Fishery Management Report No. 20-11

Chignik Management Area Salmon Annual Management Report, 2019

by

Ross L. Renick

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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 2019 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. All 5 species of North American Pacific salmon were commercially harvested in the CMA: Chinook *O. tshawytscha,* sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta* salmon. In 2019, the Chignik River Chinook salmon escapement of 1,513 fish was within the escapement goal range of 1,300 to 2,700 fish. Chinook salmon harvest in the CMA was 4,312 fish. The 2019 Chignik River early-run sockeye salmon escapement of 345,918 fish was below the escapement goal range of 350,000 to 450,000 fish for the second consecutive year. The late-run sockeye salmon escapement of 336,077 fish was within the late-run escapement goal range of 220,000 to 400,000 fish. The total 2019 CMA sockeye salmon harvest of 638,784 fish was well below all recent averages. Estimated 2019 peak pink salmon escapement in the CMA was below all odd-year averages. The 2019 indexed peak pink salmon escapement estimate of 415,300 fish was within the odd-year sustainable escapement goal (SEG) range of 260,000 to 450,000 fish. The combined estimated peak chum salmon escapement was above recent averages, and the indexed peak escapement of 98,000 chum salmon was within the SEG range of 45,000 to 110,000 fish. CMA coho and pink salmon harvests were both well above all recent averages, while chum salmon was below average. The 2019 CMA pink salmon harvest (2,452,838 fish) was the third largest on record since 1980. A total of 51 CMA permit holders made deliveries in 2019. The exvessel value for commercial salmon harvest in the CMA for 2019 totaled approximately $8 million.

Key words: Chignik Management Area (CMA), Chignik River, *Oncorhynchus*, salmon, Alaska Board of Fisheries, 2019 commercial fisheries management, Chignik Salmon Management Plan, harvest, escapement

INTRODUCTION

This report describes the 2019 commercial salmon management plan, fishing activity, escapements, and harvests in the Chignik Management Area (CMA; Area L). 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, 2019. 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 CMA. 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. Each district is further broken down into sections and statistical reporting areas (Figure 2). There are more than 100 salmon producing streams in the CMA, with the Chignik River, located in the Chignik Bay District, being the major sockeye salmon *O. nerka* producer for the CMA.

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. ADF&G manages all CMA commercial salmon resources by emergency order based on inseason evaluation of local stock abundance and escapement objectives. The majority of fishing effort is concentrated on salmon returning to the Chignik River watershed. 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 2019 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) in the Kodiak Management Area (Area K)[2] and the *Southeastern District Mainland* (SEDM) *Salmon Management Plan* (5 AAC 09.360) 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). To assist management efforts, the management plan is organized into districts or groups of districts: the Chignik Bay and Central Districts, the Eastern District, and the Western and Perryville Districts (Figure 2).

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 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 at 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

[1] ADF&G. 2019. 2019–2021 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.

the total estimated CMA sockeye salmon harvest is allocated to SEDM fishermen (5 AAC 09.360 (a–g)).

2019 CHIGNIK SALMON MANAGEMENT

The first 2019 commercial salmon fishing period began on July 6, and the last commercial fishing period ended on September 18 (Figure 3). A total of 51 CMA commercial salmon permit holders participated in the 2019 commercial salmon season.

Inseason Management

All commercial salmon resources in the CMA are managed by emergency order based on inseason evaluation of local stock abundance and escapement objectives. The Chignik River weir was operational June 1 through August 18 in 2019 and provided daily escapement counts used to manage a majority of the commercial fisheries within the CMA (Table 2). Aerial surveys from a fixed-wing aircraft were used to enumerate local stocks of pink, chum, and coho salmon that return to systems without weirs.

Between July 6 and July 15, ADF&G may conduct at least one 48-hour fishery in select bays of the Central, Eastern, Western, and Perryville Districts to provide early harvest opportunity on pink and chum salmon (Wilburn 2019). After July 15, management of these areas is based on inseason escapement information. One 48-hour fishery occurred on July 6–7 in portions of Kujulik Bay in the Central District; Dorner, Ivan and Fishrack Bays of the Western District; Amber, Nakolilok, and Yantarni Bays of the Eastern District; and Humpback and Ivanoff Bays of the Perryville District.

During the 2019 season, ADF&G applied an average stock proportion curve developed from genetic data collected during the 2010–2018 seasons. The model from which the curve was developed assumed that Black Lake (early run) fish escape upriver through July 31. Chignik Lake (late run) sockeye salmon begin escaping in mid-June, and all fish passing the weir beginning August 1 are considered late run.

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

Sockeye salmon escapement into the Chignik River in early June was well below average and was tracking below the minimum escapement goal (Tables 1 and 3). Poor early escapement resulted in no commercial salmon fishing periods in June for the Chignik Bay and Central Districts, as well as the Inner Castle Cape Subsection of the Western District (Figures 3 and 4). The fishery remained closed through mid-July as escapement levels tracked below the lower end of management objectives.

During mid-July, daily escapement began to increase, and biological indications showed a larger presence of late-run sockeye salmon escaping through the Chignik weir. After several days of large escapement (July 15–19; Table 3), a 65-hour commercial salmon fishery, which included the Chignik Bay and Central Districts, was scheduled to open beginning July 21 at 7:00 AM, with the closed-waters markers established at Humes Point in Chignik Lagoon (Figure 5). This initial fishing period was extended several times through July 30 due to moderate harvest and escapement levels. The entire CMA closed at midnight on July 30 for approximately 53 hours

and reopened August 2 after a short closure to allow more sockeye salmon to escape into the Chignik River. This short closure in August was to ensure that escapement needs for the month of August would be met before the run began to decline. The Chignik River has an inriver run goal (IRRG) in the month of August of 10,000 fish, in addition to the minimum 50,000 fish needed for escapement during August, for a total minimum escapement of 60,000 sockeye salmon. The Chignik Bay and Central Districts remained open through the remainder of August, except for one short 36-hour closure beginning at midnight August 8, because escapement remained adequate throughout the month to warrant extensions to commercial fishing periods.

The Chignik River also has an IRRG of 10,000 fish in the month of September. The CMA fishery closed at midnight on August 31 and reopened September 3 at 7:00 AM for approximately 89 hours. There was another short closure of approximately 48 hours on September 7–8 before the CMA reopened from September 9–14. These short closures were to ensure that the IRRG of 10,000 fish in September was achieved. Beginning September 15, the CMA fishing periods in the Chignik Bay and Central Districts, and the Inner Castle Cape Subsection of the Western District, may be no more than 48 hours per week (5 AAC.15.357 (b)(4)). The entire CMA opened each day September 15–18 from 8:00 AM until 8:00 PM; these 12-hour fishing periods allowed for maximum fishing opportunity each week. This was the final fishing period of 2019, and the CMA remained closed through the end of the season. In total, the Chignik Bay and Central Districts were open to commercial salmon fishing for 53 days each during the 2019 season (Figure 3), excluding additional inner bay only openings in the Central District.

The Chignik Lagoon closed waters markers remained at Humes Point for the entire 2019 season (Figure 5). This allowed for continued moderate escapement to achieve incremental management objectives, while simultaneously allowing consistent fishing opportunity in the Chignik Bay and Central Districts. A summary of emergency orders outlining the commercial salmon fishery in the Chignik Bay and Central Districts is located in Appendix A.

Eastern District Commercial Salmon Fishery

In June, the Eastern District, by regulation (5 AAC 15.357 (c)(1)), opens concurrently with the Chignik Bay and Central Districts (Figures 2 and 3). Beginning in July, 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.

In 2019, the Eastern District did not open in June due to poor sockeye salmon escapement. In mid-July, after the transition period (late June through mid-July), escapement levels of late-run sockeye salmon through the Chignik weir increased, and the Eastern District opened on July 16 for approximately 48 hours. This initial fishing period was extended for an additional 36 hours before closing at midnight on July 19. Sockeye salmon escapement through the Chignik River weir again increased during the initial opening, exceeding minimum management objectives, and a second commercial fishery was scheduled for approximately 65 hours beginning on July 21 for the entire CMA (Table 3; Figure 3). After several extensions to the July 21 opening, in which harvest levels were moderate and participation was low in the Eastern District, the fishery closed on July 30 to allow for additional sockeye salmon escapement through the Chignik weir. After strong escapement through the Chignik weir on August 1 (Table 3) and an aerial survey in late July showing an increased presence of local pink salmon, the Eastern District reopened on August 2 concurrent with the rest of the CMA. The Eastern District remained open for the

majority of August, except one short closure (August 8 and 9), because sockeye salmon escapement through the Chignik weir remained adequate and aerial surveys showed a surplus of local pink and chum salmon escaping into Eastern District streams.

In September, the Eastern District was closed for approximately 4 days (September 1, 2, 7, and 8), and was open for approximately 14 days. These short closures were to provide opportunity for sockeye salmon to escape into the Chignik River, ensuring the 10,000-fish IRRG was attained. The commercial fishery openings in September for the Eastern District were concurrent with openings in all other districts within the CMA.

The Eastern District was open for a total of 57 days during the 2019 season, excluding an additional inner bay opening that occurred on July 6–7. A summary of emergency orders outlining the commercial salmon fishery in the Eastern District is located in Appendix A.

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, 4, and 5). Also, by regulation (5 AAC 15.357 (d)), from June 1 through July 5, in the Western District, excluding the Inner Castle Cape Subsection, and in the Perryville District, the department may open the commercial salmon fishery concurrently with the Chignik Bay and Central Districts and the Inner Castle Cape Subsection of the Western District; during this time period, the Perryville District may open for no more than three 48-hour fishing periods with a minimum closure of 48 hours between each period.

Beginning July 6, these districts are managed based on the run strength of late-run sockeye salmon until the end of the transition period, which occurs in mid-July. Once the transition period ends, these districts are managed based on local pink and chum salmon escapements and the department's evaluation of the late-run sockeye salmon escapement into the Chignik River.

On July 16, the Western and Perryville Districts opened to commercial salmon fishing for approximately 48 hours. Moderate levels of harvest and escapement allowed for an extension of 36 hours before the fishery closed at midnight July 19. After a short closure, the Western and Perryville Districts reopened concurrently with the rest of the CMA. The fishery was extended several times before closing on July 30 at midnight to allow for additional sockeye salmon escapement into the Chignik River. Strong sockeye salmon escapement on August 1 (Table 3), coupled with an aerial survey in late July indicating an increase in the presence of local stocks throughout the Western and Perryville Districts, warranted a commercial fishery opening on August 2 for approximately 91 hours. The Western District remained open for the duration of August, except for one short 36-hour closure occurring August 8–9. The Perryville District remained closed during the same time frame (August 8–9) and reopened through August 15. Aerial surveys of the Perryville District during mid- to late August showed low water in a majority of streams. The Perryville District was closed on August 16 and remained closed through the remainder of August due to low escapement of pink and chum salmon and low water levels throughout the district.

In total, the Western District, excluding the Inner Castle Cape Subsection, was open to commercial salmon fishing for approximately 57 days (Figure 3). The Perryville District was open for 41 days during 2019 (Figure 3). A summary of emergency orders outlining the commercial salmon fisheries in the Western and Perryville Districts is found in Appendix A.

Escapement and Harvest Data

Stock Separation Techniques and Genetic Stock Identification

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). Prior to 2004, scale pattern analysis (SPA) was used to differentiate stock composition during this time, 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, inseason management was based on results of genetic sampling of the sockeye salmon runs.

From 2010 through 2012, as part of an Alaska Sustainable Salmon Fund (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 4). Genetic tissue (axillary process) was clipped from approximately 190 sockeye salmon during each sampling event and samples were 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 (early run) and Chignik (late run) Lakes 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 4). 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 the AKSSF. Genetic sampling for the 2018 and 2019 seasons was funded by a Saltonstall-Kennedy Grant.

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 (2010–2019), 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 2019, the daily early- and late-run sockeye salmon escapement, during the transition period, was initially determined by applying an average stock proportion curve developed from past inseason genetic information (2010–2018). There were 6 genetic sampling events during the traditional peak overlap period in 2019, and the samples were analyzed inseason after each individual sample was collected (Table 4). Once all samples were analyzed, genetic results were applied to the daily escapement of sockeye salmon from June 1 through July 31 to reflect the 2019 transition curve (Tables 3 and 4). Figure 6 represents the variable late-run sockeye salmon timing into the Chignik River from 2010–2019.

To estimate the total sockeye salmon run size after the season, 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. The early- and late-run sockeye salmon escapement and harvest results can be found in the *2019 Escapement Information* and *2019 Harvest Information* sections of this document.

Escapement Goals

In 2015, a salmon escapement goal review team, including staff from the Divisions of Commercial Fisheries and Sport Fish, was formed to review salmon escapement goals in the CMA (Schaberg et al. 2015). The team recommended changing the areawide even- 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 220,000–400,000 fish. The late-run SEG includes an IRRG of 20,000 fish added to the lower bound of the goal range for late-season subsistence needs. The IRRG was decreased at the 2019 Board of Fisheries (BOF) meeting from 75,000 sockeye salmon (25,000 in August and 50,000 fish in September) to 20,000 sockeye salmon (10,000 fish in August and 10,000 fish September 1–30; 5AAC 15.357(b)(3)(B)).

2019 Escapement Information

In 2019, the majority of salmon escapements to the Chignik River were enumerated through the use of a 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.

The majority of the Chignik River Chinook, sockeye, pink, and chum salmon escapements were counted through the weir. Because Dolly Varden *Salvelinus malma* were not commercially

harvested or actively managed in the CMA, their escapements are noted in the tables of this document for historical comparisons, but not discussed in detail in the escapement section below. The first count of the 2019 season was on June 1, and the last full count was on August 18, after which the weir was removed (Tables 2, 3, and 5). A post-weir sockeye salmon estimate was produced using times series analysis for August 19 through September 30.

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 late June. The largest days of escapement occurred on July 10 and 11 and were 108 fish each day. The run peaked by mid-July and was over by late August (Table 5; Figure 7). Chinook salmon escapement in 2019 of 1,517 fish was within the BEG range of 1,300–2,700 fish and below all recent averages (Table 6; Figure 8; Schaberg et al. 2015). The overall Chinook salmon run for Chignik River was weak in 2019. Even though escapement fell within the BEG range of 1,300–2,700, no commercial fishing occurred before July 16 and typical harvest of Chinook salmon in the Central and Chignik Bay Districts did not occur, probably increasing escapement of Chinook salmon during this time period.

Sockeye Salmon

Chignik sockeye salmon are managed based on incremental escapement objectives by run (Table 1). The Chignik River sockeye salmon early run peaked in late June and the late run peaked in mid-July (Table 3; Figure 9). The 2019 estimated total Chignik River watershed sockeye salmon escapement (681,995 fish) was below all recent averages (Table 7). The early-run escapement was estimated at 345,918 sockeye salmon and was slightly below the early-run BEG of 350,000–450,000 fish (Table 7; Figure 10). The late-run estimated escapement of 336,077 sockeye salmon was within the late-run SEG range of 220,000–400,000 fish (Table 7; Figure 10). The late-run escapement includes a post-weir estimate for August 19–September 30 (48,332; Table 2).

The late-run Chignik River sockeye salmon IRRG requires 10,000 fish be escaped past the Chignik River weir in August in addition to minimum escapement needs for the month of approximately 50,000 fish (Table 1). This requires that a minimum of 60,000 sockeye salmon escape past the weir in August. The IRRG also requires that 10,000 sockeye salmon be escaped during September. In 2019, the August component of the IRRG was met with approximately 91,218 sockeye salmon (Table 2). August escapement includes a post-weir estimate of 5,512 fish from August 19–31. The 2019 September IRRG component was also met with an estimated 42,280 sockeye salmon escaping into the Chignik River. The entire September escapement was a post-weir estimate that was produced due to the early removal of the Chignik weir (August 18).

