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2024 Yukon Area Fall Season Summary

This announcement provides a preliminary summary of the 2024 Yukon Area (Figure 1) fall chum and coho salmon season.

2024 Fall Season Outlook

The fall chum salmon run size forecast, using brood year analysis with an adjustment for recent poor productivity, was for 369,000 fish, with a range of 263,000 to 474,000 fish. A preseason run size projection was made in mid-July using the relationship between historical summer and fall chum salmon run size estimates. Using the inseason estimate of 778,000 summer chum salmon, the preseason projection for fall chum salmon was a run size of 377,000 fish. This projection is well below the historical average run size of 953,000 fall chum salmon.

The coho salmon outlook for 2024 was for a below average run size, where average (1995–2023 excluding 1996 and 2009) was 222,000 fish. The outlook assumed an average survival of fish from the 2019 parent year, for which most escapements monitored were below average and the recent trend has been run sizes below average.

Preseason Management Strategy

Management of the Yukon Area fall season salmon fisheries are in accordance with the *Yukon River Drainage Fall Chum Salmon Management Plan* (5 AAC 01.249). The plan requires that when a projected run size is less than 300,000 chum salmon, all subsistence, personal use, sport, and commercial directed chum salmon fisheries close. Subsistence-directed chum salmon fisheries may open if the drainagewide or individual escapement goals are projected to be achieved. The plan also requires a run size of at least 550,000 chum salmon to allow directed commercial fishing on surplus fish above that level. There are three U.S. escapement goals for fall chum salmon; Yukon River drainagewide (300,000–600,000), Teedriinjik (85,000–234,000), and Delta River (7,000–20,000), and two Canadian treaty objectives; Yukon River Mainstem (70,000–104,000 plus harvest shares) at the Canadian Border near Eagle and Fishing Branch River (22,000–49,000) in the Canadian portion of the Porcupine River drainage.

Based on the preseason projection of 377,000 fall chum salmon and a below average run of coho salmon, preseason management strategies included the following:

- Yukon Area districts with summer chum salmon would remain open for an additional 10 days into fall season to allow for additional harvest on the summer stock, which makes up the majority of chum salmon in the river at that time.
- After the initial 10 days, subsistence fishing would remain closed until inseason fall chum salmon projections indicated escapement goals would be met.
- If escapement goals were projected to be met, harvestable surplus would be evaluated for potential subsistence fishing opportunity.
- If escapement goals were not projected to be met, closures would be in place until the fall chum migration concluded. Important fall chum spawning tributary drainages would remain closed through December to improve salmon escapement to the spawning grounds.
- Subsistence fishing with nonsalmon gear (including 4-inch and smaller mesh size set gillnets limited to 60 feet or shorter) and selective gear (dip nets, hook and line, beach seine, and manned fish wheels) for pink, sockeye, and coho salmon would be allowed. If a conservation concern existed for a salmon species, there would be a requirement to release the species from nonsalmon gear excluding gillnets.
- Commercial salmon fishing would not be allowed unless the inseason drainagewide fall chum salmon run projection exceeded 550,000 fish, and a commercial surplus was identified, and reasonable subsistence fishing opportunity had been provided.

2024 Run Assessment

Assessment information collected from projects located in the lower river were used to inform management decisions. The projects included two lower river drift gillnet test fisheries that provided run timing and relative abundance information, and a mainstem Yukon River sonar, located near the community of Pilot Station, that provided fish abundance estimates. Stock composition information for chum salmon was provided by genetic samples collected at the mainstem Yukon River sonar. Upriver projects that monitored escapement consisted of a mainstem Yukon River sonar operated near the U.S./Canada border near Eagle; Teedriinjik (Chandalar River) sonar; Sheenjek River sonar; an upper Porcupine River sonar; a weir/sonar project operated in the Fishing Branch River, a Porcupine River headwater tributary; foot surveys conducted in the Delta River and boat surveys in the Delta Clearwater River, both tributaries of the Tanana River. Age, sex, and length information was collected at both the lower river test fisheries (in Emmonak and Mt. Village), the mainstem Yukon River sonar near the U.S./Canada border, and from the Fishing Branch and Delta rivers.

By regulation, the fall season began in District 1 on July 16, and chum salmon caught after that date in the Lower Yukon Test Fishery (LYTF) are considered fall chum salmon. Mountain Village Test Fishery (MVTF) began operating on July 18, and the mainstem Yukon River sonar, operated near the community of Pilot Station, began counting fall chum salmon on July 19. The transition of upriver districts and subdistricts to fall season management was based on the migration timing of fall chum salmon. Yukon Delta Fisheries Development Association assisted LYTF operations throughout the season and conducted all drifts in late August through September 10. Preliminary cumulative fall chum salmon catch per unit effort (CPUE) at LYTF was 1,061.22, which was below the historical median of 1,307.30. The MVTF project ceased operations September 12 with a preliminary cumulative fall chum salmon CPUE of 1,689.92, which was below the historical

median of 2,036.80. The mainstem Yukon River sonar near Pilot Station ceased operations on September 7.

After July 19, four groups of chum salmon were monitored entering the Yukon River (Figure 2). The early fish that entered in July were predominantly summer chum salmon, while fish entering in August and September were predominantly fall chum salmon. The cumulative chum salmon passage estimate during the fall season at the mainstem sonar project near Pilot Station was 246,664 fish (with a 90% confidence interval of 231,992 to 261,336), which was well below the historical median of 669,000 fish. Once mixed stock genetic analysis was applied inseason, the estimated number of fall chum salmon was near 200,000 fish. Throughout the fall season, the estimated run size tracked below the 300,000 fall chum salmon threshold necessary to allow subsistence fishing (Figure 2).

Postseason, a preliminary drainagewide estimate of run size was 165,000 fall chum salmon (developed using observed escapements from assessment projects and preliminary harvest estimates). This estimate of run size was the second lowest on record compared to a median (1974–2023) of 872,000 fish.

Run timing for fall chum salmon in all the assessment projects was 2.5 days later than average. Water levels were average to above average during the fall salmon migration within the Alaska portion of the Yukon River drainage. Water temperatures were below average in August and September in the lower Yukon River and fish experienced near average water temperatures in the mainstem upper Yukon River during their migration to the Canada border.

Coho salmon appeared to be weak and late through the entire run (Figure 3). Inseason, the cumulative coho salmon passage at the mainstem sonar was estimated to be 78,000 fish (with a 90% confidence interval of 70,397 to 84,933), well below the historical median of 138,000 fish (Figure 3). Cumulative CPUE for coho salmon at both the LYTF and MVTF projects were well below their respective historical medians for the projects. Run timing for coho salmon was 5 days later than average across all the assessment projects. The postseason run size index was estimated to be 90,000 coho salmon, which includes estimates of passage after the sonar concludes plus preliminary harvest. The median index of abundance is 200,000 coho salmon, making 2024 the third lowest on record (1995–2023, excluding 1996 and 2009).

Subsistence Fishery

The fall season began with a preseason projection of 377,000 fall chum salmon based on the summer and fall chum salmon run size relationship. In accordance with the *Yukon River Drainage Fall Chum Salmon Management Plan*, all personal use, sport, and commercial fishing was closed. As the preseason projection exceeded the lower end of the drainagewide escapement goal of 300,000–600,000 chum salmon, and the summer chum salmon run was late with adequate abundance for harvest, subsistence fishing remained open for the first 10 days of the fall season. Subsistence fishing for chum salmon was allowed using selective gear, including dip nets, beach seines, manned fish wheels, and hook and line. Chinook salmon were required to be released alive from these gears. Subsistence fishing for chum salmon then closed to assess if inseason abundance estimates of fall chum salmon would show a sufficient run size to allow harvest.

