

Yukon Fisheries News

Protecting and promoting all healthy wild fisheries and cultures along the Yukon River drainage

Fall 2023 Edition

See the Educational Exchange article to see and read about the trip to Anvik, Grayling, Holy Cross and Russian Mission with Yukon Territory participants.



News from the Director

Serena Fitka

YR DFA Executive Director

When a tragedy hits, everyone comes together. This has echoed in my mind since arriving home in St. Mary's for moose hunting. The news of Rep. Mary Peltola's husband, Buzzy's, death by the crashing of his plane on the Andraefski River was a shock. The sadness was accompanied by the loss of a

respected elder that morning. As my husband and I arrived to the airport to leave for St. Mary's, a young man's family that was taken by suicide the week before, arrived on the same flight. It was a bittersweet arrival home.

That afternoon we took our boat to Marshall. On the ride up the Yukon River, I took in all the beauty of the land and water. The process of healing for our people is in that wide open space. Grounding ourselves on the land in which we were raised and the many teachings our Elders have passed down to us is a true testament of our healing processes. I gave my sadness to the wide-open country I call home during that boat ride.

I was reminded that with sadness and hardship comes togetherness. The community comes together to support one another in times of need. The focus is to make sure all is taken care of in a healthy positive manner to give one another comfort, guidance, and respect to those who are hurting the most. In any hardship, large or small, we follow these simple guidelines.

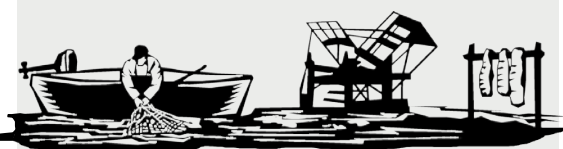
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THE OFFICIAL PUBLICATION OF THE
YUKON RIVER DRAINAGE
FISHERIES ASSOCIATION



Upcoming Meetings

North Pacific Fishery Management Council Meeting

October 2-10, 2023

Anchorage, AK at Hilton Hotel Downtown

Eastern Interior Subsistence Regional Advisory Council

October 4-5, 2023 / Arctic Village

Western Interior Subsistence Regional Advisory Council

October 11-12, 2023

Fairbanks, Pike's Waterfront Lodge

Yukon Kuskokwim Delta Subsistence Regional Advisory Council

October 10-12, 2023 / Anchorage, AK

Alaska Board of Fisheries

Work session - October 12 – 13,
Anchorage AK, Egan Center.

Hatchery Committee

October 14, 2023 / Egan Center
Comments due by September 19th

North Pacific Fishery Management Council Meeting

December 4-12, 2023 /

Hilton Hotel – Anchorage, AK

News from the Director continued

As we, the Yukon River communities, have faced another year of salmon declines we must continue to move forward in a positive light. We have lost so much in the last three years. The sudden shift in our eating, our teachings, and our living has made a huge traumatic impact on our people. However, in our tragedy is our strength. Our strength to move forward together on the issues we are concerned about, that will make a bigger impact for the better. Just as our Elders have taught us to correct those who are doing wrong or they will continue on the same path of destruction. Providing guidance to even one person can influence their decision to change.

As we end our summer season and move into the fall and winter, I encourage everyone to use your strengths to participate in the upcoming meetings. Tell your story and the impacts you have endured without salmon. Talk to one person who has a misunderstanding of the Yukon River people's way of living and guide them down a path of understanding. Filter your anger, sadness, confusion and channel it in a positive light to those who need your voices to make the decisions for the betterment of the Yukon River Salmon people.

I look forward to seeing everyone during the meeting season and finding ways to make change. Stay safe. Piuraa.



HOW DO I BECOME A YRDFA MEMBER?

- Go to yukonsalmon.org
- Go to YRDFA's Facebook page
- Fill out and mail in the form on page 23



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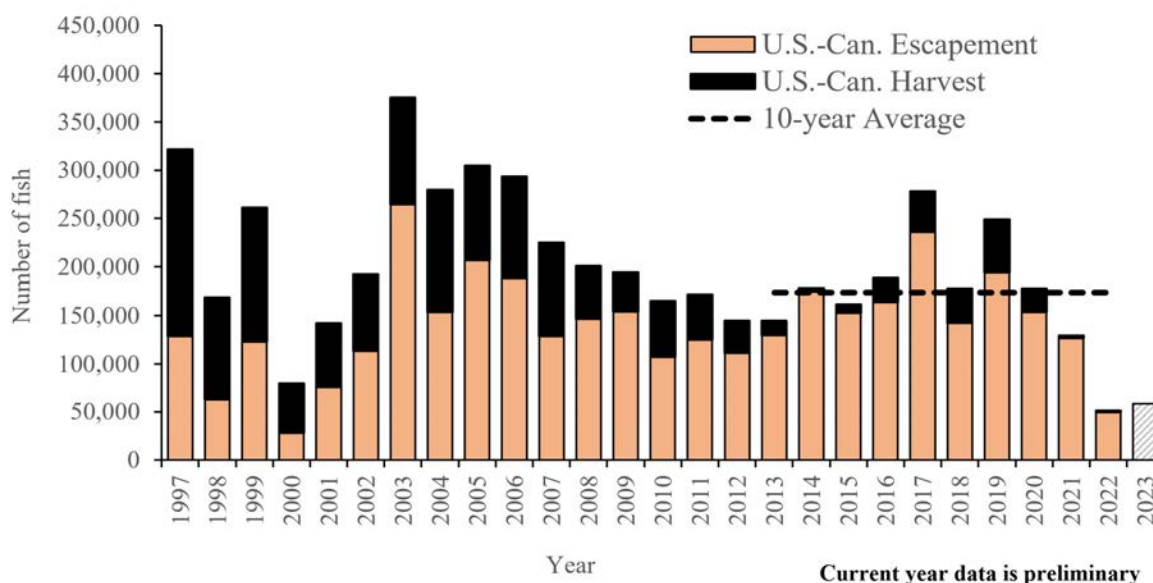
2023 Summer and Fall season salmon summaries

Authors: Deena Jallen, Fred West, Christy Gleason, Bonnie Borba, and Holly Carroll.

This was the fourth year of poor Chinook and fall chum salmon run abundance, which led to hardships for subsistence fishermen relying on these critical resources along the Yukon River. The Alaska Department of Fish and Game (ADF&G) and U.S. Fish and Wildlife Service (USFWS) staff want to extend our gratitude for the commitment of fishermen to conserve salmon runs for future generations during low abundance years.

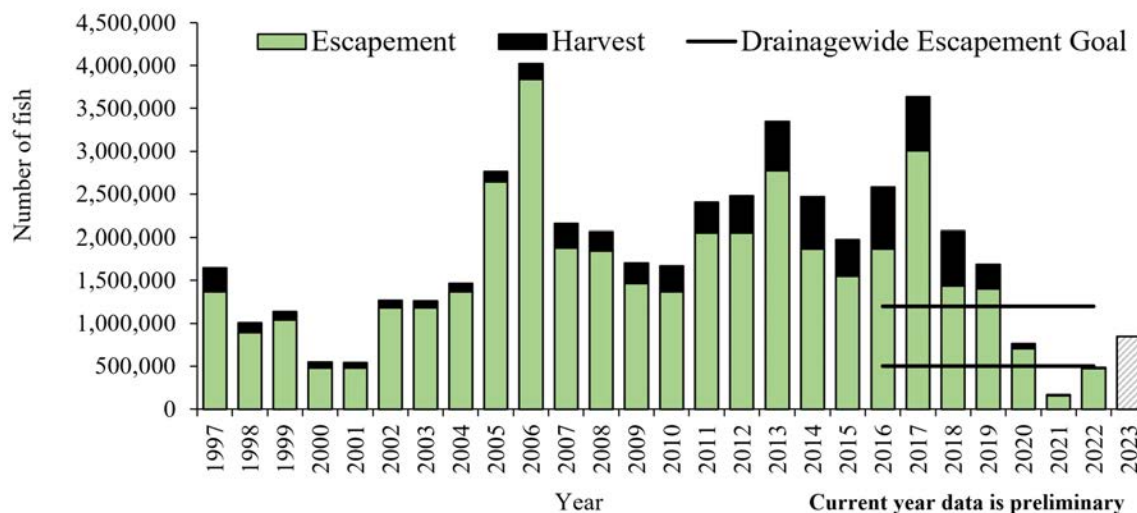
The 2023 Chinook salmon run was larger than in 2022, but still well below average, and was the second lowest on record. Approximately 58,500 Chinook salmon were estimated at Pilot Station sonar, and 15,300 Chinook salmon were counted at the Eagle sonar near the U.S. Canada border. Fishing for Chinook salmon remained closed all season. Escapement and other salmon monitoring project counts were well below average, and escapement goals were not met.