Total peak aerial survey counts of spawning sockeye salmon in Black Lake tributaries were below all averages (Table 8). Survey conditions during the average annual peak survey times (late August) for Chignik Lake and Black River tributaries were poor; however, early peak aerial survey counts were still above all recent averages (Table 9).

Sockeye salmon escapements were 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 begin to enter CMA drainages in mid-August and generally continue through November. The 2019 Chignik River coho salmon escapement estimate through August 18 was 282 fish (Table 5). Due to the early removal of the Chignik weir, a majority of the coho salmon run was not counted in 2019. Late season coho salmon stream surveys were not conducted in the CMA in 2019 due to inclement weather in September.

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 mid-August with a total escapement of 18,073 fish (Table 5). The 2019 Chignik River pink salmon escapement was above the 10- and 20-year averages but below the 5-year average (Table 6).

Escapements into other CMA streams were monitored via aerial surveys. During the season, streams that have been historically monitored for pink salmon were surveyed and compared to historical run timing and distribution. The 2019 overall combined peak escapement estimate for the CMA was approximately 842,748 pink salmon (Table 10). Pink salmon escapement was strong in the CMA, but below odd-year historical averages. The current odd-year SEG of 260,000–450,000 pink salmon is composed of 8 index streams in 4 of the 5 districts in the CMA. The 2019 calculated peak escapement, based on aerial surveys of the 8 index streams, was within the odd-year SEG with 415,300 fish (Table 11).

Chum Salmon

A limited number of chum salmon return to the Chignik River, mainly in late July and August (Table 5). The 2019 Chignik River chum salmon escapement was 67 fish, which was below all recent average escapements (Table 6).

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 2019 overall combined peak escapement estimate for the CMA was 282,967 chum salmon, which was above 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 2019 CMA chum salmon escapement estimate of 98,000 fish based on the 6 index streams was within the SEG and slightly above the 10-year average (Table 13).

2019 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 Board of Fisheries has determined that specific portions of these harvests are considered bound for the Chignik River.

A total of 2 buyer/locations purchased salmon within the CMA in 2019. Due to the low number of buyers in 2019, confidentiality requirements and agreements limit the release of certain information in this report.

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.

Chinook Salmon

A total of 4,312 Chinook salmon were harvested from the CMA in 2019, similar to the 5-year average but below the recent 10- and 20-year average harvests (Table 14). A total of 26 Chinook salmon were retained as home pack from the commercial fishery (Table 15). Most of the CMA Chinook salmon harvest occurred in mid-July, in the Western and Chignik Bay Districts (Tables 16 and 17). Weekly totals of harvest information are confidential for certain statistical weeks.

Sockeye Salmon

The 2019 CMA sockeye salmon harvest of 638,784 fish was well below the recent 5-, 10-, and 20-year average sockeye salmon harvests (Tables 14 and 18). The majority of the sockeye salmon harvest came from the Chignik Bay and Western Districts (Table 19). Sockeye salmon harvest occurred from mid-July through early August (Table 20).

Neither the Cape Igvak section of Area K nor the SEDM section of Area M opened to commercial salmon fishing during the allocation period in 2019 (June 1 through July 25). As a result, all sockeye salmon harvested that were considered Chignik-bound came from the CMA (Table 21).

The 2019 Chignik River early-run sockeye salmon run did not develop as forecasted and no directed sockeye salmon commercial fishing periods were scheduled from early June through mid-July. Approximately 14,996 early-run sockeye salmon were harvested in 2019 (Table 22; Figure 11); however, these fish were a result of commercial openings directed at late-run sockeye salmon. The late-run harvest of 623,788 sockeye salmon was slightly below the 10- and 20-year averages but above the 5-year average (Table 22; Figure 12). The total Chignik-bound commercial sockeye salmon harvest was 638,784 fish (Table 22). This makes the total run estimate (harvest plus escapement) of Chignik-bound sockeye salmon 1,320,780 fish (Table 22; Figure 13).

In 2019, the Chignik early run was approximately 470,000 sockeye salmon below the forecast, and the late run was approximately 60,000 fish above the forecast (Table 23).

Coho Salmon

A total of 248,282 coho salmon were harvested in the CMA during 2019, which was well above all recent average harvests (Tables 14 and 24). The majority of the 2019 coho salmon harvest occurred in the Western District during August (Tables 25 and 26).

Pink Salmon

The 2019 CMA pink salmon harvest (2,452,838 fish) was similar to the 10-year odd average of 2,448,302 fish, and all commercially harvested pink salmon were sold to processors by fishermen (Table 27). The majority of the 2019 pink salmon harvest occurred in the Western and Eastern Districts during August, and the Eastern District was especially productive with harvest levels well above all recent averages (Tables 28 and 29). The 2019 CMA pink salmon harvest was the third largest on record; the next largest harvests occurred in 1988 and 2017 (Table 27).

Chum Salmon

A total of 157,517 chum salmon were harvested from the CMA during the 2019 season, which was similar to the 20-year average but below the 5- and 10-year averages. (Tables 14 and 30). In 2019, all commercially harvested chum salmon were sold to processors (Table 30). The largest chum salmon harvest occurred in the Central and Western Districts while the remaining harvest occurred mostly in the Perryville District (Table 31). Chum salmon harvest in the CMA occurred from early July through August (Table 32).

ECONOMIC VALUE

In 2019, 51 CMA permit holders made deliveries (Table 33). The exvessel value of the 2019 CMA commercial salmon harvest was about $8 million, or approximately $157,021 per active permit holder, which was above the 5- and 20-year average exvessel values but below the 10-year average exvessel value (Table 33; Figure 14). Approximately 63% of exvessel revenue was from the sale of sockeye salmon ($99,219 per active permit holder). Pink salmon harvest was the next largest value in the commercial fisheries making up approximately 26% of the 2019 CMA exvessel revenue ($40,150 per active permit holder). The 2019 Chinook, coho, and chum salmon harvest provided approximately $612, $9,922, and $7,118, respectively, per active permit holder (Table 33).

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 2019.

SUBSISTENCE SALMON

The 2019 CMA subsistence harvest will not be available until after subsistence permits are returned and tabulated in the spring of 2020. Historical subsistence harvests can be found in Table 34.

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TABLES AND FIGURES

Table 1.–Chignik River sockeye salmon escapement objectives, 2019.

	Black Lake			Chignik Lake			Combined		
Date	Lower		Upper	Lower		Upper	Lower		Upper
5-Jun	12,000	–	17,000				12,000	–	17,000
10-Jun	45,000	–	55,000				45,000	–	55,000
15-Jun	95,000	–	125,000				95,000	–	125,000
20-Jun	150,000	–	230,000	1,000	–	2,000	151,000	–	232,000
25-Jun	215,000	–	320,000	3,000	–	5,000	218,000	–	325,000
30-Jun	270,000	–	360,000	6,000	–	12,000	276,000	–	372,000
5-Jul	300,000	–	390,000	12,000	–	30,000	312,000	–	420,000
10-Jul	330,000	–	410,000	20,000	–	50,000	350,000	–	460,000
15-Jul	340,000	–	430,000	40,000	–	85,000	380,000	–	515,000
20-Jul	350,000	–	440,000	70,000	–	140,000	420,000	–	580,000
25-Jul	350,000	–	448,000	110,000	–	200,000	460,000	–	648,000
30-Jul	350,000	–	450,000	140,000	–	250,000	490,000	–	700,000
4-Aug				160,000	–	290,000	510,000	–	740,000
9-Aug				170,000	–	320,000	520,000	–	770,000
14-Aug				180,000	–	335,000	530,000	–	785,000
19-Aug				190,000	–	350,000	540,000	–	800,000
24-Aug				200,000	–	360,000	550,000	–	810,000
29-Aug				208,000	–	375,000	558,000	–	825,000
31-Aug				210,000	–	380,000	560,000	–	830,000
September				220,000	–	400,000	570,000	–	850,000
Escapement Goals									
Black Lake	350,000	–	450,000						
Chignik Lake[a]	220,000	–	400,000						

Note: Historically, the estimate of the 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. Beginning in 2014, inseason genetic samples were used to determine the apportionment of the 2 runs during late June and mid-July when the runs overlap instead of the July 4 date. New interim escapement objectives were also established for both runs in 2014.

[a] The late-run escapement objective (June 20–September 30) includes the late-run sockeye salmon sustainable escapement goal (SEG; 200,000–400,000), plus an additional 20,000 sockeye salmon inriver run goal (10,000 in August and 10,000 in September) to meet late-season subsistence needs. This results in an escapement of at least 60,000 sockeye salmon in August and a management target of 10,000 sockeye salmon in September.

Table 2.–Estimated Chignik River sockeye salmon escapement, by day and management objective period, 2019.

June			July		
Date	Daily	Total	Date	Daily	Total
6/1	42	42	7/1	10,906	10,906
6/2	55	97	7/2	10,590	21,496
6/3	24	121	7/3	8,566	30,062
6/4	134	255	7/4	11,527	41,589
6/5	663	918	7/5	4,812	46,401
6/6	147	1,065	7/6	13,272	59,673
6/7	1,189	2,254	7/7	12,163	71,836
6/8	279	2,533	7/8	14,790	86,626
6/9	793	3,326	7/9	11,612	98,238
6/10	1,054	4,380	7/10	9,131	107,369
6/11	1,869	6,249	7/11	18,530	125,899
6/12	1,312	7,561	7/12	10,567	136,466
6/13	125	7,686	7/13	23,114	159,580
6/14	1,590	9,276	7/14	14,063	173,643
6/15	2,548	11,824	7/15	19,127	192,770
6/16	9,606	21,430	7/16	23,582	216,352
6/17	11,666	33,096	7/17	14,934	231,286
6/18	14,578	47,674	7/18	14,620	245,906
6/19	5,192	52,866	7/19	17,278	263,184
6/20	8,278	61,144	7/20	28,286	291,470
6/21	10,757	71,901	7/21	16,783	308,253
6/22	16,605	88,506	7/22	6,680	314,933
6/23	14,916	103,422	7/23	4,871	319,804
6/24	10,152	113,574	7/24	9,688	329,492
6/25	11,643	125,217	7/25	5,878	335,370
6/26	18,696	143,913	7/26	5,978	341,348
6/27	4,824	148,737	7/27	3,939	345,287
6/28	11,367	160,104	7/28	2,067	347,354
6/29	16,391	176,495	7/29	5,832	353,186
6/30	10,593	187,088	7/30	4,518	357,704
June total: 187,088			7/31	3,165	360,869
			July total: 360,869		

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Table 2.–Page 2 of 2.

August		
Date	Daily	Total
8/1	15,461	15,461
8/2	10,342	25,803
8/3	4,208	30,011
8/4	3,803	33,814
8/5	2,397	36,211
8/6	2,361	38,572
8/7	3,804	42,376
8/8	3,172	45,548
8/9	7,203	52,751
8/10	5,636	58,387
8/11	4,086	62,473
8/12	2,979	65,452
8/13	2,642	68,094
8/14	3,175	71,269
8/15	3,133	74,402
8/16	3,863	78,265
8/17	3,927	82,192
8/18[a]	3,514	85,706
Post-weir estimate: (8/19– 8/31)		5,512
August total: 91,218		

September		
Date	Daily	Total
Post-weir estimate: (9/1–9/30)		42,820
September total: 42,820		
Early run total[b]:		345,918
Late run total[b]:		336,077
Season total:		681,995

Note: Historically, 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. Beginning in 2014, inseason genetic samples were used to determine the apportionment of the 2 runs during late June and mid-July when the runs overlap instead of the July 4 date.

[a] The weir was removed after the completion of the 8/18 count. A post weir estimate was produced for 8/19–9/30 using a time series analysis based on the rate of decay of the run (Appendix B).

[b] Inseason genetics were used to determine the apportionment of the early- and late-run sockeye salmon in the Chignik River in 2019.

Table 3.–Genetic stock proportions of estimated Chignik River sockeye salmon escapement, by day, 2019.

Date	Daily escapement	Cumulative escapement	Early run	Late run
6/1	42	42	42	0
6/2	55	97	55	0
6/3	24	121	24	0
6/4	134	255	134	0
6/5	663	918	663	0
6/6	147	1,065	147	0
6/7	1,189	2,254	1,189	0
6/8	279	2,533	279	0
6/9	793	3,326	793	0
6/10	1,054	4,380	1,054	0
6/11	1,869	6,249	1,868	1
6/12	1,312	7,561	1,311	1
6/13	125	7,686	125	0
6/14	1,590	9,276	1,589	1
6/15	2,548	11,824	2,546	2
6/16	9,606	21,430	9,594	12
6/17	11,666	33,096	11,648	18
6/18	14,578	47,674	14,549	29
6/19	5,192	52,866	5,179	13
6/20	8,278	61,144	8,251	27
6/21	10,757	71,901	10,712	45
6/22	16,605	88,506	16,517	88
6/23	14,916	103,422	14,814	102
6/24	10,152	113,574	10,064	88
6/25	11,643	125,217	11,513	130
6/26	18,696	143,913	18,430	266
6/27	4,824	148,737	4,737	87
6/28	11,367	160,104	11,104	263
6/29	16,391	176,495	15,909	482
6/30	10,593	187,088	10,197	396
7/1	10,906	197,994	10,389	517
7/2	10,590	208,584	9,955	635
7/3	8,566	217,150	7,919	647
7/4	11,527	228,677	10,434	1,093
7/5	4,812	233,489	4,243	569
7/6	13,272	246,761	11,324	1,948
7/7	12,163	258,924	9,967	2,196
7/8	14,790	273,714	11,533	3,257
7/9	11,612	285,326	8,527	3,085
7/10	9,131	294,457	6,239	2,892
7/11	18,530	312,987	11,625	6,905

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Table 3.–Page 2 of 2.

Date	Daily escapement	Cumulative escapement	Early run	Late run
7/12	10,567	323,554	6,000	4,567
7/13	23,114	346,668	11,702	11,412
7/14	14,063	360,731	6,251	7,812
7/15	19,127	379,858	7,353	11,774
7/16	23,582	403,440	7,728	15,854
7/17	14,934	418,374	4,115	10,819
7/18	14,620	432,994	3,347	11,273
7/19	17,278	450,272	3,250	14,028
7/20	28,286	478,558	4,332	23,954
7/21	16,783	495,341	2,076	14,707
7/22	6,680	502,021	663	6,017
7/23	4,871	506,892	386	4,485
7/24	9,688	516,580	609	9,079
7/25	5,878	522,458	292	5,586
7/26	5,978	528,436	235	5,743
7/27	3,939	532,375	122	3,817
7/28	2,067	534,442	50	2,017
7/29	5,832	540,274	111	5,721
7/30	4,518	544,792	67	4,451
7/31	3,165	547,957	37	3,128
8/1	15,461	563,418	0	15,461
8/2	10,342	573,760	0	10,342
8/3	4,208	577,968	0	4,208
8/4	3,803	581,771	0	3,803
8/5	2,397	584,168	0	2,397
8/6	2,361	586,529	0	2,361
8/7	3,804	590,333	0	3,804
8/8	3,172	593,505	0	3,172
8/9	7,203	600,708	0	7,203
8/10	5,636	606,344	0	5,636
8/11	4,086	610,430	0	4,086
8/12	2,979	613,409	0	2,979
8/13	2,642	616,051	0	2,642
8/14	3,175	619,226	0	3,175
8/15	3,133	622,359	0	3,133
8/16	3,863	626,222	0	3,863
8/17	3,927	630,149	0	3,927
8/18	3,514	633,663	0	3,514

Note: Historically, 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. Beginning in 2014, inseason genetic samples were used to determine the apportionment of the 2 runs during late June and mid-July when the runs overlap instead of the July 4 date.