As the season progressed, the fall chum salmon run projection fell below the drainagewide escapement goal and subsistence fishing closures remained in place. Subsistence fishing for nonsalmon and pink, sockeye, and coho salmon was allowed with selective gear and 4-inch or

smaller mesh size gillnets. Due to salmon conservation, 4-inch or smaller mesh size gillnets were limited to operation as a set net and restricted to 60 feet or shorter in length. During salmon closures, salmon species were specified for release from selective gear types. On August 26, subsistence fishing for coho salmon in the Yukon River drainage closed due to poor returns and fishing with gillnets was only allowed from 12:01 am Fridays to 11:59 pm Sundays to reduce incidental harvest of fall chum and coho salmon for the remainder of the salmon season.

Once the tail end of the salmon runs had passed, subsistence salmon fishing restrictions were relaxed starting October 1 in the Lower Yukon and progressed to upriver districts based on migration timing of fall chum salmon. However, to protect spawning salmon, important spawning tributaries for fall chum and coho salmon remained closed to subsistence salmon fishing through December. This included the Koyukuk, Teedriinjik, Porcupine, Nenana, and Kantishna river drainages.

The preliminary subsistence harvest estimate of fall chum salmon was 3,618 fish (44% from test fishery projects), which is well below the 2019–2023 average of 15,855 fish (Table 1). The preliminary subsistence harvest estimate of coho salmon was 1,730 fish (12% from test fishery projects), which is below the 2019–2023 average of 2,204 fish (Table 2). Salmon caught in the test fisheries were donated to local communities and are reported in the total subsistence harvest estimate. This was the fifth consecutive year of subsistence salmon fishing closures in the fall season. The average subsistence harvest has declined dramatically due to closures to protect low returns of fall chum and coho salmon.

Commercial Fishery

In 2024, no commercial fisheries occurred for fall chum or coho salmon in the Yukon Area. This was the fifth year of consecutive commercial salmon fishery closures during the fall season. Prior to the recent poor years, the commercial harvest from 2012–2019 averaged 305,757 fall chum salmon and 110,620 coho salmon. Historical harvest, value, and numbers of permits in the fall chum and coho salmon fishery can be found in Tables 3-6.

Salmon Escapement

Fall Chum Salmon Escapement

In 2024, the preliminary estimate of the drainagewide total run size is approximately 165,000 fall chum salmon. This was the second smallest run on record, indicating poor survival of age-4 fish from the 2020 brood year. With the removal of the estimated total harvests this season, the drainagewide escapement is estimated to be approximately 161,000 fall chum salmon, well below the sustainable escapement goal (SEG) range of 300,000 to 600,000 fish.

All the escapements monitored for fall chum salmon in the upper Yukon River (Teedriinjik, Fishing Branch, and mainstem Yukon) were below their respective escapement goals. In the Teedriinjik River, the estimated escapement of 58,457 fall chum salmon (including expansions to estimate the run after the sonar project ended) was only 69% of the lower bound of the sustainable escapement goal (SEG) range of 85,000 to 234,000 fish (Table 7). The Fishing Branch River weir estimate was approximately 5,933 fall chum salmon, which was 73% below the lower end of the Interim Management Escapement Goal (IMEG) range of 22,000–49,000 fish (Table 7). The fall chum salmon passage estimate at the mainstem Yukon River sonar project near Eagle was 14,003 fish (90% CI: 13,754–14,252) for the dates August 28 through October 6. The fall chum salmon estimate was subsequently adjusted to include 2,201 fish, which were estimated to pass after the

project was concluded for winter. The preliminary escapement for the mainstem Yukon River in Canada was derived by subtracting the upstream U.S. and Canadian fall chum salmon harvests (30 U.S. and 0 Canada in 2024) above the Eagle sonar project from the expanded sonar estimate. The preliminary mainstem Yukon River escapement estimate of 16,174 fall chum salmon was only 23% of the lower end of the IMEG range of 70,000 to 104,000 fish (Table 7) and is the lowest on record. The average escapement to the mainstem Yukon River from 1980–2019 (prior to the recent declines) was 117,000 fall chum salmon. The estimated escapement in the Delta River, a tributary of the Tanana River, was 16,880 fall chum salmon was well within the SEG range of 7,000 to 20,000 fish (Table 7). This was the only escapement goal that was achieved in the Yukon Management Area in the fall season.

Upper Yukon River systems without escapement goals were also well below historical averages. The Sheenjek River had an estimated run size of 14,320 fall chum salmon (based on sonar); similar to escapements observed since 2022 when the project resumed operations. However, escapements in the last three years are all well below the historical average of 96,000 (1974–2012; Table 7). Assessment in the upper Porcupine River using sonars located downstream of Old Crow in Canada, estimated 8,799 fall chum salmon which was well below the historical average of 27,000 (2011–2023, excluding 2018 and 2020).

Fall Chum Salmon Age, Sex, Length and Stock Composition

Stock composition estimates for chum salmon were provided by USFWS Conservation Genetics Laboratory using tissue samples (fin clips) collected from salmon captured in the mainstem Yukon River sonar test net fishery, near Pilot Station. Chum salmon genetic samples processed from five strata between July 19 and September 7 (fall season) indicated that the stocks represented were approximately 18% summer, 29% Border U.S. (Teedriinjik/Sheenjek/Draanjik), 11% Canadian, and 42% Tanana.

In 2024, the proportion of age-3 (1%), age-4 (64%), and age-6 (0.5%) fall chum salmon were all below average, and age-5 fish (34%) were above average based on samples collected at the Lower Yukon Test Fishery using 6-inch mesh drift gillnets. Females comprised a record low of 43% of the samples which was a well below the 2001 to 2023 average of 59%. Fall chum salmon length samples in 2024 averaged 572 mm, well below the 2001–2023 average of 584 mm.

Coho Salmon Escapement

There are few coho salmon spawning escapement assessment projects in the Yukon River drainage because of funding limitations and late timing relative to onset of winter. The sonar in the mainstem Yukon River near Pilot Station was operated through September 7 and had an estimated passage of 77,665 coho salmon (90% CI: 70,397–84,933) which is well below the historical average (2014–2023) of 125,000 fish. A boat survey was conducted on the Delta Clearwater River, on November 11, providing an escapement estimate of 1,455 coho salmon (Table 8). At the time of the survey very few carcasses were observed so the count is considered a minimum. Escapement estimates for coho salmon were also conducted by aerial surveys in late October and early November on the Nenana, Toklat, and upper Tanana river drainages; all spawning areas counted were below their respective 2014–2023 averages (Table 8).

Coho Salmon Age, Sex and Length Composition

In 2024, the proportion of age-3 (27%) coho salmon was above average, age-4 fish (68%) was below average, and age-5 fish (6%) was above average based on samples collected at LYTF using 6-inch mesh drift gillnets. Females comprised 47% of the samples which is near the historical average (2001 to 2023). Both MVTF and LYTF projects caught similar sizes of coho salmon that were smaller than average, had comparable proportions of females, and were dominated by age-4 fish. Sex and length information were also taken from coho salmon (n=592) from the test fishery associated with the mainstem sonar operated near Pilot Station. Coho salmon at the sonar project averaged 536 mm in length, which was below the 1995–2023 average of 555 mm however, they were much larger than the record low of 509 observed in 2020.

