]	Pink Average[b]	Chum Total[a]	Chum Average[b]	Total value	Number of permits[c]	Value per permit
1999	27,212	302	21,132,550	234,806	170,931	1,899	578,861	6,432	118,547	1,317	22,028,101	90	244,757
2000	16,336	165	11,812,368	119,317	283,061	2,859	106,470	1,075	93,030	940	12,311,264	99	124,356
2001	12,205	133	7,419,339	80,645	263,160	2,860	366,714	3,986	209,239	2,274	8,270,657	92	89,898
2002	3,516	36	4,564,214	46,103	36,078	364	10,333	104	40,671	411	4,654,812	99	47,018
2003	20,212	202	5,283,962	52,840	173,625	1,736	182,100	1,821	71,140	711	5,731,039	100	57,310
2004	26,191	262	3,568,350	35,684	59	1	835	8	647	6	3,596,082	100	35,961
2005	36,060	377	6,314,036	64,429	11,280	115	55,070	562	10,917	111	6,427,363	98	65,585
2006	26,895	560	4,703,317	97,986	105,132	2,190	126,309	2,631	81,123	1,690	5,042,776	48	105,058
2007	26,176	476	4,154,210	75,531	195,754	3,559	1,034,322	18,806	162,089	2,947	5,572,550	55	101,319
2008	15,249	282	4,121,611	76,326	778,282	14,413	1,810,965	33,536	533,358	9,877	7,259,465	54	134,435
2009	30,714	558	7,058,058	128,328	220,824	4,015	800,530	14,555	520,791	9,469	8,630,917	55	156,926
2010	160,076	2,463	9,549,462	146,915	566,191	8,711	565,941	8,707	1,774,763	27,304	12,616,433	65	194,099
2011	57,524	899	21,469,153	335,456	278,391	4,350	1,040,264	16,254	919,586	14,369	23,764,918	64	371,327
2012	47,612	690	12,803,505	185,558	97,430	1,412	146,011	2,116	634,705	9,199	13,729,262	69	198,975
2013	37,620	495	21,960,018	288,948	86,953	1,144	868,071	11,422	385,172	5,068	23,337,834	76	307,077
2014	66,875	955	6,040,512	86,293	434,394	6,206	286,942	4,099	185,016	2,643	7,013,739	70	100,196
2015	74,403	1,033	6,600,110	91,668	101,967	1,416	940,236	13,059	164,225	2,281	7,880,941	72	109,458
2016	176,800	2,562	8,044,321	116,584	158,010	2,290	95,776	1,388	161,028	2,334	8,635,935	69	125,158
2017	51,611	770	7,182,853	107,207	546,586	8,158	6,579,390	98,200	1,439,418	21,484	15,799,858	67	235,819
2018[d]	0	0	860	143	1	1	3	1	1,235	206	3,041	6	507
Averages													
1998-2017	47,261	680	9,020,657	122,432	245,276	3,619	795,273	12,121	382,156	5,803	10,490,623	76	144,653
2008-2017	71,848	1,071	10,482,960	156,328	326,903	5,211	1,313,413	20,334	671,806	10,403	12,866,930	66	193,347
2013-2017	81,462	1,163	9,965,563	138,140	265,582	3,843	1,754,083	25,634	466,972	6,762	12,533,661	71	175,542

[a] Total value of commercial catch in dollars, by species. Total value does not include home pack or department test fishery.

[b] Average value of commercial catch in dollars, by species. Average value does not include home pack or department test fishery.

[c] Includes the number of commercial permits that received income from the harvest. These figures do not include department test fishery harvests.

[d] Values represent the initial price paid, and do not include any postseason adjustments by any processor. The average 2018 exvessel prices per pound were as follows: sockeye – $1.43, coho – $0.35, pink – $0.20, chum – $0.43.

Table 30.–Historical number of subsistence permits issued and returned and estimated subsistence salmon harvest, by species and year, 1980–2018.

	Permits		Estimated salmon harvest					
Year	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	Total
1980	82	37	6	12,475	32	169	478	13,160
1981	29	7	0	2,049	0	0	0	2,049
1982	59	15	3	8,532	12	0	2	8,549
1983	32	21	0	3,078	1,319	850	1,250	6,497
1984	77	64	23	8,747	464	204	330	9,768
1985	59	48	1	7,177	50	25	26	7,279
1986	74	38	4	10,347	205	77	98	10,731
1987	2	1	10	7,021	278	204	261	7,774
1988	80	34	9	9,073	1,455	142	54	10,733
1989	68	23	24	7,551	384	147	81	8,187
1990	72	23	103	8,099	210	115	470	8,997
1991	95	58	42	11,483	13	81	275	11,894
1992	98	19	55	8,648	709	145	305	9,862
1993	201	141	122	14,710	3,765	642	1,265	20,504
1994	219	122	165	13,978	4,055	382	1,720	20,300
1995	111	95	98	9,563	1,191	150	723	11,725
1996	119	104	48	7,357	2,126	355	2,204	12,090
1997	126	103	28	13,442	2,678	840	2,035	19,023
1998	104	72	91	7,750	1,390	186	1,007	10,424
1999	106	88	243	9,040	1,679	136	1,191	12,289
2000	130	112	163	9,561	1,802	517	1,185	13,228
2001	135	122	171	8,633	1,859	213	2,787	13,663
2002	120	86	74	10,092	1,401	23	390	11,980
2003	146	127	267	10,989	2,256	286	1,597	15,395
2004	104	57	88	7,029	1,981	202	1,047	10,347
2005	119	100	224	8,171	2,112	353	730	11,590
2006	113	79	258	8,079	1,539	275	1,035	11,186
2007	128	83	84	10,191	1,936	165	996	13,372
2008	89	69	41	7,189	877	57	619	8,783
2009[a]	95	82	104	6,785	1,174	137	707	8,907
2010[a]	124	90	188	8,148	1,820	222	656	11,034
2011	95	76	52	10,578	1,458	355	1,289	13,732
2012[a]	106	87	116	5,607	1,488	220	810	8,241
2013[a]	112	96	79	6,588	916	164	686	8,433
2014	113	101	148	7,855	1,401	207	339	9,950
2015	123	119	160	9,854	1,393	233	481	12,121
2016	118	93	97	8,150	552	118	251	9,168
2017	101	77	75	6,628	1,474	106	510	8,793

-continued-

Table 30.– Page 2 of 2.

Averages								
1997–2016	115	92	134	8,687	1,586	245	992	11,643
2007–2016	110	90	107	8,095	1,302	188	683	10,374
2012–2016	114	99	120	7,611	1,150	188	513	9,583

Source: Alaska Department of Fish and Game, Division of Subsistence, Alaska Subsistence Fisheries Database.

[a] From 1993–2008 and in 2011, 2014, and 2015 postseason household surveys were conducted to supplement harvest data collected through returned permits. To compensate underestimated harvest due to permits not returned, the average annual harvest for the period 1999–2008 and 2011 reported during postseason surveys was added to harvests from returned permits to estimate the total subsistence harvest for 2009 and 2010, 2012, and 2013.

