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**Overview of the Bristol Bay Commercial Salmon
Fishery 2019–2022: a Report to the Alaska Board of
Fisheries**

by

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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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			base of natural logarithm	<i>e</i>
hectare	ha	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	catch per unit effort	CPUE
kilogram	kg			coefficient of variation	CV
kilometer	km	at	@	common test statistics	(F, t, χ^2 , etc.)
liter	L	compass directions:		confidence interval	CI
meter	m	east	E	correlation coefficient (multiple)	R
milliliter	mL	north	N	correlation coefficient (simple)	r
millimeter	mm	south	S	covariance	cov
		west	W	degree (angular)	°
Weights and measures (English)		copyright	©	degrees of freedom	df
cubic feet per second	ft ³ /s	corporate suffixes:		expected value	<i>E</i>
foot	ft	Company	Co.	greater than	>
gallon	gal	Corporation	Corp.	greater than or equal to	≥
inch	in	Incorporated	Inc.	harvest per unit effort	HPUE
mile	mi	Limited	Ltd.	less than	<
nautical mile	nmi	District of Columbia	D.C.	less than or equal to	≤
ounce	oz	et alii (and others)	et al.	logarithm (natural)	ln
pound	lb	et cetera (and so forth)	etc.	logarithm (base 10)	log
quart	qt	exempli gratia		logarithm (specify base)	log ₂ etc.
yard	yd	(for example)	e.g.	minute (angular)	'
		Federal Information Code	FIC	not significant	NS
Time and temperature		id est (that is)	i.e.	null hypothesis	H ₀
day	d	latitude or longitude	lat or long	percent	%
degrees Celsius	°C	monetary symbols		probability	P
degrees Fahrenheit	°F	(U.S.)	\$, ¢	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	months (tables and figures): first three letters	Jan, ..., Dec	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	registered trademark	®	second (angular)	"
minute	min	trademark	™	standard deviation	SD
second	s	United States (adjective)	U.S.	standard error	SE
		United States of America (noun)	USA	variance	
Physics and chemistry		U.S.C.	United States Code	population	Var
all atomic symbols		U.S. state	use two-letter abbreviations (e.g., AK, WA)	sample	var
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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FISHERY 2019–2022:
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by

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ABSTRACT

The Bristol Bay Area collectively supports the largest wild sockeye salmon (*Oncorhynchus nerka*) fishery in the world. Sockeye salmon runs increased yearly from 2019 to 2022. Escapements averaged 19.1 million fish, and all sockeye salmon escapement goals were met or exceeded. Harvests averaged 46.1 million fish and were 4 of the 5 largest years on record. Average price paid per pound was \$1.27/lb and average exvessel value was \$318.1 million; both of these were above the long-term average. Over the same 4-year period, average harvests of other species were 14,500 Chinook (king) salmon (*O. tshawytscha*), 64,400 coho salmon (*O. kisutch*), and 603,000 chum salmon (*O. keta*). Pink salmon (*O. gorbusha*) average harvest was 83,800 fish (pink salmon are even-year dominant in Bristol Bay). Alaska Department of Fish and Game is recommending Nushagak Chinook salmon as a stock of concern this board cycle. More detailed information regarding specific years is published in the Bristol Bay Area annual management report series, and can be found on the Bristol Bay home page:

<http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon#management>.

Keywords: Bristol Bay, sockeye salmon, *Oncorhynchus nerka*, Chinook salmon, king salmon, *O. tshawytscha*, chum salmon, *O. keta*, pink salmon, *O. gorbusha*, coho salmon, *O. kisutch*

INTRODUCTION

The Bristol Bay Area (Area T) is divided into 5 commercial salmon fishing districts: Togiak and Nushagak, collectively known as the westside districts; and Naknek-Kvichak, Egegik, and Ugashik, collectively known as the eastside districts. The Togiak District is divided into 5 sections to focus harvest on Togiak River stocks and those from several separate smaller river systems. The Nushagak District is divided into the Nushagak and Igushik sections with a special harvest area (SHA) in the Wood River. The primary river systems in the Nushagak District are the Nushagak, Wood, and Igushik. The Naknek-Kvichak District is divided into the Naknek and Kvichak sections with SHAs in the Naknek and Alagnak Rivers. The Naknek, Kvichak, and Alagnak River systems are the primary salmon producers in the Naknek-Kvichak District. The Egegik District is supported by the Egegik and King Salmon Rivers and includes an SHA. The Ugashik District includes an SHA and is supported by the Ugashik, King Salmon, and Dog Salmon Rivers. Bristol Bay districts and sections are confined to terminal areas near river mouths to minimize interception of salmon destined for other rivers (Figure 1). SHAs are designed to further minimize the interception of salmon stocks or to provide focused harvest on fish surplus to escapement needs.

The management objective for all commercial salmon districts in Bristol Bay is to achieve escapement within specific ranges (escapement goals) and provide opportunities to harvest fish surplus to escapement needs (Table 1). The Bristol Bay salmon season begins on June 1 by regulation with commercial fishing periods opened by emergency order (EO) in all districts, except the Togiak District, which has a regular weekly fishing schedule. Late in the season, Naknek-Kvichak, Egegik, and Ugashik Districts have regulatory fishing schedules that begin on July 17; typically, after the bulk of the sockeye salmon run. Allocation plans are in place for all districts, except the Togiak District. Allocation plans provide the Alaska Department of Fish and Game (ADF&G, or “the department”) with guidelines for distribution of sockeye salmon harvest between the drift and set gillnet fleets from June 1 to July 17.

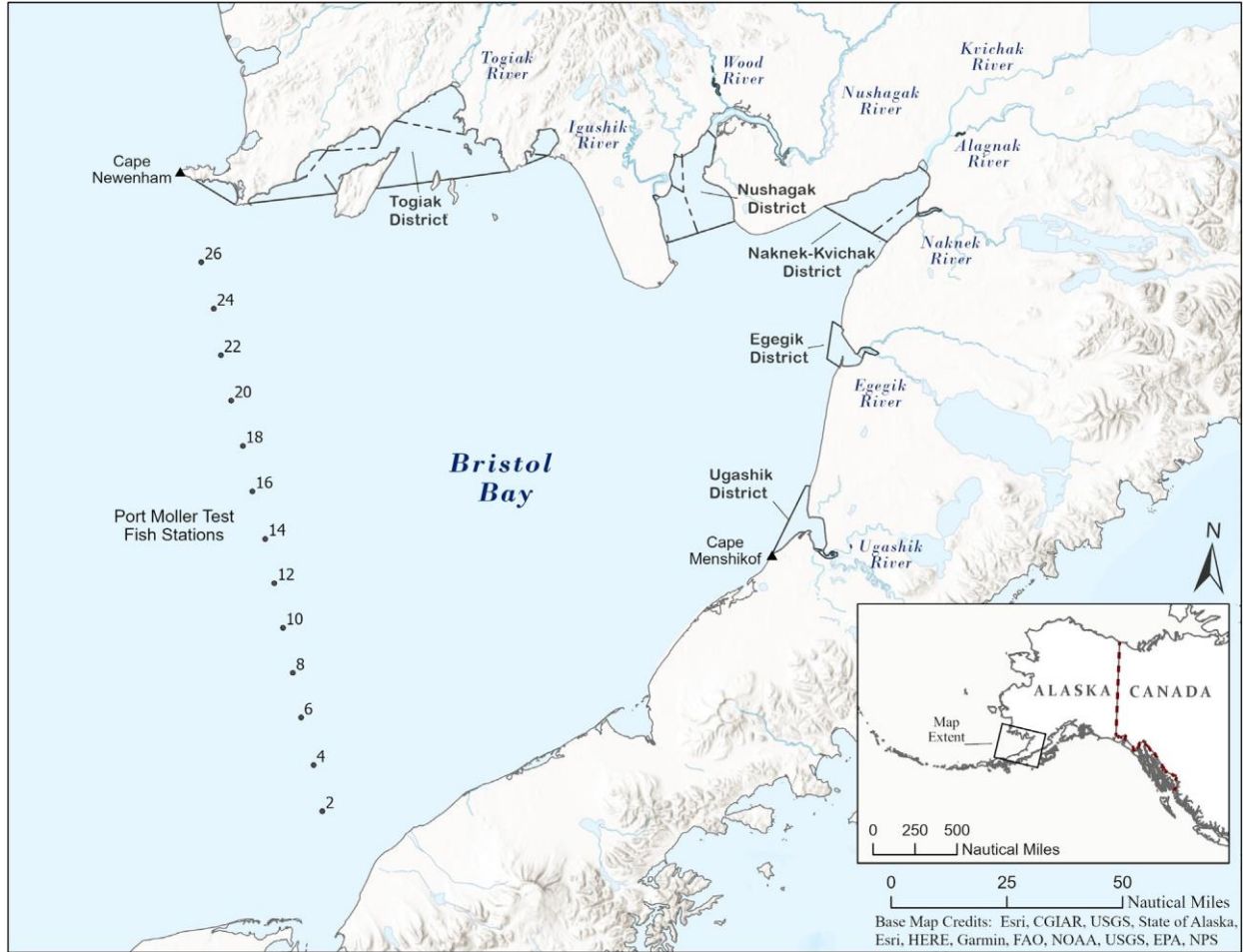


Figure 1.—Bristol Bay Area commercial salmon fishing districts and Port Moller Test Fishery stations.

Between June 1 and July 17, drift gillnet permit holders must register with the department before fishing in any district. Set gillnet permit holders are required to register before fishing anytime between June 1 and July 17 in the Nushagak District. Permit holders may transfer, after initial registration; however, they must notify the department and wait 48 hours before they may begin fishing again. Drift gillnet permit holders may create a dual permit partnership, which allows them to operate an additional 50 fathoms of gillnet gear. On average, 390 drift gillnet vessels (representing 780 permits) operated annually as dual permit vessels in Bristol Bay over the past 4 years (Table 2, Appendix A1).

Subsistence salmon harvests during the most recently reported 10 years (2008–2017) have averaged approximately 124,000 salmon, of which 96,000 have been sockeye salmon (Halas and Neufeld 2018). Sport fisheries primarily targeted Chinook and coho salmon, but pink, chum, and sockeye salmon are also harvested (Dye and Borden 2018).

SOCKEYE SALMON OVERVIEW 2019–2022

The 4 years from 2019 to 2022 can be characterized as a period of large and late sockeye salmon runs. Records were set for largest inshore run (2021, then 2022), harvest (2019, then 2022), and exvessel value (2022) to Bristol Bay. Inshore run is defined as commercial catch and escapement for a given year within a specific river, district, or the entire area. Sockeye salmon weights were

lower than historical averages (Figure 2) and run timings were historically late, particularly on the east side of Bristol Bay. Exvessel values each year were among the largest ever (Elison et al. 2022).