Federal Special Action

The Alaska Department of Fish and Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS) have coordinated on this season summary announcement. The Federal manager issued Federal emergency special actions to restrict the selective gear opportunities for chum and coho salmon to federally-qualified subsistence users within federal public waters. For information regarding Federal subsistence fishing regulations contact the USFWS Yukon River Subsistence Fishery Manager Holly Carroll at 907-351-3029.

Perspectives on Low Salmon Returns

As the salmon decline continues, the offspring from the beginning of the salmon decline in 2020 are returning to the Yukon River this past year. In 2024, the dominant age classes of fall chum salmon were age-4 (returning from 2020) and age-5 (returning from 2019). In 2020, the drainagewide escapement goal was not met despite fishery closures, and the total run size was 189,000 fall chum salmon. In 2019, the drainagewide escapement goal was near the upper end with an estimated run size of 800,000 fall chum salmon. During this recent decline, the lowest return per spawner occurred from the 2017 brood year when only 0.08 offspring returned for every 1 adult fall chum salmon that successfully spawned. Production has gradually been increasing since then to 0.91 return per spawner for the 2020 brood year, and overall remains less than the historical (1974-2018) average of 1.65 return per spawner. Looking forward to 2025, the offspring of 2020 (183,000) and 2021 (93,000) escapements will be returning to the Yukon River, which were previously the two lowest fall chum salmon run sizes on record.

It is unclear what is driving the low returns of fall chum salmon to the Yukon River drainage. Returns per spawner can be affected by many factors, including spawning success, rearing and overwintering environmental changes, outmigration timing, and their 2-4 years residency in the ocean. However, marine research surveys focused on the juvenile life stage or the first year at sea have helped us understand the early life history of Yukon River fall chum salmon. ADF&G and National Oceanic and Atmospheric Administration (NOAA) have completed these surveys annually from 2003 to 2024, except 2008 and 2020. One of the products of these marine surveys is an index of juvenile fall chum salmon abundance using data beginning in 2003. The fall chum salmon that would have returned as adults in 2024 were juveniles in 2020 and 2021. Unfortunately, there was no marine survey in 2020 due to the COVID pandemic, but the index of abundance in 2021 was close to average. Juvenile chum salmon in 2021 had above-average energy density, a measure of how much fat is stored in their bodies in preparation for their first winter at sea. While abundance and energy density appeared adequate for juveniles entering their first winter in the

ocean in 2021, it is possible these fall chum salmon experienced higher mortality in the marine environment before returning as adults to the Yukon River in 2024.

In 2024, the Northern Bering Sea survey that annually assesses juvenile salmon in their nearshore habitat saw the third-highest juvenile chum salmon abundance of the 20-year time series. Additionally, these juvenile chum salmon had average energy density. The combination of a high juvenile abundance and average energy density may bode well for future returns of Yukon River chum salmon. Juvenile chum salmon caught in the 2024 survey will return as adults primarily in the 2027 and 2028 runs.

ADF&G is involved in multiple collaborative projects to continue studying the marine life stage of Yukon River chum salmon. One of these projects is analyzing samples from chum salmon collected during high seas winter surveys to understand the distribution, diet, and condition of chum salmon from western Alaska. Another project is using chum salmon otoliths (ear bones) from smolts caught in the river and juveniles caught in the marine survey to identify critical periods for survival in the chum salmon's life. ADF&G staff are also leading the development of juvenile forecast models in hopes that future run sizes of Yukon River fall chum salmon can be predicted. The progress and results from these projects will be shared in future public meetings.

ADF&G is committed to investigating the cause of the recent Pacific salmon declines, especially regarding returns to the Yukon Area.

If you have further questions on upcoming marine salmon research efforts, contact Sabrina Garcia at sabrina.garcia@alaska.gov. Research updates are shared on https://www.facebook.com/ADFGUnderseaWorldOfSalmonAndSharks.

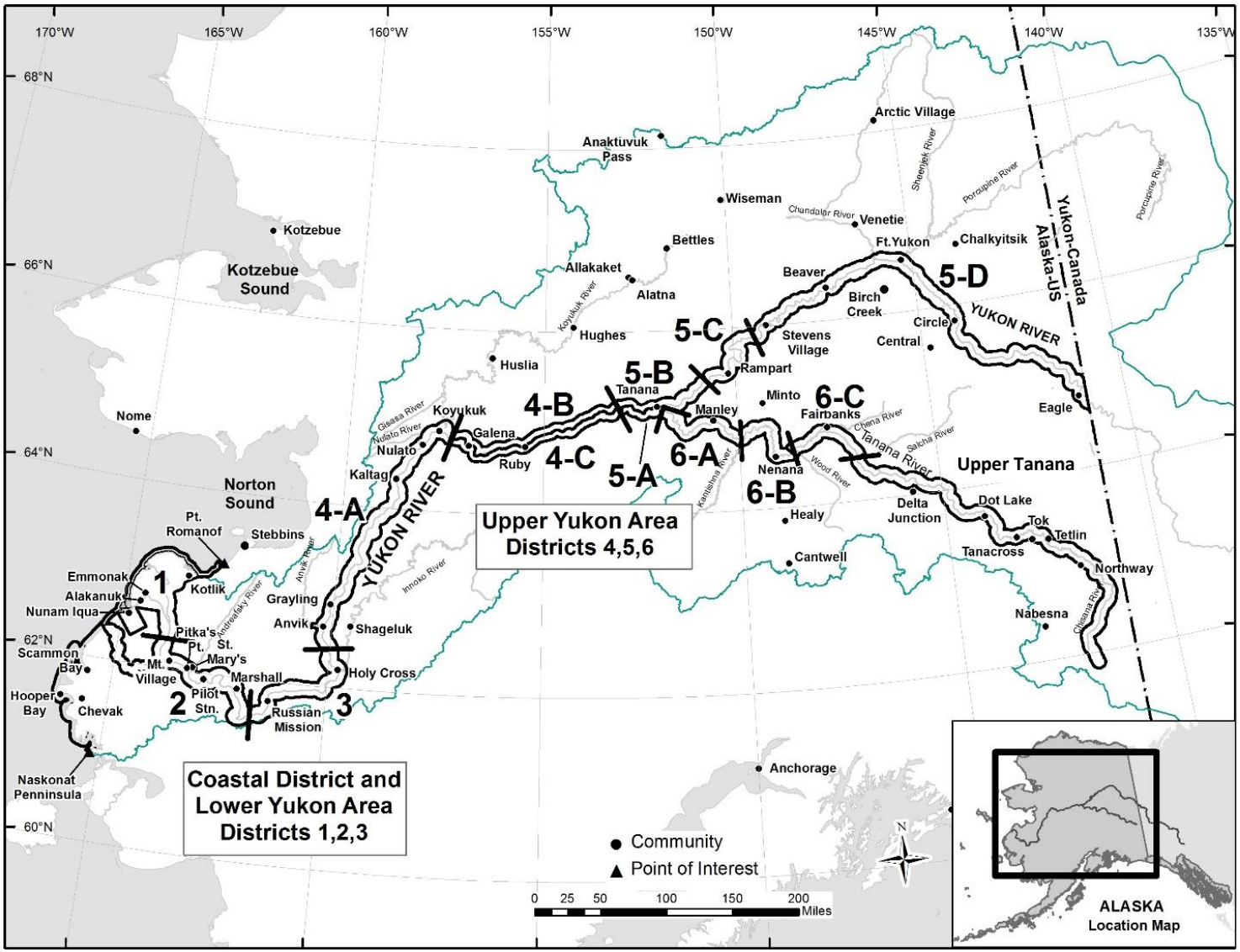
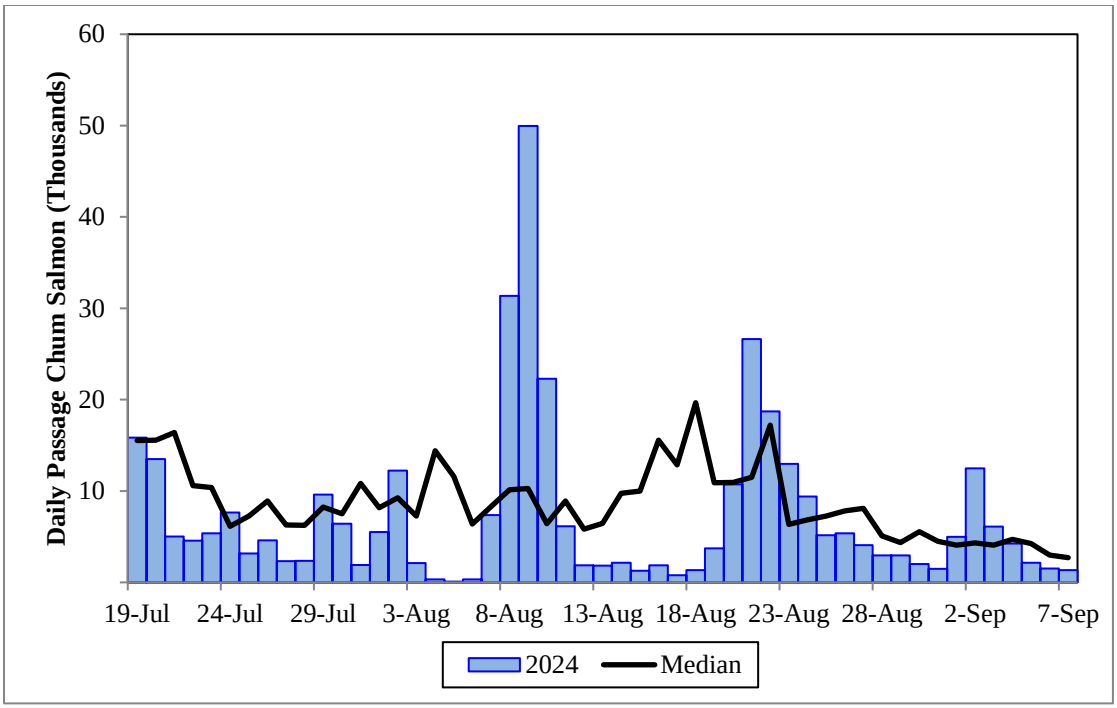


