



YUKON RIVER SALMON UPDATE



Thursday, September 29, 2022

Note: This update is intended to inform fish harvesters. Information provided in this update is preliminary and subject to change. In an effort to streamline the information provided in later updates general salmon fishery management and in-season assessment project information has been removed. For more information please refer to previous versions of the update for 2022 or 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 range for Canadian-origin fall Chum for the Yukon River mainstem is **70,000 to 104,000** fish. The escapement goal range 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 summer Chum run estimate looks to be the second lowest on record with only 2021 being lower. Based on the strong correlation between summer and fall chum, which is used to revise the estimate, the revised projection for fall chum was 68,000 for Yukon River mainstem stocks and 11,000 for Fishing Branch River stocks.

Following the revised projection, chum are sampled for Mixed Stock Analysis (MSA) at Pilot Station Sonar to estimate the proportion of each spawning aggregate passing the sonar site. Preliminary results show a much lower-than-expected proportion of Canadian-origin fall chum (10% compared to a mean of 25%). These in-season genetics results strongly indicate that the mainstem border passage of fall chum into Canada will be very low, with projections similar to last year's border passage of ~23,000.



Comparison of Current and Historical In-season Fall Chum Salmon Abundance Estimates 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 2021	10 Year 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)	Estimated Mainstem CA-origin passage projection based on % passage (avg timing) and proportion based on in-season MSA
Lower River (Pilot Station Sonar ADF&G) ^{1,2}	Project completed as of September 7	237,000	146,172	647,536	100%	
Upper River (Eagle, International Border Sonar ADF&G & DFO)	September 28	18,442	12,520	111,849	71%	25,943
Porcupine River (Old Crow Sonar VGG & DFO)	September 27	3,346	3,249	25,188 ³	82%	4,079
Fishing Branch River (VGG & DFO)	September 28	1,612	1,532	10,928 ⁵	63%	2,548

¹ Pilot Sonar Counts (includes both Canadian and U.S. origin fish)

² All fall chum salmon passage after July 19, 2022

³ 2011-2013, 2015-2017 and 2019

⁴ 2009-2012 and 2015-2020

Run Timing (Chum):

Chum salmon that enter the mouth of the Yukon River after July 19th 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. Fall chum started arriving at the international border in mid-August.



Genetics, Age, Size (Chum):

Chum salmon were sampled for age, sex, length (ASL) and mixed stock analysis (MSA) at the Lower Yukon Test Fishery, Pilot Sonar and Eagle sonar assessment sites (however the Eagle MSA is not available in-season).

Sampling at Lower Yukon Test Fishery through to August 28 showed 78% age-4 and 21% age-5 chum, and that 54% of chum sampled were female.

Preliminary 2022 data indicates that the Canadian-origin stock composition is 10% at the Pilot Station Sonar site. Historically the average has been approximately 25%. These results indicate a much lower-than-expected mainstem border passage of fall chum compared to the drainagewide run.

Canadian-Origin Fall Chum Salmon Fishery Expectations and Management Actions:

Chum salmon spawning escapement goals will not be achieved in either the Yukon River or Fishing Branch Rivers, as such, neither the U.S. nor Canada will have a harvest allocation as described in the Pacific Salmon Treaty (Yukon River Salmon Agreement). As the fall chum run progresses, DFO will monitor information from Pilot Station, Eagle Sonar and Fishing Branch River closely.

The following table, based on the Canadian Yukon River Chum Salmon Management Matrix, summarizes the revised projected expectations and fishery management actions for 2022 Canadian Yukon River Mainstem Chum fisheries:

Date:	Anticipated Border Passage (Spawning Escapement + CDN Harvest Share)	Anticipated Fishery Status			
		First Nation	Public	Domestic	Commercial
Sept 29, 2022	Below minimum spawning escapement goals for Canadian Yukon mainstem (70,000) and Fishing Branch stocks (22,000)	Current run size information does not indicate an available harvest share to Canada.	CLOSED	CLOSED	CLOSED

Current Management Summary (Chum):

- First Nation Fishery: No Available Harvest Allocation
- Public Angling Fishery: CLOSED; Catch, retention and possession limits varied to Zero.
- Commercial and Domestic Fisheries: CLOSED



CHINOOK SALMON

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

The spawning escapement goal for mainstem Canadian-origin Chinook salmon is **42,500 to 55,000** fish. This goal was set by the international Yukon River Panel as an Interim Management Escapement Goal (IMEG) and 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.