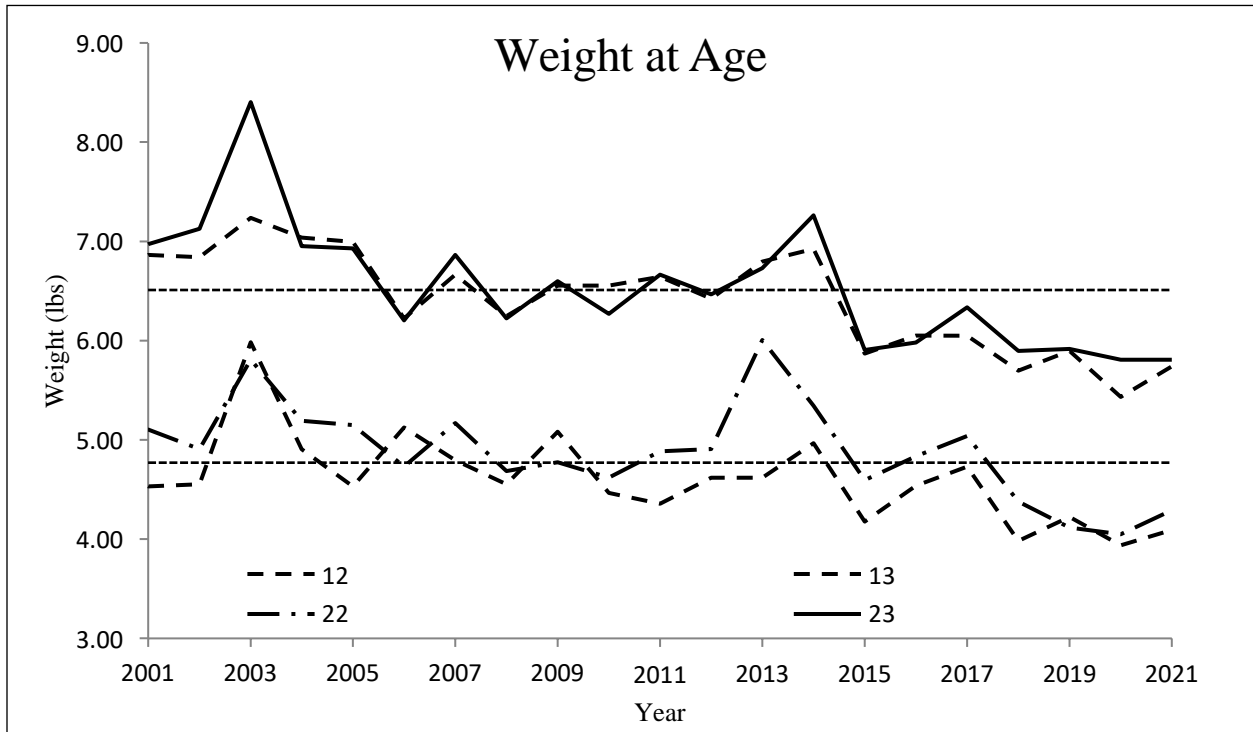


Figure 2.—Average weight (lb), by age class, of Bristol Bay sockeye salmon sampled in the commercial fishery catch, 2001–2022.

Bristol Bay sockeye salmon runs increased each year from 2019 to 2022. The inshore run in 2019 was 56.4 million fish and ranks 7th in the last 20 years (2003–2022; Appendix A2); the inshore run in 2020 was 58.3 million fish and ranks 5th in the last 20 years (Appendix A4); the inshore run in 2021 was 67.7 million fish and ranks 2nd, both all-time and in the last 20 years (Appendix A6); and the inshore run in 2022 was 78.9 million fish, the largest on record. Sockeye salmon escapement goals were either met or exceeded in all river systems in all years (Table 1 and Appendix A15).

The large sockeye salmon runs from 2019 through 2022 resulted in harvests well above the long-term average of 29.5 million fish (2002–2021; Table 2). In 2019, sockeye salmon harvests were above the long-term average in each districts except Ugashik, resulting in a Bristol Bay harvest of 43.0 million, which ranks 3rd all-time (Appendices A2, A14, and A18). In 2020, sockeye salmon harvests were above or near average in each districts except Togiak, and the baywide harvest was 39.5 million (Appendices A4 and A14). In 2021, harvests were above average in all districts and the baywide harvest of 41.9 million ranks 4th all-time (Appendices A6 and A18). In 2022, harvest was again above average in all of the districts and the baywide harvest of 60.1 million is the largest ever recorded (Appendices A8 and A18).

Exvessel values of sockeye salmon from 2019–2022 was above the recent 20-year (2002–2021) average in all 4 years (Figure 3, Appendix A17). In 2019, after postseason adjustments, sockeye salmon average price was \$1.53/lb, with an exvessel value of \$338 million that ranks 4th in this 20-year span. In 2020, after postseason adjustments, sockeye salmon average price was \$1.09/lb,

with an exvessel value of approximately \$223 million. In 2021, after postseason adjustments, sockeye salmon average price was \$1.74/lb, with an exvessel value of \$345 million (Table 2), which is the 3rd highest on record. In 2022, prior to post season adjustments, sockeye salmon average price was \$1.15/lb, with a preliminary exvessel value of \$351 million, which is the highest on record (Appendix A17).

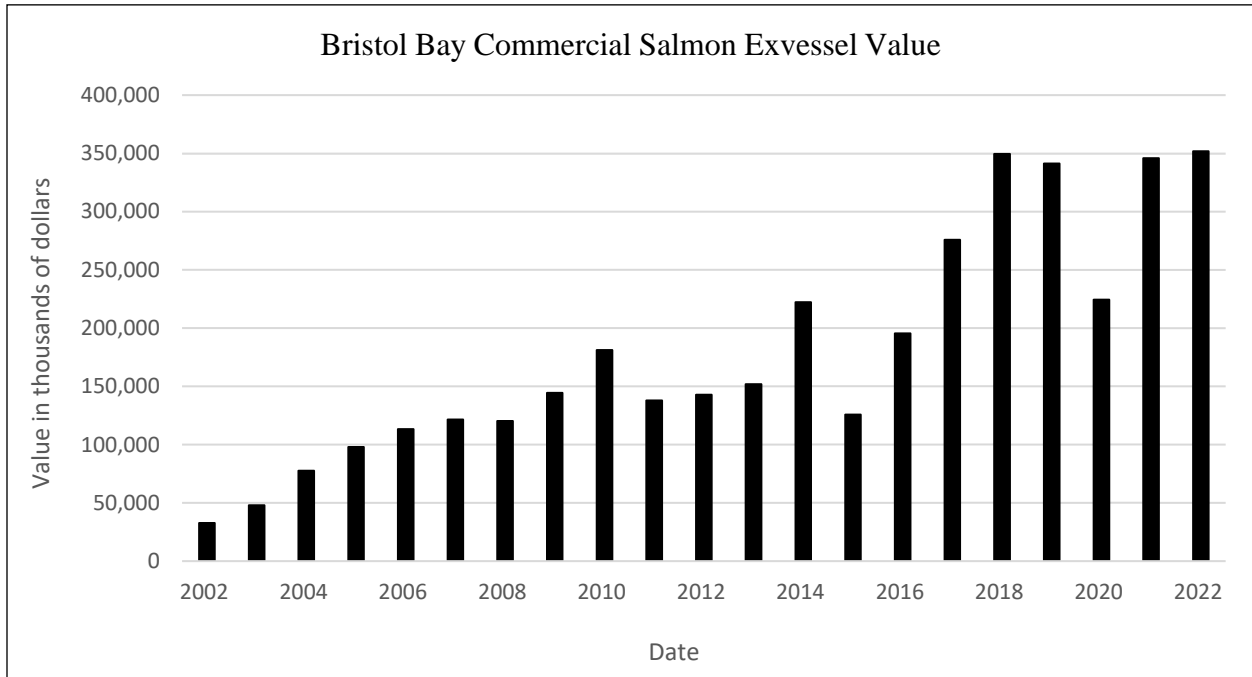


Figure 3.– Estimated exvessel value of the commercial salmon catch by species, in thousands of dollars, Bristol Bay, 2002–2022.

The record high harvests from 2019 through 2022 were influenced by run size, run timing, and processing capacity. Overall, sockeye salmon run timing to Bristol Bay was late in these most recent 4 years but shifted closer to average in 2021 and 2022. During the summer of 2019, Bristol Bay experienced a prolonged period of hot and dry weather that brought water temperatures as high as 21°C. It is possible these conditions played a role in late run timing that season. Although late, run timing in 2020 was such that the Nushagak, Naknek-Kvichak, and Egegik Districts all simultaneously experienced large movements of fish. This resulted in several days of big harvests which led some processing companies to impose catch limits. Run timing in 2021 was closer to the historical average in most districts. Despite the large run, the processing sector was able to achieve record harvest without commercial fishing operators being placed on catch limits; this was aided, in part, by the difference in run timing amid districts, and by the Egegik run coming in below forecast. The 2022 run timing was the earliest it has been since 2014. Despite the large run, catch limits were placed in only one district; this was aided by different run timing across districts, and by an estimated 25% increase in processing capacity since 2019 (Donnellan and Nemeth 2022).

Gear group allocations have been, to the extent practicable, achieved within a few percentage points in recent years (Appendices A11–13). Managing to achieve escapement is of higher priority, which can lead to allocation percentages differing from those in regulation in some years.

Table 1.—Bristol Bay Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, from 2019 to 2022 (modified from Munro and Brenner, 2022).

SPECIES River	2019–2022 Goal range		Type	Escapement			
	Lower	Upper		2019	2020	2021	2022 ^a
CHINOOK SALMON							
Nushagak River	55,000	120,000	SEG	41,258	40,313	50,009	44,433
Nushagak River	95,000		Inriver				
CHUM SALMON							
Nushagak River ^b	200,000		LB SEG	514,339	110,592	124,419	116,977
COHO SALMON							
Nushagak River	60,000	120,000	SEG	51,852	NS	NS	NS
Nushagak River	70,000	120,000	Inriver				
PINK SALMON							
Nushagak River (even years)	165,000		LB SEG	NA	NS	NA	NS
SOCKEYE SALMON							
Kvichak River	2,000,000	10,000,000	SEG	2,371,242	4,030,968	4,703,520	4,224,882
Alagnak River	210,000		LB SEG	820,458	2,386,518	3,236,904	1,668,222
Naknek River	800,000	2,000,000	SEG	2,911,470	4,112,160	2,796,534	1,921,296
Egegik River	800,000	2,000,000	SEG	2,340,210	2,389,728	1,832,196	1,786,152
Ugashik River	500,000	1,400,000	SEG	1,547,748	1,745,940	2,859,930	1,436,784
Wood River	700,000	1,800,000	SEG	2,073,276	2,243,886	4,410,156	3,747,612
Igushik River	150,000	400,000	SEG	256,074	323,814	878,952	377,760
Nushagak River	260,000	760,000	OEG	709,431	1,228,059	4,697,299	3,457,752
Nushagak River	370,000	900,000	SEG				
Togiak River	120,000	270,000	SEG	351,846	261,126	280,836	239,646

Note: SEG = sustainable escapement goal; LB SEG = lower-bound SEG; OEG = optimal escapement goal; NA = data not available; NS= no survey

^a Preliminary data.

^b Escapement goal for Nushagak River chum salmon is based on sonar count through July 20. Fish counts past July 20 are not included in this table.

Table 2.—Fishery participation, sockeye salmon harvest, price, and value, 2019–2022.

Year	\$/lb	Sockeye catch (millions)	Exvessel value (millions)	Drift gillnet permits	Dual drift gillnet vessels ^a	Set gillnet permits
2019	1.53	43.0	\$337.84	1767	372	891
2020	1.09	39.6	\$223.29	1,724	382	841
2021	1.74	42.0	\$345.02	1,753	403	870
2022 ^b	1.15	60.1	\$351.05	1,760	403	865
2019–22 avg.	1.39	46.2	\$318.13	1,751	390	867
20-year avg.	0.99	29.5	\$170.28	1,642	N.A.	843
10-year avg.	1.30	34.5	\$234.44	1,737	350	872

^a Dual permit tracking did not begin until 2010.

^b Preliminary data.

FISHERIES BY DISTRICT 2019–2022

NAKNEK-KVICHAK DISTRICT

2019

The total inshore run to the Naknek-Kvichak District in 2019 was 17.6 million sockeye salmon (Appendix A2) and 14% above the preseason forecast of 15.5 million. The harvest of 11.5 million sockeye salmon was 26% above the 2002–2021 average of 9.1 million (Appendix A11). The Naknek River escapement of 2.9 million was above the escapement goal range of 800,000 to 2 million. The Kvichak River escapement of 2.4 million was within the escapement goal range of 2–10 million. The Alagnak River escapement was 820,000 and above the lower-bound escapement goal of 210,000 (Table 1).

