# Yukon Fisheries News

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

**Spring 2025 Edition**
Holy Cross, Alaska in early Spring
photo credit: Jadon Nashoanak

Spring 2025

## News from the Director

### Serena Alstrom

YRDFA Executive Director

Reflecting on the 35 years of YRDFA's existence has been a profound experience. In my five years with the organization, I've had the privilege of engaging with numerous past board members and employees, gaining invaluable insights into the organization's rich history. From its humble beginnings—with the first meeting held in Galena—to its incorporation as a nonprofit organization the following year in St. Mary's, YRDFA's journey has been remarkable.

Growing up in a household where discussions about salmon fishing, the Yukon River Drainage Fisheries Association (YRDFA), and the Yukon River Panel were commonplace, I gained a deep understanding of how integral salmon and their management are to our way of life. This early exposure instilled in me a profound appreciation for the organization's mission and the essential role it plays in the Yukon River community.

It's concerning to see that many of the issues we're grappling with today are the same ones that have been discussed for years. The current management approach to safeguarding our salmon has primarily focused on imposing restrictions on those who utilize the resource, mainly the river users. However, this strategy has not been effective.

I recently participated in a meeting with Yukon River users who echoed this sentiment. They expressed their frustration that the restrictions haven't led to an increase in salmon populations and emphasized the need for innovative solutions. Their plea for a new approach to salmon management underscores the urgency of the situation.

[Continued on page 2]

## Inside this issue



THE OFFICIAL PUBLICATION OF THE
YUKON RIVER DRAINAGE
FISHERIES ASSOCIATION

## Upcoming Meetings

**Yukon River Panel Meetings**
April 7-10, 2025
Dawson City, YT Canada

**2025 YRDFA Board Meeting**
April 22 & 23, 2025
Fairbanks, AK / Pike's Waterfront Lodge

**YRDFA 35th Anniversary Celebration**
April 23, 2025 6PM - 11PM
Fairbanks, AK / Pike's Waterfront Lodge

**2025 YDFA Preseason Meeting**
April 24 & 25, 2025
Fairbanks, AK / Pike's Waterfront Lodge

**Marine Research Education Program North Pacific Workshop**
April 28 - May 2, 2025
Kodiak, AK

**Alaska Conference on Mining Impacts and Prevention**
May 6-8, 2025
Girdwood, AK / Alyeska Resort

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[Continued Director Report]

In the face of ongoing uncertainty, we must remain steadfast in our commitment to safeguarding our salmon populations. Advocacy within regulatory bodies is crucial and must remain a priority for our organization. Our presence in these spaces is essential to effectively communicate the status of Yukon River salmon runs, highlighting both strengths and weaknesses. While we advocate for managing the salmon's life cycle, we must remain engaged and persistent even when faced with setbacks.

There is a wealth of research being conducted on Yukon River Salmon that often fails to reach the public. While research is valuable, it is also important to consider allocating funding directly to the communities impacted by low salmon abundance. These communities possess invaluable knowledge and experience and can play a vital role in conservation efforts. By supporting these communities, we can empower them to actively participate in managing and protecting the salmon populations that are so integral to their way of life.

To safeguard the future of our organization, we must persistently champion the interests of the Yukon River communities and foster collaborative relationships with those responsible for managing our salmon resources. Our overarching objective remains to strengthen the abundance of salmon populations.

To achieve this, we must prioritize a multifaceted approach that encompasses a range of crucial initiatives. These include safeguarding and preserving critical spawning habitats, implementing responsible and sustainable fishing practices that minimize the impact on salmon populations while they are in the ocean, and advocating for policies that support the long-term health and resilience of the Yukon River ecosystem.

It is imperative that all stakeholders, including government agencies, industry representatives, Indigenous communities, and conservation organizations, work together to ensure the protection and sustainability of Yukon River salmon. By uniting our efforts and embracing a holistic approach, we can ensure that future generations will continue to benefit from this invaluable resource.

We have achieved a significant milestone, and we are incredibly proud of the impact that YRDFA has had over the past 35 years. We extend our heartfelt congratulations to all the dedicated individuals who have contributed to the success and longevity of this organization. Looking ahead, we are filled with optimism and hope that YRDFA will continue to thrive and serve the community for another 35 years and beyond. We remain committed to our mission and are excited about the opportunities that the future holds.

**Yukon Fisheries News is published by the Yukon River Drainage Fisheries Association**
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**Photos:** (Left) Dene Eslaanh dance group (Right) YRDFA Board members Victor Lord and Rochelle Adams during the NPFMC Chum Bycatch EIS Meeting.

## February NPFMC Chum Bycatch EIS Meeting- Dene Eslannh Performance

**Author:** Olivia Henaayee Irwin, YRDFA Policy Coodinator

The Dene Eslaanh Dancers, based in Fairbanks, Alaska, traveled to Anchorage to open the first day of the Council meeting with ceremony. This was a unique opportunity for all participants and Council members to witness culture and traditional knowledge through song and dance. Their performance set a neutral tone among sector groups by reminding everyone that we are here for the salmon, and symbolized the breadth of Indigenous knowledge.

Executive Director Serena Alstrom testified before the Advisory Panel, speaking to the hardships faced by communities going without salmon on the river and throughout the state. YRDFA Board members Victor Lord and Rochelle Adams also testified before the Council. Their voices, along with many others from across Alaska, brought a vital and unique perspective to the conversation. Drawing on generations of traditional knowledge, testifiers shared local and historical insights into the ongoing salmon crisis.

As fishermen, providers, and people who care deeply about the lands and waters around us, it is essential that we continue to use our voices in management spaces. YRDFA is grateful to the Dene Eslaanh Dancers for making the journey to Anchorage, and to the many advocates from the Interior region and beyond who showed up to testify.

# Contribute to YRDFA

For 35 years, YRDFA has worked to protect and advocate for all wild fisheries and traditional cultures that depend on these precious resources within the Yukon River Drainage. One of the last wild salmon runs on this planet!

You don't have to live on the Yukon River to make a difference! **You can donate today!**

**Scan QR Code or go to link below**

**https://www.yukonsalmon.org/contribute**

# Yukon River Salmon Fishery early spring update

**Author:** Deena Jallen, Summer Season Fishery Management Biologist, Alaska Department of Fish and Game

The 2025 forecasts for Chinook and fall chum salmon are for runs that are well below average and unlikely to meet escapement goals in Alaska and Canada. Subsistence fishing for salmon with 7.5 and 6-inch gillnets will likely be closed all season.

