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Chum Salmon Stock Status and Escapement Goals in Southeast Alaska through 2023

by

Andrew W. Piston

and

Teresa M. Fish

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

SPECIAL PUBLICATION NO. 24-14

**CHUM SALMON STOCK STATUS AND ESCAPEMENT GOALS IN
SOUTHEAST ALASKA THROUGH 2023**

by

Andrew W. Piston and Teresa M. Fish

Alaska Department of Fish and Game, Division of Commercial Fisheries, Ketchikan

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

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*Andrew W. Piston and Teresa M. Fish,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
2030 Sea Level Drive, Suite 205, Ketchikan, Alaska 99901, USA*

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ABSTRACT

In Southeast Alaska, chum salmon (*Oncorhynchus keta*) spawn in more than 1,200 streams. The Alaska Department of Fish and Game maintains a standardized survey program to index spawning chum salmon abundance at 87 summer-run and 7 fall-run streams. Lower-bound sustainable escapement goals are established for summer-run stocks composed of aggregates of index streams over 3 broad subregions (Southern Southeast, Northern Southeast Inside, and Northern Southeast Outside), and sustainable escapement goal ranges are established for 5 fall-run stocks that support directed fisheries (Cholmondeley Sound, Port Camden, Security Bay, Excursion River, and Chilkat River). Summer-run chum salmon escapement goals were met in all the past 5 years in the Southern Southeast Subregion, 3 of the past 5 years in the Northern Southeast Inside Subregion, and only 1 of the past 5 years in the Northern Southeast Outside Subregion. Escapement goals were met for the 5 fall-run stocks 56% of the time over the past 5 years. We reviewed chum salmon escapement goals and recommended changing the lower-bound sustainable escapement goal ranges for summer-run chum salmon in the Northern Southeast Inside and Outside Subregions due to the removal of streams from both indices. We also recommended eliminating the Chilkat River fall-run chum salmon escapement goal due to the poor relationship between fish wheel counts and escapement estimates, and the elimination of the fish wheel project in 2024. The annual common property harvest of chum salmon in Southeast Alaska averaged 6.8 million fish per year since 2014; hatchery-produced fish accounted for an average 88% of that harvest.

Keywords: chum salmon, *Oncorhynchus keta*, escapement goals, escapement index, stock status, straying, Chilkat River, Cholmondeley Sound, Crawfish Inlet, Excursion Inlet, Lynn Canal, Port Camden, Security Bay, Southeast Alaska, Taku River

INTRODUCTION

Chum salmon (*Oncorhynchus keta*) spawn in more than 1,200 streams in Southeast Alaska. Chum salmon are harvested primarily in commercial net fisheries and to a lesser extent by commercial troll fisheries, as well as in sport, personal use, and subsistence fisheries. Annual commercial harvests of chum salmon in Southeast Alaska were historically at high levels in the early to mid-1900s, then gradually declined to their lowest levels in the late 1970s (Figure 1). The total harvest of chum salmon increased dramatically in the 1990s, including a peak total harvest of 16.0 million fish in 1996, and averaged 9.8 million fish over the most recent 10 years, 2014–2023. The common property harvest (total harvest minus hatchery cost recovery) of chum salmon during this same period averaged 6.8 million fish, and the total exvessel value of that harvest averaged \$53 million a year—well ahead of the next most valuable species, pink salmon (*O. gorbuscha*), at \$27 million a year. Much of this increase was due to the production of hatchery fish, which accounted for an average 88% of the commercial common property harvest of chum salmon from 2014 to 2023. Despite an increase in wild chum salmon abundance in the 1990s, abundance (as indicated by harvest) did not rebound to nearly the same degree as pink salmon (Zadina et al. 2004) and wild coho salmon (*O. kisutch*; Shaul et al. 2004) and remained well below harvest levels of the early 20th century (Van Alen 2000). Annual harvests of wild chum salmon have recently declined to the low levels previously observed in the late 1970s (Figure 1).

Stock-specific harvest information is not available for the vast majority of wild chum salmon stocks in Southeast Alaska, which are predominantly harvested in mixed stock fisheries far from their spawning grounds. Wild chum salmon are primarily harvested incidentally to other species in traditional common property fisheries, which are managed based on abundance of other target species; for example, wild summer-run chum salmon stocks in Southeast Alaska are harvested incidentally in directed pink salmon purse seine fisheries. Some wild chum salmon runs are harvested directly in terminal or near-terminal fisheries, which allows for some accounting of stock-specific harvest; however, in many cases these fish also migrate through mixed stock

fisheries where the stock composition may not be known. Large numbers of hatchery chum salmon are harvested in targeted common property hatchery terminal area fisheries, which accounted for approximately 43% of the common property chum salmon harvest in Southeast Alaska from 2014 to 2023.

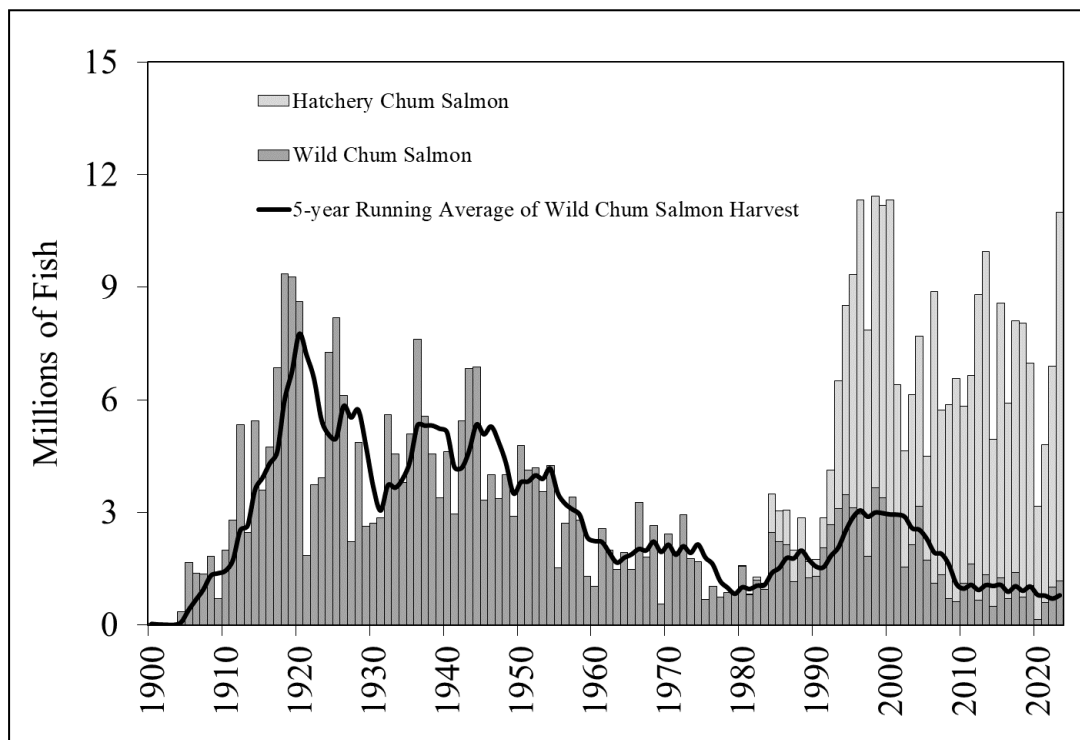


Figure 1.—Annual common property harvest of chum salmon in Southeast Alaska from 1900 to 2023 showing estimated harvests of both hatchery-produced and wild chum salmon. (Data prior to 1960 are from Byerly et al. 1999).

The Alaska Department of Fish and Game (ADF&G) developed a standardized program to estimate an annual index of spawning chum salmon abundance based primarily on aerial surveys (Heinl et al. 2004; Heinl 2005; Eggers and Heinl 2008). The trends in these indices provide a meaningful indicator of trends in the relative abundance of spawning chum salmon in Southeast Alaska. These indices also formed the basis of the first escapement goals for chum salmon in Southeast Alaska, which were established in 2009 (Eggers and Heinl 2008) and subsequently modified in 2012, 2015, and 2017 (Piston and Heinl 2011, 2014, 2017). Lower-bound sustainable escapement goals were developed for 3 broad regional aggregates of streams for summer-run chum salmon stocks, and sustainable escapement goal ranges were established for 5 additional fall-run chum salmon stocks.

In 2000 and 2001, the Alaska Board of Fisheries adopted the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223) into state regulation to ensure that the state's salmon stocks would be conserved, managed, and developed using the sustained yield principle. These policies require ADF&G to report on salmon stock status and escapement goals to the board on a regular basis, document and review existing salmon escapement goals, establish goals for stocks for which escapement can be reliably measured, and prepare scientific analyses with supporting data when

goals are created or modified. In order to meet requirements of these policies, Heint et al. (2004) and Heint (2005) produced ADF&G’s first reports on stock status of chum salmon in Southeast Alaska. They did not identify any chum salmon stocks in Southeast Alaska for which existing information was sufficient to establish escapement goals. Eggers and Heint (2008) provided an update on stock status and recommendations on the first formal escapement goals for chum salmon in Southeast Alaska, which were updated by Piston and Heint (2011, 2014, 2017, and 2020). This report represents an update regarding the status of chum salmon in the region through 2023, including an evaluation of current escapement goals (Table 1).

Table 1.–Summary of current escapement goals for Southeast Alaska chum salmon stocks and recommended escapement goals.

Run type	Stock unit	Enumeration method	Current escapement goal			Recommended escapement goal		
			Goal	Type	Year	Action	Goal	Type
Summer	Southern Southeast	Aggregate peak surveys	62,000	Lower-bound SEG ^a	2015	No change	–	–
	Northern Southeast Inside	Aggregate peak surveys	107,000	Lower-bound SEG	2018	Revise	95,000	Lower-bound SEG
	Northern Southeast Outside	Aggregate peak surveys	25,000	Lower-bound SEG	2015	Revise	19,500	Lower-bound SEG
Fall	Cholmondeley Sound	Aggregate peak surveys	30,000–48,000	SEG	2009	No change	–	–
		Aggregate peak surveys	2,000–7,000	SEG	2009	No change	–	–
	Security Bay	Peak aerial survey	5,000–15,000	SEG	2009	No change	–	–
	Excursion River	Peak aerial survey	4,000–18,000	SEG	2009	No change	–	–
	Chilkat River	Expanded fish wheel count	75,000–250,000	SEG	2015	Eliminate	–	–

^a Sustainable escapement goal (SEG).

STOCK ASSESSMENT

ESCAPEMENT MONITORING

There are more than 1,200 streams and rivers in Southeast Alaska for which ADF&G has a record of adult chum salmon spawning since 1960 (ADF&G Integrated Fisheries Database). Counts of 1,000 or more chum salmon were obtained at approximately 450 of those streams prior to 1985, when hatchery production of chum salmon began on a large scale. However, long time series of escapement information are not available for a majority of those streams. Summer-run chum salmon are most easily observed early in the season when there are few pink salmon present. It is often not possible to estimate numbers of chum salmon in streams that have substantial populations of pink salmon, and high pink salmon abundance in some years may have masked chum salmon escapements in many areas (Van Alen 2000). Of the chum salmon populations that have been consistently monitored, most have been monitored through aerial surveys, although many have also been monitored by foot surveys. Inriver fish wheel counts have been used to collect data on fall-run chum salmon at the Taku and Chilkat Rivers, both of which are large glacial, mainland river systems.

In their review of available ADF&G chum salmon escapement survey data, 1960–2002, Heint et al. (2004) identified 82 chum salmon streams, 76 summer-run and 6 fall-run, that had sufficient survey information to be useful for assessing trends in spawning populations. Another 3 stocks

were also examined but treated separately (Fish Creek–Hyder, Taku River, and Chilkat-Klehini River). Efforts have been made to continue to monitor this set of streams on an annual basis. Piston and Heintz (2014) updated these indices and increased the number of chum salmon index streams to 87 summer-run and 7 fall-run systems upon which current escapement goals are based.

Heintz et al. (2004) pointed out the many limitations of these survey counts. In addition to the challenge of separating pink and chum salmon during routine aerial surveys, these subjective survey counts can only be used as is and it is not possible to adjust them to account for counting bias among observers or convert them to estimates of total escapement. An escapement estimate is a statistically reliable measure of escapement magnitude (i.e., the total number of fish in the escapement). An escapement estimate is approximately in the same units as the estimates of harvest, and harvest estimates and escapement estimates can logically be added together to produce an estimate of total run size. Alternatively, an escapement index is a relative measure of escapement, useful for year-to-year comparisons. The maximum survey counts used here underestimate the true escapement and can only be considered a relative indicator of escapement level.

WILD CHUM SALMON STOCKS

Southeast Alaska chum salmon index streams were grouped into appropriate stock groups by area and run timing based on marine tagging and genetic studies (Eggers and Heintz 2008). Chum salmon populations in Southeast Alaska are generally divided into 2 runs based on migration timing: summer-run fish peak during the period mid-July to mid-August and fall-run fish peak in September or later (Figure 2). Allozyme studies by Kondzela et al. (1994), Phelps et al. (1994), and Wilmot et al. (1994) suggested that run timing is an isolating mechanism for chum salmon populations: “reproductive isolation between summer-run and fall-run chum salmon is an important component of the genetic diversity of this species” (Phelps et al. 1994). In addition to temporal separation, marine tagging experiments conducted in the 1900s (e.g., Rich 1926; Rich and Suomela 1929; Rich and Morton 1930) demonstrated that Southeast Alaska chum salmon populations are mostly segregated into northern and southern components: northern fish migrated to inside waters via the entrances to Icy and Chatham Straits, whereas southern fish migrated to spawning areas through the entrance to Sumner Strait and Dixon Entrance. Genetic studies of Southeast Alaska and northern British Columbia chum salmon by Kondzela et al. (1994) also supported this separation of northern and southern components.

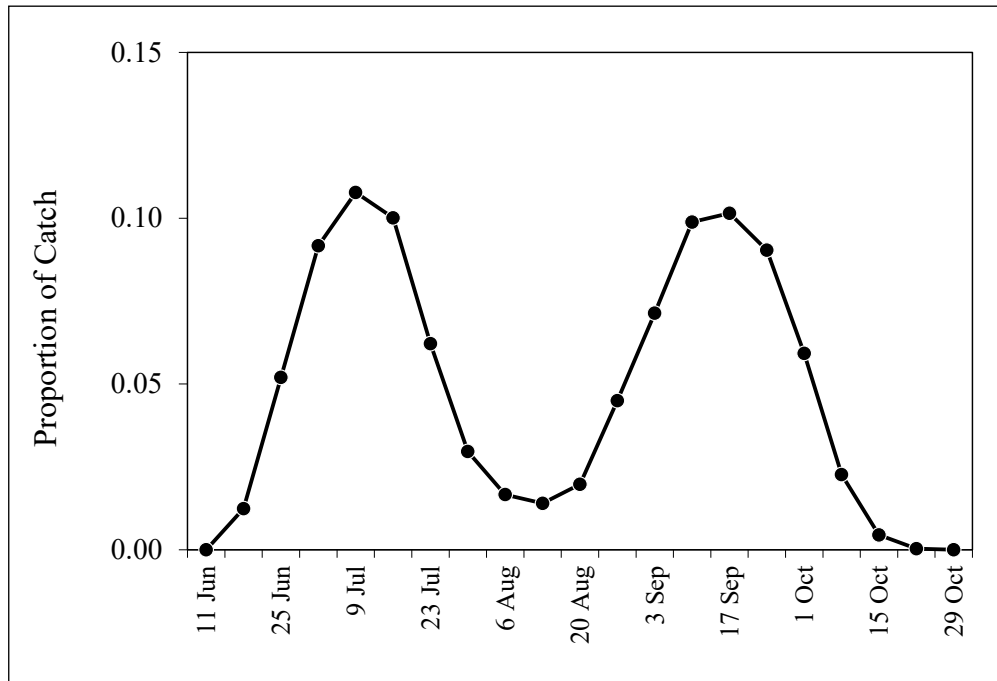


Figure 2.—Mean run timing of chum salmon in the Lynn Canal (District 115) commercial drift gillnet fishery, illustrated by plotting the mean weekly proportion of the total annual harvest of chum salmon in the fishery, 1960–2023. All chum salmon harvested in this fishery from statistical week 34 (average midweek date is 19 August) and later are considered fall-run fish.

Southeast Alaska summer-run chum salmon index streams were grouped into 3 stock groups that make up aggregates of index streams across broad subregions (Eggers and Heintz 2008, Piston and Heintz 2017). The Southern Southeast Subregion includes 15 index streams located primarily on inner islands and the mainland from Sumner Strait south to Dixon Entrance (Districts 101–107; Figures 3 and 4). The Northern Southeast Inside Subregion includes 63 index streams located on inside waters north of Sumner Strait (Districts 108–112, 114–115, and District 113 subdistricts 51–59; Figures 3 and 4). The Northern Southeast Outside Subregion includes 9 index streams located on the outside waters of Chichagof and Baranof Islands in northern Southeast Alaska (District 113, excluding Peril Straits and Hoonah Sound subdistricts 51–59; Figures 3 and 4). Southeast Alaska fall-run chum salmon index streams were grouped into stocks that support, or have supported, terminal commercial fisheries in the past. These stocks include Cholmondeley Sound, Security Bay, Port Camden, Excursion Inlet, and the Chilkat River.

We have compiled annual peak aerial and foot survey data for all the index streams. If a particular index stream was missing escapement counts for any given year, an iterative expectation-maximization algorithm (McLachlan and Krishnan 1997) was used to interpolate a missing value to maintain a set of index counts that is comparable across all years. Values were interpolated based on the assumption that the expected count for a given year was equal to the sum of all counts for a given stream, times the sum of all the counts in a given year for all the streams in the unit of interest, divided by the sum of all counts over all years for all the streams in the unit of interest. Data were arranged in a matrix and the interpolated value was calculated as the row total times column total divided by grand total—in this case, the unit of interest is the stock group, and interpolations for missing values were made at the stock group level. This

method is based on an assumed multiplicative relation between yearly count and unit count, with no interaction.

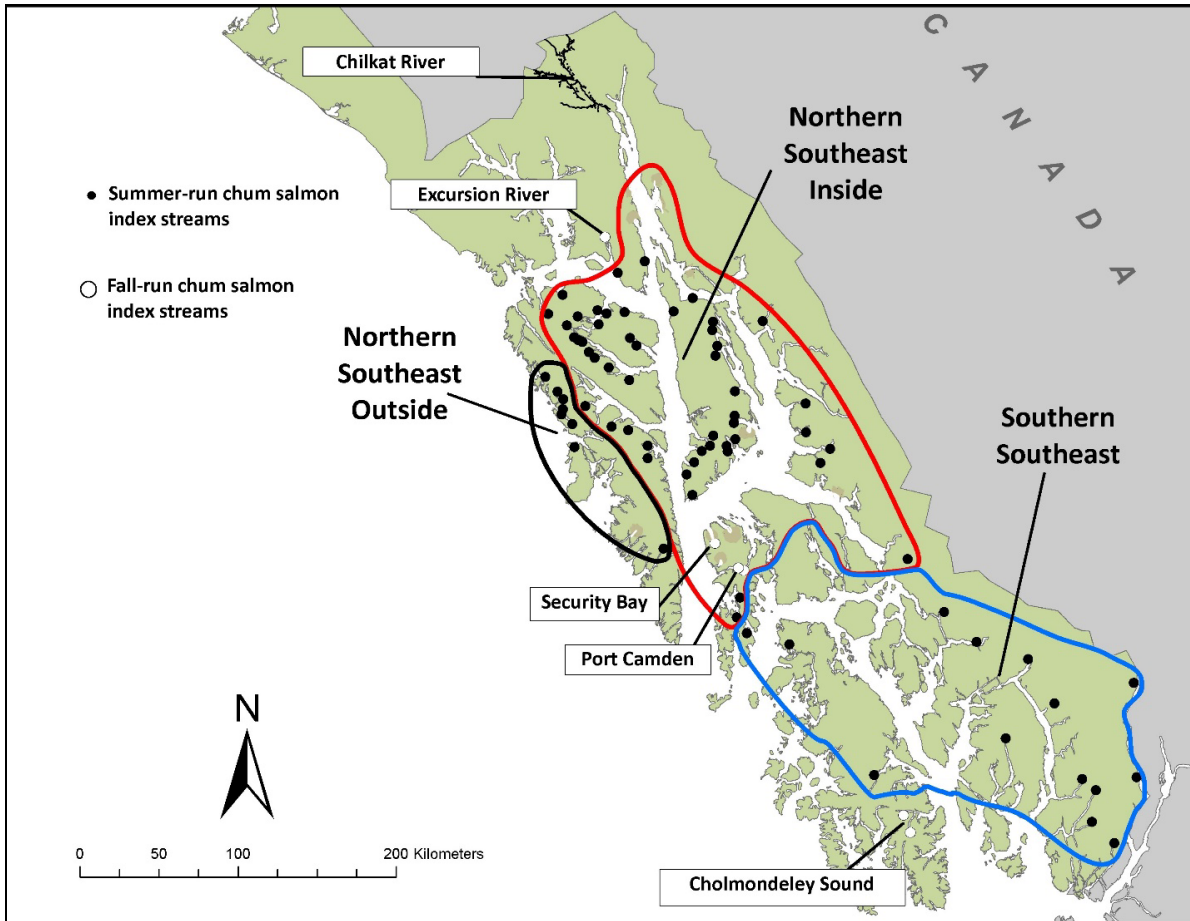


Figure 3.—Locations of ADF&G chum salmon index streams and summer-run chum salmon stock groups in Southeast Alaska.

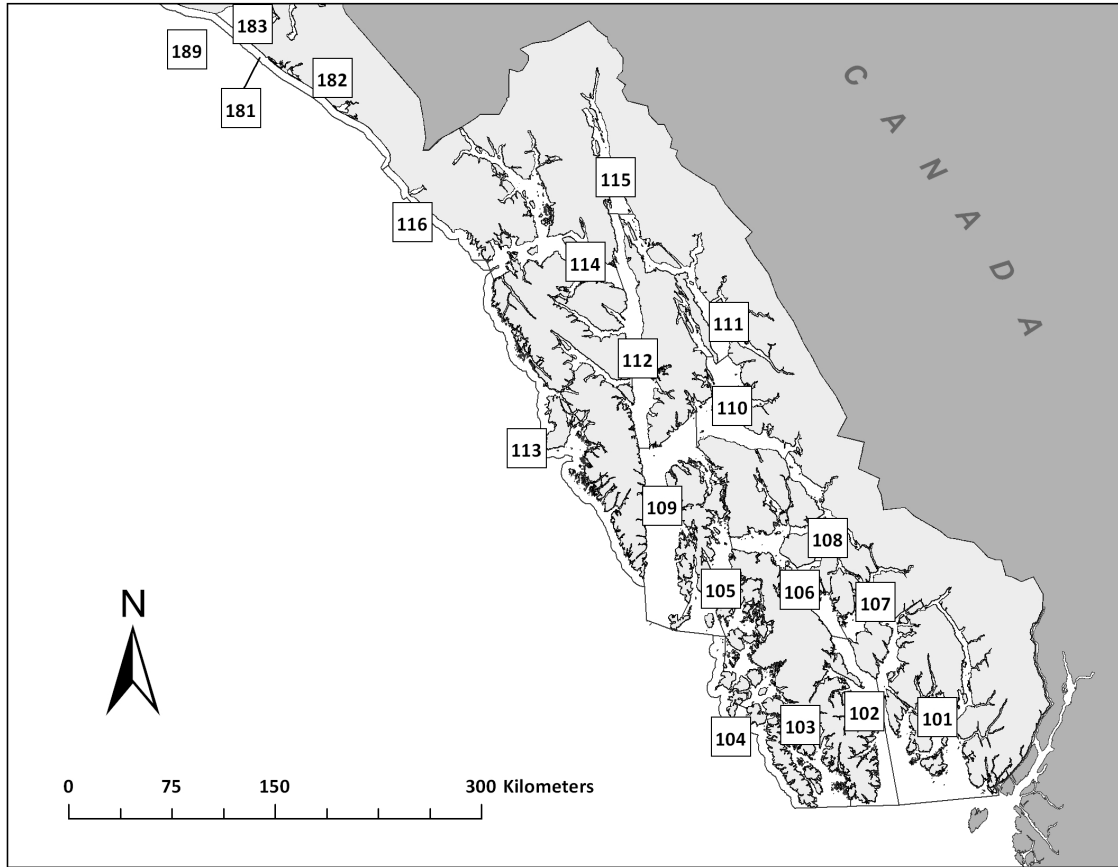


Figure 4.–Locations of ADF&G regulatory districts in Southeast Alaska.

HATCHERY CHUM SALMON STOCKS

Hatchery production of chum salmon in Southeast Alaska has increased substantially over the past 4 decades. In 1980, hatchery operators in Southeast Alaska released 8.7 million chum salmon fry at eight locations; by 2023, this number had risen to 607 million fry released at up to 23 locations (Figures 5 and 6). Seven new release sites for chum salmon have been approved in Southeast Alaska since 2012: Crawfish Inlet (Northern Southeast Regional Aquaculture Association [NSRAA]), Thomas Bay (NSRAA), Port Malmesbury (NSRAA); Port Lucy (Armstrong-Keta, Inc), Burnett Inlet (Southern Southeast Regional Aquaculture Association [SSRAA]; former Alaska Aquaculture Inc. release site through 1995), McLean Arm (alternate-year releases occurring between Kendrick and McLean; SSRAA), and Port Asumcion (SSRAA). As of 2023, chum salmon releases have occurred at all the new sites except Port Malmesbury and Port Lucy (Figure 6).

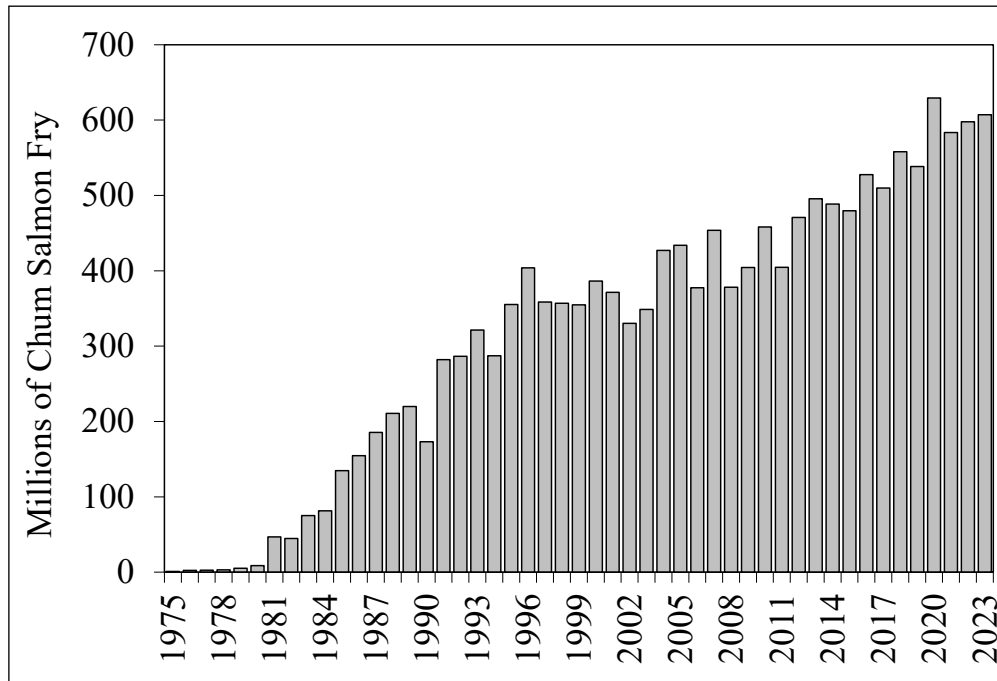


Figure 5.—Number of hatchery-produced chum salmon fry released annually in Southeast Alaska, 1975–2023.

Significant hatchery runs of chum salmon have been produced in southern Southeast Alaska by SSRAA. Initial releases occurred in 1980, and production increased to an average of 94 million fry per year in the 1990s (Figure 7). Production gradually increased again, starting in the early 2000s, and averaged 179 million fish per year from 2014 to 2023. SSRAA currently releases summer-run chum salmon at Nakat Inlet, Kendrick Bay, McLean Arm, Neets Bay, Port Asumcion, Anita Bay, and Burnett Inlet. SSRAA also releases fall-run stocks at Nakat Inlet, Neets Bay, and Burnett Inlet, and fall runs averaged roughly 10% of production over the last 10 years. SSRAA has marked nearly 100% of all releases in order to track returns: broods 1979–2002 were marked with coded wire tags, and broods 2002 and later were thermally marked. The 2002 brood was double-marked with both coded wire tags and thermal marks in order to compare estimates of harvest based on analyses using each mark type.

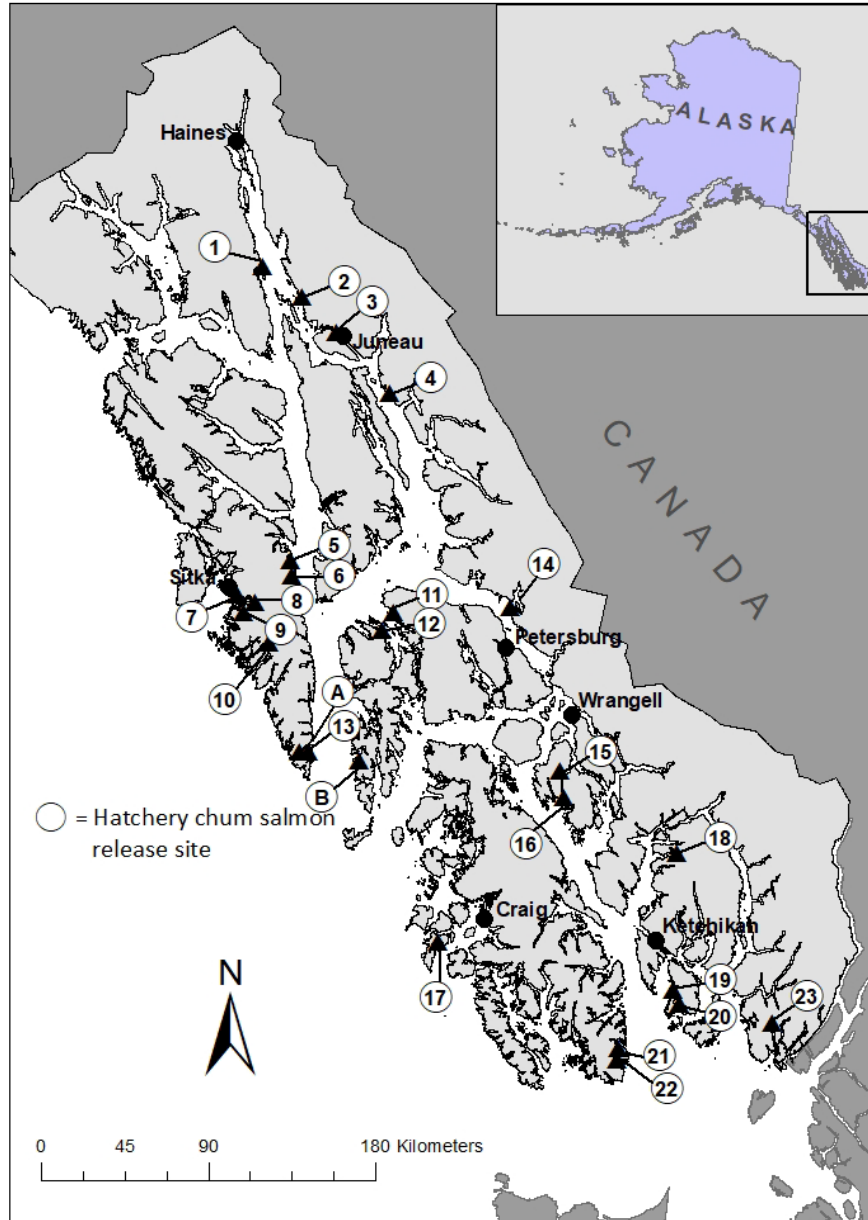


Figure 6.—Map of Southeast Alaska showing major towns and current hatchery chum salmon release sites. Hatchery release sites and operators are represented by numbered circles: 1) Boat Harbor (Douglas Island Pink & Chum, Inc [DIPAC]), 2) Amalga Harbor (DIPAC), 3) Gastineau Channel (DIPAC), 4) Limestone Inlet (DIPAC), 5) Kasnyku Bay (Northern Southeast Regional Aquaculture Association [NSRAA]), 6) Takatz Bay (NSRAA), 7) Crescent Bay (Sitka Sound Science Center), 8) Bear Cove (NSRAA), 9) Deep Inlet (NSRAA), 10) Crawfish Inlet (NSRAA), 11) Kake (NSRAA), 12) Southeast Cove (NSRAA), 13) Port Armstrong (Armstrong-Keta Inc.), 14) Thomas Bay (NSRAA), 15) Anita Bay (SSRAA), 16) Burnett Inlet (SSRAA), 17) Port Asumcion (SSRAA), 18) Neets Bay (SSRAA), 19) Chester Bay (Metlakatla Indian Community), 20) Tamgas Harbor (Metlakatla Indian Community), 21) Kendrick Bay (SSRAA), 22) McLean Arm (SSRAA), and 23) Nakat Inlet (SSRAA). Two approved release sites have not had a chum salmon release as of 2023: A) Port Lucy (Armstrong-Keta, Inc.) and B) Port Malmesbury (NSRAA).

Significant hatchery runs of chum salmon have been produced in northern Southeast Alaska by Northern Southeast Regional Aquaculture Association (NSRAA). Initial releases occurred in 1981 and production increased steadily to an average of 208 million fry per year from 2014 to 2023, making it the largest producer of chum salmon in the state. The largest chum salmon releases have been at Hidden Falls (Kasnyku and Takatz Bays; Figure 6) and Deep Inlet. NSRAA began releasing chum salmon at Southeast Cove, a former Kake Nonprofit Fisheries Corporation release site, in 2013. Releases of chum salmon at their most recently permitted release sites began in 2015 at Crawfish Inlet and in 2017 at Thomas Bay (Figure 6). Historically, NSRAA initiated thermal marking with the 1991 brood, and the proportion of releases that were thermally marked averaged 90% since 2004 and reached 100% since 2016 (Figure 7).