Chinook salmon escapement and harvest



Summer chum salmon returned near the upper end of the preseason forecast, and an estimated 846,000 summer chum salmon were counted at the Pilot Station sonar prior to the switch to fall season. The summer chum salmon run was within the drainagewide escapement goal of 500,000 to 1.2 million fish but below the historical run size of 1.6 million fish. Subsistence fishing opportunity for summer chum salmon was opened with selective gear types (dip nets, hook and line, and manned fish wheels) up through part of District 5. Pink and sockeye salmon could also be retained; however, all Chinook salmon were required to be released alive.

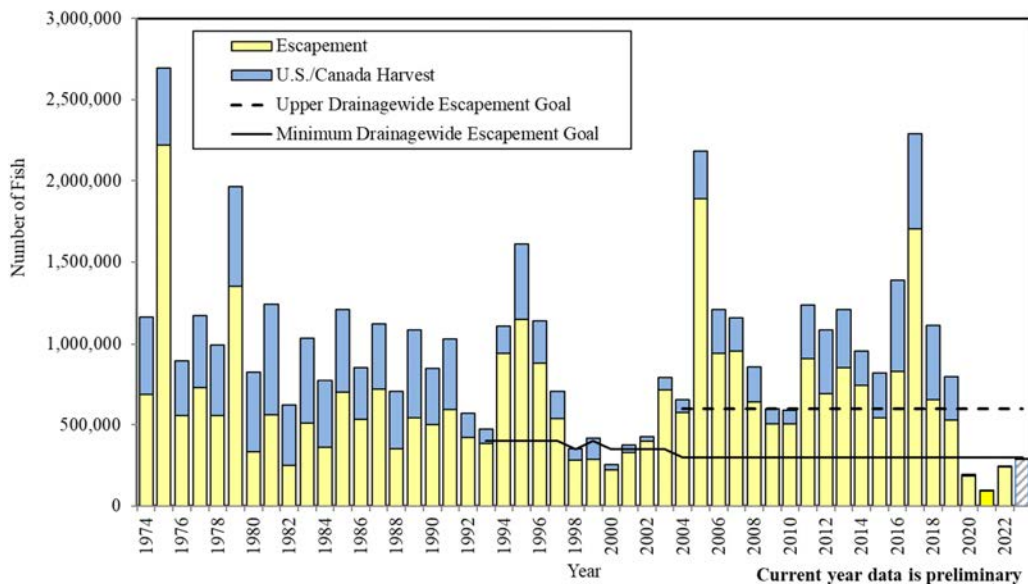
Summer chum salmon escapement and harvest (harvest include subsistence, commercial, sport, and personal use)



Fishing for nonsalmon remained open all season with 4-inch or smaller mesh gillnets restricted to 60 feet or less in length, which were required to be operated as a set net. To protect migrating salmon, fishers were encouraged to set this gear near shore and in areas where nonsalmon were more abundant.

The 2023 fall chum salmon run is approximately 290,000 fish compared to a historical run size of 1.0 million fish. The coho salmon index of run size is approximately 65,000 fish compared to a historical of 222,000 fish. Yukon River fall chum salmon run was the fifth lowest on record (1974–2022), while the coho salmon run was the second lowest (1995–2022).

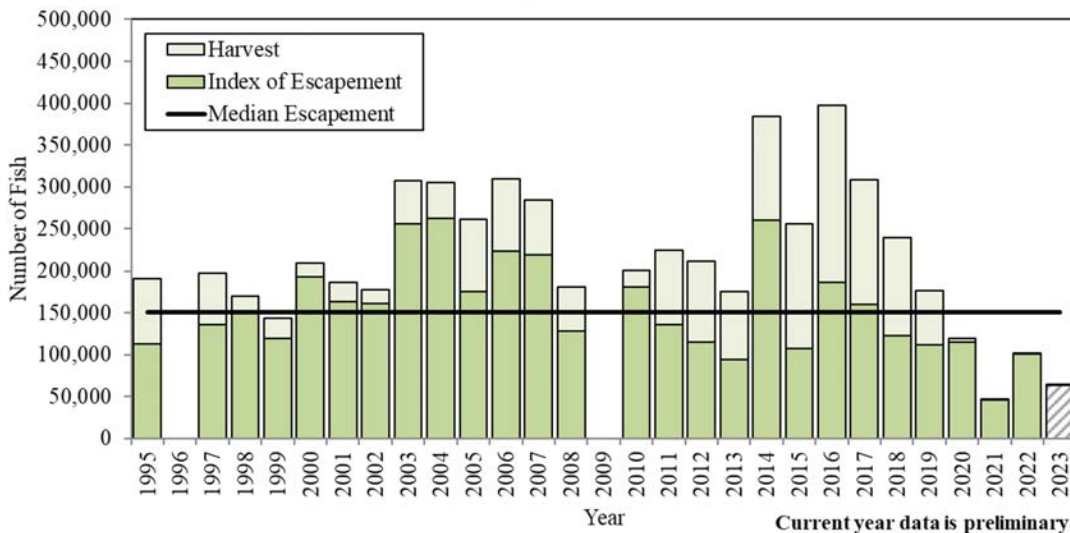
Yukon River Drainage Fall Chum Salmon Run Size



The preseason projection for fall chum salmon indicated the drainagewide escapement goal range of 300,000–600,000 fish could possibly be achieved. However, the Canadian fall chum salmon run was weak and the Canadian treaty objectives were not expected to be met. As summer chum salmon comprise the majority of the early portion of the fall season, subsistence fishing for chum salmon continued with selective gear types during the first ten days of the fall season in most districts before closing. As the fall chum salmon inseason run size projections fell below the drainagewide escapement goal, chum salmon fishing remained closed. The fall chum salmon drainagewide goal of 300,000–600,000 and Canadian treaty objectives are not expected to be achieved. The Teedriinjik goal of 85,000–234,000 fall chum salmon was projected to be met and subsistence salmon fishing was opened in this river in mid-September. The upper Yukon River sonar and weir assessment projects are ongoing through October. Once the tail end of the salmon run concludes in a district, subsistence fishing salmon closures will be relaxed in that district. While the summer and fall chum salmon runs are still below average, it is encouraging to see the steady improvements in run sizes since 2021.

Coho Salmon Index of Run Sizes

(does not include escapement below lower river sonar)



At the start of the fall season, subsistence fishing for coho salmon was open with selective gears. As the coho salmon run progressed, it became apparent the run was late and very weak, prompting fishing to close for this species as well.

For more information, contact the following staff.

Summer chum and Chinook salmon: Deena Jallen (Manager), ADF&G, deena.jallen@alaska.gov 907-459-7309 or Fred West (Research Biologist), ADF&G, fred.west@alaska.gov 907-267-2237

Fall chum and coho salmon: Christy Gleason (Manager), ADF&G, christine.gleason@alaska.gov 907-459-7240 or Bonnie Borba (Research Biologist), ADF&G, bonnie.borba@alaska.gov 907-459-7260

Federal questions: Holly Carroll, USFWS, Yukon River Subsistence Fishery Manager, holly_carroll@fws.gov 907-351-3029.

Marine salmon research questions: Sabrina Garcia, ADF&G, Marine Research Biologist, sabrina.garcia@alaska.gov, 907-267-2180.

(**Author's note:** subsistence harvest estimates will be available later this winter and fall season assessment and management were ongoing at the time of this writing. The information provided in this summary is preliminary and subject to change.)