For summer chum salmon, the run is likely to be below average, but larger than the drainagewide escapement goal. However, there is a lot of uncertainty, as the parent years in 2020 and 2021 for the summer chum salmon run were very low. Opportunities for subsistence fishing with selective gear types (dip nets, beach seines, manned fish wheels) will be considered inseason if the run comes in well.

Salmon forecasts and management strategies will be discussed at spring meetings with Advisory Committees, Yukon River Intertribal Fish Commission, Yukon River Panel, and Yukon River Drainage Fisheries Association. Households can expect an Outlook flier to be mailed in May with forecasts and preliminary management strategies for this season.

### Upcoming Yukon River Panel meeting

The Yukon River Panel public meeting sessions will take place in Canada in Dawson City on April 9 and April 10. The public is invited to attend in person and online. Agenda topics include preseason forecasts, management discussions, Restoration and Enhancement (R&E) funding decisions, research and educational presentations, and updates on the Chinook salmon rebuilding plan process. For meeting information and links to the live stream video visit the Yukon River Panel website; https://www.yukonriverpanel.com/meetings/

### BOF Proposal deadline

The Alaska Board of Fisheries is accepting proposed changes to the subsistence, personal use, sport, guided sport, and commercial fishing regulations for the Arctic, Yukon, Kuskokwim; Bristol Bay; Alaska Peninsula, Aleutian Islands, Chignik; and Statewide finfish management areas. Finfish includes salmon, herring, trout, other freshwater finfishes, and groundfish, including Pacific cod. Board of Fisheries proposals are due April 10, 2025, and can be submitted online, by mail, or by fax. Proposal form, instructions, and submission information can be found on the Board of Fisheries website; https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.main

The Arctic-Yukon-Kuskokwim Board of Fisheries Meeting will be at Pikes Waterfront Lodge in Fairbanks on November 18-22, 2025. The deadline for comments is November 3.

Jayde Ferguson, ADF&G Fish Pathologist speaks during YRDFA Community Meeting in Alakanuk, AK on March 11,2025

# ADF&G's Statewide Fish Pathology Program, Ichthyophonus, and Pus Pockets

## Discussing Yukon River Fish Health Issues with ADF&G's Fish Pathologist

**Author:** Jayde Ferguson, PhD, ADF&G Fish Pathologist

The Fish Pathologist for the Alaska Department of Fish and Game (ADF&G), Jayde Ferguson, was invited to the communities of Emmonak and Alakanuk by YRDFA staff to discuss a condition that local fishers refer to as 'pus-pocket'. He also provided an overview of the Statewide Fish Pathology Program (https://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.main) and the current understanding about the fungal-protozoan-like parasite Ichthyophonus (https://www.adfg.alaska.gov/static/species/disease/pdfs/fishdiseases/ichthyophonus.pdf) infecting Yukon River Chinook salmon based on both Local and Western Knowledge. Lastly, Jayde shared information to the communities about opportunities for fishers to utilize the no-cost diagnostic services of the ADF&G Fish Pathology Lab.

The ADF&G Fish Pathology Program is a statewide regulatory program tasked with protecting Alaska's finfish and shellfish from diseases. Specifically, the Mission Statement of the program is as follows: "The Fish Pathology Section monitors and controls finfish and shellfish diseases statewide (according to Title 16 of the Alaska Statutes) by conducting diagnostic services, developing finfish and shellfish disease policies and by advising the Commissioner of the Alaska Department of Fish and Game and other state and federal authorities on fish health issues." The program has a laboratory in Anchorage and Juneau, Alaska, and is staffed by five permanent staff (two Pathologists and three Microbiologists).

We recently obtained two non-permanent Fishery Biologists that work part of the year to provide the support needed due to the increased workload associated with the fish health issue of Ichthyophonus in Yukon Chinook salmon. Both Fish Pathologists are certified by the American Fisheries Society's Fish Health Section.

*The most valuable and effective service that we provide for protecting Alaska's fisheries is our no-cost diagnostic and consultation service that any fisher can use.*

The procedure for utilizing this service initially involves contacting program staff with information about the fish health issues that would ideally include photographs of the problem. This initial consultation can often lead to a diagnosis for the common fish diseases that occur in Alaska as provided in more detail from our online fish disease field guide entitled "Common Diseases of Wild and Cultured Fishes in Alaska" (https://www.adfg.alaska.gov/static/species/disease/pdfs/fish_disease_book.pdf).

Based on the information provided by fishers and the assessment by the pathologists, a sample may or may not be warranted, and if so, then instructions for sample submission can then be provided. Other services that we provide to protect Alaska's fisheries include: 1) hatchery support and oversight involving inspections and permitting; 2) regulatory authority on permitting and oversight of reporting and controlling fish diseases; 3) development of statewide fish and shellfish disease policies to reduce disease agent (pathogen) introduction and amplification; 4) applied research on fish health resulting in peer-reviewed publications; 5) public outreach and education, such as lab tours, mentorships, published field guides and a laboratory manual on fish and shellfish diseases; and 6) surveillance of fish pathogens from brood fish, diagnostic cases, and fish kills.

Regarding his summary of previous and current research on investigating the impacts of Ichthyophonus on Yukon River Chinook salmon, he spoke about the core project that is in collaboration with the USFWS and was aimed at monitoring infections in returning adults from 2022-2024 to assess disease and mortality associated with the parasite as part of ongoing efforts to develop mitigation strategies to manage around this disease. He showed that there is bi-lateral and multi-agency acknowledgement that Ichthyophonus research is needed while infection prevalence (%) is high in the population and that the Joint Technical Committee of the Yukon River Panel has stated guidance to re-initiate Ichthyophonus directed research when prevalence exceeds 25%, which it has since 2020. Additionally, Ichthyophonus-associated mortality is currently the leading hypothesis to explain why the number of Yukon River Chinook salmon reaching the spawning grounds has been much lower than that assessed in the lower river.

Yukon Chinook salmon and other salmon stocks from the Bering Sea become infected by eating infected prey in the ocean and there is evidence that Chinook salmon stocks from the Bering Sea are more susceptible to the parasite than other Chinook salmon stocks south of the Aleutian Chain (Jones and Dawe, 2002; Elliott et al., 2021). The parasite was first detected in Alaska in 1988 from a Yukon Chinook salmon collected near Koyukuk (ADF&G Lab report Acc. No. 1989-0026). High levels of Ichthyophonus-associated disease in Yukon Chinook salmon occurred in the early to mid-2000's that resulted in foundational research and the development of the Rapids Research Center by Mr. Stan Zuray near Rapids, Alaska, which has bridged Local and Western Science.

