



2023 Preliminary Yukon River Salmon Fisheries Review

Supplemental handout from the U.S. Fish and Wildlife Service Yukon Team
For the Fall Regional Advisory Council Meetings

This summary is considered preliminary as estimates of abundance may change post season. Fall season data is still being compiled at time of submission, and therefore should be considered incomplete. This report is compiled by U.S. Fish and Wildlife Service (USFWS) in cooperation with the Alaska Department of Fish and Game (ADF&G).

Going into the 2023 fishing season, the Yukon River Chinook and Chum salmon had very poor projected run sizes. There was little to no expected harvestable surplus available for subsistence salmon fishing, and therefore salmon fishing closures were needed throughout the season. We aimed to give plenty of notice to Yukon River fishers on what to expect. The outlook and management strategy were discussed in depth during the spring of 2023 at the following meetings: Yukon River Panel, the Yukon River Intertribal Fish Commission preseason meeting, and the Yukon River Drainage Fishermen's Association (YRDFA) Board meeting, and preseason fishermen's meeting.

The colored Outlook flier with the pre-season management strategy was mailed to all Yukon River households in May. Below we outline how each run compared to their respective preseason forecast and historical run sizes.

Summer Season

The 2023 Chinook Salmon drainage wide outlook was for a run size of 62,000 to 104,000 fish, with the Canadian component unlikely to be large enough to meet escapement goals. The Chinook Salmon drainage wide run came in below the preseason outlook and was the second lowest on record with approximately 58,500 Chinook Salmon passing Pilot Station sonar (Figure 1). Of those passing the sonar, approximately 28,000 were Canadian-origin (based on genetic mixed stock analysis at the Pilot Station sonar) and were expected at the Eagle sonar. However, only approximately 15,300 Canadian-origin Chinook Salmon passed the Eagle sonar (Figure 2). This is well below the previous Interim Management Escapement goal of 42,500 to 55,000, and only slightly larger than 2022, which was the lowest on record for this project. For the fifth season in a row, nearly half as many Canadian-origin Chinook Salmon as expected arrived at the Eagle sonar. While we do not know what is causing this discrepancy, there are indications Chinook Salmon may be dying during their migration in the upper river (known as en route mortality). See details of our collaborative research in the "*Ichthyophonous*" section below.

The summer Chum Salmon run was projected to be 280,000 to 900,000 fish. The run fell within the upper end of the forecast, with a final passage estimate of approximately 846,000 summer Chum Salmon past the Pilot Station sonar. As of the transition date to fall season at the Pilot Station sonar, July 18, the run was within drainage wide escapement goal of 500,000 to 1.2 million. This is a great improvement over the low return in 2022. While the drainage wide escapement goal was met, other important escapement goals for summer Chum Salmon including the Anvik River were likely not met, and counts at other assessment projects were still well below average.

Fall Season

The fall Chum Salmon outlook was between 112,000 to 602,000 fish. The final day of counting at Pilot Station sonar is September 7. Approximately 335,000 Chum Salmon passed the sonar between July 19 and August 31 (Figure 4). Inseason, genetic mixed stock analysis (MSA) was applied to Pilot Station sonar counts to provide a more accurate index of fall Chum Salmon abundance. The in river abundance estimate of fall Chum Salmon was approximately 257,000 and is short of the 300,000 fish needed to meet escapement needs or to provide any subsistence harvest. As of August 31, the fall Chum Salmon count at Eagle sonar was 346 which is below the average of 3,747 for this date. Inseason MSA estimates indicate Canadian border objectives for fall Chum Salmon will not be met this season. The passage estimates of fall Chum salmon at Teedriinjik sonar are well below average, but the project has experienced high water and flooding and missed some days of counting. Sheenjek River sonar counts are also well below average. Upper Yukon River escapement projects for fall Chum Salmon are still ongoing at the time this document was submitted therefore estimates are incomplete.