Figure 1.–Alaska portion of the Yukon River drainage showing communities and fishing districts.



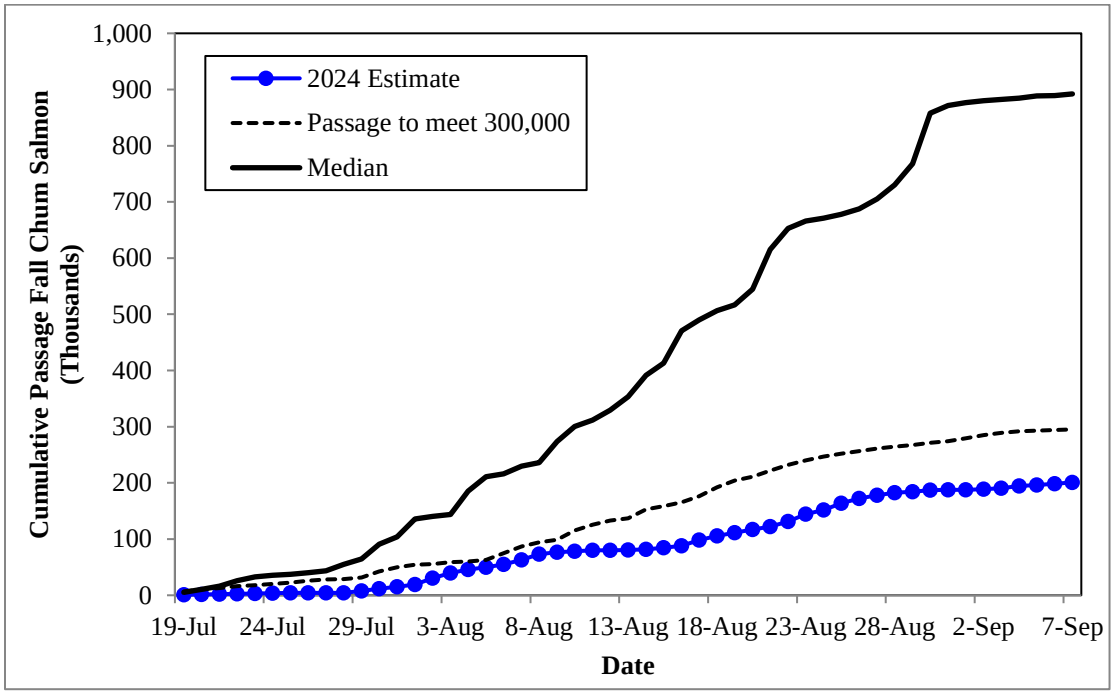


Figure 2.–Estimated daily passage of chum salmon (top) based on the Yukon River mainstem sonar (Pilot Station) and cumulative fall chum salmon based on genetics for 2024 (bottom), compared to historical (1995, 1997–2008, and 2010–2023) median run size. The dashed line is the passage required to meet the minimum management requirement of 300,000 fish to allow subsistence fishing.