**Figure 1** Diffuse white coalescing granulomas (chronic inflammation) containing Ichthyophonus in salmon fillet. These are firm white spots.

Our current understanding about this host-parasite system is that Chinook salmon become infected at sea after their first summer and that infections persist until adult salmon return to the river. Most infected fish that enter the river do not yet display signs of disease, but these subclinical infections can be detected with lab tests. As adult salmon migrate upriver and continue to naturally age rapidly during sexual maturation (senescence), the fish's immune system is less capable of fighting the infection so the parasite spreads throughout the body (disseminates) and clinical disease is commonly observed in infected fish at mid-river locations. Stressors, such as warm water temperatures, can exacerbate disease progression. Diseased fish are rarely observed upriver indicating that the most severely diseased fish die during their migration.

This Ichthyophonus study has been leveraged to study many different facets of Yukon River Chinook salmon health. Collaborating projects have included, but are not limited to: 1) Community engagement by ADF&G and USFWS staff; 2) Ichthyophonus studies in the ocean and lab-based studies led by the ADF&G Fish Pathology Lab; 3) developing non-lethal methods for detecting Ichthyophonus as a partnership between ADF&G, USGS, and by Fish Health & Pathology LLC (Dr. Morag Clinton); 4) Other disease and health screenings by ADF&G; 5) Radio telemetry studies for evaluating enroute mortality by ADF&G; 6) Thiamine (Vitamin B1) deficiency studies by ADF&G and NOAA; 7) Fecundity by ADF&G; 8) Heat stress by USGS; 9) Paralytic shellfish poisoning by the Knik Tribe; and 10) Heart health by Fish Health & Pathology LLC (Dr. Morag Clinton).

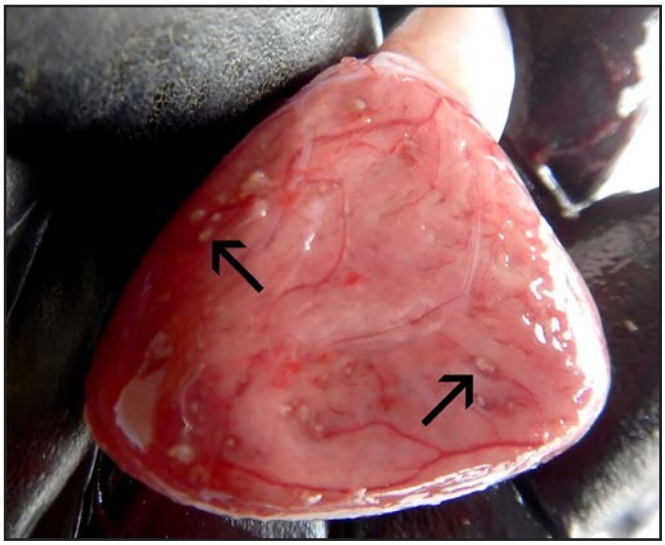


**Figure 2** Grossly visible firm white spots on heart (arrows) that represent granulomas (chronic inflammation) containing Ichthyophonus.

Lastly, he ended with a discussion on pus-pocket, which has been a common name for a condition involving white spots with and without liquid by Yukon River residents. Catherine Moncrieff from YRDFA conducted interviews in communities located in the lower river and learned that 2018 was the first time this condition was noticed in salmon (undefined species) encountered at Emmonak and it has increasingly occurred annually since then. She also learned that it was first observed in the 1980's in Chinook and chum salmon caught at Alakanuk and that it has increasingly occurred since the 2000's.

As many as 40% of the chum salmon have reportedly displayed pus-pocket at Alakanuk and these have been described as having pus when cut. Alakanuk residents also noted a separate condition referred to as 'soft flesh' in the mid-1990's and since the 2000's. The earliest reference of pus-pockets on file at the ADF&G Fish Pathology Program was in 1996 where a sample was submitted to the lab for diagnosis, but the condition was not present in the material submitted (ADF&G Fish Pathology Lab report Acc. No. 1997-0016). Subsequent reports indicated that this was most likely due to either Ichthyophonus or the cnidarian (microscopic jellyfish-like) parasite Henneguya (https://www.adfg.alaska.gov/static/species/disease/pdfs/fishdiseases/henneguya.pdf). Samples from a Yukon River Chinook salmon near Rampart, Alaska, were submitted in 1998 because it contained white pustules in the flesh, and this was diagnosed as being due to Ichthyophonus (ADF&G Fish Pathology Lab report Acc. No. 1999-0001), which produces firm white spots, but not liquid.

Of note is that Ichthyophonus cannot infect people or other mammals, but fish also contain other parasites, such as coiled worms (anisakids; https://www.adfg.alaska.gov/static/species/disease/pdfs/fishdiseases/anisakid_larvae.pdf), which can cause human health concerns if the fish is not properly prepared for consumption by following the FDA guidelines (https://www.fda.gov/food/seafood-guidance-documents-regulatory-information/fish-and-fishery-products-hazards-and-controls). The safest way to prevent parasite infections in people that consume fish is to freeze the fish in a standard freezer at -4°F (-20°C) for 7 days or cook it to an internal temperature of 145°F (63°C) for 15 seconds. Drying the fish, in addition to salting and smoking, can reduce the risk of becoming infected, but it does not reduce the risk as much as freezing or cooking as described above.

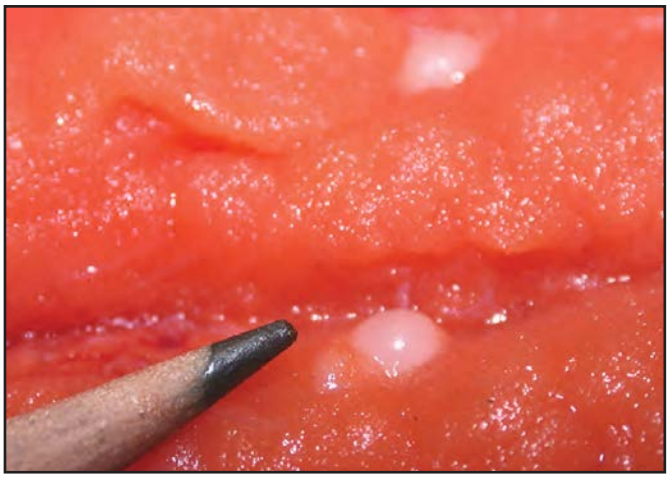


**Figure 3** Single white pseudocyst (pencil head) of Henneguya containing myriad numbers of spores. The pseudocysts are soft and easily punctured, which oozes white fluid containing spores when cut, resembling pus.