Douglas Island Pink and Chum, Inc. (DIPAC) has also produced significant hatchery runs of chum salmon in northern Southeast Alaska. Initial releases occurred in 1977; production increased through the 1980s and has been fairly stable since 1991, with average releases of approximately 100 million fry annually (Figure 7). DIPAC releases chum salmon at Amalga Harbor, Gastineau Channel, Limestone Inlet, and Boat Harbor. DIPAC has consistently marked its releases, initially with coded wire tags (through the 1992 brood) and later with thermal marks (since the 1991 brood), and 100% of its releases have been thermal marked since the 1997 brood.

Smaller numbers of hatchery chum salmon have been released by Kake Non-Profit Fisheries Corporation (at Gunnuck Creek and Southeast Cove; now NSRAA sites), Sitka Sound Science Center (at Crescent Bay and Deep Inlet), Armstrong-Keta, Inc. (at Port Armstrong), and Metlakatla Indian Community (at Annette Island). The total releases for these operators combined ranged from 26 to 97 million fish since 1997 (Figure 7). Releases from Armstrong-Keta, Inc. have been 100% thermal marked since 2006, and approximately 80% of the chum salmon released annually from these operators have been thermal marked during the most recent 10-year period (Figure 7).

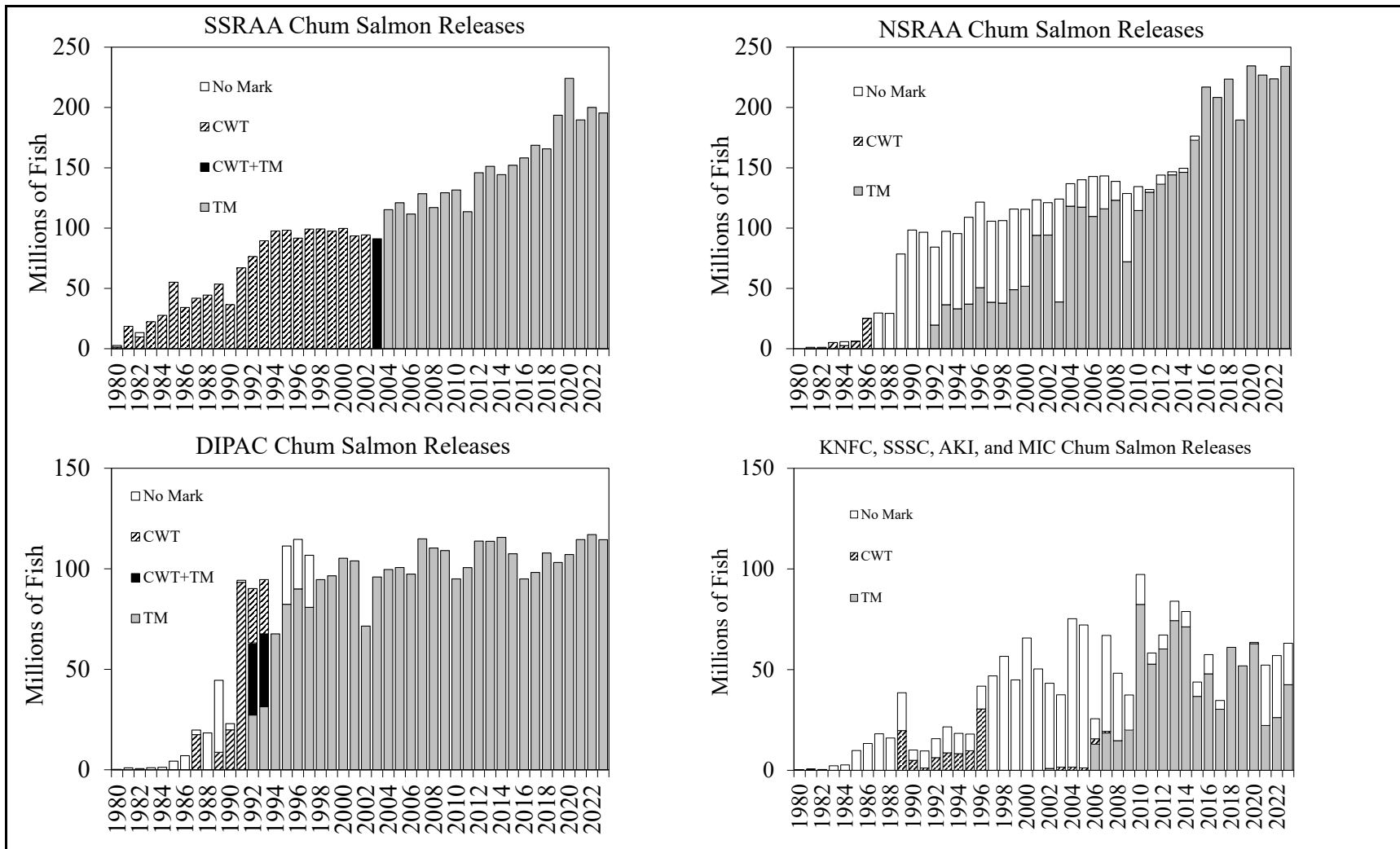


Figure 7.—Annual releases of chum salmon by nonprofit hatcheries in Southeast Alaska, 1980–2023. Releases are presented by type of mark: no mark, coded wire tag (CWT), thermal mark (TM), and coded wire tag and thermal mark combined. NSRAA = Northern Southeast Regional Aquaculture Association; SSRAA = Southern Southeast Regional Aquaculture Association; DIPAC = Douglas Island Pink & Chum, Inc.; KNFC = Kake Non-Profit Fisheries Corp.; SSSC = Sitka Sound Science Center; AKI = Armstrong-Keta, Inc.; MIC = Metlakatla Indian Community. Does not include ADF&G hatchery releases from 1980 to 1991.

HARVEST

Commercial harvest data are compiled from ADF&G fish ticket information. Commercial harvest data provide estimates of the total harvest in a fishery, but not stock composition. Wild chum salmon are harvested primarily in mixed stock fisheries, typically some distance from spawning areas, and it is usually not possible to account for stock-specific harvests. Some wild chum salmon runs, particularly fall-run fish, are harvested directly in terminal or near-terminal fisheries, which allows for some accounting of stock-specific harvest; however, in many cases those fish also migrate through mixed stock fisheries where stock composition may not be known.

In addition, our knowledge of the harvest of wild chum salmon, particularly summer-run fish, is imprecise because of the high abundance of hatchery fish in mixed stock commercial fisheries since the early 1990s. Over the past decade, an average 43% of the annual common property chum salmon harvest occurred within hatchery terminal harvest areas (defined in regulation as either terminal harvest areas or special harvest areas) adjacent to hatchery release sites where stock composition is assumed to be entirely hatchery fish. However, substantial harvest of hatchery stocks also occurs in traditional mixed stock common property fisheries.

Hatchery operators are required to provide ADF&G with estimates of the total number of hatchery chum salmon harvested each year (e.g., Wilson 2020). Methods used to estimate harvests in traditional mixed stock fisheries vary, however, from comprehensive thermal mark sampling (Brunette et al. 2013, 2022) to “best estimates” (Davidson et al. 2011), which are sometimes based on consultation between ADF&G management biologists and hatchery operators (Heinl 2005). Rough harvest estimates of wild chum salmon can thus be produced by simply subtracting the reported contribution of hatchery fish in the common property fisheries from the total commercial harvest of chum salmon (Heinl et al. 2004; McGee 2004; Heinl 2005).

Almost all the common property chum salmon harvests in southern Southeast Alaska fisheries (i.e., Districts 101–108) have been sampled for coded wire tags or thermal marks since 1983. SSRAA began thermal marking 100% of their chum salmon releases in 2003 and implemented a sampling program to collect and analyze otoliths from traditional mixed stock net fishery harvest in 2005. This program has provided the best estimates of the harvest of hatchery and wild stock chum salmon in Southeast Alaska. Detailed analysis of the harvest of hatchery and unmarked chum salmon in southern Southeast Alaska net fisheries from 2006 to 2015 were reported by Brunette et al. (2013 and 2022). Historical harvest estimates for this subregion include harvests of hatchery fish in hatchery terminal areas and estimates of the combined harvests of wild and hatchery fish in traditional mixed stock common property fisheries outside of hatchery terminal areas (Appendix B1). These estimates include summer- and fall-run fish combined. The harvest rate on wild summer-run chum salmon in traditional mixed stock commercial net fisheries throughout Districts 101–108 is assumed to be at least moderate based on harvest rates achieved on hatchery stocks in those fisheries (Eggers and Heinl 2008).

Little stock-specific harvest data are available for chum salmon in the Northern Southeast Inside Subregion, which includes Districts 109–112, 114–115, and the Hoonah Sound portion of District 113 (subdistricts 51–59). Common property harvests during the summer season (before statistical week 34; average midweek date 19 August) in Lynn Canal (District 115) and the Taku-Snettisham area (District 111) have been composed primarily of hatchery fish since 1985, whereas harvests in Districts 110, 112, 113 (Hoonah Sound), and 114 have been composed of

mixtures of hatchery and wild fish. Harvests during the fall-run season (statistical week 34 and later) are considered wild chum salmon because there are no significant hatchery runs of fall chum salmon in the Northern Southeast Inside Subregion (Appendix B2). The harvest rate on wild summer-run chum salmon in traditional, mixed stock commercial net fisheries in the Northern Southeast Inside Subregion is assumed to be at least moderate (Eggers and Heint 2008).

The Northern Southeast Outside Subregion is all of District 113 except Hoonah Sound. Harvests in this subregion include mixed contributions of wild and hatchery fish in traditional common property fisheries outside of hatchery terminal areas and known harvests of hatchery fish inside hatchery terminal areas (Appendix B3). The harvest rate on Northern Southeast Outside Subregion chum salmon in traditional mixed stock commercial purse seine fisheries is assumed to be at least moderate (Eggers and Heint 2008).

ESCAPEMENT GOALS

The status of wild chum salmon stocks in Southeast Alaska was judged primarily by performance in meeting established escapement goals. Formal escapement goals are established for eight chum salmon stock groups in the Southeast region, and all are classified as sustainable escapement goals (Table 1; Piston and Heint 2017). Escapement goal classifications are defined in the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222) under Section (f) as:

“(3) “biological escapement goal” or “(BEG)” means the escapement that provides the greatest potential for maximum sustained yield (MSY); and

“(36) “sustainable escapement goal” or “(SEG)” means a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5- to 10-year period, used in situations where a BEG cannot be estimated or managed for; will be stated as a range “(SEG Range)” or a lower bound “(Lower Bound SEG)”.

The sustainable escapement goal for Chilkat River fall-run chum salmon was based on stock-recruit analysis (Eggers and Heint 2008; Piston and Heint 2014). The remaining Southeast Alaska chum salmon escapement goals were derived primarily using a “percentile approach” (Clark et al. 2014), due to lack of stock-specific information on harvest, age composition, or total escapement. The percentile approach was developed by Bue and Hasbrouck (unpublished)¹ in 2001 and has since been used extensively throughout Alaska (Munro 2023) to develop sustainable escapement goals in situations where stock assessment data are insufficient to estimate the escapement that produces maximum sustained yield, S_{MSY} .

As outlined by Clark et al. (2014), the percentile approach is based on the principle that a range of observed escapements, or indices of escapements, that have been sustained over a period of time represents a sustainable escapement goal for a stock that has been fished and likely sustained some unknown level of harvest over that same period. Maintaining escapements within a specified range of percentiles of those observed escapements provides a proxy for the range of escapements that encompasses S_{MSY} (Clark et al. 2014). As a result of their review, Clark et al. (2014) recommended 3 tiers of percentile ranges (Table 2) that performed better with respect to S_{MSY} across a wide range of productivities, serial correlation in escapements, and measurement

¹ Bue, B. G., and J. J. Hasbrouck. Unpublished. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage. Subsequently referred to as Bue and Hasbrouck (unpublished).

error in escapements for stocks that experience low to moderate (<0.40) average harvest rates. Clark et al. (2014) further cautioned that the percentile approach is not recommended for stocks that have both very low contrast (≤ 4) and high measurement error or those stocks that experience average harvest rates ≥ 0.40 . It was recommended that if the percentile approach must be used for stocks that experience higher harvest rates, the lower bound of the escapement goal range should be set no lower than the 25th percentile of observed escapements as a precautionary approach to prevent overfishing and the upper bound should be set at the 75th percentile or greater, regardless of the level of measurement error.

Table 2.—Three tiers recommended by Clark et al. (2014) to set sustainable escapement goals based on percentiles of observed escapement counts for stocks that experience low to moderate (<0.40) harvest rates.

Tier	Escapement contrast and measurement error	Sustainable escapement goal range
Tier 1	High contrast (>8); high error (aerial and foot surveys)	20th to 60th percentiles
Tier 2	High contrast (>8); low error (weir and tower counts)	15th to 65th percentiles
Tier 3	Low contrast (≤ 8)	5th to 65th percentiles

Sustainable escapement goals were initially established for Southeast Alaska chum salmon in 2009 (Eggers and Heintz 2008). The goals for aggregate summer-run stocks and the fall-run Cholmondeley Sound stock were based on survey data from the early 1980s to 2007 and goals for fall-run stocks at Security Bay, Port Camden, and Excursion River were based on survey data from the early 1960s to 2007. Lower-bound sustainable escapement goals were established for summer-run chum salmon, rather than ranges, because summer-run fish are harvested in mixed stock commercial fisheries and their escapements cannot be managed to fall within a range. In 2011, escapement goals for Southern Southeast and Northern Southeast Inside subregion summer-run chum salmon were re-evaluated using percentiles of historical data back to 1960 to provide the broadest time series possible on which to base the goals (Piston and Heintz 2011). These time series included 2 periods of high productivity in the 1960s and 1980s–1990s, and a period of low productivity in the 1970s (Piston and Heintz 2011). In 2014, the escapement goals for Southern Southeast and Northern Southeast Outside subregion summer-run chum salmon were adjusted to account for the addition of new index streams to those stock groups (Piston and Heintz 2014). Through the 2014 review, the 25th and 75th percentiles were used to set lower and upper bounds of chum salmon escapement goals following Bue and Hasbrouck (unpublished).

Piston and Heintz (2017) reviewed all Southeast Alaska percentile-based chum salmon escapement goals with respect to recommendations of Clark et al. (2014) and incorporated escapement index data through 2016 in the analysis. Although Southeast Alaska chum salmon stocks would best fit the Tier 1 percentile range (20th–60th percentiles; Table 2), because there is high measurement error and high contrast (>8) in available escapement data, harvest rates on wild chum salmon are poorly known. Harvest rates, however, are assumed to be moderate and possibly exceed 0.40 in many cases, particularly for summer-run fish. As a result, Piston and Heintz (2017) recommend escapement goals for Southeast Alaska chum salmon be based on the 25th to 75th percentiles of historical escapement index counts—a precautionary approach recommended by Clark et al. (2014). Updated stock assessment information through 2016 resulted in changing only the Northern Southeast Inside subregion escapement goal. It was also recommended that Southeast Alaska percentile-based chum salmon escapement goals remain unchanged into the future until indices are modified or stock assessment improves to a point where more rigorous methods can be used to set goals (Piston and Heintz 2017; Heintz et al. 2017).

Finally, Piston and Heintz (2020) did not modify escapement indices or goals in their review of chum salmon stock status and escapement goals through 2019.

STOCK STATUS

Southern Southeast Summer-Run Chum Salmon

The Southern Southeast Subregion includes summer-run chum salmon index streams located on the islands and mainland of Southeast Alaska, from Sumner Strait south to Dixon entrance. Peak escapement survey data were available for 9 index streams since 1960 and for all 15 index streams since 1980 (Figure 8; Appendix A1). The current lower-bound sustainable escapement goal is 62,000 chum salmon counted on peak surveys to the aggregate set of index streams (Piston and Heintz 2014). Escapement indices were low during the mid-1960s to late 1970s, increased into the 1990s, and have generally remained above the escapement goal over the past two decades, with the exception of poor escapement years from 2008 to 2010 (Figure 8). Escapement indices were above the current escapement goal in all of the past 5 years, 2019–2023, and the escapement index of 276,000 fish in 2023 was an all-time record high.

Wild chum salmon harvests in the Southern Southeast Subregion were relatively stable and averaged 650,000 fish annually from 1960 to the early 1980s. The total harvest of chum salmon in this subregion increased substantially in the late 1980s and 1990s, primarily due to hatchery production (Figure 8; Appendix B1 and B4). From 1990 to 2023, the chum salmon harvest in traditional mixed stock fisheries averaged 2.3 million fish. Harvests in terminal hatchery areas (not including cost-recovery harvests) averaged an additional 465,000 fish.

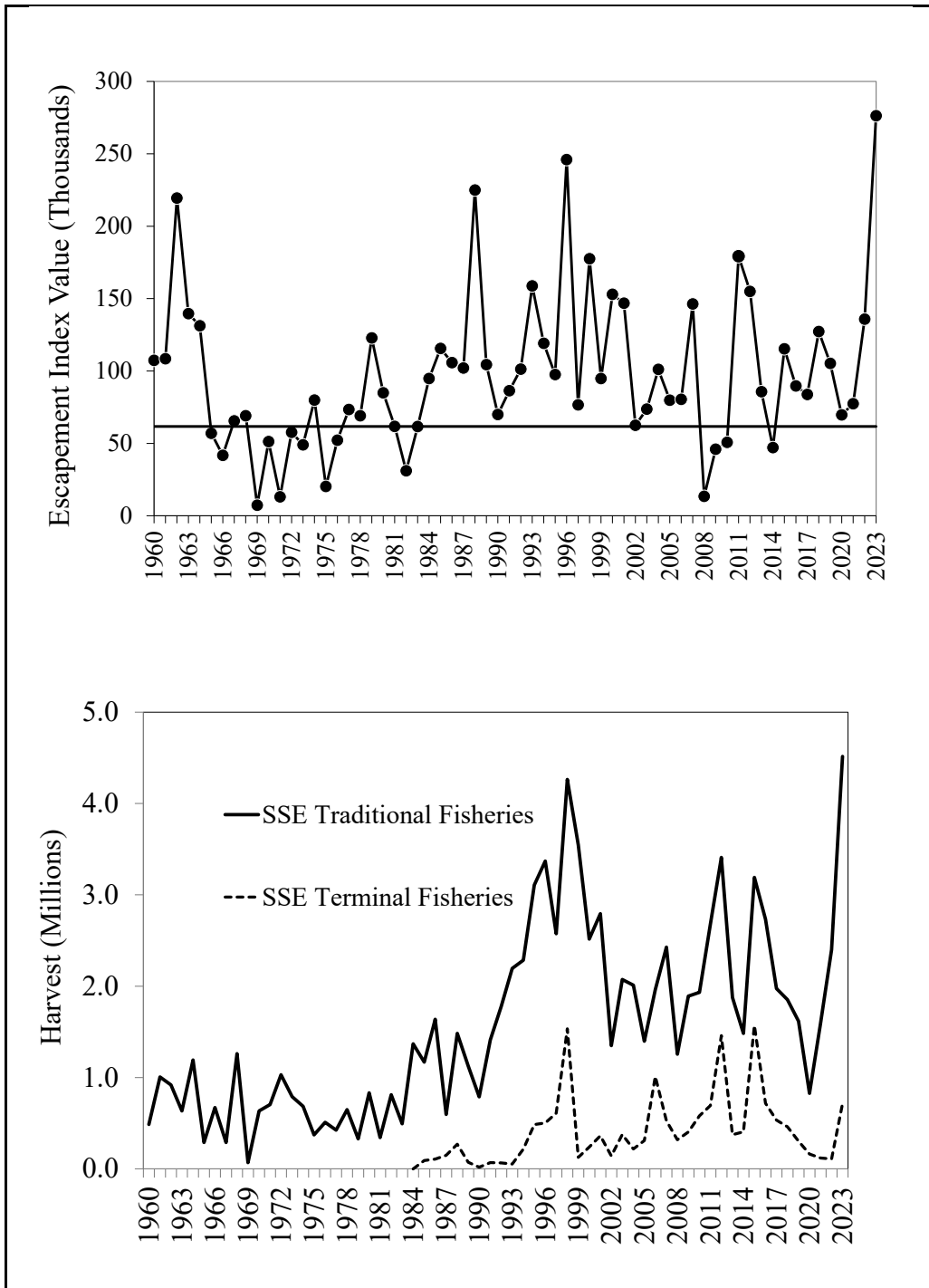


Figure 8.—Escapement index for wild summer-run chum salmon in the Southern Southeast (SSE) stock group, 1960–2023 (top), and the annual common property harvest of chum salmon in the Southern Southeast Subregion, Districts 101–108, 1960–2023 (bottom). Terminal harvests do not include hatchery cost recovery. The horizontal black line in the escapement figure is the current lower-bound sustainable escapement goal of 62,000 fish.

Northern Southeast Inside Summer-Run and Fall-Run Chum Salmon

The Northern Southeast Inside Subregion includes summer-run chum salmon index streams located on the inside waters of Southeast Alaska north of Sumner Strait. The current lower-bound sustainable escapement goal is 107,000 chum salmon counted on peak surveys to the aggregate set of index streams (Piston and Heintz 2017). Peak escapement survey data were available for 31 index streams since 1960 and for all 63 index streams since 1982 (Figure 9; Appendix A2). Escapement indices were generally high in the 1960s, and then declined in the 1970s–1980s. The escapement index trended upward into the late 1990s, trended downward through 2010, and has fluctuated considerably since that time (Figure 9). Escapement indices were above the current escapement goal in 3 of the past 5 years, 2019–2023, and the escapement index of 324,000 in 2023 was the largest index since 2002.

Hatchery runs of chum salmon in the Northern Southeast Inside Subregion increased rapidly in the early 1990s and have remained high since that time (Figure 9). The estimated summer-run chum salmon harvest in Northern Southeast Inside Subregion traditional fisheries (traditional fisheries through week 33; Districts 109–112, 113 inside, 114, and 115) increased in the 1990s and 2000s as a result of increased hatchery returns (Figure 9). From 2014 to 2023, the total harvest of summer-run chum salmon in the subregion’s traditional mixed stock fisheries averaged 1.3 million fish (Appendix B2). Harvests in terminal hatchery areas (not including cost-recovery harvests) averaged an additional 777,000 fish over the same period.

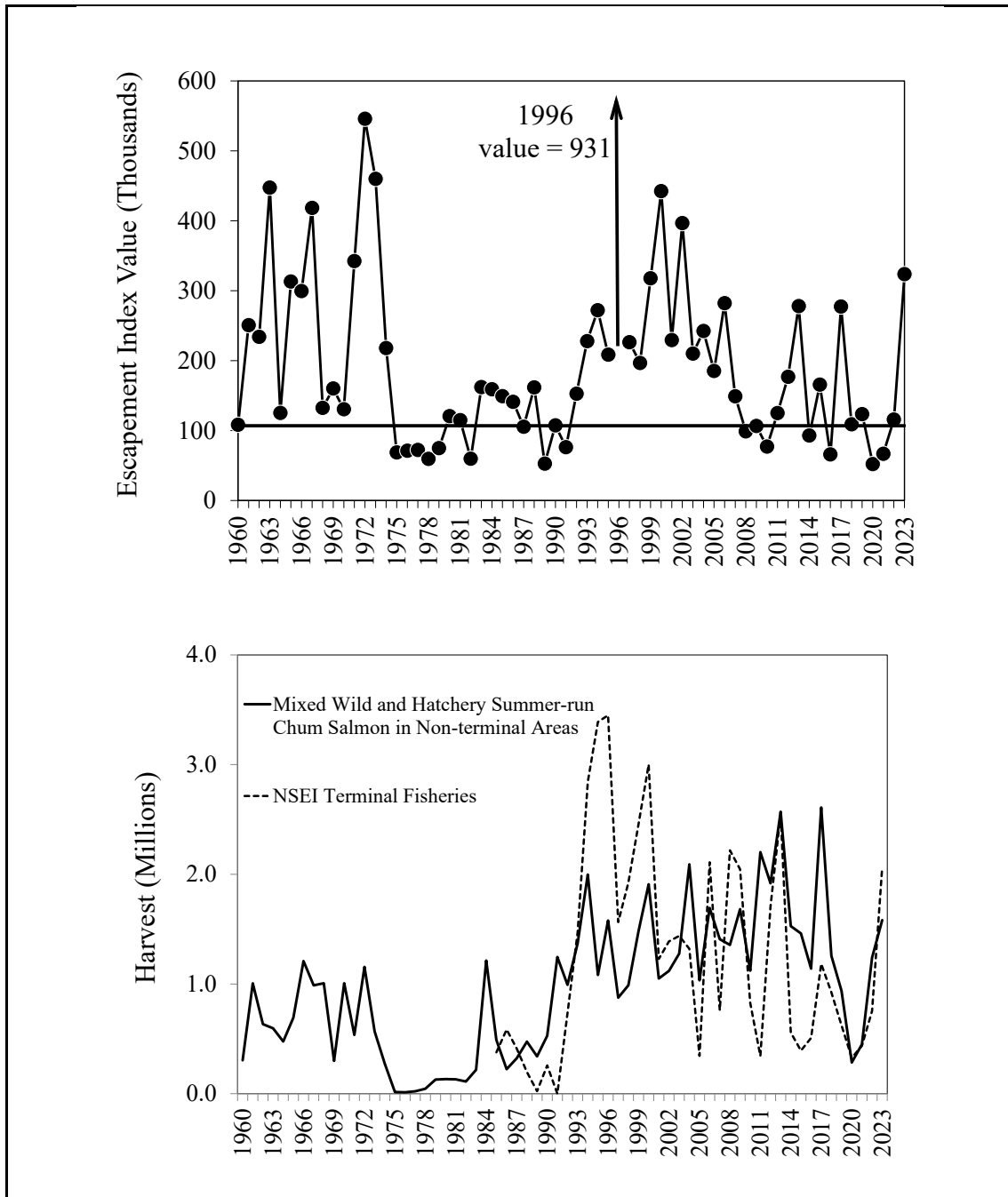


Figure 9.—Escapement index for wild summer-run chum salmon in the Northern Southeast Inside (NSEI) stock group, 1960–2023 (top), and the harvest of chum salmon in the Northern Southeast Inside Subregion of Southeast Alaska, 1960–2023 (bottom). The harvest of mixed wild and hatchery summer-run chum salmon in non-terminal areas includes all harvests in Districts 109–112, 114–115, and inside subdistricts of District 113 through statistical week 33 (average midweek date 12 August). Terminal harvests do not include hatchery cost recovery. The horizontal black line in the escapement figure is the lower-bound sustainable escapement goal of 107,000 fish.

Unlike the Southern Southeast Subregion, which has substantial returns of fall-run hatchery chum salmon, fall-run chum salmon in the Northern Southeast Inside Subregion are primarily wild fish and their harvest is estimated by considering fish harvested from statistical week 34 and later as fall-run fish. Wild chum salmon harvests in the fall-run period declined in the early 1990s and have remained low since (Figure 10). Annual fall-run harvests in the Northern Southeast Inside Subregion averaged 430,000 from 1960 to 1990, but only 115,000 since 1995.

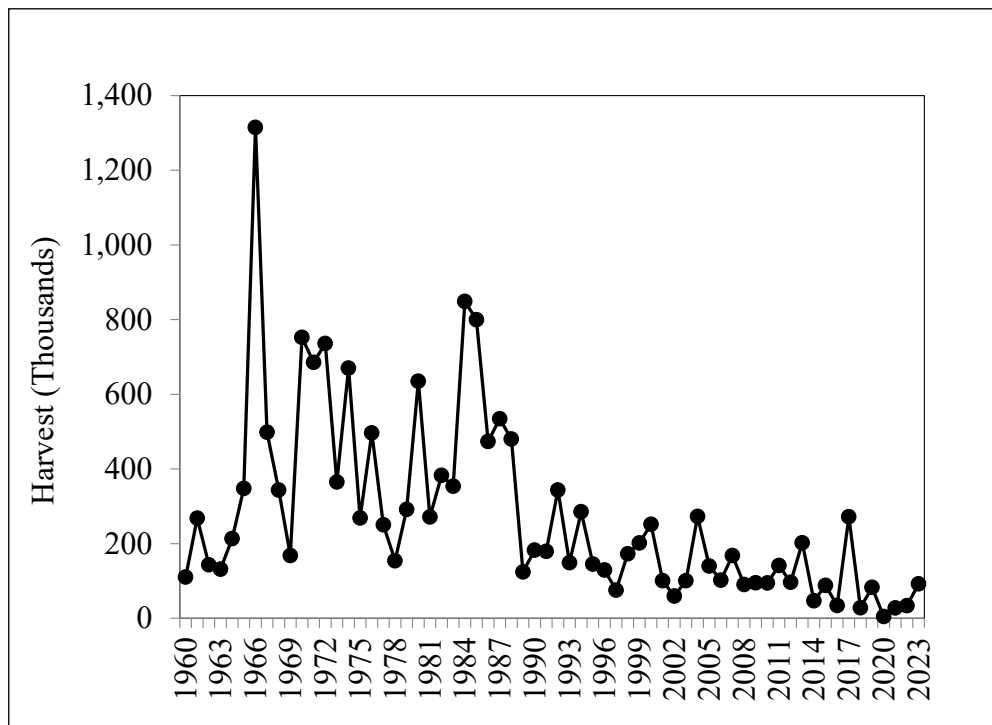


Figure 10.—Harvest of fall-run chum salmon in the Northern Southeast Inside Subregion, 1960–2023. Chum salmon harvested in statistical week 34 (average midweek date 19 August) and later are considered fall-run fish.

Northern Southeast Outside Summer-Run Chum Salmon

The Northern Southeast Outside Subregion includes primarily summer-run chum salmon index streams on the outside waters of Chichagof and Baranof Islands in northern Southeast Alaska. Peak escapement survey data were available for 9 index streams since 1982 (Figure 11; Appendix A3). The current lower-bound sustainable escapement goal is 25,000 chum salmon counted on peak surveys to these 9 index streams, combined (Piston and Heintz 2014). Escapement indices were below goal in 4 of the past 5 years (Figure 11). Total chum salmon harvests were relatively low until the onset of hatchery runs in the early 1980s and greatly increased since the 1990s due to increased hatchery production (Figure 11; Appendix B3 and B4).

In 2018 and 2019, the commercial chum salmon harvest in the Northern Southeast Outside Subregion increased substantially due to very large returns of hatchery chum salmon to the new Crawfish Inlet release site (Figure 6). Total runs of hatchery fish to Crawfish Inlet were estimated to be 3.5 million fish in 2018 (Stopha 2019) and 2.1 million in 2019 (Wilson 2020).

The total subregion harvest of 5.1 million chum salmon in 2018 was the largest since statehood (Figure 11; Appendix B3), and hatchery fish from the Crawfish Inlet release accounted for approximately 69% of that harvest. The chum salmon harvest in Crawfish Inlet and adjacent West Crawfish Inlet in 2018 and 2019 accounted for approximately 29% and 21% of the total Southeast Alaska chum salmon harvest, respectively. Since 2019, hatchery chum salmon runs to Crawfish Inlet and West Crawfish Inlet declined from these very high levels but remained productive, with harvests of 1.4 million fish in 2020, 1.2 million fish in 2021, 630,000 fish in 2022, and 1.7 million fish in 2023, accounting for an average of 43% of the subregion’s harvest in those years.

Large numbers of Crawfish Inlet hatchery chum salmon entered West Crawfish Inlet in 2018 and 2019 rather than returning directly to the release site in Crawfish Inlet, which raised concerns about the straying of hatchery fish into nearby wild stock streams. Otolith sampling conducted at the West Crawfish NE Arm Head index stream prior to 2018 showed relatively low proportions of stray hatchery fish (maximum 4.2% in 2008; Piston and Heinel 2012a), as did the Northern Southeast Outside Subregion index as a whole (<2%; Piston and Heinel 2012a; Josephson et al. 2021). In 2018 and 2019, otolith samples collected from carcasses at West Crawfish NE Arm Head and other nearby streams (Figure 6) showed very high proportions of stray hatchery fish were present in escapements (Piston and Heinel 2020). Samples collected at the West Crawfish NE Arm Head index stream in 2022, at peak spawn timing for wild stock chum salmon, were still 64% hatchery strays despite a much smaller return of chum salmon to the Crawfish Inlet release site than in 2018 and 2019 (Table 3). Samples collected in 2022 from Whale Bay Great Arm Head showed no hatchery strays and samples collected at Kalinin Cove Head in 2020 showed a very low proportion of stray hatchery fish (2%; Table 3).

Table 3.—Proportions of stray hatchery chum salmon from samples collected in streams in the Northern Southeast Outside Subregion of Southeast Alaska from 2018 to 2022.