- The sockeye salmon harvest percentages were 14% Naknek set gillnet, 9% Kvichak set gillnet, and 77% drift gillnet (Appendix A12).
- There was an average of 427 drift permits registered during the allocation period, which is below the 2002–2021 average of 453 (Appendices A3 and A10).
- The midpoint of the sockeye salmon run into the district was July 10, which was 4 days later than the historical average.
- The main Naknek-Kvichak District closed, and the Naknek River SHA opened to drift gillnet gear for 2 fishing periods on July 18 in order to achieve the Kvichak River escapement goal.

2020

The total inshore run to the Naknek-Kvichak District in 2020 was 24.8 million sockeye salmon (Appendix A4) and was 24% above the forecast of 19.0 million. The harvest of 14.3 million sockeye salmon was 57% above the 2002–2021 average (Appendix A14). All sockeye salmon escapement goals were met or exceeded with escapements of 4.1 million on the Naknek River (which was the largest on record), 4.0 million on the Kvichak River, and 2.4 million on the Alagnak River (Table 1).

- The sockeye salmon harvest percentages were 80% drift gillnet, 12% Naknek set gillnet, and 8% Kvichak set gillnet (Appendix A12).
- There was an average of 515 drift gillnet permits registered during the allocation period, which is above 2002–2021 average of 453 (Appendices A5 and A10).
- Commercial fishing operators were placed on limits July 7–10.
- The 3 highest daily harvests during the season were all over 1 million sockeye salmon and they all occurred when drift gillnets were restricted to the Naknek Section.
- The midpoint of the sockeye salmon run into the district was July 11, which was 5 days later than the historical average.

2021

The total inshore run to the Naknek-Kvichak District in 2021 was 20.0 million sockeye salmon (Appendix A6) and 18% above the forecast of 17.0 million. The harvest of 9.3 million sockeye salmon was close to the 2002–2021 average (Appendix A14). All sockeye salmon escapement goals were met or exceeded with escapements of 2.8 million on the Naknek River, 4.7 million on the Kvichak River, and 3.2 million on the Alagnak River (Table 1).

- The sockeye salmon harvest percentages were 75% drift gillnet, 13% Naknek set gillnet, and 12% Kvichak set gillnet (Appendix A12).
- There was an average of 393 drift gillnet permits registered during the allocation period, which is below the 2002–2021 average of 453 (Appendices A7 and A10).
- The midpoint of the sockeye salmon run into the district was July 9, which was 3 days later than the historical average.

2022

The total inshore run to the Naknek-Kvichak District in 2022 was 22.0 million sockeye salmon (Appendix A8) and 6% above the preseason forecast of 20.7 million. The harvest of 14.2 million sockeye salmon was 56% above the 2002–2021 average (Appendix A11). All sockeye salmon escapement goals were met with escapements of 1.9 million on the Naknek River, 4.2 million on the Kvichak River, and 1.7 million on the Alagnak River (Table 1).

- The sockeye salmon harvest percentages were 14% Naknek set gillnet, 11% Kvichak set gillnet, and 75% drift gillnet (Appendix A12).
- There was an average of 359 permits registered during the allocation period, which was the lowest since 2018 (Appendices A9 and A10).
- Fishing was open in both sections during every high tide throughout the season, except that drift gillnets were restricted to the Naknek Section for 3 periods and set gillnets closed in the Kvichak Section during 1 period.
- The midpoint of the sockeye salmon run into the district was July 10, which was 4 days later than the historical average.
- Chinook salmon aerial surveys were incomplete because of lack of pilot and aircraft availability.

EGEGIK DISTRICT

2019

The total inshore run to Egegik District in 2019 was 17.0 million sockeye salmon, (Appendix A2) which nearly doubled the preseason forecast of 8.7 million. The harvest was 14.7 million fish (Appendix A14). The escapement was 1.8 million sockeye salmon and within the escapement goal range of 800,000 to 2.0 million fish (Table 1).

- The harvest of 14.7 million sockeye was above the 2002–2021 average of 7.8 million, and 4th highest since 1883 (Appendices A14 and A18).
- The midpoint of the run of July 10 was 6 days late compared to the 2009–2018 average of July 4.
- The sockeye salmon harvest allocation were 81% drift gillnet and 19% set gillnet. Managing for escapement takes priority over harvest allocation, which resulted in a higher allocation to the set gillnet fleet (Appendix A11).

2020

The total inshore run to Egegik District was 15.8 million sockeye salmon (Appendix A4) and was 54% above the forecast of 10.2 million sockeye salmon. The harvest totaled 13.4 million fish (Appendix A14). Escapement was 2.4 million sockeye salmon, which exceeded the upper bound of the escapement goal range (Table 1).

- The sockeye salmon harvest of 13.4 million ranked 3rd in the 20-year span from 2003 to 2022 and 6th highest since 1883 (Appendices A14 and A18).
- The 2020 run again exhibited late run timing; the midpoint was July 9 compared to the 2010–2019 average of July 5.
- A large volume of fish began arriving in the district on July 6. Combined with catches from other districts, the processing sector could not keep pace and catch limits were in place July 7–11. This was the primary reason for the high escapement.
- The sockeye salmon harvest allocation percentages were 86% drift gillnet and 14% set gillnet, as prescribed in regulation (Appendix A11).

2021

The total inshore run to Egegik District was 10.4 million (Appendix A6) and was 5% below the forecast of 11.0 million sockeye salmon. The district harvest was 8.6 million sockeye salmon (Appendix A14). Escapement was 1.8 million sockeye salmon, which was within the escapement goal range (Table 1).

- The run timing in 2021 was earlier than the previous 3 years, with the midpoint being the same as the 2011–2020 average of July 5.
- Between June 22 and July 1, a series of strong storms moved through the region that brought strong easterly winds and heavy inshore seas. This probably affected harvest power during that time period.
- Although the run came in below forecast, 2021 sockeye salmon harvest was above the most recent 20-year average of 7.8 million fish (Appendix A14).
- Fish weights were below average. In addition, there was a high return of age-1.1 and age-2.1 sockeye salmon.
- Harvest allocation was 84% drift gillnet and 16% set gillnet (Appendix A10).

2022

The total inshore run to Egegik District was 18.2 million (Appendix A6) and was 14% above the forecast of 16.0 million sockeye salmon. The district harvest was 16.5 million sockeye salmon (Appendix A14). Escapement was 1.8 million sockeye salmon, which was within the escapement goal range (Table 1).

- The run timing in 2022 was similar to 2021, with the midpoint being July 5.
- The harvest of 16.5 million fish ranks 1st in the 20-year span from 2003–2022 and 2nd all-time since 1883 (Appendices A14 and A18).
- Harvest allocation was 79% drift gillnet and 21% set gillnet (Appendix A11). Drift effort was relatively small for the 2022 season, due to drift effort being attracted to the Nushagak District (Appendix A10).

UGASHIK DISTRICT

2019

The total inshore run of sockeye salmon to the Ugashik District was 2.6 million fish (Appendix A2). This was 21% below the forecast of 3.3 million fish. The harvest was 1.0 million (Appendix A14). Escapement was 1.5 million sockeye salmon, which exceeded the escapement goal range of 500,000 to 1.4 million (Table 1).

- The midpoint of the run was July 21, nine days later than the average of July 12.
- There was a prolonged period of warm and calm weather in the month of July and water temperatures rose to 21°C, which can be lethal to salmon. This was probably the reason for the extremely late run timing as fish milled in the district, until water temperatures decreased around July 17.
- Pacific walruses were again hauled out on the beach at Cape Greig, just to the north of the district. The north line was moved south 1 mile to provide buffer space between the animals and the fishery.
- Harvest allocation was 66% drift gillnet and 34% set gillnet (Appendix A11).

2020

The total inshore run of sockeye salmon to the Ugashik District was 4.3 million fish (Appendix A4) and 3% below the preseason forecast of 4.5 million. District harvest was 2.6 million fish (Appendix A14). Escapement was 1.7 million sockeye salmon, which exceeded the escapement goal range (Table 1).

- The 2020 harvest of 2.6 million sockeye salmon was below the 20-year average (2002–2021) of 3.2 million (Appendix A14).
- The midpoint of the run was July 16, four days later than the average of July 12.
- Pacific walruses were again hauled out on the beach just to the north of the district. The north line was moved south one mile to provide buffer space between the animals and the fishery.
- Commercial fishing operators were placed on catch limits July 11–13.
- Harvest allocation was 74% drift gillnet and 26% set gillnet (Appendix A11).

2021

The total inshore sockeye salmon run to the Ugashik District was 8.0 million fish (Appendix A6) and 23% above the preseason forecast of 6.5 million. District harvest was 5.2 million fish (Appendix A14). Escapement was 2.8 million sockeye salmon, which exceeded the escapement goal range (Table 1).

- The harvest of 5.2 million ranks 4th within the last 20 years and 7th all-time since 1893 (Appendices A14 and A18).
- The escapement of 2.8 million was the largest in the last 20 years and 2nd largest on record (Appendix A15).
- A substantial volume of fish milled in the outer district until July 11, when they all moved at the same time.
- The midpoint of the run was July 14, four days later than the average of July 10.
- North line of the district was again adjusted approximately 1 mile to the south due to the haul out of walrus at Cape Greig.
- Harvest allocation was 87% drift gillnet and 13% set gillnet (Appendix A11).

2022

The total inshore sockeye salmon run to the Ugashik District was 7.7 million fish (Appendix A8) and 26% above the preseason forecast of 6.2 million. District harvest was 6.2 million fish (Appendix A14). Escapement was 1.4 million sockeye salmon, which is at the upper end of the escapement goal range (Table 1).

- The harvest of 6.2 million ranks 2nd within the last 20 years and 3rd all-time since 1893 (Appendices A14 and A18).
- Run timing shifted earlier than previous years, with the midpoint being July 10.
- Walrus were not hauled out near Cape Greig this season and the north line of the district was as stated in regulation.
- Harvest allocation was 89% drift gillnet and 11% set gillnet (Appendix A11).

NUSHAGAK DISTRICT

2019

The 2019 inshore sockeye salmon run to the Nushagak District of 17.8 million fish was 78% above the preseason forecast of 10.0 million fish (Appendix A2). The harvest of 14.8 million sockeye salmon now ranks 4th in the history of the Nushagak District (Appendix A18). Escapement into the Nushagak River was 709,000, which is within the escapement goal range of 370,000–900,000 sockeye salmon. Wood River sockeye salmon escapement was 2.1 million, which exceeds the escapement goal range of 700,000–1.8 million fish. Sockeye salmon escapement to the Igushik River was 256,000, which is within the escapement goal range of 150,000–400,000 fish (Table 1). Nushagak River chum salmon escapement of 651,000 was well above the 200,000 lower bound of the escapement goal (Appendix A2). Coho and pink salmon were not enumerated in 2019 due to budget cuts.

- Commercial fishing for sockeye salmon began earlier than average on June 20 with the drift gillnet fleet. The Chinook salmon inriver goal of 95,000 was surpassed in 2018, Chinook salmon escapement was projecting within the escapement goal range for 2019, and Wood River sockeye salmon escapement exceeded 100,000; therefore, no action was taken for Chinook salmon conservation at that point of the 2019 season.
- Nushagak River Chinook salmon escapement index was poor with 41,258 fish counted, below the escapement goal range of 55,000–120,000 (Table 1). The escapement index is the sonar count minus sport and subsistence harvest upriver of the sonar.
- 2019 was notably hot, dry, and calm. This allowed for thermal stratification of water bodies. Water temperatures exceeded lethal limits for sockeye salmon in some systems, particularly the Igushik River. Thermal barriers may have delayed salmon migration and changed fish behavior.
- The harvest percentages were 78% drift net and 22% set net, compared to the 74/26% allocation as specified in regulation (Appendices A11 and A13).