Table 4.–Estimates of genetic stock composition, with upper and lower 90% credibility intervals, and standard deviations for escapement through the Chignik River weir, by sample date, 2010–2019.

			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	0.130	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	0.050	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 4.–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
2019	6/25	188	0.998	0.988	1.000	0.008	0.002	0.000	0.012	0.008
	7/1	188	0.984	0.892	1.000	0.037	0.160	0.000	0.108	0.037
	7/8	187	0.640	0.543	0.732	0.058	0.360	0.268	0.457	0.058
	7/13	188	0.591	0.475	0.698	0.067	0.409	0.302	0.525	0.067
	7/19	177	0.188	0.119	0.263	0.044	0.812	0.737	0.881	0.044
	7/26–7/29	95	0.033	0.000	0.085	0.027	0.967	0.915	1.000	0.027

Table 5.–Estimated Chignik River Chinook, coho, pink, and chum salmon, and Dolly Varden escapement, by day, 2019.

	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	0	0
6/4	0	0	0	0	0	0	0	0	0	0
6/5	0	0	0	0	0	0	0	0	12	12
6/6	0	0	0	0	0	0	0	0	13	25
6/7	0	0	0	0	0	0	0	0	42	67
6/8	0	0	0	0	0	0	0	0	7	74
6/9	0	0	0	0	0	0	0	0	78	152
6/10	0	0	0	0	0	0	0	0	151	303
6/11	0	0	0	0	0	0	0	0	90	393
6/12	0	0	0	0	0	0	0	0	72	465
6/13	0	0	0	0	0	0	0	0	18	483
6/14	0	0	0	0	0	0	0	0	108	591
6/15	0	0	0	0	0	0	0	0	67	658
6/16	0	0	0	0	0	0	0	0	102	760
6/17	0	0	0	0	0	0	0	0	201	961
6/18	12	12	0	0	0	0	0	0	216	1,177
6/19	0	12	0	0	0	0	0	0	94	1,271
6/20	12	24	0	0	0	0	0	0	48	1,319
6/21	0	24	0	0	0	0	0	0	138	1,457
6/22	6	30	0	0	0	0	0	0	114	1,571
6/23	12	42	0	0	0	0	0	0	133	1,704
6/24	6	48	0	0	0	0	0	0	108	1,812
6/25	6	54	0	0	0	0	0	0	147	1,959
6/26	0	54	0	0	18	18	0	0	198	2,157
6/27	0	54	0	0	0	18	0	0	72	2,229
6/28	6	60	0	0	0	18	6	0	102	2,331
6/29	12	72	0	0	12	30	0	0	206	2,537
6/30	12	84	0	0	42	72	0	0	222	2,759
7/1	24	108	0	0	12	84	0	0	144	2,903
7/2	48	156	0	0	36	120	0	6	318	3,221
7/3	37	193	0	0	24	144	0	6	372	3,593
7/4	72	265	0	0	144	288	0	6	558	4,151
7/5	42	307	0	0	12	300	0	6	91	4,242
7/6	42	349	0	0	24	324	0	6	258	4,500
7/7	90	439	0	0	90	414	0	6	342	4,842
7/8	50	489	0	0	18	432	0	6	156	4,998
7/9	42	531	0	0	48	480	0	6	213	5,211
7/10	108	639	0	0	36	516	0	6	62	5,273

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Table 5.–Page 2 of 2.

	Chinook		Coho		Pink		Chum		Dolly Varden	
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative
7/11	108	747	0	0	103	619	0	6	120	5,393
7/12	66	813	0	0	90	709	0	6	42	5,435
7/13	72	885	0	0	270	979	0	6	140	5,575
7/14	60	945	0	0	306	1,285	0	6	72	5,647
7/15	54	999	0	0	192	1,477	0	6	78	5,725
7/16	60	1,059	0	0	330	1,807	0	6	42	5,767
7/17	24	1,083	0	0	138	1,945	0	6	18	5,785
7/18	30	1,113	0	0	66	2,011	0	6	12	5,797
7/19	6	1,119	0	0	90	2,101	7	13	12	5,809
7/20	36	1,155	0	0	270	2,371	0	13	18	5,827
7/21	54	1,209	0	0	138	2,509	12	25	30	5,857
7/22	36	1,245	0	0	48	2,557	0	25	18	5,875
7/23	12	1,257	0	0	66	2,623	0	25	18	5,893
7/24	36	1,293	0	0	102	2,725	0	25	12	5,905
7/25	30	1,323	0	0	132	2,857	0	25	0	5,905
7/26	19	1,342	0	0	108	2,965	0	25	12	5,917
7/27	6	1,348	0	0	168	3,133	12	37	6	5,923
7/28	36	1,384	0	0	60	3,193	0	37	6	5,929
7/29	24	1,408	0	0	224	3,417	6	43	6	5,935
7/30	12	1,420	0	0	192	3,609	0	43	6	5,941
7/31	7	1,427	0	0	86	3,695	6	49	0	5,941
8/1	36	1,463	0	0	342	4,037	0	49	6	5,947
8/2	24	1,487	0	0	187	4,224	0	49	42	5,989
8/3	6	1,493	0	0	146	4,370	0	49	6	5,995
8/4	0	1,493	0	0	174	4,544	0	49	18	6,013
8/5	0	1,493	0	0	104	4,648	0	49	12	6,025
8/6	0	1,493	0	0	192	4,840	0	49	24	6,049
8/7	0	1,493	0	0	733	5,573	0	49	0	6,049
8/8	0	1,493	0	0	534	6,107	0	49	6	6,055
8/9	0	1,493	0	0	1,106	7,213	0	49	42	6,097
8/10	6	1,499	18	18	1,170	8,383	0	49	0	6,097
8/11	6	1,505	18	36	1,446	9,829	0	49	36	6,133
8/12	0	1,505	0	36	696	10,525	0	49	19	6,152
8/13	6	1,511	0	36	629	11,154	0	49	0	6,152
8/14	0	1,511	0	36	882	12,036	0	49	12	6,164
8/15	6	1,517	12	48	1,776	13,812	6	55	30	6,194
8/16	0	1,517	60	108	1,261	15,073	0	55	24	6,218
8/17	0	1,517	60	168	1,320	16,393	12	67	18	6,236
8/18	0	1,517	114	282	1,680	18,073	0	67	6	6,242
Total		1,517		282		18,073		67		6,242

Note: The Chignik River weir was removed after the last full day of counts on 8/18. No post-weir estimates were produced for Chinook, coho, pink, or chum salmon.

Table 6.–Estimated Chignik River Chinook, coho, pink, and chum salmon, and Dolly Varden escapement, by year, 1980–2019.

	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	108,955	3,171	58	44,899
2015	2,054	60,209	4,269	54	16,346

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Table 6.–Page 2 of 2.

Year	Escapement[a]				
	Chinook[b]	Coho[c]	Pink[c]	Chum[c]	Dolly Varden[c]
2016	1,843	30,291	486	114	24,625
2017	1,137	33,270	123,531	615	7,664
2018	825	64,214	3,222	54	4,550
2019[d]	1,517	282	18,073	67	6,242
Averages					
1999–2018	3,106	22,968	13,414	136	15,659
2009–2018	1,954	33,450	17,760	139	17,368
2014–2018	1,751	59,388	26,936	179	19,617

[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, coho, and chum salmon or Dolly Varden.

[d] The Chignik weir was removed on August 18, earlier than the average removal time, due to budgetary and environmental constraints.

Table 7.–Total Chignik River sockeye salmon escapement and escapement goals, based on postseason analysis, by run, by year, 1980–2019.

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	662,660	377,438	1,040,098
1992	360,681	403,755	764,436
1993	364,261	333,116	697,377
1994	769,462	197,447	966,909
1995	366,496	373,425	739,921
1996	464,748	284,389	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	384,088	341,132	725,220
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	354,884	773,174
2017	453,257	339,303	792,560
2018[a]	263,979	275,718	539,697
2019	345,918	336,077	681,995

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Table 7.–Page 2 of 2.

Year	Early run	Late run	Total
Escapement Goal	350,000–450,000	220,000–400,000	570,000–850,000
Averages			
1999–2018	418,945	325,547	744,491
2009–2018	408,316	348,397	756,713
2014–2018	405,999	370,189	776,188

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

Table 8.–Estimated peak sockeye salmon escapement estimates for Black Lake tributaries, 1980–2019.

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	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
2019	9,200	ND	24,500	107,900	14,200	2,100	157,900
Averages							
1999–2018	35,895	8,091	48,529	160,511	7,795	20,712	256,322
2009–2018	36,050	5,550	36,910	160,644	8,510	12,900	239,880
2014–2018	39,800	ND	36,320	154,575	12,200	20,400	232,380

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, 1980–2019.

	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	ND
1981	950	1,500	18,700	21,150	ND	ND	ND	ND
1982	1,066	10,791	5,000	16,857	ND	ND	ND	ND
1983	ND	ND	6,000	6,000	ND	ND	ND	ND
1984	ND	ND	8,200	8,200	ND	ND	ND	ND
1985	350	450	1,200	2,000	ND	ND	ND	ND
1986	ND	ND	8,300	8,300	ND	ND	ND	ND
1987	ND	ND	1,000	1,000	ND	ND	ND	ND
1988	ND	ND	4,600	4,600	ND	ND	ND	ND
1989	ND	ND	2,100	2,100	ND	ND	ND	ND
1990	300	0	50	350	ND	ND	ND	ND
1991	ND	ND	ND	ND	ND	ND	ND	ND
1992	ND	ND	ND	ND	ND	ND	ND	ND
1993	ND	ND	16,000	16,000	ND	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	ND
2003	ND	ND	2,000	2,000	ND	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	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

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	Black River				Chignik Lake			
Year	Bearskin Creek	West Fork	Chiaktuak Creek	Total	Clark River	Home Creek	Hatchery Beach	Total
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
2019	0	9,600	21,600	31,200	13,100	ND	124,000	137,100
Averages								
1999–2018	2,604	9,223	13,988	24,389	26,530	5,341	52,000	76,443
2009–2018	1,321	9,236	16,921	27,766	29,631	2,194	68,000	90,111
2014–2018	2,850	18,600	28,675	50,125	19,510	2,530	74,500	96,540

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 estimates for the Chignik Management Area, by district and year, 1980–2019.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
1960	ND	28,000	130,000	48,600	123,800	330,400
1979	1,200	297,000	194,300	185,000	181,300	857,600
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.

Year	District					Total
	Chignik Bay	Central	Eastern	Western	Perryville	
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
2019	35,873	238,700	441,100	98,500	28,575	842,748
Averages						
1999–2018	34,792	179,196	434,090	78,861	97,152	824,090
2009–2018	27,026	129,955	326,362	63,572	79,877	626,791
2014–2018	32,987	120,970	300,344	59,613	69,154	583,068
Odd-Year Averages						
1999–2018	52,385	280,225	566,245	107,957	134,165	1,140,977
2009–2018	47,622	224,570	521,320	95,774	133,790	1,023,076
2014–2018	54,836	256,217	546,587	87,373	137,583	1,086,690

Note: 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 inseason management, not just the 8 index streams used to compute the escapement index. All escapement estimates were via peak aerial survey, with the exception of Chignik River, which was included in the Chignik Bay District estimate.

Table 11.–Estimated Chignik Management Area peak pink salmon combined escapement of index streams, and escapement objectives, 2006–2019.

Year	Total estimated peak escapement[a]
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
2019	415,300
Odd-year SEG	260,000–450,000
Odd-year Average (2009–2018)	367,570

[a] 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, 1980–2019.

	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.

	District					
Year	Chignik Bay	Central	Eastern	Western	Perryville	Total
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
2019	2,067	66,500	168,400	12,400	33,600	282,967
Averages						
1999–2018	3,965	30,575	98,246	12,318	52,030	197,134
2009–2018	2,339	28,785	91,967	14,021	58,965	196,077
2014–2018	1,099	25,200	75,262	11,382	35,130	148,073

Note: 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. All estimates were via aerial survey, with the exception of Chignik River, which was included in the Chignik Bay District estimate.

Table 13.–Estimated Chignik Management Area peak chum salmon combined escapement of index streams, and escapement objectives, 2006–2019.

Year	Total estimated peak escapement[a]
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
2019	98,000
SEG	45,000–110,000
Average 2009–2018	90,395

[a] Calculated using peak aerial surveys from the 6 index streams established in Schaberg et al. 2015.

Table 14.–Total annual Chignik Management Area commercial salmon harvests (including home pack and the department's test fishery harvests), by species and year, 1980–2019.

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

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Table 14.–Page 2 of 2

Year	Number of permits	Landings	Harvest					
			Chinook	Sockeye	Coho	Pink	Chum	Total
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
2019	51	1,503	4,312	638,784	248,282	2,452,838	157,517	3,501,733
Averages								
1999–2018	64	2,332	4,711	1,329,010	86,315	1,116,445	162,805	2,699,287
2009–2018	62	2,216	6,965	1,374,471	94,773	1,336,203	231,810	3,044,222
2014–2018	57	1,754	8,543	892,908	107,148	1,909,834	176,953	3,095,386

Table 15.–Annual Chignik Management Area Chinook salmon harvest, 1980–2019.

	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
2019	0	0	4,286	39,024	26	348	4,312	39,372
Averages								
1999–2018	2	36	4,613	49,752	96	1,627	4,711	51,415
2009–2018	2	24	6,896	62,938	66	1,064	6,965	64,026
2014–2018	3	33	8,501	67,832	38	517	8,543	68,383

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

[a] 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.

Table 16.–Chignik Management Area Chinook salmon harvest (including home pack and the department's test fishery catches), by district and year, 1980–2019.

	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
2019	1,140	349	862	1,281	680	4,312
Averages						
1999–2018	1,182	1,812	203	1,409	105	4,711
2009–2018	765	3,272	339	2,388	201	6,965
2014–2018	630	4,893	227	2,469	324	8,543

Table 17.–Chignik Management Area Chinook salmon harvest (including home pack), by district and statistical week, 2019.

		District				
Date	Deliveries	Chignik Bay	Central	Eastern	Western	Perryville
7/5–7/11	13	Closed	[a]	[a]	[a]	[a]
7/12–7/18	78	Closed	0	[a]	456	320
7/19–7/25	190	767	35	[a]	132	69
7/26–8/1	182	181	55	[a]	260	85
8/2–8/8	229	121	130	88	162	58
8/9–8/15	269	31	58	56	168	25
8/16–8/22	247	29	23	410	48	Closed
8/23–8/29	202	10	17	243	38	Closed
8/30–9/5	[a]	[a]	[a]	[a]	[a]	[a]
9/6–9/12	[a]	[a]	[a]	[a]	[a]	[a]
9/13–9/19	[a]	[a]	[a]	[a]	[a]	[a]
Total[b]	1,503	1,139	349	862	1,281	680

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

[b] Season totals include information not provided by individual week due to confidentiality requirements.

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, 1970–2019.

	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.

	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
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	17,055,904	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
2019	0	0	638,772	3,615,965	12	70	638,784	3,616,035	0	0	0	0	638,784	3,616,035
Averages[e]														
1999–2018	6,209	40,608	1,322,269	8,912,247	533	3,464	1,329,010	8,954,349	214,036	1,265,289	98,211	645,069	1,589,510	10,530,085
2009–2018	4,793	28,686	1,369,375	9,061,543	303	1,963	1,374,471	9,088,251	238,535	1,550,832	102,791	664,669	1,647,532	10,790,670
2014–2018	5,216	28,206	887,585	5,256,406	107	607	892,908	5,285,219	140,836	794,728	78,998	457,146	1,024,808	6,036,344

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.