The Coho Salmon run outlook was for a below average return. The Coho Salmon run came in much lower than 2022, with approximately 33,500 fish counted at the Pilot Station sonar through August 31, which is below the average of 118,591 fish (for this date historically) and the second lowest on record. (Figure 5).

Management Actions

The Office of Subsistence Management (OSM) received special action request FSA23-02 asking the Federal Subsistence Board (Board) to close Federal public waters of the Yukon River drainage to the harvest of Chinook, Chum and Coho salmon except by federally qualified subsistence users from June 1 through September 30, 2023, and to require that Federal subsistence fishing schedules, openings, closures and methods be determined by the Federal Fisheries Manager. This request fell within the scope of authority of the Federal manager, Holly Carroll and was transferred to her by the Board. The request; the testimonies at a public hearing; discussions at Tribal Consultations; and public discussions at the YRDFA preseason fishermen's meeting were all considered in the Federal management strategy. After coordination with staff from OSM and the management team from the Alaska Department of Fish and Game (ADF&G), the Federal management actions were taken in consultation and concurrently with ADF&G announcements which restricted state-managed waters. When any salmon fishing opportunity was provided, fishing was limited by the Federal manager to federally qualified subsistence users only in Federal public waters.

Unfortunately, due to the poor outlook and returns, directed-subsistence salmon fishing for Chinook and Chum salmon were essentially closed for the entire season. Managers provided liberal opportunity for subsistence fishers to harvest non-salmon species using 4-inch or smaller mesh gillnets (restricted to 60 feet maximum length) during closures. Once summer Chum Salmon abundance was large enough to meet the drainage-wide escapement goal, selective gear fishing opportunities to target summer chum were opened up through Subdistrict 5-ABC and allowed the retention of Pink, Sockeye, summer Chum and Coho salmon.

However, once the fall Chum Salmon were more abundant in the run retention of fall chum was closed in each district, but selective gears were still legal for retention of coho. However, by the final week of August, it became clear the Coho salmon were clearly coming in much poorer than expected so retention of Coho and Chum salmon were no longer allowed. A drainage-wide announcement closing all retention of Coho Salmon was issued August 31. At this time, as no salmon harvest opportunities were being provided, Federal special actions limiting fishing to federally qualified users in Federal public waters were rescinded.

While the mainstem restrictions for subsistence salmon fishing will be relaxed in October, some tributaries such as the Koyukuk River, Teedriinjik and Porcupine rivers will need to stay closed through December in order to avoid harvest of actively spawning fall Chum Salmon.

The USFWS and the Yukon River Fishery Management team acknowledges the last three years with no directed Chinook and summer Chum salmon and 4 years with no fall Chum Salmon subsistence salmon fishery has resulted in tremendous hardship, loss of cultural practices, and unprecedented sacrifice within Yukon River households and communities. We recognize all of those who continue to be stewards of their surrounding lands and waters and would like to express a special thank you to those who have stayed involved at various public outreach meetings during these disheartening times of low abundance.

Tribal Consultation, Public Outreach, and Meetings

The USFWS has a core mission to consult with Federally Recognized Tribal Governments and the Yukon Fishery team has been working to expand and improve government-to-government consultation. This spring 2023, the USFWS held six district-wide formal Tribal Consultation teleconference meetings with Yukon River Tribal Governments. The Federal Subsistence Fishery Manager presented information on the outlook and management strategy for the 2023 salmon season, engaged in discussion among Tribal representatives and USFWS staff on the provided information as well as other topics such as the Federal special action request (FSA23-02), updates on *Ichthyophonous* research and other topics chosen by Tribal representatives.

This fall 2023, the USFWS will offer one-to-one Tribal Consultations with any Tribal Government that requests one with the Inseason manager. An invitation will be sent to each Yukon River Tribal Government and ANCSA corporation offering the opportunity to schedule any requested meetings. This approach will allow each Tribal Government to tailor the consultation around their individual topics of concern, questions, or recommendations regarding Yukon River fisheries management. This coming spring, district-wide Tribal Government Consultations will be offered to share salmon outlooks prior to the 2024 fishing season.