Year	ADF&G stream number	Stream name	Sample date	Otoliths analyzed	Not marked	Marked	% Marked
2018	113-32-005	West Crawfish NE Arm Head	8/27/2018	92	35	57	62%
2018	113-32-005	West Crawfish NE Arm Head	9/28/2018	87	1	86	99%
2019	113-32-005	West Crawfish NE Arm Head	8/27/2019	63	58	5	8%
2019	113-32-005	West Crawfish NE Arm Head	9/4/2019	95	6	89	94%
2019	113-32-004	West Crawfish North Arm NE	8/29/2019	95	16	79	83%
2019	113-32-004	West Crawfish North Arm NE	9/5/2019	96	7	89	93%
2019	113-22-015	Whale Bay Great Arm Head	8/19/2019	29	29	0	0%
2019	113-22-015	Whale Bay Great Arm Head	8/28/2019	69	26	43	62%
2020	113-62-009	Kalinin Cove Head	9/13/2020	64	63	1	2%
2022	113-32-005	West Crawfish NE Arm Head	8/23/2022	94	34	60	64%
2022	113-22-015	Whale Bay Great Arm Head	8/24/2022	94	94	0	0%

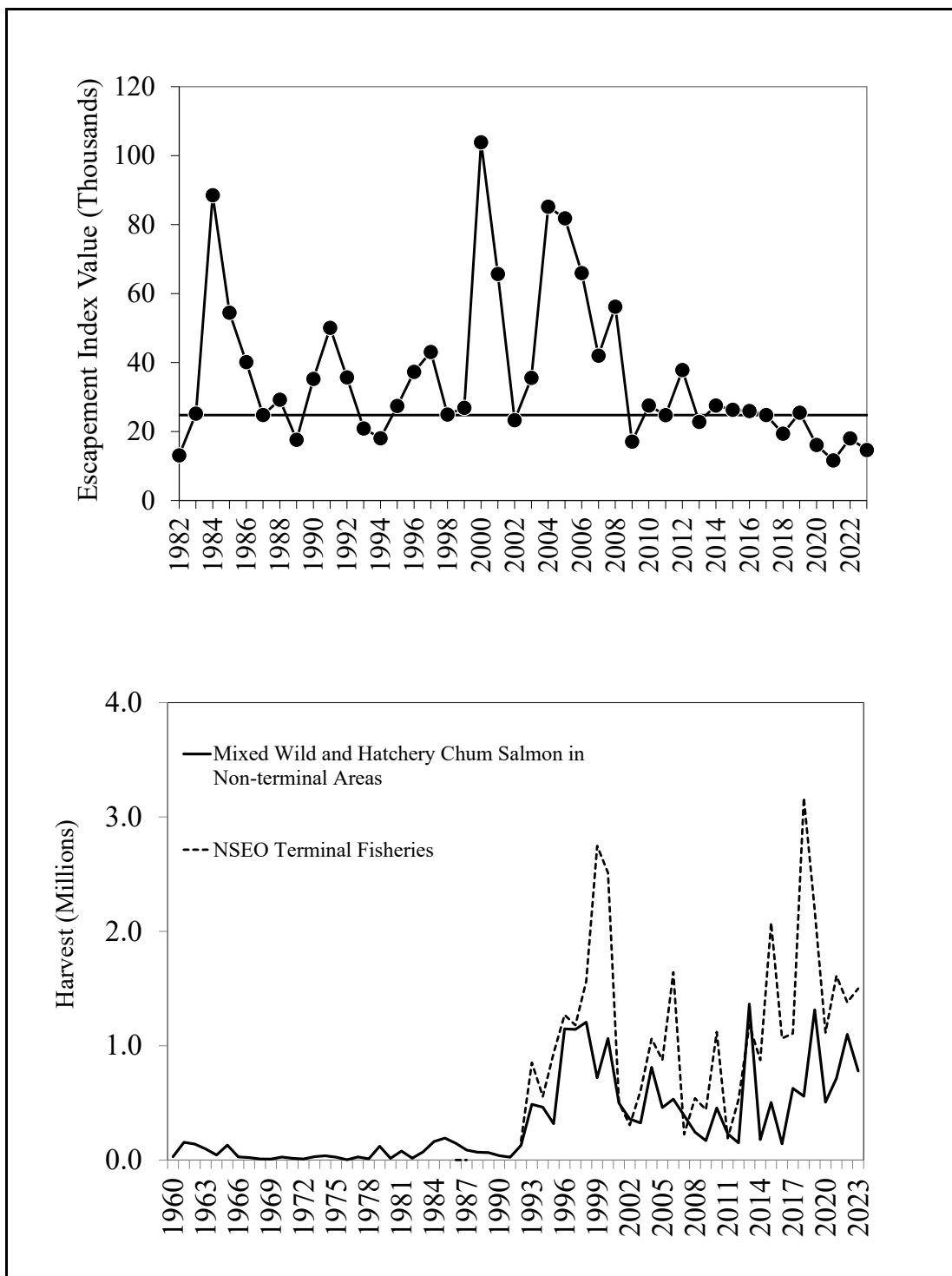


Figure 11.—Escapement index for wild summer-run chum salmon in the Northern Southeast Outside (NSEO) stock group, 1982–2023 (top), and harvest of chum salmon in the Northern Southeast Outside Subregion, 1960–2023 (bottom). Terminal harvests do not include hatchery cost recovery. The horizontal black line in the escapement figure is the current lower-bound sustainable escapement goal of 25,000 fish.

Cholmondeley Sound Fall-Run Chum Salmon

Cholmondeley Sound (Prince of Wales Island) fall-run chum salmon support a terminal commercial purse seine fishery that has provided commercial fishers with a valuable opportunity to extend the fishing season beyond the directed pink salmon purse seine season that ends in late August. Harvests of fall-run chum salmon in Cholmondeley Sound (subdistrict 102-40) averaged 42,000 fish in the 1970s and 1980s but increased to an average of 122,000 fish a year from 1991 to 2004, including a peak harvest of 359,000 chum salmon in 1998. Chum salmon abundance decreased abruptly in 2005 and harvests through 2010 were very low due to conservative management of the fishery (Figure 12; Piston and Brunette 2011). Harvests averaged just 20,000 fish in years where fisheries occurred from 2011 to 2023. These fish are also harvested in other mixed stock fisheries prior to reaching the terminal area, so a complete accounting of the total harvest is not possible.

Prior to 2009, management of the fall chum salmon fishery in Cholmondeley Sound was based on an informal escapement target of 30,000 chum salmon at Disappearance Creek (ADF&G stream number 102-40-043) and peak aerial escapement survey counts of 10,000–15,000 fish in Lagoon Creek (ADF&G stream number 102-40-060; Heidl et al. 2004). Those management targets were not escapement goals as defined in the Escapement Goal Policy (5 AAC 39.223) but were based on the best professional judgment of area management staff. The escapement at Disappearance Creek was measured at an adult counting weir operated nearly annually from 1961 to 1984. The weir was typically removed once the escapement target had been met, however, and was not always operated continuously when it was in place (Heidl et al. 2004); thus, the weir counts during those years represent minimum escapement estimates. Beginning in 1985, aerial surveys were the primary method used to monitor escapements to Disappearance and Lagoon Creeks to ensure that escapement targets were met (Heidl et al. 2004). Peak escapement survey estimates since 1980 have ranged from 1,800 to 50,000 chum salmon in Disappearance Creek, and 5,000 to 50,000 chum salmon in Lagoon Creek (Appendix A4). The department operated a weir and conducted mark–recapture studies at Disappearance Creek from 2008 to 2010 and obtained total escapement estimates of 55,000 in 2008 (Piston and Heidl 2010a), 61,500 in 2009 (Piston and Heidl 2010b), and 85,600 in 2010 (Piston and Brunette 2011).

In 2009, ADF&G established a sustainable escapement goal of 30,000–48,000 chum salmon counted on peak aerial surveys to Disappearance and Lagoon Creeks combined (Eggers and Heidl 2008). Escapement indices were within or above the current escapement goal range in 4 of the past 5 years from 2019 to 2023 (Figure 12).

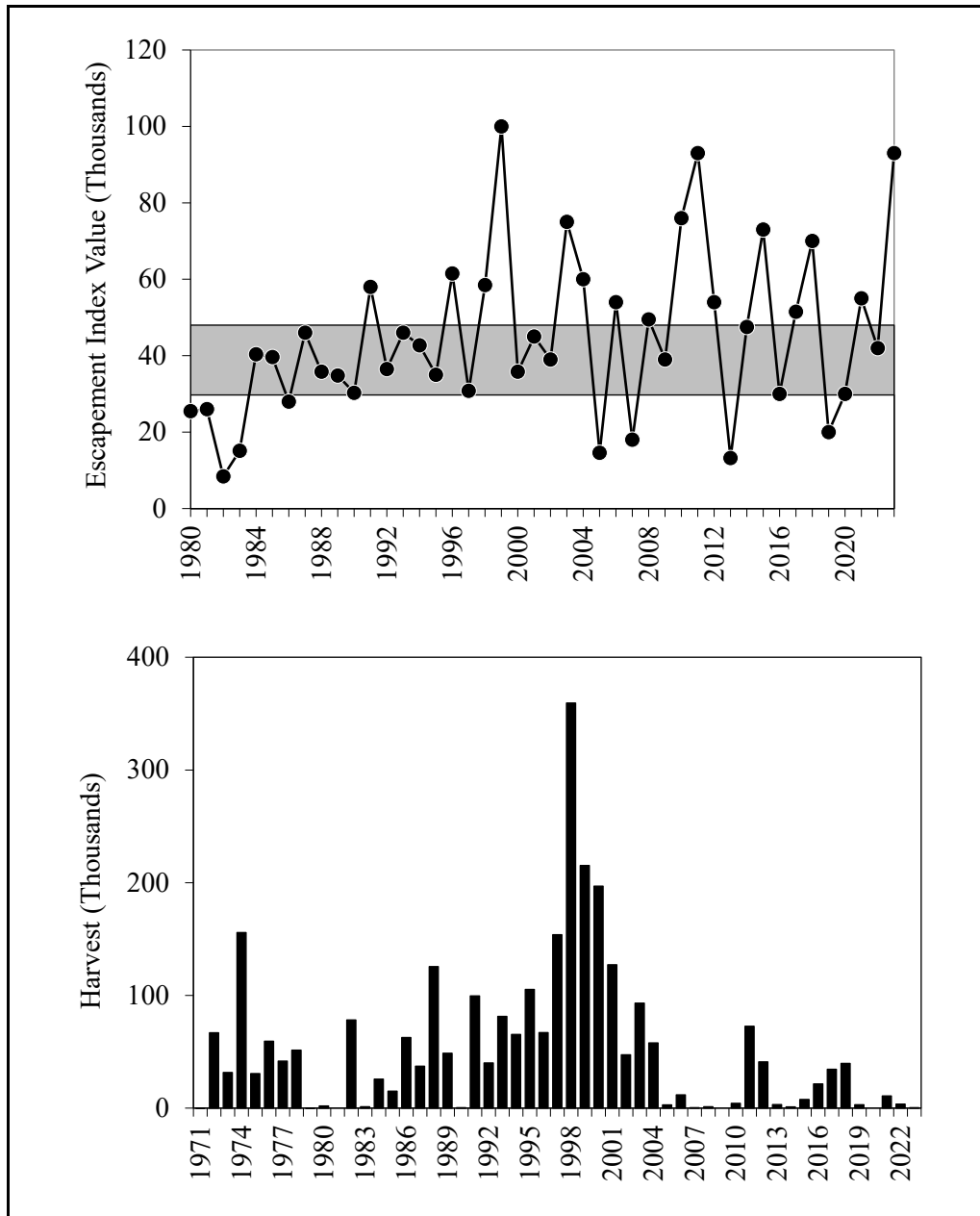


Figure 12.—Annual escapement index and sustainable escapement goal range (shaded area; 30,000–48,000 fish) of wild fall-run chum salmon in Cholmondeley Sound, 1980–2023 (top), and purse seine harvest of fall-run chum salmon in adjacent subdistrict 102-40, 1971–2023 (bottom). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later were considered fall-run fish.

Port Camden Fall-Run Chum Salmon

Port Camden (Kuiu Island) fall-run chum salmon have been harvested in a terminal commercial purse seine fishery in subdistrict 109-43 in years when run strength appeared adequate to provide a harvest of fish surplus to escapement needs. The chum salmon harvest at Port Camden averaged 12,000 fish in years when the terminal fishery was conducted, with a maximum harvest of 51,000 fish in 1992 (Figure 13; Appendix B5). There has been no fall-run chum salmon harvest at Port Camden since 2000, with the exception of a small harvest of 108 fish in 2012.

Port Camden fall-run chum salmon are likely also harvested in other mixed stock fisheries prior to reaching the terminal area, so a complete accounting of the total harvest is not possible.

Prior to 2009, management of the fishery was based on an informal escapement target of 4,000 chum salmon counted on aerial surveys at each of the 2 primary fall-run chum salmon streams in Port Camden: Port Camden South Head Creek (ADF&G stream number 109-43-006) and Port Camden West Head Creek (ADF&G stream number 109-43-008; Appendix A5). Both are relatively short streams in terms of spawning habitat; runs average slightly smaller in the west head creek and run timing is about 10–14 days later than in the south head creek (Eggers and Heintz 2008). The management targets were not escapement goals as defined in the Escapement Goal Policy (5 AAC 39.223) but were based on the best professional judgment of area management staff. In 2009, ADF&G established a sustainable escapement goal of 2,000–7,000 chum salmon counted on peak aerial surveys to the 2 Port Camden streams combined (Eggers and Heintz 2008). The escapement index was within or above the current escapement goal range in 2 of the past 5 years (Figure 13).

Enhancement projects were conducted at the 2 Port Camden streams beginning in the mid-1980s by NSRAA, U. S. Forest Service (USFS), and ADF&G (ADF&G 2004). The goals of the enhancement projects were to rehabilitate fall-run chum salmon stocks in Port Camden and to provide additional fall-run chum salmon to the common property fishery. NSRAA constructed and operated instream incubation boxes on the 2 Port Camden streams and was permitted to collect up to 10 million chum salmon eggs annually. Fry were released from the incubation boxes from 1986 to 1998, with an average release of more than 4 million fry from 1991 to 1998. In addition, the USFS constructed an intertidal spawning channel in West Head Creek in 1989. The channel was designed to allow for easier passage of fish from the intertidal area into the stream and to take advantage of available groundwater in an area not previously used by spawning chum salmon, although little actual spawning occurred in the constructed channel (ADF&G 2004).

The enhancement work at Port Camden did not result in increased production of fall-run chum salmon and the project was cancelled in 2000. Runs of chum salmon to Port Camden have been poor since the late 1990s and there has not been a significant fall fishery since 2000. The peak survey counts to both index streams combined averaged 6,000 fish per year from 1964 to 1998, but only 2,600 fish per year since 1999.

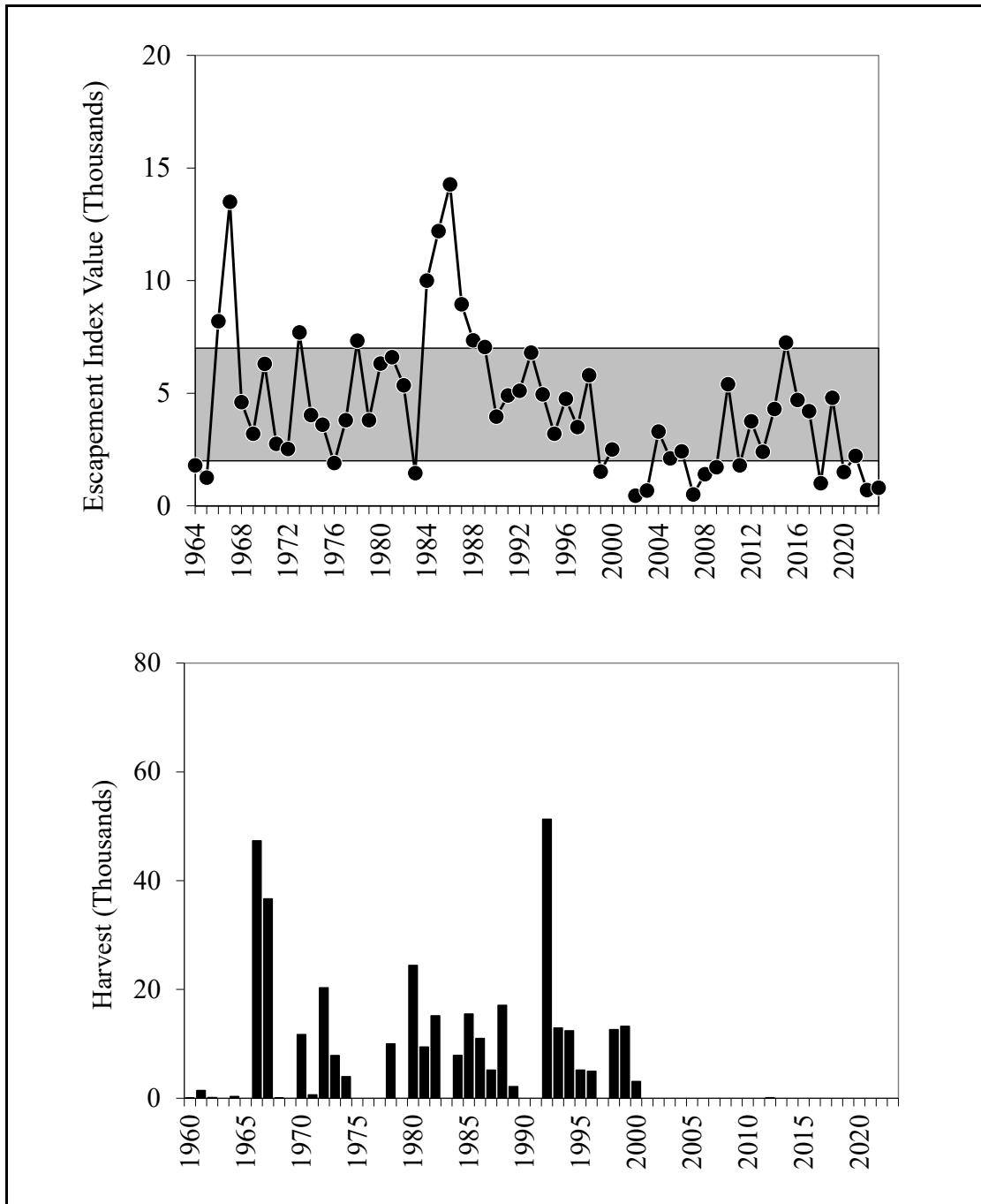


Figure 13.—Annual escapement index and sustainable escapement goal range (shaded area; 2,000–7,000 fish) of wild fall-run chum salmon in Port Camden, 1964–2023 (top), and purse seine harvest of fall chum salmon in adjacent subdistrict 109-43, 1960–2023 (bottom). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later were considered fall-run fish.

Security Bay Fall-Run Chum Salmon

Security Bay (Kuiu Island) fall-run chum salmon have been harvested in a terminal commercial purse seine fishery in subdistrict 109-45 during years when the run strength appeared adequate to provide a harvest of fish surplus to escapement needs (Figure 14). The chum salmon harvest at Security Bay averaged 9,100 fish in years when the terminal fishery was conducted, with a maximum harvest of 71,000 fish in 1984 (Appendix B5). Harvests have been low in all recent years and have averaged less than 1,000 fish in the 3 years over the past decade when the fishery was opened (Figure 14). These fish are likely also harvested in other mixed stock fisheries prior to reaching the terminal area, so a complete accounting of the total harvest is not possible. Escapements have been assessed through aerial surveys since 1960 at Salt Chuck Creek (ADF&G stream number 109-45-013), the primary chum salmon stream in Security Bay (Figure 14; Appendix A5).

Prior to 2009, management of the fishery at Security Bay was based on an informal escapement target of 10,000–20,000 chum salmon counted on a peak aerial survey at Salt Chuck Creek (Eggers and Heintz 2008). The management target was not an escapement goal as defined in the Escapement Goal Policy (5 AAC 39.223) but was based on the best professional judgment of area management staff. In 2009, ADF&G established a sustainable escapement goal of 5,000–15,000 chum salmon counted on a peak aerial survey at Salt Chuck Creek (Eggers and Heintz 2008). The escapement index was within or above the current escapement goal range in 3 of the past 5 years, 2019–2023 (Figure 14).

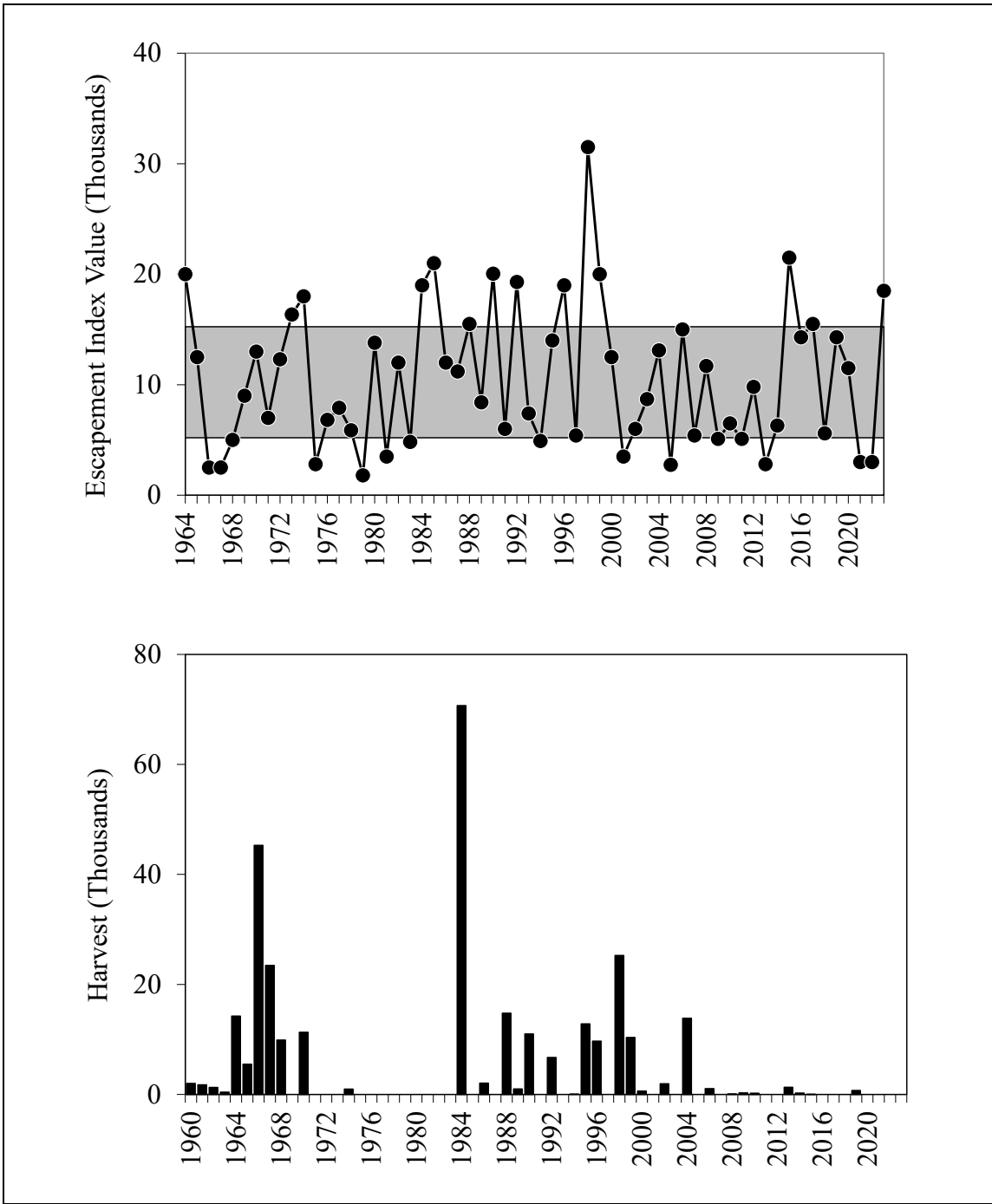


Figure 14.—Annual escapement index and sustainable escapement goal range (shaded area; 5,000–15,000 fish) of wild fall-run chum salmon in Salt Chuck Creek, 1964–2023 (top), and purse seine harvest of fall chum salmon in adjacent Security Bay subdistrict 109-45, 1960–2023 (bottom). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later were considered fall-run fish.

Excursion River Fall-Run Chum Salmon

Excursion River fall-run chum salmon have been harvested in a terminal commercial purse seine fishery in subdistrict 114-80 during years when run strength appeared adequate to provide a harvest of fish surplus to escapement needs. These fish are probably also harvested in other mixed stock fisheries prior to reaching the terminal area, so a complete accounting of the total harvest is not possible. The area open to seining is limited to section 14-C by the *Northern Southeast Seine Salmon Fishery Management Plan* (5 AAC 33.366(b)) to minimize the impact openings might have on other migrating stocks (e.g., Chilkat River fall-run chum salmon). Escapements have been assessed through aerial surveys since 1960 at the Excursion River (ADF&G stream number 114-80-020), the primary chum salmon producing stream in Excursion Inlet (Figure 15; Appendix A5). Survey and harvest data suggest runs were much larger in the 1960s and 1970s than in more recent times. The harvest averaged 95,000 fish from 1960 to 1981 in years when the terminal fishery was conducted but has only averaged 30,000 fish since that time. From 2014 to 2023, the harvest averaged 72,000 fish in the 2 years fisheries were conducted. The harvest of 126,000 fall chum salmon in 2017 was the largest harvest since 1980 (Figure 15). Peak aerial survey estimates at the Excursion River averaged 20,000 fish from 1960 to 1981, but only 6,400 since that time. In 2009, ADF&G established a sustainable escapement goal of 4,000–18,000 chum salmon counted on a peak aerial survey at the Excursion River (Eggers and Heintl 2008). The escapement index was within the current escapement goal range in only 1 of the past 5 years, 2019–2023 (Figure 15).

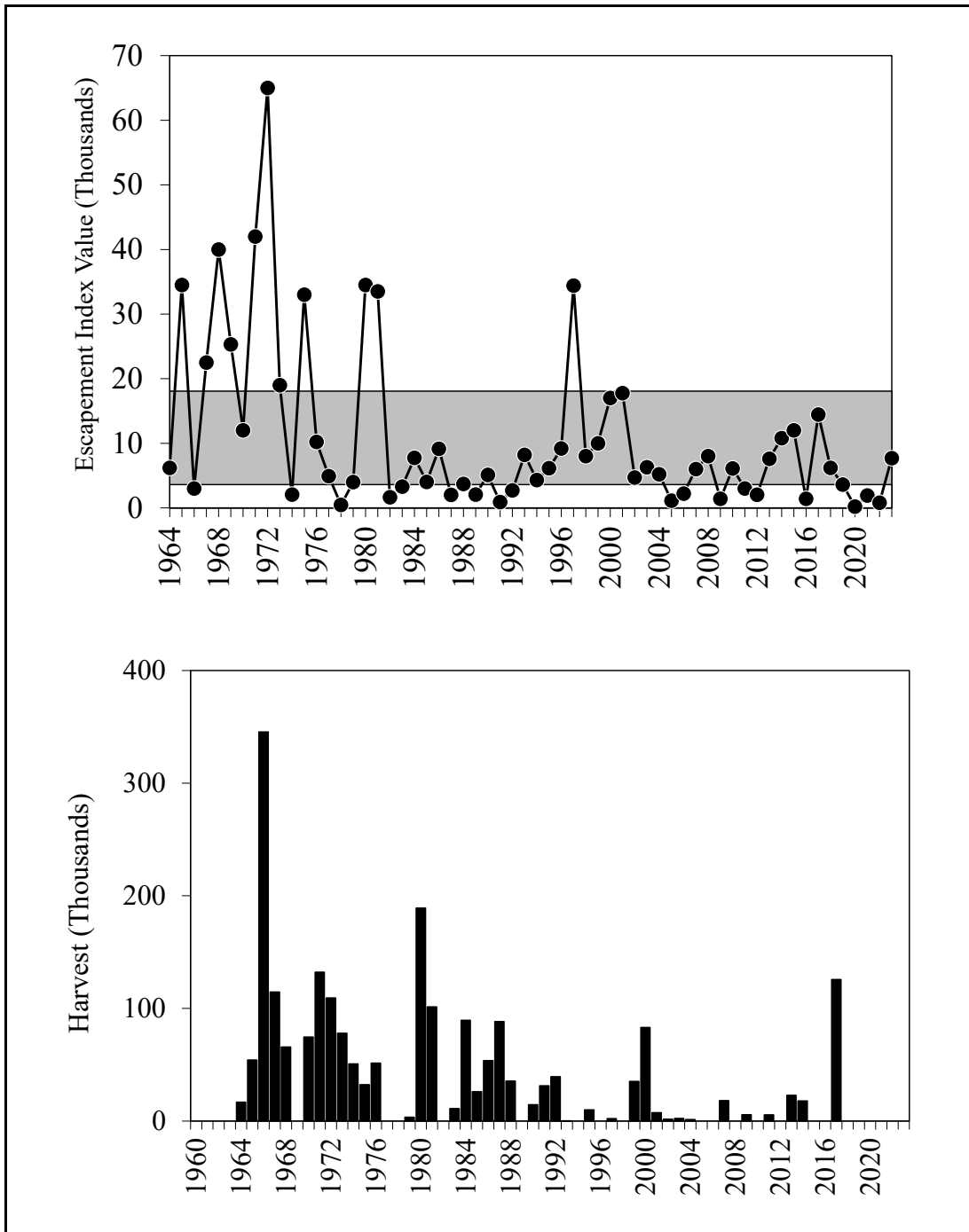


Figure 15.—Annual escapement index and sustainable escapement goal range (shaded area; 4,000–18,000 fish) of wild fall-run chum salmon in the Excursion River, 1964–2023 (top), and purse seine harvest of fall-run chum salmon in adjacent Excursion Inlet subdistrict 114-80, 1960–2023 (bottom). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later were considered fall-run fish.

Chilkat River Fall-Run Chum Salmon

The Chilkat River drainage near Haines supports the largest fall chum salmon run in the region (Halupka et al. 2000). Most of the spawning takes place in the mainstem and side channels of the Chilkat River (ADF&G stream number 115-32-025) and its major tributary, the Klehini River (ADF&G stream number 115-32-046). Chilkat River fall-run chum salmon are primarily harvested in the Lynn Canal (District 115) commercial drift gillnet fishery, although they are likely also harvested to some degree in other mixed stock fisheries prior to reaching Lynn Canal.

Harvest and survey data suggest runs were much larger from the 1960s to early 1980s. The commercial harvest of fall-run chum salmon averaged nearly 300,000 fish per year during the 1970s and 1980s, but harvest and fisheries performance measures declined during the 1990s and the harvest has averaged 55,000 fish per year since 1989 (Figure 16). Harvests were lower in many years in the 1990s due in part to fishery restrictions specifically implemented to protect this stock (Bachman 2005). The number of boat days in the fall fishery declined from an average of 3,143 prior to 1990 to 1,633 from 1990 to 2023.

The chum salmon escapement to the Chilkat River drainage was historically monitored via aerial surveys, which also exhibited a decline in the 1990s (Figure 17); however, the department considers historical aerial surveys of the drainage to be unreliable for indexing escapement due to the highly glacial nature of the system. Drainagewide escapement estimates from 1994 to 2023 are based on inriver fish wheel catches calibrated to total escapement estimated from mark-recapture studies conducted in 1990 and 2002–2005 (Bachman 2005; Eggers and Heintl 2008). Chilkat River fall chum salmon total runs averaged 295,000 fish since 1994, and the estimated harvest rate in the Lynn Canal drift gillnet fishery averaged 22% during that time (Table 4).

In 2014, ADF&G modified the sustainable escapement goal to 75,000–250,000 or, equivalently, a fish wheel index catch of 1,160–3,875 chum salmon, based on an updated stock-recruit analysis of the 1994–2008 brood years (Piston and Heintl 2014). The goal was considered a sustainable escapement goal rather than a biological escapement goal because of uncertainty in escapement estimates for this stock. Estimated escapements were within or above the current escapement goal range in all but one year since 1997 (Figure 18). Fish wheel counts were not expanded to estimated chum salmon escapement in 2018 due to road construction at the fish wheel site and extremely low water that impacted the project throughout the season (Gray et al. 2019). The estimated escapement of 751,000 fish in 2023 was the highest since the fish wheel project began (Figure 18).

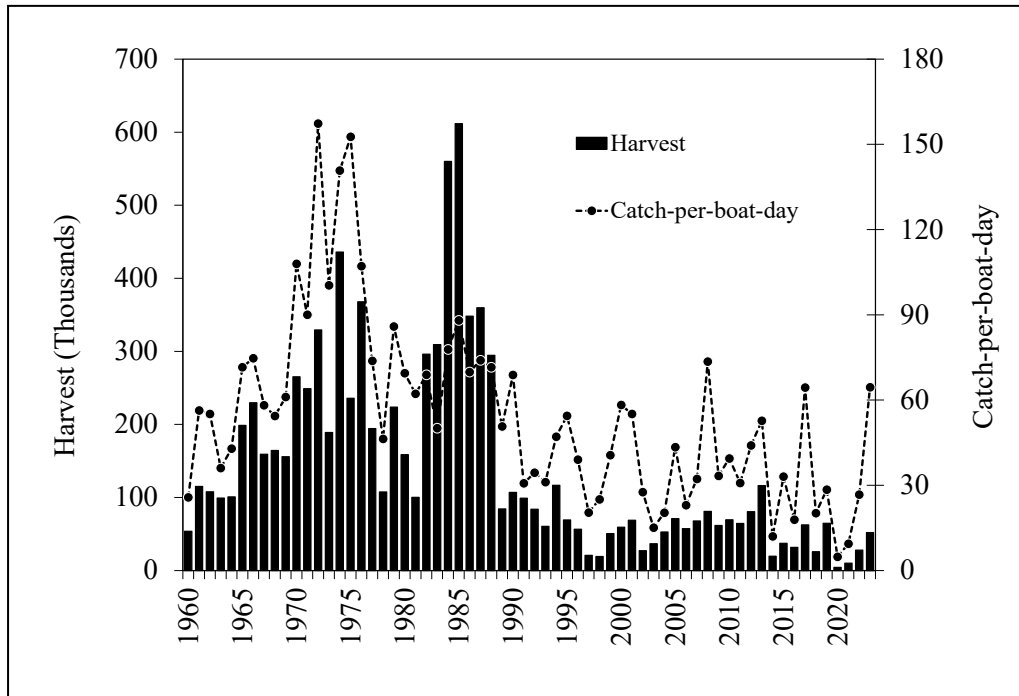


Figure 16.—Annual commercial drift gillnet harvest and catch-per-boat-day of fall-run chum salmon in Lynn Canal (District 115), 1960–2023. All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later were considered fall-run fish.