[e] Averages do not include years in which Cape Igvak, SEDM, or both did not fish.

Table 19.–Total annual Chignik Management Area sockeye salmon harvest (including home pack and the department's test fishery catches), by district, 1980–2019.

	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
2019	275,304	83,040	43,803	196,391	40,246	638,784
Averages						
1999–2018	968,560	273,005	44,488	97,639	15,260	1,329,010
2009–2018	900,020	368,242	69,532	160,094	29,288	1,374,471
2014–2018	500,936	243,524	41,764	272,884	56,995	892,908

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

Table 20.–Chignik Management Area sockeye salmon harvest (including home pack), by district and statistical week, 2019.

		District				
Date	Deliveries	Chignik Bay	Central	Eastern	Western	Perryville
7/5–7/11	13	Closed	[a]	[a]	[a]	[a]
7/12–7/18	78	Closed	21	[a]	19,525	6,417
7/19–7/25	190	66,025	5,412	[a]	69,384	10,706
7/26–8/1	182	66,611	15,463	[a]	36,140	12,031
8/2–8/8	229	39,110	26,662	4,449	32,527	5,280
8/9–8/15	269	36,513	18,062	10,394	12,435	4,790
8/16–8/22	247	25,156	8,395	14,013	15,707	Closed
8/23–8/29	202	20,084	6,848	6,483	8,341	Closed
8/30–9/5	[a]	[a]	[a]	[a]	[a]	[a]
9/6–9/12	[a]	[a]	[a]	[a]	[a]	[a]
9/13–9/19	[a]	[a]	[a]	[a]	[a]	[a]
Total[b]	1,503	275,304	83,040	43,803	196,391	40,246

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

[b] Season totals include information not provided by individual week due to confidentiality requirements.

Table 21.–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, 1978–2019.

	Chignik[a]		Cape Igvak[a]		SEDM[a]		
Year	Catch	Percent	Catch[b]	Percent	Catch[c]	Percent	Total
1978	1,454,389	86.6	225,078	13.4	ND	ND	1,679,467
1979	794,504	98.3	13,950	1.7	ND	ND	808,454
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 21.–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
2019	185,567	100.0	0	0.0	0	0.0	185,567
Averages[h]							
1999–2018	1,079,903	83.7	214,036	13.1	100,407	7.1	1,342,159
2009–2018	1,135,330	84.9	254,473	13.2	102,791	7.4	1,408,391
2014–2018	638,348	89.3	140,836	11.2	78,998	8.1	770,248

[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.

[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 22.–Chignik sockeye salmon escapement, total harvest considered Chignik-bound, and total run, 1970–2019.

	Early run			Late run			Total run [a,b,c]		
Year	Escapement	Harvest	Total	Escapement	Harvest	Total	Escapement	Harvest	Total
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	657,511	1,711,549	2,384,420	382,587	661,025	1,028,252	1,040,098	2,372,574	3,412,672
1992	360,681	744,417	1,105,098	405,922	777,311	1,183,233	766,603	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	366,163	666,799	1,032,962	373,757	1,315,862	1,689,619	739,920	1,982,661	2,722,581
1996	464,461	1,688,264	2,152,725	284,676	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	350,004	640,084	990,088	334,119	652,144	986,263	684,123	1,292,228	1,976,351
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 22.–Page 2 of 2.

	Early run			Late run			Total run [a,b,c]		
Year	Escapement	Harvest	Total	Escapement	Harvest	Total	Escapement	Harvest	Total
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
2019	345,918	14,996	360,914	336,077	623,788	959,866	681,995	638,784	1,320,779
Averages									
1999–2018	420,479	894,224	1,314,704	325,679	694,931	1,020,609	746,158	1,589,155	2,335,313
2009–2018	408,316	960,429	1,368,745	347,711	686,394	1,034,105	756,027	1,646,823	2,402,851
2014–2018	405,999	468,245	874,244	368,816	556,564	925,380	774,815	1,024,808	1,799,624

[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 for comparison purposes.

[b] Does not include subsistence-caught fish.

[c] Includes harvests from the Chignik Lagoon test fishery and fish retained for home pack.

[d] Beginning in 2014, information from inseason genetic samples taken from the escapement at Chignik weir were used to determine the apportionment of the 2 runs during late June and mid-July for escapement and harvest instead of using the traditional July 4 cutoff date.

Table 23.–Chignik sockeye salmon forecasts and actual runs, by run and year, 1994–2019, 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
2019	0.83	0.36	-0.47	0.90	0.96	0.06	1.73	1.32	-0.41
Averages									
2009–2018	1.31	1.36	0.05	1.00	1.05	0.05	2.31	2.40	0.09
2014–2018	1.20	0.87	-0.33	1.02	0.93	-0.09	2.22	1.80	-0.42

Table 24.–Chignik Management Area coho salmon harvest, by year, 1980–2019.

	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
2019	0	0	248,281	1,581,396	1	6	248,282	1,581,402
Averages								
1999–2018	2	14	86,272	631,973	41	311	86,315	632,299
2009–2018	0	0	94,758	667,656	15	122	94,773	667,779
2014–2018	0	0	107,127	766,977	21	159	107,148	767,136

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 25.–Chignik Management Area coho salmon harvest (including home pack and the department's test fishery catches), by district and year, 1980–2019.

	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
2019	32,365	47,639	32,142	116,720	19,416	248,282
Averages						
1999–2018	11,248	15,467	1,007	56,692	6,444	86,315
2009–2018	6,321	18,346	1,077	68,149	11,411	94,773
2014–2018	4,339	24,508	697	84,686	19,705	107,148

[a] Confidentiality requirements prevent the release of this information

Table 26.–Chignik Management Area coho salmon harvest (including home pack), by district and statistical week, 2019.

		District				
Date	Deliveries	Chignik Bay	Central	Eastern	Western	Perryville
7/5–7/11	13	Closed	[a]	[a]	[a]	[a]
7/12–7/18	78	Closed	0	[a]	10,760	2,670
7/19–7/25	190	540	354	[a]	9,465	7,306
7/26–8/1	182	828	1,244	[a]	11,977	3,538
8/2–8/8	229	840	4,405	1,002	4,946	2,173
8/9–8/15	269	1,590	10,987	5,019	21,959	2,340
8/16–8/22	247	2,719	12,260	14,837	31,840	Closed
8/23–8/29	202	4,814	13,179	9,994	20,208	Closed
8/30–9/5	[a]	[a]	[a]	[a]	[a]	[a]
9/6–9/12	[a]	[a]	[a]	[a]	[a]	[a]
9/13–9/19	[a]	[a]	[a]	[a]	[a]	[a]
Total[b]	1,503	32,365	47,639	32,142	116,720	19,416

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

[b] Season totals include information not provided by individual week due to confidentiality requirements.

Table 27.–Chignik Management Area pink salmon harvest, by year, 1980–2019.

	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
2019	0	0	2,452,838	7,583,891	0	0	2,452,838	7,583,891
Odd-year Averages								
1999–2018	90	312	1,793,681	6,001,921	65	242	1,793,836	6,002,475
2009–2018	64	181	2,448,238	8,229,000	0	0	2,448,302	8,229,181
2014–2018	88	251	3,309,247	11,253,265	0	0	3,309,335	11,253,515

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 28.–Chignik Management Area pink salmon harvest (including home pack and the department's test fishery catches), by district and year, 1980–2019.

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
2019	153,279	380,257	735,710	925,305	258,287	2,452,838
Odd-year Averages						
1999–2018	114,848	428,267	129,771	789,263	331,687	1,793,836
2009–2018	139,838	435,176	223,207	1,039,432	610,650	2,448,302
2014–2018	196,971	544,495	261,985	1,372,307	933,577	3,309,335

[a] Confidentiality requirements prevent the release of this information

Table 29.–Chignik Management Area pink salmon harvest (including home pack), by district and statistical week, 2019.

		District				
Date	Deliveries	Chignik Bay	Central	Eastern	Western	Perryville
7/5–7/11	13	Closed	[a]	[a]	[a]	[a]
7/12–7/18	78	Closed	3,225	[a]	32,454	28,836
7/19–7/25	190	12,621	2,763	[a]	109,680	39,392
7/26–8/1	182	13,375	13,629	[a]	42,167	40,331
8/2–8/8	229	18,058	68,117	8,730	67,105	38,144
8/9–8/15	269	33,519	77,125	90,806	143,353	100,022
8/16–8/22	247	41,199	105,546	391,295	368,602	Closed
8/23–8/29	202	24,595	90,176	213,426	146,556	Closed
8/30–9/5	[a]	[a]	[a]	[a]	[a]	[a]
9/6–9/12	[a]	[a]	[a]	[a]	[a]	[a]
9/13–9/19	[a]	[a]	[a]	[a]	[a]	[a]
Total[b]	1,503	153,279	380,257	735,710	925,305	258,287

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

[b] Season totals include information not provided by individual week due to confidentiality requirements.

Table 30.–Chignik Management Area chum salmon harvest, by year, 1980–2019.

	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
2019	0	0	157,517	1,037,197	0	0	157,517	1,037,197
Averages								
1999–2018	15	130	162,762	1,248,553	28	209	162,805	1,248,892
2009–2018	11	86	231,768	1,751,679	31	230	231,810	1,751,995
2014–2018	20	154	176,919	1,314,013	13	103	176,953	1,314,270

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 31.–Chignik Management Area chum salmon harvest (including home pack and the department's test fishery catches), by district and year, 1980–2019.

	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
2019	12,205	52,173	15,249	50,675	27,215	157,517
Averages						
1999–2018	8,797	57,514	31,551	64,873	8,590	162,805
2009–2018	10,864	85,641	51,229	95,314	14,417	231,810
2014–2018	8,008	55,015	41,610	91,739	24,589	176,953

Table 32.–Chignik Management Area chum salmon harvest (including home pack), by district and statistical week, 2019.

		District				
Date	Deliveries	Chignik Bay	Central	Eastern	Western	Perryville
7/5–7/11	13	Closed	[a]	[a]	[a]	[a]
7/12–7/18	78	Closed	24,280	[a]	4,887	1,474
7/19–7/25	190	1,347	4,240	[a]	7,179	5,873
7/26–8/1	182	1,865	2,276	[a]	10,671	6,581
8/2–8/8	229	2,392	9,036	779	6,568	6,883
8/9–8/15	269	2,687	5,713	4,933	11,581	6,124
8/16–8/22	247	2,114	1,847	5,821	7,187	Closed
8/23–8/29	202	1,238	916	1,933	2,197	Closed
8/30–9/5	[a]	[a]	[a]	[a]	[a]	[a]
9/6–9/12	[a]	[a]	[a]	[a]	[a]	[a]
9/13–9/19	[a]	[a]	[a]	[a]	[a]	[a]
Total[b]	1,503	12,205	52,173	15,249	50,675	27,215

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

[b] Season totals include information not provided by individual week due to confidentiality requirements.

Table 33.–Value of the commercial salmon harvest, by species, and average value per active permit, in dollars, in the Chignik Management Area, 1970–2019.

	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 33.–Page 2 of 2.

Year	Chinook		Sockeye		Coho		Pink		Chum		Total value	Number of permits[c]	Value per permit
	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]	Total[a]	Average[b]			
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
2019	31,219	612	5,060,150	99,219	506,047	9,922	2,047,651	40,150	363,019	7,118	8,008,086	51	157,021
Averages													
1999-2018	45,900	665	7,964,072	110,699	236,730	3,524	766,330	11,799	376,290	5,747	9,389,370	72	132,441
2009-2018	70,323	1,043	10,070,885	148,710	249,075	3,770	1,132,316	16,980	618,594	9,436	12,141,288	61	179,954
2014-2018	73,938	1,064	5,573,731	80,379	248,192	3,614	1,580,469	23,349	390,184	5,789	7,866,703	57	114,228

[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 2019 exvessel prices per pound were as follows: Chinook = $0.80, sockeye = $1.40, coho = $0.32, pink = $0.27, chum = $0.35.

Table 34.–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

-continued-

Table 34.–Page 2 of 2.

	Permits		Estimated salmon harvest					
Year	Issued	Returned	Chinook	Sockeye	Coho	Chum	Pink	Total
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
2018	84	69	68	4,538	966	157	399	6,128
Averages								
1998–2017	114	91	136	8,346	1,525	209	916	11,132
2008–2017	108	89	106	7,738	1,255	182	635	9,916
2013–2017	113	97	112	7,815	1,147	166	453	9,693

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

[a] From 1993 to 2008 and in 2011, 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, 2013, and 2015.

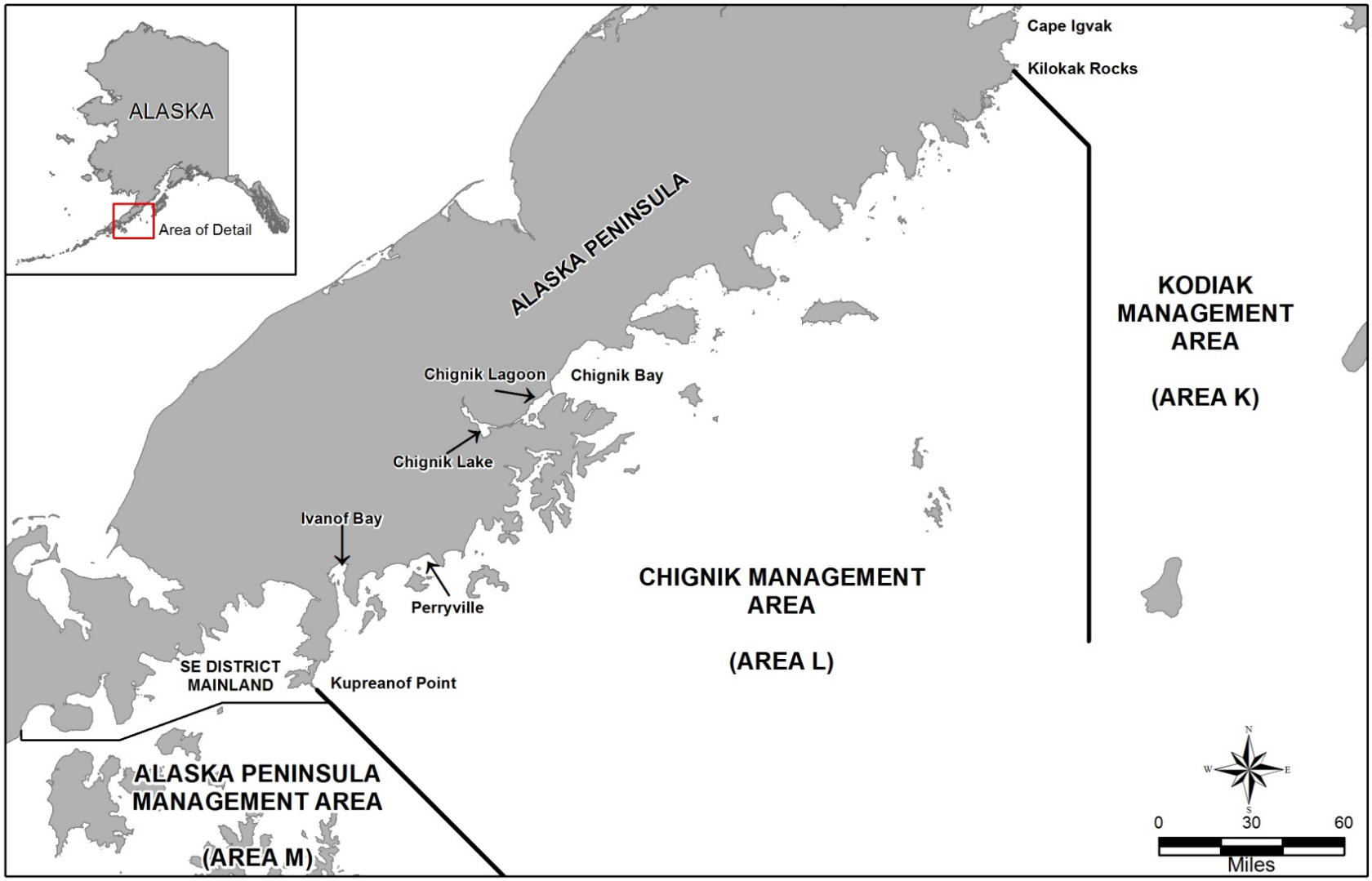

Figure 1.–Map of the Alaska Peninsula illustrating the relative locations of the Chignik, Kodiak, and Alaska Peninsula management areas.