YRDFA Executive Director, Serena Fitka and Policy Coordinator, Gabe Canfield attended the 8th Annual Wild Salmon Day at Westchester Lagoon in Anchorage, Alaska on August 10, 2023. Live music, a food truck, and booths from other salmon conservation organizations filled the fun community celebration to honor our shared connections to salmon and the importance of healthy salmon habitat.

At this year's event, Serena and Gabe each spoke about our organization, mission and the issues that the Yukon River is experiencing to bring awareness to the low numbers, returns and subsistence fishery closures that are affecting the diet, tradition and cultures of the people that live along the Yukon River.

We spoke to many people at the YRDFA booth. It was surprising how many people didn't know about the hardships that the Yukon River communities are facing with our situation and we were able to be there to communicate and spread awareness of what is happening to other people and salmon conservancy organizations.

On May 8, 2016, Governor Bill Walker signed into law establishing August 10th of each year as Alaska Wild Salmon Day. This day is dedicated to the lifeblood of Alaska: the five wild species of salmon found in the state. Wild Salmon Day 2023 highlighted the efforts to restore salmon to the Eklutna River, and discussing how trawler bycatch is impacting our communities.

We thank the Wild Salmon Day event organizers, the people who visited our booth and the other organizations that participated along with us to celebrate one of the best things about Alaska, our salmon. See you all at the next Wild Salmon Day!



Photo credit: Allison Heaslet with the Alaska Native Science and Engineering Program (ANSEP).

Keith Herron and Jaden Andrew, graduate and undergraduate students at the University of Alaska Fairbanks and USFWS employees, at a fishwheel operated by a local fisher to catch Yukon River Chinook salmon to support a variety of fish health projects.

Working Together to Monitor the Health of Yukon River Salmon

Authors: **Scott T. Walter** (U.S. Fish and Wildlife Service), **Zachary Liller** (Alaska Department of Fish and Game), **Jayde Ferguson** (Alaska Department of Fish and Game), **Keith Herron** (U.S. Fish and Wildlife Service), **Fred West** (Alaska Department of Fish and Game), **Holly Carroll** (U.S. Fish and Wildlife Service), **Katie Howard** (Alaska Department of Fish and Game), **Solomia Bushell** (Knik Tribe), **Bruce Wright** (Knik Tribe), **Morag Clinton** (University of Alaska - Fairbanks), **Natasha Ayoub** (University of Waterloo - Ontario, Canada), and **Vanessa von Biela** (U.S. Geological Survey Alaska Science Center)

Below represents a collaborative approach to better understand the health of Yukon River Chinook salmon and ultimately how to improve that health to the extent possible. This work is generously funded by the following sources. We greatly appreciate and deeply thank the: Alaska Sustainable Salmon Fund, Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, U.S. Pacific Salmon Treaty Implementation Funds, Congressionally Directed Stewardship Funds secured by Senator Murkowski, Pollock Conservation Cooperative, North Pacific Research Board, National Institute of Health, University of Alaska - Fairbanks Biomedical Learning and Student Training (BLaST) program and Tamanta program (National Science Foundation funded), Natural Sciences and Engineering Research Council of Canada, Mitacs Accelerate Fellowship and Internship with Yukon First Nation Salmon Stewardship Alliance, Wildlife Conservation Society - Weston Family Boreal Research Fellowship, University of Waterloo - Swanson Laboratory, Yukon Fish and Wildlife Enhancement Trust, Kwanlin Dun First Nation, Whitehorse Rapids Fish Hatchery, U.S. Geological Survey, Alaska Department of Fish and Game, and U.S. Fish and Wildlife Service.

Background

Ichthyophonus is a fish parasite that infects salmon during ocean feeding. This parasite does not harm people, but in salmon the parasite can lead to poor heart health that may lead to death during migration. Ichthyophonus infection levels in Yukon River Chinook salmon have fluctuated over time, but a new dramatic rise reported by subsistence fishers in 2020 may be one possible explanation contributing to low numbers of migrating Yukon Chinook salmon in recent years. In response to this trend, a collaborative effort was started to see if poor fish health is related to undocumented death of migrating Chinook salmon, and if so, what can be done about it. For more background on the history of this disease and the ongoing study see the spring 2023 YRDFA article, pages 6-8.

<https://yukonsalmon.org/spring-2023-newsletter/>

This recent resurgence of Ichthyophonus in Yukon Chinook salmon has prompted the collection and testing of their hearts for infection for three years (2022–2024). Unfortunately, because there are currently no non-lethal methods to test for Ichthyophonus, lethal sampling is required to evaluate the disease. Alaska Department of Fish and Game (ADF&G) and the U.S. Fish and Wildlife Service (USFWS) understand that each and every Chinook salmon is very important to people living along the Yukon River. We undertook the decision to initiate a study that required lethally sampling fish very seriously, especially given that Chinook salmon run sizes are at historic lows and fishing has been closed. ADF&G and the USFWS determined the short-term impact of limited lethal sampling will help inform sustainable management, in the face of this disease, for many years to come. In addition to the core study, there have been two silver linings to this sampling. First, all sampled fish are distributed to local Yukon River residents providing a small subsistence connection in another year of empty drying racks and smokehouses. We understand the importance of respecting each fish and making sure none goes to waste. Second, these sampled fish provide an unprecedented opportunity to evaluate their overall health through one of the largest collaborative research endeavors ever to be undertaken for Yukon River Chinook salmon.

Salmon are generally quite resilient when they have just one problem, but when the problems start to pile up, referred to as ‘multiple stressors’, it is more likely that salmon will not survive to spawn. That is a big concern for management that aims to ensure enough eggs are placed in the gravel for the next generation of Yukon River Chinook salmon for long-term sustainability of populations, ecosystems, and fishing opportunities that maintain the health, culture, and food security of communities along the Yukon River.

Collaborations Around Salmon Health Monitoring

To gain the most information out of each Chinook salmon sampled in the Ichthyophonus study, below outlines how a team with many different areas of expertise is using various samples – all from the same fish in the core study – to create a more comprehensive understanding of Chinook salmon health within the Yukon River drainage.

Community Engagement

The USFWS leads sampling at two of the four study sites by engaging with Yukon River Tribal Governments and local fishers to support inclusivity and to gain multiple perspectives (Indigenous, local, and western knowledge) about Yukon River Chinook salmon health and population trends. The USFWS works with very experienced and knowledgeable fishers at Rapids (Stan Zuray, Ruth Althoff, Charlie Campbell, and Joe Zuray) and Fort Yukon (Josh Cadzow) to catch Chinook salmon. Fish are handled with the highest care and respect and we coordinate with Tribal Councils and youth groups to distribute fish to elders, Tribal Governments, and other community members for subsistence use. In 2024 we plan to discuss preliminary results with Tribal Government partners to provide an opportunity for them to co-interpret the data and to help direct future research and management recommendations. Sample efforts by ADF&G and the U.S. Geological Survey also work with YRDFA to engage community members as well. (Contact: keith_ivy@fws.gov, kathrine.howard@alaska.gov, and vvonbiela@usgs.gov)

Ichthyophonus

The core Ichthyophonus study is led by ADF&G and the USFWS with local partnerships for field sampling and fish distribution of Yukon River Chinook salmon. The study was designed to collect up to 200 samples per site annually from four sites spanning the Yukon River in Alaska:

at the Pilot Station and Eagle sonar test fisheries and at Rapids (in-between Tanana and Rampart) and Fort Yukon. However, not all sites are sampled every year and sample numbers per site are usually lower. The primary near-term objective is to determine if the Ichthyophonus disease is contributing to death during migration that could account for the low numbers of Canadian-origin Chinook salmon that reach the U.S. / Canada border. Heart tissue is collected from sampled Chinook salmon and processed in the lab to measure the prevalence (number of fish with the disease) and intensity (the level of infection) of Ichthyophonus. Other samples are also collected to determine each fish's age, size, weight, sex, and genetic stock of origin to evaluate health patterns across these categories. Long-term, the project intends to establish an annual Ichthyophonus monitoring program at the Pilot Station Sonar using fish that have died from handling, build support to increase community-based Ichthyophonus monitoring, and to develop methods to estimate yearly disease-associated death to assess the fate of migrating Canadian-origin Chinook salmon. (Contact: jayde.ferguson@alaska.gov and scott_walter@fws.gov)