2020

The 2020 inshore sockeye salmon run to the Nushagak District of 12.7 million fish was 5% above the preseason forecast of 12.0 million fish (Appendix A4). The harvest of 8.9 million sockeye salmon ranks 7th in the history of the Nushagak District (Appendix A18). Sockeye salmon escapement into the Nushagak River was 1.2 million, which is above the escapement goal range. Wood River sockeye salmon escapement was 2.2 million, which is also above the escapement goal range. Igushik River sockeye salmon escapement was 324,000 and within the escapement goal range (Table 1). Nushagak River chum salmon escapement was 113,000 fish, well below the 200,000 lower bound of the escapement goal (Appendix A4). Coho and pink salmon were not enumerated in 2020 due to budget cuts.

- The total Nushagak District run of 12.7 million sockeye salmon was the smallest in the 2019–2022 period, but the 6th largest in the last 20 years (Appendix A4).
- Nushagak River Chinook salmon run was late and small. Sockeye salmon fishing was delayed for several days to allow additional Chinook salmon escapement. Commercial fishing began June 26.
- The Nushagak River Chinook salmon escapement index was 40,313; this was below the 55,000 lower end of the escapement goal range (Table 1).
- Harvest percentages were 69% drift and 31% set (Appendices A11 and A13).

2021

The 2021 inshore sockeye salmon run to the Nushagak District of 28.3 million fish was 91% above the preseason forecast of 14.8 million fish (Appendix A6). The harvest of 18.3 million sockeye salmon ranks 3rd in the history of the Nushagak District behind 2018 and 2022 (Appendix A18). Sockeye salmon escapement into the Nushagak River was 4.7 million, well above the escapement goal range and the largest escapement ever. Wood River escapement was 4.4 million, also above the escapement goal range and the 3rd largest escapement ever. Igushik River escapement was 879,000, above the escapement goal range and the 2nd largest escapement ever (Table 1). Nushagak River chum salmon escapement was 125,000, well below the 200,000 lower bound of the escapement goal (Appendix A6). Coho and pink salmon were not enumerated in 2021 due to budget cuts.

- The department delayed commercial fishing well past what is required by the management plan to try and protect Chinook and chum salmon.
- The Nushagak River Chinook salmon run was poor, with a sonar escapement index of 50,009 fish and a harvest of 4,306 Chinook salmon during the directed sockeye salmon fishery (Appendix A6), which is the lowest on record.
- Harvest percentages were 81% drift and 29% set (Appendices A11 and A13).

2022

The 2022 inshore sockeye salmon run to the Nushagak District of 30.2 million fish was 2% above the preseason forecast of 29.5 million fish (Appendix A8). The harvest of 22.6 million sockeye salmon ranks 2nd in the history of the Nushagak District (Appendix A18). Sockeye salmon escapement into the Nushagak River was 3.5 million, well above the escapement goal range and the 3rd largest escapement ever. Wood River escapement was 3.8 million, above the escapement goal range. Igushik River escapement was 379,000, within the escapement goal range (Table 1). For the 3rd straight year, the Nushagak River chum salmon escapement, 117,000, was below the 200,000 lower bound of the escapement goal (Appendix A8). Coho and pink salmon were not enumerated in 2022 due to budget cuts.

- The department delayed commercial fishing well past what is required by the regulatory management plan to protect Chinook and chum salmon.
- Fishing began on June 23 with a large daily harvest of over 800,000 sockeye salmon.
- The June 30 harvest of 2.4 million was the largest single day harvest in the history of the Nushagak District.
- The Nushagak River Chinook salmon run was poor, with a sonar index of 44,434 fish and a harvest of 5,325 Chinook salmon for the 2022 salmon season (Appendix A8).
- Harvest percentages were 82% drift and 18% set (Appendices A11 and A13).

TOGIAK

Togiak District differs substantially from other Bristol Bay districts. The harvest is much smaller, with an average harvest of 600,000 sockeye salmon over the last 20 years (2002–2021) (Appendix A18). Run timing is later relative to the other districts and fishing participants are generally local residents of Togiak and Twin Hills.

2019

The 2019 inshore sockeye salmon run to the Togiak District of 1.4 million fish was 25% above the preseason forecast of 1.1 million fish (Appendix A2). The harvest of 1.0 million sockeye salmon is the largest ever for Togiak District (Appendix A18). Escapement into the Togiak River was 352,000, above the escapement goal range of 120,000–270,000 sockeye salmon (Table 1).

- The total run of 1.4 million sockeye salmon was the 2nd largest total run ever (Appendix A2).
- The Chinook salmon harvest of 3,568 was 28% below the 2002–2021 average (Appendix A2).

2020

The 2020 inshore sockeye salmon run to the Togiak District of 707,000 fish was 20% below the preseason forecast of 880,000 fish (Appendix A4). The harvest of 446,000 sockeye salmon is 26% below the 2002 to 2021 average (Appendix A18). Sockeye salmon escapement into the Togiak River was 261,000 and within the escapement goal range (Table 1).

- The total run was 15% below the long-term average of 835,000 fish.
- The Chinook salmon harvest of 767 fish was 85% below the 2002–2021 average (Appendix A4).

2021

The 2021 inshore sockeye salmon run to the Togiak District of 957,000 fish was 20% above the preseason forecast of 800,000 fish. The harvest of 676,000 was 13% above the 2002–2021 average (Appendix A6). Sockeye salmon escapement into the Togiak River was 281,000 and above the escapement goal range (Table 1).

- The Chinook salmon harvest of 729 fish was 85% below the 2002–2021 average (Appendix A6).

2022

The 2022 inshore sockeye salmon run to the Togiak District of 823,144 fish was 28% below the preseason forecast of 1.15 million fish. The harvest of 584,000 fish was 5% below the 2002–2021 average (Appendix A8). Sockeye salmon escapement into the Togiak River was 240,000 fish and within the escapement goal range (Table 1).

- The Chinook salmon harvest of 1,371 fish was 72% below the 2002–2022 average (Appendix A8).
- Togiak District management was conservative because of lack of pilot and aircraft availability to assess run entry when escapement was low.

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APPENDIX A: SALMON

Appendix A1.–Bristol Bay Area permits fished, by gear group, 2002–2022.

Year	Drift total	Permits fished	Dual	% fished	Set total	Permits fished	% fished	Drift and set total
2002	1,878	1,183	a	62%	1,006	680	68%	2,558
2003	1,867	1,389	a	74%	1,001	714	71%	2,581
2004	1,860	1,426	a	77%	989	797	81%	2,849
2005	1,862	1,526	a	82%	988	829	84%	2,850
2006	1,859	1,567	a	84%	985	844	86%	2,844
2007	1,862	1,621	a	87%	983	836	85%	2,845
2008	1,863	1,636	a	88%	980	850	87%	2,843
2009	1,863	1,642	a	88%	981	855	87%	2,844
2010	1,863	1,731	360	93%	983	861	88%	2,846
2011	1,862	1,747	224	94%	981	878	90%	2,846
2012	1,862	1,740	326	93%	979	883	90%	2,841
2013	1,862	1,709	313	92%	978	854	87%	2,840
2014	1,863	1,751	312	94%	977	875	90%	2,840
2015	1,864	1,744	309	94%	975	885	91%	2,838
2016	1,864	1,714	353	92%	973	858	88%	2,834
2017	1,863	1,728	357	93%	972	879	91%	2,835
2018	1,863	1,735	372	94%	970	881	91%	2,833
2019	1,862	1,767	372	95%	965	891	93%	2,827
2020	1,862	1,724	382	93%	964	841	87%	2,826
2021	1,862	1,753	403	94%	964	870	90%	2,826
2022 ^b	1,863	1,760	403	94%	962	865	90%	2,825
2002–2022 Avg.	1,863	1,642	345	88%	980	843	86%	2,812

^a Dual permit tracking did not begin until 2010.

^b Preliminary data.

Appendix A2.—Total inshore run of salmon, in numbers of fish, Bristol Bay Area, 2019.

District	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak Catch	11,527,837	2,743	134,517	530	1,418	11,667,045
Escapement-Kvichak tower	2,371,242	ND	ND	ND	ND	2,371,242
Naknek tower	2,911,470	ND	ND	ND	ND	2,911,470
Alagnak tower	820,458	ND	ND	ND	ND	820,458
Naknek-Kvichak Subtotal	17,631,007	2,743	134,517	530	1,418	17,770,215
Egegik Catch	14,683,614	3,344	156,260	221	18,233	14,861,672
Escapement- Egegik tower	2,340,210	ND	ND	ND	ND	2,340,210
Egegik Subtotal	17,023,824	3,344	156,260	221	18,233	17,201,882
Ugashik Catch	1,037,030	2,062	20,249	183	550	1,060,074
Escapement- Ugashik tower	1,547,748	ND	ND	ND	ND	1,547,748
Ugashik Subtotal	2,584,778	2,062	20,249	183	550	2,607,822
Nushagak Catch	14,755,905	21,509	855,428	2,021	33,018	15,667,881
Escapement - Wood tower	2,073,276	ND	ND	ND	ND	2,073,276
Igushik tower	256,074	ND	ND	ND	ND	256,074
Nushagak sonar	709,349	41,258	651,164	ND	51,852	1,453,623
Nushagak Subtotal	17,794,604	62,767	1,506,592	2,021	84,870	19,450,854
Togiak Catch	1,018,644	3,568	227,731	3,875	27,778	1,281,596
Escapement - Togiak tower	351,846	ND	ND	ND	ND	351,846
Togiak Subtotal	1,370,490	3,568	227,731	3,875	27,778	1,633,442
Bristol Bay Catch	43,023,030	33,226	1,394,185	6,830	80,997	44,538,268
Bristol Bay Escapement	13,381,673	41,258	651,164	0	51,852	14,125,947
Bristol Bay Total Run	56,404,703	74,484	2,045,349	6,830	132,849	58,664,215

Note: Nushagak sonar enumerated Chinook, sockeye, chum, and coho salmon in 2019. ND = No data.

Appendix A3.–Daily district registration of drift gillnet permit holders and dual permit registration, by district, Bristol Bay, 2019.