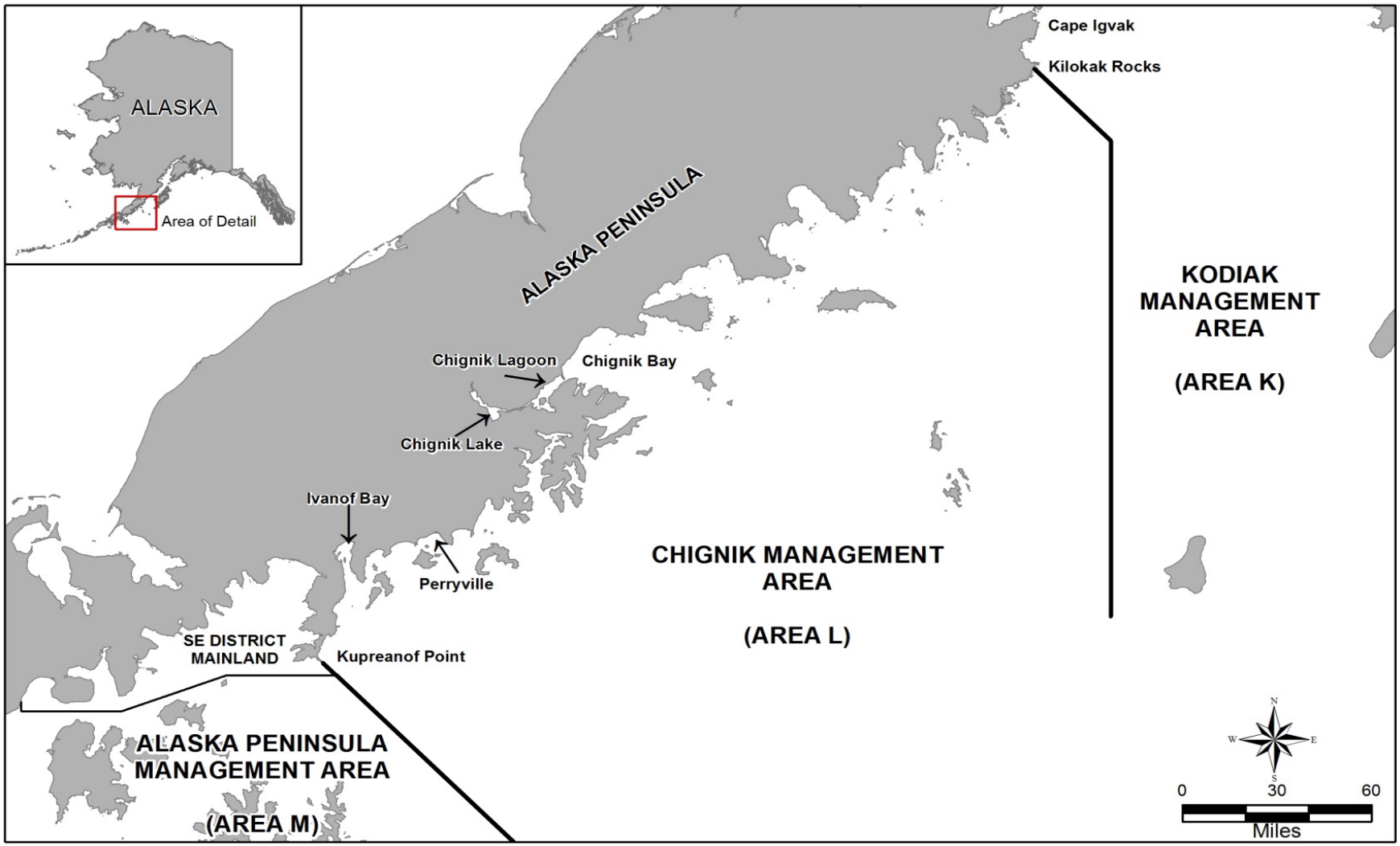

Figure 1.–Map of the Alaska Peninsula illustrating the relative locations of the Chignik, Kodiak, and Alaska Peninsula management areas.

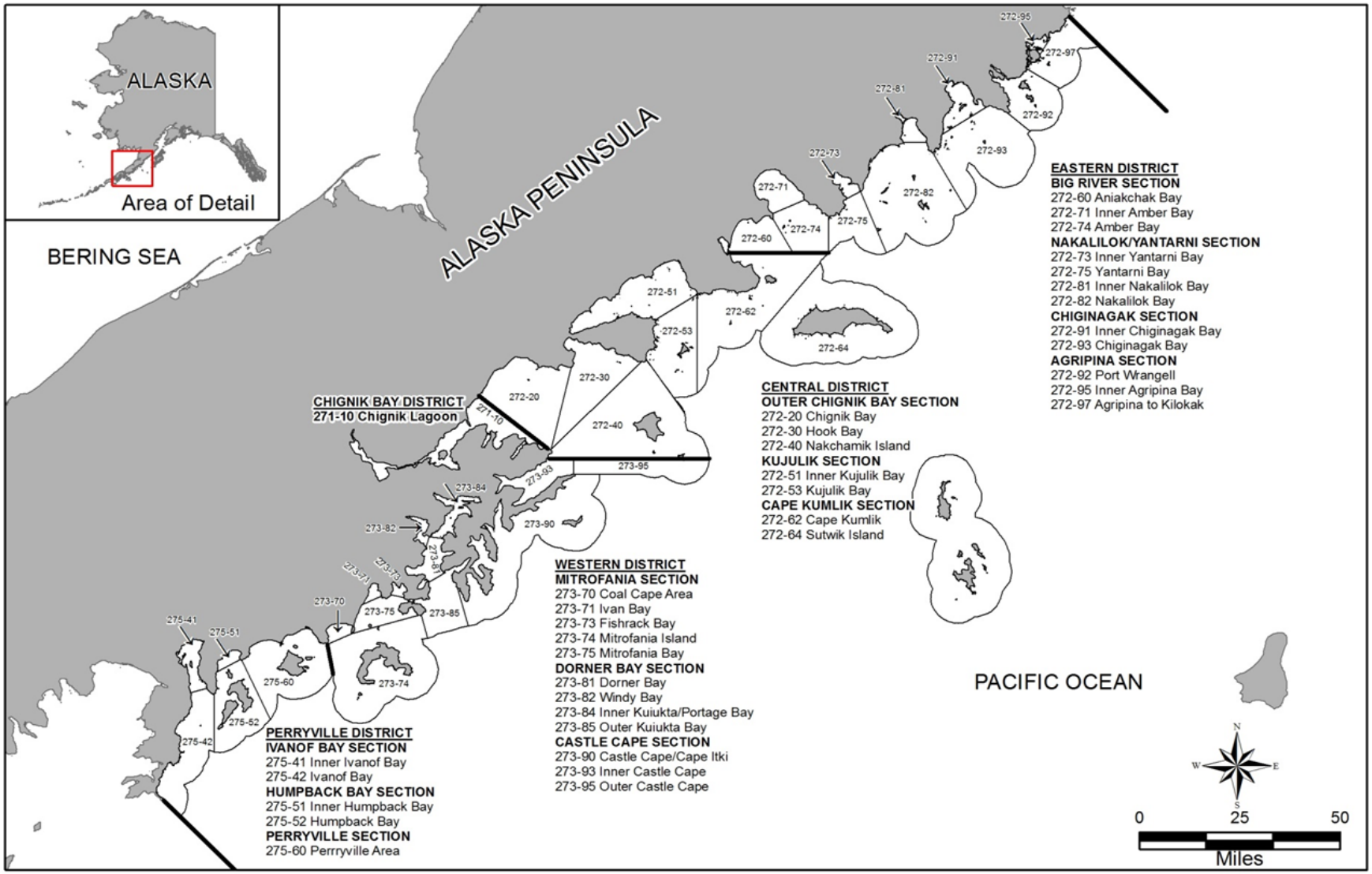

Figure 2.–Map of the Chignik Management Area illustrating district, section and statistical area boundaries.