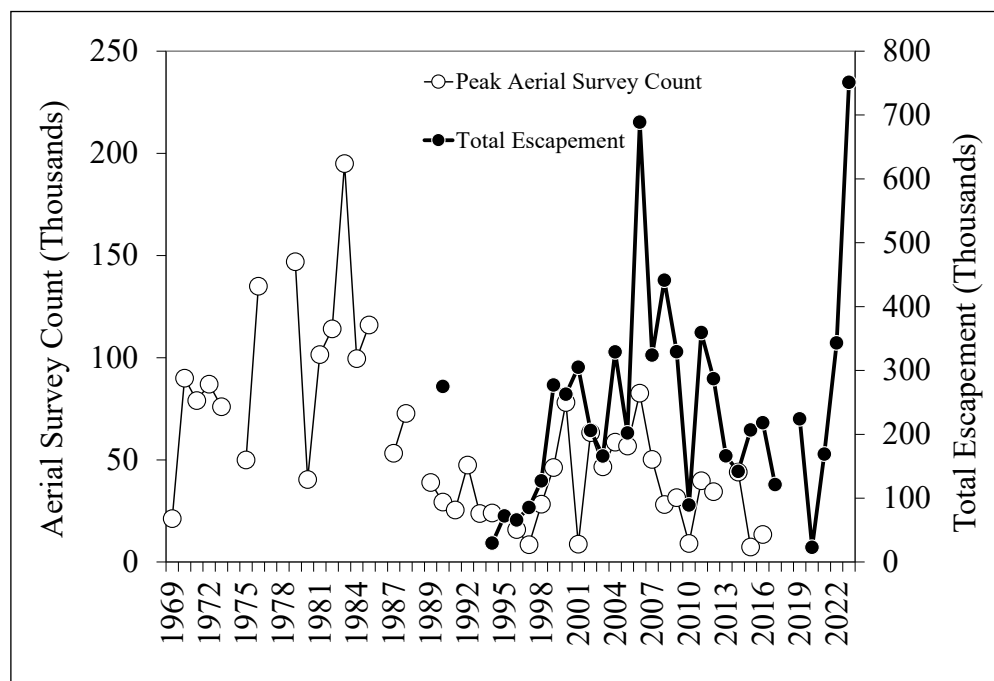


Figure 17.—Annual peak aerial survey counts of spawning chum salmon in the Chilkat and Klehini Rivers, 1969–2016, and estimated total escapement of chum salmon in the Chilkat River in 1990 and 1994–2023. There was no escapement estimate in 2018 due to road construction at fish wheel site and consistent low water.

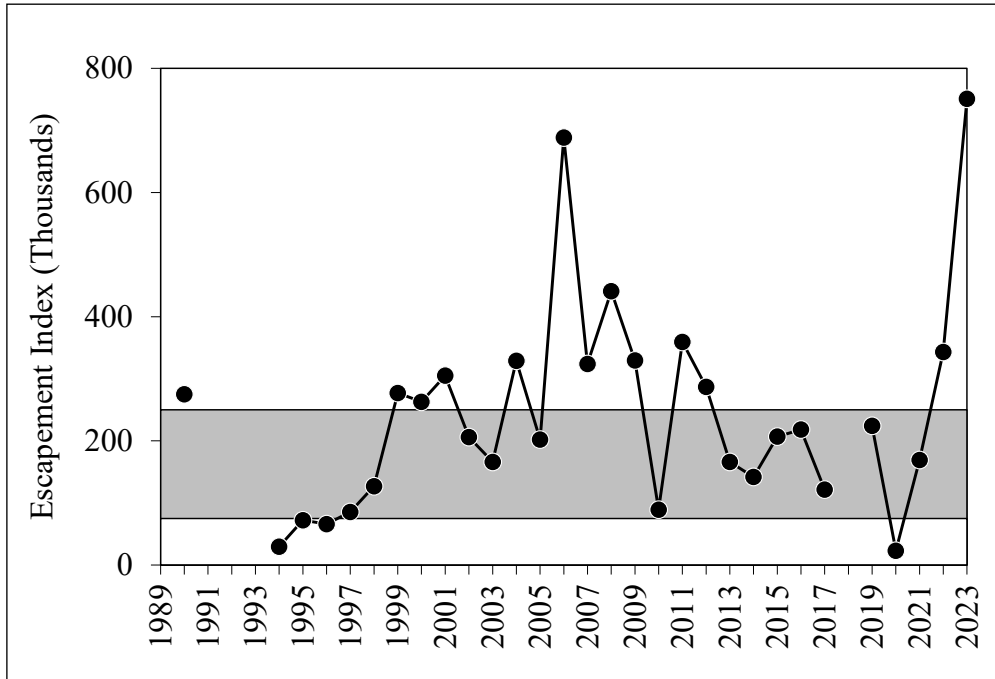


Figure 18.—Annual escapement estimates and sustainable escapement goal range (shaded area; 75,000–250,000 fish) of Chilkat River fall chum salmon, 1990 and 1994–2023. There was no escapement estimate in 2018 due to road construction at fish wheel site and consistent low water.

Table 4.–Total escapement of Chilkat River fall-run chum salmon, based on mark–recapture studies and expanded fish wheel catches, estimated annual commercial harvests, total runs, and harvest rates, 1990–2023.

Year	Fish wheel operations		Peak aerial survey count ^a	Estimated escapement ^b	Commercial catch ^c	Estimated total return	Estimated harvest rate ^d
	Dates	Catch					
1990	14 Aug–25 Oct	3,025	29,350	275,000	106,982	381,982	28%
1994	18 Jun–11 Sept	454 ^e	24,000	29,593	116,599	146,192	80%
1995	18 Jun–11 Sept	1,107 ^e	ND ^f	72,158	69,201	141,359	49%
1996	18 Jun–11 Sept	1,010 ^e	16,000	65,835	56,437	122,272	46%
1997	11 Jun–9 Oct	1,311	9,000	85,455	20,850	106,305	20%
1998	8 Jun–13 Oct	1,947	28,000	126,912	19,239	146,151	13%
1999	7 Jun–8 Oct	4,251	46,000	277,094	50,576	327,670	15%
2000	9 Jun–7 Oct	4,032	78,000	262,818	59,365	322,183	18%
2001	6 Jun–7 Oct	4,680	9,000	305,057	68,898	373,955	18%
2002	7 Jun–19 Oct	2,895	63,300	206,000	27,134	233,134	12%
2003	6 Jun–21 Oct	3,838	46,600	166,000	36,640	202,640	18%
2004	7 Jun–19 Oct	4,276	58,700	329,000	52,755	381,755	14%
2005	6 Jun–11 Oct	3,125	51,300	202,000	71,020	273,020	26%
2006	9 Jun–14 Oct	10,565	83,000	688,660	57,363	746,023	8%
2007	7 Jun–9 Oct	4,969	50,250	323,895	68,056	391,951	17%
2008	6 Jun–10 Oct	6,768	28,150	441,160	80,875	522,035	15%
2009	31 May–9 Oct	5,053	31,500	329,370	61,589	390,959	16%
2010	5 Jun–11 Oct	1,368	9,100	89,171	69,362	158,533	44%
2011	4 Jun–10 Oct	5,513	39,800	359,355	64,813	424,168	15%
2012	13 Jun–7 Oct	4,403	34,400	287,001	81,196	368,197	22%
2013	6 Jun to 3 Oct	2,548	ND	166,087	116,379	282,466	41%
2014	6 Jun–16 Oct	2,176	44,000	141,839	19,558	161,397	12%
2015	8 Jun–6 Oct	3,172	7,300	206,761	37,204	243,965	15%
2016	9 Jun–5 Oct	3,346	13,400	218,103	31,657	249,760	13%
2017	6 Jun–4 Oct	2,015	ND	121,344	62,535	183,879	34%
2018	ND	ND	ND	ND	25,689	ND	ND
2019	6 Jun–27 Sept	3,440	ND	224,230	64,586	288,816	22%
2020	8 Jun–29 Sept	348	ND	22,684	4,229	26,913	16%
2021	3 Jun–6 Oct	2,589	ND	168,759	10,001	178,760	6%
2022	7 Jun–4 Oct	5,259	ND	342,798	27,922	370,720	8%
2023	5 Jun–3 Oct	11,529	ND	751,497	51,937	803,434	6%
Average		4,016	36,370	242,855	54,537	298,353	22%

^a Drainagewide aerial counts include the Klehini and Chilkat Rivers, combined.

^b Escapements for years in **bold text** are based on mark–recapture; in other years, escapement was estimated by multiplying the fish wheel catch by the expansion factor of 65.18.

^c Commercial harvest of fall chum salmon includes all Lynn Canal (District 115) chum salmon harvested from statistical week 34 through the end of the season.

^d Harvest rate considered minimum; stock likely also harvested in mixed stock fisheries prior to entering Lynn Canal.

^e Fish wheel catch was expanded for early closure based on average run timing from 1997–2007.

^f ND = no data

Taku River Fall-Run Chum Salmon

The transboundary Taku River (ADF&G stream number 111-32-032) supports fall-run chum salmon that spawn in Canada. Taku River fall-run chum salmon stocks are primarily harvested in the commercial drift gillnet fishery in Taku Inlet (subdistrict 111-32). The Transboundary Technical Committee of the Pacific Salmon Commission established an interim escapement goal of 50,000–80,000 chum salmon for the Taku River in the 1980s (TTC 1986). There was no scientific basis for the goal, which was based on professional judgment. The goal was not formally adopted by ADF&G (Heinl et al. 2004), and it was removed from bilateral technical committee management reports in 2015 (TTC 2015). Fish wheels, operated jointly by ADF&G and Department of Fisheries and Oceans Canada (DFO), provide the only index of abundance available for Taku River fall-run chum salmon. The commercial harvest of fall-run chum salmon in the Taku Inlet drift gillnet fishery increased in the 1970s and averaged 45,000 fish a year from 1970 to 1985. The harvest then declined through the late 1980s to very low levels in the late 1990s and has averaged only 1,800 fish a year over the past decade (Figure 19). Fish wheel counts also declined sharply in the early 1990s and abundance appears to have remained at low levels since that time (Figure 20). In 2018, new stock assessment methods were implemented at the Taku River fish wheel project that resulted in hourly fish wheel checks and stopping the fish wheels at night, resulting in approximately 18 hours of fish capture a day instead of 24 and corresponding lower catches of salmon (Bednarski et al. 2019). In 2023, fish wheel hours were again reduced to approximately 8 hours per day.

The department has not recommended Taku River fall-run chum salmon as a candidate stock of concern due to the lack of reliable escapement information and a formal escapement goal, and because this stock spawns entirely in Canada. Total escapements of chum salmon in the Taku River drainage have yet to be estimated and attempts by ADF&G and DFO to estimate escapement through mark–recapture methods have been unsuccessful due to low tagging rates. Aerial survey counts are unreliable for measuring abundance due to the highly glacial nature of the Taku River system (Andel 2010). Retention of fall-run chum salmon in Canadian inriver fisheries has not been permitted since at least 1998 (TTC 1999; TTC 2019).

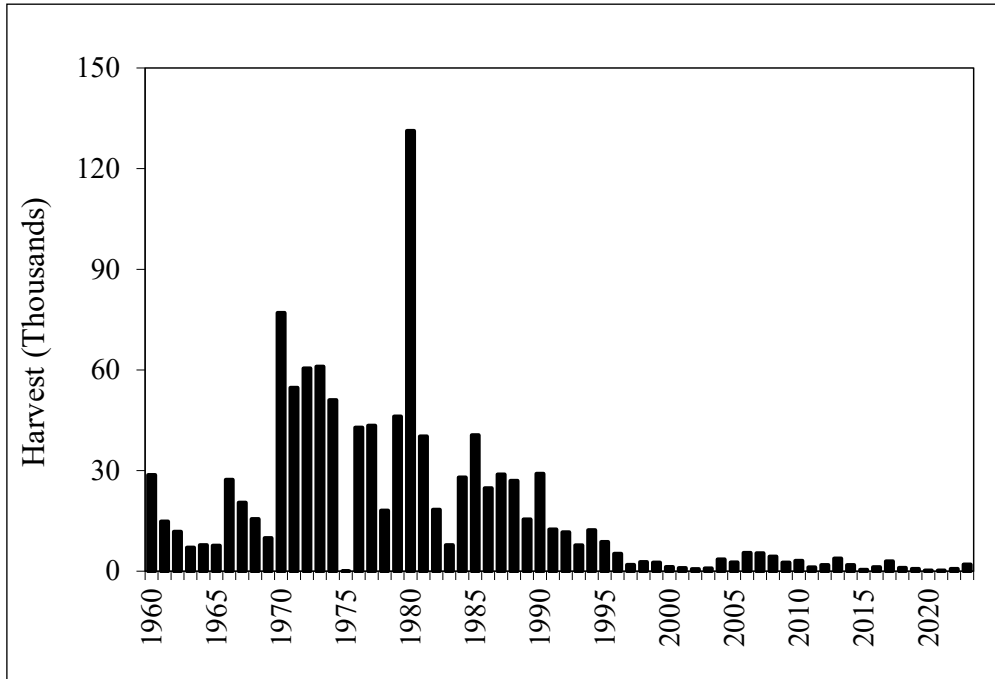


Figure 19.—Annual commercial drift gillnet harvest of wild fall-run chum salmon in Taku Inlet (subdistrict 111-32; 1960–2023). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later are considered fall-run fish.

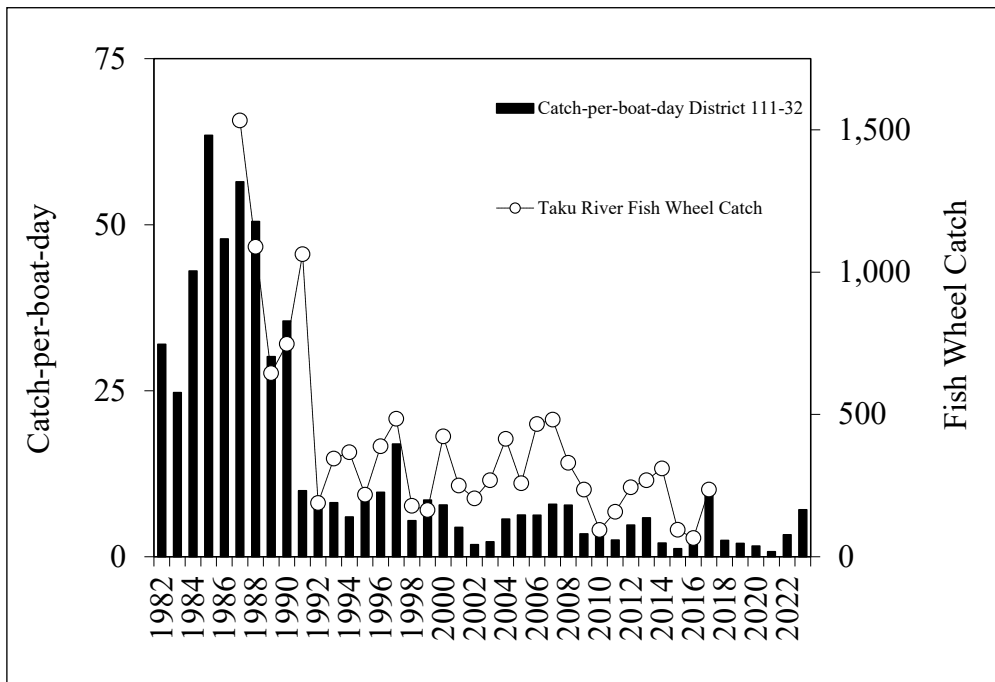


Figure 20.—Annual commercial drift gillnet catch-per-boat-day of fall-run chum salmon in Taku Inlet (subdistrict 111-32; 1982–2023) plotted with the Taku River fish wheel catch of all chum salmon (1987–2017). All chum salmon harvested in statistical week 34 (average midweek date 19 August) and later are considered fall-run fish. Fish wheel catches are not shown after 2017 due to new stock assessment methods that resulted in reduced fish wheel operational times and proportionally lower total catches.

ESCAPEMENT GOAL REVISIONS

SUMMER-RUN CHUM SALMON STOCKS

Summer-run chum salmon escapement goals provide an indication of management performance over broad areas of Southeast Alaska and goals are based on aggregates of peak counts from multiple index streams. We re-evaluated Southeast Alaska summer-run chum salmon escapement goals based on the removal of 13 index streams in the Northern Southeast Inside Subregion and one index stream in the Northern Southeast Outside Subregion. As in past escapement goal evaluations for Southeast Alaska summer-run chum salmon, we used the percentile approach (Clark et al. 2014), whereby the contrast of the escapement data, measurement error of assessment method, and the harvest rate of the stock were used to select percentiles of observed annual escapements to be used for estimating a sustainable escapement goal. For stocks with average harvest rates of 40% or higher, the lower bound of the escapement goal was set at the 25th percentile as a precautionary measure for stock protection (Clark et al. 2014).

Northern Southeast Inside Summer-Run Chum Salmon

The current Northern Southeast Inside Subregion escapement goal is set at the 25th percentile of the annual sum of peak escapement survey data to 63 index streams over the years 1982–2016 (lower-bound SEG = 107,000; Piston and Heintz 2017; Heintz et al. 2017). We recalculated the escapement index with the removal of 13 index streams that had various data limitations. Index streams were primarily removed due to factors making consistent chum salmon counts difficult (Table 5; Appendix A6). The 13 streams removed from the index accounted for an average of 9% of the total index from 2014 to 2023, but 74% of the values for the 10 streams removed due to visibility issues (Table 5) were interpolated.

Factors for removing an index stream included masking of the presence of chum salmon during aerial surveys because of small chum salmon escapements in proportion to average pink salmon escapements in the same stream; continual issues regarding visibility of fish from the air (e.g., glacial water, tannic water, and extensive overhanging vegetation); and the presence of high proportions of hatchery chum salmon. Index streams removed due to the presence of hatchery chum salmon in the escapement have exceeded 50% hatchery salmon when sampled for the presence of hatchery-origin fish (Dry Bay Creek 56% in 2022 and 71% in 2023; Fish Creek range = 69–88%; Sawmill Creek range = 15–78%; Piston and Heintz 2012a; Piston and Heintz 2012b; Josephson et al. 2021). For Berners River, usable peak chum salmon counts were only obtained in 3 of the past 10 years, and small samples of otoliths from the mid-1990s and early 2000s (Josephson 2010), as well as its proximity to Sawmill Creek and DIPAC release sites in Lynn Canal, indicate stray proportions may be high there as well.

We identified 29 streams in the aggregate index with survey counts for greater than 50% of the years 1960–1981. This set of 29 index streams also accounted for a large portion of the annual subregion escapement index from 1982 to 2016 (median = 74%), which was recommended as baseline years for recalculating escapement goals if changes to the indices occurred (Piston and Heintz 2017). We calculated escapement indices for the years 1960–1981 by expanding this set of 29 index streams in 3 steps. First, these 29 streams were grouped together and missing values were imputed for the years 1960–1981 (18% of the data points). Second, the annual surveys from 1960–1981 to this set of 29 index streams were summed. Finally, we estimated the total Northern

Southeast Inside Subregion escapement indices for 1960–1981, by dividing the annual sum-of-surveys to this set of 29 index streams by the median proportion of 74%. These calculations provided annual escapement indices for the years 1960–2016 (Appendix A6). Given the high contrast (>8) in the entire 1960–2023 escapement series, and at least moderate harvest rate, we used the 25th percentile of the escapement index from 1960 to 2016 (Piston and Heintl 2017) to calculate a lower-bound sustainable escapement goal of 95,000 chum salmon counted on peak surveys to the 50 (63 original; 13 removed) index streams in this subregion (Appendix A6).

Table 5.–Streams removed from the Northern Southeast Inside Subregion summer-run chum salmon aggregate escapement index. The reasons for removal were divided into 2 categories: all reasons impacting chum salmon visibility (including masking by pink salmon) or the presence of high proportions of stray hatchery chum salmon.

Subregion	District	ADF&G stream number	Stream name	Reason for removal
NSEI	109	109-44-037	Saginaw Bay South Head	Visibility issues
NSEI	109	109-44-039	Saginaw Creek	Visibility issues
NSEI	109	109-45-017	Lookout Point Creek Sec. B	Visibility issues
NSEI	109	109-52-007	Rowan Creek	Visibility issues
NSEI	110	110-13-004	Dry Bay Creek	Hatchery strays
NSEI	110	110-23-019	Snug Cove-Gambier Bay	Visibility issues
NSEI	110	110-23-040	East of Snug Cove	Visibility issues
NSEI	111	111-50-069	Fish Creek-Douglas Island	Hatchery strays
NSEI	115	115-10-042	St. James Bay NW Side	Visibility issues
NSEI	115	115-10-046	St. James River	Visibility issues
NSEI	115	115-10-080	Endicott River	Visibility issues
NSEI	115	115-20-010	Berners River	Visibility issues/hatchery strays
NSEI	115	115-20-052	Sawmill Creek-Berners Bay	Hatchery strays

Northern Southeast Outside Summer-Run Chum Salmon

The current Northern Southeast Outside Subregion escapement goal is set at the 25th percentile of the annual sum of peak escapement survey data to 9 index streams over the years 1982–2016 (lower-bound SEG = 25,000; Piston and Heintl 2017). We recalculated the escapement index with the removal of the West Crawfish NE Arm Head index stream (Appendix A7), which was removed due to recent high proportions of stray hatchery fish from the nearby Crawfish Inlet release site in the escapement (Table 3; yearly range = 59–80% since 2018). In addition, in all recent years, numbers of presumed hatchery fish ranging from 1,500 to 20,000 fish were observed milling at the mouth of the creek in August making standard index counts of wild chum salmon impossible to obtain.

Interpolated counts for all streams in all prior years were recalculated with the West Crawfish NE Arm Head stream removed. Given the relatively high contrast (7; Appendix A7) in the entire 1982–2023 escapement series, and at least moderate harvest rate, we used the 25th percentile of the escapement index to calculate a lower-bound sustainable escapement goal of 19,500 chum salmon counted on peak surveys to the 8 index streams in this subregion (Appendix A7). For calculating the goal, we only used data from 1982 to 2016, which was recommended as a baseline for summer-run chum salmon in this subregion (Piston and Heintl 2017), and to avoid simply lowering the goal during a period of poor escapements.

FALL-RUN CHUM SALMON STOCKS

Chilkat River

The current Chilkat River escapement goal of 75,000–250,000 (or, equivalently, a fish wheel index catch of 1,160–3,875 chum salmon) was based on an updated stock-recruit analysis of the 1994–2008 brood years (Piston and Heintz 2014). Due to the very poor relationship between fish wheel counts and the mark–recapture estimates ($R^2 = 0.15$), which were used to expand fish wheel counts to estimates of total escapement (expansion factor > 50), we recommend eliminating the goal and continuing to manage the fishery based on fishery performance. In addition, the Chilkat River fish wheel project was discontinued in 2024, which eliminated the current method of escapement estimation for this stock.

ESCAPEMENT GOAL RECOMMENDATIONS

We summarize the escapement goal recommendations as follows:

1. Northern Southeast Inside summer-run chum salmon: change the existing lower-bound sustainable escapement goal of 107,000 index spawners to 95,000 index spawners based on an updated analysis with 13 index streams removed. Index counts are the aggregate peak aerial and foot survey counts for the 50 indicator streams in this stock group.
2. Northern Southeast Outside summer-run chum salmon: change the existing lower-bound sustainable escapement goal of 25,000 index spawners to 19,500 index spawners based on an updated analysis with one index stream removed. Index counts are the aggregate peak aerial and foot survey counts for the 8 indicator streams in this stock group.
3. Chilkat River fall-run chum salmon: eliminate goal and manage based on fisheries performance data.

DISCUSSION

CHUM SALMON ESCAPEMENTS

Abundance of wild summer-run chum salmon, as indicated by both escapement indices (Figures 8, 9, and 11) and estimated harvest (Figure 1), has generally declined since the high levels in the 1990s and has fluctuated greatly over the last decade. In 2023, however, the escapement index for the Southern Southeast Subregion reached record high levels (Figure 8) and the escapement index in the Northern Southeast Inside Subregion was the largest since 2002 (Figure 9). Summer-run chum salmon escapement goals were met in each of the past 5 years in the Southern Southeast Subregion, and in 3 of the past 5 years in the Northern Southeast Inside Subregion, and 1 of the past 5 years in the Northern Southeast Outside Subregion (Figure 11). For fall-run chum salmon, the lower bound of escapement goals were met for Chilkat River and Cholmondeley Sound in 4 of the last 5 years; for Security Bay in 3 of the past 5 years; for Port Camden in 2 of the last 5 years; and 1 of the last 5 years for the Excursion River (Figure 15).

Northern Southeast Outside Summer-Run Chum Salmon

Northern Southeast Outside Subregion summer-run chum salmon escapements have been below the escapement goal for the last 4 consecutive years, with the recent 10-year average also being less than the lower bound of the escapement goal. The recent 10-year average peak survey count for each index stream has been lower than their long-term averages, except for the Black River,

the northernmost index stream in the subregion, and the stream with the largest average counts. The recent 10-year mean peak survey count for Black River was 86% of the long-term average, but the 10-year median count was 109% of the long-term median. Peak counts at the remaining 8 index streams averaged approximately 58% of the long-term mean during the most recent 10-year period.

Although uncertainty is inherent in chum salmon escapement indices due to the challenges of species differentiation, especially during aerial surveys, approximately 23% of chum salmon surveys in the Northern Southeast Outside Subregion have been foot surveys since 1982. Foot surveys provide improved ability to separate chum and pink salmon on the spawning grounds and adds additional confidence in the chum salmon index counts. The presence of a foot survey crew in the Sitka management area allows for consistent ground-truthing of aerial survey estimates and the option to obtain peak counts on foot at many chum salmon index streams in this subregion. In addition, most of the chum salmon index streams in this subregion are flown or walked multiple times throughout the season, which provides additional support to the conclusion that the low chum salmon abundance indices in recent years reflects a true decline in abundance.

Summer-run chum salmon in the Northern Southeast Outside Subregion are caught in traditional purse seine fisheries, which are managed primarily for pink salmon but occasionally, specific bays or inlets may be open to target summer-run chum salmon when there is an observed high abundance of chum salmon returning to a specific system (Thynes et al. 2021). No specific management actions have been taken to allow more chum salmon to escape into the rivers and streams in this subregion, but potential strategies are being considered due to continued low escapements. In general, pink salmon runs to the Northern Southeast Outside Subregion are later timed than summer-run chum salmon. Peak chum salmon survey counts typically occur from late July to mid-August. Peak spawning activity typically occurs during August and surveys conducted in late August or September often include more dead than live fish. By early August, a substantial proportion of most summer-run chum salmon are either in the creeks or staged near the mouth of creeks. Pink salmon peak counts typically occur in late August or early September and there are often still large numbers of fish counted in the mouth and intertidal stream sections at that time. Although survey effort generally ends by early September as fisheries close for the year, historical surveys conducted in mid-September suggest that peak spawning for pink salmon occurs in mid-to-late September with spawning continuing well into October. These differences in run timing between summer-run chum salmon and pink salmon in the Northern Southeast Outside Subregion help ensure that a portion of the chum salmon run is subject to little harvest pressure and that any management action to reduce wild summer-run chum salmon harvest rates should primarily focus on late July and early August fisheries openings.

Commercial purse seine fisheries targeting pink salmon in southern District 113, south of Sitka Sound, are rarely opened before August. From 2014 to 2023, there were only 3 openings in this portion of the district prior to statistical week 31. With the removal of the West Crawfish index stream, the only index stream south of Sitka Sound is Whale Bay Great Arm Head (Figure 21). Whale Bay is opened occasionally in late July when a harvestable surplus of chum salmon is identified, but more typically opens in August if surplus pink salmon are observed. Chum salmon harvests in Whale Bay after early August are typically small, except for 2019, when large numbers of Crawfish Inlet hatchery chum salmon appeared to have moved into Whale Bay (Table 3) and over 64,000 chum salmon were harvested in late August. Harvest rates on the

Whale Bay summer-run chum salmon are likely very low, except in years with targeted chum salmon openings. North of Sitka Sound, commercial purse seine openings often begin in mid-July, especially in years of high pink salmon abundance, and management actions to reduce summer-run chum salmon harvests are likely to have more impact. In contrast to purse seine fisheries on the inside waters of Southeast Alaska, which often harvest fish in migration corridors, long distances from the spawning grounds, purse seine openings along the outer coast of District 113 are typically more terminal in nature which may allow for targeted management actions to increase escapements at poorly performing summer-run chum salmon streams while minimizing potential impacts to pink salmon fisheries.

Excursion River Fall-Run Chum Salmon

Excursion River fall-run chum salmon escapements were below goal for 4 straight years (2019–2022), but the escapement index of 7,700 fish in 2023 was well above the lower bound of the escapement goal. Excursion Inlet may open for commercial purse seining if run strength appears adequate to both meet escapement and provide surplus harvest; however, no directed openings targeting Excursion River fall-run chum salmon have occurred since 2017. Due to the late timing of fall-run chum salmon, and the location of Excursion Inlet to the west of most commercial net fisheries, very few of these fish are likely harvested outside of directed openings. Over the past 10-year period, other than the 2 years with a directed fishery, there are very few chum salmon harvested in District 114 after week 33, and the district was not open for seining in 4 of 10 years (Table 6). The small harvests that do occur are almost entirely from the opposite side of Icy Strait in subdistrict 114-27.

The late timing of Excursion River fall-run chum salmon has also presented challenges for escapement monitoring. Historical surveys conducted in mid-to-late October indicate that spawning occurs well into late October and November, but survey effort has seldom extended into October since the early 2000s. Due to the late timing and generally poor weather in the fall, survey effort often ends when it is determined that no directed fishery is going to occur, which likely biases peak survey counts low in these years. Over the past 10 years, the peak survey is typically the final survey of the year and in most cases survey effort ends by mid-September. Although including fish staging at the mouth of the river can help make survey counts more inclusive of later timed fish, it is likely that there has been a greater tendency to underestimate the peak abundance in recent years. Ensuring the continuation of survey efforts through at least the end of September would help establish that escapement estimates are consistent through the time series and determine if recent perceived declines in escapement are biologically significant or an artifact of survey timing.

Table 6.—District 114 commercial purse seine fishery chum salmon harvest, 2014 to 2023. Bold numbers are from the directed Excursion River fall-run chum salmon fishery in subdistrict 114-80.

Statistical Week	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
28	–	10,128	–	29,129	–	–	–	–	–	6,879
29	–	26,704	–	54,340	–	–	–	–	–	20,218
30	–	15,376	–	39,521	–	–	–	916	–	23,314
31	–	16,428	–	11,711	–	–	–	463	2,193	6,645
32	–	4,918	–	5,375	–	–	–	626	4,253	2,934
33	–	5,048	–	4,672	–	–	–	223	–	561
34	–	653	–	107,054	–	–	–	75	–	296
35	–	173	–	28,593	–	–	–	–	–	–
36	17,856	119	–	1,088	–	–	–	–	–	–
Week 34+	17,856	945	–	136,735	–	–	–	75	–	296

HATCHERY CHUM SALMON STRAYING

In 2018 and 2019, large numbers of hatchery chum salmon from the first returns to the new Crawfish Inlet release site entered adjacent West Crawfish Inlet, where they overlap in run timing with and vastly outnumber wild chum salmon. As pointed out by Piston and Heintz (2020), major increases of stray Crawfish Inlet hatchery fish in 2 of the 9 Northern Southeast Outside Subregion index streams (West Crawfish NE Arm Head, Whale Bay Great Arm Head; Table 3; Figure 21) present challenges for monitoring wild stock escapements and assessing escapement goal performance as required by the sustainable salmon fisheries policy. Since 2019, additional sampling was conducted at West Crawfish NE Arm Head, Whale Bay Great Arm Head, and Kalinin Cove (Table 4; Figure 21).

Much drier than average summer and fall conditions occurred in Southeast Alaska in 2018 and 2019 (von Biela et al. 2022; Walston et al. 2023), when the first returns to the Crawfish Inlet release site occurred. However, the large number of stray hatchery fish observed in West Crawfish Inlet in those years does not appear to be related to precipitation and stream flows. In 2020 and 2021, large numbers of presumed hatchery fish—based on prior years sampling, the buildup and targeted harvest of hatchery fish in West Crawfish Inlet, and poor wild chum salmon escapements to other streams in the subregion—were again observed despite near- or above-average precipitation at the nearest weather station in Sitka (National Oceanic and Atmospheric Administration National Weather Service)². An estimated 10,000 presumed hatchery fish were counted off the mouth of the creek in early August 2020, and 8,000 were counted off the creek mouth in mid-August 2021.

The total run size of Crawfish Inlet hatchery chum salmon decreased since the initial returns, from an average of 2.8 million in 2018 and 2019, to 1.4 million in 2020 and 2021, and only 713,000 in 2022 (Wilson 2023), which likely reduced the buildup of hatchery chum salmon in West Crawfish Inlet. Although it appeared that the number of stray hatchery fish near the index stream had lessened in 2022 based on visual counts (peak mouth count 1,800 on 23 August), when sampled in late August the proportion of hatchery fish in the stream was still very high at 64% (Table 3) despite the much smaller total run of Crawfish Inlet hatchery chum salmon. Samples collected at Kalinin Cove on 13 September 2020 and Whale Bay on 24 August 2022 had very low (Kalinin Cove Head = 2% stray hatchery fish) or no (Whale Bay Great Arm Head)

² <https://www.weather.gov/wrh/Climate?wfo=ajk> (accessed June 2024).

hatchery strays present. The number of strays at West Crawfish Inlet NE Arm Head would have accounted for nearly the entire subregion escapement goal in 2019 (approximately 20,000 fish; Piston and Heintz 2020), and a substantial portion of the escapement goal in 2020 and 2021. Based on the high proportions of stray hatchery fish, the decision was made to remove West Crawfish Inlet NE Arm Head as an index stream from the Northern Southeast Outside Subregion.