Henneguya is of freshwater origin where fish become infected by spores released by tiny, segmented worms (annelids). This parasite forms white cysts that are soft and will release a white fluid substance when filleted with a knife that could be mistaken for pus. Henneguya infections have been referred to as 'milky flesh' disease and 'tapioca' disease due to the presentation of infections but is not associated with fish mortality. Henneguya also does not infect people or other mammals. Soft flesh is a separate condition from pus-pockets and is caused by a different cnidarian (macroscopic jellyfish-like) parasite called Kudoa (https://www.adfg.alaska.gov/static/species/disease/pdfs/fishdiseases/kudoa.pdf). This parasite occurs in the ocean and is also transmitted by spores released by tiny, segmented worms (annelids). Kudoa does not form white spots or milky white fluid, but it does cause the flesh to become soft once the fish dies due to the release of enzymes (proteins) by the parasite after the death of the fish. Kudoa is not associated with fish mortality, but some species, such as Kudoa septempunctata, can cause a self-limiting foodborne illness in people that consume raw olive flounder containing that parasite species.

He ended the discussion by talking about how other diseases or conditions encountered that are poorly studied would be prime candidates for diagnostic evaluations by the Fish Pathology Program. An example was given involving a chum salmon caught at Russian Mission in 2023 that appeared to have moderately sized holes (cavities) in the flesh

**Figure 4** Gross pathology of fillets from Yukon River chum salmon caught at Russian Mission in 2023 showing large cavitations (holes), large areas of white and discolored flesh, and hemorrhage. A sample was not obtained so it was not possible to determine the cause of this abnormality.

in addition to large areas of pale muscle and hemorrhaging (bleeding into the muscle). Suspected causes included loss of muscle integrity from Kudoa (soft flesh disease), high lipid content resulting in spaces between muscle bundles, atypical Bacterial Kidney Disease (BKD) (https://www.adfg.alaska.gov/static/species/disease/pdfs/fishdiseases/bacterial_kidney_disease.pdf), trauma, or something else. A sample was never obtained, but this illustrated a good example of an understudied fish health issue in this system that would warrant sample submission to the lab for diagnosis. BKD is caused by a bacterium called Renibacterium salmoninarum, which is of freshwater origin and can cause fish mortality. This bacterium does not infect people or other mammals. The most important takeaway message was that people who are concerned about a fish abnormality should photograph it and then contact him directly for consultation, and if warranted, submit a sample.

Regarding any fish health questions or potential case submission, Jayde can be reached directly at (907) 267-2394 or jayde.ferguson@alaska.gov. This was an excellent opportunity to engage with Yukon River residents about their fish health concerns and provide community members with information regarding the no-cost diagnostic and consultation service by ADF&G that can be utilized when sick fish are encountered.

**Literature Cited:**

Elliott DG, Conway CM, McKibben CL, MacKenzie AH, Hart LM, Groner ML, Purcell MK, Gregg JL, Hershberger PK. Differential susceptibility of Yukon River and Salish Sea stocks of Chinook salmon Oncorhynchus tshawytscha to ichthyophoniasis. Dis Aquat Organ. 2021 May 6;144:123-131. doi: 10.3354/dao03577. PMID: 33955850.

Jones S.R.M. & Dawe S.C. (2002) Ichthyophonus hoferi Plehn & Mulsow in British Columbia stocks of Pacific herring, Clupea pallasi Valenciennes, and its infectivity to Chinook salmon, Oncorhynchus tshawytscha (Walbaum). Journal of Fish Diseases 25, 415–421.

# YRDFA meets with communities of Alakanuk and Emmonak

**Author:** Catherine Moncrieff, YRDFA Anthropologist

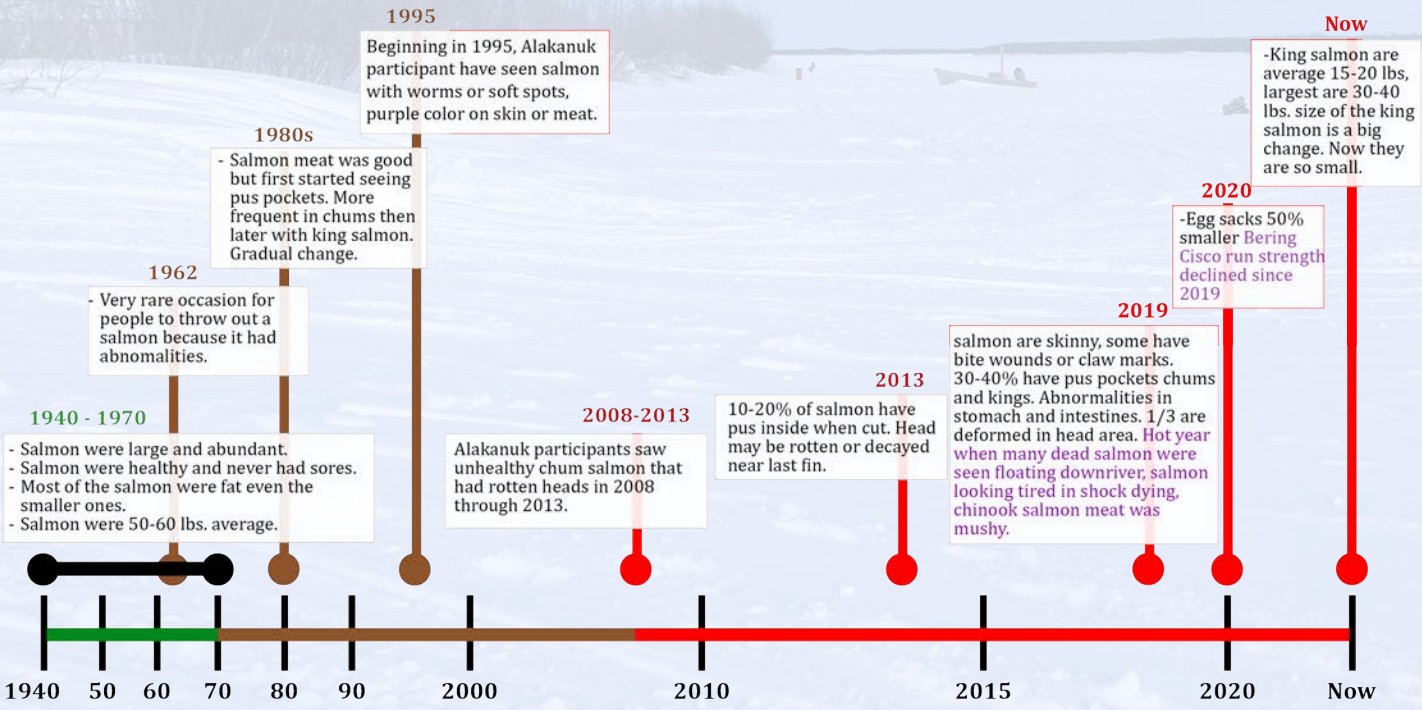
In early March, YRDFA led a team who traveled to the Yukon River mouth communities of Alakanuk and Emmonak to share results of projects, provide information on fish disease, and to share information about upcoming projects.