Date	<u>Naknek-Kvichak</u>		<u>Egegik</u>		<u>Ugashik</u>		<u>Nushagak</u>		<u>Togiak^a</u>	
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total	Total ^b
6/1	ND	ND	1	0	ND	ND	ND	ND	ND	1
6/2	1	0	6	2	ND	ND	3	ND	ND	10
6/3	1	0	6	2	ND	ND	3	ND	ND	10
6/4	2	0	6	2	ND	ND	11	4	ND	19
6/5	2	0	8	2	ND	ND	12	4	3	25
6/6	3	0	8	2	2	0	13	4	4	30
6/7	3	0	12	4	2	0	13	4	4	34
6/8	3	0	13	4	2	0	14	4	4	36
6/9	3	0	15	6	3	0	14	4	4	39
6/10	3	0	15	6	4	0	14	4	4	40
6/11	3	0	21	10	5	0	22	4	5	56
6/12	3	0	40	18	5	0	25	4	5	78
6/13	4	0	49	22	5	0	35	6	5	98
6/14	7	2	70	30	5	0	43	10	5	130
6/15	8	2	82	32	7	2	60	18	5	162
6/16	8	0	85	34	7	2	61	18	5	166
6/17	10	0	123	52	7	2	65	20	6	211
6/18	19	2	177	80	11	2	101	34	7	315
6/19	21	2	198	92	11	2	124	46	9	363
6/20	24	4	210	88	12	2	183	68	13	442
6/21	30	6	228	92	12	2	632	312	14	916
6/22	31	6	340	150	13	2	758	374	14	1,156
6/23	32	6	377	170	16	4	819	400	17	1,261
6/24	120	34	359	154	17	4	861	414	20	1,377
6/25	194	52	368	158	20	8	849	406	24	1,455
6/26	234	70	385	170	26	10	856	420	25	1,526
6/27	322	112	394	176	26	10	840	410	28	1,610
6/28	328	108	408	178	28	10	829	400	32	1,625
6/29	327	102	428	188	36	12	833	400	32	1,656
6/30	334	108	450	206	41	14	834	402	33	1,692
7/01	337	110	449	204	45	16	834	400	34	1,699
7/02	342	110	450	206	45	16	832	400	36	1,705
7/03	346	112	452	206	49	20	840	406	37	1,724
7/04	354	114	453	208	46	18	827	402	38	1,718
7/05	361	118	452	208	47	20	814	396	39	1,713
7/06	377	122	456	210	50	22	792	380	39	1,714
7/07	387	124	460	214	54	24	763	368	39	1,703
7/08	406	138	452	208	55	24	740	358	39	1,692
7/09	440	158	450	206	55	24	699	328	40	1,684
7/10	462	168	441	204	62	28	592	252	42	1,599
7/11	501	194	430	204	69	34	522	200	42	1,564
7/12	609	270	427	204	77	36	481	184	42	1,636
7/13	639	284	467	238	89	44	414	162	42	1,651
7/14	656	280	456	238	89	44	358	144	42	1,601
7/15	691	276	563	300	81	44	284	102	42	1,661
7/16	742	302	617	324	65	30	250	82	44	1,718
Average ^c	427	156	450	212	53	23	686	318	37	1,652

Note: Total permit sum includes dual permit registrations. ND = no data.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Total does not account for permits in transfer status.

^c Seasonal averages calculated for June 16 to July 16.

Appendix A4.—Total inshore run of salmon, in numbers of fish, Bristol Bay Area, 2020.

District	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak Catch	14,311,034	816	36,381	1,345	1,033	14,350,609
Escapement-Kvichak tower	4,030,968	ND	ND	ND	ND	4,030,968
Naknek tower	4,112,160	ND	ND	ND	ND	4,112,160
Alagnak tower	2,386,518	ND	ND	ND	ND	2,386,518
Naknek-Kvichak Subtotal	24,840,680	816	36,381	1,345	1,033	24,880,255
Egegik Catch	13,364,669	711	50,055	1,755	26,342	13,443,532
Escapement- Egegik tower	2,389,728	ND	ND	ND	ND	2,389,728
Egegik Subtotal	15,754,397	711	50,055	1,755	26,342	15,833,260
Ugashik Catch	2,598,269	1,349	16,339	381	818	2,617,156
Escapement - Ugashik tower	1,745,940	ND	ND	ND	ND	1,745,940
Ugashik Subtotal	4,344,209	1,349	16,339	381	818	4,363,096
Nushagak Catch	8,860,302	6,363	136,605	26,216	76,133	9,105,619
Escapement - Wood tower	2,243,886	ND	ND	ND	ND	2,243,886
Igushik tower	323,814	ND	ND	ND	ND	323,814
Nushagak sonar	1,228,059	40,313	112,731	ND	ND	1,381,103
Nushagak Subtotal	12,656,061	46,676	249,336	26,216	76,133	13,054,422
Togiak Catch	445,572	767	53,510	42,216	10,095	552,160
Escapement - Togiak tower	261,126	ND	ND	ND	ND	261,126
Togiak Subtotal	706,698	767	53,510	42,216	10,095	813,286
Bristol Bay Catch	39,579,846	10,006	292,890	71,913	114,421	40,069,076
Bristol Bay Escapement	18,722,199	40,313	112,731	0	0	18,875,243
Bristol Bay Total Run	58,302,045	50,319	405,621	71,913	114,421	58,944,319

Note: Nushagak sonar enumerated Chinook, sockeye, and chum salmon in 2020.

Appendix A5.—Daily district registration of drift gillnet permit holders and dual permit registration, by district, Bristol Bay, 2020.

Date	Naknek-Kvichak		Egegik		Ugashik		Nushagak		Togiak ^a		Total ^b
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total		
6/1	0	0	3	0	0	0	1	0	0	4	
6/2	5	2	17	2	1	0	12	8	1	36	
6/3	5	2	18	2	1	0	14	10	1	41	
6/4	5	2	18	2	1	0	15	10	3	44	
6/5	5	2	20	2	2	0	15	10	4	46	
6/6	5	2	20	2	2	0	15	10	4	46	
6/7	5	2	21	2	2	0	15	10	4	47	
6/8	5	2	23	2	2	0	15	10	4	50	
6/9	11	2	34	6	7	0	27	10	5	85	
6/10	11	2	37	6	7	0	33	10	6	100	
6/11	12	2	43	8	7	0	35	10	12	111	
6/12	12	2	46	10	7	0	37	10	14	116	
6/13	14	2	50	12	8	2	42	12	14	128	
6/14	25	2	74	14	8	2	42	12	14	163	
6/15	25	2	102	30	8	2	46	16	14	196	
6/16	35	2	136	52	12	6	65	22	15	265	
6/17	39	2	146	54	12	6	78	22	17	294	
6/18	40	2	147	54	12	6	96	28	19	315	
6/19	57	2	177	66	8	2	112	34	20	378	
6/20	61	2	196	78	8	2	152	32	24	442	
6/21	67	2	223	86	8	2	175	60	25	499	
6/22	80	12	266	110	8	2	201	66	26	585	
6/23	112	28	277	108	8	2	270	90	30	698	
6/24	131	30	271	106	8	2	335	114	31	776	
6/25	181	48	300	120	14	6	528	220	31	1,054	
6/26	270	96	329	134	25	14	697	336	31	1,354	
6/27	350	148	393	176	29	18	682	320	33	1,488	
6/28	389	170	408	184	30	18	675	318	34	1,537	
6/29	434	198	410	184	31	18	677	320	35	1,588	
6/30	459	206	431	192	29	16	676	320	36	1,632	
7/01	466	208	440	200	30	16	662	312	37	1,635	
7/02	473	210	446	202	34	16	636	290	37	1,626	
7/03	495	228	450	204	37	18	589	256	37	1,608	
7/04	511	240	462	214	42	20	540	220	37	1,592	
7/05	518	240	500	242	47	20	479	202	37	1,581	
7/06	531	246	529	268	48	20	478	202	37	1,625	
7/07	544	252	573	280	48	20	488	210	39	1,692	
7/08	548	252	570	282	50	20	484	204	39	1,694	
7/09	550	252	567	282	44	14	466	192	42	1,670	
7/10	558	258	556	272	46	14	437	172	43	1,640	
7/11	589	278	516	248	48	14	360	124	43	1,557	
7/12	616	296	471	230	61	26	299	106	44	1,491	
7/13	696	344	482	230	91	46	294	104	44	1,607	
7/14	715	350	483	230	144	68	282	94	44	1,668	
7/15	722	354	480	232	158	74	282	94	44	1,686	
7/16	722	352	474	228	174	80	279	92	44	1,688	
Average ^c	515	238	467	220	57	26	500	214	39	1,578	

Note: Total permit sum includes dual permit registrations.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Total does not account for permits in transfer status.

^c Seasonal averages calculated for June 16 to July 16.

Appendix A6.—Total inshore run of salmon, in numbers of fish, Bristol Bay Area, 2021.

District	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak Catch	9,253,721	990	34,338	224	1,053	9,290,326
Escapement-Kvichak tower	4,703,520	ND	ND	ND	ND	4,703,520
Naknek tower	2,796,534	ND	ND	ND	ND	2,796,534
Alagnak tower	3,236,904	ND	ND	ND	ND	3,236,904
Naknek-Kvichak Subtotal	19,990,679	990	34,338	224	1,053	20,027,284
Egegik Catch	8,552,456	475	20,317	281	15,952	8,589,481
Escapement- Egegik tower	1,832,196	ND	ND	ND	ND	1,832,196
Egegik Subtotal	10,384,652	475	20,317	281	15,952	10,421,677
Ugashik Catch	5,205,169	444	20,793	28	151	5,226,585
Escapement- Ugashik tower	2,859,930	ND	ND	ND	ND	2,859,930
Ugashik Subtotal	8,065,099	444	20,793	28	151	8,086,515
Nushagak Catch	18,283,479	4,306	115,456	1,122	27,467	18,431,830
Escapement - Wood tower	4,410,156	ND	ND	ND	ND	4,410,156
Igushik tower	878,952	ND	ND	ND	ND	878,952
Nushagak sonar	4,697,299	50,009	125,352	ND	ND	4,872,660
Nushagak Subtotal	28,269,886	54,315	240,808	1,122	27,467	28,593,598
Togiak Catch	676,163	729	21,346	1,941	3,583	703,762
Escapement - Togiak tower	280,836	ND	ND	ND	ND	280,836
Togiak Subtotal	956,999	729	21,346	1,941	3,583	984,598
Bristol Bay Catch	41,970,988	6,944	212,250	3,596	48,206	42,241,984
Bristol Bay Escapement	25,696,327	50,009	125,352	0	0	25,871,688
Bristol Bay Total Run	67,667,315	56,953	337,602	3,596	48,206	68,113,672

Note: Nushagak sonar enumerated Chinook, sockeye, and chum salmon in 2021. ND = no data available.

Appendix A7.–Daily district registration of drift gillnet permit holders and dual permit registration, by district, Bristol Bay, 2021.

Date	Naknek-Kvichak		Egegik		Ugashik		Nushagak		Togiak ^a		Total ^b
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total		
6/1	0	0	6	0	0	0	1	0	0	7	
6/2	3	0	12	0	1	0	1	0	1	18	
6/3	3	0	12	0	1	0	1	0	1	19	
6/4	3	0	13	0	1	0	1	0	2	25	
6/5	3	0	17	2	1	0	2	0	2	25	
6/6	3	0	17	2	1	0	2	0	3	26	
6/7	3	0	17	2	1	0	2	0	3	26	
6/8	3	0	17	2	1	0	2	0	3	26	
6/9	3	0	20	4	1	0	4	0	3	31	
6/10	3	0	39	4	1	0	4	0	3	50	
6/11	5	0	41	4	1	0	5	0	3	55	
6/12	5	0	44	4	3	2	7	0	3	64	
6/13	8	2	47	4	5	4	7	0	5	72	
6/14	8	2	54	8	7	6	7	0	6	82	
6/15	12	2	76	18	12	10	13	4	6	119	
6/16	19	2	99	30	14	12	15	4	6	153	
6/17	21	2	129	46	14	12	25	8	9	198	
6/18	32	4	171	66	15	12	43	14	11	272	
6/19	35	4	193	78	11	8	60	20	15	314	
6/20	43	6	304	152	13	10	71	24	16	447	
6/21	53	12	316	158	17	14	79	24	16	481	
6/22	65	14	343	170	37	28	110	34	17	572	
6/23	67	10	347	174	34	26	208	76	19	675	
6/24	68	10	366	184	34	24	308	120	20	796	
6/25	74	12	383	184	42	30	745	400	26	1,270	
6/26	94	14	396	186	50	38	815	444	26	1,381	
6/27	163	34	415	192	59	40	860	464	26	1,523	
6/28	201	32	411	192	76	46	839	450	26	1,553	
6/29	214	52	410	192	80	48	800	430	27	1,531	
6/30	263	72	422	202	93	54	757	394	27	1,562	
7/01	303	90	441	212	105	64	742	376	27	1,618	
7/02	335	106	429	204	131	86	746	372	27	1,668	
7/03	358	124	421	204	128	84	741	368	29	1,677	
7/04	375	134	398	190	131	86	734	362	30	1,668	
7/05	383	140	388	184	136	88	739	360	30	1,676	
7/06	395	148	384	182	150	98	736	360	31	1,696	
7/07	411	160	370	176	150	98	723	352	31	1,685	
7/08	420	162	345	166	150	96	736	358	31	1,682	
7/09	452	180	335	162	154	96	673	320	32	1,646	
7/10	464	184	312	146	156	96	644	300	33	1,609	
7/11	516	216	285	132	178	108	451	200	33	1,463	
7/12	542	228	293	138	205	128	395	184	33	1,468	
7/13	657	278	293	140	273	162	381	174	35	1,639	
7/14	692	288	295	146	305	180	364	164	35	1,691	
7/15	670	282	312	154	334	196	344	150	35	1,695	
7/16	671	280	317	156	351	204	337	146	35	1,711	
Average ^c	393	147	366	175	156	97	650	324	30	1,596	

Note: Total permit sum includes dual permit registrations.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Total does not account for permits in transfer status.