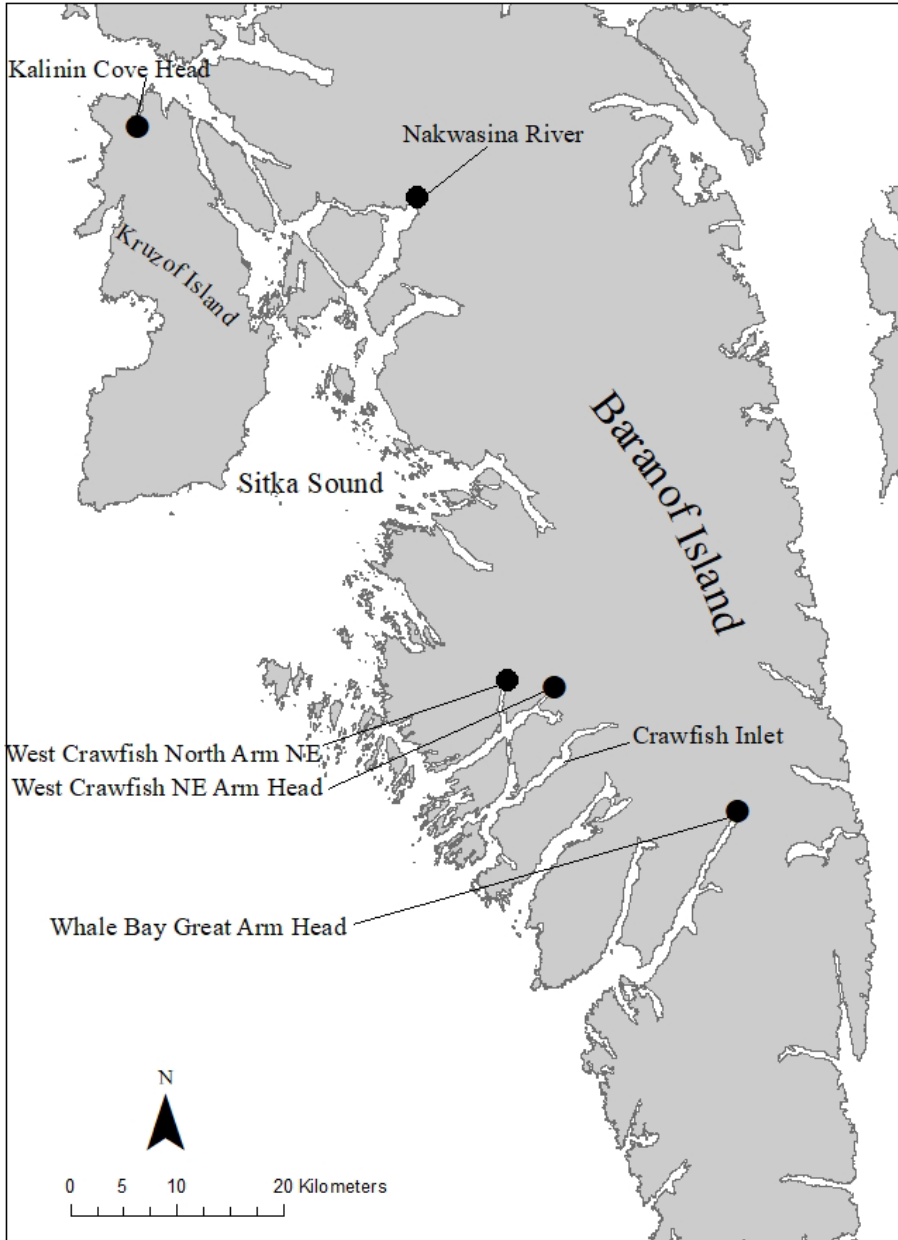


Figure 21.—Location of Crawfish Inlet and sites related to hatchery chum salmon straying in the Northern Southeast Outside Subregion in Southeast Alaska.

In 2017, releases of chum salmon began at a new site in Thomas Bay just north of Petersburg (Figure 6). This new release site is within 15 km of Dry Bay Creek, an index stream in the Northern Southeast Inside Subregion. From 2017 to 2023 releases averaged 18.2 million fish and

adult returns to the site began in 2019 when the first 3-year-olds began returning. Samples collected by the United States Forest Service from chum salmon carcasses at Dry Bay Creek on 21 August 2019 were 6% marked (Table 7; none from Thomas Bay), which was less than the 13% hatchery strays recorded in a prior sample in 2010 (Piston and Heintz 2012a). In 2022 and 2023, when all age classes of chum salmon were returning to Thomas Bay, samples collected by United States Forest Service showed that stray proportions in Dry Bay Creek had increased dramatically from prior sampling efforts, and the proportion of stray hatchery fish was over 50% in both years (Table 7). Only 30% of the marked fish in 2022 were from the nearby Thomas Bay release site, and that proportion increased to 68% in 2023. Although there are no other chum salmon index streams within 50 km of the Thomas Bay release site, average proportions of hatchery strays may have increased in other streams in the Northern Southeast Inside Subregion over previous studies (Piston and Heintz 2012a, Piston and Heintz 2012b, Josephson et al. 2021) with the addition of this new release site.

Existing management strategies for wild summer-run chum salmon are not altered by the removal of the West Crawfish and Dry Bay index streams. These changes are intended to ensure that the index more accurately tracks wild chum salmon escapements, which would be inflated by increased numbers of hatchery fish. Similarly, the removal of 10 streams from the Northern Southeast Inside Subregion due to visibility issues does not change our assessment of wild chum salmon escapements because a high proportion of the counts for those streams were interpolated due to a lack of consistent peak survey counts. These changes will reduce the geographic coverage of the wild chum salmon escapement indices in these two subregions, but the overall trends shown by the updated indices are virtually identical to the trends prior to the removal of index streams. A new project to assess chum salmon escapements using helicopter surveys will be implemented from 2024 to 2026, which may improve the department’s ability to monitor chum salmon escapement in the long term.

Table 7.—Proportions of stray hatchery chum salmon from samples collected by the United States Forest Service in Dry Bay Creek in the Northern Southeast Inside Subregion of Southeast Alaska in 2019, 2022, and 2023.

Year	ADF&G stream number	Stream name	Sample date	Otoliths analyzed	Not marked	Marked	% Marked
2019	110-13-004	Dry Bay Creek	8/21/2019	141	133	8	6%
2022	110-13-004	Dry Bay Creek	8/18/2022	114	50	64	56%
2023	110-13-004	Dry Bay Creek	8/16/2023	183	53	130	71%

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**APPENDIX A:
SOUTHEAST ALASKA CHUM SALMON ESCAPEMENT
INDICES**

Appendix A1.–Peak escapement index series for 15 Southern Southeast summer-run chum salmon index streams, by survey type, 1960–2023.
(Note: bold values were interpolated.)

District	101	101	101	101	101	101
Management area	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan
Subregion	SSE	SSE	SSE	SSE	SSE	SSE
Survey type	Aerial or foot	Aerial	Foot	Aerial	Aerial	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	101-11-101	101-15-019	101-15-085	101-30-030	101-30-060	101-45-078
Stream name	Hidden Inlet	Tombstone River	Fish Creek	Keta River	Marten River	Carroll Creek
1960	800	500	–	2,500	1,500	9,452
1961	500	700	–	500	600	9,552
1962	6,551	41,000	–	39,784	10,282	4,800
1963	4,800	9,600	–	9,000	10,000	30,000
1964	15,900	1,500	–	27,000	5,000	8,000
1965	2,000	5,000	–	7,000	2,900	2,000
1966	2,000	6,000	–	5,500	2,000	1,500
1967	1,957	6,114	–	11,882	300	2,400
1968	14,000	4,000	–	12,530	3,238	3,000
1969	800	1,200	–	1,200	700	300
1970	200	1,200	–	15,000	10,000	500
1971	600	1,200	–	400	500	1,156
1972	5,200	3,000	–	10,000	2,000	5,079
1973	6,000	5,350	–	5,680	3,500	2,850
1974	3,100	7,000	–	8,750	500	3,000
1975	605	400	–	550	100	5,575
1976	540	900	–	7,600	400	8,000
1977	1,500	12,025	–	14,500	1,507	4,520
1978	7,700	5,300	–	13,500	200	5,600
1979	1,200	6,500	–	5,300	5,725	10,326
1980	2,900	4,580	9,199	10,000	9,200	8,200
1981	350	1,000	1,797	3,500	400	800
1982	550	550	5,795	3,000	300	11,000
1983	3,600	18,500	4,525	800	500	3,500
1984	800	9,250	3,549	16,500	300	11,000
1985	1,400	5,000	13,598	30,000	1,200	7,500
1986	430	10,000	9,107	46,000	1,000	600
1987	1,500	12,800	28,418	10,100	1,000	6,122
1988	1,400	20,000	23,476	47,000	17,500	44,000
1989	500	12,100	13,593	11,000	5,129	10,000
1990	650	4,400	3,666	30,000	3,436	3,942
1991	150	5,500	1,826	11,000	4,242	12,282

-continued-

Appendix A1.–Page 2 of 7.

District	101	101	101	101	101	101
Management area	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan
Subregion	SSE	SSE	SSE	SSE	SSE	SSE
Survey type	Aerial or Foot	Aerial	Foot	Aerial	Aerial	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	101-11-101	101-15-019	101-15-085	101-30-030	101-30-060	101-45-078
Stream name	Hidden Inlet	Tombstone River	Fish Creek	Keta River	Marten River	Carroll Creek
1992	500	2,600	15,236	20,000	6,000	13,000
1993	3,287	22,800	25,807	28,000	3,500	5,500
1994	1,500	7,500	7,251	40,100	2,500	3,200
1995	5,000	5,000	3,667	20,000	950	25,000
1996	2,700	5,200	3,243	90,000	4,000	30,000
1997	1,585	5,500	502	15,000	1,500	3,500
1998	4,300	8,000	17,533	43,000	10,100	10,000
1999	800	3,000	1,380	20,000	1,000	10,000
2000	600	4,000	7,648	22,000	1,000	14,000
2001	3,800	4,000	11,775	45,000	7,209	20,000
2002	700	3,000	5,392	20,000	3,072	2,000
2003	1,200	4,000	11,674	16,000	3,619	6,737
2004	550	15,000	23,920	8,000	4,965	2,500
2005	550	3,000	4,485	5,000	3,922	7,302
2006	1,664	4,000	9,100	20,000	5,500	2,000
2007	5,000	20,000	4,285	10,000	40,000	10,000
2008	1,500	200	418	500	1,000	1,229
2009	2,000	10,000	1,680	4,000	4,000	4,207
2010	50	8,000	2,200	12,000	1,000	3,500
2011	16,000	60,000	2,455	20,000	13,000	14,700
2012	5,000	47,000	2,830	26,000	10,000	13,000
2013	1,300	23,000	633	11,900	8,000	2,000
2014	285	10,500	2,466	4,250	500	2,560
2015	4,000	25,000	7,759	10,000	5,200	17,500
2016	2,800	23,800	6,255	6,500	2,850	15,700
2017	208	5,000	1,346	20,000	5,000	3,600
2018	1,260	55,000	14,803	7,000	2,000	12,000
2019	6,500	16,000	7,270	10,000	2,000	10,000
2020	95	30,000	2,440	12,967	6,000	3,000
2021	88	40,000	2,979	4,500	800	4,500
2022	6,000	10,000	2,275	35,000	4,000	3,845
2023	10,000	62,000	8,210	40,000	12,968	5,000

-continued-

Appendix A1.–Page 3 of 7.

District	101	101	101	101	102	105
Management area	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Petersburg
Subregion	SSE	SSE	SSE	SSE	SSE	SSE
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	101-55-020	101-55-040	101-71-04K	101-75-015	102-60-082	105-20-012
Stream name	Wilson River	Blossom River	King Creek	Eulachon River	Harris River	P Beauclerc S Arm E
1960	--	--	6,098	250	--	--
1961	--	--	5,000	3,000	--	--
1962	--	--	12,465	3,463	--	--
1963	--	--	3,200	1,400	--	--
1964	--	--	7,500	10,000	--	--
1965	--	--	250	700	--	--
1966	--	--	2,371	2,000	--	--
1967	--	--	3,723	1,034	--	--
1968	--	--	3,926	1,091	--	--
1969	--	--	25	410	--	--
1970	--	--	3,000	3,000	--	--
1971	--	--	2,000	650	--	--
1972	--	--	7,200	4,600	--	--
1973	--	--	2,700	1,975	--	--
1974	--	--	4,540	1,200	--	--
1975	--	--	600	600	--	--
1976	--	--	7,600	500	--	--
1977	--	--	3,000	3,500	--	--
1978	--	--	2,800	1,400	--	--
1979	--	--	2,450	250	--	--
1980	7,578	4,000	7,000	1,500	4,000	1,053
1981	4,000	8,000	600	350	5,675	200
1982	500	200	500	200	600	500
1983	300	3,670	3,554	1,200	5,665	764
1984	8,460	4,100	6,000	6,000	8,715	1176
1985	10,700	8,000	5,000	872	10,626	700
1986	10,000	6,303	3,300	5,000	9,729	400
1987	9,112	6,082	5,890	200	9,386	200
1988	28,000	5,000	10,000	1,000	11,000	2,600
1989	10,800	800	300	1,117	9,600	1,295
1990	10,000	1,100	800	748	6,432	300
1991	5,000	5,000	300	924	7,940	1,071

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Appendix A1.–Page 4 of 7.

District	101	101	101	101	102	105
Management area	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Ketchikan	Petersburg
Subregion	SSE	SSE	SSE	SSE	SSE	SSE
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	101-55-020	101-55-040	101-71-04K	101-75-015	102-60-082	105-20-012
Stream name	Wilson River	Blossom River	King Creek	Eulachon River	Harris River	P Beauclerc S Arm E
1992	10,000	4,000	9,200	1,083	2,500	600
1993	5,000	3,500	7,000	1,000	14,597	4,000
1994	23,000	8,000	15,000	800	1,800	1,830
1995	800	12,000	8,000	1,043	500	2,250
1996	21,951	12,000	12,000	300	25,000	5,500
1997	18,000	1,500	10,000	1,000	7,040	1,500
1998	10,000	10,000	35,000	1,000	17,000	1,000
1999	5,000	5,000	8,000	800	8,714	500
2000	16,000	2,000	11,000	200	55,000	2,200
2001	15,000	12,000	4,000	3,200	3,500	800
2002	9,000	5,000	1,500	669	5,750	1,020
2003	6,575	4,388	4,250	788	6,773	327
2004	9,022	5,000	5,831	1,081	15,000	1,000
2005	10,000	8,000	8,000	200	12,000	2,400
2006	10,000	7,000	4,638	400	4,300	800
2007	20,000	12,000	3,000	600	13,452	600
2008	800	3,000	1,000	144	1,000	250
2009	5	5,000	800	2,000	4,229	830
2010	4,000	10,000	2,600	543	3,500	550
2011	4,000	12,000	3,000	1,000	21,000	2,222
2012	10,000	15,000	5,000	500	10,000	3,000
2013	13,000	10,000	5,000	200	1,682	2,498
2014	10,000	2,500	5,000	494	4,240	594
2015	1,000	18,000	7,000	1,000	12,000	1,475
2016	5,000	9,000	5,000	4,500	5,000	1,000
2017	5,000	20,000	8,500	2,000	5,000	200
2018	800	6,000	3,000	1,480	2,000	1,595
2019	1,200	12,500	6,500	1,225	20,000	1,320
2020	500	4,000	3,500	1,800	2,000	874
2021	2,000	10,000	3,500	919	3,000	971
2022	11,081	22,000	6,500	800	12,320	271
2023	22,539	20,000	5,500	3,228	9,500	3,375

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District	105	107	107	
Management area	Petersburg	Petersburg	Petersburg	
Subregion	SSE	SSE	SSE	Southern
Survey type	Aerial or foot	Aerial	Aerial	Southeast
Run type	Summer	Summer	Summer	Subregion
Stream no.	105-42-005	107-40-025	107-40-049	
Stream name	Calder Creek	Oerns Creek	Harding River	index total ^a (×1,000)
1960	–	5,000	45,000	108
1961	–	2,000	50,000	109
1962	–	2,000	25,000	221
1963	–	4,500	20,000	141
1964	–	2,000	10,000	132
1965	–	700	17,200	57
1966	–	599	5,680	42
1967	–	1,000	15,000	66
1968	–	991	3,000	70
1969	–	105	100	7
1970	–	735	300	52
1971	–	188	2,000	13
1972	–	827	300	58
1973	–	703	3,700	49
1974	–	13,800	11,050	81
1975	–	1,400	3,600	20
1976	–	1,020	8,000	53
1977	–	3,100	5,000	74
1978	–	750	8,500	70
1979	–	4,600	45,000	124
1980	1,416	1,200	13,100	85
1981	620	446	34,000	62
1982	1,799	280	5,300	31
1983	499	445	14,100	62
1984	1,478	1,080	16,400	95
1985	410	590	20,000	116
1986	2,000	765	1,200	106
1987	700	1,300	9,300	102
1988	1,000	490	12,520	225
1989	200	4,000	24,000	104
1990	1,166	530	2,800	70
1991	1,440	700	29,000	86

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District	105	107	107	
Management area	Petersburg	Petersburg	Petersburg	
Subregion	SSE	SSE	SSE	Southern
Survey type	Aerial or foot	Aerial	Aerial	Southeast
Run type	Summer	Summer	Summer	Subregion
Stream no.	105-42-005	107-40-025	107-40-049	
Stream name	Calder	Oerns	Harding	index total ^a
	Creek	Creek	River	(×1,000)
1992	900	150	15,500	101
1993	2,000	800	32,000	159
1994	1,300	861	4,500	119
1995	2,430	900	10,000	98
1996	3,500	1,600	29,000	246
1997	700	554	8,708	77
1998	3,500	1,100	6,000	178
1999	2,700	2,900	25,000	95
2000	3,000	500	13,800	153
2001	500	1,000	15,000	147
2002	400	50	5,000	63
2003	850	500	6,000	74
2004	3,000	30	6,200	101
2005	3,000	1,000	11,000	80
2006	2,900	100	8,000	80
2007	900	200	6,300	146
2008	1,000	97	1,300	13
2009	1,623	400	5,231	46
2010	1,350	300	1,150	51
2011	7,218	200	2,400	179
2012	2,900	250	4,500	155
2013	1,570	1,400	3,500	86
2014	1,030	800	1,900	47
2015	1,165	400	3,800	115
2016	600	667	1,000	90
2017	4,000	671	3,300	84
2018	6,000	948	13,351	127
2019	4,000	1,200	5,600	105

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Appendix A1.–Page 7 of 7.

District	105	107	107	
Management area	Petersburg	Petersburg	Petersburg	
Subregion	SSE	SSE	SSE	Southern
Survey type	Aerial or foot	Aerial	Aerial	Southeast
Run type	Summer	Summer	Summer	Subregion
Stream no.	105-42-005	107-40-025	107-40-049	
Stream name	Calder Creek	Oerns Creek	Harding River	index total ^a (×1,000)
2020	520	527	1,500	70
2021	673	500	3,000	77
2022	7,000	1,024	13,737	136
2023	40,000	12,000	22,000	276
			Median =	86
			Minimum =	7
			Maximum =	276
			Contrast =	38

Note: Data for streams that were surveyed intermittently prior to 1980 (denoted by en dashes) were not used for index calculations.

^a Index total is the sum of all 15 index streams. Values from 1960 to 1979 were calculated using the average proportion of the total index represented by streams with consistent long-term survey data from 1960 to 2016. For an explanation of the calculation of index values from 1960 to 1979, see Piston and Heintz (2014).

Appendix A2.—Peak escapement index series for 63 Northern Southeast Inside summer-run chum salmon index streams, 1960–2023. (Note: bold values were interpolated.)

District	108	109	109	109	109	109	109	109	109
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	108-41-010	109-30-016	109-44-037	109-44-039	109-45-017	109-52-007	109-62-014	109-62-024	109-62-024
Stream name	North Arm Creek	Tyee Head East	Saginaw Bay S Head	Saginaw Creek	Lookout Point Cr Sec B	Rowan Creek	Sample Creek	Petrof Bay W Head	Petrof Bay W Head
1960	524	—	—	—	—	—	—	—	—
1961	500	—	—	—	—	—	—	—	—
1962	100	—	—	—	—	—	—	—	—
1963	503	—	—	—	—	—	—	—	—
1964	572	—	—	—	—	—	—	—	—
1965	15	—	—	—	—	—	—	—	—
1966	1,367	—	—	—	—	—	—	—	—
1967	875	—	—	—	—	—	—	—	—
1968	1,400	—	—	—	—	—	—	—	—
1969	731	—	—	—	—	—	—	—	—
1970	595	—	—	—	—	—	—	—	—
1971	1,562	—	—	—	—	—	—	—	—
1972	2,490	—	—	—	—	—	—	—	—
1973	160	—	—	—	—	—	—	—	—
1974	100	—	—	—	—	—	—	—	—
1975	314	—	—	—	—	—	—	—	—
1976	325	—	—	—	—	—	—	—	—
1977	295	—	—	—	—	—	—	—	—
1978	630	—	—	—	—	—	—	—	—
1979	835	—	—	—	—	—	—	—	—
1980	1,450	—	—	—	—	—	—	—	—
1981	643	—	—	—	—	—	—	—	—
1982	840	700	350	650	30	50	200	150	150
1983	812	4,700	885	150	492	1,161	150	495	495
1984	3,470	4,611	2,590	400	500	500	1,600	485	485
1985	1,826	400	2,600	455	350	500	700	2,000	2,000
1986	1,068	7,000	1,300	350	1,150	1,300	4,500	300	300
1987	1,040	6,100	1,600	600	600	150	500	100	100
1988	1,280	13,500	500	500	350	700	1,200	700	700
1989	404	4,000	300	50	1,000	1,300	800	45	45
1990	4,095	10,000	587	50	800	100	483	328	328
1991	265	600	416	232	200	546	343	400	400

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District	108	109	109	109	109	109	109	109	109
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	108-41-010	109-30-016	109-44-037	109-44-039	109-45-017	109-52-007	109-62-014	109-62-024	109-62-024
Stream name	North Arm Creek	Tyee Head East	Saginaw Bay S Head	Saginaw Creek	Lookout Point Cr Sec B	Rowan Creek	Sample Creek	Petrof Bay W Head	
1992	708	8,500	600	1,000	463	1,094	600	1,700	
1993	926	7,500	1,100	300	800	900	500	695	
1994	740	4,500	600	300	400	300	300	400	
1995	570	23,300	1,540	50	950	1,200	1,100	636	
1996	2530	18,000	3,200	3,300	2,000	650	2,000	2,000	
1997	1,420	1,950	300	690	300	2,000	1,017	600	
1998	1,115	1,050	1,100	1,000	900	2,000	300	300	
1999	1,801	6,300	3,000	969	964	1,400	400	500	
2000	2,280	34,000	3,000	800	1,342	3,200	300	500	
2001	820	400	400	1,000	696	2,100	1,032	500	
2002	881	100	2,164	1,209	400	2,840	1,783	1,210	
2003	606	2,500	1,147	641	300	1,505	945	641	
2004	800	4,100	500	1,400	735	4,700	2,200	1,400	
2005	850	300	1,011	565	700	600	833	350	
2006	1,100	4,000	300	860	856	10,000	1,500	1,100	
2007	883	1,300	813	300	452	1,067	1,000	300	
2008	560	500	540	200	300	708	1,000	200	
2009	891	3,048	300	200	323	100	150	50	
2010	360	400	417	600	234	543	4,300	200	
2011	1,324	3,534	676	300	379	881	660	373	
2012	3,627	150	900	750	550	1,400	1,550	1,200	
2013	1,981	7,647	1,500	900	500	1,965	1,466	858	
2014	650	200	502	1,600	277	658	491	600	
2015	1,222	1,200	895	545	494	1,172	875	519	
2016	860	1,758	355	216	196	466	347	206	
2017	3,000	7,407	1,498	912	827	1,962	1,464	869	
2018	710	2,912	589	359	325	2,000	5,000	2,500	
2019	804	3,298	667	700	368	894	725	423	
2020	339	1,392	282	173	156	377	306	179	
2021	243	1,786	361	223	199	484	393	229	
2022	732	3,095	626	386	346	839	681	397	
2023	1,000	8,645	1,748	150	2,300	400	1,901	1,108	

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Appendix A2.–Page 3 of 17.

District	110	110	110	110	110	110	110	110	110
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-13-004	110-22-004	110-22-012	110-22-014	110-23-008	110-23-010	110-23-019	110-23-040	
Stream name	Dry Bay Creek	Amber Creek N Arm Pybus	Donkey Creek	Cannery Cove Pybus Bay	Johnston Creek	Bowman Creek	Snug Cove Gambier Bay	East of Snug Cove	
1960	883	–	–	–	–	–	–	–	–
1961	2,044	–	–	–	–	–	–	–	–
1962	1,907	–	–	–	–	–	–	–	–
1963	3,648	–	–	–	–	–	–	–	–
1964	1,000	–	–	–	–	–	–	–	–
1965	2,553	–	–	–	–	–	–	–	–
1966	2,800	–	–	–	–	–	–	–	–
1967	7,625	–	–	–	–	–	–	–	–
1968	395	–	–	–	–	–	–	–	–
1969	400	–	–	–	–	–	–	–	–
1970	6,000	–	–	–	–	–	–	–	–
1971	9,000	–	–	–	–	–	–	–	–
1972	2,515	–	–	–	–	–	–	–	–
1973	3,749	–	–	–	–	–	–	–	–
1974	2,609	–	–	–	–	–	–	–	–
1975	200	–	–	–	–	–	–	–	–
1976	581	–	–	–	–	–	–	–	–
1977	1,854	–	–	–	–	–	–	–	–
1978	550	–	–	–	–	–	–	–	–
1979	110	–	–	–	–	–	–	–	–
1980	2,570	–	–	–	–	–	–	–	–
1981	1,308	–	–	–	–	–	–	–	–
1982	568	40	1,600	220	10	20	150	30	
1983	177	50	1,300	150	600	80	539	841	
1984	928	300	2,600	1,000	2,500	400	750	1,200	
1985	870	160	1,455	150	400	474	496	600	
1986	823	500	450	350	600	500	700	1,500	
1987	1,675	250	3,300	1,515	800	400	300	547	
1988	329	300	6,300	3,350	8,000	3,460	2,300	4,300	
1989	290	124	600	465	400	100	175	150	
1990	1,582	850	2,800	700	2,000	400	950	1,650	
1991	56	200	1,200	100	700	242	450	1,150	

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Appendix A2.–Page 4 of 17.

District	110	110	110	110	110	110	110	110	110
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-13-004	110-22-004	110-22-012	110-22-014	110-23-008	110-23-010	110-23-019	110-23-040	
Stream name	Dry Bay Creek	Amber Creek N Arm Pybus	Donkey Creek	Cannery Cove Pybus Bay	Johnston Creek	Bowman Creek	Snug Cove Gambier Bay	East of Snug Cove	
1992	1,360	359	1,500	1,500	500	485	700	150	
1993	3,218	500	6,000	2,700	1,200	500	800	800	
1994	1,055	640	3,900	2,400	1,929	250	904	1,411	
1995	1,550	600	7,900	1,600	550	300	180	320	
1996	3,771	1,200	13,000	4,800	7,200	2,000	800	1,200	
1997	4,200	50	11,000	1,800	500	300	600	1,173	
1998	1,344	500	12,000	2,900	600	625	653	400	
1999	336	800	10,500	3,400	600	400	450	800	
2000	2,579	2,100	15,000	6,200	2,700	1,100	900	1,100	
2001	540	450	4,500	2,800	1,050	500	1,000	400	
2002	2,312	933	2,100	1,525	2,811	1,259	400	900	
2003	355	494	2,500	1,300	1,490	667	698	1,090	
2004	1,790	600	8,100	5,200	2,100	900	1,300	400	
2005	741	200	4,000	1,800	900	500	420	2,300	
2006	1,060	1,150	10,000	3,100	1,000	2,300	1,600	4,000	
2007	570	400	2,500	450	300	400	1,200	1,900	
2008	139	500	800	600	200	400	100	100	
2009	700	700	400	900	747	200	200	546	
2010	1,776	1,000	500	780	540	800	700	500	
2011	1,371	300	2,700	1,100	200	100	100	641	
2012	4,253	500	3,700	1,300	900	1,900	500	700	
2013	1,503	723	4,900	1,900	1,200	700	500	1,417	
2014	330	242	1,600	300	250	800	298	1,400	
2015	912	432	800	200	700	571	531	867	
2016	1,841	171	1,400	200	436	227	211	345	
2017	1,204	722	4,000	2,050	1,838	1,000	2,500	1,452	
2018	300	284	4,000	510	723	377	374	571	
2019	2,100	322	800	1,020	300	427	423	300	
2020	450	136	1,118	431	342	180	179	271	
2021	300	174	500	2,500	439	231	229	347	
2022	501	302	2,470	987	900	750	900	400	
2023	6,100	843	1,500	2,757	3,000	7,000	200	1,671	

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District	110	110	110	110	111	111	111	111
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-32-009	110-33-013	110-34-006	110-34-008	111-13-010	111-15-024	111-15-030	111-16-040
Stream name	Chuck River Windham Bay	Lauras Creek	Glen Creek	Sanborn Creek	Mole River	Windfall Harbor W Side	Pack Creek	Swan Cove Creek
1960	–	3,200	741	150	–	–	700	–
1961	–	4,919	1,715	3,218	–	–	3,229	–
1962	–	5,000	3,000	5,000	–	–	7,400	–
1963	–	8,777	4,500	150	–	–	5,762	–
1964	–	2,459	10,000	500	–	–	1,614	–
1965	–	500	2,142	200	–	–	4,033	–
1966	–	45,000	11,000	4,000	–	–	3,857	–
1967	–	20,000	100	35,000	–	–	500	–
1968	–	2,599	906	2,000	–	–	1,706	–
1969	–	3,141	1,095	2,055	–	–	400	–
1970	–	2,559	892	1,674	–	–	700	–
1971	–	25,000	2,000	3,000	–	–	6,000	–
1972	–	25,500	2,000	500	–	–	3,200	–
1973	–	4,000	1,500	3,000	–	–	5,000	–
1974	–	20,000	1,000	900	–	–	5,000	–
1975	–	200	50	100	–	–	80	–
1976	–	300	487	915	–	–	1,100	–
1977	–	300	700	400	–	–	932	–
1978	–	1,800	1,700	500	–	–	500	–
1979	–	300	60	962	–	–	965	–
1980	–	1,500	900	1,400	–	–	200	–
1981	–	600	786	1,200	–	–	1,481	–
1982	316	2,000	50	1,200	400	300	950	350
1983	25	200	766	350	150	713	100	479
1984	700	3,500	1,200	1,900	400	1,500	1,000	2,100
1985	788	900	700	400	500	656	2,400	300
1986	300	1,500	500	900	300	300	700	1,000
1987	557	700	405	2,000	934	200	1,000	200
1988	2,600	3,520	900	3,400	700	350	300	600
1989	279	500	600	500	468	232	771	156
1990	600	1,500	507	2,400	500	200	600	550
1991	30	1,050	900	1,000	200	100	200	100

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District	110	110	110	110	111	111	111	111
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-32-009	110-33-013	110-34-006	110-34-008	111-13-010	111-15-024	111-15-030	111-16-040
Stream name	Chuck River Windham Bay	Lauras Creek	Glen Creek	Sanborn Creek	Mole River	Windfall Harbor W Side	Pack Creek	Swan Cove Creek
1992	1,000	1,800	800	900	300	700	600	452
1993	1,000	1,400	1,600	2,900	200	250	800	674
1994	500	1,500	850	950	4,000	200	3,500	1,200
1995	400	800	500	1,600	340	20	800	617
1996	7,100	2,320	500	14,300	8,247	3,000	8,000	900
1997	2,000	180	3,000	1,000	2,004	995	6,500	200
1998	1,039	500	725	1,000	1,742	3,000	8,000	2,000
1999	300	900	100	700	6,000	1,100	4,000	500
2000	3,050	4,800	4,000	8,200	2,010	600	2,600	625
2001	1,100	1,300	500	2,500	875	2,500	1,500	100
2002	200	2,670	1,800	1,200	3,100	1,950	5,000	1,000
2003	1,110	350	700	1,095	500	4,000	17,000	500
2004	3,000	2,800	3,000	7,300	8,000	1,066	12,500	1,000
2005	979	650	700	6,300	6,000	815	1,000	548
2006	1,400	600	1,000	7,300	3,000	300	4,500	834
2007	500	1,420	1,300	1,700	900	655	1,000	300
2008	400	900	400	1,500	876	300	950	1,000
2009	1,600	722	200	1,200	944	466	1,000	400
2010	600	300	850	700	2,500	300	2,100	238
2011	682	1,088	400	2,000	1,900	400	1,900	900
2012	800	1,200	1,400	900	1,000	769	3,000	2,900
2013	7,100	1,882	1,900	3,400	1,700	1,207	3,100	600
2014	1,800	630	1,500	1,300	841	200	1,349	6,000
2015	4,500	3,500	900	250	1,499	1,500	2,405	714
2016	1,300	500	1,700	1,900	595	291	955	150
2017	1,500	1,975	800	2,500	2,509	1,228	4,025	1,200
2018	600	776	562	1,322	250	0	100	100
2019	1,000	879	636	800	1,200	539	125	524
2020	365	371	600	627	703	227	1,000	40
2021	468	476	347	805	750	20	945	282
2022	3,000	2,000	398	2,000	2,800	1,800	1,700	489
2023	20,000	2,500	9,000	18,000	2,500	2,000	2,500	800