Our team was first welcomed by the Chuloonawick and Emmonak Tribal Councils and the community of Emmonak. We held a meeting at the Complex Monday night, March 10th, and were happy to catch the end of Bingo and the beginning of preparations for Dance practice. The next day, we flew to Alakanuk and held a similar meeting. Both meetings had great turnout and lots of questions and interesting discussion.

Catherine presented results from the Engaging Fishers in Research on Chinook salmon. She had traveled to Emmonak in March and Alakanuk in June of 2023 where she was able to interview 8 knowledgeable Elders in each community. The interviews focused on their observations of any changes in the health of Chinook salmon as they leave the marine environment and begin their swim upriver. She also created timelines for each community showing their observations in changes in salmon health. (See below).

## Engaging Fishers Timeline

**Alakanuk, Alaska**
**Timeline Changes**

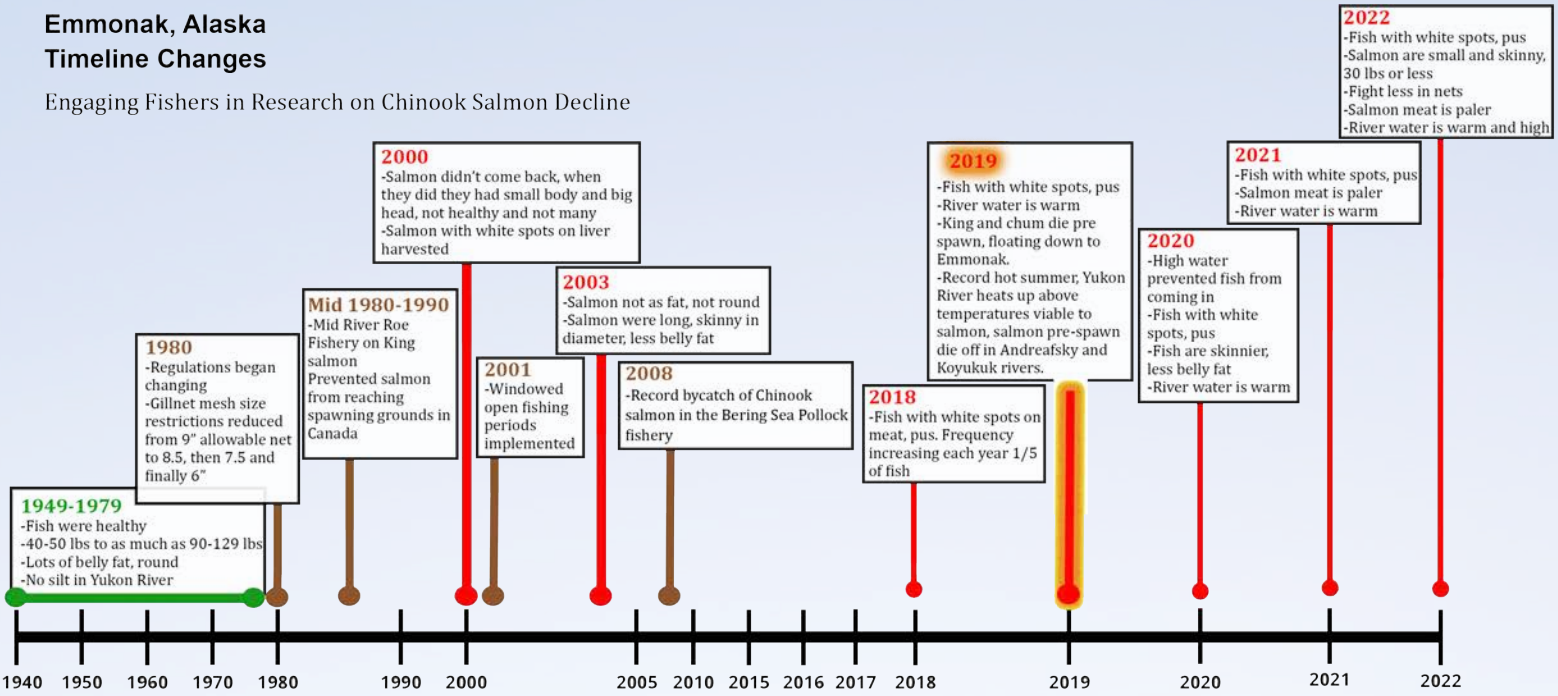



Based on 2023 interviews with 8 knowledgeable fishers in Alakanuk.
Thank you to the inverview participants, Tribal Council, and community for supporting this project

# Engaging Fishers Timeline

**Emmonak, Alaska**
**Timeline Changes**

Engaging Fishers in Research on Chinook Salmon Decline




Based on 2023 interviews with 8 knowledgeable fishers in Emmonak.
Thank you to the inverview participants, Tribal Council, and community for supporting this project
Thank you to the North Pacific Research Board for funding this project #2207

In sum, both communities saw very healthy fish through the 1960 to 1980s and salmon were large and abundant. In the 1980s, fishers in both communities saw things changing from new regulations and net sizes to the first time they saw pus pockets and abnormalities in the salmon. In 1980 to 1995, fishers in Alakanuk were seeing increasing pus pockets in chum salmon and then Chinook salmon. By 1995 they saw salmon with worms, sore spots or purple color on the skin or meat. In Emmonak fishers were concerned by the year 2000 when the salmon didn't come back that year and when they did, they had small bodies with big heads. The fishers in Emmonak reported that the salmon were not healthy and there were not many salmon that year. They also saw white spots on the liver of some salmon harvested.

Community concerns of the health of Yukon River salmon increased over time. In 2001 the Windowed opening fishing period of management began. In 2003 fishers in Emmonak reported the salmon to be not as fat, long and skinny in diameter. In 2008-2013 fishers in Alakanuk reported that they were seeing unhealthy chum salmon and by 2013 10-20% of their salmon had early decay and pus on the inside when they cut them open. In 2018, fishers in Emmonak saw salmon with white spots on the meat and increasing frequency of pus in up to 1 in 5 of their harvested salmon.