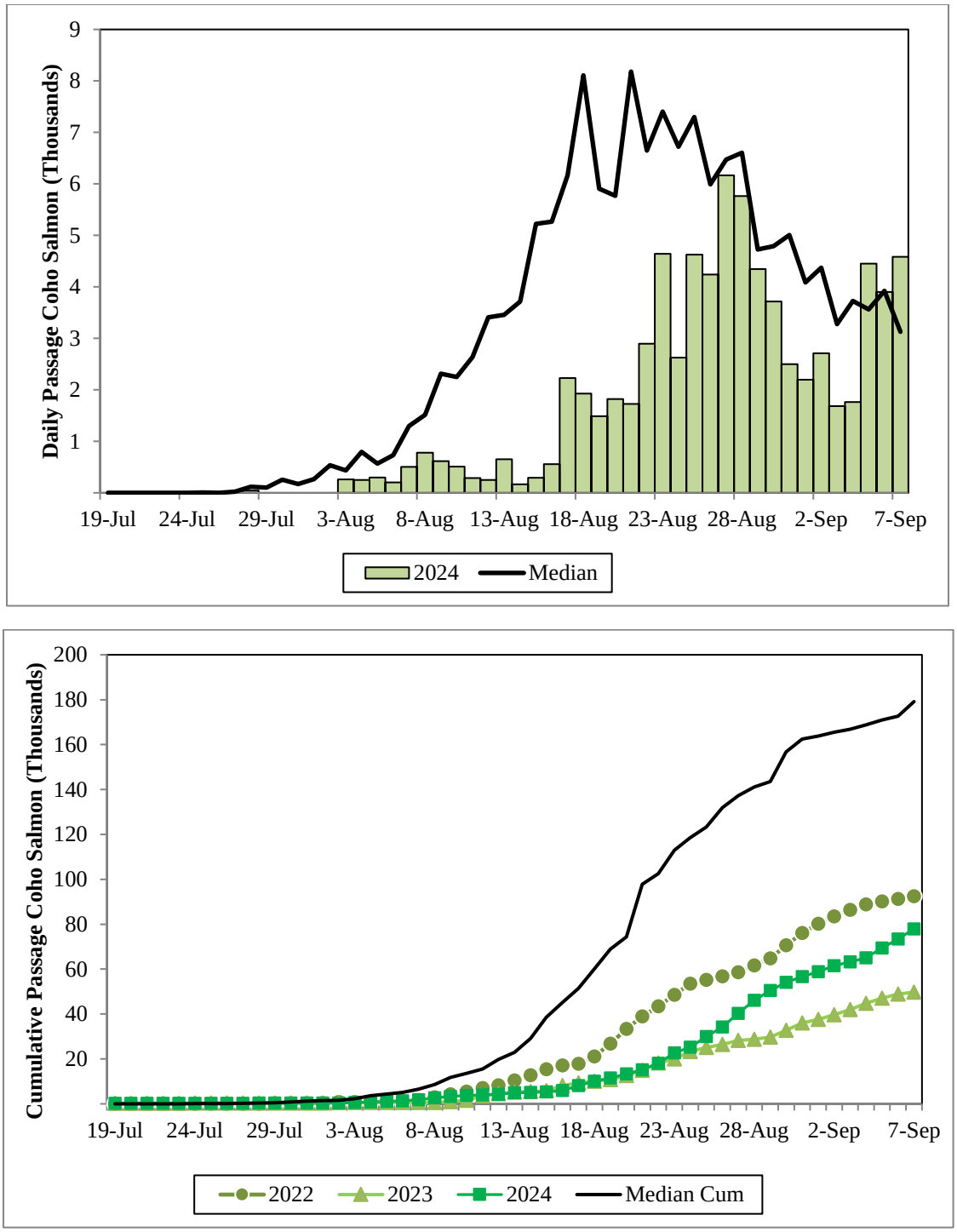


Figure 3.–Estimated daily passage of coho salmon (top) based on the Yukon River mainstem sonar (Pilot Station), 2024 compared to historical (1995, 1997–2008, and 2010–2023) median run size index. Cumulative passage of coho salmon (bottom) at the mainstem Yukon River sonar project (Pilot Station) in 2024 compared to historical median, 2022, and 2023.

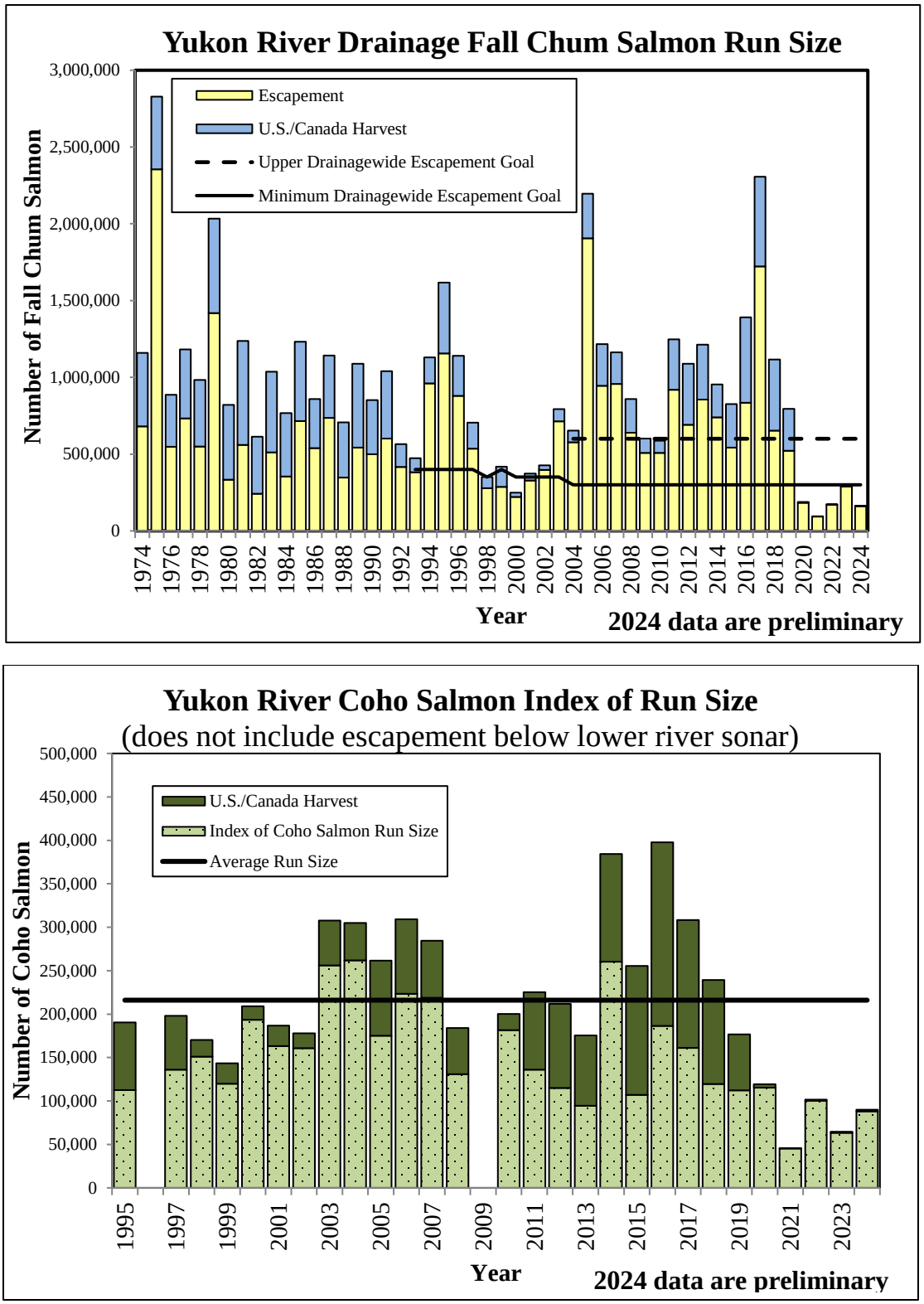


Figure 4.–Estimated drainagewide run size of fall chum salmon (top) and index of run size of coho salmon (bottom) in the Yukon River drainage.

Table 1.–Fall chum salmon subsistence harvest estimates, including donated test fishery harvests, by district, Yukon Area, 2004–2024.