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District	111	111	111	111	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Foot	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	111-17-010	111-33-010	111-41-005	111-50-069	112-15-062	112-19-010	112-21-005	112-21-006
Stream name	King Salmon River	Prospect Creek Speel	Admiralty Creek	Fish Creek Douglas I.	Robinson Creek	Wilson River	Clear River Kelp Bay	Ralphs Creek
1960	10,000	–	830	1,010	909	500	600	2,700
1961	3,995	–	1,921	1,500	2,104	2,589	3,000	750
1962	15,200	–	1,792	2,187	1,963	2,415	9,000	4,778
1963	7,128	–	3,428	4,183	3,754	8,000	45,000	12,000
1964	1,997	–	3,000	1,172	1,052	1,294	4,000	200
1965	4,990	–	2,399	2,928	2,628	3,233	31,000	9,000
1966	2,325	–	400	1,219	500	500	12,000	200
1967	2,000	–	300	4,500	920	350	16,699	8,548
1968	2,111	–	4,025	1,239	1,112	1,368	15,000	3,000
1969	1,500	–	1,227	1,200	500	100	5,000	3,271
1970	2,000	–	999	1,220	50	1,347	25,000	1,000
1971	1,500	–	9,600	3,201	3,800	400	15,000	6,994
1972	2,500	–	3,500	3,000	8,200	400	5,000	9,000
1973	14,000	–	10,000	4,299	9,000	4,748	45,000	5,000
1974	6,000	–	800	1,200	1,000	1,900	15,000	1,500
1975	60	–	2,000	185	1,700	350	2,746	1,405
1976	500	–	650	1,342	750	100	500	1,456
1977	100	–	100	850	1,130	747	2,888	1,478
1978	949	–	200	1,366	500	615	1,300	1,217
1979	100	–	500	1,360	800	2,000	4,000	1,531
1980	400	–	1,100	3,200	3,000	400	1,000	900
1981	11,500	–	881	1,200	2,000	1,187	4,588	3,500
1982	500	300	450	1,219	500	200	5,000	3,000
1983	300	75	520	1,466	3,200	2,083	8,000	6,000
1984	4,150	800	5,100	3,380	550	3,800	4,000	1,000
1985	3,200	692	1,500	6,683	500	160	2,000	5,000
1986	4,750	500	1,000	2,047	1,200	500	12,000	4,200
1987	2,000	200	500	281	500	400	23,000	1,000
1988	1,300	1,750	250	609	350	350	25,000	100
1989	300	50	200	1,187	400	500	1,608	3,000
1990	1,050	300	800	1,486	1,200	500	8,000	2,000
1991	1,300	200	200	2,194	1,000	979	2,000	1,822

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District	111	111	111	111	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Foot	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	111-17-010	111-33-010	111-41-005	111-50-069	112-15-062	112-19-010	112-21-005	112-21-006
Stream name	King Salmon River	Prospect Creek Speel	Admiralty Creek	Fish Creek Douglas I.	Robinson Creek	Wilson River	Clear River Kelp Bay	Ralphs Creek
1992	1,300	400	200	1,839	1,000	1,900	4,000	1,100
1993	1,000	400	500	639	1,800	6,000	3,500	4,000
1994	5,800	500	500	3,943	1,500	2,000	5,000	2,000
1995	2,200	600	200	2,941	400	2,200	8,000	10,800
1996	9,000	4,320	900	6,595	2,750	5,600	5,000	8,395
1997	3,400	321	50	1,890	4,000	500	12,000	7,000
1998	7,100	5,000	700	849	1,000	3,100	3,000	4,000
1999	3,500	500	1,874	1,570	2,000	4,000	15,000	5,000
2000	4,110	2,250	300	7,915	1,350	5,700	4,800	11,300
2001	1,150	1,000	5,500	815	1,621	2,000	5,500	14,400
2002	2,800	3,000	3,500	146	4,750	3,100	3,000	9,000
2003	4,000	400	600	1,150	3,200	10,000	6,401	8,430
2004	5,000	1,100	1,429	2,408	1,000	3,000	3,000	5,600
2005	6,000	860	500	1,841	2,500	5,500	5,644	5,300
2006	3,500	800	2,500	2,710	1,995	10,000	1,100	12,300
2007	1,150	800	4,700	270	1,054	1,000	2,500	4,000
2008	800	1,100	583	888	800	2,900	400	4,000
2009	1,700	1,900	500	1,058	2,400	1,700	3,201	2,200
2010	4,600	2,900	300	764	1,750	1,014	400	2,600
2011	3,000	3,000	731	205	4,000	2,500	1,070	3,350
2012	13,800	1,800	2,600	719	1,700	2,356	200	5,600
2013	4,000	700	1,700	125	2,300	3,500	550	9,300
2014	3,800	550	150	1,426	752	100	900	10,500
2015	12,000	4,300	500	1,541	1,340	1,000	205	1,610
2016	850	1,100	100	612	800	1,300	450	2,500
2017	3,200	1,800	500	1,900	3,800	3,605	400	11,750
2018	2,000	1,700	680	546	909	50	470	6,500
2019	3,100	3,500	4,000	1,049	1,500	1,700	350	2,300
2020	2,500	600	400	118	438	150	900	215
2021	1,400	800	300	417	2,200	2,900	600	682
2022	1,300	400	100	760	400	7,500	5,443	6,006
2023	2,500	500	600	2,400	4,000	6,300	3,100	7,000

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District	112	112	112	112	112	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-42-025	112-44-010	112-46-009	112-47-010	112-48-015	112-48-019	112-48-023	112-48-035	
Stream name	Kadashan Creek	Saltery Bay Head	Seal Bay Head	Long Bay Head	Big Goose Creek	Little Goose Creek	West Bay Head Creek	Tenakee Inlet Head	
1960	–	700	4,000	10,000	5,000	–	1,000	4,000	
1961	–	3,433	3,000	10,000	25,000	–	24,000	10,000	
1962	–	1,750	4,400	2,800	7,400	–	3,200	6,000	
1963	–	3,000	12,000	1,800	11,000	–	8,000	13,000	
1964	–	1,716	6,462	8,570	4,200	–	3,000	320	
1965	–	4,288	16,146	17,671	14,196	–	14,763	350	
1966	–	3,100	3,500	2,000	4,150	–	13,350	5,200	
1967	–	1,800	19,000	17,000	6,000	–	30,700	20,530	
1968	–	1,814	1,000	7,475	6,005	–	3,020	4,753	
1969	–	2,192	5,000	5,000	10,200	–	4,000	7,500	
1970	–	1,786	4,000	3,000	1,100	–	1,800	5,000	
1971	–	75	20,000	7,000	18,000	–	9,000	1,200	
1972	–	2,900	49,000	35,000	29,000	–	18,000	12,000	
1973	–	4,000	33,000	28,000	5,300	–	13,000	12,000	
1974	–	2,984	20,500	17,000	5,000	–	6,000	2,500	
1975	–	1,500	4,000	4,000	3,000	–	500	500	
1976	–	976	10,500	3,000	550	–	150	2,557	
1977	–	400	1,000	150	250	–	400	800	
1978	–	816	1,000	3,000	1,000	–	2,809	2,138	
1979	–	200	1,000	1,650	300	–	3,534	180	
1980	–	100	5,000	4,700	2,500	–	5,686	200	
1981	–	2,000	2,000	2,000	2,000	–	2,500	1,500	
1982	1,567	1,119	2,800	5,000	3,000	10	1,000	300	
1983	4,249	12,300	7,700	12,000	14,100	1,606	2,000	4,000	
1984	4,168	250	6,200	8,430	7,600	1,576	1,600	1,000	
1985	3,000	400	5,000	7,000	10,050	100	15,300	1,900	
1986	1,800	1,000	4,500	10,000	10,000	50	2,000	1,050	
1987	2,764	300	1,000	1,000	1,300	1,045	1,000	1,100	
1988	7,600	200	6,200	6,000	5,400	130	4,300	1,925	
1989	1,000	500	1,000	1,200	2,100	523	1,800	1,300	
1990	2,100	200	2,700	2,200	3,050	100	500	1,500	
1991	1,000	1,000	5,500	3,200	5,000	755	2,000	2,000	

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District	112	112	112	112	112	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-42-025	112-44-010	112-46-009	112-47-010	112-48-015	112-48-019	112-48-023	112-48-035	
Stream name	Kadashan Creek	Saltery Bay Head	Seal Bay Head	Long Bay Head	Big Goose Creek	Little Goose Creek	West Bay Head Creek	Tenakee Inlet Head	
1992	2,000	1,100	9,300	10,100	8,300	200	8,400	6,100	
1993	3,500	1,050	7,000	7,100	19,700	1,000	10,500	9,200	
1994	6,200	2,800	19,000	42,500	39,200	1,500	29,510	18,000	
1995	3,600	2,000	7,000	10,000	22,000	500	7,900	13,000	
1996	43,000	32,700	89,000	105,000	84,000	2,000	57,000	103,000	
1997	3,500	3,500	5,700	19,900	9,400	1,400	15,000	11,000	
1998	3,000	400	11,000	15,000	10,000	7,700	23,000	6,700	
1999	2,500	1,100	20,000	28,000	21,000	2,150	32,000	15,000	
2000	10,800	10,500	22,500	28,500	25,000	4,800	42,000	15,000	
2001	700	4,150	5,000	2,275	2,935	1,000	5,200	10,000	
2002	19,000	21,000	55,000	42,000	23,000	7,500	23,500	28,500	
2003	5,700	700	7,600	4,000	1,100	5,000	5,000	12,000	
2004	10,000	4,100	12,000	10,700	4,500	800	20,000	5,500	
2005	3,000	2,000	13,000	9,000	1,500	8,000	8,000	4,500	
2006	3,500	2,500	8,000	12,200	2,900	6,500	12,800	5,300	
2007	3,905	2,500	3,600	12,000	3,500	1,950	12,500	4,000	
2008	2,500	1,100	6,050	19,000	900	5,700	5,800	2,800	
2009	500	500	3,750	3,800	3,000	5,300	4,200	1,300	
2010	800	300	2,800	1,800	1,200	1,800	3,900	1,200	
2011	500	2,269	6,500	4,500	2,500	3,000	2,000	2,500	
2012	1,250	1,100	9,000	5,050	6,000	1,200	3,700	3,500	
2013	21,000	1,550	22,200	17,500	7,000	8,100	8,000	7,500	
2014	1,500	800	4,500	7,200	560	1,190	6,200	225	
2015	4,414	800	12,000	16,000	400	19,000	950	8,000	
2016	1,000	800	5,500	4,520	1,100	900	2,800	6,150	
2017	3,000	4,000	14,100	25,000	15,800	1,000	21,600	5,500	
2018	4,000	800	1,700	5,900	4,900	200	4,100	4,000	
2019	600	3,800	6,000	9,300	6,100	50	2,600	2,800	
2020	1,400	4,700	2,100	2,400	1,800	200	1,500	1,500	
2021	1,100	1,200	1,500	1,200	1,100	500	1,800	2,500	
2022	2,000	3,000	3,500	2,600	1,400	200	6,000	3,300	
2023	3,000	4,000	19,500	18,000	18,500	3,000	5,000	4,200	

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District	112	112	112	112	112	112	112	113
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-50-020	112-50-030	112-65-024	112-72-011	112-73-024	112-80-028	112-90-014	113-53-003
Stream name	Kennel Creek	Freshwater Creek	Greens Creek	Weir Creek N Arm Hood Bay	Weir Creek S Arm Hood Bay	Chaik Bay Creek	Whitewater Creek	Saook Bay West Head
1960	1,736	–	1,052	1,413	1,445	3,160	1,539	–
1961	4,018	–	2,434	3,270	9,000	7,313	3,560	–
1962	1,750	–	2,271	3,050	5,000	20,000	2,350	–
1963	4,000	–	7,000	5,835	5,968	13,048	6,353	–
1964	2,008	–	3,500	1,635	1,672	8,560	1,780	–
1965	5,018	–	3,040	4,084	4,177	9,133	4,447	–
1966	3,850	–	5,025	3,906	500	2,200	3,211	–
1967	9,500	–	1,500	5,457	300	13,000	6,000	–
1968	6,500	–	1,800	1,728	1,767	1,000	4,000	–
1969	1,400	–	1,000	300	4,200	1,500	500	–
1970	5,900	–	200	150	6,000	1,500	1,200	–
1971	1,500	–	500	500	5,000	2,800	4,862	–
1972	3,500	–	4,100	1,500	3,000	3,860	9,000	–
1973	7,369	–	2,000	400	4,000	12,000	14,000	–
1974	3,000	–	200	500	5,000	3,000	6,000	–
1975	2,000	–	500	50	300	800	500	–
1976	1,100	–	400	40	300	3,500	200	–
1977	1,500	–	4,000	100	1,800	2,111	300	–
1978	300	–	700	100	1,000	1,738	800	–
1979	800	–	6,000	978	100	2,000	400	–
1980	2,000	–	3,200	1,080	1,500	4,000	2,000	–
1981	2,600	–	2,000	1,400	1,000	1,000	200	–
1982	140	250	553	450	500	1,600	300	1,124
1983	500	600	500	700	500	2,000	2,550	3,046
1984	1,400	600	1,800	1,800	1,600	6,900	3,000	1,500
1985	2,000	2,000	4,000	5,000	5,800	2,500	2,000	5,000
1986	2,200	750	6,500	1,300	3,000	8,300	2,000	1,000
1987	450	696	1,750	630	1,800	2,000	700	1,982
1988	1,100	300	800	1,600	620	6,500	1,800	3,500
1989	500	300	500	700	400	2,000	2,000	992
1990	4,050	300	4,150	1,000	500	1,500	1,700	3,500
1991	2,050	100	200	1,000	200	500	1,070	2,000

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District	112	112	112	112	112	112	112	112	113
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-50-020	112-50-030	112-65-024	112-72-011	112-73-024	112-80-028	112-90-014	113-53-003	
Stream name	Kennel Creek	Freshwater Creek	Greens Creek	Weir Creek N Arm Hood Bay	Weir Creek S Arm Hood Bay	Chaik Bay Creek	Whitewater Creek	Saook Bay West Head	
1992	3,150	1,000	600	8,300	4,300	11,200	5,000	2,000	
1993	8,900	1,650	1,000	7,700	2,200	23,600	9,900	4,280	
1994	1,300	1,300	1,100	2,300	500	6,500	2,500	500	
1995	4,200	6,000	900	650	1,500	6,300	4,100	100	
1996	39,300	2,600	11,500	22,000	13,000	21,000	4,500	6,600	
1997	7,000	500	2,000	4,003	4,900	8,100	3,000	1,700	
1998	2,700	1,297	500	500	550	5,000	2,000	4,000	
1999	3,300	2,095	1,200	13,000	6,000	10,000	8,950	5,968	
2000	3,000	2,918	2,300	3,000	16,500	21,700	5,300	10,630	
2001	5,000	1,000	1,500	3,900	3,600	12,000	1,700	9,500	
2002	2,950	4,750	1,450	8,000	4,050	10,750	1,500	5,500	
2003	1,000	500	3,000	500	500	3,800	3,700	3,947	
2004	2,000	2,400	2,150	2,300	2,500	13,000	4,200	3,500	
2005	1,400	1,800	500	4,000	2,500	4,000	2,500	3,481	
2006	3,700	1,861	2,610	7,100	3,500	8,700	4,000	17,500	
2007	1,500	983	1,000	2,000	2,120	2,500	2,092	6,950	
2008	400	1,000	550	1,749	500	4,100	1,500	1,800	
2009	1,500	1,500	200	1,887	1,500	1,300	1,000	490	
2010	800	700	1,100	1,000	700	900	700	2,400	
2011	300	2,000	3,000	500	400	1,800	1,500	1,420	
2012	400	20	2,510	6,800	3,200	9,500	1,000	3,240	
2013	650	6,000	1,810	3,000	500	19,500	2,300	5,146	
2014	1,508	690	876	1,640	1,246	6,500	400	2,300	
2015	200	1,500	1,562	2,923	2,221	4,500	2,203	795	
2016	1,530	491	100	1,161	300	3,300	875	1,000	
2017	4,419	2,068	2,593	4,893	3,695	20,000	3,688	6,000	
2018	0	813	300	1,924	0	8,000	300	4,180	
2019	300	921	200	2,178	5,000	4,000	600	2,100	
2020	1,000	1,200	476	920	708	2,500	100	2,500	
2021	1,500	2,000	300	300	1,500	5,500	550	1,210	
2022	3,200	1,500	200	3,000	1,000	3,300	2,000	3,300	
2023	5,000	2,500	1,500	7,300	4,395	12,300	5,500	4,265	

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District	113	113	114	114	114	114	114	114
Management area	Sitka	Sitka	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	113-54-007	113-56-003	114-23-070	114-25-010	114-27-030	114-31-013	114-32-004	114-33-023
Stream name	Rodman Creek	Ushk Bay W End	Mud Bay River	Homeshore Creek	Spasski Creek	Game Creek	Seagull Creek	Neka River
1960	1,503	–	–	–	2,000	4,179	1,050	5,250
1961	3,477	–	–	–	4,531	9,670	1,200	10,700
1962	600	–	–	–	4,227	9,020	2,200	11,800
1963	6,205	–	–	–	25,000	45,000	4,000	23,500
1964	1,738	–	–	–	750	275	500	7,476
1965	5,000	–	–	–	5,659	12,077	3,089	18,679
1966	4,154	–	–	–	7,400	6,000	8,500	43,500
1967	5,803	–	–	–	9,000	30,000	1,700	9,000
1968	1,837	–	–	–	500	6,000	1,307	3,000
1969	2,221	–	–	–	5,500	9,500	1,580	16,500
1970	3,000	–	–	–	400	1,000	700	8,200
1971	500	–	–	–	2,100	20,000	2,500	43,000
1972	2,360	–	–	–	15,500	40,000	5,383	51,000
1973	1,500	–	–	–	3,000	12,000	4,536	39,000
1974	1,500	–	–	–	300	3,500	2,150	10,000
1975	500	–	–	–	400	400	200	7,000
1976	200	–	–	–	1,500	5,200	300	4,251
1977	1,004	–	–	–	8,000	1,700	2,300	9,000
1978	1,500	–	–	–	2,000	2,000	3,500	1,600
1979	1,040	–	–	–	1,355	7,000	300	9,000
1980	500	–	–	–	5,300	13,300	550	8,500
1981	1,000	–	–	–	4,000	5,500	4,200	6,000
1982	300	1,172	500	339	800	2,500	220	2,500
1983	2,903	3,176	400	550	500	8,000	1,550	24,500
1984	2,849	2,025	220	7,000	3,250	12,200	2,400	10,550
1985	500	500	1,129	846	3,500	4,300	5,300	7,000
1986	1,000	2,000	1,068	515	2,300	3,900	500	12,500
1987	3,000	3,000	150	598	500	8,000	2,300	8,000
1988	500	3,500	100	150	950	5,600	600	4,000
1989	945	1,034	399	100	910	1,500	200	2,800
1990	3,000	300	813	300	2,500	2,000	110	11,000
1991	1,365	3,000	200	600	1,500	2,300	1,200	4,400

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District	113	113	114	114	114	114	114	114
Management area	Sitka	Sitka	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	113-54-007	113-56-003	114-23-070	114-25-010	114-27-030	114-31-013	114-32-004	114-33-023
Stream name	Rodman Creek	Ushk Bay W End	Mud Bay River	Homeshore Creek	Spasski Creek	Game Creek	Seagull Creek	Neka River
1992	2,734	2,992	50	700	3,000	3,000	1,200	9,700
1993	4,080	4,464	2,000	1,100	3,700	11,900	4,100	12,500
1994	4,872	500	300	2,200	4,600	3,400	1,700	9,300
1995	3,733	4,084	300	4,000	3,200	4,800	1,700	9,700
1996	8,000	1,600	1,100	1,050	9,700	35,100	7,000	24,800
1997	3,500	4,431	1,000	200	4,500	9,000	7,800	9,500
1998	2,500	3,854	200	400	4,200	4,000	300	8,600
1999	3,800	6,224	3,500	500	2,000	7,000	3,000	20,000
2000	6,800	19,000	350	500	900	4,100	1,250	29,000
2001	8,100	12,100	4,500	1,300	9,500	12,100	3,000	23,000
2002	5,500	9,000	2,250	1,100	9,400	2,000	4,500	11,500
2003	9,000	1,500	1,590	800	3,500	15,000	600	16,000
2004	7,500	3,000	3,100	2,200	4,000	5,000	800	7,400
2005	1,410	3,630	5,000	1,500	3,000	2,000	1,820	4,800
2006	8,710	15,500	7,500	1,600	2,500	7,500	2,772	20,000
2007	8,060	2,920	6,500	3,000	3,550	5,300	1,500	8,000
2008	1,800	1,070	600	561	1,500	3,760	75	1,050
2009	370	770	3,000	2,200	2,000	1,500	250	1,700
2010	800	130	900	1,400	1,800	300	600	5,900
2011	520	270	800	2,500	4,000	2,500	500	4,500
2012	3,100	2,000	1,500	500	8,400	8,000	1,667	12,000
2013	15,300	2,000	10,000	3,500	800	15,500	900	10,700
2014	2,200	300	846	607	900	500	851	1,400
2015	1,835	140	3,000	1,082	5,000	5,000	400	2,500
2016	900	500	200	430	2,200	1,050	592	800
2017	15,000	1,000	4,600	1,811	3,500	10,000	2,494	2,900
2018	6,150	2,500	1,000	712	600	2,800	700	5,300
2019	460	300	5,000	806	3,500	6,200	1,000	9,500
2020	1,085	650	1,200	100	600	500	466	1,370
2021	300	200	2,000	435	2,000	6,000	598	1,500
2022	4,732	595	300	700	3,500	4,700	600	2,500
2023	5,660	1,000	5,000	200	6,200	18,500	1,800	17,800

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District	114	114	115	115	115	115	115	115	
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	Northern
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Southeast
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Inside Subregion
Stream no.	114-34-010	114-40-035	115-10-042	115-10-046	115-10-080	115-20-010	115-20-052	115-20-052	Subregion
Stream name	Humpback Creek	Trail River	St James Bay NW Side	St. James River	Endicott River	Berners River	Sawmill Creek Berners River	Sawmill Creek Berners River	index total ^a (×1,000)
1960	2,467	–	–	–	–	–	–	–	108
1961	5,708	–	–	–	–	–	–	–	251
1962	12,700	–	–	–	–	–	–	–	234
1963	5,000	–	–	–	–	–	–	–	448
1964	2,853	–	–	–	–	–	–	–	125
1965	7,129	–	–	–	–	–	–	–	313
1966	500	–	–	–	–	–	–	–	300
1967	3,000	–	–	–	–	–	–	–	419
1968	400	–	–	–	–	–	–	–	133
1969	11,000	–	–	–	–	–	–	–	160
1970	400	–	–	–	–	–	–	–	130
1971	9,000	–	–	–	–	–	–	–	343
1972	21,000	–	–	–	–	–	–	–	546
1973	10,500	–	–	–	–	–	–	–	460
1974	3,200	–	–	–	–	–	–	–	218
1975	11,600	–	–	–	–	–	–	–	69
1976	5,100	–	–	–	–	–	–	–	71
1977	3,000	–	–	–	–	–	–	–	72
1978	3,000	–	–	–	–	–	–	–	60
1979	2,000	–	–	–	–	–	–	–	75
1980	4,500	–	–	–	–	–	–	–	121
1981	7,000	–	–	–	–	–	–	–	115
1982	2,300	370	400	342	937	515	4,580	–	60
1983	2,250	3,000	825	5,000	2,539	1,397	250	–	162
1984	4,000	1,650	800	60	500	800	2,500	–	159
1985	3,700	500	2,910	100	2,337	5,400	400	–	149
1986	4,500	400	700	360	210	1,070	600	–	141
1987	2,500	500	1,000	604	400	600	1,500	–	106
1988	550	2,500	1,900	492	2,500	406	800	–	162
1989	800	500	350	302	5,000	100	100	–	53
1990	1,500	200	750	150	4,600	500	1,150	–	107
1991	2,800	7,400	1,100	436	900	657	430	–	76

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District	114	114	115	115	115	115	115	115	Northern Southeast Inside Subregion Subregion index total ^a (×1,000)
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	
Stream no.	114-34-010	114-40-035	115-10-042	115-10-046	115-10-080	115-20-010	115-20-052	115-20-010	
Stream name	Humpback Creek	Trail River	St James Bay NW Side	St. James River	Endicott River	Berners River	Sawmill Creek Berners River	Berners River	
1992	4,400	400	600	200	2,550	220	450	153	
1993	5,500	800	700	250	1,500	800	1,150	228	
1994	6,300	300	600	1,558	800	4,000	3,050	272	
1995	4,600	1,843	105	1,194	3,265	125	1,388	209	
1996	27,000	500	850	2,400	10,000	5,900	5,700	931	
1997	5,600	1,400	300	200	3,542	770	1,000	226	
1998	4,000	500	100	1,126	2,000	1,025	1,100	197	
1999	6,500	8,000	50	510	1,900	780	2,115	318	
2000	7,400	4,000	550	72	200	250	2,979	443	
2001	6,050	200	959	6,000	1,100	10,000	1,527	229	
2002	4,350	6,500	2,800	1,200	3,000	3,400	2,639	397	
2003	2,500	1,000	878	5,000	16,100	1,811	550	210	
2004	2,500	1,300	1,800	1,387	2,400	1,950	1,000	242	
2005	3,500	3,500	1,600	2,050	18,750	1,500	900	185	
2006	3,200	1,900	1,179	1,615	2,000	5,400	450	282	
2007	2,000	2,500	623	853	2,500	1,000	600	149	
2008	500	560	413	100	500	5,800	500	99	
2009	900	1,700	500	602	15,800	12,000	1,000	107	
2010	1,300	686	323	435	3,500	1,100	200	77	
2011	1,300	2,500	120	705	23,000	3,300	2,000	125	
2012	9,500	1,500	730	1,000	3,000	2,056	100	177	
2013	2,400	4,600	200	1,568	3,000	1,000	1,845	278	
2014	1,887	120	370	50	1,945	1,048	617	93	
2015	6,000	1,543	5,400	924	4,000	600	1,100	166	
2016	630	613	307	367	200	730	437	66	
2017	7,800	5,100	1,293	1,546	3,020	3,076	1,451	277	
2018	2,900	2,100	508	608	2,229	1,209	501	109	
2019	3,200	8,000	200	300	1,200	300	189	123	

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District	114	114	115	115	115	115	115	115	
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Northern Southeast Inside Subregion Subregion index total ^a (×1,000)
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	
Stream no.	114-34-010	114-40-035	115-10-042	115-10-046	115-10-080	115-20-010	115-20-052		
Stream name	Humpback Creek	Trail River	St James Bay NW Side	St. James River	Endicott River	Berners River	Sawmill Creek Berners River		
2020	2,700	1,200	240	288	400	571	200		52
2021	500	4,000	308	369	2,000	732	142		67
2022	1,800	1,200	534	640	2,349	1,269	558		116
2023	11,000	7,200	1,493	1,788	1,000	1,000	2,070		324
							Median =		160
							Minimum =		52
							Maximum =		931
							Contrast =		18

Note: Data for streams that were surveyed intermittently prior to 1982 (denoted by en dashes) were not used for index calculations.

^a Index total is the sum of all 63 index streams. Values from 1960 to 1981 were calculated using the average proportion of the total index represented by streams with consistent long-term survey data from 1960 to 2010.

Appendix A3.—Peak escapement index series for 9 Northern Southeast Outside summer-run chum salmon index streams, 1982–2023. (Note: bold values were interpolated.)

District	113	113	113	113	113
Management area	Sitka	Sitka	Sitka	Sitka	Sitka
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	NSE Outside
Survey type	Aerial	Aerial or foot	Aerial or foot	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer
Stream no.	113-22-015	113-62-009	113-73-006	113-73-010	113-73-012
Stream name	Whale Bay Great Arm Head	Kalinin Cove Head	Waterfall Cove Creek	Slocum Arm Head	Khaz Creek
1982	3,900	1,200	384	500	1,000
1983	2,500	1,271	741	1,587	966
1984	1,500	4,000	1,000	6,000	3,000
1985	2,000	12,000	500	5,000	6,000
1986	5,500	2,550	1,000	3,000	3,200
1987	4,000	4,000	729	2,000	1,300
1988	6,500	1,000	4,200	4,000	1,000
1989	1,300	60	518	1,108	500
1990	4,000	1,777	2,000	1,000	2,000
1991	8,809	6,000	1,473	3,152	1,500
1992	4,000	1,800	5,000	2,247	2,000
1993	3,677	1,054	500	1,316	1,500
1994	3,400	910	1,000	1,136	600
1995	7,550	685	1,000	3,000	4,000
1996	4,200	800	150	6,000	700
1997	7,000	1,604	3,000	1,000	1,500
1998	1,300	1,600	1,310	1,775	1,135
1999	5,000	250	438	1,000	500
2000	27,000	1,088	1,000	3,900	2,000
2001	18,300	1,270	1,100	4,000	1,000
2002	1,000	968	590	2,000	808
2003	12,800	1,510	4,000	1,680	3,500
2004	11,800	233	1,130	2,000	3,000
2005	23,800	1,110	740	2,360	910
2006	24,000	3,326	780	5,000	182
2007	8,340	1,630	520	4,865	930
2008	4,200	5,140	550	3,400	730
2009	3,000	2,000	215	275	57
2010	2,420	580	1,000	1,733	281
2011	8,550	1,190	210	500	230

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District	113	113	113	113	113
Management area	Sitka	Sitka	Sitka	Sitka	Sitka
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	NSE Outside
Survey type	Aerial	Aerial or foot	Aerial or foot	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer
Stream no.	113-22-015	113-62-009	113-73-006	113-73-010	113-73-012
Stream name	Whale Bay Great Arm Head	Kalinin Cove Head	Waterfall Cove Creek	Slocum Arm Head	Khaz Creek
2012	3,700	1,907	850	4,000	3,000
2013	2,230	1,000	990	1,800	900
2014	1,510	1,500	1,000	2,090	1,265
2015	6,730	1,250	783	1,250	1,200
2016	1,200	180	3,000	360	2,480
2017	4,200	100	430	1,290	2,150
2018	3,300	1,570	210	2,480	1,100
2019	7,100	5,000	1,000	3,090	1,000
2020	1,800	200	1,500	1,031	656
2021	1,300	682	500	655	85
2022	4,200	851	240	2,330	400
2023	505	900	291	544	200

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District	113	113	113	113	
Management area	Sitka	Sitka	Sitka	Sitka	
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	Northern
Survey type	Aerial	Aerial	Foot	Aerial	Southeast
Run type	Summer	Summer	Summer	Summer	Outside
Stream no.	113-32-005	113-72-005	113-73-003	113-81-011	Subregion
Stream name	W Crawfish NE Arm Head	Sister Lake SE Head	Lake Stream Ford Arm	Black River	index total
1982	1,933	3,000	645	500	13,062
1983	1,224	4,911	2,000	10,000	25,200
1984	30,000	25,000	1,000	17,000	88,500
1985	2,500	11,000	450	15,000	54,450
1986	18,000	3,500	400	3,000	40,150
1987	4,100	3,000	651	5,000	24,780
1988	3,500	5,000	1,033	3,000	29,233
1989	500	4,000	1,610	8,000	17,595
1990	3,000	18,000	959	2,500	35,236
1991	9,678	17,000	1,456	1,000	50,069
1992	1,000	18,000	1,140	500	35,687
1993	2,000	5,000	1,559	4,291	20,897
1994	3,000	4,000	3,000	1,000	18,046
1995	5,000	4,450	1,416	300	27,401
1996	10,500	12,650	1,271	1,000	37,271
1997	6,000	10,000	2,955	10,000	43,059
1998	7,000	5,750	2,631	2,400	24,901
1999	7,800	1,200	1,697	9,000	26,885
2000	33,000	4,041	844	31,000	103,873
2001	9,177	1,910	5,900	23,000	65,657
2002	3,450	6,550	1,927	6,000	23,293
2003	2,300	2,000	1,770	6,000	35,560
2004	6,000	22,300	1,560	37,150	85,173
2005	32,370	11,270	540	8,700	81,800
2006	8,680	8,000	4,055	11,920	65,943
2007	12,300	6,530	1,280	5,602	41,997
2008	4,300	14,900	8,475	14,500	56,195
2009	3,500	3,000	820	4,200	17,067
2010	8,170	5,240	595	7,500	27,519
2011	4,350	3,000	1,730	5,000	24,760

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District	113	113	113	113	
Management area	Sitka	Sitka	Sitka	Sitka	
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	Northern
Survey type	Aerial	Aerial	Foot	Aerial	Southeast
Run type	Summer	Summer	Summer	Summer	Outside
Stream no.	113-32-005	113-72-005	113-73-003	113-81-011	Subregion
Stream name	W Crawfish NE Arm Head	Sister Lake SE Head	Lake Stream Ford Arm	Black River	index total
2012	2,900	5,050	7,800	8,600	37,807
2013	4,200	8,300	1,320	2,070	22,810
2014	3,065	8,125	570	8,425	27,550
2015	6,970	4,090	1,286	2,725	26,285
2016	500	5,570	1,010	11,650	25,950
2017	1,310	3,470	2,230	9,600	24,780
2018	1,800	3,570	830	4,500	19,360
2019	300	270	410	7,300	25,470
2020	2,000	3,138	786	5,000	16,112
2021	610	2,262	120	5,400	11,614
2022	3,370	1,224	865	4,500	17,980
2023	438	1,320	1,450	9,000	14,648
				Median =	27,143
				Minimum =	11,614
				Maximum =	103,873
				Contrast =	8.9

Appendix A4.–Peak escapement index series for Cholmondeley Sound fall-run chum salmon index streams, 1980–2023. (Note: bold values were interpolated.)

District	102	102	
Management area	Ketchikan	Ketchikan	
Survey type	Aerial	Aerial	
Run type	Fall	Fall	Cholmondeley
Stream no.	102-40-043	102-40-060	Sound
Stream name	Disappearance Creek	Lagoon Creek	index total
1980	13,500	12,000	25,500
1981	21,000	5,000	26,000
1982	1,800	6,633	8,433
1983	4,000	11,100	15,100
1984	23,401	16,982	40,383
1985	26,000	13,632	39,632
1986	16,000	12,000	28,000
1987	32,500	13,500	46,000
1988	21,000	14,800	35,800
1989	19,800	15,000	34,800
1990	22,000	8,300	30,300
1991	33,000	25,000	58,000
1992	21,000	15,500	36,500
1993	29,000	17,000	46,000
1994	22,700	20,000	42,700
1995	20,000	15,000	35,000
1996	38,000	23,500	61,500
1997	18,000	12,800	30,800
1998	32,500	26,000	58,500
1999	50,000	50,000	100,000
2000	21,500	14,300	35,800
2001	22,000	23,000	45,000
2002	22,000	17,000	39,000
2003	45,000	30,000	75,000
2004	30,000	30,000	60,000
2005	7,600	7,000	14,600
2006	38,000	16,000	54,000
2007	9,500	8,500	18,000
2008	35,500	14,000	49,500
2009	26,000	13,000	39,000
2010	45,000	31,000	76,000
2011	50,000	43,000	93,000
2012	32,000	22,000	54,000
2013	5,200	8,000	13,200
2014	29,500	18,000	47,500
2015	47,000	26,000	73,000
2016	14,000	16,000	30,000
2017	29,000	22,500	51,500
2018	26,000	44,000	70,000
2019	13,000	7,000	20,000
2020	18,000	12,000	30,000
2021	35,000	20,000	55,000
2022	25,000	17,000	42,000
2023	55,000	38,000	93,000
		Minimum =	8.4
		Maximum =	100.0
		Contrast =	11.9

Appendix A5.—Peak escapement index series for Northern Southeast Subregion fall-run chum salmon index streams, 1964–2023. (Note: bold values were interpolated.)