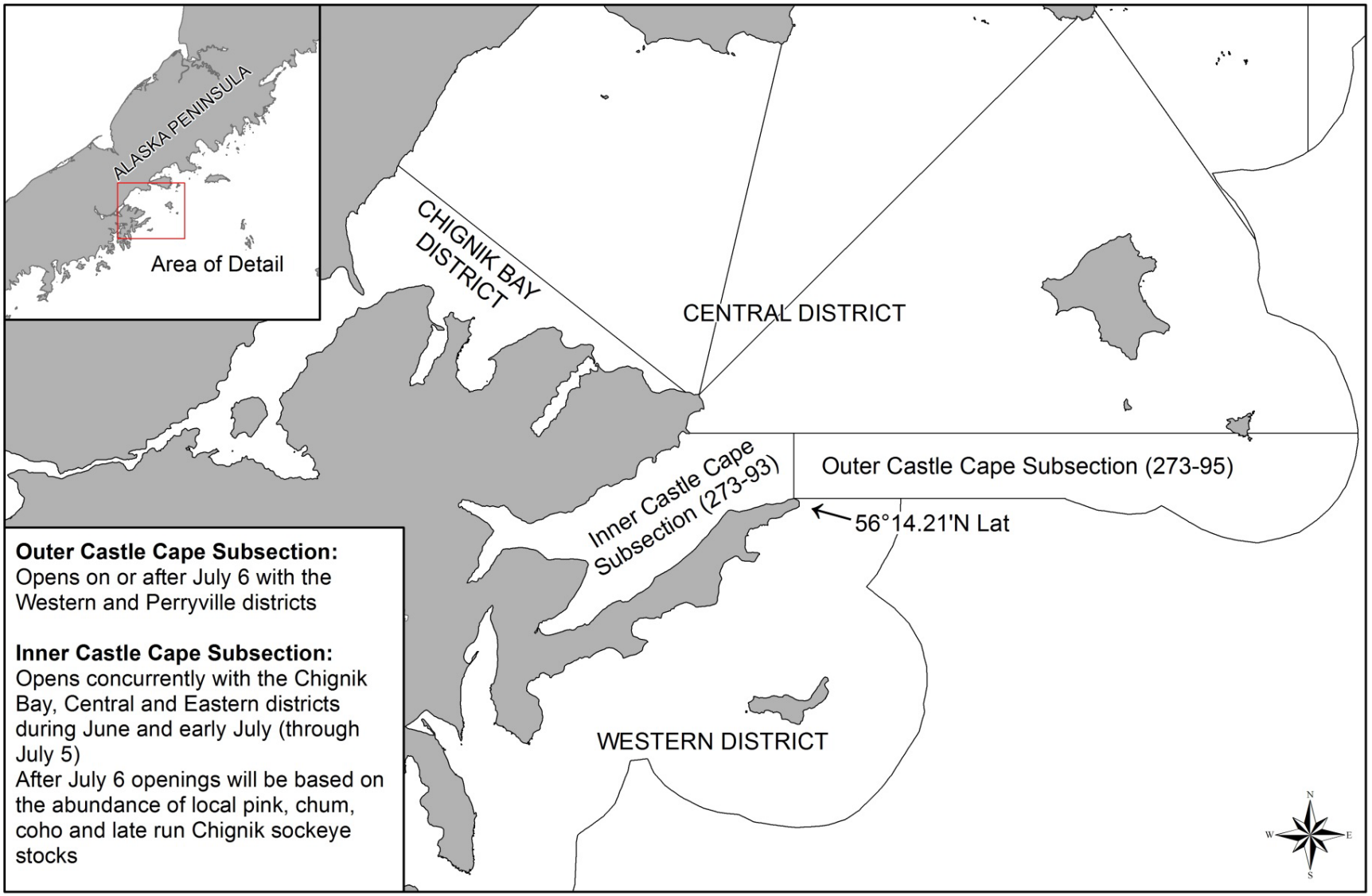

Figure 3.– Map depicting the Inner (273-93) and Outer (273-95) Castle Cape Sections of the Western District.

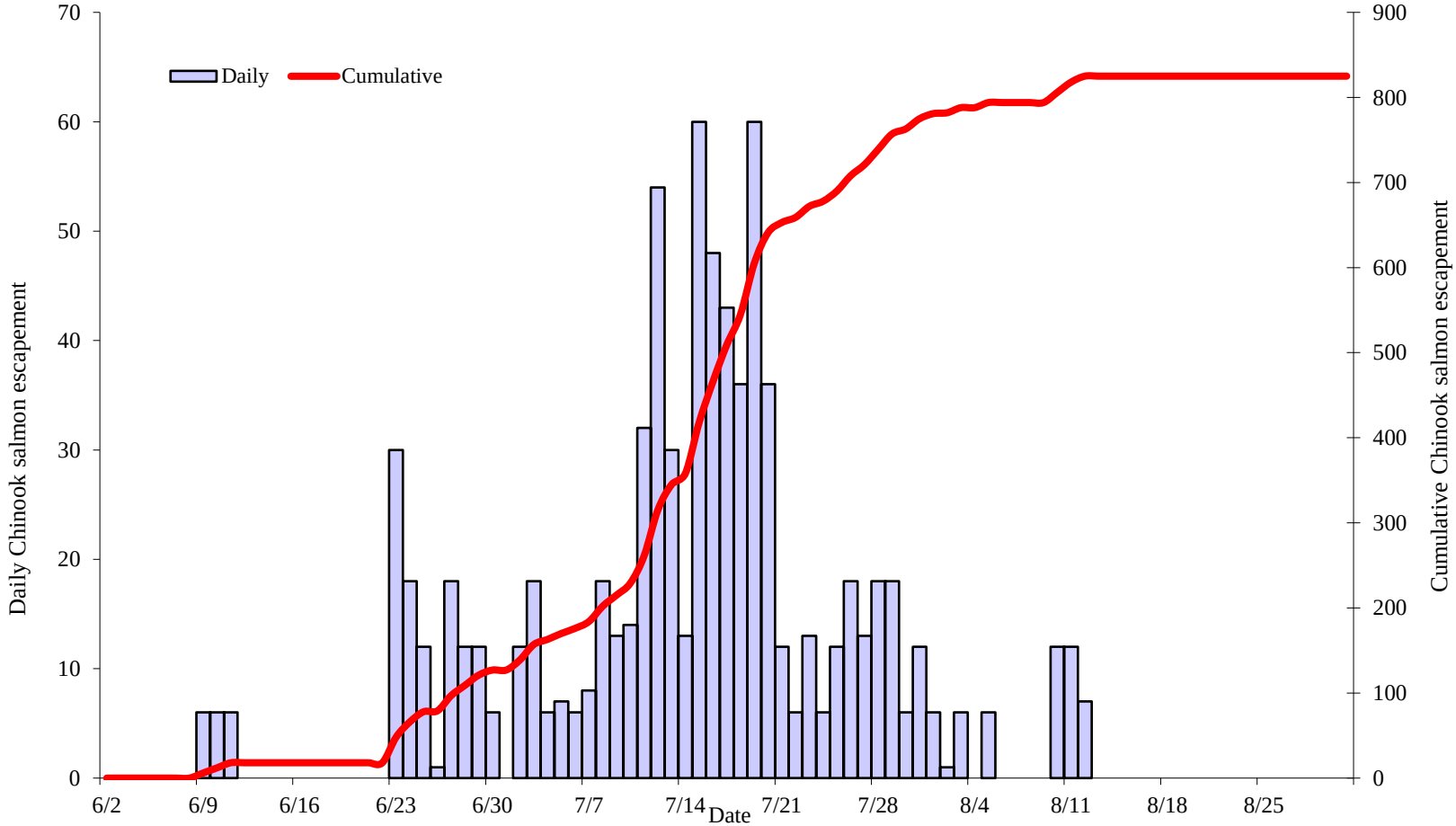

Figure 4.–Chignik River estimated daily and cumulative Chinook salmon escapement, 2018.