	Lower Yukon					*Upper Yukon*				Yukon
Year	Coastal	District 1	District 2	District 3	*Subtotal*	District 4	District 5	District 6	*Subtotal*	total
2004	320	2,067	2,421	298	5,106	7,797	40,670	8,953	57,420	62,526
2005	70	2,889	3,257	1,304	7,520	9,405	51,663	22,946	84,014	91,534
2006	187	3,902	4,015	480	8,584	6,335	52,158	16,925	75,418	84,002
2007	234	4,390	3,472	925	9,021	8,576	53,731	29,893	92,200	101,221
2008	386	2,823	3,522	1,821	8,552	7,412	57,258	16,135	80,805	89,357
2009	158	1,917	1,563	937	4,575	7,382	38,083	16,079	61,544	66,119
2010	186	3,202	1,419	1,325	6,132	6,788	44,334	11,391	62,513	68,645
2011	315	3,434	2,578	354	6,681	7,260	51,885	14,376	73,521	80,202
2012	11	7,622	3,332	637	11,602	18,055	54,350	15,302	87,707	99,309
2013	149	3,673	4,878	1,764	10,464	15,191	76,098	11,640	102,929	113,393
2014	252	4,072	5,817	2,457	12,598	15,936	51,197	12,798	79,931	92,529
2015	198	5,877	6,258	1,388	13,721	13,274	50,260	9,345	72,879	86,600
2016	762	4,572	4,539	997	10,870	10,034	58,831	4,882	73,747	84,617
2017	553	4,581	4,082	1,284	10,500	9,573	61,444	4,622	75,639	86,139
2018	522	3,665	2,985	699	7,871	5,944	45,988	9,404	61,336	69,207
2019	815	4,251	3,804	754	9,624	4,232	44,946	4,932	54,110	63,734
2020	652	1,594	937	26	3,209	365	1,952	202	2,519	5,728
2021[a]	39	143	435	0	617	0	71	17	88	705
2022[a]	236	1,166	432	25	1,859	86	815	18	919	2,778
2023[a]	165	1,928	1,459	159	3,711	78	3,199	2	3,279	6,990
2024[a]	359	1,080	867	162	2,109	8	1,072	70	1,150	3,618
Average										
2014–2023	419	3,185	3,075	779	7,458	5,952	31,870	4,622	42,445	49,903
2019–2023	381	1,816	1,413	193	3,804	952	10,197	1,034	12,183	15,987

Source: Numbers of fish harvested are based on reports from OceanAK (accessed 1/2/2025), applicable annual footnotes are within the database.
[a] Values are preliminary until the project report is published.

Table 2.–Coho salmon subsistence harvest estimates, including donated test fishery harvests, by district, Yukon Area, 2004–2024.

	Lower Yukon					*Upper Yukon*				Yukon
Year	Coastal	District 1	District 2	District 3	*Subtotal*	District 4	District 5	District 6	*Subtotal*	total
2004	63	1,175	1,500	284	3,022	4,766	1,423	11,584	17,773	20,795
2005	279	976	1,110	217	2,582	2,971	2,159	19,538	24,668	27,250
2006	335	1,177	2,459	83	4,054	1,302	3,779	10,571	15,652	19,706
2007	110	2,265	2,347	739	5,461	2,952	3,366	7,845	14,163	19,624
2008	116	1,211	1,997	410	3,734	1,490	3,203	8,428	13,121	16,855
2009	246	847	1,057	321	2,471	3,986	2,498	7,051	13,535	16,006
2010	124	1,122	557	353	2,156	1,730	3,604	5,555	10,889	13,045
2011	55	1,127	823	36	2,041	2,072	1,389	6,842	10,303	12,344
2012	93	3,350	1,346	556	5,345	3,556	3,092	9,540	16,188	21,533
2013	287	1,224	1,080	371	2,962	4,940	1,298	5,257	11,495	14,457
2014	204	1,782	1,769	340	4,095	3,062	2,030	7,911	13,003	17,098
2015	174	2,100	3,002	428	5,704	1,941	2,462	8,000	12,403	18,107
2016	355	1,231	1,131	140	2,857	826	861	4,271	5,958	8,815
2017	424	1,044	1,396	497	3,361	526	1,012	2,515	4,053	7,414
2018	865	967	591	154	2,577	1,580	1,449	2,661	5,690	8,267
2019	804	1,962	642	232	3,640	497	612	1,069	2,178	5,818
2020	339	552	494	20	1,405	138	196	591	925	2,330
2021[a]	50	36	126	0	212	0	31	53	84	296
2022[a]	291	289	284	30	894	108	29	59	196	1,090
2023[a]	295	708	359	74	1,141	5	32	3	40	1,476
2024[a]	287	361	334	240	935	446	43	19	508	1,730
Average										
2014–2023	380	1,067	979	192	2,589	868	871	2,713	4,453	7,071
2019–2023	356	709	381	71	1,458	150	180	355	685	2,202

Source: Numbers of fish harvested are based on reports from OceanAK (accessed 1/2/2025), applicable annual footnotes are within the database.

[a] Values are preliminary until the project report is published.

Table 3.–Fall chum salmon commercial harvest by district, Yukon Area, 2004–2024.

	Lower Yukon				*Upper Yukon*				Yukon
Year	District 1	District 2	District 3	*Subtotal*	District 4	District 5	District 6	*Subtotal*	total
2004	660	–	–	660	–	–	3,450	3,450	4,110
2005	130,525	–	–	130,525	–	–	49,637	49,637	180,162
2006	101,254	39,905	–	141,159	–	1,667	23,353	25,020	166,179
2007	38,852	35,826	–	74,678	–	427	15,572	15,999	90,677
2008	67,704	41,270	–	108,974	–	4,556	5,967	10,523	119,497
2009	11,911	12,072	–	23,983	–	–	1,893	1,893	25,876
2010	545	270	–	815	–	–	1,735	1,735	2,550
2011	127,735	100,731	–	228,466	–	1,246	10,917	12,163	240,629
2012	139,842	129,284	–	269,126	811	2,419	17,336	20,566	289,692
2013	106,588	106,274	–	212,862	–	1,041	24,148	25,189	238,051
2014	51,829	59,138	–	110,967	–	1,264	3,368	4,632	115,599
2015	100,562	74,214	–	174,776	–	1,048	15,646	16,694	191,470
2016	226,576	213,225	–	439,801	–	7,542	18,053	25,595	465,396
2017	328,410	134,668	–	463,078	1,402	1,952	23,270	26,624	489,702
2018	198,950	170,645	–	369,595	596	896	16,698	18,190	387,785
2019	145,692	106,141	–	251,833	–	900	15,627	16,527	268,360
2020	–	–	–	–	–	–	–	–	–
2021	–	–	–	–	–	–	–	–	–
2022	–	–	–	–	–	–	–	–	–
2023	–	–	–	–	–	–	–	–	–
2024	–	–	–	–	–	–	–	–	–
Average									
2010–2019	142,673	109,459	NA	252,132	936	2,034	14,680	16,792	268,923

Note: En dash indicates no commercial fishing occurred. NA indicates insufficient information to generate average.

Table 4.–Coho salmon commercial harvest by district, Yukon Area, 2004–2024.

	Lower Yukon				*Upper Yukon*				Yukon
Year	District 1	District 2	District 3	*Subtotal*	District 4	District 5	District 6	*Subtotal*	total
2004	1,583	–	–	1,583	–	–	18,649	18,649	20,232
2005	36,533	–	–	36,533	–	–	21,778	21,778	58,311
2006	39,323	14,482	–	53,805	–	–	11,137	11,137	64,942
2007	21,720	21,487	–	43,207	–	–	1,368	1,368	44,575
2008	13,946	19,248	–	33,194	–	91	2,408	2,499	35,693
2009	5,992	1,577	–	7,569	–	–	742	742	8,311
2010	1,027	1,023	–	2,050	–	–	1,700	1,700	3,750
2011	45,335	24,184	–	69,519	–	–	7,502	7,502	77,021
2012	39,757	29,063	–	68,820	0	634	5,335	5,969	74,789
2013	27,304	31,456	–	58,760	–	0	7,439	7,439	66,199
2014	54,804	48,602	–	103,406	–	0	1,286	1,286	104,692
2015	66,029	54,860	–	120,889	–	0	8,811	8,811	129,700
2016	113,669	67,208	–	180,877	–	54	20,551	20,605	201,482
2017	95,982	33,277	–	129,259	0	0	9,656	9,656	138,915
2018	65,431	40,845	–	106,276	0	0	4,314	4,314	110,590
2019	40,621	15,622	–	56,243	–	0	2,348	2,348	58,591
2020	–	–	–	–	–	–	–	–	–
2021	–	–	–	–	–	–	–	–	–
2022	–	–	–	–	–	–	–	–	–
2023	–	–	–	–	–	–	–	–	–
2024	–	–	–	–	–	–	–	–	–
Average									
2014–2023	72,756	43,402	NA	116,158	0	9	7,828	7,837	123,995

Note: En dash indicates no commercial fishing occurred. NA indicates insufficient information to generate average.