District	109	109		109			114	
Management area	Petersburg	Petersburg		Petersburg			Juneau	
Subregion	NSE Inside	NSE Inside		NSE Inside			NSE Inside	
Survey type	Aerial	Aerial		Aerial			Aerial	
Run type	Fall	Fall		Fall			Fall	
Stream no.	109-43-006	109-43-008		109-45-013	Salt Chuck		114-80-020	
Stream name	Port Camden S Head	Port Camden W Head	Port Camden index total	Salt Chuck Security	Security index total		Excursion River	Excursion index total
1964	300	1,500	1,800	20,000	20,000		6,200	6,200
1965	50	1,200	1,250	12,500	12,500		34,500	34,500
1966	8,000	200	8,200	2,500	2,500		3,000	3,000
1967	10,000	3,500	13,500	2,500	2,500		22,500	22,500
1968	4,000	600	4,600	5,000	5,000		40,000	40,000
1969	2,100	1,103	3,203	9,000	9,000		25,300	25,300
1970	5,000	1,300	6,300	13,000	13,000		12,000	12,000
1971	2,000	750	2,750	7,000	7,000		42,000	42,000
1972	2,500	20	2,520	12,300	12,300		65,000	65,000
1973	7,000	700	7,700	16,350	16,350		19,000	19,000
1974	2,630	1,400	4,030	18,001	18,001		2,050	2,050
1975	2,300	1,300	3,600	2,800	2,800		33,000	33,000
1976	1,450	450	1,900	6,810	6,810		10,200	10,200
1977	3,000	800	3,800	7,900	7,900		4,900	4,900
1978	6,100	1,235	7,335	5,875	5,875		450	450
1979	3,300	500	3,800	1,800	1,800		4,000	4,000
1980	4,100	2,220	6,320	13,800	13,800		34,500	34,500
1981	4,100	2,500	6,600	3,500	3,500		33,500	33,500
1982	3,800	1,550	5,350	12,000	12,000		1,640	1,640
1983	771	680	1,451	4,830	4,830		3,300	3,300
1984	6,800	3,200	10,000	19,000	19,000		7,750	7,750
1985	8,700	3,500	12,200	21,000	21,000		4,025	4,025
1986	8,200	6,070	14,270	12,000	12,000		9,150	9,150
1987	7,400	1,550	8,950	11,200	11,200		2,000	2,000
1988	4,100	3,250	7,350	15,500	15,500		3,700	3,700
1989	4,700	2,350	7,050	8,410	8,410		2,050	2,050
1990	3,000	960	3,960	20,040	20,040		5,100	5,100
1991	3,100	1,800	4,900	6,000	6,000		900	900
1992	2,900	2,206	5,106	19,300	19,300		2,700	2,700
1993	5,100	1,700	6,800	7,400	7,400		8,200	8,200
1994	3,800	1,150	4,950	4,900	4,900		4,300	4,300
1995	2,000	1,200	3,200	14,000	14,000		6,140	6,140

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District	109	109		109		114	
Management area	Petersburg	Petersburg		Petersburg		Juneau	
Subregion	NSE Inside	NSE Inside		NSE Inside		NSE Inside	
Survey type	Aerial	Aerial		Aerial		Aerial	
Run type	Fall	Fall		Fall		Fall	
Stream no.	109-43-006	109-43-008		109-45-013	Salt Chuck	114-80-020	
Stream name	Port Camden S Head	Port Camden W Head	Port Camden index total	Salt Chuck Security	Security index total	Excursion River	Excursion index total
1996	3,400	1,350	4,750	19,000	19,000	9,200	9,200
1997	2,000	1,500	3,500	5,400	5,400	34,400	34,400
1998	3,600	2,200	5,800	31,500	31,500	8,000	8,000
1999	920	600	1,520	20,000	20,000	10,000	10,000
2000	1,400	1,100	2,500	12,500	12,500	17,000	17,000
2001	ND	ND	ND	3,500	3,500	17,750	17,750
2002	300	150	450	6,000	6,000	4,680	4,680
2003	131	545	676	8,700	8,700	6,300	6,300
2004	1,700	1,600	3,300	13,100	13,100	5,200	5,200
2005	1,820	290	2,110	2,750	2,750	1,100	1,100
2006	2,250	170	2,420	15,000	15,000	2,203	2,203
2007	280	225	505	5,400	5,400	6,000	6,000
2008	1,150	250	1,400	11,700	11,700	8,000	8,000
2009	1,211	500	1,711	5,100	5,100	1,400	1,400
2010	3,900	1,500	5,400	6,500	6,500	6,100	6,100
2011	600	1,200	1,800	5,100	5,100	3,000	3,000
2012	1,900	1,850	3,750	9,800	9,800	2,020	2,020
2013	1,300	1,100	2,400	2,800	2,800	7,600	7,600
2014	1,600	2,700	4,300	6,300	6,300	10,800	10,800
2015	3,200	4,050	7,250	21,500	21,500	12,000	12,000
2016	3,200	1,500	4,700	14,300	14,300	1,400	1,400
2017	2,100	2,100	4,200	15,500	15,500	14,450	14,450
2018	600	400	1,000	5,600	5,600	6,200	6,200
2019	1,100	3,700	4,800	14,300	14,300	3,600	3,600
2020	1,300	200	1,500	11,500	11,500	200	200
2021	1,500	720	2,220	3,000	3,000	1,900	1,900
2022	500	200	700	3,000	3,000	800	800
2023	300	500	800	18,500	18,500	7,700	7,700
		Minimum =	0		2		0
		Maximum =	14		32		65
		Contrast =	32		18		325

Appendix A6.—Revised peak escapement index series for 50 Northern Southeast Inside summer-run chum salmon index streams, 1960–2023.
 (Note: bold values were interpolated.)

District	108	109	109	109	110	110	110	110
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	108-41-010	109-30-016	109-62-014	109-62-024	110-22-004	110-22-012	110-22-014	110-23-008
Stream name	North Arm Creek	Tyee Head East	Sample Creek	Petrof Bay W Head	Amber Creek N Arm Pybus	Donkey Creek	Cannery Cove Pybus Bay	Johnston Creek
1960	524	—	—	—	—	—	—	—
1961	500	—	—	—	—	—	—	—
1962	100	—	—	—	—	—	—	—
1963	503	—	—	—	—	—	—	—
1964	697	—	—	—	—	—	—	—
1965	630	—	—	—	—	—	—	—
1966	1,342	—	—	—	—	—	—	—
1967	875	—	—	—	—	—	—	—
1968	1,400	—	—	—	—	—	—	—
1969	658	—	—	—	—	—	—	—
1970	545	—	—	—	—	—	—	—
1971	1,297	—	—	—	—	—	—	—
1972	3,000	—	—	—	—	—	—	—
1973	600	—	—	—	—	—	—	—
1974	1,000	—	—	—	—	—	—	—
1975	250	—	—	—	—	—	—	—
1976	750	—	—	—	—	—	—	—
1977	440	—	—	—	—	—	—	—
1978	630	—	—	—	—	—	—	—
1979	835	—	—	—	—	—	—	—
1980	1,450	—	—	—	—	—	—	—
1981	643	—	—	—	—	—	—	—
1982	840	700	200	440	131	1,600	227	64
1983	812	3,642	150	770	50	1,300	150	600
1984	3,470	4,043	1,600	855	517	2,845	1,000	2,500
1985	1,826	400	700	2,862	703	1,455	172	400
1986	1,068	7,000	4,500	552	500	450	350	600
1987	1,040	6,500	500	100	250	3,300	1,515	800
1988	1,280	13,500	2,096	700	300	7,700	3,350	8,000
1989	404	4,000	800	45	132	1,010	400	450
1990	4,095	10,000	839	575	850	2,800	700	2,000
1991	265	600	603	400	200	1,200	100	700

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District	108	109	109	109	110	110	110	110
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Foot	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	108-41-010	109-30-016	109-62-014	109-62-024	110-22-004	110-22-012	110-22-014	110-23-008
Stream name	North Arm Creek	Tyee Head East	Sample Creek	Petrof Bay W Head	Amber Creek N Arm Pybus	Donkey Creek	Cannery Cove Pybus Bay	Johnston Creek
1992	708	8,500	600	1,700	439	1,500	1,500	500
1993	926	7,500	1,017	538	500	6,000	2,700	1,200
1994	740	4,500	1,450	400	793	3,900	2,400	1,958
1995	570	23,300	1,424	2,040	600	8,360	1,651	550
1996	2,530	18,000	9,280	2,898	1,200	13,500	4,800	7,410
1997	1,420	1,950	800	3,540	50	11,000	1,800	3,350
1998	1,271	1,050	300	300	500	12,000	2,900	600
1999	350	6,300	400	500	800	10,500	3,400	600
2000	2,280	34,000	300	500	2,100	15,000	6,200	2,700
2001	820	400	1,976	1,305	450	4,500	2,800	1,050
2002	881	100	3,263	2,238	1,149	2,100	1,525	2,835
2003	606	2,500	1,469	4,650	517	2,500	1,300	1,276
2004	800	4,100	2,200	1,400	600	8,100	5,200	2,100
2005	850	300	1,318	350	200	4,000	1,800	900
2006	1,100	4,000	1,500	1,100	1,150	10,000	3,100	1,000
2007	883	1,300	1,000	300	400	2,500	450	300
2008	616	500	1,000	200	500	800	600	200
2009	891	1,934	150	50	700	400	900	518
2010	588	400	4,300	200	1,000	500	780	507
2011	1,324	600	660	526	300	2,700	1,100	200
2012	3,627	150	1,550	1,200	500	3,300	1,300	900
2013	1,981	7,517	2,318	1,590	816	4,900	1,900	1,200
2014	650	200	730	600	257	1,600	300	250
2015	1,222	1,200	600	892	458	800	250	700
2016	860	1,711	528	362	186	1,400	200	458
2017	3,000	7,325	2,259	1,549	795	4,000	2,050	1,962
2018	699	2,860	5,000	2,500	310	4,000	510	766
2019	808	3,304	1,019	699	359	800	1,086	300
2020	344	1,408	434	298	153	1,174	463	377
2021	243	1,753	540	371	190	500	2,500	470
2022	732	3,091	953	654	335	2,577	1,016	900
2023	1,000	8,671	2,674	1,834	941	1,500	2,850	3,000

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District	110	110	110	110	110	111	111	111
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-23-010	110-32-009	110-33-013	110-34-006	110-34-008	111-13-010	111-15-024	111-15-030
Stream name	Bowman Creek	Chuck River Windham Bay	Lauras Creek	Glen Creek	Sanborn Creek	Mole River	Windfall Harbor W Side	Pack Creek
1960	–	–	3,200	200	200	–	–	700
1961	–	–	500	2,000	10,000	–	–	2,835
1962	–	–	6,900	3,000	7,400	–	–	7,400
1963	–	–	1,500	4,500	4,200	–	–	5,358
1964	–	–	6,000	26,000	4,000	–	–	2,140
1965	–	–	800	2,068	300	–	–	1,936
1966	–	–	45,000	1,100	10,200	–	–	4,121
1967	–	–	20,000	700	35,000	–	–	500
1968	–	–	4,427	1,599	2,000	–	–	2,000
1969	–	–	5,978	2,159	3,792	–	–	400
1970	–	–	12,900	1,789	5,400	–	–	2,500
1971	–	–	25,550	5,800	3,650	–	–	6,530
1972	–	–	6,000	2,000	5,600	–	–	5,700
1973	–	–	4,000	1,500	3,000	–	–	5,000
1974	–	–	20,000	1,000	5,560	–	–	5,000
1975	–	–	200	50	100	–	–	175
1976	–	–	300	922	1,620	–	–	1,100
1977	–	–	850	700	500	–	–	1,700
1978	–	–	1,800	1,700	500	–	–	500
1979	–	–	1,420	160	1,090	–	–	200
1980	–	–	1,500	900	2,274	–	–	200
1981	–	–	773	1,409	1,200	–	–	1,319
1982	223	207	2,000	50	1,200	400	300	950
1983	133	1,135	200	148	508	150	625	100
1984	857	1,630	3,500	1,200	1,900	580	1,500	1,000
1985	805	1,118	1,600	700	925	500	386	2,400
1986	500	300	1,500	500	900	300	300	700
1987	1,328	871	1,510	405	2,000	1,009	200	1,000
1988	3,460	2,600	9,411	900	5,029	700	350	300
1989	100	380	500	600	500	440	209	660
1990	1,000	600	1,500	570	2,400	500	200	600
1991	300	610	1,050	900	1,000	200	100	200

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District	110	110	110	110	110	111	111	111
Management area	Petersburg	Petersburg	Petersburg	Petersburg	Petersburg	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	110-23-010	110-32-009	110-33-013	110-34-006	110-34-008	111-13-010	111-15-024	111-15-030
Stream name	Bowman Creek	Chuck River Windham Bay	Lauras Creek	Glen Creek	Sanborn Creek	Mole River	Windfall Harbor W Side	Pack Creek
1992	620	1,000	1,800	800	900	300	700	600
1993	500	1,000	1,400	1,600	2,900	200	250	800
1994	250	500	1,500	850	950	4,000	200	3,500
1995	300	400	800	500	7,090	340	20	800
1996	2,000	7,100	2,320	1,240	14,300	9,211	3,000	8,000
1997	610	2,000	2,076	3,000	1,000	2,204	1,047	6,500
1998	275	830	500	725	1,000	1,877	3,000	8,000
1999	400	802	900	400	700	6,000	1,100	4,000
2000	1,100	3,050	4,800	4,000	8,200	2,010	600	2,600
2001	500	1,100	1,300	500	2,500	500	2,500	1,500
2002	1,622	200	3,600	1,800	1,200	3,100	1,950	5,000
2003	730	1,485	350	700	700	500	4,000	17,000
2004	900	3,000	2,800	3,000	9,930	8,000	1,141	12,500
2005	500	1,332	650	700	8,199	6,000	733	1,000
2006	2,300	1,400	600	1,000	7,300	3,000	300	4,500
2007	400	500	1,420	1,300	1,700	900	759	1,000
2008	400	400	900	400	1,500	909	300	950
2009	200	1,600	658	200	1,200	698	332	1,000
2010	800	600	300	850	700	2,500	300	2,100
2011	381	775	1,088	400	900	1,900	400	1,900
2012	1,900	2,700	1,200	1,400	900	1,000	792	3,000
2013	700	7,100	2,577	1,900	3,400	1,700	1,290	3,100
2014	800	1,800	805	1,500	1,300	855	406	1,284
2015	647	4,500	3,500	900	2,244	1,523	724	2,280
2016	262	1,300	500	1,700	1,900	618	294	928
2017	1,000	1,500	2,492	800	2,500	2,644	1,257	3,972
2018	438	600	973	600	1,520	250	491	100
2019	506	1,000	1,124	693	800	1,200	567	125
2020	216	439	479	600	749	703	242	1,000
2021	269	546	596	368	932	750	20	951
2022	750	3,000	2000	2,000	2,000	2,800	1,800	1,700
2023	7,000	20,000	2,500	9,000	18,000	2,500	2,000	2,500

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District	111	111	111	111	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	111-16-040	111-17-010	111-33-010	111-41-005	112-15-062	112-19-010	112-21-005	112-21-006
Stream name	Swan Cove Creek	King Salmon River	Prospect Creek Speel	Admiralty Creek	Robinson Creek	Wilson River	Clear River Kelp Bay	Ralphs Creek
1960	–	10,000	–	1,207	1,126	500	600	2,700
1961	–	1,930	–	2,630	2,453	2,900	4,000	750
1962	–	15,200	–	2,837	2,646	1,000	13,800	3,469
1963	–	8,782	–	4,996	4,660	8,000	45,000	12,000
1964	–	3,489	–	3,000	1,851	2,000	4,000	200
1965	–	8,000	–	1,796	1,675	500	31,000	9,000
1966	–	8,000	–	400	500	750	12,000	1,000
1967	–	4,000	–	300	920	350	28,500	500
1968	–	4,000	–	2,025	1,295	636	15,000	3,000
1969	–	1,500	–	1,875	500	100	5,000	2,292
1970	–	2,000	–	1,553	50	711	25,000	1,000
1971	–	1,500	–	9,600	3,800	400	15,000	4,518
1972	–	2,500	–	3,500	8,200	400	11,500	9,000
1973	–	14,000	–	10,000	9,000	200	45,000	5,000
1974	–	6,000	–	800	1,000	1,900	29,400	1,500
1975	–	60	–	2,000	1,700	350	4,798	1,015
1976	–	500	–	650	750	100	500	979
1977	–	100	–	1,000	1,130	330	4,000	997
1978	–	1,051	–	200	558	274	1,300	731
1979	–	100	–	500	800	2,000	4,000	984
1980	–	400	–	1,100	3,000	400	1,000	900
1981	–	400	–	1,224	2,000	560	7,073	3,500
1982	350	500	300	450	500	200	5,000	3,000
1983	603	300	75	520	3,200	1,625	8,000	6,000
1984	2,100	4,150	800	6,040	550	3,800	4,000	1,000
1985	359	3,200	177	2,630	500	160	2,000	5,000
1986	1,000	4,750	825	1,000	1,200	500	12,000	4,200
1987	200	2,000	907	1,728	500	400	23,000	1,000
1988	600	1,300	1,750	250	350	350	25,000	100
1989	202	300	630	200	400	500	1,086	3,000
1990	550	1,050	750	800	1,200	500	8,000	2,000
1991	100	1,300	200	200	1,000	873	8,000	2,086

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District	111	111	111	111	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	111-16-040	111-17-010	111-33-010	111-41-005	112-15-062	112-19-010	112-21-005	112-21-006
Stream name	Swan Cove Creek	King Salmon River	Prospect Creek Speel	Admiralty Creek	Robinson Creek	Wilson River	Clear River Kelp Bay	Ralphs Creek
1992	669	1,300	400	257	1,000	1,900	4,000	1,100
1993	1,018	1,000	400	500	1,800	6,000	3,500	4,000
1994	1,200	5,800	500	500	1,500	2,000	5,000	2,000
1995	965	2,200	600	200	400	2,200	8,000	10,800
1996	900	9,000	2,700	900	2,750	5,600	5,000	8,395
1997	200	3,400	321	50	4,000	500	12,000	7,000
1998	2,000	7,100	5,000	700	1,000	3,100	3,000	4,000
1999	500	3,500	500	2,099	2,000	4,000	3,000	5,000
2000	625	4,110	2,250	300	1,350	5,700	4,800	11,300
2001	100	1,150	1,000	5,500	2,074	2,000	5,500	14,400
2002	1,000	2,800	3,000	3,500	4,750	3,100	3,000	9,000
2003	500	3,914	400	600	3,200	500	4,248	8,430
2004	1,000	5,000	1,100	1,692	1,000	3,000	3,000	5,600
2005	707	6,000	1,130	500	2,500	5,500	3,810	5,300
2006	1,088	3,500	800	2,500	2,309	1,200	1,100	14,000
2007	300	2,500	800	4,700	4,500	3,500	2,500	8,600
2008	417	800	1,100	641	800	2,900	400	4,000
2009	400	1,700	1,900	500	2,400	1,700	350	2,200
2010	313	4,600	2,900	300	1,750	844	400	2,600
2011	900	3,000	3,000	632	4,000	2,500	1,070	3,350
2012	2,900	13,800	1,800	2,600	1,700	2,058	200	5,600
2013	600	4,000	700	1,700	2,300	3,500	550	9,300
2014	6,000	3,800	550	150	832	100	900	10,500
2015	698	12,000	4,300	500	1,482	1,000	205	1,610
2016	150	850	1,100	100	800	1,300	450	2,500
2017	1,200	3,200	1,800	500	3,800	3,268	400	11,750
2018	100	2,000	1,700	680	1,004	50	470	6,500
2019	100	3,100	3,500	4,000	1,500	1,700	350	2,300
2020	40	2,500	600	400	494	150	900	215
2021	290	1,400	800	300	2,200	2,900	600	682
2022	512	1,300	400	100	400	7,500	5,443	6,006
2023	800	2,500	500	600	4,000	6,300	3,100	7,000

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District	112	112	112	112	112	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-42-025	112-44-010	112-46-009	112-47-010	112-48-015	112-48-019	112-48-023	112-48-035	
Stream name	Kadashan Creek	Saltery Bay Head	Seal Bay Head	Long Bay Head	Big Goose Creek	Little Goose Creek	West Bay Head Creek	Tenakee Inlet Head	
1960	–	700	4,000	10,000	5,000	–	1,000	4,000	
1961	–	300	3,000	15,000	25,000	–	24,000	10,000	
1962	–	1,750	4,400	2,800	7,400	–	3,200	6,000	
1963	–	3,000	12,000	18,000	11,000	–	8,000	13,000	
1964	–	1,194	8,519	8,570	4,200	–	3,000	4,895	
1965	–	1,080	4,200	2,600	3,000	–	600	4,428	
1966	–	5,500	14,000	15,000	4,150	–	13,350	7,000	
1967	–	1,800	19,000	23,800	23,800	–	30,700	20,530	
1968	–	835	1,000	3,500	4,000	–	3,020	4,500	
1969	–	1,128	5,000	5,000	10,200	–	4,000	7,500	
1970	–	934	4,000	3,000	1,100	–	1,800	5,000	
1971	–	75	20,000	7,000	18,000	–	9,000	1,200	
1972	–	2,900	49,000	35,000	29,000	–	18,000	12,000	
1973	–	4,000	33,000	28,000	5,300	–	13,000	12,000	
1974	–	1,668	20,500	17,000	5,000	–	6,000	2,500	
1975	–	1,500	4,000	4,000	3,000	–	500	500	
1976	–	482	10,500	3,000	550	–	150	1,975	
1977	–	400	1,000	840	250	–	400	800	
1978	–	360	1,000	3,000	1,000	–	1,683	1,474	
1979	–	200	1,000	2,781	300	–	2,267	180	
1980	–	195	5,000	4,700	2,500	–	3,579	200	
1981	–	2,000	4,200	2,000	2,000	–	2,500	1,500	
1982	5,000	951	2,800	5,000	3,000	827	1,000	300	
1983	1,000	312	7,700	12,000	14,100	149	2,000	4,000	
1984	3,978	250	6,200	8,430	7,600	2,142	1,600	1,000	
1985	3,000	400	5,000	7,000	10,050	100	15,300	1,900	
1986	1,800	1,000	4,500	10,000	10,000	50	2,000	1,050	
1987	2,750	300	1,000	1,000	1,300	1,481	1,000	1,100	
1988	7,600	200	6,200	6,000	5,400	130	4,300	1,925	
1989	1,000	500	1,000	1,200	2,100	645	1,800	1,300	
1990	2,100	200	2,700	2,200	3,050	100	500	1,500	
1991	1,000	1,000	5,500	3,200	5,000	1,037	2,000	2,000	

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District	112	112	112	112	112	112	112	112	112
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-42-025	112-44-010	112-46-009	112-47-010	112-48-015	112-48-019	112-48-023	112-48-035	
Stream name	Kadashan Creek	Saltery Bay Head	Seal Bay Head	Long Bay Head	Big Goose Creek	Little Goose Creek	West Bay Head Creek	Tenakee Inlet Head	
1992	2,000	1,100	9,300	10,100	8,300	200	8,400	6,100	
1993	3,500	1,050	7,000	7,100	19,700	1,000	10,500	9,200	
1994	6,200	2,800	19,000	42,500	39,200	1,500	29,510	18,000	
1995	3,600	2,000	7,000	10,000	22,000	500	7,900	13,000	
1996	43,000	32,700	89,000	105,000	84,000	2,000	57,000	103,000	
1997	3,500	3,500	5,700	19,900	9,400	1,400	15,000	11,000	
1998	3,000	400	11,000	15,000	10,000	7,700	23,000	6,700	
1999	2,500	1,100	20,000	28,000	21,000	2,150	32,000	15,000	
2000	10,800	10,500	22,500	28,500	25,000	4,800	42,000	15,000	
2001	700	4,150	5,000	2,275	2,935	1,000	5,200	10,000	
2002	19,000	21,000	55,000	42,000	23,000	7,500	23,500	28,500	
2003	5,700	700	7,600	4,000	1,100	5,000	5,000	12,000	
2004	10,000	4,100	21,000	10,700	4,500	800	20,000	5,500	
2005	3,000	2,000	13,000	9,000	1,500	8,000	8,000	4,500	
2006	3,500	2,500	8,000	12,200	2,900	6,500	12,800	5,300	
2007	4,353	2,500	3,600	12,000	3,500	2,050	12,500	4,000	
2008	2,500	1,100	6,050	19,000	900	5,700	5,800	2,800	
2009	500	500	3,750	3,800	3,000	5,300	4,200	1,300	
2010	800	300	2,800	1,800	1,200	1,800	3,900	1,200	
2011	500	1,515	6,500	4,500	2,500	3,000	2,000	2,500	
2012	1,250	1,100	9,000	5,050	6,000	1,200	3,700	3,500	
2013	21,000	1,550	22,200	17,500	7,000	8,100	8,000	7,500	
2014	1,500	800	4,500	7,200	560	1,190	6,200	225	
2015	4,152	800	12,000	16,000	400	19,000	950	8,000	
2016	1,000	800	5,500	4,520	1,100	900	2,800	6,150	
2017	3,000	4,000	14,100	25,000	15,800	1,000	21,600	5,500	
2018	4,000	800	1,700	5,900	4,900	200	4,100	4,000	
2019	600	3,800	6,000	9,300	6,100	50	2,600	2,800	
2020	1,400	4,700	2,100	2,400	1,800	200	1,500	1,500	
2021	1,100	1,200	1,500	1,200	1,100	500	1,800	2,500	
2022	2,000	3,000	3,500	2,600	1,400	200	6,000	3,300	
2023	3,000	4,000	19,500	18,000	18,500	3,000	5,000	4,200	

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District	112	112	112	112	112	112	112	113
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-50-020	112-50-030	112-65-024	112-72-011	112-73-024	112-80-028	112-90-014	113-53-003
Stream name	Kennel Creek	Freshwater Creek	Greens Creek	Weir Creek N Arm Hood Bay	Weir Creek S Arm Hood Bay	Chaik Bay Creek	Whitewater Creek	Saook Bay West Head
1960	1,559	–	1,150	267	1,093	3,500	1,412	–
1961	3,398	–	500	583	9,000	4,000	2,500	–
1962	1,750	–	2,704	150	5,000	20,000	2,350	–
1963	4,000	–	7,000	1,107	4,525	9,583	1,000	–
1964	2,500	–	3,500	440	1,798	8,560	1,100	–
1965	2,320	–	1,711	398	607	300	1,240	–
1966	3,850	–	5,025	847	700	2,200	3,211	–
1967	9,500	–	1,500	1,120	300	13,000	6,000	–
1968	6,500	–	1,800	308	1,258	1,000	4,000	–
1969	1,400	–	1,000	320	4,200	1,500	500	–
1970	5,900	–	200	150	600	1,500	1,200	–
1971	1,500	–	500	500	500	2,800	4,324	–
1972	3,500	–	4,100	1,500	3,000	6,000	9,000	–
1973	6,567	–	2,000	400	4,000	12,000	14,000	–
1974	3,328	–	200	500	5,000	3,000	6,000	–
1975	2,000	–	1,500	50	300	800	500	–
1976	1,100	–	400	40	300	3,500	200	–
1977	1,500	–	4,000	331	1,800	690	300	–
1978	1,150	–	700	100	1,000	500	800	–
1979	800	–	6,000	194	100	2,000	400	–
1980	2,000	–	3,200	1,080	1,500	4,000	2,000	–
1981	2,600	–	2,000	1,400	1,600	1,600	200	–
1982	140	250	900	450	500	1,600	300	1,100
1983	500	600	500	700	500	2,000	2,550	2,567
1984	1,400	600	1,800	1,800	1,600	6,900	3,000	1,500
1985	2,000	2,000	4,000	5,000	5,800	2,500	2,000	5,000
1986	2,200	750	6,500	1,300	3,000	8,300	2,000	1,000
1987	450	902	1,750	630	1,800	2,000	700	1,970
1988	1,100	300	800	1,600	620	6,500	1,800	3,500
1989	500	300	500	700	400	2,000	2,000	858
1990	4,050	300	4,150	1,000	500	1,500	1,700	3,500
1991	2,050	632	200	1,000	200	500	967	2,000

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District	112	112	112	112	112	112	112	113
Management area	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Sitka
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	112-50-020	112-50-030	112-65-024	112-72-011	112-73-024	112-80-028	112-90-014	113-53-003
Stream name	Kennel Creek	Freshwater Creek	Greens Creek	Weir Creek N Arm Hood Bay	Weir Creek S Arm Hood Bay	Chaik Bay Creek	Whitewater Creek	Saook Bay West Head
1992	3,150	1,000	600	8,300	4,300	11,200	5,000	2,000
1993	8,900	1,650	1,000	7,700	2,200	23,600	9,900	4,333
1994	1,300	1,300	1,100	2,300	500	6,500	2,500	500
1995	6,155	6,000	900	650	1,500	6,300	4,100	100
1996	39,300	2,600	11,500	22,000	13,000	21,000	4,500	6,600
1997	7,000	500	2,000	4,134	4,900	8,100	3,000	1,700
1998	2,700	1,678	500	500	550	5,000	2,000	4,000
1999	3,300	2,662	1,200	13,000	6,000	10,000	8,950	5,815
2000	3,000	441	2,300	3,000	16,500	21,700	5,300	10,630
2001	5,000	600	1,500	3,900	3,600	12,000	1,700	9,500
2002	2,950	4,750	1,450	8,000	4,050	10,750	1,500	5,500
2003	1,000	500	300	500	500	3,800	3,700	3,358
2004	2,000	2,400	2,150	2,300	2,500	13,000	4,200	3,500
2005	1,400	1,800	500	4,000	2,500	4,000	2,500	3,012
2006	3,700	2,121	2,165	7,100	3,500	8,700	4,000	17,500
2007	1,500	5,500	1,000	2,000	2,308	4,500	1,500	6,950
2008	400	1,000	550	1,706	500	4,100	1,500	1,800
2009	1,500	1,500	200	1,309	1,500	1,300	1,000	490
2010	800	700	1,100	1,000	700	900	700	2,400
2011	300	2,000	3,000	500	400	1,800	1,500	1,420
2012	400	20	2,510	6,800	3,200	9,500	1,000	3,240
2013	650	6,000	1,810	3,000	500	19,500	2,300	1,740
2014	1,425	764	780	1,604	1,235	6,500	400	2,300
2015	200	1,500	1,390	1,500	2,201	4,500	2,085	795
2016	1,530	552	100	1,159	300	3,300	846	1,000
2017	4,426	2,364	2,413	4,960	3,820	20,000	3,619	6,000
2018	0	923	300	1,937	0	8,000	300	4,180
2019	300	1,066	200	2,237	5,000	4,000	600	2,100
2020	1,000	1,200	464	953	734	2,500	100	2,500
2021	1,500	2,000	300	300	1,500	5,500	550	1,210
2022	3,200	1,500	200	3,000	1,000	3,300	2,000	3,300
2023	5,000	2,500	1,500	7,300	4,522	12,300	5,500	4,265

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District	113	113	114	114	114	114	114	114	114
Management area	Sitka	Sitka	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	113-54-007	113-56-003	114-23-070	114-25-010	114-27-030	114-31-013	114-32-004	114-33-023	
Stream name	Rodman Creek	Ushk Bay W End	Mud Bay River	Homeshore Creek	Spasski Creek	Game Creek	Seagull Creek	Neka River	
1960	815	–	–	–	2,000	5,330	1,050	5,250	
1961	1,000	–	–	–	3,000	2,000	1,200	10,700	
1962	2,600	–	–	–	5,949	12,531	2,200	11,800	
1963	3,375	–	–	–	25,000	45,000	4,000	23,500	
1964	1,341	–	–	–	6,500	4,150	500	2,600	
1965	5,000	–	–	–	3,765	2,800	1,025	10,000	
1966	2,583	–	–	–	7,400	6,000	8,500	43,500	
1967	3,415	–	–	–	9,000	30,000	4,000	9,000	
1968	938	–	–	–	500	6,000	1,431	3,000	
1969	1,267	–	–	–	5,500	9,500	1,933	16,500	
1970	3,000	–	–	–	400	1,000	700	8,200	
1971	500	–	–	–	2,100	20,000	2,500	43,000	
1972	2,360	–	–	–	15,500	40,000	6,343	51,000	
1973	1,500	–	–	–	3,000	12,000	5,239	39,000	
1974	1,500	–	–	–	300	3,500	2,859	10,000	
1975	500	–	–	–	400	400	200	7,000	
1976	200	–	–	–	1,500	5,200	300	5,039	
1977	500	–	–	–	8,000	1,700	2,300	9,000	
1978	1,500	–	–	–	2,000	2,000	3,500	1,600	
1979	544	–	–	–	415	7,000	300	9,000	
1980	500	–	–	–	5,300	13,300	550	8,500	
1981	1,000	–	–	–	4,000	5,500	4,200	7,500	
1982	300	727	500	415	800	2,500	220	2,500	
1983	2,948	1,695	400	550	500	8,000	1,550	24,500	
1984	3,273	2,025	220	600	3,250	12,200	2,400	10,550	
1985	500	500	1,431	762	3,500	4,300	1,200	7,000	
1986	1,000	2,000	1,484	515	2,300	3,900	500	12,500	
1987	3,000	3,000	150	594	500	5,020	2,300	8,000	
1988	500	3,500	100	150	950	2,880	600	4,000	
1989	986	567	486	100	910	1,500	200	2,800	
1990	3,000	300	1,085	300	2,500	2,000	110	11,000	
1991	1,585	3,000	200	600	1,500	2,300	1,200	4,400	