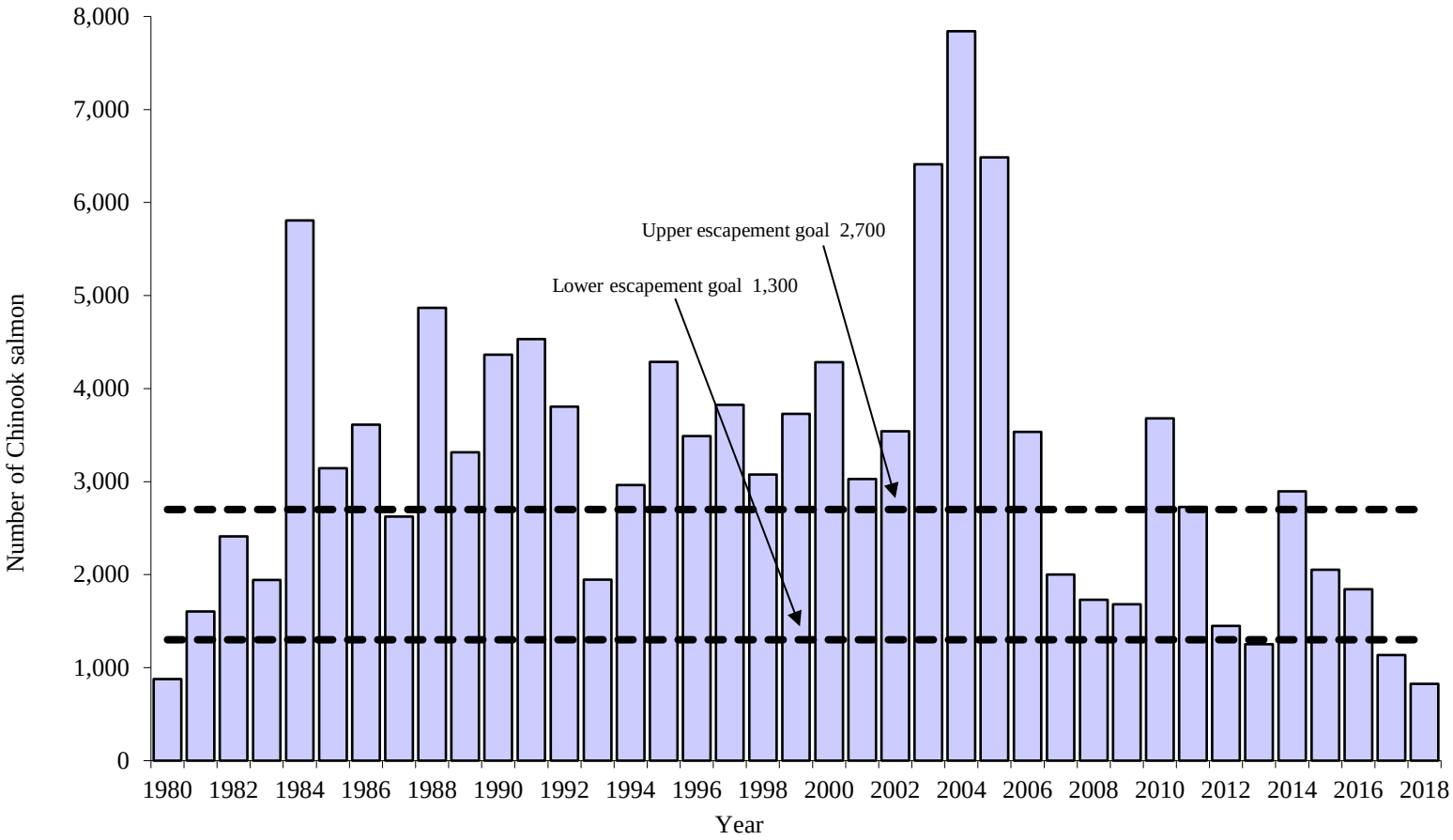

Figure 5.–Chignik River Chinook salmon escapement compared to the current escapement goal range, by year, 1980–2018.

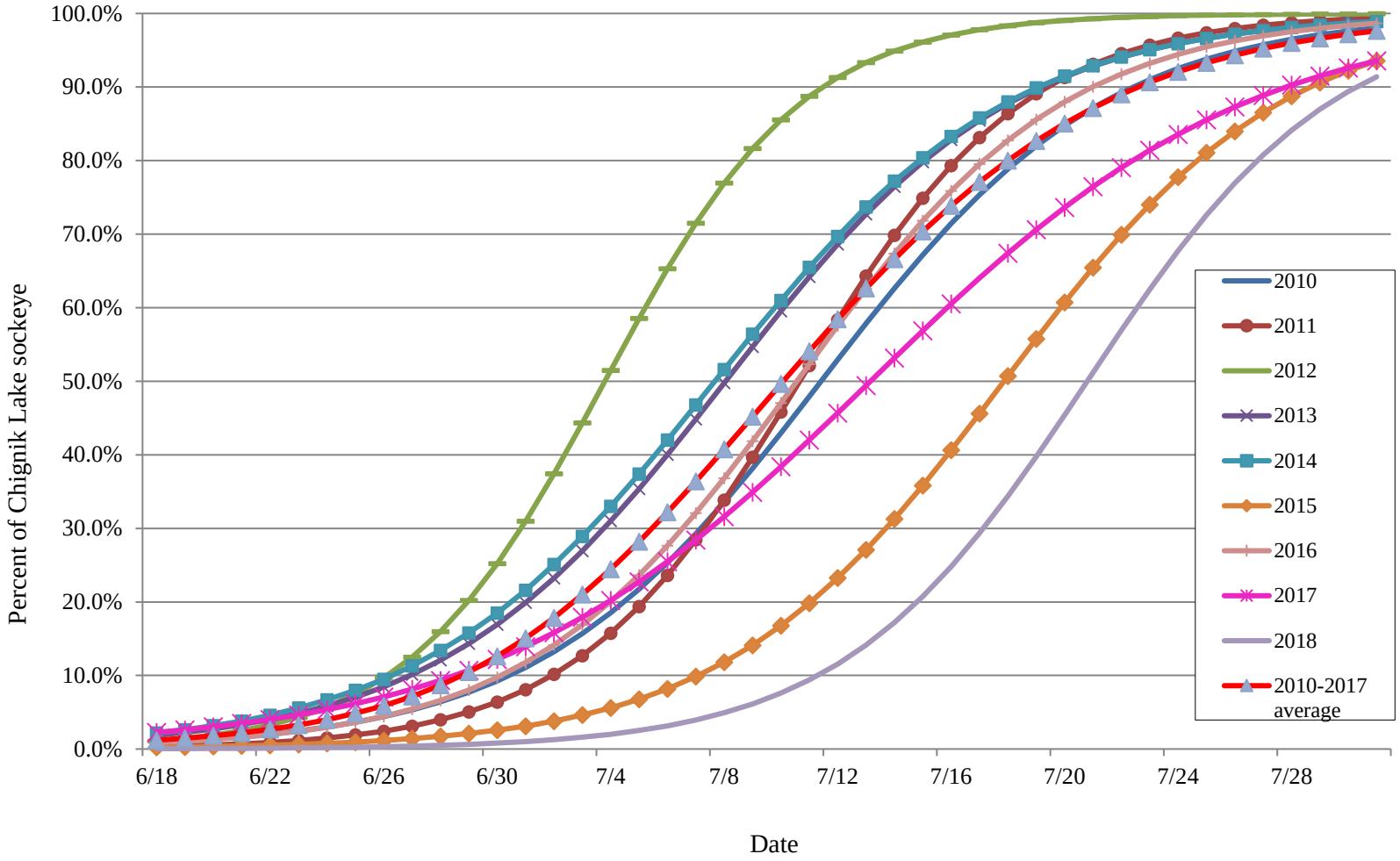

Figure 6.–Estimated proportional escapement of Chignik Lake (late run) sockeye salmon from inseason mixed-stock genetic analysis, 2010–2018.