Table 5.–Value of fall chum and coho salmon commercial salmon fishery, 2004–2024.

	Fall Chum					Coho					Value by Species		Value by Area		
	Lower Yukon		Upper Yukon			Lower Yukon		Upper Yukon							
Year	$/lb	Value	$/lb	$/lb Roe	Value	$/lb	Value	$/lb	$/lb Roe	Value	Fall Chum	Coho	Lower	Upper	Total
2004	0.25	1,126	0.05	–	848	0.25	2,774	0.06	–	6,372	1,974	9,146	3,900	7,220	11,120
2005	0.32	316,698	0.14	–	48,159	0.32	83,793	0.12	–	19,182	364,857	102,975	400,491	67,341	467,832
2006	0.20	202,637	0.14	–	33,806	0.20	50,299	0.19	–	11,137	236,443	61,436	252,936	44,943	297,879
2007	0.27	144,256	0.20	–	16,907	0.39	127,869	0.20	–	1,368	161,163	129,237	272,125	18,275	290,400
2008	0.55	428,969	0.27	–	22,089	0.97	216,777	0.20	–	3,717	451,058	220,494	645,746	25,806	671,552
2009	0.70	108,778	0.19	–	1,286	1.00	52,176	0.15	–	457	110,064	52,633	160,954	1,743	162,697
2010	1.00	5,428	0.23	–	2,761	1.50	20,535	0.26	–	442	8,189	20,977	25,963	3,203	29,166
2011	1.00	1,627,575	0.22	–	16,114	1.00	472,168	0.15	–	6,792	1,643,689	478,960	2,099,743	22,906	2,122,649
2012	0.75	1,385,550	0.22	–	28,354	1.25	534,523	0.22	–	7,428	1,413,904	541,951	1,920,073	35,782	1,955,855
2013	0.75	1,154,203	0.16	–	25,744	1.10	453,998	0.17	–	7,115	1,179,947	461,113	1,608,201	32,859	1,641,060
2014	0.75	621,975	0.25	–	8,156	1.00	706,665	0.38	–	2,380	630,131	709,045	1,328,640	10,536	1,339,176
2015	0.60	762,142	0.14	–	15,683	0.70	616,617	0.12	–	6,877	777,825	623,494	1,378,759	22,560	1,401,319
2016	0.68	2,093,566	0.14	–	22,477	1.00	1,143,844	0.13	–	15,540	2,116,043	1,159,384	3,237,410	38,017	3,275,427
2017	0.60	2,038,232	0.15	1.75	29,176	1.00	814,580	0.15	2.00	8,778	2,067,408	823,358	2,852,812	37,954	2,890,766
2018	0.78	2,113,454	0.13	–	17,933	1.00	677,205	0.15	–	3,688	2,131,387	680,892	2,790,659	21,620	2,812,279
2019	0.60	1,054,751	0.17	–	18,395	1.00	336,578	0.21	–	2,371	1,073,146	338,949	1,391,329	20,766	1,412,095
2020	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2021	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2022	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2023	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2024	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Average 2014–2023	0.67	1,447,353	0.16	NA	18,636	0.95	715,915	0.19	NA	6,606	1,465,990	722,520	2,163,268	25,242	2,188,510

Note: En dash indicates no commercial fishing occurred. NA indicates insufficient information to generate average.

Table 6.–Number of participating commercial salmon fishing gear permit holders making at least one delivery for fall chum or coho salmon by district and season, Yukon Area in Alaska, 2004–2024.

	Lower Yukon Area				Upper Yukon Area				Yukon Area
Year	District 1	District 2	District 3	Subtotal[a]	District 4	District 5	District 6	Subtotal[b]	total
2004	26	0	0	26	0	0	6	6	32
2005	177	0	0	177	0	0	7	7	184
2006	219	71	0	286	0	4	11	15	301
2007	181	122	0	300	0	2	8	10	310
2008	251	177	0	428	0	3	8	11	439
2009	165	130	0	292	0	0	2	2	294
2010	72	18	0	90	0	0	4	4	94
2011	234	169	0	395	0	2	5	8	403
2012	266	201	0	457	4	3	5	13	462
2013	251	197	0	436	0	1	6	7	443
2014	256	199	0	441	0	2	2	4	445
2015	266	184	0	440	0	1	5	6	446
2016	275	197	0	459	0	4	4	8	467
2017	318	144	0	438	5	4	4	13	451
2018	284	172	0	448	4	3	3	10	458
2019	276	136	0	404	0	3	4	7	411
2020	–	–	–	–	–	–	–	–	–
2021	–	–	–	–	–	–	–	–	–
2022	–	–	–	–	–	–	–	–	–
2023	–	–	–	–	–	–	–	–	–
2024	–	–	–	–	–	–	–	–	–
Average									
2014–2023	279	172	0	438	2	3	4	8	446

[a] The Lower Yukon Area subtotal is the unique number of permits fished in Districts 1, 2, and 3 as fishers may transfer between districts during the season.
[b] Sum of Districts 4, 5, and 6 averages may not equal Upper Yukon Area district subtotal due to rounding error.

Table 7.–Fall chum salmon passage or escapement estimates for selected spawning areas, Yukon River drainage, 2004–2024.

	Alaska						Canada		
		Tanana River drainage		Upper Yukon River drainage					
Year	Yukon River drainagewide escapement estimate[a]	Delta River[b]	Bluff Cabin Slough[c]	Teedriinjik (Chandalar) River[d]	Sheenjek River[e]	Yukon River mainstem (Eagle) passage estimate[f]	Mainstem escapement estimate[g]	Porcupine River sonar[h]	Fishing Branch River[i]
2004	576,800	25,073	10,270	169,848	37,877 [j]	–	154,080[k]	–	20,417
2005	1,906,000	28,132	11,964	526,838	485,886	–	437,498[k]	–	119,058
2006	945,000	14,055	–	254,778	175,620	245,290	220,898[k]	–	30,954
2007	956,500	18,610	–	243,805	69,184	265,008	236,987[k]	–	32,150
2008	639,900	23,055	1,198	178,278	50,348	185,409	167,898	–	19,086
2009	507,900	13,492	2,900	–	54,126	101,734	93,626	–	25,828
2010	507,400	17,993	1,610	167,532	24,669 [j]	132,930	117,789	–	15,413
2011	919,300	23,639	2,655	298,223	97,976	224,355	205,566	–	13,085
2012	691,400	9,377 [l]	–	205,791	104,701	153,248	137,662	–	22,399
2013	854,600	31,955	5,554	252,710	–	216,791	200,262	35,615	–
2014	739,400	32,480 [l]	4,095	226,489	–	172,887	156,796	17,244	–
2015	542,350	33,401 [l]	6,020	164,486	–	125,095	108,658	21,397	8,351
2016	833,700	21,913 [l]	4,936	295,023	–	161,027	145,267	54,395	29,397
2017	1,723,000	48,783 [l]	–	509,115	–	419,099	401,585	67,818	48,524
2018	653,200	39,641 [l]	5,822	170,356	–	168,798	154,126	–	10,151
2019	521,250	51,748 [l]	4,664	116,323	–	113,256	99,866	27,447	18,171
2020	183,200	9,854 [l]	1,124	–	–	23,512	23,512	–	4,795
2021	93,285	1,613	1,085	21,162	–	23,170	23,170	3,486	2,413
2022	170,800	5,670 [l]	1,844	69,333	13,957	22,075	22,034	3,804	2,934
2023[m]	287,900	13,366	–	136,551	15,958	22,179	22,090	15,649	11,528
2024	161,100	16,880	3,732	58,457	14,320	16,204	16,174	8,799	5,933
Average									
2013–2023	574,808	25,847	3,699	189,871	14,958	125,110	115,710	26,405	15,140
2018–2023	251,287	16,450	2,179	85,842	14,958	40,838	38,134	12,597	7,968
SEG Range	300,000	7,000 [a]	–	85,000 [n]	[o]		> 80,000 [p]		50,000
	600,000	20,000		234,000					120,000 [p]
Interim Management Escapement Goal							70,000–104,000 [q]		22,000–49,000 [r]