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District	113	113	114	114	114	114	114	114
Management area	Sitka	Sitka	Juneau	Juneau	Juneau	Juneau	Juneau	Juneau
Subregion	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside	NSE Inside
Survey type	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial	Aerial
Run type	Summer	Summer	Summer	Summer	Summer	Summer	Summer	Summer
Stream no.	113-54-007	113-56-003	114-23-070	114-25-010	114-27-030	114-31-013	114-32-004	114-33-023
Stream name	Rodman Creek	Ushk Bay W End	Mud Bay River	Homeshore Creek	Spasski Creek	Game Creek	Seagull Creek	Neka River
1992	3,274	1,883	50	700	3,000	3,000	1,200	9,700
1993	4,977	2,862	2,000	1,100	3,700	11,900	4,100	12,500
1994	5,917	500	300	2,200	4,600	3,400	1,700	9,300
1995	4,721	2,715	300	4,000	3,200	4,800	1,700	9,700
1996	8,000	1,600	1,100	1,050	9,700	35,100	5,300	24,800
1997	3,500	2,842	1,000	200	4,500	9,000	5,400	9,500
1998	2,500	2,421	200	400	4,200	4,000	300	8,600
1999	3,800	3,841	3,500	500	2,000	7,000	3,000	20,000
2000	6,800	21,700	350	500	900	4,100	1,250	29,000
2001	8,100	12,100	4,500	1,300	9,500	12,100	3,000	23,000
2002	5,500	1,868	2,250	1,100	9,400	2,000	4,500	11,500
2003	7,000	1,500	1,901	800	3,500	15,000	600	16,000
2004	7,500	3,000	3,100	2,200	4,000	5,000	800	7,400
2005	1,410	530	5,000	1,500	3,000	2,000	1,233	4,800
2006	8,710	2,950	7,500	1,397	2,500	7,500	1,896	20,000
2007	8,060	2,060	6,500	3,000	3,550	5,300	1,500	8,000
2008	1,800	1,070	600	535	1,500	3,760	75	1,050
2009	370	770	3,000	2,200	2,000	1,500	250	1,700
2010	800	130	900	1,400	1,800	300	600	5,900
2011	520	270	800	2,500	4,000	2,500	500	4,500
2012	3,100	2,000	1,500	500	8,400	8,000	1,331	12,000
2013	17,540	2,000	10,000	3,500	800	15,500	900	10,700
2014	2,200	300	945	503	900	500	683	1,400
2015	1,835	140	3,000	897	5,000	5,000	400	2,500
2016	900	500	200	364	2,200	1,050	494	800
2017	15,000	1,000	4,600	1,557	3,500	10,000	2,113	2,900
2018	6,150	2,500	1,000	608	600	2,800	700	5,300
2019	460	300	5,000	702	3,500	6,200	1,000	9,500
2020	1,085	650	1,200	100	600	500	406	1,370
2021	300	200	2,000	373	2,000	6,000	506	1,500
2022	4,732	595	300	700	3,500	4,700	600	2,500
2023	5,660	1,000	5,000	200	6,200	18,500	1,800	17,800

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District	114	114	
Management area	Juneau	Juneau	
Subregion	NSE Inside	NSE Inside	
Survey type	Aerial	Aerial	Northern
Run type	Summer	Summer	Southeast
Stream no.	114-34-010	114-40-035	Inside Subregion
Stream name	Humpback Creek	Trail River	index total ^a (×1,000)
1960	2,817	–	97
1961	1,000	–	212
1962	12,700	–	229
1963	5,000	–	404
1964	1,500	–	160
1965	4,191	–	145
1966	500	–	309
1967	3,000	–	408
1968	1,750	–	112
1969	11,000	–	151
1970	400	–	125
1971	9,000	–	299
1972	21,000	–	497
1973	10,500	–	411
1974	3,200	–	224
1975	11,600	–	67
1976	5,100	–	65
1977	3,000	–	66
1978	3,000	–	48
1979	2,400	–	65
1980	4,500	–	103
1981	7,000	–	99
1982	2,300	370	55
1983	2,250	3,000	127
1984	4,000	1,650	141
1985	3,700	500	125
1986	4,500	400	130
1987	2,500	500	98
1988	550	2,500	153
1989	800	500	43
1990	1,500	200	95
1991	2,800	400	68

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District	114	114	
Management area	Juneau	Juneau	
Subregion	NSE Inside	NSE Inside	
Survey type	Aerial	Aerial	Northern
Run type	Summer	Summer	Southeast
Stream no.	114-34-010	114-40-035	Inside Subregion
Stream name	Humpback	Trail	index total ^a
	Creek	River	(×1,000)
1992	4,400	400	141
1993	5,500	800	215
1994	6,300	300	256
1995	4,600	2,402	204
1996	27,000	500	892
1997	5,600	1,400	213
1998	4,000	500	182
1999	6,500	8,000	289
2000	7,400	4,000	418
2001	6,050	2,433	207
2002	4,350	6,500	370
2003	2,500	1,000	167
2004	2,500	1,300	233
2005	3,500	3,500	149
2006	3,200	1,900	230
2007	2,000	2,500	155
2008	500	560	88
2009	900	1,700	68
2010	1,300	779	66
2011	1,300	2,500	87
2012	9,500	1,500	161
2013	2,400	4,600	263
2014	1,917	120	83
2015	6,000	1,738	146
2016	630	705	60
2017	7,800	5,100	256
2018	2,900	2,100	100
2019	3,200	8,000	116

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District	114	114	
Management area	Juneau	Juneau	
Subregion	NSE Inside	NSE Inside	
Survey type	Aerial	Aerial	Northern
Run type	Summer	Summer	Southeast
Stream no.	114-34-010	114-40-035	Inside Subregion
Stream name	Humpback Creek	Trail River	index total ^a (×1,000)
2020	2,700	1,200	49
2021	500	4,000	61
2022	1,800	1,200	108
2023	11,000	7,200	303
		Median =	146
		Minimum =	43
		Maximum =	892
		Contrast =	21

Note: Data for streams that were surveyed intermittently prior to 1982 (denoted by en dashes) were not used for index calculations.

^a Index total is the sum of all 50 index streams. Values from 1960 to 1981 were calculated using the average proportion of the total index represented by streams with consistent long-term survey data from 1960 to 2016.

Appendix A7.—Revised peak escapement index series for eight Northern Southeast Outside summer-run chum salmon index streams, 1982–2023. (Note: bold values were interpolated.)

District	113	113	113	113	113
Management area	Sitka	Sitka	Sitka	Sitka	Sitka
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	NSE Outside
Survey type	Aerial	Aerial or foot	Aerial or foot	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer
Stream no.	113-22-015	113-62-009	113-73-006	113-73-010	113-73-012
Stream name	Whale Bay Great Arm Head	Kalinin Cove Head	Waterfall Cove Creek	Slocum Arm Head	Khaz Creek
1982	3,900	1,200	434	500	1,000
1983	2,500	1,750	1,057	2,184	1,339
1984	1,500	4,000	1,000	6,000	3,000
1985	2,000	12,000	500	5,000	6,000
1986	5,500	2,550	1,000	3,000	3,200
1987	4,000	4,000	805	2,000	1,300
1988	6,500	1,000	4,200	4,000	1,000
1989	1,300	60	681	1,407	500
1990	4,000	2,089	2,000	1,000	2,000
1991	8,424	6,000	1,557	3,217	1,500
1992	4,000	2,298	5,000	2,869	2,000
1993	4,694	1,436	500	1,792	1,500
1994	3,400	975	1,000	1,217	600
1995	7,550	685	1,000	3,000	4,000
1996	4,200	800	150	6,000	700
1997	7,000	1,604	3,000	1,000	1,500
1998	1,300	1,600	1,310	1,775	1,135
1999	5,000	250	438	1,000	500
2000	27,000	1,088	1,000	3,900	2,000
2001	18,300	1,270	1,100	4,000	1,000
2002	1,000	968	590	2,000	808
2003	12,800	1,510	4,000	1,680	3,500
2004	11,800	233	1,130	2,000	3,000
2005	23,800	1,110	740	2,360	910
2006	24,000	3,699	780	5,000	182
2007	8,340	1,630	520	4,865	930
2008	4,200	5,140	550	3,400	730
2009	3,000	2,000	215	275	57
2010	2,420	580	1,000	1,534	281
2011	8,550	1,190	210	500	230

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District	113	113	113	113	113
Management area	Sitka	Sitka	Sitka	Sitka	Sitka
Subregion	NSE Outside	NSE Outside	NSE Outside	NSE Outside	NSE Outside
Survey type	Aerial	Aerial or foot	Aerial or foot	Aerial or foot	Aerial or foot
Run type	Summer	Summer	Summer	Summer	Summer
Stream no.	113-22-015	113-62-009	113-73-006	113-73-010	113-73-012
Stream name	Whale Bay Great Arm Head	Kalinin Cove Head	Waterfall Cove Creek	Slocum Arm Head	Khaz Creek
2012	3,700	2,263	850	4,000	3,000
2013	2,230	1,000	990	1,800	900
2014	1,510	1,500	1,000	2,090	1,265
2015	6,730	1,250	741	1,250	1,200
2016	1,200	180	3,000	360	2,480
2017	4,200	100	430	1,290	2,150
2018	3,300	1,570	210	2,480	1,100
2019	7,100	5,000	1,000	3,090	1,000
2020	1,800	200	1,500	1,182	725
2021	1,300	682	500	655	85
2022	4,200	851	240	2,330	400
2023	505	900	291	544	200

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District	113	113	113	
Management area	Sitka	Sitka	Sitka	
Subregion	NSE Outside	NSE Outside	NSE Outside	Northern
Survey type	Aerial	Foot	Aerial	Southeast
Run type	Summer	Summer	Summer	Outside
Stream no.	113-72-005	113-73-003	113-81-011	Subregion
Stream name	Sister Lake SE Head	Lake Stream Ford Arm	Black River	index total
1982	3,000	657	500	11,191
1983	6,433	2,000	10,000	27,264
1984	25,000	1,000	17,000	58,500
1985	11,000	450	15,000	51,950
1986	3,500	400	3,000	22,150
1987	3,000	651	5,000	20,756
1988	5,000	1,033	3,000	25,733
1989	4,000	1,610	8,000	17,558
1990	18,000	959	2,500	32,548
1991	17,000	1,456	1,000	40,155
1992	18,000	1,140	500	35,807
1993	5,000	1,559	5,892	22,373
1994	4,000	3,000	1,000	15,192
1995	4,450	1,416	300	22,401
1996	12,650	1,271	1,000	26,771
1997	10,000	2,955	10,000	37,059
1998	5,750	2,631	2,400	17,901
1999	1,200	1,697	9,000	19,085
2000	4,041	844	31,000	70,873
2001	1,910	5,900	23,000	56,480
2002	6,550	1,927	6,000	19,843
2003	2,000	1,770	6,000	33,260
2004	22,300	1,560	37,150	79,173
2005	11,270	540	8,700	49,430
2006	8,000	4,055	11,920	57,636
2007	6,530	1,280	5,602	29,697
2008	14,900	8,475	14,500	51,895
2009	3,000	820	4,200	13,567
2010	5,240	595	7,500	19,150
2011	3,000	1,730	5,000	20,410

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Appendix A7.–Page 4 of 4.

District	113	113	113	
Management area	Sitka	Sitka	Sitka	
Subregion	NSE Outside	NSE Outside	NSE Outside	Northern
Survey type	Aerial	Foot	Aerial	Southeast
Run type	Summer	Summer	Summer	Outside
Stream no.	113-72-005	113-73-003	113-81-011	Subregion
Stream name	Sister Lake SE Head	Lake Stream Ford Arm	Black River	index total
2012	5,050	7,800	8,600	35,263
2013	8,300	1,320	2,070	18,610
2014	8,125	570	8,425	24,485
2015	4,090	1,121	2,725	19,107
2016	5,570	1,010	11,650	24,450
2017	3,470	2,230	9,600	23,470
2018	3,570	830	4,500	17,560
2019	270	410	7,300	25,170
2020	3,481	866	5,000	14,754
2021	2,700	120	5,400	11,442
2022	1,224	865	4,500	14,610
2023	1,320	1,450	9,000	14,210
			Median =	23,978
			Minimum =	11,191
			Maximum =	79,173
			Contrast =	7.1

**APPENDIX B:
SOUTHEAST ALASKA CHUM SALMON HARVEST**

Appendix B1.—Harvest of chum salmon in the Southern Southeast Subregion, 1960–2023.

Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total harvest
1960	487,048	0	0	0	487,048
1961	1,005,349	0	0	0	1,005,349
1962	918,768	0	0	0	918,768
1963	634,211	0	0	0	634,211
1964	1,192,522	0	0	0	1,192,522
1965	289,062	0	0	0	289,062
1966	671,682	0	0	0	671,682
1967	289,819	0	0	0	289,819
1968	1,261,197	0	0	0	1,261,197
1969	69,259	0	0	0	69,259
1970	635,258	0	0	0	635,258
1971	703,419	0	0	0	703,419
1972	1,029,904	0	0	0	1,029,904
1973	791,673	0	0	0	791,673
1974	684,874	0	0	0	684,874
1975	373,659	0	0	0	373,659
1976	509,270	0	0	0	509,270
1977	425,413	0	0	0	425,413
1978	648,609	0	0	0	648,609
1979	329,390	0	0	0	329,390
1980	832,585	0	639	0	833,224
1981	342,486	0	106	0	342,592
1982	811,452	260	13	778	812,503
1983	493,908	0	152	18,148	512,208
1984	1,368,893	296	783	453,054	1,823,026

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Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total harvest
1985	1,168,982	91,417	1,203	132,986	1,394,588
1986	1,637,621	107,513	888	99,213	1,845,235
1987	595,991	149,412	4,034	434,249	1,183,686
1988	1,484,147	270,007	4,435	318,452	2,077,041
1989	1,126,717	73,032	1,257	55,004	1,256,010
1990	789,414	18,493	1,518	89,410	898,835
1991	1,412,948	69,987	5,938	59,676	1,548,549
1992	1,780,482	66,295	996	328,190	2,175,963
1993	2,195,195	52,793	482	689,118	2,937,588
1994	2,284,362	216,040	432	940,366	3,441,200
1995	3,107,883	486,067	896	987,961	4,582,807
1996	3,369,998	502,882	43	1,738,660	5,611,583
1997	2,574,650	610,693	1,598	2,160,667	5,347,608
1998	4,263,534	1,534,267	1,870	2,375,770	8,175,441
1999	3,546,467	126,544	5,149	1,883,802	5,561,962
2000	2,516,475	238,770	12,079	1,634,288	4,401,612
2001	2,792,617	362,733	3,540	878,992	4,037,882
2002	1,350,545	141,214	2,909	663,294	2,157,962
2003	2,073,379	376,802	1,344	1,047,613	3,499,138
2004	2,010,985	218,140	515	763,335	2,992,975
2005	1,397,882	309,847	42	691,178	2,398,949
2006	1,961,534	1,011,078	19	1,042,569	4,015,200
2007	2,428,119	527,929	235	923,212	3,879,495
2008	1,255,726	318,692	19	659,745	2,234,182
2009	1,891,782	404,707	288	761,810	3,058,587

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Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total harvest
2010	1,932,098	580,787	569	1,224,351	3,737,805
2011	2,680,668	694,225	978	1,484,606	4,860,477
2012	3,410,258	1,459,036	5,903	1,152,363	6,027,560
2013	1,876,328	373,788	2,767	454,101	2,706,984
2014	1,483,185	406,393	187	554,426	2,444,191
2015	3,189,966	1,569,854	128	582,288	5,342,236
2016	2,732,166	718,826	20,940	599,588	4,071,520
2017	1,974,182	534,074	2,572	702,768	3,213,596
2018	1,852,112	461,557	39	615,001	2,928,709
2019	1,617,196	303,424	3	243,608	2,164,285
2020	827,242	163,261	81	453,576	1,444,160
2021	1,588,149	118,927	3	628,852	2,335,931
2022	2,398,926	109,905	425	1,477,761	3,987,017
2023	4,514,641	714,757	45	1,139,897	6,369,340

^a Includes harvest in traditional fisheries in Districts 101–108, and Annette Island fisheries.

^b Includes common property harvests in terminal hatchery areas.

^c Includes spring troll, test fisheries, and other minor harvests of chum salmon.

Appendix B2.—Harvest of chum salmon in the Northern Southeast Inside Subregion, 1960–2023.

Year	Common property fisheries						Total harvest
	Traditional summer-run ^a	Traditional fall-run ^b	Traditional fisheries total	Terminal hatchery	Other fisheries ^c	Hatchery cost recovery	
1960	304,318	110,556	414,874	0	0	0	414,874
1961	1,005,871	268,269	1,274,140	0	0	0	1,274,140
1962	634,442	143,129	777,571	0	0	0	777,571
1963	595,968	131,840	727,808	0	0	0	727,808
1964	475,894	213,560	689,454	0	0	0	689,454
1965	692,967	347,671	1,040,638	0	0	0	1,040,638
1966	1,209,087	1,314,644	2,523,731	0	0	0	2,523,731
1967	988,551	498,316	1,486,867	0	0	0	1,486,867
1968	1,006,675	343,713	1,350,388	0	0	0	1,350,388
1969	298,982	168,339	467,321	0	0	0	467,321
1970	1,006,498	752,240	1,758,738	0	0	0	1,758,738
1971	536,033	685,554	1,221,587	0	0	0	1,221,587
1972	1,156,386	736,074	1,892,460	0	0	0	1,892,460
1973	567,938	364,975	932,913	0	0	0	932,913
1974	273,636	669,892	943,528	0	0	0	943,528
1975	15,293	268,801	284,094	0	0	0	284,094
1976	13,449	496,648	510,097	0	0	0	510,097
1977	22,365	250,487	272,852	0	0	0	272,852
1978	45,129	154,339	199,468	0	0	0	199,468
1979	129,070	291,502	420,572	0	0	0	420,572
1980	133,626	634,974	768,600	0	1,699	752	771,051
1981	131,527	271,472	402,999	0	253	0	403,252
1982	111,147	383,109	494,256	0	332	0	494,588
1983	217,911	353,865	571,776	0	157	31	571,964
1984	1,213,916	848,912	2,062,828	0	870	23	2,063,721
1985	489,594	799,508	1,289,102	376,808	5,002	9	1,670,921

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Year	Common property fisheries						Total harvest
	Traditional summer-run ^a	Traditional fall-run ^b	Traditional fisheries total	Terminal hatchery	Other fisheries ^c	Hatchery cost recovery	
1986	223,636	473,508	697,144	584,725	902	0	1,282,771
1987	323,581	534,499	858,080	410,572	3,719	32,919	1,305,290
1988	475,272	480,136	955,408	198,087	5,371	160,979	1,319,845
1989	340,866	124,287	465,153	23,572	2,820	44,018	535,563
1990	528,469	182,528	710,997	257,987	7,681	210,773	1,187,438
1991	1,246,746	179,475	1,426,221	0	15,082	275,505	1,716,808
1992	992,171	343,592	1,335,763	734,129	8,618	251,188	2,329,698
1993	1,370,704	148,761	1,519,465	1,471,182	21,981	233,189	3,245,817
1994	1,997,895	285,391	2,283,286	2,842,059	32,772	440,538	5,598,655
1995	1,082,382	145,374	1,227,756	3,389,558	39,441	585,156	5,241,911
1996	1,579,008	129,096	1,708,104	3,449,235	53,900	2,378,073	7,589,312
1997	876,213	75,682	951,895	1,564,740	24,455	1,293,222	3,834,312
1998	987,925	172,998	1,160,923	1,923,543	34,325	1,272,666	4,391,457
1999	1,480,841	201,953	1,682,794	2,457,081	31,881	1,366,990	5,538,746
2000	1,909,469	251,732	2,161,201	2,999,824	50,712	2,392,694	7,604,431
2001	1,050,487	100,735	1,151,222	1,228,276	86,577	1,101,456	3,567,531
2002	1,119,013	59,766	1,178,779	1,388,273	16,603	1,870,131	4,453,786
2003	1,277,469	100,665	1,378,134	1,438,365	23,328	3,634,329	6,474,156
2004	2,090,840	273,071	2,363,911	1,320,266	31,988	2,288,070	6,004,235
2005	1,034,067	140,142	1,174,209	344,907	6,581	655,173	2,180,870
2006	1,693,384	102,357	1,795,741	2,110,175	26,050	3,105,869	7,037,835
2007	1,408,649	167,991	1,576,640	761,136	19,441	2,231,832	4,589,049
2008	1,356,330	90,686	1,447,016	2,219,317	8,847	2,070,145	5,745,325
2009	1,682,013	95,031	1,777,044	2,046,100	14,052	2,003,341	5,840,537
2010	1,123,791	94,477	1,216,268	828,143	38,911	1,894,126	3,977,448

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Year	Common property fisheries						Total harvest
	Traditional summer-run ^a	Traditional fall-run ^b	Traditional fisheries total	Terminal hatchery	Other fisheries ^c	Hatchery cost recovery	
2011	2,202,343	141,257	2,343,600	343,972	154,777	2,528,151	5,370,500
2012	1,917,928	96,364	2,014,292	1,705,657	40,254	1,853,327	5,613,530
2013	2,570,145	202,339	2,772,484	2,556,816	327,827	1,575,641	7,232,768
2014	1,528,056	46,853	1,574,909	556,964	28,403	898,373	3,058,649
2015	1,460,970	88,217	1,549,187	393,037	38,184	1,615,741	3,596,149
2016	1,140,976	34,191	1,175,167	508,082	22,709	1,596,793	3,302,751
2017	2,609,785	271,787	2,881,572	1,183,833	33,658	1,955,896	6,054,959
2018	1,257,005	28,440	1,285,445	923,380	94,591	1,174,388	3,477,804
2019	937,597	82,910	1,020,507	620,761	58,092	1,798,069	3,497,429
2020	284,997	4,847	289,844	327,008	6,601	379,580	1,003,033
2021	450,533	27,833	478,416	437,090	15,807	930,397	1,861,710
2022	1,240,914	33,790	1,274,704	754,463	16,194	1,256,940	3,302,301
2023	1,582,129	92,391	1,674,520	2,065,033	36,144	2,245,996	6,021,693

^a Includes harvests in traditional fisheries through statistical week 33 in Districts 109–112, 113 inside, 114, and 115.

^b Harvest in traditional fisheries after statistical week 33 in Districts 109–112, 113 inside, 114, and 115.

^c Includes spring troll, experimental fisheries, and other minor harvest of chum salmon.

Appendix B3.—Harvest of chum salmon in the Northern Southeast Outside Subregion, 1960–2023.

Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total chum salmon harvest
1960	30,211	0	0	0	30,211
1961	155,730	0	0	0	155,730
1962	139,943	0	0	0	139,943
1963	97,622	0	0	0	97,622
1964	44,201	0	0	0	44,201
1965	131,253	0	0	0	131,253
1966	27,596	0	0	0	27,596
1967	22,718	0	0	0	22,718
1968	10,052	0	0	0	10,052
1969	8,567	0	0	0	8,567
1970	26,687	0	0	0	26,687
1971	15,002	0	0	0	15,002
1972	9,811	0	0	0	9,811
1973	29,466	0	0	0	29,466
1974	37,985	0	0	0	37,985
1975	25,742	0	0	0	25,742
1976	3,178	0	0	0	3,178
1977	27,608	0	0	0	27,608
1978	11,370	0	0	0	11,370
1979	121,016	0	0	0	121,016
1980	15,663	0	65	0	15,728
1981	79,148	0	0	1	79,149
1982	16,447	0	0	0	16,447
1983	71,921	0	0	90	72,011
1984	161,908	0	0	127	162,035
1985	192,853	0	21	56	192,930

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Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total chum salmon harvest
1986	147,357	849	0	62,579	210,785
1987	87,633	715	1,003	127,395	216,746
1988	69,052	0	22	33,378	102,452
1989	65,642	0	1	85,058	150,701
1990	39,002	0	0	81,462	120,464
1991	25,427	0	0	41,132	66,559
1992	128,733	168,270	0	116,073	413,076
1993	487,670	851,868	4,813	334,489	1,678,840
1994	462,619	556,476	350	336,577	1,356,022
1995	317,793	935,796	79	134,442	1,388,110
1996	1,146,958	1,269,510	697	419,511	2,836,676
1997	1,142,257	1,179,273	91	282,517	2,604,138
1998	1,206,229	1,563,636	198	355,821	3,125,884
1999	720,313	2,747,460	114	361,094	3,828,981
2000	1,063,075	2,512,013	204	326,414	3,901,706
2001	498,352	502,152	1,342	144,942	1,146,788
2002	359,355	305,779	239	176,926	842,299
2003	325,267	607,083	409	207,663	1,140,422
2004	809,838	1,060,636	124	498,714	2,369,312
2005	459,255	875,343	16	512,479	1,847,093
2006	532,866	1,642,890	17	324,887	2,500,660
2007	389,750	224,751	232	329,715	944,448
2008	244,373	540,311	46	287,822	1,072,552
2009	169,633	440,217	1,041	147,490	758,381
2010	455,620	1,120,242	118	180,558	1,756,538

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Year	Common property traditional fisheries ^a	Common property terminal hatchery ^b	Other fisheries ^c	Hatchery cost recovery	Total chum salmon harvest
2011	230,500	191,124	53	74,427	496,104
2012	150,326	530,065	38	50,036	730,465
2013	1,364,559	1,181,141	13,941	70,198	2,629,839
2014	179,115	874,285	139	122,831	1,176,370
2015	503,574	2,075,662	425	108,925	2,688,586
2016	142,443	1,064,618	228	535,088	1,742,377
2017	627,150	1,107,431	41	426,686	2,161,308
2018	558,277	3,167,660	9,381	1,342,496	5,077,814
2019	1,313,914	2,184,470	4,638	218,151	3,721,173
2020	506,720	1,115,163	56	624,627	2,246,566
2021	715,003	1,611,561	247	892,211	3,219,022
2022	1,099,333	1,380,060	31	686,565	3,165,989
2023	778,893	1,499,943	184	1,050,250	3,329,270

^a Includes all traditional harvest types in District 113 (outside subdistricts).

^b Includes terminal area fisheries only, excluding private hatchery cost-recovery fisheries.

^c Includes spring troll, experimental fisheries, and other minor harvest of chum salmon.

Appendix B4.—Total harvest of chum salmon in Southeast Alaska, 1960–2023.

Year	Southern Southeast	Northern Southeast Inside	Northern Southeast Outside	Grand total
1960	487,048	414,874	30,211	932,133
1961	1,005,349	1,274,140	155,730	2,435,219
1962	918,768	777,571	139,943	1,836,282
1963	634,211	727,808	97,622	1,459,641
1964	1,192,522	689,454	44,201	1,926,177
1965	289,062	1,040,638	131,253	1,460,953
1966	671,682	2,523,731	27,596	3,223,009
1967	289,819	1,486,867	22,718	1,799,404
1968	1,261,197	1,350,388	10,052	2,621,637
1969	69,259	467,321	8,567	545,147
1970	635,258	1,758,738	26,687	2,420,683
1971	703,419	1,221,587	15,002	1,940,008
1972	1,029,904	1,892,460	9,811	2,932,175
1973	791,673	932,913	29,466	1,754,052
1974	684,874	943,528	37,985	1,666,387
1975	373,659	284,094	25,742	683,495
1976	509,270	510,097	3,178	1,022,545
1977	425,413	272,852	27,608	725,873
1978	648,609	199,468	11,370	859,447
1979	329,390	420,572	121,016	870,978
1980	833,224	770,299	15,728	1,619,251
1981	342,592	403,252	79,149	824,993
1982	812,503	494,588	16,447	1,323,538
1983	512,208	571,964	72,011	1,156,183
1984	1,823,026	2,063,721	162,035	4,048,782
1985	1,394,588	1,670,921	192,930	3,258,439

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Year	Southern Southeast	Northern Southeast Inside	Northern Southeast Outside	Grand total
1986	1,845,235	1,283,088	210,785	3,339,108
1987	1,183,686	1,305,290	216,746	2,705,722
1988	2,077,041	1,319,845	102,452	3,499,338
1989	1,256,010	535,563	150,701	1,942,274
1990	898,835	1,187,438	120,464	2,206,737
1991	1,548,549	1,716,808	66,559	3,331,916
1992	2,175,963	2,329,698	413,076	4,918,737
1993	2,937,588	3,245,817	1,678,840	7,862,245
1994	3,441,200	5,598,655	1,356,022	10,395,877
1995	4,582,807	5,241,911	1,388,110	11,212,828
1996	5,611,583	7,589,312	2,836,676	16,037,571
1997	5,347,608	3,834,312	2,604,138	11,786,058
1998	8,175,441	4,391,457	3,125,884	15,692,782
1999	5,561,962	5,538,746	3,828,981	14,929,689
2000	4,401,612	7,604,431	3,901,706	15,907,749
2001	4,037,882	3,567,531	1,146,788	8,752,201
2002	2,157,962	4,453,786	842,299	7,454,047
2003	3,499,138	6,474,156	1,140,422	11,113,716
2004	2,992,975	6,004,235	2,369,312	11,366,522
2005	2,398,949	2,180,870	1,847,093	6,426,912
2006	4,015,200	7,037,835	2,500,660	13,553,695
2007	3,879,495	4,589,049	944,448	9,412,992
2008	2,234,182	5,745,325	1,072,552	9,052,059
2009	3,058,587	5,840,537	758,381	9,657,505
2010	3,738,660	3,977,448	1,756,538	9,472,646
2011	4,860,477	5,370,500	496,116	10,727,081
2012	6,027,560	5,613,530	730,465	12,371,555
2013	2,706,984	7,232,768	2,629,839	12,569,591

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Year	Southern Southeast	Northern Southeast Inside	Northern Southeast Outside	Grand total
2014	2,444,191	3,058,649	1,176,370	6,679,210
2015	5,342,236	3,596,149	2,688,586	11,626,971
2016	4,071,520	3,302,757	1,742,377	9,116,654
2017	3,213,596	6,052,846	2,161,308	11,427,750
2018	2,928,709	3,477,765	5,077,814	11,484,288
2019	2,164,285	3,497,429	3,721,173	9,382,887
2020	1,444,160	1,003,003	2,246,566	4,693,729
2021	2,335,931	1,861,710	3,219,022	7,416,633
2022	3,988,343	3,302,301	3,165,989	10,456,633
2023	6,369,340	6,021,693	3,329,270	15,720,303

Appendix B5.—Terminal harvest of fall-run chum salmon in Southeast Alaska, 1960–2023 (“–” indicates there were no fall fishery openings).

Year	Cholmondeley Sound	Port Camden	Security Bay	Excursion River	Chilkat River
1960	17,208	22	1,993	0	53,655
1961	0	1,435	1,745	0	115,129
1962	0	127	1,272	0	107,788
1963	32,847	0	409	0	99,232
1964	43,372	316	14,239	16,767	100,708
1965	2,688	0	5,501	54,308	198,647
1966	40,763	47,324	45,293	345,427	229,557
1967	93,223	36,668	23,466	114,606	159,053
1968	61,902	28	9,891	65,780	164,239
1969	9,537	–	0	0	155,816
1970	19,362	11,711	11,308	74,585	265,110
1971	88	646	0	132,249	248,811
1972	66,855	20,304	0	109,257	329,216
1973	31,684	7,850	–	78,031	188,968
1974	155,857	3,959	979	50,749	435,915
1975	30,635	–	–	32,320	235,729
1976	59,363	–	–	51,510	367,779
1977	41,677	–	–	–	194,376
1978	51,410	10,005	–	–	107,611
1979	194	0	0	3,453	223,613
1980	1,983	24,413	0	189,084	158,477
1981	–	9,418	–	101,351	100,186
1982	78,300	15,171	–	–	296,127
1983	1,203	0	–	11,063	309,291
1984	25,811	7,890	70,692	89,431	559,916
1985	15,071	15,506	–	26,106	611,698
1986	62,654	10,994	2,065	53,689	348,080
1987	37,213	5,183	–	88,376	359,686

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Year	Cholmondeley Sound	Port Camden	Security Bay	Excursion River	Chilkat River
1988	125,514	17,078	14,769	35,493	294,509
1989	48,739	2,158	995	–	84,308
1990	481	0	10,984	14,538	106,982
1991	99,543	0	–	31,374	99,041
1992	40,136	51,311	6,729	39,383	83,854
1993	81,414	12,932	0	324	60,392
1994	65,414	12,402	56	–	116,599
1995	105,342	5,185	12,819	9,940	69,201
1996	66,991	4,966	9,689	0	56,437
1997	153,833	0	0	2,145	20,850
1998	359,443	12,636	25,267	0	19,239
1999	215,214	13,236	10,368	35,237	50,576
2000	197,016	3,087	621	83,057	59,365
2001	127,258	0	0	7,493	68,898
2002	47,309	–	1,952	1,714	27,134
2003	93,200	–	0	2,360	36,640
2004	57,923	0	13,849	1,413	52,755
2005	2,850	–	0	–	71,020
2006	11,800	–	1,065	0	57,363
2007	389	–	0	18,149	68,056
2008	1,256	–	86	–	80,875
2009	0	–	285	5,697	61,589
2010	4,235	–	226	–	69,362
2011	72,689	–	0	5,479	64,514
2012	40,998	108	0	–	80,606
2013	3,173	–	1,300	22,840	116,356
2014	1,101	0	254	17,856	19,558
2015	7,633	0	20	0	37,204
2016	21,476	–	0	–	31,657

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Year	Cholmondeley Sound	Port Camden	Security Bay	Excursion River	Chilkat River
2017	34,527	–	0	125,721	62,535
2018	39,629	–	–	–	25,689
2019	3,060	–	734	–	64,586
2020	–	–	–	–	4,229
2021	10,879	–	–	–	10,001
2022	3,542	–	–	–	27,922
2023	452	–	–	–	51,937