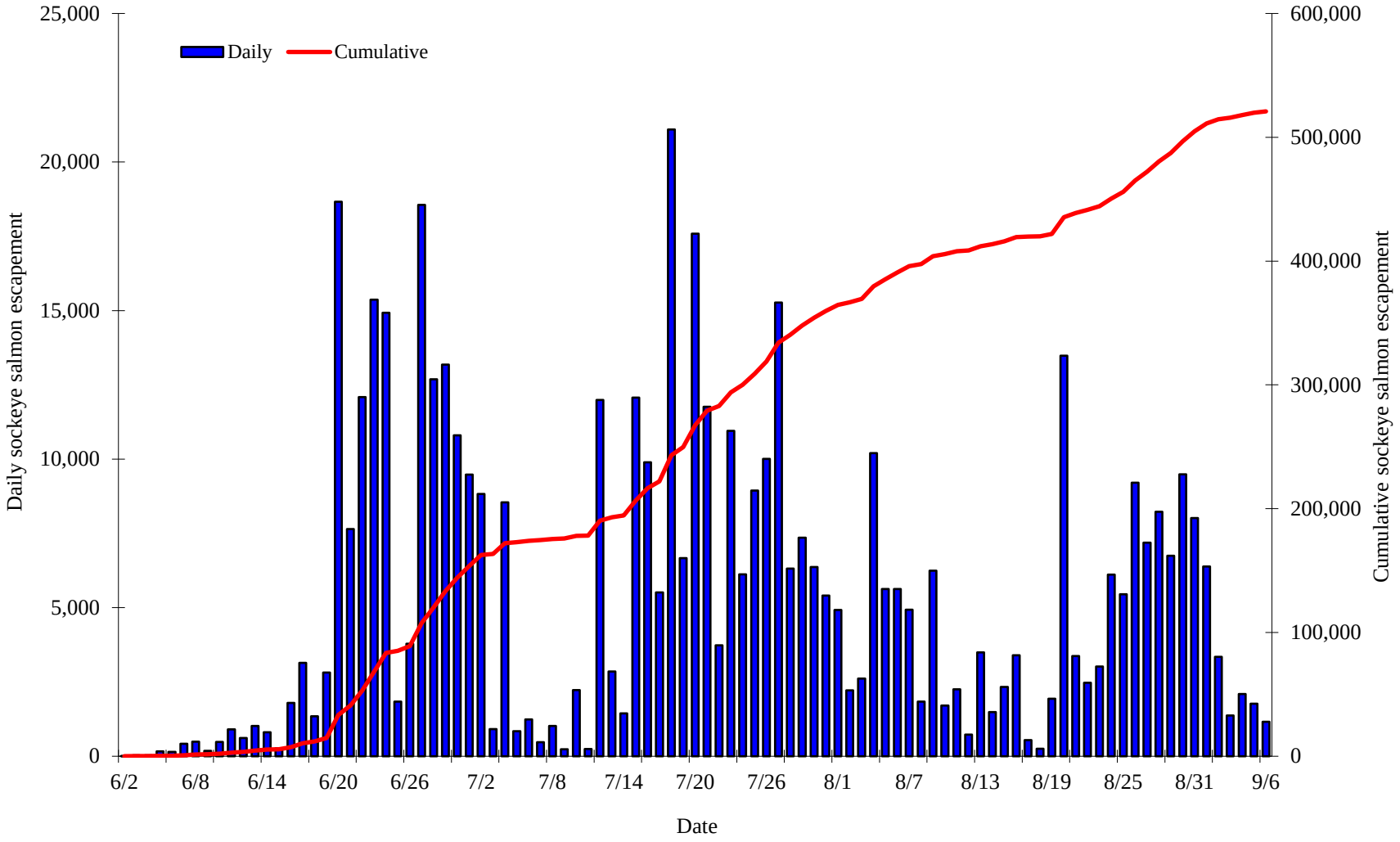

Figure 7.–Chignik River sockeye salmon daily and cumulative escapement (6/1–9/6), 2018.

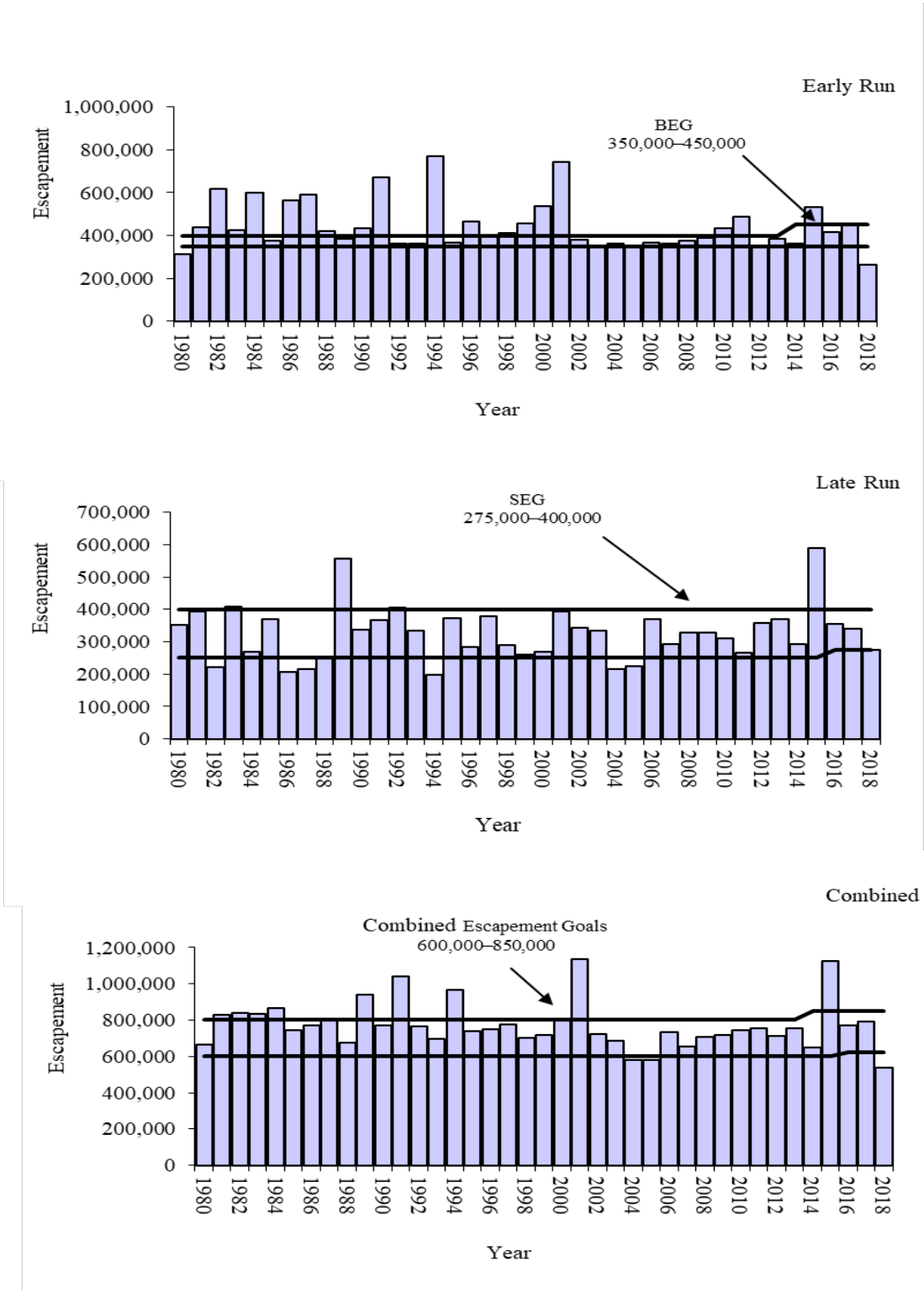

Figure 8.–Chignik River sockeye salmon early, late, and combined run escapements 1980–2018, compared to established escapement goals (including a late run inriver run goal of 75,000).

