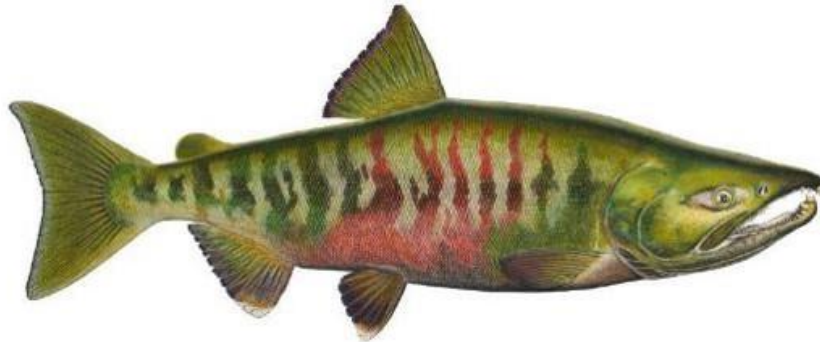




# YUKON RIVER SALMON UPDATE



**Thursday November 2, 2023**

Note: This update is intended to inform fish harvesters. Information provided in this update is preliminary and subject to change. For more information please refer to the contacts identified at the end of this update.

## **CHUM SALMON**

### **Canadian-Origin Fall 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.

This year's U.S. summer chum run came in above the preseason outlook and was stronger than it has been in recent years. 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 U.S. initially revised the fall chum salmon run size estimate based on the summer chum to fall chum salmon relationship to be approximately 425,000 fall chum salmon expected to enter the mouth of the Yukon River in Alaska.

That revised number was decreased based on genetics and run timing information and is now in alignment with preseason forecasts of less than 300,000 fall chum. This is below the drainage-wide escapement goal of 300,000 to 600,000 and will not be large enough to achieve spawning escapement objectives, nor provide for harvest opportunities in either Alaska or Canada.



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

Assessment Site	Date	Total Count to Date (Number of fall Chum estimated to have migrated past the assessment site)	Total Count to Date in 2022	Average Historical Cumulative Count to Date (Average number of fall Chum estimated to have migrated past the assessment site by this date)	Estimated Average % Passage Complete (avg timing based on Assessment site)	Estimated Projected Run Size Based on % Passage (avg timing)
Lower River (Pilot Station Sonar ADF&G) <sup>1</sup>	Sept 7 counts complete	289,734	242,000	757,116	100%	47,983 <sup>2</sup>
Upper River (Eagle, International Border Sonar ADF&G & DFO)	Oct 6 counts complete	20,260	21,063	132,410	100%	20,260
Porcupine River (Old Crow Sonar VGG & DFO) <sup>3</sup>	Oct 4 counts complete	14,966	3,701	28,932	100%	14,966
Fishing Branch River (Sonar/weir, VGG & DFO)	Oct 18 counts complete	11,098	2,908	15,795	100%	11,098
Kluane River Aerial (DFO)	Oct 27 counts complete	125	290	3,182 <sup>4</sup>	n/a	n/a

<sup>1</sup> Reference the below section, Genetics, Age, Size (Chum) for details on Pilot Sonar Fall Chum estimates.

<sup>2</sup> This value represents the genetic estimation of Canadian origin Fall Chum that passed Pilot Station

<sup>3</sup> Season began on August 22 due to wildfire evacuation

<sup>4</sup> Kluane aerial survey average consists of 2017-2022 data

### Run Timing (Chum):

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. Chum are expected to start arriving at the international border in late August.

### Genetics, Age, Size (Chum):

Based on in-season genetic analyses from Pilot Station Chum Salmon samples, the 2023 Fall Chum run is estimated to be approximately 290,000, compared to 242,000 in 2022. The Canadian Origin component of this year's Fall Chum run, based upon genetic analysis is approximately 48,000.

Genetic analysis on Fall Chum at Pilot Station is completed in stages throughout the season, indicated by strata. Strata 1 consists of all chum salmon from the start of the fall season on July 19 through to July 31. The percent Canadian Fall Chum were below average for the Fall 1 and Fall 2 strata, with Fall 3 reaching the 10-year average (Table 1).

Table 1. 2023 Yukon River Fall Chum Salmon genetic assignment to Canadian origin by strata at Pilot Station, Alaska.

2023 strata date ranges	2023 percent Canadian-origin Fall Chum	10 year average percent Canadian-origin Fall Chum
July 19 – 31 (Fall 1)	2%	12-25%
August 1 – 13 (Fall 2)	14%	25-29%
August 14 – 27 (Fall 3)	20%	18-27%



Genetic assignment of Canadian origin Fall Chum Salmon at Pilot Station is further broken down into aggregate populations (Table 2). These data show the Mainstem Yukon River aggregate to be the largest contributor of Canadian Fall Chum this year.

Table 2. 2023 Yukon River Fall Chum Salmon genetic assignment to Canadian run by strata at Pilot Station, Alaska.

	<b>Porcupine</b>	<b>Mainstem</b>	<b>White</b>	<b>Teslin</b>
July 19 – 31 (Fall 1)	0.11%	0.73%	1.15%	0.04%
August 1 – 13 (Fall 2)	2.78%	7.92%	2.86%	0.02%
August 14 – 27 (Fall 3)	0.08%	15.25%	5.09%	0.02%

Sampling for age, sex, length, and genetics continues at Fishing Branch, with approximately 350 Chum Salmon sampled to date. As of October 4, sex composition was 55% male and 45% female, with average fork length of males slightly larger than females (659 mm and 617 mm, respectively).