In response to sustained period of poor returns and low survival, for the 2022 season the Yukon River Panel provided 2 recommendations to the Governments of Canada and the United States. These can be found in the Yukon River Panel's May 2022 press release at the following web address: <https://www.yukonriverpanel.com/publications/yrp-press-releases/>

The 2022 pre-season forecast was for **41,000 to 62,000** Canadian-origin Chinook salmon. However, uncertainty and past forecast performance strongly suggested that it was unlikely that the run size would be at the upper end of this range. In addition, it was thought possible that, as was observed in 2019, 2020, and 2021, the run of Canadian-origin Chinook salmon would not be large enough to achieve the spawning escapement objectives. As a result, the run size will not provide harvest opportunities in either Alaska or Canada.

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

The pre-season forecast indicated that the 2022 return of Canadian-origin Chinook would likely not be of sufficient size to achieve spawning escapement goals nor provide for harvest opportunities. As Chinook passed Pilot Station Sonar and Eagle Sonar, passage estimates were used to develop in-season projections for total Canadian-origin run size. With the Chinook run complete at Pilot Station and Eagle Sonar, estimates were for the lowest run of Canadian-origin Chinook on record, and showed a continued discrepancy between Pilot Station estimates of Canadian-origin Chinook and their passage recorded at Eagle. The 2022 Yukon River Chinook salmon run was not sufficient to meet spawning escapement goals.

The following table presents the most current data available for each assessment project and compares these values to both the equivalent date in 2021 and the average of that date in the project'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 Count to Date In 2021	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 Run size projection based on % passage (avg timing)
Lower River (Pilot Station Sonar) ADFG	Counts Complete	44,581 (Includes Canadian and U.S.-origin fish)	124,874	168,358	100%	44,581
Upper River (Eagle, International Border Sonar) ADFG & DFO	Aug 21 (counts complete)	12,025	30,669	52,549	96%	12,514
Porcupine River (Old Crow Sonar) VGG & DFO	Aug 6 (counts complete)	349	370	2,944 ¹	100%	349
Klondike River Sonar TH	Aug 18 (counts Complete)	249	843	817 ²	99%	251
Tatchun River Video Weir LSCFN	Aug 30 (counts complete)	161	n/a	n/a	99%	193
Takhini River Sonar KDFN	Sept 5 (counts complete)	475	245	1,224 ³	100%	475
Whitehorse Fish Ladder YEC & YFGA	Sept 2 (counts complete)	165	270	945	100%	165

¹ 2014 to 2019 and 2021

³ 2017-2018 and 2021

² 2010-2011 and 2020-2021

Run Timing (Chinook):

The first Chinook caught in the Lower Yukon Test Fishery near Emmonak was on June 5. The Pilot Station sonar enumeration program (located around 200 km from the river mouth) has been operational since June 1 and has been counting Chinook daily since June 3. Chinook typically take approximately 30 days to migrate from Pilot Station to Eagle. The first Chinook was recorded at the Eagle Sonar on July 1.



Genetics and Age (Chinook):

Chinook salmon were 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).

Preliminary 2022 data indicates that the Canadian-origin stock composition is 47% at the Pilot Station Sonar site. Historically the average has been approximately 41%. Genetic composition of the end of the Chinook run at Pilot Station will be available post-season.

Sampling at Pilot Station through to July 27 indicated that the overall age classes were dominated by age-6 (46%), followed by age-5 (36%), age-4 (12%) and age-7 (6%) and that 53% of Chinook sampled were female.

Sampling at the Lower Yukon Test Fishery through to July 15 indicated that the overall age classes were dominated by age-6 (63%), followed by age-5 (26%), then age-4&7 (both 5%) and that 59% of Chinook sampled were female.

Sampling at Eagle Sonar through August 10 showed 49% age-6, 42% age-5, and 4% for both age-6 and age-7 fish. Females composed 47% of the run.

Chinook Salmon Harvest Management Zone and Fishery Status:

Date	Expected Border Passage	Fishery Status			
		First Nation	Public	Domestic	Commercial
Sept 29, 2022	Below minimum spawning escapement goal ($\leq 42,500$)	Current run size information indicates that there is no available harvest allocation to Canada	CLOSED	CLOSED	CLOSED

Current Management Summary (Chinook):

- First Nation Fishery: No Available Harvest Allocation
- Public Angling Fishery: CLOSED
- Commercial and Domestic Fisheries: CLOSED



Information Links and Notifications About Fishery Management Actions

Yukon River Panel (Pacific Salmon Treaty) – the Yukon River Salmon Agreement and Yukon River Panel Recommendations for 2022 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 and issuance of an *Aboriginal Communal Salmon Fishing Licence* to First Nations.

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_req

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 2020 Season Summary and 2021 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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