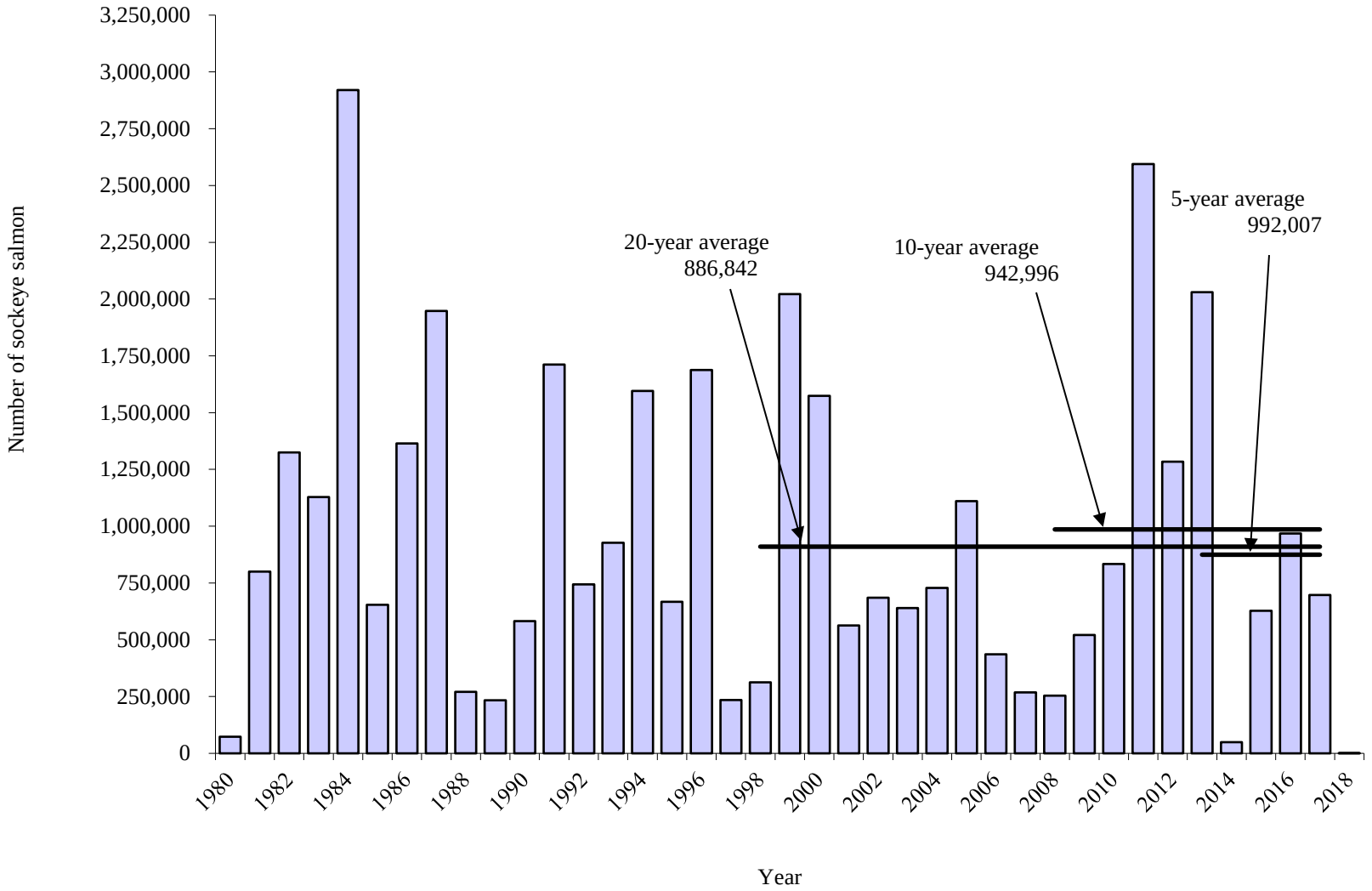

Figure 9.–Chignik-bound sockeye salmon early-run harvest, 1980–2018.

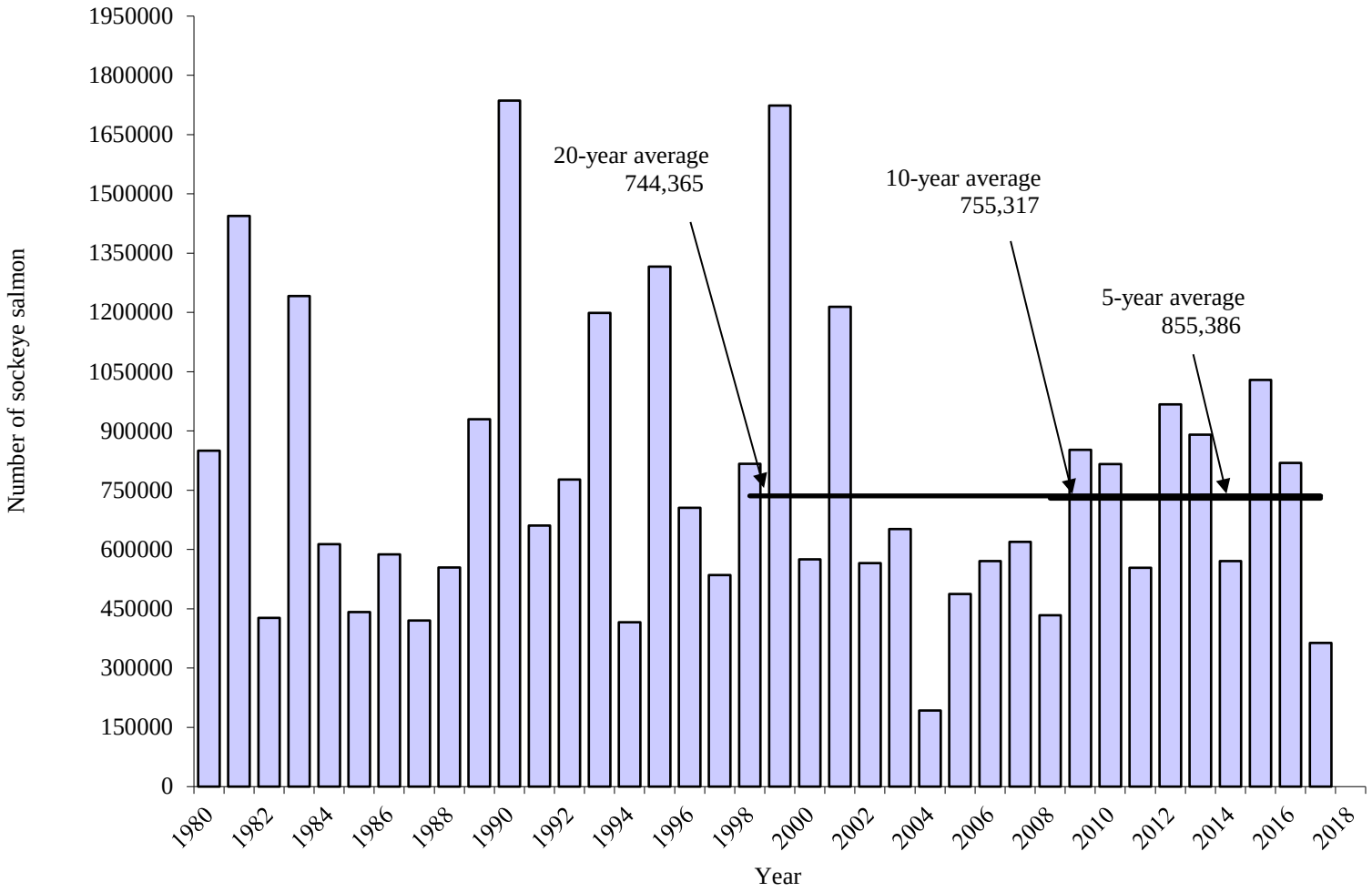

Figure 10.–Chignik-bound sockeye salmon late-run harvest, 1980–2018.

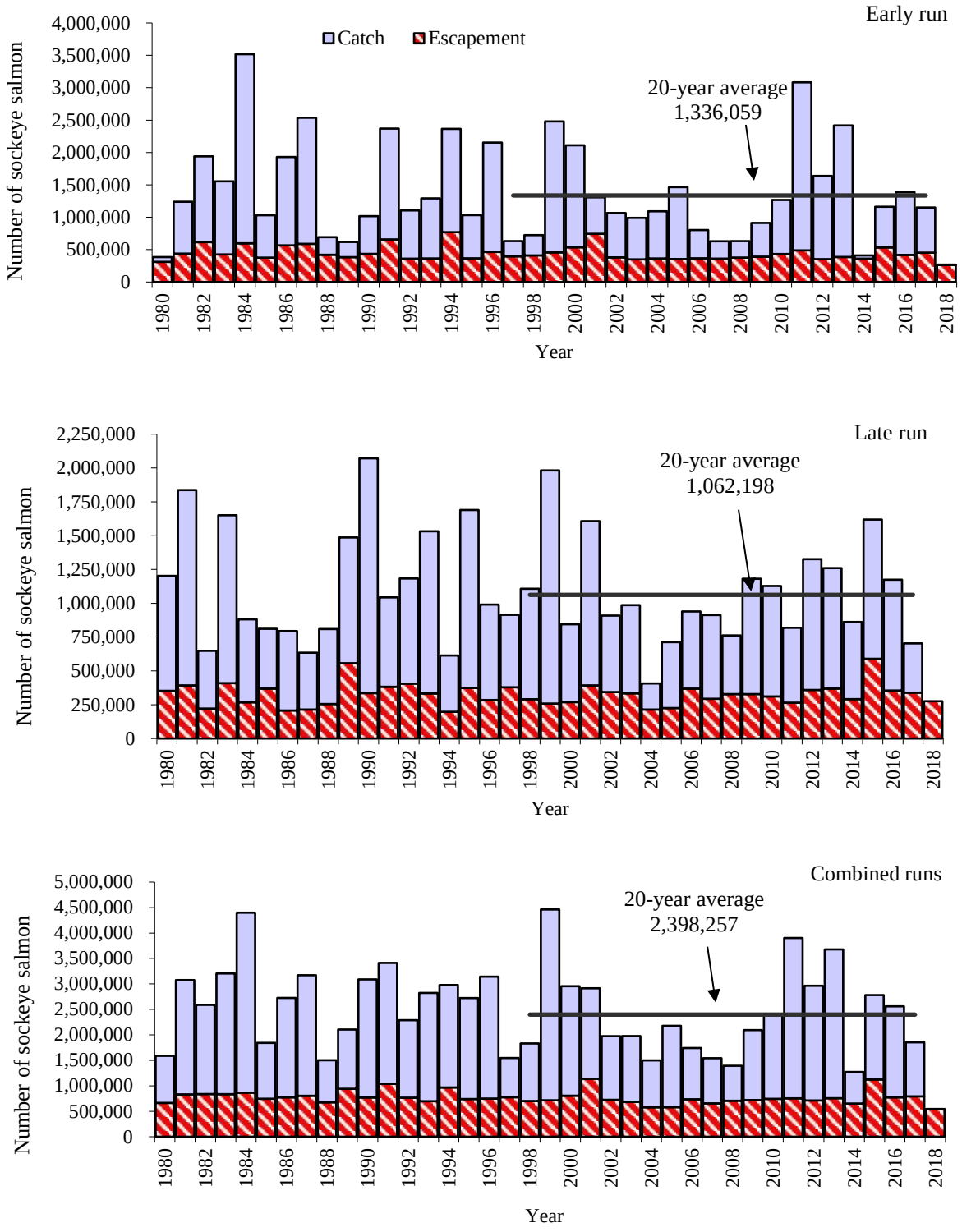

Figure 11.–Total sockeye salmon escapement and catch considered Chignik-bound including home pack, the department's test fishery harvest, and Cape Igvak and SEDM allocations, by year and run, 1980–2018.