An Emmonak community member speaks during the community meeting on March 10, 2025

The year 2019 has become known as the "hot year" on the Yukon River when many chum and Chinook salmon were seen floating downriver, dying before spawning. Fishers in Emmonak and Alakanuk saw many salmon floating on the river. In Emmonak they reported salmon with white spots and pus. In Alakanuk they reported skinny salmon with claw marks and 30-40% of the chum and Chinook with pus pockets and 1/3 with abnormalities in the stomach, head, and intestines. The salmon meat was mushy and the salmon looked tired while swimming.

Fishers in Alakanuk said in 2020 the egg sacks were smaller by 50% and the Bering cisco run had declined. In Emmonak fishers reported that in 2020 and 2021 the salmon still had white spots, the meat was pale and the river water was still warm. In 2022, the Emmonak fishers reported that the salmon were still small and skinny with pale meat, fighting less in the nets. In Alakanuk in 2022 fishers reported that the Chinook salmon have shrunk in size.

Catherine Moncrieff, YRDFA Anthropologist and Alakanuk Elder Denis Sheldon during Alakanuk's Community meeting.

The other members of the travel team each presented their projects. Grace, YRDFA's Community-Based Monitoring Program Coordinator, shared insights about YRDFA's Clearinghouse Project, which aims to assess the existing record of traditional ecological knowledge (TEK), identify gaps, and conduct interviews to help fill them. The project also focuses on integrating TEK indicators into Western science and prioritizing vulnerable areas for future research and conservation efforts.

To achieve these goals, YRDFA is interviewing local knowledge holders, building historical timelines, and developing a data submission portal that will host both community observations and western science collected data. Ultimately, the project aims to foster partnerships, identify data gaps, uplift community-based monitoring efforts, and create a central hub for both current and historical information.

Kristen Green, a contractor with NOAA described their upcoming workshops on food security in Western Alaska. She invited the communities to consider being a host for a workshop.

Jayde Ferguson of the Fish Pathology Section at ADF&G shared with the communities about the fish disease identification opportunities through the Department of Fish and Game. He reported that the most important thing is to photograph it and then contact him and he can help you determine if he knows what it is by the picture or if he needs you to send in a sample. He then described the Ichthyophonus project and history on the Yukon River. He also talked about pus pockets in salmon and what they might be. He assured everyone that both Ichthyophonus and the various types of pus pockets are NOT harmful to humans but might not be appetizing. He did report that salmon do get coiled worms and they could be painful to humans and the way to avoid ingesting them is to cook, freeze or thoroughly dry your salmon. Jayde can be reached at (907) 267-2394 or jayde.ferguson@alaska.gov

YRDFA Founding member, Nick Tucker speaks with Jayde Ferguson during Emmonak's Community meeting

We thank the communities of Alakanuk and Emmonak for welcoming us into your communities and for attending the meetings. It was great to see you in your communities and to share these discussions. We also thank the North Pacific Research Board for funding the Engaging Fishers Project and of course, we are forever indebted to the Elders for spending their lifetimes gathering their knowledge and then sharing it with all of us.

*Quyana*

Catherine Moncrieff with Alakanuk Tribal Chief Ray Oney

Catherine Moncrieff with YRDFA Board Member John Strongheart and Tiffany Agayar during the Alakanuk community meeting

# CUMULATIVE DRIVERS OF SALMON DECLINE MAY BE COMPOUNDED BY MANAGEMENT STRUCTURES

**Author:** Gale K. Vick

The rapid decline of the average size of all five wild salmon species in Alaska is dramatic but even worse, the abundance decline of Chinook, chum and coho is catastrophic for many areas of the state.

We may all wish there was a single definitive cause for salmon decline that we could point to, but there is not. Many factors create negative impacts on wild salmon stocks within a single year and compound over many years. Not fully appreciating the cumulative action of many impacts has brought us to a precipice. "Death by a thousand cuts" is a very apt description of what Alaska's wild salmon face. To name a few:

| MARINE | RIVERINE |
|---|---|
| MULTIPLE SPECIES AND SECTOR HARVEST CONFLICTS | LINEAR MIXED STOCK FISHERIES MANAGEMENT |
| FISHERIES POLITICS DOMINATED BY COMMERCIAL | TENSION BETWEEN USER GROUPS |
| HARVEST PRACTICES | HARVEST PRACTICES |
| BYCATCH | IN-RIVER BYCATCH AND INTERCEPT |
| INTERCEPT | CHANGING ESCAPEMENT GOALS |
| BOAT SIZES | RIVER CONDITIONS CREATED BY CLIMATE CHANGE |
| GEAR TYPES AND MESH SIZES | GEAR TYPES AND MESH SIZES |
| OCEAN CONDITIONS CREATED BY CLIMATE CHANGE | LIMITED ENUMERATION OF SPAWNING AGGREGATE |
| COMPETITION FOR FORAGE FOOD | LOSS OF GENETICS |
| ASIAN AND ALASKAN HATCHERY INCREASES | REDUCED AND UNMONITORED FECUNDITY |
| TOO MANY PINKS IN THE OCEAN | AGE CLASS DECLINES |
| "TROPHIC CASCADE" | IN-RIVER PREDATION OF ADULTS AND SMOLT |
| HATCHERY STRAYING | HATCHERY STRAYING |
| DEPENDENCY ON HATCHERIES | HATCHERY IMPACTS ON WILD STOCK GENETICS |
| AGE CLASS DECLINES | LOWERED BASIC HEALTH AND FAT CONTENT |
| OCEAN PREDATION | ICHTHYOPHONOUS |
| DIESEASE AND PARASITES | LACK OF EDUCATION AND INFORMATION SYSTEMS |
| HEALTH OF JUVENILE NURSERIES | LACK OF SUFFICENT DATA IN MANY ARENAS |
| LACK OF EDUCATION AND INFORMATION SYSTEMS | BARRIERS |
| LACK OF SUFFICIENT DATA | RIPARIAN HABITAT DESTRUCTION |
| INSUFFICIENT GENETIC SAMPLING | MINING IMPACTS |
| INTERRUPTED INTERNATIONAL COOPERATIVE STUDIES | HUMAN ACTIVITY NEAR SPAWNING AND REARING GROUNDS |
| INSUFFICIENT USE OF TRADTIONAL KNOWLEDGE | INSUFFICIENT USE OF TRADITIONAL KNOWLEDGE |
| UNSUSTAINABLE FISHING PRACTICES | INSUFFICIENT MANAGEMENT OF STOCKS OF CONCERN |
| OCEAN ACIDIFICATON | INCREASING RIVER TEMPERATURES |
| OCEAN CONTAMINATION | PESTICIDES AND HERBICIDES |
| PLASTIC POLLUTION | STORM RUN-OFF AND OTHER WATER POLLUTION |
| LACK OF ATTENTION TO ECOSYSTEMS | LACK OF ATTENTION TO ECOSYSTEMS |
| NEED TO CREATE SALMON CORRIDORS | NOT PAYING ATTENTION TO DISCRETE STOCKS |
| NOT MAKING CLEAR DISTINCTIONS BETWEEN WILD AND NOT | TURBINE EFFECTS |
| UNDETECTED MORTALITY | FISH HANDLING |
| SHIFTING BASELINES ON DATA | SHIFTING BASELINES ON DATA |
| TENDENCY TO LAY BLAME ELSEWHERE | TENDENCY TO LAY BLAME ELSEWHERE |
| PLACING TOO MUCH BURDEN ON SUBSISTENCE USERS | PLACING TOO MUCH BURDEN ON SUBSISTENCE USERS |
| DISAGREEMENTS ON SUSTAINANBLE MEASURES | DISAGREEMENTS ON SUSTAINANBLE MEASURES |
| MULTI JURISDICTIONAL MANAGEMENT | MULTI JURISDICTONAL MANAGEMENT |