Egg Condition and Kidney Disease

In another study that uses these sampled fish, ADF&G is evaluating the number and size of eggs of females at Pilot Station and Eagle (2022 only). This information will help understand if the returning fish are producing enough eggs, of high enough quality, to sustain future generations. ADF&G is also studying Proliferative Kidney Disease, an emerging pathogen of concern in Alaska. The disease-causing parasite has not yet been found in Yukon River Chinook salmon but was documented in Yukon River chum salmon in 2011. This disease, while it does not hurt humans who consume the fish, can cause the fish to die before they spawn when the water is too warm. Yearly monitoring of this kidney disease is of interest given global warming and high Yukon River water temperatures in recent years. (Contact: jayde.ferguson@alaska.gov)

Thiamine Vitamin Deficiency

Thiamine is a vitamin that salmon can only get through their food in the ocean and is essential for fish and their eggs to survive. When salmon eggs have too little thiamine it causes lifelong developmental issues impacting their sight, reflexes, immune system, and survival. While low levels of thiamine have been linked to catastrophic reproductive failures in Chinook and Atlantic salmon in some areas, thiamine deficiency has also been found to be treatable in some situations. Given that low thiamine levels have been observed in some Yukon River Chinook salmon stocks, we are sampling the eggs of Chinook salmon in this project to determine how vulnerable Yukon salmon are to thiamine deficiency-related mortality. (Contact: kathrine.howard@alaska.gov)

Paralytic Shellfish Toxins

Paralytic shellfish toxins (PSTs) are a naturally occurring marine biotoxin produced by some algae. When shellfish eat these algae, they retain the toxin that can then be transferred throughout the food web. If humans eat infected seafood, the toxin may affect the nervous system causing temporary paralysis, illness, or even death in severe cases. Past data show that Yukon River Chinook and chum salmon have PST levels below 9 micrograms, which is below the Food and Drug Administration's regulatory and safe limit of 80 micrograms. However, other locations in Alaska have had salmon tissues with higher PST levels. To determine potential human health risks from consuming salmon, we are investigating PST levels in salmon across the state, including on the Yukon River through liver, kidney, digestive track, and muscle samples collected from fish in this study. So far, we have not seen alarming levels in Yukon fish. (Contact: mbushell@kniktribe.org)

Heart Stress

Ichthyophonus infection of heart tissue may change the level of different molecules and proteins in the bloodstream. We collected blood samples from the Ichthyophonus study fish for laboratory testing to measure levels of different blood components that could suggest heart infection and damage. This testing included looking at a group of proteins known as troponins that are released into the bloodstream from heart tissue when it becomes damaged. By comparing blood troponin levels against varying levels of Ichthyophonus infection, this project aims to identify indicators of heart infection. While blood samples were collected from dead fish in the Ichthyophonus sampling, blood samples can also be taken from live fish. Therefore, although still being explored and requiring further ground-truthing, if levels of troponin or other markers in the blood correspond to levels of Ichthyophonus infection, this may be a step towards developing a non-lethal tool to test Chinook salmon for Ichthyophonus. (Contact: mclinton2@alaska.edu)

Heat Stress

Previous research in the Yukon River found that water temperatures higher than 64.4°F cause heat stress in Yukon Chinook salmon and adults that experience warmer freshwater migrations produce fewer juveniles in the next generation. Therefore, we are estimating the proportion of fish from the Ichthyophonus study that also have heat stress that could be another source of mortality or reduce reproduction. We collected a small muscle tissue sample to measure the heat shock protein 70 because cells make a lot more of this when they are too hot. The combination of heat stress and Ichthyophonus disease may be particularly deadly because heat stress is associated with high demand on the heart to provide extra oxygen that may not be possible if Ichthyophonus disease weakens the heart tissue. Other stressors mentioned in this article could even further put migrating Chinook salmon at risk to death before spawning. (Contact: vvonbiela@usgs.gov)

Juvenile Locations

To understand where juvenile Yukon River Chinook salmon spend their time during the first two years of their life while in freshwater, ear bones, known as otoliths, were collected from fish in the Ichthyophonus study. These tiny bones contain chemicals that are absorbed over time at different locations and when analyzed they can tell us where fish have been and when. Laboratory analyses compare the chemical strontium absorbed in the ear bones' growth rings to strontium levels measured in water samples collected at different locations throughout the Yukon River drainage. This research is important for fishery managers and stewards to identify and protect critical juvenile salmon habitat. (Contact: nsayoub@uwaterloo.ca)

Ichthyophonus Laboratory Trials

To expand the broader goal of understanding effects of Ichthyophonus, ADF&G, the U.S. Geological Survey, and Alaska Pacific University have started a new line of research using samples of the Yukon River-specific 'strain' of Ichthyophonus collected from Chinook salmon. Feasibility trials are being conducted with laboratory fish to support a multi-year experiment to determine how Ichthyophonus infection is associated with mortality. No laboratory fish will be released to the wild and results will be used long-term to understand how Yukon River Chinook salmon respond to different levels of infection, estimate yearly Ichthyophonus-associated death, and inform sustainable management of Yukon River salmon fisheries. (Contact: jayde.ferguson@alaska.gov)

Future Plans

The continued success of these diverse collaborative projects is groundbreaking and is establishing a strong trajectory to develop a new and long-term Chinook salmon health monitoring program in the Yukon River. The foundation of this initiative is to build capacity and support at the community-level of subsistence users, empower Tribal Governments and Yukon River fishers to collect data from harvest, and to develop improved methods to monitor the effects of multiple stressors on Chinook salmon throughout the Yukon River drainage. By working together as stewards, researchers, and managers, we will better understand how to maintain a healthy Yukon River Chinook salmon population and ecosystem.



Educational Exchange 2023

Seven Yukon Territory Canadian Participants traveled to Alaska and visited four Yukon River communities under the Education Exchange program funded by the Yukon River Panel. The program is jointly coordinated by the Canadian-based organization Yukon Salmon Sub-Committee and the U.S. based organization the Yukon River Drainage Fisheries Association. The program alternates the trip between Alaska and the Yukon Territory and this year seven participants from Canada traveled to Yukon River Communities of Anvik, Grayling, Holy Cross and Russian Mission in Alaska to experience what it's like in communities and cultures different from their area. It has been a few years since the Educational Exchange has operated due to COVID-19 restrictions. It was a nice and refreshing experience to get out on the Yukon River and visit people in the communities we serve. We had Yukon Territory residents participating in the Cultural Exchange from Whitehorse and Old Crow, YT from Canada. The participants were Alberta Sam, Brittany Au, Kelly Scott, Max Zimmerman from Whitehorse, YT. Natasha Ayoub and Spruce Gerberding from Dawson City, YT. Katherine Peter from Old Crow, YT.



In Anvik, we met with the community and had conversations on the hardships of being restricted from subsistence fishing. The Canadians also expressed their hardships of declining salmon numbers that they have been experiencing over the decades and how we all need to work together on restoring those numbers. We were also joined by the U.S. Fish and Wildlife's Alaska Regional Director, Sara Boario and Alaska Native Affairs Specialist, Crystal Leonetti along with other staff during our meeting.

The Educational Exchange participants got the opportunity to visit Anvik resident's fish racks and smokehouses that were nearly empty as the community was restricted from fishing their traditional summer chum salmon run because of low numbers counted downriver.



In Grayling, the community invited us into their nice and warm community hall. During the community meeting, the people expressed the hardships of having no availability to harvest salmon over the past four years due to restrictions in salmon fishing. Reducing their food choices to canned foods and other unhealthier options and struggling to survive through the winter with the rising costs of everything. With the lack of traditional foods, residents are forced to consume foods from the grocery store which are causing illnesses like diabetes and cancer within their residents.



The third community we arrived in during our educational exchange trip was Holy Cross. Holy Cross greeted us with residents coming to meet us, bringing food and a warming welcome into their community. We had a community meeting the next day and had some really good food at Holy Cross. During the meeting the residents shared the familiar messages of fishing restrictions and having to gather other foods that they can get to survive throughout the winter, much like other communities on the Yukon. Also, there were some concerns of diseases like Ichthyophthirius “ich” showing up in greater numbers in their fish and having to gather other species of fish and the concerns that they too will be affected in the future.