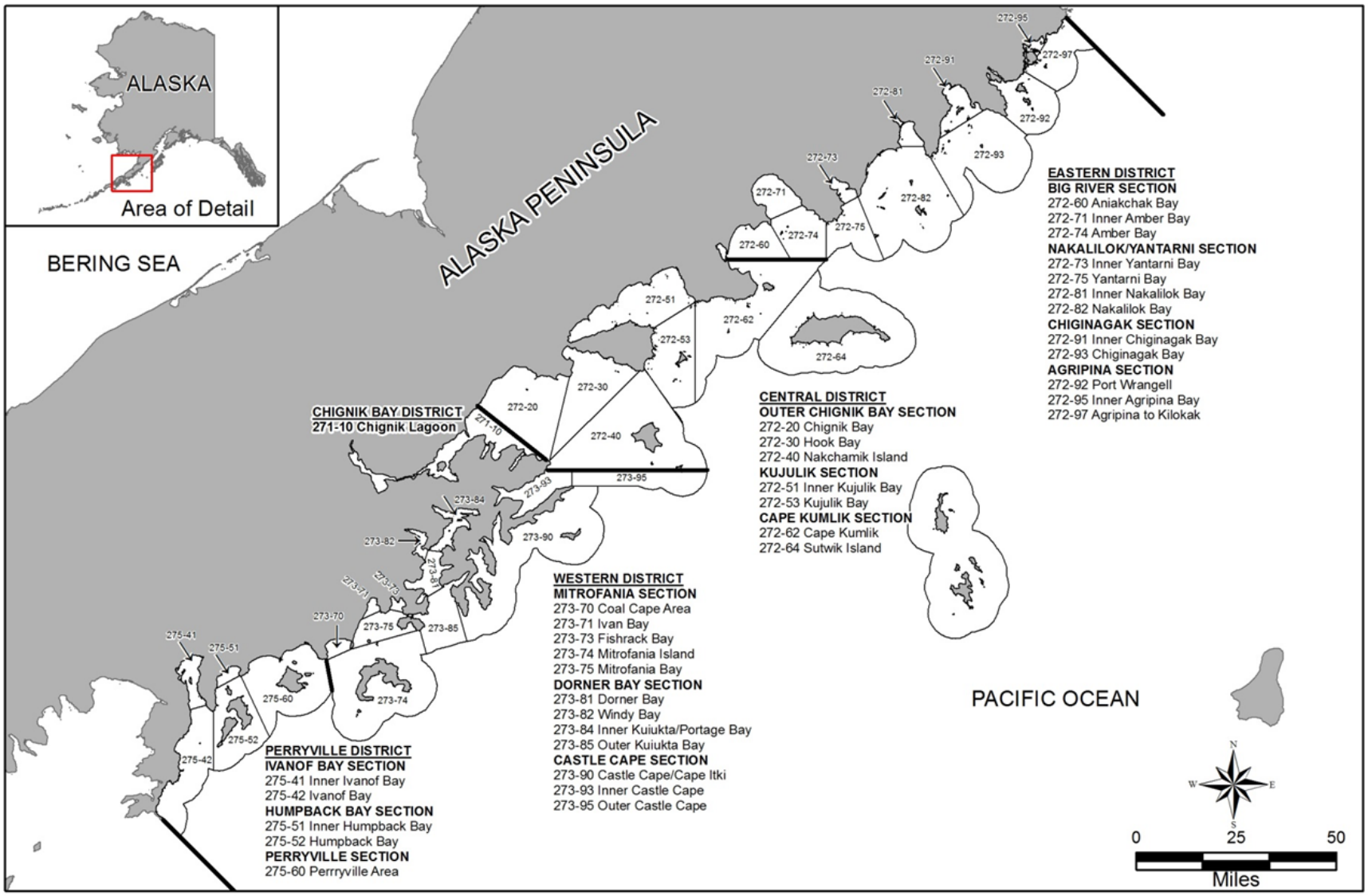

Figure 2.–Map of the Chignik Management Area illustrating district, section, and statistical area boundaries.

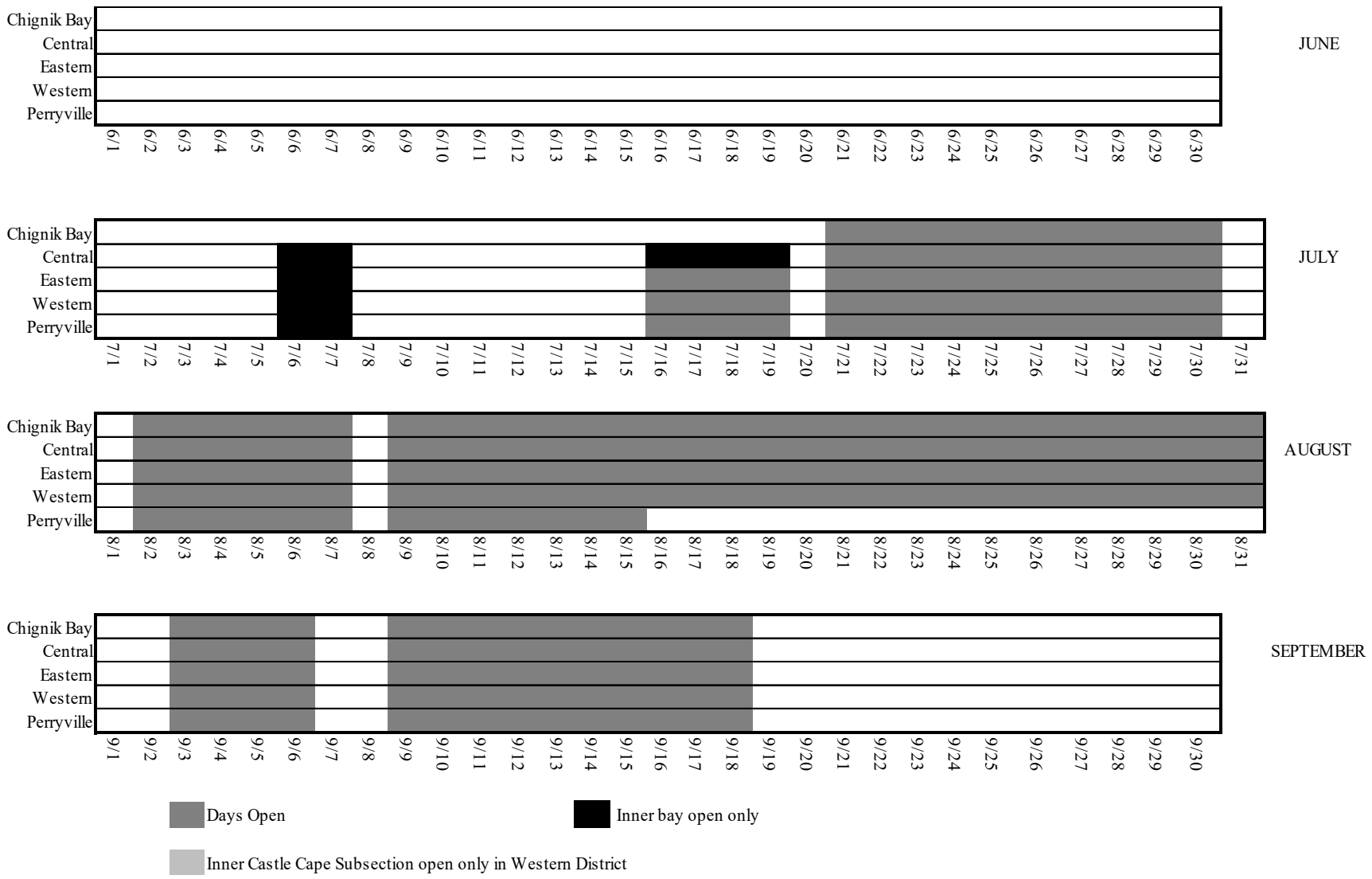

Figure 3.–Representation of days open to commercial salmon fishing, by district and month, 2019.

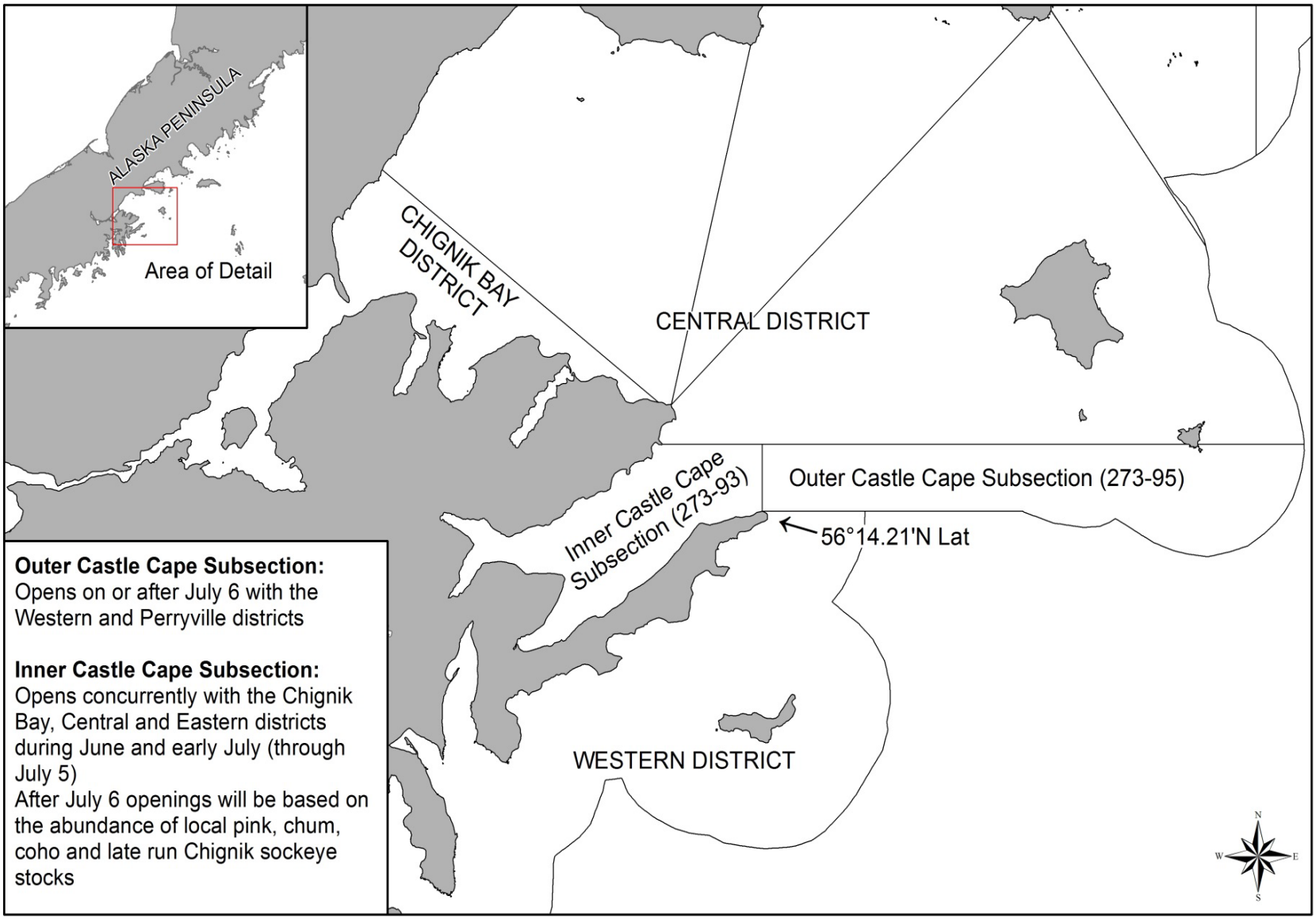

Figure 4.–Map depicting the Inner (273-93) and Outer (273-95) Castle Cape Sections of the Western District.

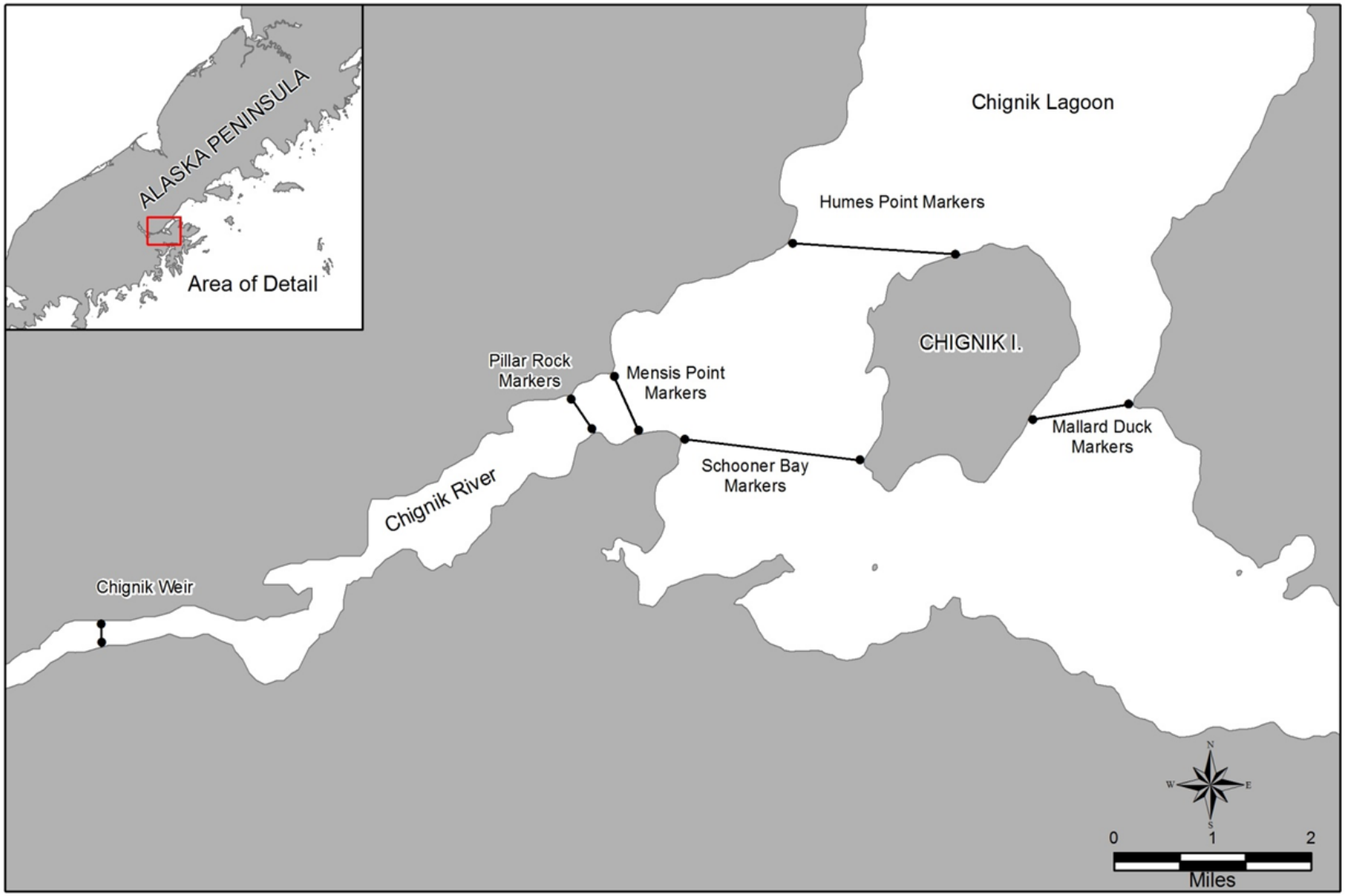

Figure 5.–Map of upper Chignik Lagoon showing the location of the Pillar Rock, Mensis Point, Humes Point, Mallard Duck, and Schooner Bay marker locations.