The 2024 Alaska Salmon Research Task Force Final Report identified seven potential impact areas to Alaskan salmon productivity: (1) climate and extreme events, (2) salmon health and condition, (3) marine food limitations, (4) marine harvest and bycatch, (5) predators, (6) freshwater habitat changes, (7) freshwater harvest.

Because this was a research task force, the report was not definitive on the single over-arching factor that rarely gets the attention it needs and could be the key to mitigating many other factors and that is management. **2**

In State, Federal and international waters in the North Pacific, the multiple layers of jurisdictions and management, costing millions of dollars each year, has led to the belief that Alaska has the best managed fisheries in the world. Yet, despite the dedication and expertise of hundreds of agency people, Alaska's fisheries and aquatic ecosystems are in very deep trouble, with salmon being the most vulnerable.

The salmon decline crisis in Alaska has been seemingly swift but its roots go back decades. There is no debate that some decline factors are beyond our control, but many decline factors are embedded in our lack of knowledge, resources and political will, greatly exacerbated by multi-jurisdictional management, multi-sector use and simple greed. We have all been complicit at some level. Everyone feels entitled to a share of the resource, which chronically stalls or eliminates even relatively simple solutions for sustainable salmon passage to spawning grounds. It is only fair that all sectors share in the burden of conservation but multi-management systems and high-stakes species harvest make it easy to bifurcate responsibility and disguise intent. It creates great opportunity to blame other sectors and regions.

While subsistence and personal use are restricted to Alaskans and subsistence has priority in low abundance, much of Alaska's fisheries resource goes to commercial activities and, in many cases, non-Alaskans. There are legal reasons

for this but it results in sectors that may or may not subscribe priority to the Alaska Constitutional requirement that "all natural resources belong to the State of Alaska are for "the maximum benefit of its people." And further that these

"shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses." Nor do many Outside interests have any understanding of subsistence needs.

This is further complicated by the production of hatchery fish and the growing evidence of impacts on wild salmon. Many user groups that have come to rely on hatchery salmon may not see the importance of wild salmon in the same way non-hatchery groups do. Reliance on hatchery salmon leads to a loss of ecosystems considerations and perspective and may be diverting attention and resources away from adequate wild salmon management. Ultimately, reliance on hatchery produced fish is both prohibitively expensive and non-sustainable.

This brings us to the essential problem of finding the political will and financial resources to adequately address wild salmon decline factors that are within our ability to affect. Years of conflict among sectors have embedded some very contradictory management practices. Where the Alaska Constitution mandates sustained yield management and Alaska's Sustainable Salmon Policy mandates precautionary measures and the Magnuson-Stevens Fisheries Conservation Management Act (MSA) mandates protections against over-fishing, and international treaties mandate other specific protections, actual practices have often resulted in one species being detrimentally subject to the greater economic interests of another. This is one of the biggest threats to Alaska's wild salmon because it makes it incredibly difficult to assign effective mitigation. This is self-evident in bycatch and intercept, in the development of hatchery salmon, and issues such as boat size, gear types, mesh size and harvest timing that have resulted in smaller and less abundant fish.

In short, we may be inadvertently managing to extinction of some species, most notably Chinook salmon. Even without the barriers faced in the Pacific Northwest, Alaska has managed, in a very short period of time, to dissipate our most iconic species. And others – chum, coho and even sockeye, are following suit.

Traditional regulatory processes – federal councils, state boards, legislature, international panels – cannot be expected to amend the cross-jurisdictional problems of managing anadromous species that often travel thousands of miles in their cycle from freshwater to salt water and back again. So, what are some possible solutions?

We are not going to change the regulatory infrastructure that currently exists but we can help bridge the vast divide by:

(1) Clearly defining priorities that cross jurisdictions
(2) Creating a perpetual independent salmon think tank to incorporate some of the best science and scientists available as well as traditional knowledge/science and the role of indigenous co-stewardship
(3) Supporting priority for salmon corridors and utilizing Gravel to Gravel initiatives
(4) Putting emphasis on the fecundity of spawning aggregate

These are just a few ideas. Whatever we decide, we need to do it immediately and not rely on periodic task forces that sunset without significant change. But more, we need to really commit to our wild salmon.

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**1** https://www.fisheries.noaa.gov/feature-story/alaska-salmon-research-task-force-completes-science-report

**2** Many of the comments discussed management's role

**3** https://www.fws.gov/sites/default/files/documents/FINAL-3-1-23-DOI%20Gravel%20to%20Gravel%20Fact%20Sheet_508.pdf

# Fish + Health Survey

YRDFA has developed this survey to better understand how changes in fishing and traditional diets are impacting the health and well-being of people living along the Yukon River. Your responses will help create a baseline of knowledge that reflects community experiences. **This information will remain anonymous** and we will use the findings to support efforts such as securing grant funding and informing testimony to advocate for the needs of Yukon River communities.

As a thank you for your time, everyone who completes the survey will be entered into a drawing to win a YRDFA hoodie!
Three winners will be selected.
Drawing will take place June 1st, 2025.

## 2 survey options

**Written**
Mail in responses to:

PO Box 13334
Trapper Creek, AK
99683

**Online**
Scan QR Code

**https://arcg.is/0rW0LH0**

# Fish + Health Survey

Where do you live?

How old are you?

How have tighter fishing restrictions and low fish runs affected how you store, share, or distribute food?