^c Seasonal averages calculated for June 16 to July 16.

Appendix A8.—Total inshore run of salmon, in numbers of fish, Bristol Bay Area, 2022.

District	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak Catch	14,172,393	1,129	33,962	18,823	1,003	14,227,310
Escapement-Kvichak tower	4,224,882	ND	ND	ND	ND	4,224,882
Naknek tower	1,921,296	ND	ND	ND	ND	1,921,296
Alagnak tower	1,668,222	ND	ND	ND	ND	1,668,222
NK Subtotal	21,986,793	1,129	33,962	18,823	1,003	22,041,710
Egegik Catch	16,468,800	272	27,141	4,317	5,138	16,505,668
Escapement- Egegik tower	1,786,152	ND	ND	ND	ND	1,786,152
Egegik Subtotal	18,254,952	272	27,141	4,317	5,138	18,291,820
Ugashik Catch	6,247,386	277	15,989	362	11	6,264,025
Escapement- Ugashik tower	1,436,784	ND	ND	ND	ND	1,436,784
Ugashik Subtotal	7,684,170	277	15,989	362	11	7,700,809
Nushagak Catch	22,619,021	5,325	172,069	12,366	1,789	22,810,570
Escapement - Wood tower	3,747,612	ND	ND	ND	ND	3,747,612
Igushik tower	378,768	ND	ND	ND	ND	378,768
Nushagak sonar	3,455,272	44,434	116,692	ND	ND	3,616,398
Nushagak Subtotal	30,202,145	49,758	288,761	12,366	1,789	30,555,104
Togiak Catch	583,498	1,371	52,655	59,856	1,099	698,479
Escapement - Togiak tower	239,646	ND	ND	ND	ND	239,646
Togiak Subtotal	823,144	1,371	52,655	59,856	1,099	938,125
Bristol Bay Catch	60,091,098	8,374	301,816	95,724	9,040	60,506,052
Bristol Bay Escapement	18,858,634	44,434	116,692	0	0	19,019,76
Bristol Bay Total Run	78,949,732	52,808	418,508	95,724	9,040	79,525,812

Note: 2022 data are preliminary. Nushagak sonar enumerated Chinook, sockeye, and chum salmon in 2022.

Appendix A9.–Daily district registration of drift gillnet permit holders and dual permit registration, by district, Bristol Bay, 2022.

Date	Naknek-Kvichak		Egegik		Ugashik		Nushagak		Togiak ^a		Total ^b
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total		
6/1	0	0	0	0	0	0	0	0	0	0	0
6/2	1	0	14	2	0	0	2	0	3	3	20
6/3	1	0	20	2	0	0	2	0	3	3	26
6/4	2	0	21	2	0	0	3	0	3	3	29
6/5	2	0	21	2	0	0	3	0	3	3	29
6/6	2	0	21	2	0	0	3	0	3	3	29
6/7	3	0	22	2	0	0	7	4	3	3	35
6/8	3	0	22	2	0	0	7	4	3	3	35
6/9	3	0	27	4	0	0	7	4	4	4	41
6/10	5	0	32	4	1	0	10	6	5	5	53
6/11	7	0	37	6	2	0	10	6	6	6	62
6/12	11	0	40	6	2	0	10	6	6	6	69
6/13	11	0	46	10	5	0	11	6	6	6	79
6/14	13	2	61	14	7	2	16	6	8	8	105
6/15	13	2	78	18	10	4	22	6	11	11	134
6/16	13	2	116	38	10	4	27	6	13	13	179
6/17	18	2	181	80	11	4	37	8	14	14	261
6/18	20	2	173	72	12	4	68	26	14	14	287
6/19	19	2	209	90	13	4	95	30	15	15	351
6/20	28	6	233	104	15	4	258	114	16	16	550
6/21	33	6	246	104	23	10	381	170	17	17	700
6/22	39	6	280	120	25	12	495	230	18	18	857
6/23	100	26	314	136	33	12	796	416	19	19	1,262
6/24	133	34	335	140	32	12	946	510	21	21	1,467
6/25	168	48	335	140	38	14	984	518	25	25	1,550
6/26	197	52	343	142	39	14	979	518	26	26	1,584
6/27	218	60	350	150	43	16	974	510	26	26	1,611
6/28	247	70	349	150	47	20	969	504	27	27	1,639
6/29	264	78	345	146	55	24	929	486	27	27	1,620
6/30	271	82	346	148	66	28	915	480	28	28	1,626
7/01	283	86	357	148	100	52	920	486	29	29	1,689
7/02	296	94	362	154	104	54	924	490	30	30	1,716
7/03	299	94	344	150	115	62	888	474	30	30	1,676
7/04	294	92	336	150	118	62	884	472	30	30	1,662
7/05	312	100	347	150	145	74	876	468	32	32	1,712
7/06	312	98	347	150	162	82	867	464	34	34	1,722
7/07	320	100	343	148	165	82	840	452	34	34	1,702
7/08	322	102	335	146	171	84	778	416	35	35	1,641
7/09	331	102	316	138	192	96	762	404	36	36	1,637
7/10	389	136	277	124	206	102	710	376	37	37	1,619
7/11	428	160	271	122	207	102	622	322	37	37	1,565
7/12	489	194	269	122	241	112	541	300	37	37	1,577
7/13	547	222	274	128	265	132	495	270	37	37	1,618
7/14	609	242	281	132	320	160	453	244	38	38	1,701
7/15	644	268	288	134	328	166	436	236	38	38	1,734
7/16	657	274	288	134	327	168	416	222	38	38	1,726
Average ^c	359	125	323	141	157	78	780	414	32	32	1,651

Note: Total permit sum includes dual permit registrations.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Total does not account for permits in transfer status.

^c Seasonal averages calculated for June 16 to July 16.

Appendix A10.—Average daily district registration of drift gillnet permit holders and dual vessel registration, by district, Bristol Bay, 2002–2022.

Date	Naknek-Kvichak		Egegik		Ugashik		Nushagak		Togiak ^a	
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total	Total ^b
2002	227	–	297	–	89	–	359	–	57	1,029
2003	310	–	297	–	184	–	433	–	66	1,290
2004	352	–	462	–	134	–	372	–	60	1,381
2005	292	–	369	–	162	–	539	–	51	1,413
2006	386	–	334	–	82	–	617	–	45	1,465
2007	390	–	343	–	181	–	543	–	45	1,502
2008	432	–	287	–	134	–	374	–	46	1,274
2009	399	–	379	–	103	–	360	–	48	1,290
2010	409	–	336	–	146	–	405	–	49	1,345
2011	620	–	280	–	269	–	424	–	53	1,646
2012	685	–	326	–	219	–	282	–	58	1,570
2013	645	113	366	70	224	50	313	49	64	1,612
2014	738	135	374	70	115	22	389	65	64	1,680
2015	677	108	387	70	180	41	332	53	48	1,624
2016	532	201	358	152	257	118	409	190	38	1,593
2017	403	65	447	108	254	64	469	190	40	1,611
2018	231	60	311	113	92	43	943	485	33	1,610
2019	427	159	450	106	53	12	686	159	37	1,652
2020	515	119	467	110	57	13	500	107	39	1,578
2021	393	74	366	87	156	48	650	162	30	1,596
2022	359	125	323	141	157	78	780	414	32	1,651
Average ^c	453	115	362	99	154	46	470	162	49	1,488
Average ^d	445	117	428	101	89	24	612	143	35	1,609

Note: Total permit sum includes dual boat registrations. En dash (–) = no data, dual permit registration not available prior to 2013.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Seasonal averages calculated for June 25–July 16.

^c 2002–2021 average.

^d 2019–2021 average.

Appendix A11.—Allocation of sockeye salmon by district and gear type 2002–2022.

Year	Percent harvest by gear type ^a							
	Naknek-Kvichak		Egegik		Ugashik		Nushagak	
	Drift	Set	Drift	Set	Drift	Set	Drift	Set
2002	65	35	85	15	88	12	75	25
2003	66	34	81	19	89	11	84	16
2004 ^b	80	20	86	14	88	12	84	16
2005	78	22	82	18	87	13	85	15
2006	83	17	84	16	88	12	88	12
2007	81	19	84	16	92	8	80	20
2008	81	19	85	15	92	8	79	21
2009	80	20	85	15	87	13	77	23
2010	80	20	84	16	90	10	77	23
2011	83	17	83	17	87	13	77	23
2012	85	15	83	17	90	10	63	37
2013	84	16	85	15	90	10	78	22
2014	83	17	89	11	82	18	74	26
2015	84	16	81	19	91	9	69	31
2016	83	17	82	18	91	9	67	33
2017	72	28	87	13	92	8	75	25
2018	71	29	80	20	78	22	82	18
2019	77	13	81	19	66	34	78	22
2020	80	20	86	14	74	26	69	31
2021	75	25	84	16	87	13	84	16
2022 ^c	75	25	79	21	89	11	82	18
2002–2021 Avg.	78	21	84	16	87	13	77	23
2019–2021 Avg.	77	19	84	16	76	24	77	23
Allocation	84	16	86	14	90	10	74	26

^a Data from 2002 to 2022 for Naknek-Kvichak, Egegik, Ugashik, and Nushagak Districts are for the allocation periods only.

^b Excludes 1,656,924 fish harvested in the General District.

^c Preliminary data.

Appendix A12.–Naknek-Kvichak District sockeye salmon allocation by gear type and percent of catch through the allocation period, 2002–2022.

Year	Driftnet			Setnet		Naknek River Special Harvest Area	
	Naknek-Kvichak driftnet	Naknek section	Kvichak section	Combined setnet	Driftnet	Setnet	
2002 ^a	65% ^b	0%	0%	35% ^a	65%	35%	
2003	66% ^b	1%	0%	34% ^a	64%	36%	
2004	80% ^b	9%	8%	20% ^a	88%	12%	
2005	81% ^b	2%	1%	19% ^a	79%	21%	
2006	83% ^b	5%	3%	17% ^a	79%	21%	
2007	82% ^c	12%	6%	18% ^c	79%	21%	
2008	81% ^c	12%	7%	19% ^c	NA	NA	
2009	80% ^c	11%	9%	20% ^c	NA	NA	
2010	80% ^c	10%	10%	20% ^c	NA	NA	
2011	83% ^c	10%	7%	17% ^c	NA	NA	
2012	85% ^c	7%	8%	15% ^c	NA	NA	
2013	84% ^c	8%	8%	16% ^c	NA	NA	
2014	83% ^c	9%	8%	17% ^c	NA	NA	
2015	84% ^c	8%	8%	16% ^c	NA	NA	
2016	82% ^c	9%	9%	18% ^c	NA	NA	
2017	70% ^c	16%	14%	30% ^c	NA	NA	
2018	71% ^c	17%	12%	29% ^c	84%	16%	
2019	77% ^c	14%	9%	23% ^c	NA	NA	
2020	80% ^c	12%	8%	20% ^c	NA	NA	
2021	75% ^c	13%	12%	25% ^c	NA	NA	
2022 ^d	75% ^c	14%	11%	25% ^c	NA	NA	
2002–2021 Avg.	79%	9%	7%	21%	77%	23%	
2019–2021 Avg.	77%	13%	10%	23%	NA	NA	
Allocation	84%	8%	8%	16%	NA	NA	

Note: NA = not applicable.