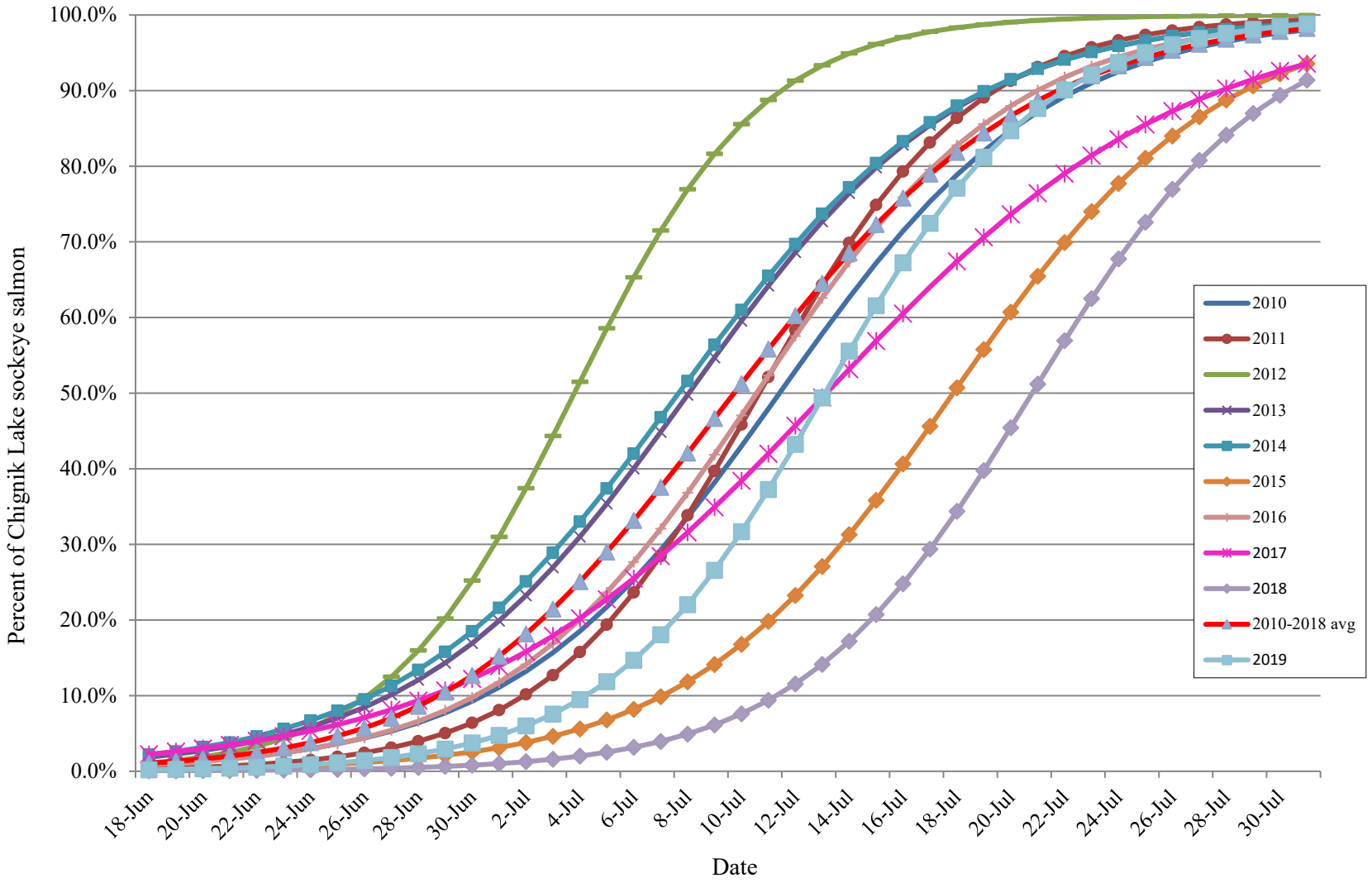

Figure 6.–Estimated proportional escapement of Chignik Lake (late run) sockeye salmon from inseason mixed-stock genetic analysis, 2010–2019.

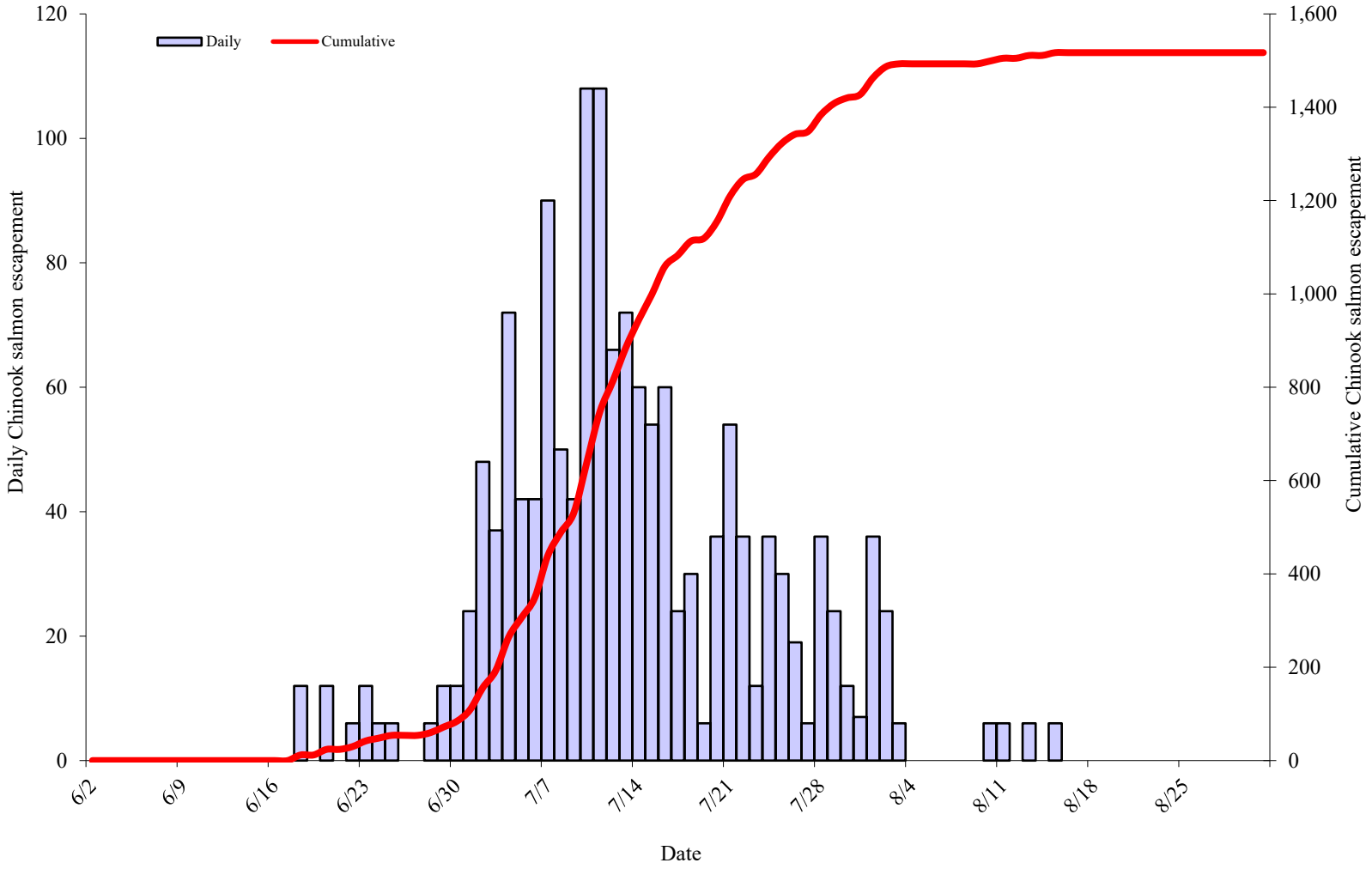

Figure 7.–Chignik River estimated daily and cumulative Chinook salmon escapement, 2019.

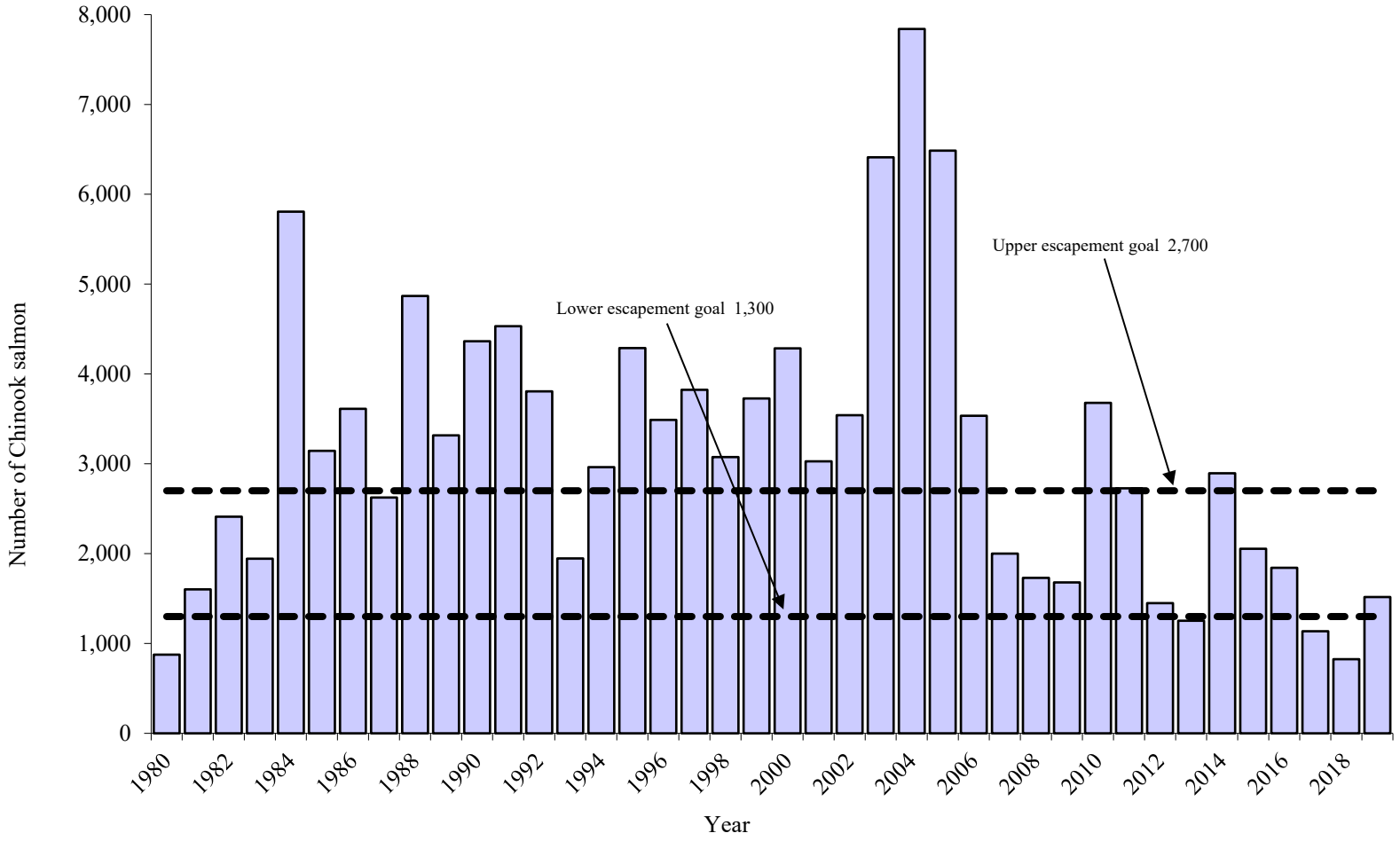

Figure 8.–Chignik River Chinook salmon escapement compared to the current escapement goal range, by year, 1980–2019.

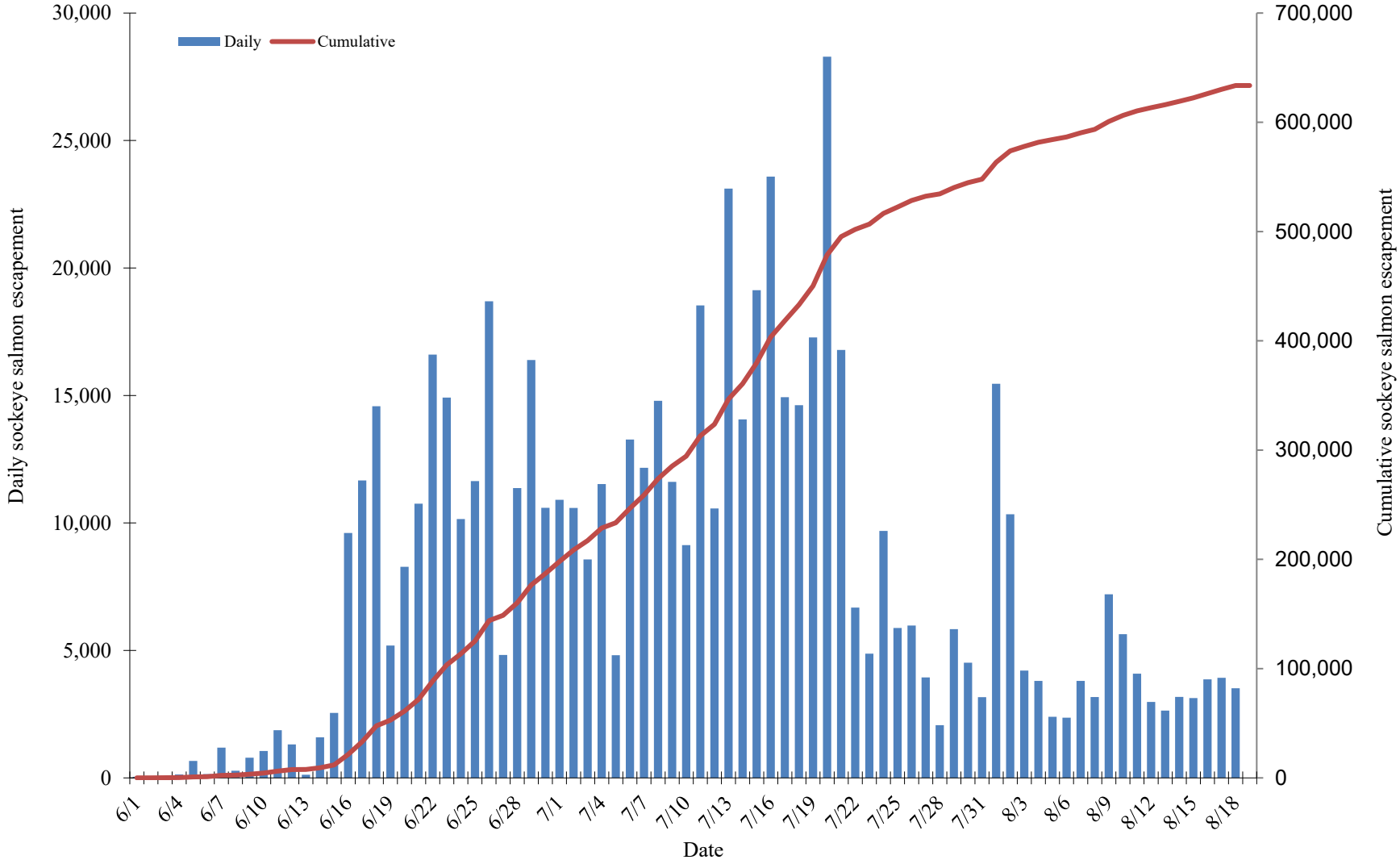

Figure 9.–Chignik River sockeye salmon daily and cumulative escapement (6/1–8/18), 2019.