Russian Mission - July 18th, 2023

In Russian Mission, we were greeted by curious residents and children when we showed up with boats from Holy Cross. In the meeting, the community members showed their support and appreciation for our mission and work to help protect and preserve our salmon for the future generations. Some of their concerns voiced were of a dam that was built in the headwaters of the Yukon that may have affected Chinook Salmon genetics that were big, strong and able to swim up that far to spawn. An Elder also shared knowledge of the nourishing food of salmon to the body of people who relied on this staple of food for many generations to survive and thrive. To finish our last night on this trip, there was Yup'ik Dancing which the Educational Exchange participants joined in, making it a memorable end to the trip.



YRDFA would like to thank the communities of Anvik, Grayling, Holy Cross and Russian Mission for all the kind, warm-hearted experiences and welcoming us into your wonderful communities. Thank you to the residents for coming in and sharing your concerns with us at the gatherings, showing our Educational Exchange participants your kindness and appreciating our efforts to sustain our subsistence fisheries into the future.





Getting Involved in Fisheries Policy and Advocacy

Gabe Canfield, YRDFA Policy Coordinator

Fall and winter are the seasons that many fisheries policy boards meet on an annual basis to go over policies that are drafted by Board of Fish members, policy makers and members of the public. At the bottom of this article you will find a number of these important dates surrounding fisheries policy impacting the Yukon River, and many of these meetings include opportunities for public testimony and public comment! Here are some more details about the upcoming meetings and organizations putting them on:

The North Pacific Fisheries Management Council is one of eight regional councils established by the Magnuson-Stevens Fishery Conservation and Management Act in 1976 to manage fisheries in the 200-mile Exclusive Economic Zone, 3 miles off the coast of Alaska. It consists of the main council, the Scientific and Statistical Committee, which represents federal and state employees and academics and which drafts and analyzes scientific data that is taken from marine and freshwater sources that is input into the decision making process of the general council, and the Advisory Panel that represents user groups such as Native organizations and tribes, recreational fishermen, consumer groups and other user groups and which meets to bring forth these concerns and incorporate impacts of fisheries policy decisions. The main council and these two committees will be meeting October 2-10 in Anchorage. This is a good time to bring forth testimony on chum salmon protections that should be incorporated into new policy, as one of their main focuses will be chum salmon bycatch in the Bering Sea.

The Subsistence Regional Advisory Councils, as a part of the Federal Subsistence Board within the US Fish and Wildlife Service, meet twice a year, once in the spring and fall to go over regional subsistence updates, policy, and offers great opportunity for local involvement on subsistence policy. These Regional Advisory Councils will take into account public testimony and offer recommendations on proposals they support in varying governing bodies such as Board of Fish proposals. The three on the Yukon River include the Eastern Interior Subsistence Regional Advisory Council, the Western Interior Subsistence Regional Advisory Council, and the Yukon Kuskokwim Delta Subsistence Regional Advisory Council. These are great for advocacy at a local level and for relevant action surrounding subsistence fishing rights.

The Alaska Board of Fish will be having a work session and subsequent hatchery committee session from October 12-14. On the 14th, there will be an opportunity to learn and share your voice on the impact of hatcheries on fish and fisheries in Alaska. This will be happening in Anchorage.

These meetings will be happening in person but many such as the Regional Advisory Councils allow for testimony over the phone. These are great avenues for having your voice be heard on issues that impact fish, fisheries and your way of life, as these policies can bring forth change for good or bad. Even if you can't attend in person, the Yukon River Drainage Fisheries Association encourages your participation to one or more of these meetings to learn more about advocacy and the issues, and the potential to share your concerns in public comment or testimony.

Want to share your comments or testimony but don't know how to? The Yukon River Drainage Fisheries Association can help! Gabe Canfield is our dedicated Policy Coordinator and can connect you with resources, help draft your testimony or just give general support. We will also have staff at all these meetings in person and can answer questions there. Hope to hear from you and see you at one of these meetings for fisheries advocacy!

The importance of salmon escapement goals on the Yukon River

Gale K. Vick

We all know that “escapement” is the number of fish that return to spawn. What is much less understood is the different kinds of escapement goals and how they are applied by the Alaska Department of Fish and Game (ADF&G) to Alaska’s salmon fisheries.

“Five management plans drive the department’s management of Chinook and summer chum salmon on the Yukon River and they have been continually improved and refined (Appendix A1) since the major stock downturns. The plans are: 5 AAC 05.360, Yukon River King Salmon Management Plan; 5 AAC 05.362, Yukon River Summer Chum Salmon Management Plan; 5 AAC 74.060, Chena and Salcha River King Salmon Sport Harvest Management Plan; 5 AAC 05.367, Tanana River Salmon Management Plan; and 5 AAC 05.368, Anvik River Chum Salmon Fishery Management Plan. Original goals stated in the action plan include reducing fishing mortality to meet spawning escapement goals, providing opportunity for subsistence users to harvest levels within the ANS range, and reestablishing the historical range of harvest levels by other users.”

Almost all of Alaska’s harvestable surplus of salmon is based on escapement estimates, with some notable exceptions, like intercept fisheries.

“Knowledge of escapement (i.e., the number of spawners) is necessary to develop spawner recruit relationships and forecast the production of the next generation, including the number of salmon potentially available to harvest. In addition, knowledge of total run-size for a population (escapement plus catch) is required to compute the survival and productivity of the previous salmon generation and to monitor trends in abundance and/or productivity. Escapement can be estimated using counting fences, mark recapture, visual surveys including area-under-the-curve, and electronic, video, and hydro-acoustic counters. Escapement data are a basic element in salmon fisheries management, including forecasting adult returns to fisheries.”

“Escapement goals are founded in the sustained yield principle highlighted in the State of Alaska Constitution (Article VIII, section 4) and in state statute (AS 16.05.020). Several policies in Alaska Administrative Code also provide guidance for establishing escapement goals including the policy for the management of sustainable salmon fisheries (5 AAC 39.222), the policy for statewide salmon escapement goals (5 AAC 39.223) and the policy for the management of mixed stock fisheries (5 AAC 39.220). These policies provide detailed definitions of specific escapement goal types, outline the responsibilities of the Alaska Department of Fish and Game (ADF&G) and the Alaska Board of Fisheries (BOF) in establishing goals, and provide general direction for development and application of escapement goals in Alaska. Currently, there are 287 active salmon stock escapement goals throughout the state of Alaska (Figure 1).”

Escapement goal explanations (see *Alaska Escapement Goal Explanations* - page 16) can be complicated. The State of Alaska uses a set of definitions that are set in Section 5 AAC 39.223 - Policy for statewide salmon escapement goals.

“The Department of Fish and Game (department) and the Board of Fisheries (board) are charged with the duty to conserve and develop Alaska’s salmon fisheries on the sustained yield principle. Therefore, the establishment of salmon escapement goals is the responsibility of both the board and the department working collaboratively. The purpose of this policy is to establish the concepts, criteria, and procedures for establishing and modifying salmon escapement goals and to establish a process that facilitates public review of allocative issues associated with escapement goals.”

The Yukon River has escapement goals (EGs) for each species in key spawning streams. All Yukon River escapement goals are SEG except for the Anvik River which is based on a BEG.

- Chinook salmon EGs are established for the East and West Fork of the Andreafsky, the Anvik, Nulato, Chena and Salcha Rivers as well as Canadian mainstem. None of these goals have been met in the last two years, and most of have been marginal in the last five years.
- Summer chum EGs are established for the entire Yukon drainage, the East Fork of the Andreafsky and the Anvik River. The Anvik has not met its escapement goal since 2017 and in the last three years it has been below 10%.

- Fall chum EGs are established for the entire Yukon drainage, the Delta River, Teedrinijik, Sheenjek, Fishing Branch (Canada), Yukon mainstem (Canada.) Several fall chum EGs have been eliminated. Fall chum drainage wide has not been met in the last four years.

- Coho EGs are established only in the Delta Clearwater River and has not met those goals since 2017.