^a Inriver catches included in total harvest percentage calculation.

^b Entire season was fished in the NRSHA.

^c Inriver catches excluded from total harvest percentage calculation.

^d Preliminary data.

Appendix A13.–Nushagak District sockeye salmon allocation by gear type and percentage of catch, through the allocation period, 2002–2022.

Year	Nushagak drift	Setnet			Wood River Special Harvest	
	District	Nushagak section	Igushik section	Combined section	Driftnet	Setnet
2002 ^a	78%	21%	1%	22%	66%	34%
2003 ^a	84%	14%	2%	16%	NA	NA
2004 ^a	84%	15%	1%	16%	NA	NA
2005 ^a	85%	13%	2%	15%	NA	NA
2006 ^a	88%	11%	2%	12%	NA	NA
2007 ^a	80%	17%	3%	20%	NA	NA
2008 ^a	79%	16%	5%	21%	NA	NA
2009 ^a	77%	19%	4%	23%	NA	NA
2010 ^a	77%	17%	5%	23%	70%	30%
2011 ^a	77%	16%	7%	23%	NA	NA
2012 ^a	65%	28%	7%	35%	51%	49%
2013 ^a	78%	17%	5%	22%	NA	NA
2014 ^a	77%	16%	7%	23%	16%	84%
2015 ^a	69%	22%	9%	31%	NA	NA
2016 ^a	67%	22%	11%	33%	NA	NA
2017 ^a	75%	18%	4%	22%	NA	NA
2018 ^a	82%	16%	2%	18%	NA	18%
2019 ^a	78%	18%	3%	21%	NA	2%
2020 ^a	69%	26%	3%	29%	3%	NA
2021 ^a	81%	13%	3%	16%	NA	3%
2022 ^{a,b}	82%	13%	2%	15%	NA	3%
2002–2021 Avg.	78%	18%	4%	22%	41%	31%
2019–2021 Avg.	76%	19%	3%	22%	NA	NA
Allocation	74%	20%	6%	26%	NA	NA

Note: NA = not applicable.

^a Allocation period June 1 to July 17.

^b Preliminary data.

Appendix A14.—Sockeye salmon harvest by district, in numbers of fish, Bristol Bay Area, 2002–2022.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2002	1,418,938	4,610,374	1,573,234	2,839,424	233,743	10,675,713
2003	3,348,504	2,291,502	1,748,934	6,665,965	706,008	14,760,913
2004 ^a	4,715,070	10,209,227	3,139,229	6,104,048	437,234	26,261,802
2005	6,728,469	8,015,950	2,216,635	7,096,031	465,094	24,522,179
2006	7,151,741	7,408,983	2,429,637	10,876,552	626,442	28,493,355
2007	9,022,511	6,495,908	5,026,615	8,404,111	816,581	29,765,726
2008	10,381,844	7,403,885	2,334,022	6,903,157	651,315	27,674,223
2009	8,514,944	11,527,462	2,555,263	7,730,168	559,442	30,887,279
2010	10,858,209	5,070,816	4,031,832	8,424,030	667,850	29,052,737
2011	9,016,321	4,810,362	2,643,495	4,886,552	744,626	22,101,356
2012	10,152,917	5,062,390	2,418,653	2,663,014	622,909	20,919,883
2013	4,853,030	4,779,133	2,168,216	3,163,805	467,329	15,431,513
2014 ^b	13,791,290	6,928,621	1,511,416	6,448,463	443,287	29,127,035
2015	16,531,193	8,749,567	5,473,800	5,592,816	371,903	36,719,279
2016	13,466,245	8,739,699	6,630,231	8,109,797	645,797	37,591,769
2017	8,256,304	11,980,502	5,705,712	12,322,519	516,488	38,781,525
2018	8,917,710	5,149,621	2,771,945	24,230,150	867,770	41,937,196
2019	11,527,837	14,683,614	1,037,030	14,755,905	1,018,644	43,023,030
2020	14,311,034	13,364,669	2,598,269	8,860,302	445,572	39,579,846
2021	9,253,721	8,552,456	5,205,169	18,283,479	676,163	41,970,988
2022 ^c	14,172,393	16,468,800	6,247,386	22,619,021	583,498	60,091,098
2002–2021 Avg.	9,110,892	7,791,737	3,160,967	8,718,014	599,210	29,463,867
2002–2011 Avg.	7,115,655	6,784,447	2,769,890	6,993,004	590,834	24,419,528
2012–2021 Avg.	11,106,128	8,799,027	3,552,044	10,443,025	607,586	34,508,206

^a Total includes General District harvest of 1,656,994 fish.

^b Includes 3,958 fish that were not assigned to a district.

^c Preliminary data.

Appendix A15.—Sockeye salmon escapement by district, in numbers of fish, Bristol Bay Area, 2002–2022.

Year	Naknek-Kvichak ^a	Egegik ^b	Ugashik ^c	Nushagak ^d	Togiak ^e	Total
2002	2,303,463 ^f	1,036,092	905,584	1,755,993 ^g	199,507	6,200,639
2003	5,627,974	1,152,120	790,202	2,295,963 ^g	261,851 ^h	10,128,110
2004	12,836,100	1,290,144	815,104	2,196,864 ^g	154,681 ^h	17,292,893
2005	9,283,980	1,621,734	799,612	2,968,962 ^g	155,778 ^h	14,830,066
2006	6,795,420	1,465,158	1,003,158	4,861,780 ^g	312,126	14,437,642
2007	8,221,926	1,432,500	2,599,186	2,461,579 ^g	269,646	14,984,837
2008	7,411,104	1,259,568	596,332	3,271,926 ^g	205,680	12,744,610
2009	4,406,424	1,146,276	1,364,338	2,317,569 ^g	313,946	9,548,553
2010	6,859,068	927,054	830,886	2,791,080 ^g	188,298	11,596,386
2011	4,325,220	961,200	1,029,853	1,947,577	190,970	8,454,820
2012	5,926,503 ^f	1,233,900	695,018	1,389,975	203,148	9,448,544
2013	4,122,686 ^f	1,113,630	898,110	2,465,791	128,118	8,728,335
2014	6,133,492 ^f	1,382,466	640,158	3,723,697	151,934	12,031,747
2015	15,033,216 ^f	2,160,792	1,564,638	3,389,330	218,700	22,366,676
2016	7,930,458 ^f	1,837,260	1,635,270	2,459,450	200,046	14,062,484
2017	7,105,200	2,600,982	1,186,446	7,705,277	195,330	18,793,235
2018	8,201,286	1,608,354	1,167,792	9,525,486	511,770	21,014,688
2019	6,103,170	2,340,210	1,547,748	3,038,781	351,846	13,381,755
2020	10,529,646	2,389,728	1,745,940	3,795,795	261,126	18,722,235
2021	10,736,958	1,832,196	2,859,930	9,986,407	280,836	25,696,327
2022 ⁱ	7,814,400	1,786,152	1,436,784	7,583,124	239,646	18,860,106
2002–2021 Avg.	7,494,665	1,539,568	1,233,765	3,717,464	237,767	14,223,229
2002–2011 Avg.	6,807,068	1,229,185	1,073,426	2,686,929	225,248	12,021,856
2012–2021 Avg.	8,182,262	1,849,952	1,394,105	4,747,999	250,285	16,424,603

^a Includes tower counts from Kvichak, Alagnak, and Naknek Rivers.

^b Includes Egegik River. May include King Salmon River and Shoskey Creek.

^c Includes Ugashik River. Also includes Mother Goose River and Dog Salmon River system, 1991–2004.

^d Includes Igushik, Nushagak-Mulchatna, Nuyakuk, Snake, and Wood Rivers and Nushagak River sonar.

^e Togiak River tower count.

^f Alagnak aerial survey.

^g Snake River not surveyed.

^h Only partial and/ or late survey of Togiak streams. Includes Togiak River, lake tributaries, Kulukak system and other miscellaneous river systems.

ⁱ Preliminary data.

Appendix A16.—Average exvessel price per pound (US dollars, \$) paid for salmon, by species, Bristol Bay Area, 2002–2022.

Year	Sockeye	Chinook	Chum	Pink	Coho
2002	0.49	0.33	0.09	0.06	0.32
2003	0.51	0.32	0.08	0.07	0.27
2004	0.51	0.37	0.09	0.09	0.31
2005	0.62	0.58	0.11	0.02	0.29
2006	0.66	0.71	0.12	0.03	0.38
2007	0.67	0.64	0.13	0.03	0.41
2008	0.75	0.83	0.17	0.17	0.55
2009	0.80	0.89	0.17	0.07	0.56
2010	1.07	1.18	0.28	0.36	0.66
2011	1.17	1.04	0.37	0.29	0.74
2012	1.18	1.31	0.34	0.39	0.55
2013	1.61	1.48	0.30	0.14	0.79
2014	1.35	1.32	0.41	0.24	0.84
2015	0.64	0.56	0.30	0.06	0.39
2016	0.96	0.84	0.30	0.18	0.58
2017	1.30	0.94	0.29	0.15	0.70
2018	1.60	1.02	0.37	0.27	0.68
2019	1.53	0.83	0.32	0.10	0.70
2020	1.09	0.92	0.30	0.09	0.80
2021	1.31	1.03	0.35	0.07	0.60
2022 ^a	1.15	0.74	0.32	0.14	0.73
2002–2021 Avg.	0.99	0.86	0.24	0.14	0.56
2002–2011 Avg.	0.73	0.69	0.16	0.12	0.45
2012–2021 Avg.	1.26	1.03	0.33	0.17	0.66

Source: OCEANAK Alaska Department of Fish and Game Commercial Operators Annual Report (COAR) Buying Subject Area. The department is not responsible for errors or deficiencies in reproduction, subsequent analysis, or interpretation.

Note: The exvessel price includes any reported postseason adjustments or bonuses paid after the fish was purchased. Prices represent a weighted average price per pound by species and area. Prices may reflect a mixture of gear types and delivery conditions.

^a Does not include postseason adjustments.

Appendix A17.—Estimated exvessel value of the commercial salmon catch by species, in thousands of dollars, Bristol Bay Area, 2002–2022.

Year	Sockeye	Chinook	Chum	Pink ^a	Coho	Total ^b
2002	31,962	277	287	0	18	32,544
2003	46,897	236	423	1	238	47,795
2004	76,175	634	423	171	150	77,553
2005	96,044	720	946	0	168	97,878
2006	110,372	1,240	1,441	19	191	113,263
2007	119,196	542	1,583	0	120	121,441
2008	118,028	297	1,344	170	401	120,240
2009	142,457	387	1,347	0	177	144,368
2010	176,784	495	1,743	1,567	470	181,059
2011	154,851	455	1,542	1	62	137,726
2012	139,675	338	1,475	860	345	142,693
2013	148,681	366	2,049	0	654	151,750
2014	217,311	311	1,214	1,209	1,990	222,035
2015	123,547	347	1,758	0	92	125,744
2016	192,349	361	1,688	547	312	195,257
2017	271,549	431	2,594	18	1,071	275,663
2018	345,093	477	2,891	238	720	349,419
2019	337,838	449	2,549	2	290	341,128
2020	223,287	87	511	21	437	224,343
2021	248,343	66	430	2	247	249,088
2022 ^c	351,052	53	534	44	38	351,721
2002–2021 Avg.	166,022	426	1,412	241	408	167,549
2002–2011 Avg.	107,277	496	1,025	385	198	97,524
2012–2021 Avg.	224,767	323	1,716	290	616	227,712

Note: Value paid to commercial fishing operators. Derived from exvessel price per pound multiplied by weight of commercial catch.

