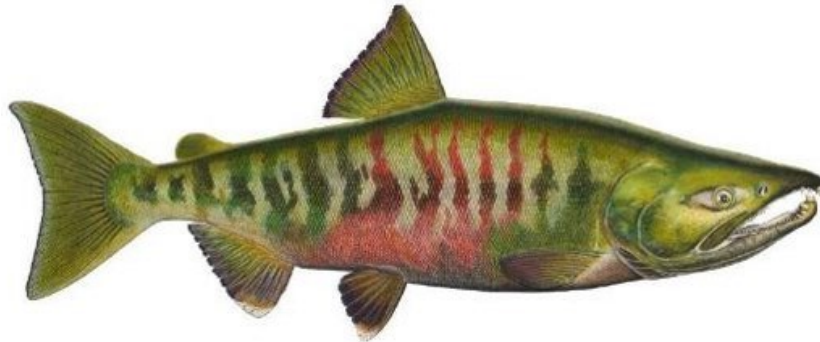




# YUKON RIVER SALMON UPDATE



**Thursday September 19, 2024**

Note: This update is intended to inform fish harvesters. Information provided in this update is preliminary and subject to change. The focus of the updates will be on Chinook in June and July and will transition to chum for late August and September. For more information please refer to the contacts identified at the end of this update.

## **CHUM SALMON**

### **Canadian-Origin Chum Salmon Escapement Goals and Revised Projection:**

The spawning escapement goal for Canadian-origin fall Chum for the Yukon River mainstem is **70,000 – 104,000** fish. The escapement goal for Fishing Branch Chum (Porcupine drainage) is **22,000 to 49,000** fish. These goals were set by the Yukon River Panel and are intended to ensure that enough salmon reach the spawning grounds each year to sustain the population.

The pre-season outlook for Canadian-origin Yukon River chum salmon was for approximately 55,000 fish. The pre-season outlook for Fishing Branch River chum was for approximately 15,000 fish.

This year's U.S. summer chum run came in below the preseason outlook, but above the lower bound of the range, and was higher than was seen in 2020-2022. It was below the historical average but exceeded the lower end of the drainage wide escapement goal. Based on this, openings for summer chum subsistence fishing with selective gear types were announced. The age-4 component of the return (33%) was below average (48%), while the age-5 component was above average.

Using the historic summer to fall chum salmon relationship, the fall chum salmon run size estimate was updated in-season to approximately 377,000. Further in-season updates were available as fall chum entered the Yukon River, resulting in a decreased estimate of 203,000 – 229,000 fish.



Previous year's return of Canadian origin chum provide a basis to estimate this year's return to Canada. Using these historic Canadian origin proportions, the in-season estimated return of chum to the Canadian Yukon River mainstem was 30,000 to 34,500 and 8,000 to 9,000 for Fishing Branch River. As data is gathered through the season, we gain greater clarity through the collection of passage estimates (Table 1) and genetic sampling results (Table 2). Based on lower observed passage estimates than forecast, and the lower Canadian component than seen in recent years, the return of chum salmon to Canadian streams is expected to be lower than forecast and among the lowest returns on record.

Current estimates of fall chum passage at assessment sites along the Yukon River have begun and are presented in Table 1.

Table 1. Comparison of Current and Historical In-season Chum Salmon Abundance Estimates (US and Canada) for Various Projects:

<b>Assessment Site</b>	<b>Date</b>	<b>Total Count to Date</b> (Number of fall Chum estimated to have migrated past the assessment site)	<b>Total Count to Date in 2023</b>	<b>10 year Average Cumulative Count to Date</b> (Average number of fall Chum estimated to have migrated past the assessment site by this date)
Lower River (Pilot Station Sonar ADF&G)	Counts complete	209,859	370,015	707,588
Upper River (Eagle, International Border Sonar ADF&G & DFO)	Sept 17	4,355	8,439	37,371
Porcupine River (Old Crow Sonar VGG & DFO)	Sept 17	5,085	8,162	13,130
Fishing Branch River	Sept 17	864	1,652	4,953

**Run Timing:**

Chum salmon that enter the mouth of the Yukon River after July 16<sup>th</sup> are considered to be fall Chum and may later be confirmed and adjusted with the use of genetics. Chum typically take 39 days to travel from the mouth of the river to the international border. The first chum salmon caught in the Eagle Sonar test fishery was on August 26, which is also the crossover date from Chinook to chum salmon.

**Genetics, Age, Size:**

As the run progresses, sampling is conducted for age, sex, length and stock composition. Sampling strata are labeled to indicate sampling during the summer and fall management seasons in Alaska, with fall season beginning July 19. Strata Fall 1 was separated post-season to account for a large difference in summer and fall chum between pulses. Results of genetic sampling at Pilot Station can be found in Table 2.