Inseason assessment data and management actions were shared weekly on the Tuesday YRDFA teleconferences. Throughout the fishing season, management staff also responded to daily emails and phone calls from community members. The Federal emergency special actions were announced on the same day as ADF&G Advisory Announcements, and were emailed to City and Tribal Government offices, posted online under Fisheries Special Actions on the Office of Subsistence Management website and Subsistence Facebook page, and distributed by email to anyone signed up to receive Federal announcements. **If you did not receive Federal announcements this summer, please contact the USFWS management staff (listed at the end of this document) to get signed up for future notices. If you have feedback about federal management and how it went this season, we would love to hear it; please call or email the Federal team.**

The following figures show inseason abundance indices (with data through August 31, 2023) for each species compared to previous seasons. These estimates should not be used to compare to escapement goals, as runs are reconstructed post season using methods that account for harvest, escapement, and genetic mixed stock analysis. All estimates for 2023 are preliminary.

Figure 1. Cumulative passage of Chinook salmon at the Pilot Station sonar from 1995 through 2023, excluding 1996 and 2009.

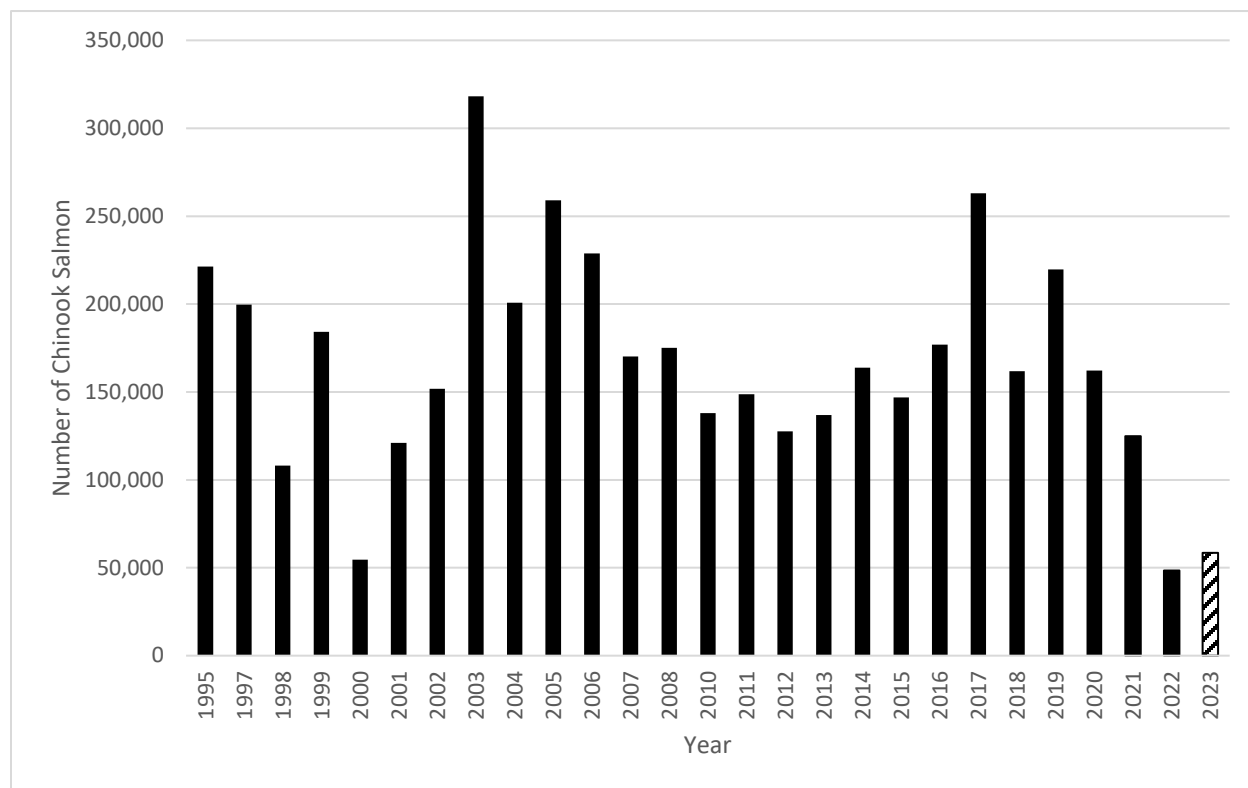


Figure 2. Cumulative passage estimates of Canadian-origin Chinook Salmon at Eagle sonar from 2005 through 2023.

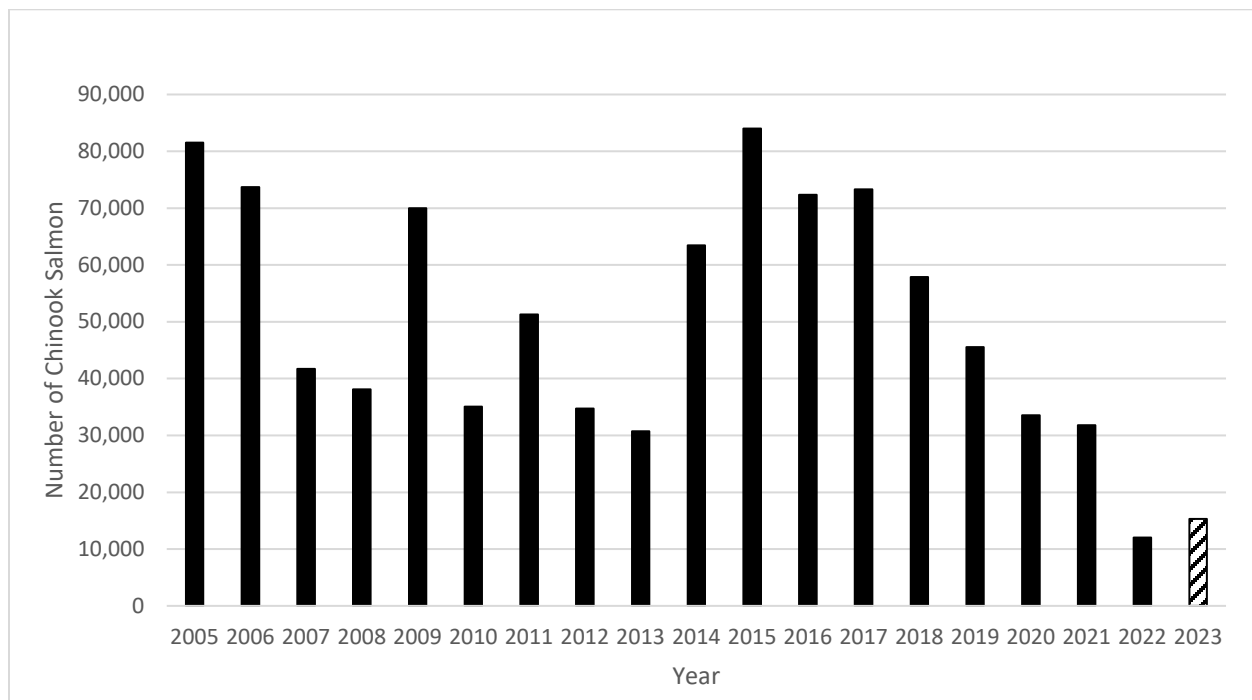


Figure 3. Cumulative passage of summer Chum Salmon at the Pilot Station sonar project (through July 18) from 1995 through 2023, excluding 1996.