-continued-

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Note: En dash indicates no data were collected or calculated. SEG indicates "sustainable escapement goal" with lower and upper ranges.

[a] Escapement estimates are derived from Bayesian State-Space model as posterior medians.

[b] Population estimate generated from replicate foot surveys and stream life data using AUC (area-under-curve method) unless otherwise indicated.

[c] Aerial survey count, unless otherwise indicated.

[d] Split beam sonar estimate (2004–2006). DIDSON sonar (2007-present). Includes expansions to the end of the run (October 9, October 13 in 2018).

[e] Split beam sonar estimate (2004) and DIDSON sonar (2005–2012 and 2022–present). Includes expansions to the end of the run (October 9). Two bank operations unless otherwise indicated.

[f] Sonar estimates include an expansion for fish that may have passed after operations ceased, through October 18, except 2018 was expanded through October 23 for an extremely late run.

[g] Estimated mainstem Yukon River Canadian escapement is derived from Eagle sonar expanded estimate minus harvest upstream of project from Eagle community and including Canadian harvests (2006–present), unless otherwise indicated.

[h] Porcupine River Sonar is located near Canadian border, downstream of community of Old Crow. Includes expansions to the end of the run.

[i] Weir located within the Canadian portion of the Porcupine River drainage. Includes expansions to the end of the run.

[j] Right bank only operations.

[k] Estimated mainstem Canadian escapement derived from mark-recapture project minus Canadian mainstem harvest.

[l] Peak counts from foot surveys unless otherwise noted.

[m] Data are preliminary.

[n] Escapement goal revised to a sustainable escapement goal in 2019 based on percentile method.

[o] Sheenjek escapement goal 50,000–104,000 was discontinued in 2016 (was right bank only dataset).

[p] Escapement goal as written in the Pacific Salmon Treaty.

[q] Interim Management Escapement Goal (IMEG) range of 70,000 to 104,000 was established for 2010 to present is based on Canadian stock Ricker model.

[r] IMEG established 2008 and is based on percentile method.

Table 8.–Coho salmon passage or escapement estimates for selected spawning areas, Yukon River drainage, 2004–2024.

Year	Yukon River index of drainagewide escapement[a]	Nenana River drainage				Upper Tanana River drainage					
		Lost Slough	Nenana Mainstem[b]	Wood Creek	Seventeen Mile Slough	Delta Clearwater River[c]		Clearwater Lake and Outlet		Richardson Clearwater River	
2004	261,845	220 (h)	450 (h)	840 (h)	3,370 (h)	37,550	(b)	2,925	(b)	8,626	(h)
2005	175,268	430 (h)	325 (h)	1,030 (h)	3,890 (h)	34,293	(b)	2,100	(b)	2,024	(h)
2006	223,236	194 (h)	160 (h)	634 (h)	1,916 (h)	16,748	(b)	4,375	(b)	271	(h)
2007	218,871	63 (h)	520 (h)	605 (h)	1,733 (h)	14,650	(b)	2,075	(b)	553	(h)
2008	130,984	1,342 (h)	1,539 (h)	578 (h)	1,652 (h)	7,500	(b)	1,275	(b)	265	(h)
2009	[d]	410 (h)	–	470 (h)	680 (h)	16,850	(b)	5,450	(b)	155	(h)
2010	181,507	1,110 (h)	280 (h)	340 (h)	720 (h)	5,867	(b)	813	(b)	1,002	(h)
2011	135,914	369 (h)	–	–	912 (h)	6,180	(b)	2,092	(b)	575	(h)
2012	115,094	–	106 (h)	–	405 (h)	5,230	(b)	396	(h)	515	(h)
2013	94,375	721 (h)	–	55 (h)	425 (h)	6,222	(b)	2,221	(h)	647	(h)
2014	260,251	333 (h)	378 (h)	649 (h)	886 (h)	4,285	(b)	434	(h)	1,941	(h)
2015	106,988	242 (h)	1,789 (h)	1,419 (h)	3,890 (h)	19,533	(b)	1,621	(h)	3,742	(h)
2016	186,399	334 (h)	1,680 (h)	1,327 (h)	2,746 (h)	6,767	(b)	1,421	(h)	1,350	(h)
2017	161,213	1,278 (h)	862 (h)	2,025 (h)	1,942 (h)	9,627	(b)	–		–	
2018	119,646	1,822 (h)	241 (h)	361 (h)	347 (h)	2,884	(b)	2,465	(h)	976	(h)
2019	112,177	–	749 (h)	184 (h)	424 (h)	2,043	(b)	258	(h)	300	(h)
2020	115,396	28 (h)	206 (h)	231 (h)	507 (h)	2,557	(b)	210	(h)	475	(h)
2021	45,234	126 (h)	104 (h)	226 (h)	213 (h)	913	(b)	130	(h)	17	(h)
2022	100,478	–	–	–	–	1,750	(b)	101	(h)	57	(h)
2023	63,318	–	–	–	–	1,794	(b)	–		–	
2024[e]	88,186	–	349 (h)	–	–	1,455	(b)	708	(h)	395	(h)
Average											
2014–2023	127,110	595	751	803	1,369	5,215		830		1,107	
2019–2023	87,320	77	353	214	381	1,811		175		212	

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Table 8.–Page 2 of 2.

Note: Only peak counts presented. Survey rating is fair to good, unless otherwise noted. Denotations of survey methods include (b)=boat and (h)=helicopter. En dash indicates no data available.

[a] Index of drainagewide escapement based on Pilot Station sonar, which is expanded by portion of the run missed using nearby test fisheries, plus harvest below sonar site, then subtracts total drainage harvest to estimate escapement. Does not include the escapements to the Andreafsky River (East Fork was monitored 1995–2005 and averaged 8,000 coho salmon).

[b] Index area includes mainstem Nenana River between confluences of Lost Slough and Teklanika River.

[c] Index area is lower 17.5 miles of system. Sustainable escapement goal (SEG) of 5,200–17,000 was discontinued in 2023. A BEG of greater than 9,000 fish was used from 1993 to 2003.

[d] Could not be derived as extreme low water levels were experienced in 2009, affecting species apportionment at Pilot Station sonar, which is the basis of this index.

[e] Data are preliminary.