^a Includes even years only.

^b Total may vary from actual sum due to rounding.

^c Does not include post season adjustments.

Appendix A18.—Historical sockeye salmon harvest, by district, Bristol Bay, 1893–2022.

Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1893	100,000	0	200,000	640,000	0	940,000
1894	262,550	0	112,850	860,000	0	1,235,400
1895	413,651	54,321	65,219	938,946	0	1,472,137
1896	487,630	20,400	229,020	1,262,690	0	1,999,740
1897	1,410,287	203,458	463,698	1,240,080	0	3,317,523
1898	2,241,113	247,842	548,793	1,890,092	0	4,927,840
1899	1,649,127	284,650	661,524	2,517,436	0	5,112,737
1900	3,208,263	307,574	796,965	4,234,533	0	8,547,335
1901	3,622,638	427,886	769,002	5,401,051	0	10,220,577
1902	6,038,386	403,444	1,640,973	4,725,715	0	12,808,518
1903	7,516,329	781,038	1,703,536	6,319,189	0	16,320,092
1904	5,856,442	136,759	564,492	5,345,659	0	11,903,352
1905	6,773,275	140,000	532,779	7,387,935	0	14,833,989
1906	4,954,905	238,000	203,014	5,427,512	0	10,823,431
1907	6,782,072	481,578	302,402	2,627,351	0	10,193,403
1908	9,088,285	781,131	272,355	6,092,031	0	16,233,802
1909	9,532,722	840,620	218,223	4,906,318	0	15,497,883
1910	6,336,382	619,001	168,471	4,469,755	0	11,593,609
1911	4,587,344	1,158,176	112,521	2,957,073	0	8,815,114
1912	13,821,905	1,455,247	425,763	3,993,428	0	19,696,343
1913	13,691,550	902,728	577,615	5,409,933	0	20,581,826
1914	12,584,809	897,767	254,716	6,457,815	0	20,195,107
1915	7,156,488	1,217,252	509,076	5,904,862	0	14,787,678
1916	11,551,086	1,578,862	647,422	3,744,551	0	17,521,921
1917	15,762,582	1,856,600	1,047,111	5,847,239	0	24,513,532
1918	14,219,536	1,818,218	756,206	6,296,705	0	23,090,665
1919	4,929,761	607,688	146,590	1,477,336	0	7,161,375
1920	5,275,140	498,949	441,770	2,682,056	0	8,897,915
1921	9,690,857	1,136,670	1,135,265	3,717,284	0	15,680,076
1922	15,766,366	2,550,068	1,879,067	3,436,576	0	23,632,077
1923	14,361,488	1,116,057	782,545	1,921,874	0	18,181,964
1924	6,813,083	874,019	446,810	2,168,154	0	10,302,066
1925	3,355,293	212,987	438,103	3,903,125	0	7,909,508
1926	12,717,504	1,522,721	1,151,541	4,022,328	0	19,414,094
1927	8,917,893	1,285,059	211,409	657,467	0	11,071,828
1928	12,200,000	1,300,000	500,000	5,710,000	0	19,710,000
1929	6,711,975	1,107,325	445,673	3,923,675	0	12,188,648
1930	2,334,138	373,250	111,150	1,440,650	0	4,259,188
1931	8,845,850	1,203,063	639,263	2,102,438	0	12,790,614

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Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1932	10,203,563	1,342,913	526,988	2,866,088	0	14,939,552
1933	16,944,386	1,780,344	611,347	4,372,873	0	23,708,950
1934	13,339,666	1,871,974	750,602	4,638,268	0	20,600,510
1935	1,703,568	416,127	0	903,264	0	3,022,959
1936	16,778,943	1,432,588	815,215	1,560,138	0	20,586,884
1937	13,957,327	2,221,161	518,027	4,561,299	0	21,257,814
1938	20,967,834	1,112,759	296,491	2,322,704	0	24,699,788
1939	7,773,909	750,098	639,217	4,169,121	0	13,332,345
1940	2,960,644	210,939	36,022	1,519,082	0	4,726,687
1941	4,966,660	342,900	65,806	1,778,338	0	7,153,704
1942	3,224,192	0	653,392	2,465,779	0	6,343,363
1943	12,874,650	0	1,081,925	3,373,643	0	17,330,218
1944	6,626,906	363,854	1,041,603	3,513,241	0	11,545,604
1945	4,195,431	0	808,797	2,296,019	0	7,300,247
1946	5,077,201	327,208	617,995	2,028,144	0	8,050,548
1947	13,965,201	995,745	913,795	2,767,287	0	18,642,028
1948	9,182,953	1,092,590	1,463,048	2,805,798	0	14,544,389
1949	3,941,568	1,016,115	691,515	800,123	0	6,449,321
1950	4,366,471	791,329	787,384	1,212,091	0	7,157,275
1951	2,926,413	644,551	318,629	436,950	0	4,326,543
1952	9,401,060	886,852	280,146	698,071	0	11,266,129
1953	3,738,839	1,234,600	688,720	449,341	0	6,111,500
1954	1,819,666	1,437,791	1,067,531	315,357	12,280	4,652,625
1955	2,564,341	622,885	240,817	1,054,978	66,085	4,549,106
1956	5,987,750	1,187,099	341,499	1,263,186	101,933	8,881,467
1957	4,578,643	814,459	350,858	491,498	40,044	6,275,502
1958	922,611	500,684	433,813	1,092,156	36,402	2,985,666
1959	1,689,425	662,391	423,414	1,719,687	113,202	4,608,119
1960	9,847,848	1,446,884	752,634	1,517,988	139,648	13,705,002
1961	8,166,983	2,686,076	357,223	511,483	192,161	11,913,926
1962	2,281,284	638,862	243,159	1,461,766	92,945	4,718,016
1963	957,902	695,582	188,695	842,744	186,213	2,871,136
1964	2,243,701	1,103,935	576,768	1,420,941	250,775	5,596,120
1965	19,139,567	3,179,559	925,690	793,323	217,100	24,255,239
1966	5,397,538	2,101,174	445,458	1,170,271	199,799	9,314,240
1967	2,337,226	1,070,942	163,744	657,711	101,107	4,330,730
1968	1,216,858	671,554	82,457	749,281	72,699	2,792,849
1969	4,655,072	889,322	169,845	773,207	134,252	6,621,698
1970	17,803,805	1,403,509	171,541	1,188,534	153,377	20,720,766

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Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
1971	5,857,378	1,306,682	954,068	1,256,799	209,060	9,583,987
1972	1,102,365	839,820	17,440	381,347	75,261	2,416,233
1973	168,249	221,337	3,920	272,093	95,723	761,322
1974	538,163	172,253	2,151	510,571	139,341	1,362,479
1975	3,085,416	964,024	14,558	645,902	188,914	4,898,814
1976	2,547,276	1,329,788	174,923	1,265,422	301,883	5,619,292
1977	2,167,214	1,780,567	92,623	619,025	218,451	4,877,880
1978	5,123,668	1,207,294	7,995	3,137,166	452,016	9,928,139
1979	14,991,826	2,257,332	391,118	3,327,346	460,984	21,428,606
1980	15,120,457	2,623,066	885,875	4,497,787	634,561	23,761,746
1981	10,992,809	4,361,406	2,116,066	7,493,093	639,707	25,603,081
1982	5,005,802	2,447,514	1,139,192	5,916,187	595,696	15,104,391
1983	21,559,372	6,755,256	3,349,451	5,119,744	588,208	37,372,031
1984	14,546,710	5,190,413	2,658,376	1,992,681	322,126	24,710,306
1985	8,179,093	7,537,273	6,468,862	1,307,889	209,766	23,702,883
1986	2,892,171	4,852,935	5,002,949	2,719,313	308,688	15,776,056
1987	4,986,002	5,356,669	2,128,652	3,254,720	342,732	16,068,775
1988	3,480,836	6,456,598	1,523,520	1,706,716	822,126	13,989,796
1989	13,809,956	8,901,994	3,146,239	2,788,194	88,923	28,735,306
1990	17,272,367	10,333,858	2,118,796	3,521,467	197,589	33,444,077
1991	10,475,206	6,797,166	2,945,742	5,053,845	549,221	25,821,180
1992	9,395,948	15,646,575	3,320,966	2,789,741	726,446	31,879,676
1993	8,907,872	21,600,603	4,176,952	5,236,932	539,933	40,462,292
1994	16,327,858	10,750,213	4,352,797	3,393,139	400,039	35,224,046
1995	20,279,581	14,426,007	4,509,418	4,445,900	605,328	44,266,234
1996	8,215,028	10,809,115	4,411,055	5,693,563	462,897	29,591,658
1997	589,311	7,517,389	1,402,690	2,506,818	142,569	12,158,777
1998	2,595,439	3,528,845	730,274	2,990,597	190,427	10,035,582
1999	9,452,972	7,388,080	2,256,007	6,175,419	385,411	25,657,889
2000	4,727,061	7,029,397	1,538,790	6,367,208	794,996	20,457,452
2001	5,280,538	2,872,662	480,509	4,734,800	810,096	14,178,605
2002	1,418,938	4,610,374	1,573,234	2,839,424	233,743	10,675,713
2003	3,348,504	2,291,502	1,748,934	6,665,965	706,008	14,760,913
2004	4,715,070	10,209,227	3,139,229	6,104,048	437,234	24,604,808
2005	6,728,469	8,015,950	2,216,635	7,096,031	465,094	24,522,179
2006	7,151,741	7,408,983	2,429,637	10,876,552	626,442	28,493,355
2007	9,022,511	6,495,908	5,026,615	8,404,111	816,581	29,765,726
2008	10,381,844	7,403,885	2,334,022	6,903,157	651,315	27,674,223
2009	8,514,944	11,527,462	2,555,263	7,730,168	559,442	30,887,279

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Year	Naknek-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2010	10,858,209	5,070,816	4,031,832	8,424,030	667,850	29,052,737
2011	9,016,321	4,810,362	2,643,495	4,886,552	744,626	22,101,356
2012	10,152,917	5,062,390	2,418,653	2,663,014	622,909	20,919,883
2013	4,853,030	4,779,133	2,168,216	3,163,805	467,329	15,431,513
2014	13,791,290	6,928,621	1,511,416	6,448,463	443,287	29,123,077
2015	16,531,193	8,749,567	5,473,800	5,592,816	371,903	36,719,279
2016	13,466,245	8,739,699	6,630,231	8,109,797	645,797	37,591,769
2017	8,256,304	11,980,502	5,705,712	12,322,519	516,488	38,781,525
2018	8,917,710	5,149,621	2,771,945	24,230,150	867,770	41,937,196
2019	11,527,837	14,683,614	1,037,030	14,755,905	1,018,644	43,023,030
2020	14,311,034	13,364,669	2,598,269	8,860,302	445,572	39,579,846
2021	9,253,721	8,552,456	5,205,169	18,283,479	676,163	41,970,988
2022	14,172,393	16,468,800	6,247,368	22,619,021	583,498	60,091,080
All year avg.	7,706,884	3,175,850	1,303,845	3,783,755	206,150	16,176,484
1972–2021 Avg.	8,520,688	6,755,804	2,491,745	5,484,498	485,485	23,738,220
2012–2021 Avg.	10,916,146	8,436,421	3,469,449	9,937,891	620,044	33,379,951
2017–2021 Avg.	10,453,321	10,746,172	3,463,625	15,690,471	704,927	41,058,517