Table 2. 2024 genetic mixed-stock analysis estimates of Canadian-origin chum salmon from each sampling strata at Pilot Station Sonar site, Alaska.

Fall strata date ranges	Percent Canadian-origin Fall Chum*	Estimated Canadian origin passage
June 6 – 23 (Summer 1)	<1%	145
June 24 – July 7 (Summer 2)	<1%	954
July 8 – 18 (Summer 3)	<1%	1,252
July 19 – 28 (Fall 1)	<1%	181
July 29 - August 6 (Fall 2)	25%	14,661
August 7 - 19 (Fall 3)	8%	4,605
August 20 – 26 (Fall 4)	5%	3,061
August 27 – September 7 (Fall 5)	24%	6,840
<b>Season total</b>	<b>15%</b>	<b>31,699</b>

\*Percent is in relation to fall chum passage estimates at Pilot Station

Genetic apportionment of fall chum salmon is further partitioned into Canadian stock aggregates. This occurs in-season through the Pilot Station sampling program and post-season through the Eagle Sonar sampling program. With Canadian stock aggregates equating small individual components of the drainage-wide return, these estimates are not relied upon, however they help as a tool to understand the overall return. Samples collected through the Pilot Station sampling program are estimated for Porcupine, Mainstem Yukon River, White, and Teslin. Collectively, these aggregates constitute the Canadian components estimated in Table 2.

Post-season genetic results collected from the Eagle sonar program provide a much clearer overall estimate of Canadian stock aggregates, but small relative sample sizes can reduce the confidence of these estimates. Canadian chum salmon stocks reported through Eagle include Mainstem, White, Teslin, and Yukon early. These will be provided post-season for the 2024 year. Due to the location of the Eagle sonar program, information provided does not include the Porcupine River.

### Canadian Management Strategy – Chum salmon:

- First Nation Fishery: Harvest opportunities are not anticipated
- Public Angling Fishery: Closed
- Commercial Fishery: Closed – long term closure in place since 2021
- Domestic Fishery: Closed – long term closure in place since 2021



## **CHINOOK SALMON**

### **Canadian-Origin Chinook Salmon Rebuilding Target and Pre-Season Forecast:**

For 2024, in-line with the agreed upon measures in the new Agreement, a rebuilding target of 71,000 Canadian-origin Chinook salmon international border passage has been adopted by both Canada and the U.S. This rebuilding target is intended to help stem the persistent decline of Chinook salmon and ensure that enough salmon reach the spawning grounds each year to sustain the population and provide future harvest opportunities. The Yukon River Panel recommended no Chinook salmon fishing in 2024 based on the pre-season forecast and measures outlined in the Agreement.

The 2024 pre-season forecast framed the prediction of 13,000 Canadian-origin Chinook salmon across the Canada/U.S. border after accounting for anticipated enroute mortality. The return of Canadian-origin Chinook salmon will not be significant enough to achieve the rebuilding target, nor provide for harvest opportunities in either Alaska or Canada.

### **In-Season Assessment:**

Information from the Pilot Station sonar project in the lower Alaskan portion of the Yukon River provides an early-season indication of run strength and timing for Canadian-origin Chinook salmon. There is uncertainty associated with the Pilot Station estimate due to two principal challenges: 1) co-migration of Chinook salmon with several other fish species of similar size (species apportionment uncertainty), and 2) distinction of Canadian-origin Chinook salmon from U.S.-origin Chinook salmon (stock identification uncertainty based on genetic analysis). The Yukon River is also extremely large at this site (width and volume of water).

In the upper Yukon River, the estimate of the number of Chinook salmon returning to Canada is obtained from the Eagle sonar assessment project located downstream of the international border near Eagle, Alaska. There is a higher degree of confidence in the estimated number of Chinook salmon migrating past the Eagle Sonar assessment program as the fish community is less abundant and diverse in this location, Chinook salmon are more readily differentiated from other fish species and the overall size of the Yukon River is considerably smaller at this location.

For the 2024 season, in addition to the Pilot Station and Eagle sonar assessment projects, eight assessment projects are being delivered within the Yukon. Six of these projects are implemented in collaboration with Yukon First Nation governments, while the remainder are operated or partnered with government, contractors or non-government organizations. Passage estimates of Chinook salmon are shown in Table 3, including the 2024 cumulative count to date, the equivalent date count in 2023 and the average count of that date in the project's history.