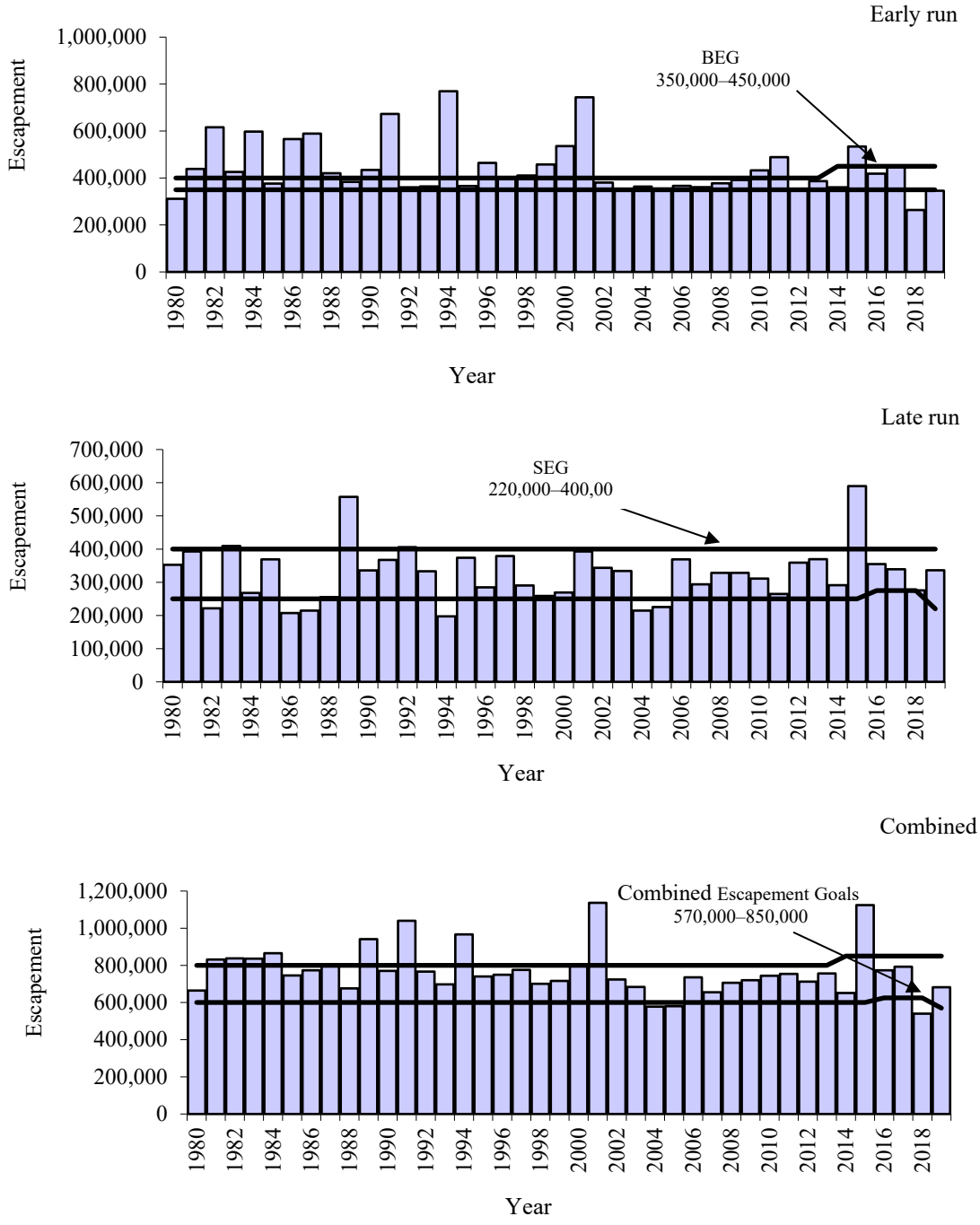

Figure 10.–Chignik River sockeye salmon early, late, and combined-run escapements 1980–2019 compared to established escapement goals (including a late run inriver run goal of 20,000 sockeye salmon).

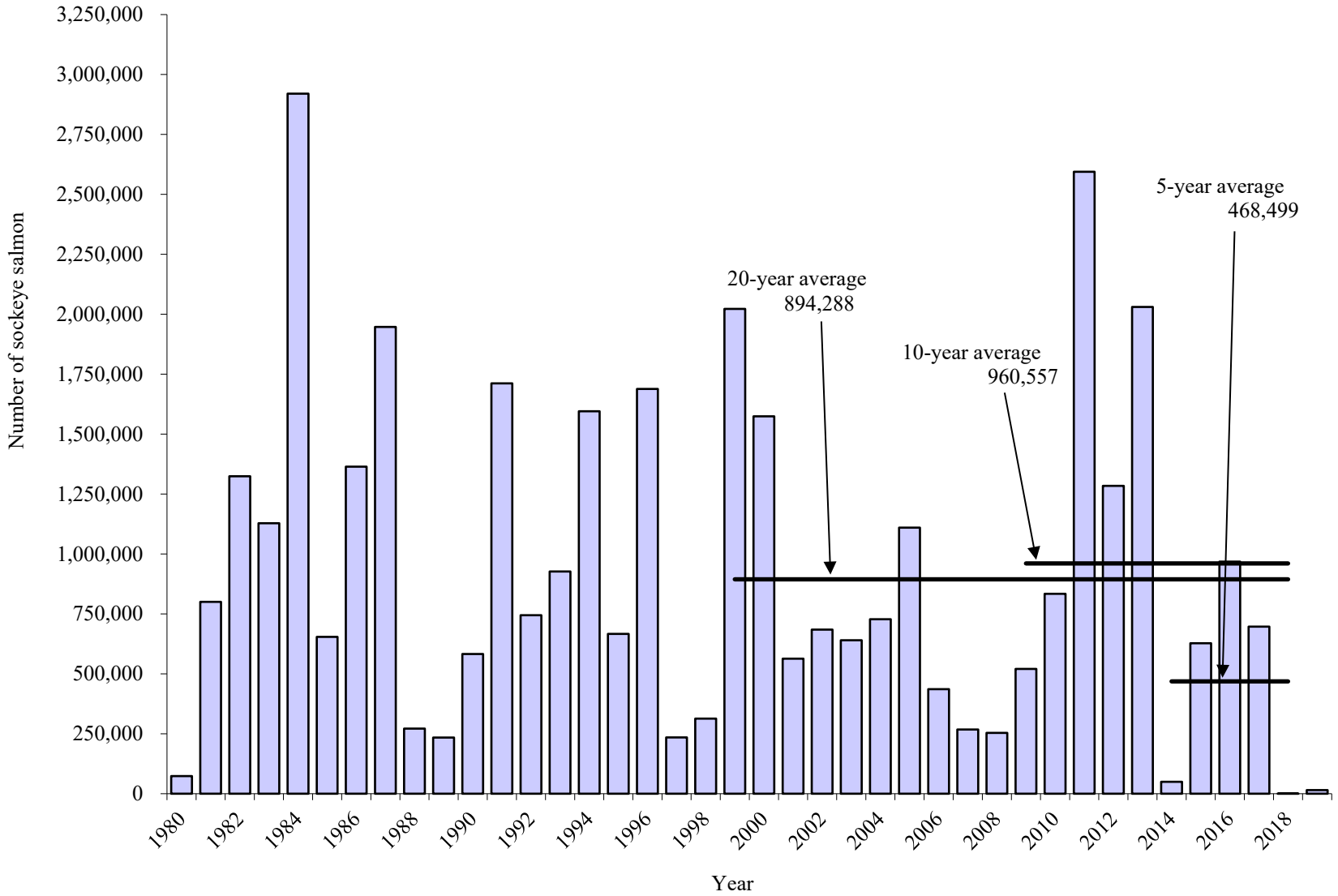

Figure 11.–Chignik-bound sockeye salmon early-run harvest, 1980–2019.

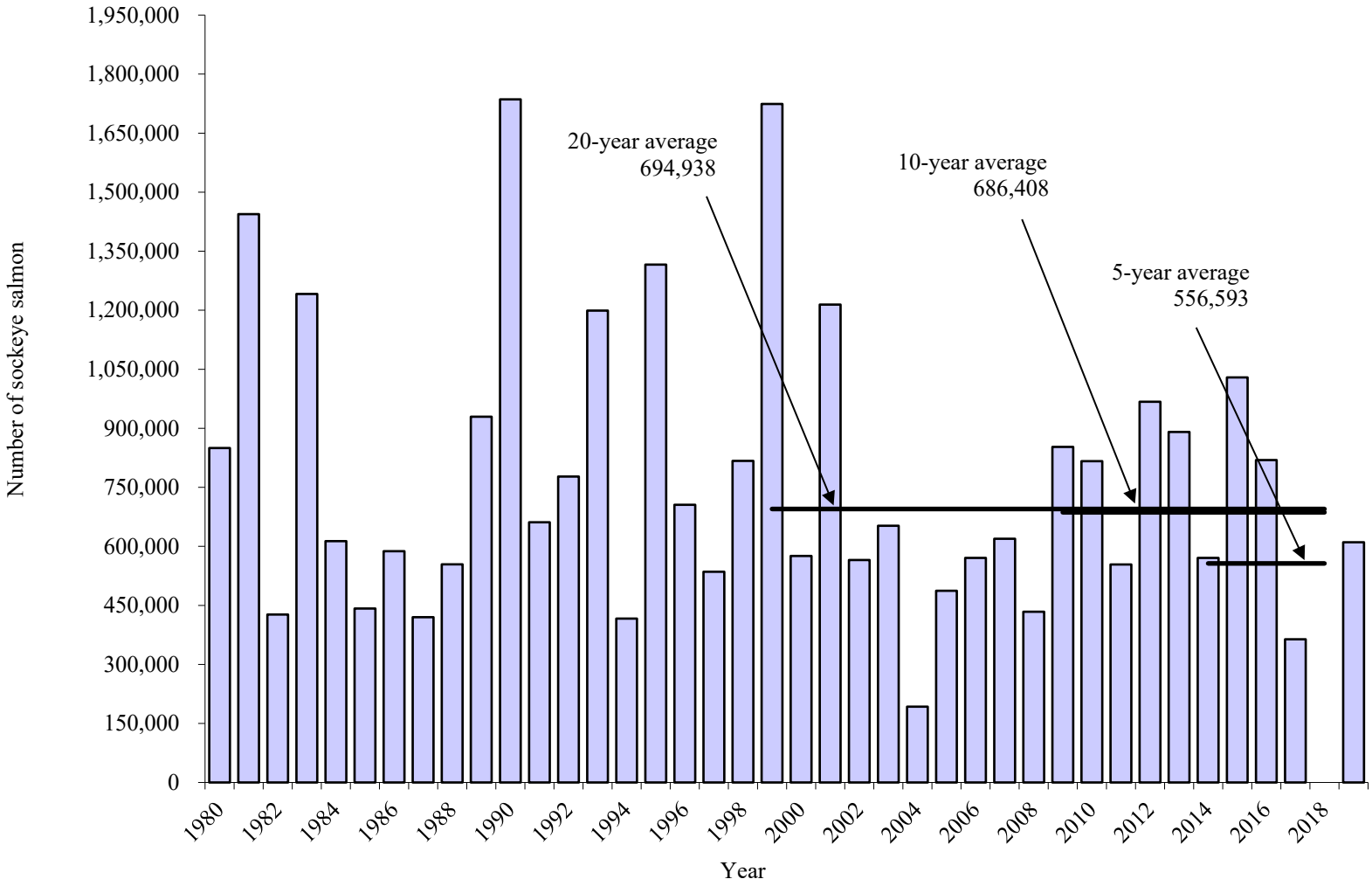

Figure 12.–Chignik-bound sockeye salmon late-run harvest, 1980–2019.

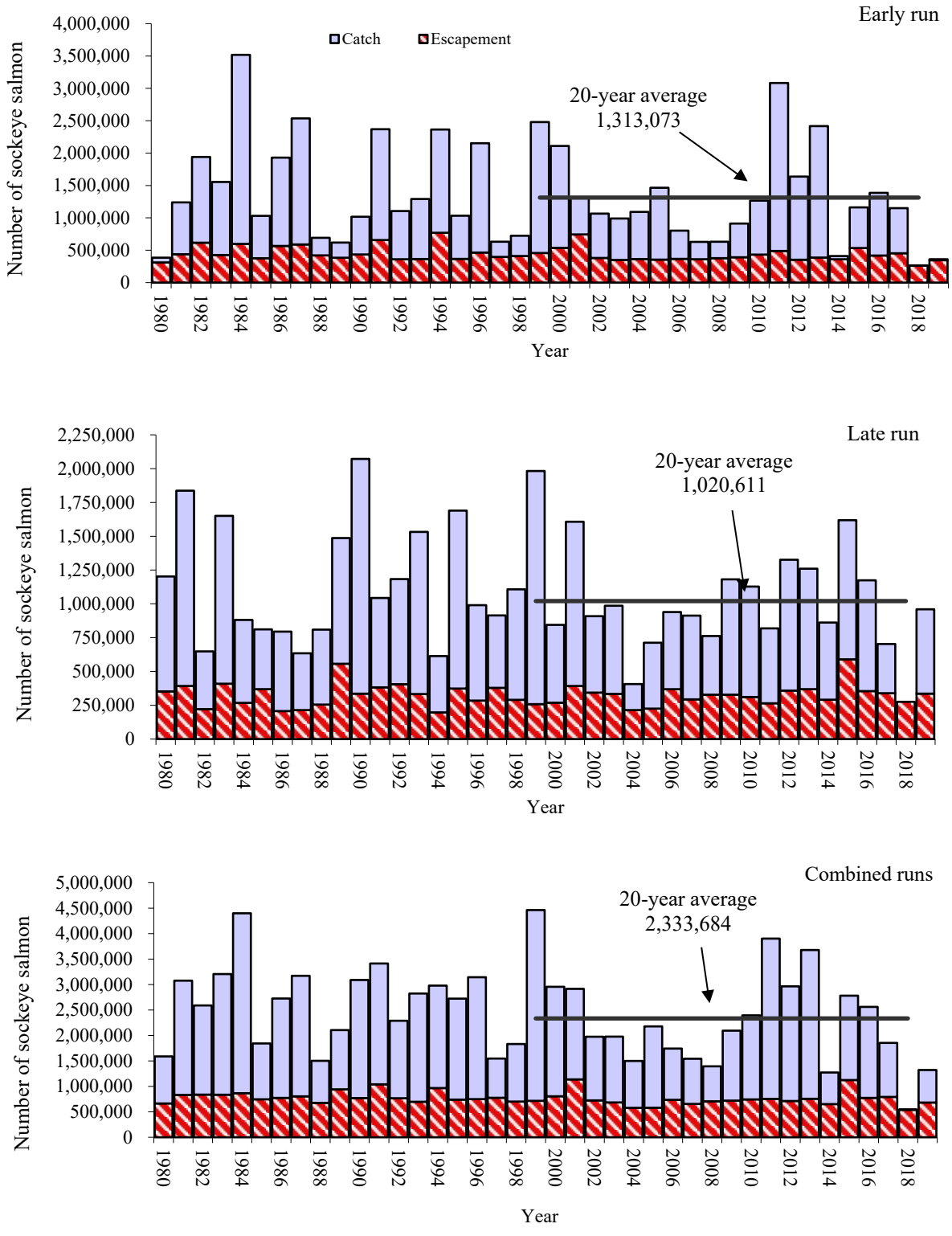

Figure 13.–Total sockeye salmon escapement and catch considered Chignik-bound including home pack, the department's test fishery harvest, and Cape Igvak and SEDM allocations, by year and run, 1980–2019.