**Current Management Summary (Chum):**

- First Nation Fishery: No harvest opportunities
- Public Angling Fishery: Closed
- Commercial Fishery: Closed
- Domestic Fishery: Closed

**CHINOOK SALMON**

**Canadian-Origin Chinook Salmon Escapement Goals and Pre-Season Forecast:**

As in 2021 and 2022, Canada’s recommended management objective for Canadian-origin Chinook salmon is 55,000 fish. This objective is intended to ensure that enough salmon reach the spawning grounds each year to sustain the population and provide for current and future harvest opportunities. Both the U.S. and Canadian contingents of the Yukon River Panel agreed that the pre-season outlook estimates suggest that there would be no fishing in 2023.

The 2023 pre-season outlook was for an estimated 34,000 Canadian-origin Chinook salmon (range: 26,000 to 43,000). Uncertainty, enroute mortality and past forecast performance strongly suggested that it was highly unlikely that the run size would reach the estimate. Similar to previous years, 2019 to 2022, the return of Canadian-origin Chinook salmon was not large enough to achieve the spawning escapement objectives, nor provide for harvest opportunities in either Alaska or Canada.

**In-Season Assessment (Chinook):**

Information from the Pilot Station Sonar in the lower Yukon River in Alaska provides an early-season indication of run strength of 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 size of 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 program 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 Chinook salmon are more readily



differentiated from other fish species and the overall size of the River is considerably smaller at this location.

In addition to the two assessment programs (Pilot Station & Eagle Sonar) delivered by the Alaska Department of Fish & Game (ADF&G) for the 2023 season, eight programs were operated within the Yukon. Six of these programs were directed or operated in collaboration with Yukon First Nation governments, while the remainder were operated or partnered with government, contractors or non-governmental organizations.

The following table presents the most current count available for each assessment program, the equivalent date count during the last year of operation and the average count of that date in the program's history.

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

Assessment Site	Date	Total Count to Date (Number of Chinook salmon estimated to have migrated past the assessment site)	Total 2022 Count to Date	10 Year Historical Average Cumulative Count to Date (Average number of salmon estimated to have migrated past the assessment site by this date)	Estimated Average % Passage Complete (avg timing based on Assessment site)	Estimated Projected Run Size Based on % Passage (avg timing)
Lower River (Pilot Station Sonar) ADFG <sup>1</sup>	Aug 26 counts complete	58,487	48,439	160,446	100%	58,487
Upper River (Eagle, International Border Sonar) ADFG & DFO	Aug 27 counts complete	15,304	12,025	50,404	100%	15,304
Porcupine River Sonar (VGG & DFO)	Aug 9 counts complete	496	349	2,792	100%	496
Klondike River Sonar (TH)	Aug 18 counts complete	243	249	703	100%	243
Pelly River Sonar (SFN)	Aug 27 counts complete	1,860	4,963*	7,023	100%	1,860
Big Salmon Sonar (Private Contractor)	Aug 27 counts complete	1,744	1,948*	4,720	100%	1,744
Nisutlin River Sonar (TTC) <sup>2</sup>	Sept 10 counts complete	636	n/a	n/a	n/a	n/a
Tatchun River Video Weir (LSCFN)	Sept 5 counts complete	82	203	457	100%	82
Takhini River Sonar (KDFN)	Sept 5 counts complete	332	475	1,037	100%	332
Whitehorse Fish Ladder YEC & YFGA	Sept 16 counts complete	154	165	862	100%	154

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

<sup>2</sup> 2023 is the first full season for the Nisutlin River Sonar project

\* Pelly River and Big Salmon Sonar projects did not run in 2022 – total count to date is from 2021



## **Run Timing (Chinook):**

The first Chinook caught in the Lower Yukon Test Fishery near Emmonak was on June 8. The Pilot Station sonar enumeration program (located around 200 km from the river mouth) has been operational since June 6 and has been counting Chinook since June 10. Run timing is typically 29-30 days from Pilot Station to Eagle. This season is a slightly later run timing compared to normal.

## **Genetics, Age, Size (Chinook):**

Chinook salmon are being sampled for age, sex, length (ASL) and mixed stock analysis (MSA) at both the Pilot Station and Eagle sonar assessment sites (however the Eagle MSA is not available in-season).

Genetic results of Chinook sampled at Pilot Station from June 7 – 26 (strata 1), June 27 – July 3 (strata 2) and July 4 – 23 (strata 3) estimate Canadian-origin fish at 44%, 54% and 48% (+/- 8%), respectively. Strata 1 consisted of a lower than average Canadian-origin component while strata 2 and 3 exceeded the average.

## **In-Season Chinook Salmon Information (Pilot Station and Eagle Sonar):**

The pre-season outlook indicated that the 2023 return of Canadian-origin Chinook would not be of sufficient size to achieve spawning escapement goals nor provide for harvest opportunities. As Chinook pass Pilot Station Sonar, passage estimates can be used to develop in-season projections for total Canadian-origin run size. Current information collected at Pilot Station strongly suggests a run size of Chinook salmon near historical lows, that will not be sufficient to meet spawning escapement goals and as a result no harvest opportunities will be provided.

## **Current Management Summary (Chinook):**

- First Nation Fishery: No harvest opportunities
- Public Angling Fishery: Closed
- Commercial Fishery: Closed
- Domestic Fishery: Closed

## **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 2022 Season Summary and 2023 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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