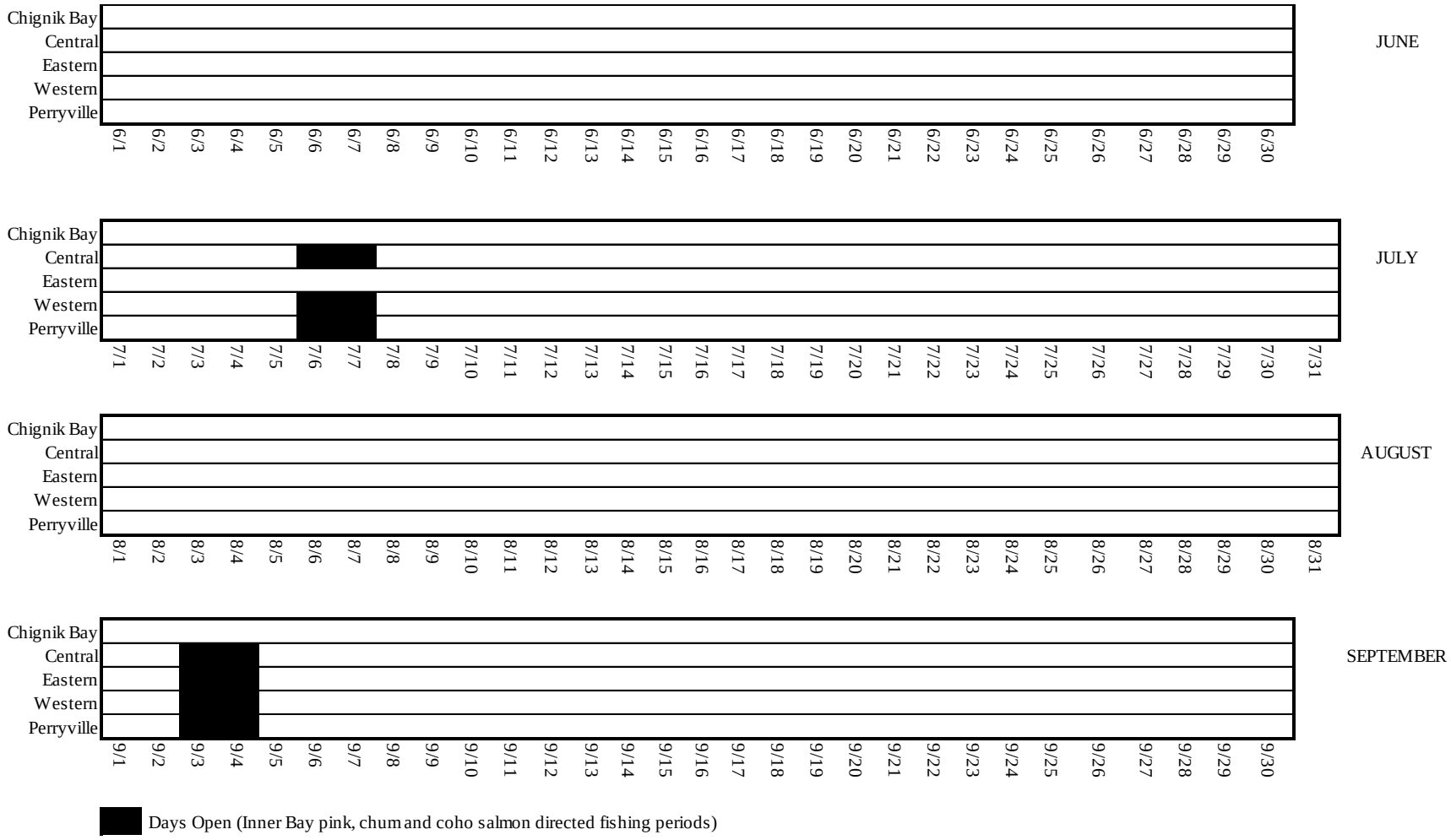

Figure 12.–Representation of days open to commercial salmon fishing by district and month, 2018.

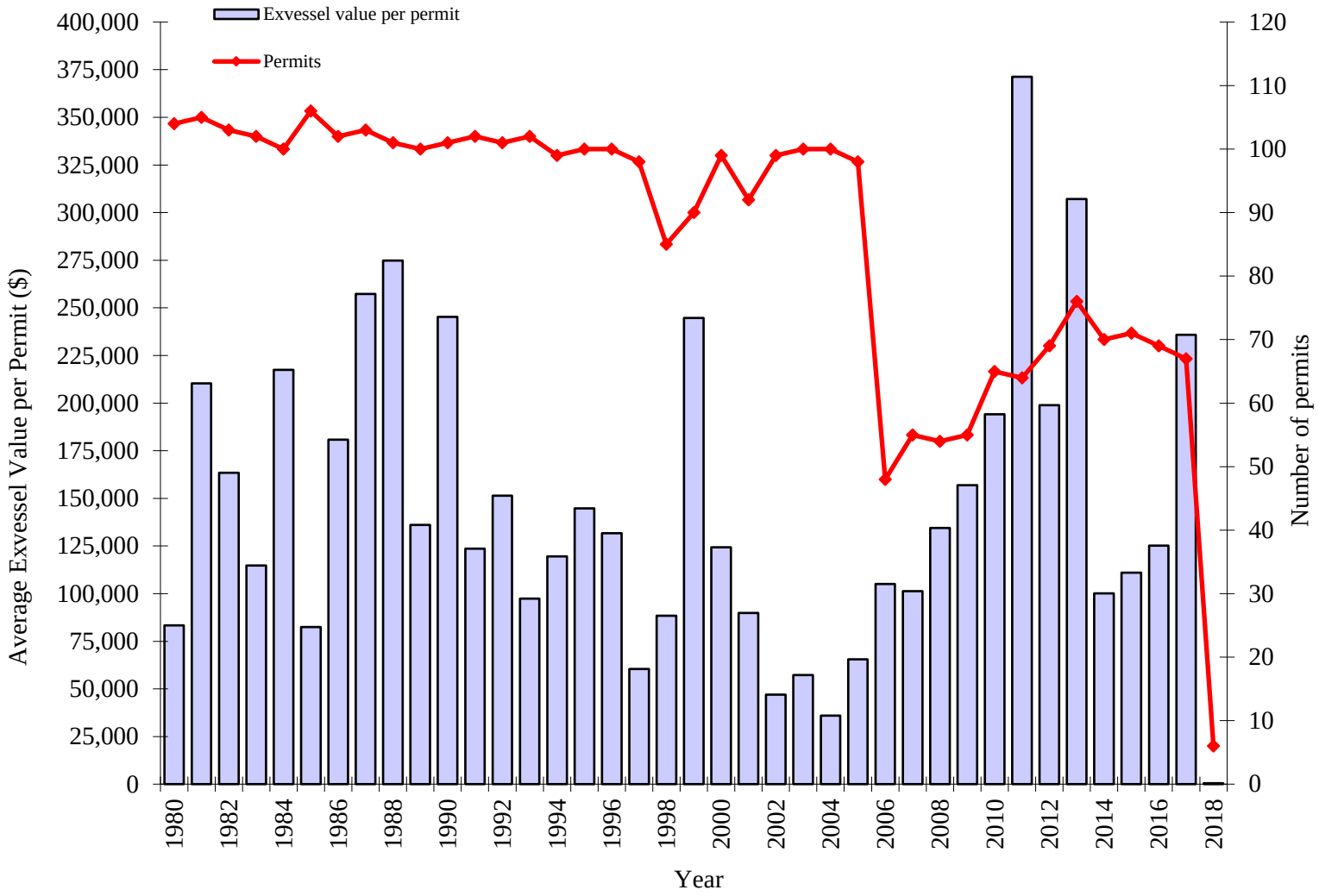

Figure 13.–Average exvessel value per permit and total permits fished by year 1980–2018.