Goals that were not met in 2021, 2022 and 2023 were depleted despite absolutely no commercial, subsistence, sports or personal use harvest. Both ADF&G in-season reports and summaries as well as the JTC (Joint Technical Committee) are excellent sources of information.

Two other important in-river goals for the Yukon River:

Amounts Necessary for Subsistence (ANS) have not been met for years.

Canadian origin salmon: Interim Management Escapement Goal (IMEG) Set by the Yukon River Panel

These goals have not been met for five consecutive years

Escapement goals are often overlooked as indices of salmon stock health. When a system does not meet its escapement goals for an individual species over a period of time, this triggers a “stock of concern” (SOC) assignment to how those fisheries must then be managed. There are three SOC levels in Alaska salmon management: Yield, Management and Conservation. Each SOC level has certain triggers.

There is a big temptation to lower escapement goals that haven’t been met in several years. This is called a “shifting baseline” and can further threaten the sustainability of stocks so should be completely discouraged.

However, escapement goals are not the only measure of fisheries spawning health. Along with escapement is an estimate of a spawning area’s ASL – or age-sex-length. This measures the strength of the year class, the male-female ratio and the over-all length of the salmon to determine averages and comparisons to years past. Our crisis in the declining size and year class dominance of salmon are the real indices and that is where we need to focus.

Yukon River Salmon Stock Status and Salmon Fisheries, 2022: A Report to the Alaska Board of Fisheries, January 2023, Special publication No. 22-20.

Area M, Alaska Peninsula is the most notable exception

<https://npafc.org/salmon-escapement/>

Fishery Manuscript Series No. 17-05 Summary of Pacific Salmon Escapement Goals in Alaska with a Review of Escapements from 2008 to 2016 by Andrew R. Munro and Eric C. Volk 2017

And ADF&G https://www.adfg.alaska.gov/index.cfm?adfg=sonar.site_fish&site=16

Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2012 to 2020.

<https://www.yukonriverpanel.com/about-us/organizational-structure/joint-technical-committee/>

<https://www.zoology.ubc.ca/~etaylor/Sept29.pdf>

<https://www.cbc.ca/news/canada/north/yukon-river-salmon-chinook-chum-forecasts-2023-1.6803057>

<https://npafc.org/salmon-escapement/>

https://www.adfg.alaska.gov/CF_R3/external/sites/aykdbms_website/datatypes/asl.aspx

<https://www.adfg.alaska.gov/fedaidpdfs/RIR.3A.2015.04.pdf>

“Salmon Age, Sex, and Length (ASL) Sampling Procedures for the Arctic-Yukon-Kuskokwim Region” 2015,

by Shane M. Eaton <https://www.adfg.alaska.gov/fedaidpdfs/RIR.3A.2015.04.pdf>

“In the past, several fish measurement techniques have been used in the AYK Region. However, in an effort to standardize data collection region wide, measurements should be made from the middle of the eye to the fork of the tail and recorded to the nearest millimeter (Figure 4). Measurements should be taken using a rigid device, such as a meter stick or metal caliper, with the fish laying on a flat surface such as a measuring board or table, not on the curved bottom of a boat. If measuring length using a flexible tape, stretch the tape taut to get the length. Do not measure length with the flexible tape slack or along the curvature of the fishes’ body.”

ALASKA ESCAPEMENT GOAL EXPLANATIONS:

<https://www.adfg.alaska.gov/index.cfm?adfg=sonar.escapementgoals>

BEGs and SEGs in a nutshell:

Biological Escapement Goals (BEGs) and Sustainable Escapement Goals (SEGs) are the most important goals used for management. These two goals are established based on the number of salmon, by stock and river system, that need to escape to spawn to provide for sustained yields in the future. BEGs and SEGs are determined through ADF&G research programs.

Official Definitions:

Biological Escapement Goal (BEG): The escapement that provides the greatest potential for maximum sustained yield; BEG will be the primary management objective for the escapement unless an optimal escapement goal or in-river run goal has been adopted; BEG will be developed from the best biological information, and should be scientifically defensible on the basis of available biological information; BEG will be determined by the department and will be expressed as a range based on factors such as salmon stock productivity and data uncertainty; the department will seek to maintain evenly distributed salmon escapements within the bounds of the BEG (from 5 AAC 39.222(f)).

Sustainable Escapement Goal (SEG):

A level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated due to the absence of a stock specific catch estimate; the SEG is the primary management objective for the escapement, unless an optimal escapement goal or in-river run goal has been adopted by the board, and will be developed from the best biological information; the SEG will be determined by the department and will be stated as a range that takes into account data uncertainty; the department will seek to maintain escapements within the bounds of the SEG (from 5 AAC 39.222(f)).

OEGs and In-river Goals in a nutshell:

While BEGs and SEGs are set by ADF&G, In-river Goals and OEGs are established by the Board of Fisheries. In-river Goals require ADF&G to leave enough returning salmon unharvested to meet the BEG or SEG and to make a certain number of salmon available for in-river harvests. The OEG can also add fish to the BEG or SEG for in-river fishermen, but may also add fish for escapement when there are uncertainties in the data used to establish a BEG or SEG. Not all of the salmon stocks that ADF&G manages have In-river Goals or OEGs.

Optimal Escapement Goal (OEG):

A specific management objective for salmon escapement that considers biological and allocative factors and may differ from the SEG or BEG; an OEG will be sustainable and may be expressed as a range with the lower bound above the level of Sustainable Escapement Threshold, and will be adopted as a regulation by the board; the department will seek to maintain evenly distributed escapements within the bounds of the OEG (from 5 AAC 39.222(f)).

In-river Goal: A specific management objective for salmon stocks that are subject to harvest upstream of where escapement is estimated; the in-river run goal will be set in regulation by the board and is comprised of the SEG, BEG or OEG, plus specific allocations to in-river fisheries; (from 5 AAC 39.222(f)).

SET (Sustainable Escapement Threshold) "sustained escapement threshold" or "(SET)" means a threshold level of escapement, below which the ability of the salmon stock to sustain itself is jeopardized; in practice, SET can be estimated based on lower ranges of historical escapement levels, for which the salmon stock has consistently demonstrated the ability to sustain itself; the SET is lower than the lower bound of the BEG and lower than the lower bound of the SEG; the SET is established by the department in consultation with the board, as needed, for salmon stocks of management or conservation concern;

5 AAC 39.222. Policy for the management of sustainable salmon fisheries

<https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>



Catherine Moncrieff at an Alakanuk Community Meeting.

Engaging Fishers in Research on Chinook and Chum Salmon

Catherine Moncrieff, YRDFA Anthropologist

YRDFA began a new project this year in which we are partnering with four Yukon River communities and biological scientists working on understanding the drivers of the Yukon River salmon declines. One portion of this project is to learn from local fishers at the mouth of the river about the historic health of Chinook salmon as they leave the marine environment and enter the freshwater environment. We started our work with Traditional Ecological Knowledge (TEK) interviews in Emmonak in March 2023 and we were able to bring Videographer Howdice Brown III to record activities and community feedback to the project. Our community meeting presentation described the project and brought speakers to share about Yukon River salmon research. Holly Carroll of USFWS presented about the Ichthyophonous project and Vanessa von Biela of USGS presented about the heat stress studies. While in Emmonak, we were able to conduct 8 TEK interviews. In June, Catherine Moncrieff traveled to Alakanuk to conduct TEK interviews and hold a community meeting to discuss YRDFA activities and share about this project. We had a great community meeting with a lot of ideas and feedback shared. With the help of local assistant Arlene Frances, we were able to conduct 7 TEK interviews. Since then we have been working with the interview material and plan to share results with the communities.



Our second objective is working with fishers in St. Mary's and Huslia to monitor river water temperature, create a community response team to assess the damage if there is a salmon die-off and conduct annual salmon carcass surveys. Objective 2 activities began in June when Serena Fitka, YRDFA's Executive Director, traveled to St. Mary's with Vanessa von Biela. We hired David Beans to conduct water temperature monitoring and oversee the temperature logger on the Andreafski River. Serena then joined the YRDFA team, Catherine and Michelle, in Huslia to begin the water temperature monitoring portion of the project and to hold a community meeting. We hired Francis Nollner to monitor the temperature logger in the Koyukuk River. We are also conducting salmon carcass surveys in these two tributaries of the Yukon River. More information about the carcass survey will be provided in the near future.