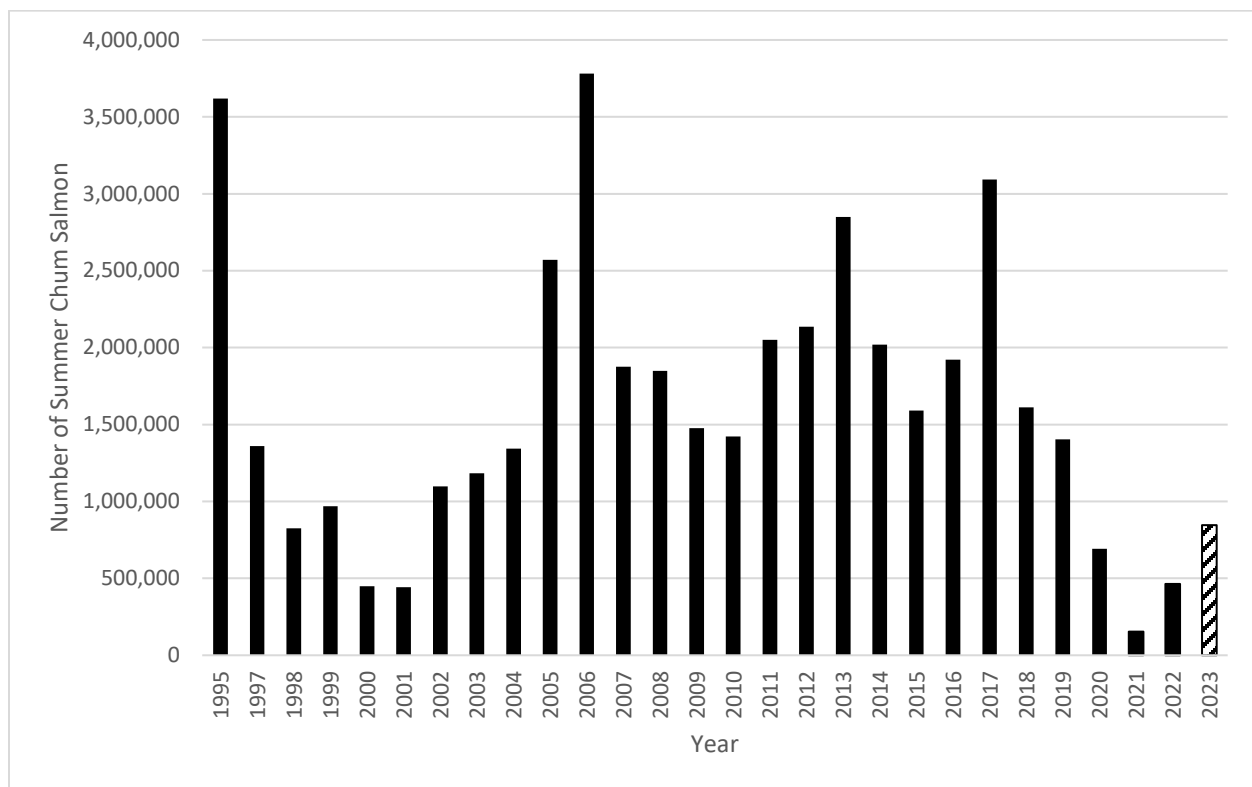


Figure 4. Cumulative passage of fall Chum Salmon (after July 18 and through August 31) at the Pilot Station sonar project from 1995 through 2023, excluding 1996 and 2009.