APPENDIX A. SUMMARY OF 2018 EMERGENCY ORDERS

Appendix A1.–Summary of the 2018 Chignik Management Area emergency orders.

E.O. Number	Issued	Effective	Action taken
4-FS-L-1-18	9:15 AM 7/3/2018	4:00 PM 7/7/2018	**Opens** specific statistical areas within the CMA to target local pink and chum salmon harvest for 48 hours from 12:01 AM Saturday, July 7, until 11:59 PM Monday, July 10. The areas and statistical codes are as follows; Kujulik Bay (272-51), Ivan Bay (273-71), Fish Rack Bay (273-73), Dorner Bay (273-84, 273-81, 273-82), Humpback Bay (275-51), and Ivanof Bay (275-41),
4-FS-L-SUB-18-1	9:15 AM 7/12/2018	12:01 AM 7/13/2018	**Prohibits** the retention of Chinook salmon in the state subsistence fishery from 12:01 AM, Friday July 13, until 11:59 PM Monday, December 31.
4-FS-L-2-18	6:15 PM 8/31/2018	12:01 AM 9/3/2018	**Opens** specific statistical areas within the CMA to target local coho salmon harvest for 48 hours from 12:01 AM Monday, September 3, until 11:59 PM Tuesday, September 4. The areas and statistical codes are as follows; Amber Bay (272-71), Inner Nakalilok Bay (272-81), Inner Yantarni Bay (272-73), Chiginagak Section (272-91), Kujulik Bay (272-51), Dorner Bay (273-84, 273-81, and 273-82), and Ivanof Bay (275-41).

APPENDIX B. 2018 CHIGNIK RIVER SOCKEYE SALMON POST-WEIR ESCAPEMENT ESTIMATE MEMORANDUM

MEMORANDUM

State of Alaska

Department of Fish and Game

Westward Region Office

TO: Kevin Schaberg
Regional Finfish Research Coordinator
Commercial Fisheries Division
Region IV- Kodiak

PHONE NO: 907-486-1848

DATE: September 18, 2018

FROM: Heather Finkle
Finfish Research Biologist
Commercial Fisheries Division
Region IV- Kodiak

SUBJECT: 2018 Chignik post-weir estimate thru September 30

The overwhelming majority of Chignik River sockeye salmon escapement is estimated when passing through the Chignik weir, which is operational generally from the end of May to the beginning of September. However, fish continue to escape the system through September, during which time an in-river run goal (IRRG: August goal of 25 thousand fish and September goal of 50 thousand fish) exists supplemental to the sustainable escapement goal of 200-400 thousand fish that extends through September 30 (Schaberg 2015, Witteveen et al. 2007).

Historically, a post-weir estimate has been derived to estimate the sockeye salmon escapement to the Chignik River following the closure of the weir. Typically, a time series analysis generalizing the decay of the run (Chatfield 1985, Hyndman and Athanasopoulos 2014) has been employed for the post-weir analysis to estimate fish passage through September 30. Since 2011, a DIDSON sonar has been employed as an alternate method to count escapement in the event of weir failure or following removal. Although operated concurrently with the weir, DIDSON sonar counts have yet to be compared to the established weir count index. However, for 2018, the Chignik weir was pulled rather early on August 18 because of high water events. Subsequently, DIDSON sonar was used to enumerate fish passage between August 19 and September 6; those counts were

-continued-

utilized in the post-weir estimate model along with available weir counts.

A Holt time series model, which accounted for autocorrelation, nonstationarity, and exponential trends in the data (Hyndman and Athanasopoulos 2014), estimated a total of 18,793 late-run fish to have escaped upriver from September 7 to September 30 (Figure 1). The model employed late-run data from August 4 to September 6 to represent the decay of the run. No fishing occurred during the period of post-weir estimation. The addition of the post-weir estimate to the run reconstruction yields a total of 34,915 fish escaping the system from September 1 to 30. The post-weir estimate increases the late-run escapement total to 275,719 fish and the total escapement to the Chignik watershed to 539,697 fish.

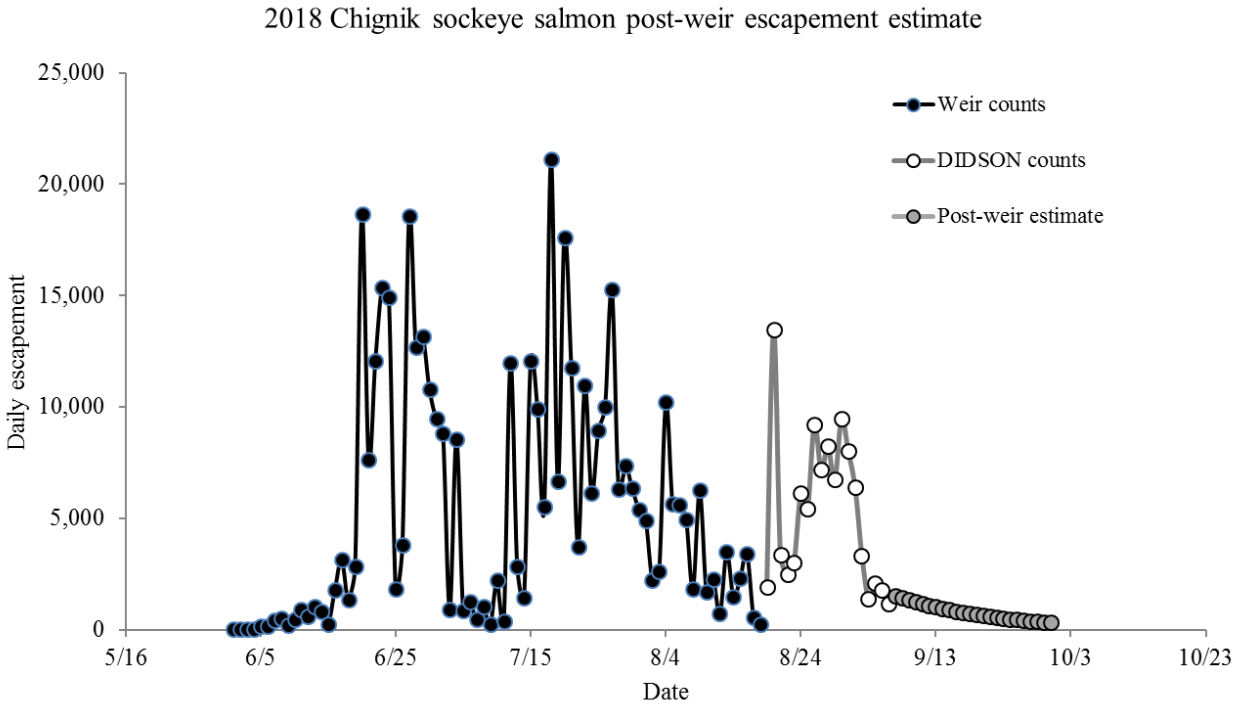

Figure 1. Estimated Chignik sockeye salmon run by day for 2018.

Chatfield, C. 1985. The Analysis of Time Series: An Introduction, 3rd ed. Chatman and Hall, London.

Hyndman, R.J., and G. Athanasopoulos. 2014. *Forecasting: principles and practice.* OTexts, Melbourne, Australia. http://www.otexts.org/fpp.

Schaberg, K. L., D. A. Tracy, M. B. Foster, and M. Loewen. 2015. Review of salmon escapement goals in the Chignik Management Area, 2015. Alaska Department of Fish and Game, Fishery Manuscript Series No. 15-02, Anchorage.

Witteveen, M. J., H. Finkle, J. J. Hasbrouck, and I. Vining. 2007. Review of salmon escapement goals in the Chignik Management Area, 2007. Alaska Department of Fish and Game, Fishery Manuscript No. 07-09, Anchorage.

CC: Wilburn, Renick, Wadle