This project, funded by the North Pacific Research Board, began in January of 2023 runs through Feb 2026. It has a goal of contributing to an understanding of the drivers of decline and collapse in Yukon Chinook and chum salmon. Through this project we are partnering with four Yukon River communities - Alakanuk, Emmonak, St. Mary's, and Huslia - and another NPRB funded project, Exploring Linkages of a Changing Climate and Productivity of Chinook Salmon led by Drs. Katie Howard and Vanessa von Biela. Local and Traditional Knowledge interviews on historical Chinook salmon health in Alakanuk and Emmonak will inform biological research on drivers of salmon decline by learning more about their observations of salmon health as they leave the marine environment. The water temperature monitoring and carcass surveys out of St Marys and Huslia will provide important information to studies about heat stress in salmon. And our final objective in this project is to increase outreach and hold community meetings to share Yukon River salmon research.



Michelle Smith, YRDFA Program Coordinator and Serena Fitka, YRDFA Executive Director in Huslia, Alaska.



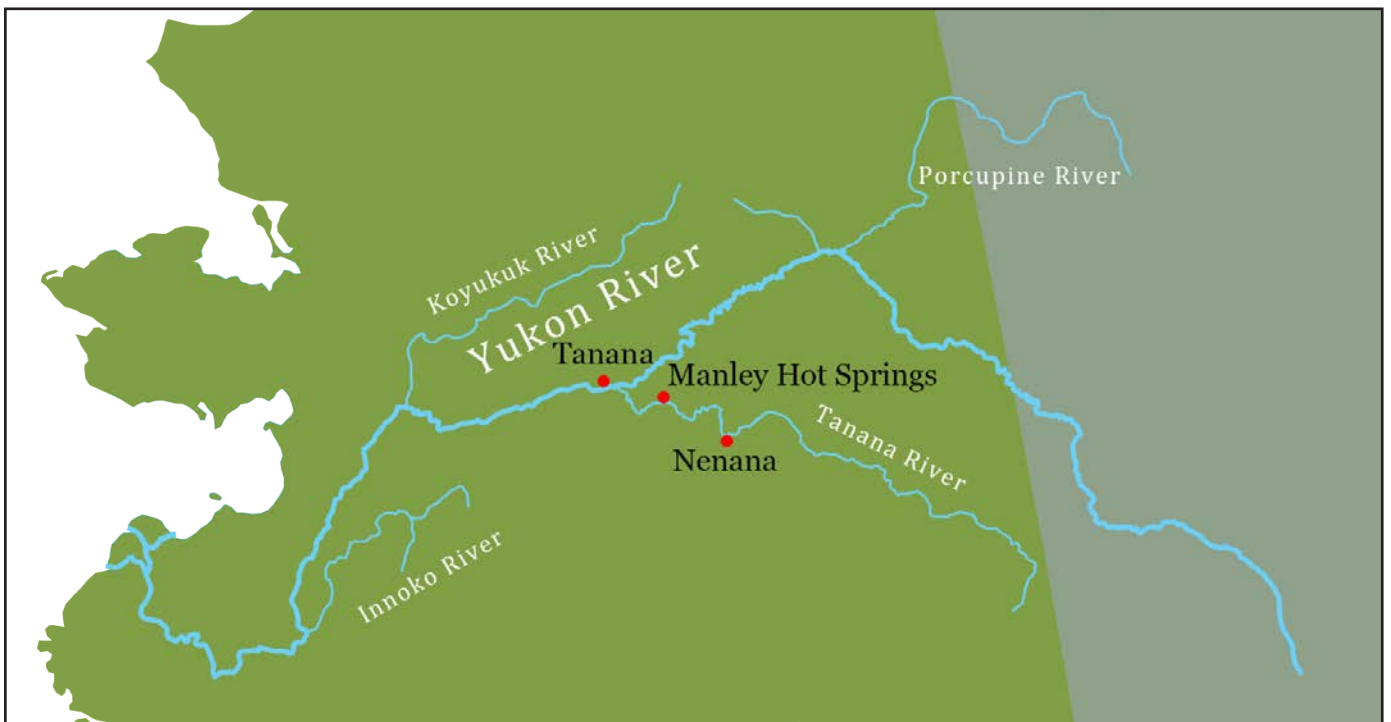


In-Season Salmon Survey Fall Summary

Catherine Moncrieff, YRDFA Anthropologist

The In-Season Subsistence Salmon Survey program took place in 10 communities this summer and surveyors reported on all 13 In-Season Yukon River Salmon Management teleconferences. This summer the 10 participating communities included Alakanuk, Mountain Village, Marshall, Russian Mission, Anvik, Ruby, Huslia, Tanana/Rapids, Fort Yukon and Eagle. After receiving training in Fairbanks this spring, the surveyors spoke to Yukon River fishers weekly for 6 weeks during the summer fishing season and reported a summary on the teleconferences. Seven of 10 surveyors completed their end of season evaluation and reported that surveying fishers who are not allowed to fish or are extremely limited in gear choices was difficult. But they did their best and represented their communities by sharing their observations and challenges for the 2023 season. They reported that they appreciate being able to represent fishers in their communities who do not want to speak on the teleconference or are unable to call in. They encouraged YRDFA to provide incentives for fishers who participate such as a raffle for gas or stove oil and we implemented that this September. The surveyors are also supportive of the digitization of this program. YRDFA is working with the Indigenous Sentinel Network to develop a digitized version of the In-season Salmon Survey program. This will allow our surveyors to conduct the survey digitally with their phones and teach fishers how to submit observations on their own. We expect to have the digital version completed later this year.

The In-season Subsistence Salmon Survey Program is an important communication tool that helps managers ensure that both Yukon River escapement is met and, in a normal year, as many subsistence fishers are meeting their harvest goals as possible. YRDFA hires a local person in 10 communities along the Yukon River stretching from Alakanuk to Eagle to survey fishers during the Chinook salmon season in their community. The observations fishers share with YRDFA surveyors are summarized by the community to protect anonymity and then shared with Yukon River In-season Managers and the Yukon River community through the In-season Salmon Management Teleconferences. This project is funded by the Fisheries Resource Monitoring Program through March of 2024 and we thank them for their support.



Tanana River Fish location Project Update

Catherine Moncrieff, YRDFA Anthropologist

Our project investigating fish locations in the Yukon and Tanana Rivers is winding down and we want to thank the local communities for supporting this work and sharing their vast knowledge about the fish in their region. Together, we are working with the communities of Tanana, Nenana, and Manley Hot Springs to identify important areas with anadromous fish and other fish for investigations to nominate areas for the Anadromous Waters Catalog and the Alaska Freshwater Fish Inventory. This project, funded by the Alaska Sustainable Salmon Fund (AKSSF), is a partnership between YRDFA, the Alaska Department of Fish and Game (ADF&G), and the communities. Its full and official title is, **Integrating Local and Traditional Ecological Knowledge (LTK) into Anadromous Waters Cataloging and Fish Inventories of select drainages of the Tanana and Yukon rivers 2021-2024.**

In year one, we conducted interviews and mapping activities with 20 knowledgeable fishers and hunters in the three communities. In year two, the ADF&G team conducted field work to document fish presence, rearing, and spawning. Nominations were made for water bodies supporting anadromous fishes such as least cisco, broad whitefish, humpback whitefish, and/or Chinook salmon. They caught 15 species and made 29 nominations to the Alaska Freshwater Fish Inventory on 30 water bodies including 13 new or extended water bodies added to the Anadromous Waters Catalog, 8 water bodies had new species or species life-phases added, and 33 miles of previously unlisted anadromous fish habitat (streams) were added.