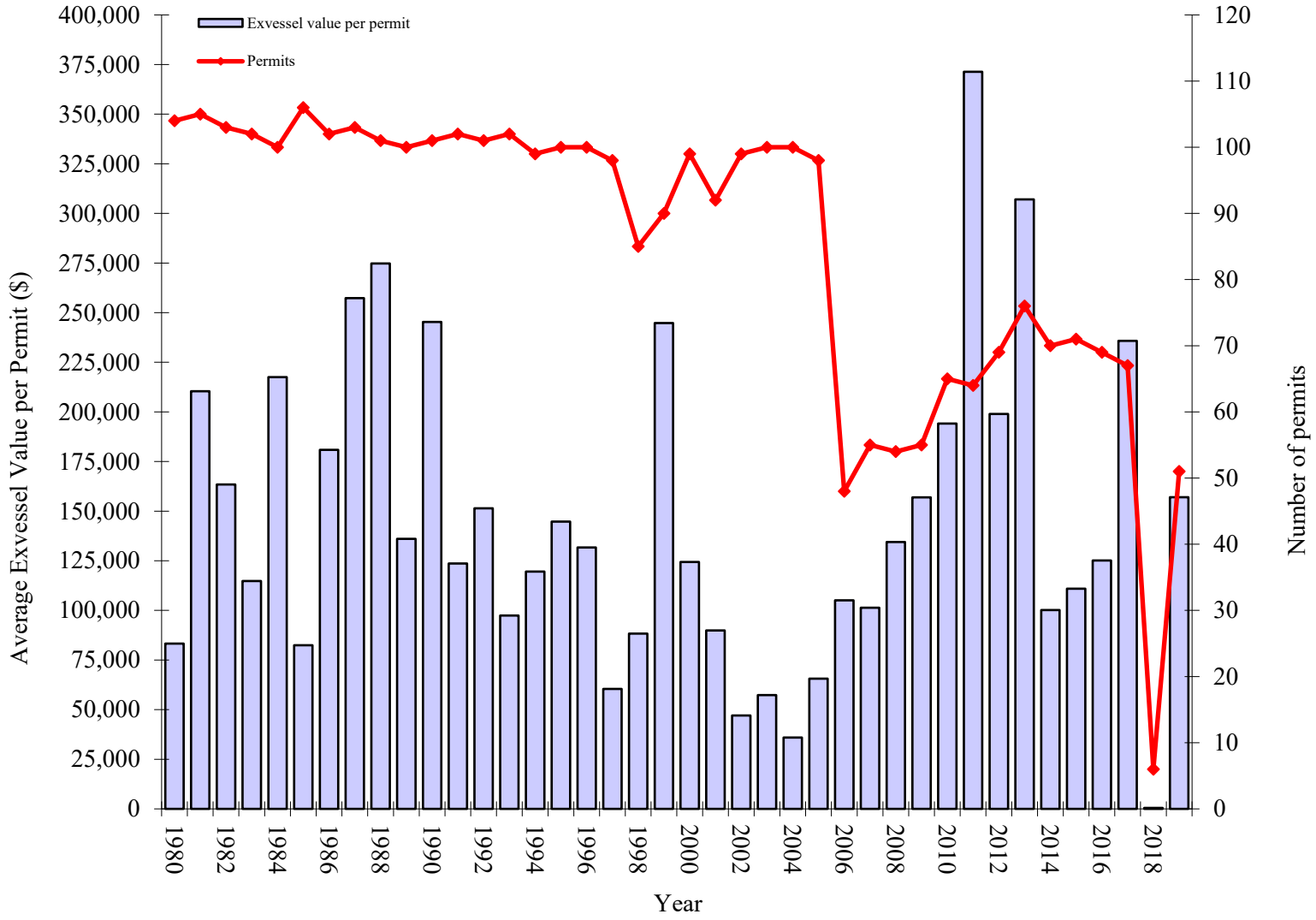

Figure 14.–Average exvessel value per permit and total permits fished by year, 1980–2019.

APPENDIX A.
SUMMARY OF 2019 EMERGENCY ORDERS

Appendix A1.–Summary of the 2019 Chignik Management Area (CMA) emergency orders.

E.O. Number	Issued	Effective	Action taken
4-FS-L-1-19	9:15 AM 7/2/2019	12:01 AM 7/6/2019	Opens certain statistical areas within the CMA to target local pink and chum harvest for 48 hours from 12:01 AM Saturday, July 6 until 11:59 PM Sunday, July 7. The areas are as follows with the statistical code; Kujulik Bay (272-51), Ivan Bay (273-71), Fish Rack Bay (273-73), Dorner Bay (273-84; 273-82; 273-81), Humpback Bay (275-51), Ivanof Bay (275-41), Amber Bay (272-71), Inner Nakalilok Bay (272-81), Inner Yantarni Bay (272-73), Chiginagak Bay (272-91), and Agripina Bay (272-95).
4-FS-L-2-19	5:15 PM 7/13/2019	12:01 AM 7/16/2019	Opens the Eastern, Western, and Perryville districts and Kujulik Bay of the Central District for 48 hours from 12:01 AM Tuesday, July 16 until 11:59 PM Wednesday, July 17.
4-FS-L-3-19	9:15 AM 7/17/2019	11:59 PM 7/17/2019	Extends the current commercial salmon fishing period in the Eastern, Western, and Perryville Districts and in Kujulik Bay of the Central District for 36 hours from 11:59 PM Wednesday, July 17 until noon Friday, July 19.
4-FS-L-4-19	5:15 PM 7/19/2019	7:00 AM 7/19/2019	Opens the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 65 hours from 7:00 AM Sunday, July 21 until 11:59 PM Tuesday, July 23. Upper Chignik Lagoon markers to be located at Humes Point.
4-FS-L-5-19	9:15 AM 7/23/2019	11:59 PM 7/23/2016	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western and Perryville Districts for 48 hours from 11:59 PM Tuesday, July 23 until 11:59 PM Thursday, July 25.
4-FS-L-6-19	9:15 AM 7/25/2019	11:59 PM 7/28/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 72 hours from 11:59 PM Thursday, July 25 until 11:59 PM Sunday, July 28.
4-FS-L-7-19	9:15 AM 7/28/2019	11:59 PM 7/28/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 48 hours from 11:59 PM Sunday, July 28 until 11:59 PM Tuesday, July 30.
4-FS-L-8-19	9:15 AM 8/1/2019	5:00 AM 8/2/2019	Opens the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 91 hours from 5:00 AM Friday, August 2 until 11:59 PM Monday, August 5. Upper Chignik Lagoon markers to be located at Humes Point.
4-FS-L-9-19	9:15 AM 8/5/2019	11:59 PM 8/5/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 48 hours from 11:59 PM Monday, August 5 until 11:59 PM Wednesday, August 7.

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Appendix A1.–Page 2 of 2.

E.O. Number	Issued	Effective	Action taken
4-FS-L-10-19	9:15 AM 8/8/2019	12:00 PM 8/9/2019	Opens the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 84 hours from noon Friday, August 9 until 11:59 PM Monday, August 12. Upper Chignik Lagoon markers to be located at Humes Point.
4-FS-L-11-19	5:15 PM 8/11/2019	11:59 PM 8/12/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western and Perryville Districts for 48 hours from 11:59 PM Monday, August 12 until 11:59 PM Wednesday, August 14.
4-FS-L-12-19	5:15 PM 8/13/2019	11:59 PM 8/14/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western and Perryville Districts for 48 hours from 11:59 PM Wednesday, August 14 until 11:59 PM Friday, August 16.
4-FS-L-13-19	5:15 PM 8/15/2019	11:59 PM 8/16/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, and Western Districts from 11:59 PM Friday, August 16 until 11:59 PM Monday, August 19. The Perryville District will close at 11:59 PM Friday, August 16.
4-FS-L-14-19	5:15 PM 8/18/2019	11:59 PM 8/19/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern and Western Districts of the Chignik Management Area from 11:59 PM Monday, August 19 until further notice.
4-FS-L-15-19	9:15 AM 8/28/2019	11:59 PM 8/31/2019	Closes the current commercial salmon fishing period in the Chignik Bay, Central, Eastern and Western districts of the Chignik Management Area at 11:59 PM Saturday, August 31.
4-FS-L-16-19	9:15 AM 8/31/2019	7:00 AM 9/3/2019	Opens the Chignik Bay, Central, Eastern, Western and Perryville Districts for 89 hours from 7:00 AM Tuesday, September 3 until 11:59 PM Friday, September 6. Upper Chignik Lagoon markers to be located at Humes Point.
4-FS-L-17-19	9:15 AM 9/7/2019	2:00 PM 9/9/2019	Opens the Chignik Bay, Central, Eastern, Western, and Perryville Districts for 82 hours from 2:00 PM Monday, September 9 until 11:59 PM Thursday, September 12. Upper Chignik Lagoon markers to be located at Humes Point.
4-FS-L-18-19	9:15 AM 9/11/2019	11:59 PM 9/12/2019	Extends the current commercial salmon fishing period in the Chignik Bay, Central, Eastern, Western and Perryville Districts for 48 hours from 11:59 PM Thursday, September 12 until 11:59 PM Saturday, September 14.
4-FS-L-19-19	9:15 AM 9/14/2019	8:00 AM 9/15/2019	Opens the Chignik Bay, Central, Eastern, Western and Perryville Districts for four 12-hour commercial salmon fishing periods. Sunday, September 15 from 8:00 AM until 8:00 PM. Monday, September 16 from 8:00 AM until 8:00 PM. Tuesday, September 17 from 8:00 AM until 8:00 PM. Wednesday, September 18 from 8:00 AM until 8:00 PM. Upper Chignik Lagoon markers to be located at Humes Point.

APPENDIX B.
2019 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

DATE: October 2, 2019

PHONE: 907-486-1848

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

SUBJECT: 2019 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 generally operates from the end of May to the beginning of September. Fish continue to escape the system through September, however, during which time an in-river run goal (IRRG: August goal of 10 thousand fish and September goal of 10 thousand fish) exists supplemental to the sustainable escapement goal of 200-400 thousand fish that extends through September 30 (Schaberg 2015, Wilburn 2019).

Historically, a time series analysis generalizing the decay of the run (Chatfield 1985, Hyndman and Athanasopoulos 2014) has been employed to estimate the post-weir sockeye salmon escapement to the Chignik River through September 30. For 2019, the Chignik weir was pulled rather early on August 18 because of budgetary constraints. Subsequently, the post-weir estimate encompasses the projected sockeye salmon escapement between August 19 and September 30.

A Holt time series model, which accounted for autocorrelation, nonstationarity, and exponential trends in the data (Hyndman and Athanasopoulos 2014), estimated a total of 48,332 late-run fish to have escaped upriver after removal of the Chignik weir (Figure 1). The model employed late-run data from July 28 to August 18 to represent the decay of the run. Fishing occurred from August 19 to September 5: catch during this time were subtracted from their respective daily time series run estimate to calculate escapement. The addition of the post-weir estimate to the run reconstruction yielded a total of 42,820 fish escaping the system from September 1 to 30. The post-weir estimate increased the late-run escapement total to 336,076 fish and the total escapement to the Chignik watershed to 681,995 fish.

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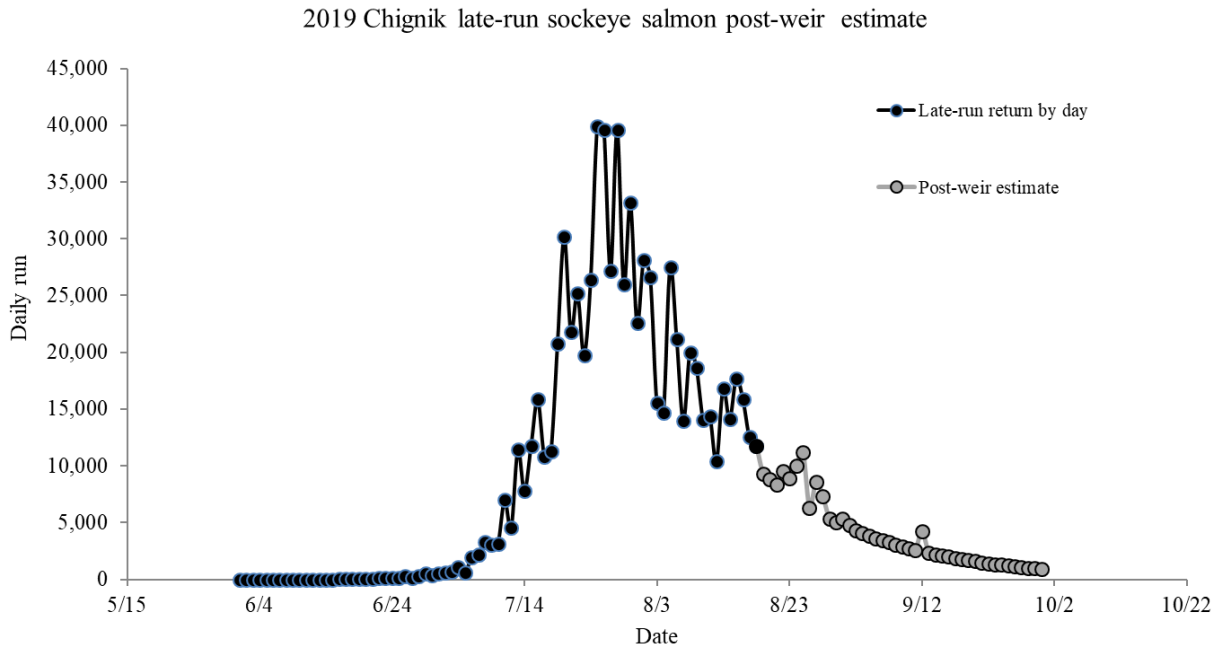

Figure 1. Estimated Chignik sockeye salmon run by day for 2019.

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.

Wilburn, D. M. 2019. Chignik Management Area commercial salmon fishery harvest strategy, 2019. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K19-09, Kodiak.

CC: Renick, Wadle