**Table 3. Comparison of Current and Historical In-season Chinook Salmon Abundance Estimates for Various Projects:**

<b>Assessment Site</b>	<b>Date</b>	<b>Total Count to Date</b> (Number of Chinook salmon estimated to have migrated past the assessment site)	<b>Total Count to Date In 2023</b>	<b>10 Year Average Cumulative Count to Date</b> (Average number of salmon estimated to have migrated past the assessment site by this date)	<b>Estimated Average % Passage Complete</b> (avg timing based on Assessment site)	<b>Estimated Run Size Projection Based on % Passage</b> (avg timing)
Lower River (Pilot Station Sonar) ADFG <sup>1</sup>	Counts complete	64,496	58,529	152,279	100%	64,496
Upper River (Eagle, International Border Sonar) ADFG & DFO	Counts complete	24,112	14,752	48,791	100%	24,112
Porcupine River Sonar (VGG & DFO)	Counts complete	532	512	3,071	100%	532
Klondike River Sonar (TH)	Counts complete	264	274	630	100%	264
Pelly River Sonar (SFN)	Counts complete	2,852	1,843	5,499	100%	2,852
Big Salmon Sonar (Private Contractor)	Counts complete	1,815	1,747	5,499	100%	1,815
Tatchun River Video Weir (LSCFN)	Sept 6	141	n/a	373	100%	141
Takhini River Sonar (KDFN)	August 26	535	211	754	84%	636
Whitehorse Fish Ladder YEC & YFGA	Counts complete	355	154	763	100%	355
Nisutlin River Sonar (TTC)	Sept 1	561	593	n/a	n/a	n/a

<sup>1</sup> Pilot Station Sonar Counts (includes both Canadian and U.S origin fish)



### **In-Season Run Size:**

The 2024 cumulative passage at Eagle sonar was 24,112, which is well below average but higher than the last two years. It exceeded the pre-season predicted border passage of 13,000 and is also within the pre-season forecast of 19,000 – 28,000 Canadian-origin fish.

### **Run Timing:**

The first Chinook caught in the Lower Yukon Test Fishery near Emmonak was on June 12<sup>th</sup>. Pilot Station sonar (located ~200 km from the river mouth) was operational on June 5 and counted Chinook from June 12 to July 21. Run timing is typically 29-30 days from Pilot Station to Eagle and this season's return was later than average, estimated to be 4-7 days later than average at Eagle.

### **Genetics, Age, Size:**

Chinook salmon are sampled for age, sex, length (ASL), and mixed stock analysis (MSA) at both the Pilot Station and Eagle sonar assessment sites. Results from samples collected at Pilot Station are available in-season and those collected from the Eagle sonar site are available post-season.

<b>2024 strata date ranges</b>	<b>2024 percent Canadian-origin Chinook</b>	<b>10 year average percent Canadian-origin Chinook</b>
June 5 – 23 (Strata 1)	54%	45–54%
June 24 – July 8 (Strata 2)	42%	35–44%
TBD (Strata 3)	TBD	TBD

### **In-Season Assessment - Upper River (Eagle Sonar):**

The Eagle sonar assessment program has been operational since June 28, with 14 Chinook estimated on day 1 and the last Chinook counted on August 26, with a total estimated passage of 24,112. The test fishery live-sampled 152 Chinook salmon for ASL and tissue (MSA) during the season. The Eagle program is led by ADF&G with support from DFO.

### **Canadian Management Strategy - Chinook Salmon:**

- **First Nation Fishery:** Chinook salmon opportunities not anticipated based on the pre-season forecast. For run sizes above 71,000 (rebuilding target), limited subsistence fishery opportunities may be provided.
- **Public Angling Fishery:** Suspended (closed) beginning in 2024 through 2030.
- **Commercial Fishery:** Suspended (closed) beginning in 2024 through 2030 (long term closure in place since 2021).
- **Domestic Fishery:** Suspended (closed) beginning in 2024 through 2030 (long term closure in place since 2021).



## **Information Links and Notifications About Fishery Management Actions:**

**Yukon River Panel (Pacific Salmon Treaty)** – the Yukon River Salmon Agreement can be found at: <https://www.yukonriverpanel.com/>

**Canadian First Nation Subsistence Fisheries** – Fisheries and Oceans Canada communicates directly with Yukon River First Nation Governments by way of pre-season, in-season and post-season meetings.

**Canadian Recreational, Domestic, and Commercial Fisheries** – Information is available via the Fishery Notification System at: <http://notices.dfo-mpo.gc.ca/fns-sap/index-eng.cfm>  
Fishers are encouraged to subscribe to receive automatic notifications on fisheries of interest via email at: [http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=pub\\_reg](http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm?pg=pub_reg)

**U.S. Fisheries** – Information on fisheries in U.S. portion of the Yukon River is available at: <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareayukon.salmon>

**Joint Technical Committee** (of the Yukon River Panel) - Further information on Canadian-Origin salmon escapement goals and preseason forecasts may be found in the Yukon River Salmon 2023 Season Summary and 2024 Season Outlook Report at: <https://www.yukonriverpanel.com/publications/yukon-river-joint-technical-committee-reports/>

## **Contacts**

For questions about the information provided in this update or additional information please contact:

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