The summer of 2023 was an extended field work period due to weather delays on fieldwork planned for the summer 2022. To assist the collection process, we contracted with a local fisher out of Tanana to sample 4 streams downstream of Tanana that the ADF&G team was unable to successfully sample in 2022. Additionally in the summer of 2023, the ADF&G team traveled to Nenana in August to sample some headwater sites. This completes our fish sampling for this project and now we wait for ADF&G to conduct their data entry, nominations and Anadromous Waters Catalog updates. Once complete our final task will be to hold community meetings with Nenana, Manley Hot Springs and Tanana. We will be reaching out to the communities to select a time period that works for them to share this information.

This project ends in June of 2024 and we thank the Alaska Sustainable Salmon Fund for supporting this work.



Gabe Canfield, Katie Turner, Lindsey Turner, and Millena Jordan at the Salmonfest YR DFA booth.

Elders Warnings Project Overview and Update

Katie Turner, TCC Emerging Leader

They told us there'd come a time...

Conserving fish, preserving tradition on the Yukon River: A catalog of Elders Warnings.

As salmon numbers continue to decline, the way of life of the Yukon River peoples, as well as their rights to food, health, and culture are at risk. Communities along the Yukon River have been forced to face abrupt changes in their cultures and way of life. Already, as a result of these changes, Yukon River communities have not been able to harvest the food they need to ensure an adequate diet. Climate change, as well as overfishing, have resulted in the crash of Yukon River salmon. To counteract these challenges, it is important to review, catalog, collect, and analyze the teachings and warnings of Elders, in order to work towards rebuilding salmon populations along the Yukon River.

The Yukon River Drainage Fisheries Association (YR DFA), in conjunction with Tanana Chiefs Conference (TCC) Emerging Leaders, has been working on the Elders Warnings Project since January 2020. The goal of the project being to document traditional understandings and warnings regarding king salmon, and to share the gathered information within Yukon River communities, as well as with organizations involved in fisheries management. This three year project, led by YR DFA's own Catherine Moncrieff, is in its final stages with TCC Emerging Leaders Millena Jordan of Rampart, Natawnee Wiehl of Rampart, and Katie Turner of Holy Cross working towards finalizing various films, posters, and presentations to share wisdom gained from sifting through archives and conducting interviews. Utilizing these teachings from Yukon River Elders will help us better understand the decline in salmon, and to help figure out what the next steps are in terms of fisheries management.



Gabe Canfield speaking on the Arches Amphitheater at this year's Salmonfest held August 4-6, 2023 in Ninilchik, Alaska.

Throughout the project, 42 participants were interviewed including participants from Mountain Village, Holy Cross, Huslia, Hughes, Ruby, Tanana, Fairbanks, Minto, Nenana, Rampart, Stevens Village, Beaver, Fort Yukon, and Eagle. The information gathered includes local observations of salmon trends, cultural insight, and changes in environment. Through these interviews we learned that community members from up and down the Yukon River are facing a plethora of negative impacts caused by the decline in salmon including poor mental, spiritual, and physical health, and concerns surrounding cultural survival. As learned from an interview with Mountain Village Elder Lorraine Mike, salmon provides a foundation of wellness to Yukon River communities.

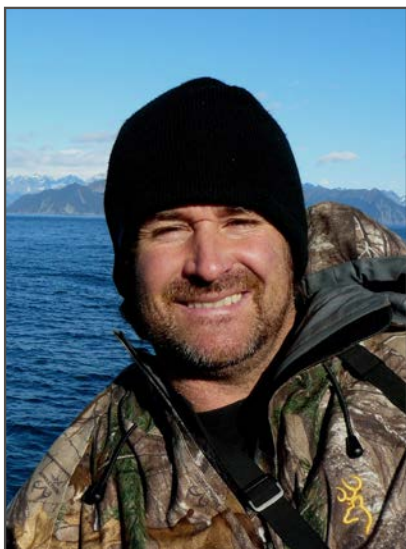
Lorraine states:

We'll lose our health, we'll lose our culture, we'll lose all our cultural knowledge, our bodies and minds will get weaker, people will start dying young, we'll lose our identities unless we figure out another way to survive... in thinking about salmon we'll lose everything.

Another aspect of the project has been attending different events to share our findings including the TCC Annual Convention, Denakkanaaga, the Board of Fisheries meeting, and Salmonfest. Gabe Canfield (YRDFA), as well as Millena Jordan and Katie Turner ran a table at this year's Salmonfest in Ninilchik, AK. Salmonfest acts as a gathering place for salmon advocates, and was a great place to speak about the issues happening along the Yukon River. We were met with a lot of encouragement from a number of salmon supporters.

Subsistence activities serve as the primary foundation of Yukon River community members both in terms of food security, as well as within spiritual and cultural connection. We are very thankful to the North Pacific Research Board for funding this project. A huge thank you goes out to the Elders for providing insight, the researchers that dedicate their time to salmon restoration, and to all of the individuals advocating for salmon. Continuing to fight for salmon will get us closer to restoring these practices along the Yukon River. *Xisrigidisddhinh- and for that I am thankful (Deg Xinag)*

Welcoming new YRDFA Employee



James Van Lanen Environment Specialist

James Van Lanen is an anthropologist with expertise in human ecology, hunter-gatherer studies, socioecological resilience theory, community-based natural resource management, indigenous stewardship, co-management, subsistence policy and management, traditional ecological knowledge, ecological restoration, and ecosystem change in relation to human uses of wild resources. He previously spent thirteen years working as a Subsistence Resource Specialist for the Alaska Department of Fish and Game, where he worked on projects with several Yukon River communities. James has also worked on conservation issues with indigenous communities in Southeast Asia, South America, and Africa. He currently lives in the Upper Copper River Basin.

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ENVIRONMENT SPECIALIST: **James Van Lanen**
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BOARD OF DIRECTORS

DISTRICT	NAME	COMMUNITY
Coastal, Seat 1	Lester Wilde	Hooper Bay
Y-1, Seat 1	Stanley Pete	Nunam Iqua
Y-1, Seat 2	Allen Hansen	Alakanuk
Y-1, Seat 3	Paul Andrews	Emmonak
Y-2, Seat 1	Bill Alstrom	St. Marys
Y-2, Seat 2	Mike Peters	Marshall
Y-2, Seat 3	Stanislaus Sheppard	Mtn. Village
Y-3, Seat. 1	Alfred Demientieff Jr.	Holy Cross
Y-4, Seat 1	Fred Huntington, Sr.	Galena
Y-4, Seat 2	Richard Burnham	Kaltag
Y-5, Seat 1	Charlie Wright	Tanana
Y-5, Seat 2	Brooke Woods	Rampart
Y-6, Seat 1	Dorothy Shockley	Manley Hot Springs
Y-6, Seat 2	Victor Lord	Nenana
Koyukuk River	Pollock Simon, Sr.	Allakaket
Flats, Seat 1	Jan Woodruff	Eagle
Canadian, Seat 1	James MacDonald	Whitehorse, YT

YOUNG FISHERS REPS

DISTRICT	NAME	COMMUNITY
Lower River	Kerri Kelly	Pilot Station
Upper River	Katlyn Zuray	Fairbanks (Tanana)

ALTERNATES

DISTR./SEAT #	REPRESENTATIVE	COMMUNITY
Coastal, Alt. 1	Richard Tuluk	Chevak
Coastal, Alt. 2	VACANT	-
Y-1, Alt 1	Marvin Okitkun	Kotlik
Y-1, Alt. 2	John Strongheart	Alakanuk
Y-2, Alt. 1	Rex Nick	Pilot Station
Y-2, Alt. 2	William Riley Jr.	Pitka's Point
Y-3, Alt. 1	Basil Larson	Russian Mission
Y-4, Alt. 1	VACANT	-
Y-4, Alt. 2	Robert Walker	Anvik
Y5, Alt. 1	Julie Hyslop	Tanana
Y-6, Alt. 1	Phillip Titus	Minto
Y-6, Alt. 2	Kathleen Dimientieff	Nenana
Koyukuk Alt.1	Darrel Vent Sr.	Huslia
Flats, Alt. 1	Rochelle Adams	Fort Yukon/Beaver
Canadian, Alt 1	Carl Sidney	Teslin, YT

Yes!

I want to be a part of the United Voice on the Yukon River and support YRDFA!

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 \$75 newsletter subscription with beanie
 \$100 newsletter subscription with hoodie
 Other amount \$ _____

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