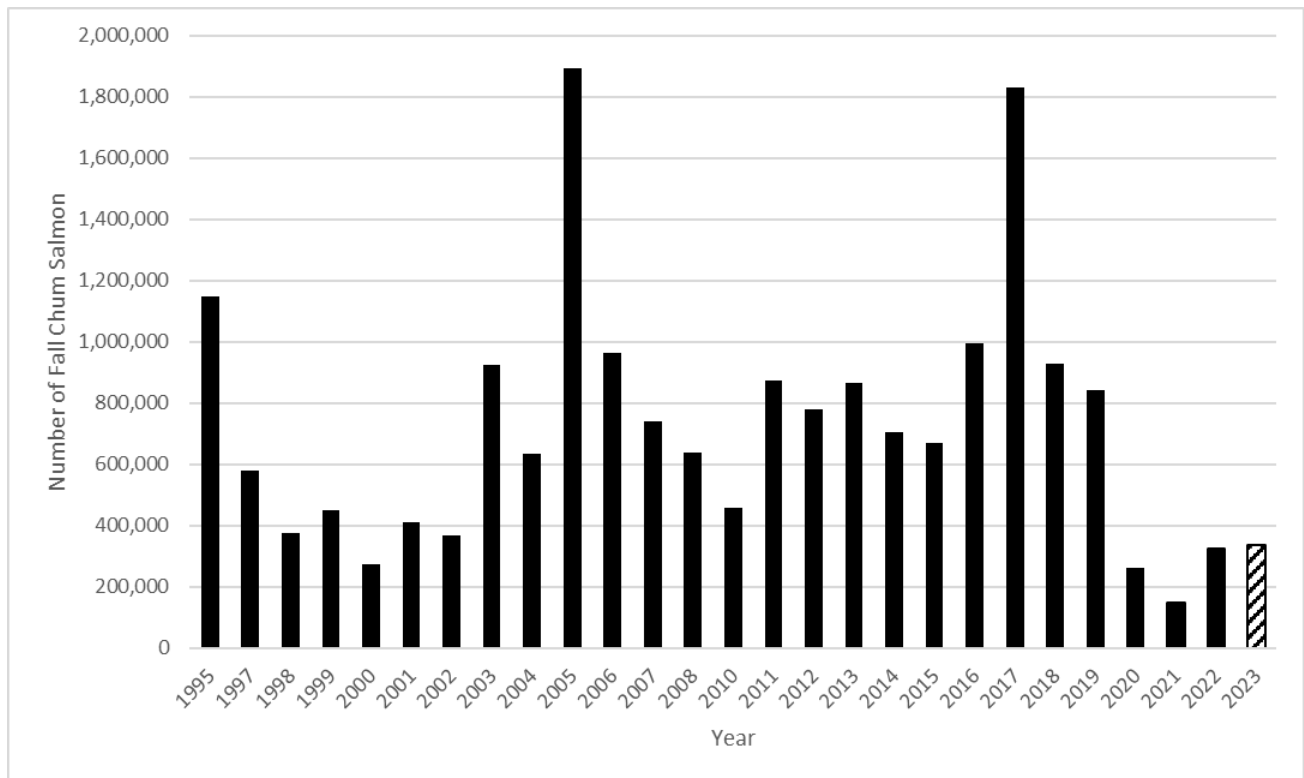
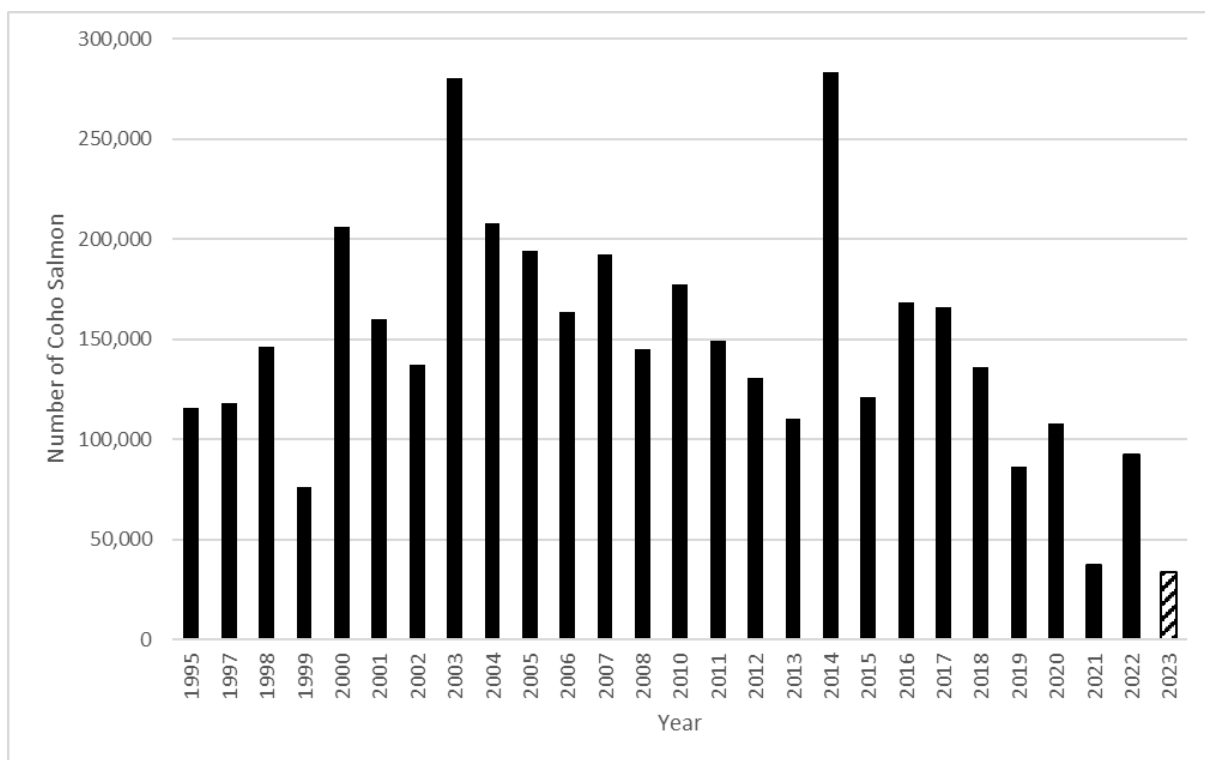