Have you or your family noticed changes in your health since fishing closures began? (i.e. weight gain, diabetes, heart issues, stress, depression, substance use)

Yukon River Drainage Fisheries Association

In the last 5 years, have you or a family member been diagnosed with any of the following conditions? (Please circle)

Type 2 diabetes

High blood pressure

Heart disease

Obesity

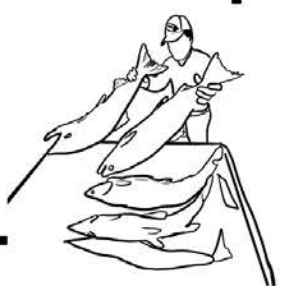
Depression or Anxiety

Other (please specify)

If you or a family member have been diagnosed with any of these conditions, do you believe changes in your diet (such as less access to salmon and traditional foods) have played a role?

Has your doctor or health provider talked to you about diet-related health risks since fishing closers began?

Yukon River Drainage Fisheries Association



What other foods have you relied on to replace salmon?

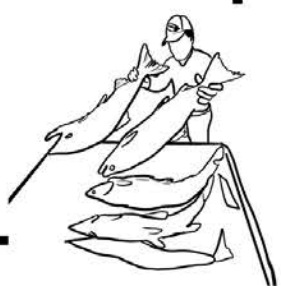
Do you think store-bought foods provide the same nutritional value as traditional foods?

What would help improve health in your community?

Do you have any additional comments on how the loss of fishing has impacted the health of you, your family, or your community?

Yukon River Drainage Fisheries Association

**Thank you, enaa baasee', quyana, chin'an, mahsi' choo, gunalchéesh**



# Welcoming New YRDFA Employee

**Brian McKenna**
Fisheries Biologist

Brian was born and raised in Missouri, where the burbs met the beans. His childhood was spent navigating the urban sprawl that eventually consumed the wild areas where he played and interacted with nature. While enduring a classroom learning environment from grammar school through graduate school, Brian would tell you that he has learned as much if not more from being outdoors than in the classroom. Brian has always felt most at home in the natural world and is fueled by curiosity and continued learning. He enjoys building relationships, helping others, and is passionate about hunting animals, fishes, fruits, and fungi, as a way to connect with nature and provide food for his family.

Brian's educational journey started in the Midwest while playing collegiate soccer at the University of Missouri Saint Louis and earning an undergraduate degree in Business Administration. After graduation, it didn't take long for him to get bored in the business world. Brian decided to follow his passion for the natural world and started on a journey that he's still enjoying today. Brian has since received degrees from Oregon State University (Fisheries Management) and the University of Florida (Fisheries and Aquatic Sciences), and has gained invaluable experiences working in fisheries in the Midwest, Gulf of Mexico, and Alaska.

Brian moved to Alaska in 2010. He lived in Seward in 2010-2011 while working as a fisheries technician monitoring salmon populations in the Kenai Peninsula. In 2012 he moved to Fairbanks and began his career serving the people and fishes of the Yukon River. Brian spent two years working as a technician for the USFWS (2012-2013) and 11 years working as a biologist for the Tanana Chiefs Conference (2013-2024), prior to joining YRDFA in 2025. Brian currently resides in Missouri where he and his wife Emily are raising their two young kiddos, Theodore and Rozalyn. Brian is thankful for YRDFA's remote office environment which enables him to raise his family in Missouri while continuing to serve the people and fishes of the Yukon River.

## Donate to YRDFA's Silent Auction

**For 35 years YRDFA has been serving the people of the Yukon. Please support our continued efforts to protect the salmon by donating items to our 35th Anniversary Silent Auction**

### Donations could include

(but not limited to)

- -Alaska Native arts & beadwork
- -Handicrafts
- -Outdoor/sporting gear
- -Tickets (airline/event)
- -Gift Cards
- -Items from local businesses

**Donations accepted until Monday, April 14th**

**Email Olivia@yukonsalmon.org for donation instructions**

## TEAM DIRECTORY

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Email: matthew@yukonsalmon.org

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***FISHERIES BIOLOGIST:*** Brian McKenna
Email: brian@yukonsalmon.org

## BOARD OF DIRECTORS

| DISTRICT | NAME | COMMUNITY |
|---|---|---|
| Coastal, Seat 1 | Clifford Kaganak Sr. | Scammon Bay |
| Y-1, Seat 1 | Stanley Pete | Nunam Iqua |
| Y-1, Seat 2 | John Strongheart | 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 | Robert Walker | Anvik |
| 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 | Darrell Vent | Huslia |
| Flats, Seat 1 | Jan Woodruff | Eagle |
| Canadian, Seat 1 | VACANT | - |

## 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 | Willie Andrews | Emmonak |
| 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 | Tommy Kriska | Nulato |
| Y-4, Alt. 2 | VACANT | - |
| Y5, Alt. 1 | Janessa Newman | Rampart |
| Y-6, Alt. 1 | Phillip Titus | Minto |
| Y-6, Alt. 2 | Kathleen Demientieff | Nenana |
| Koyukuk Alt.1 | VACANT | - |
| Flats, Alt. 1 | Rochelle Adams | Fort Yukon/Beaver |
| Canadian, Alt 1 | VACANT | - |

## YOUNG FISHERS REPS

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

*Yes!*

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

***Individual Membership:***

- ☐ **$50** newsletter subscription
- ☐ **$75** newsletter subscription with beanie
- ☐ **$100** newsletter subscription with hoodie
- ☐ **Other amount** $_____

***Agency/Business Donor:***

☐ **$5000** Chinook ☐ **$1000** Chum ☐ **$500** Coho ☐ **$200** Pink
Includes advertising on website, Facebook, and during public gatherings.

***Payment Method:***

(Online donations can be submitted at https://yukonsalmon.org/support/)

☐ Check #_____enclosed (payable to **YRDFA**)

☐ Card (Circle one): VISA Mastercard Discover AMEX

Card #:_____

Exp. Date: _____ CVV: _____

Name on Card: _____

**Signature:** _____

Name: _____

Company/Organization/Fishing District: _____

_____

Address: _____

_____

City: _____

State:_____ Zip:_____

Phone:_____

Email:_____

***Mail completed slip & donation to:***

**YRDFA**
**PO Box 13334**
**Trapper Creek, AK 99683**

***Phone:***

**1-877-999-8566**

Cut & mail

Yukon River Drainage Fisheries Association (YRDFA) is a 501(c)3 organization. Donations are tax-deductible to the extent allowed by law.

Yukon River Drainage Fisheries Association
PO Box 13334 • Trapper Creek, AK 99683