Figure 5. Cumulative passage of Coho Salmon at the Pilot Station sonar project from 1995 through 2023, excluding 1996 and 2009. The sonar ceases operations before the Coho Salmon run is complete, so estimates are considered an index.



***Ichthyophonus* Study**

We continue to monitor the amount of *Ichthyophonus* disease present in the Yukon River Chinook Salmon population, the intensity of the disease, and whether Chinook Salmon are dying due to disease before reaching upper portions of the drainage and spawning locations. This is a collaborative effort between ADF&G, the USFWS, and multiple fish disease experts, affected communities, and local Yukon River fishers.

Steps were taken to minimize the impact of the study and ensure that sampled fish were used to the greatest possible benefit. Careful planning of the minimum sample sizes needed for statistical rigor were considered. All the sampled fish were handled with the highest care and respect contributing to a variety of research projects addressing Yukon Chinook salmon health and life history, and distributed to local elders, Tribal Governments and individuals for subsistence use.

Official sampling in 2023 occurred at three sites: Pilot Station sonar test fishery in the lower river (operated by ADF&G), Rampart rapids from a fish wheel test fishery contracted by the USFWS (in the middle river), and near Fort Yukon at a fish wheel test fishery contracted by the USFWS (in the upper river). Sampling goals were a maximum of 180 fish per site, but low catch rates contributed to the following sample sizes collected (n): Pilot Station (n = 156), Rapids (n = 180), and Fort Yukon (n = 90). Preliminary results will be shared once data is analyzed.

The overall goal of the project is to establish a new long-term *Ichthyophonus* disease monitoring platform in the lower Yukon River, build capacity and support for community-based *Ichthyophonus* monitoring by Tribal Governments or local Yukon River fishers, and determine if *Ichthyophonus* is associated with en route mortality allowing for appropriate management adjustments, if necessary.

Please contact any member of our team with questions about Yukon Fisheries:

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