TAKU RIVER TLINGIT
First Nation

Spring/Summer 2024

Inside this issue:

The Taku River Tlingit (TRT) Fisheries Department is preparing for our 2024 field season. We wanted to update everyone on the Fisheries Program and provide information on the status of the Taku salmon runs. You may notice that some of the articles in this Newsletter are repeats from our previous newsletters (including "Some Background in How Salmon are Managed in the Taku"). This is because this article provides important background information that does not change year-to-year.

Any feedback on what you would like to see covered in our next newsletter would be most welcome! Enjoy!

Fisheries Department Program Summary:

The core funding for TRT Fisheries Department comes from the Aboriginal Fisheries Strategy (AFS). This is Federal funding to support TRT involvement in salmon management on the Taku River.

The TRTFN Fisheries Department Collaborates with other departments on various projects, in particular the Land Guardian and Mining departments.

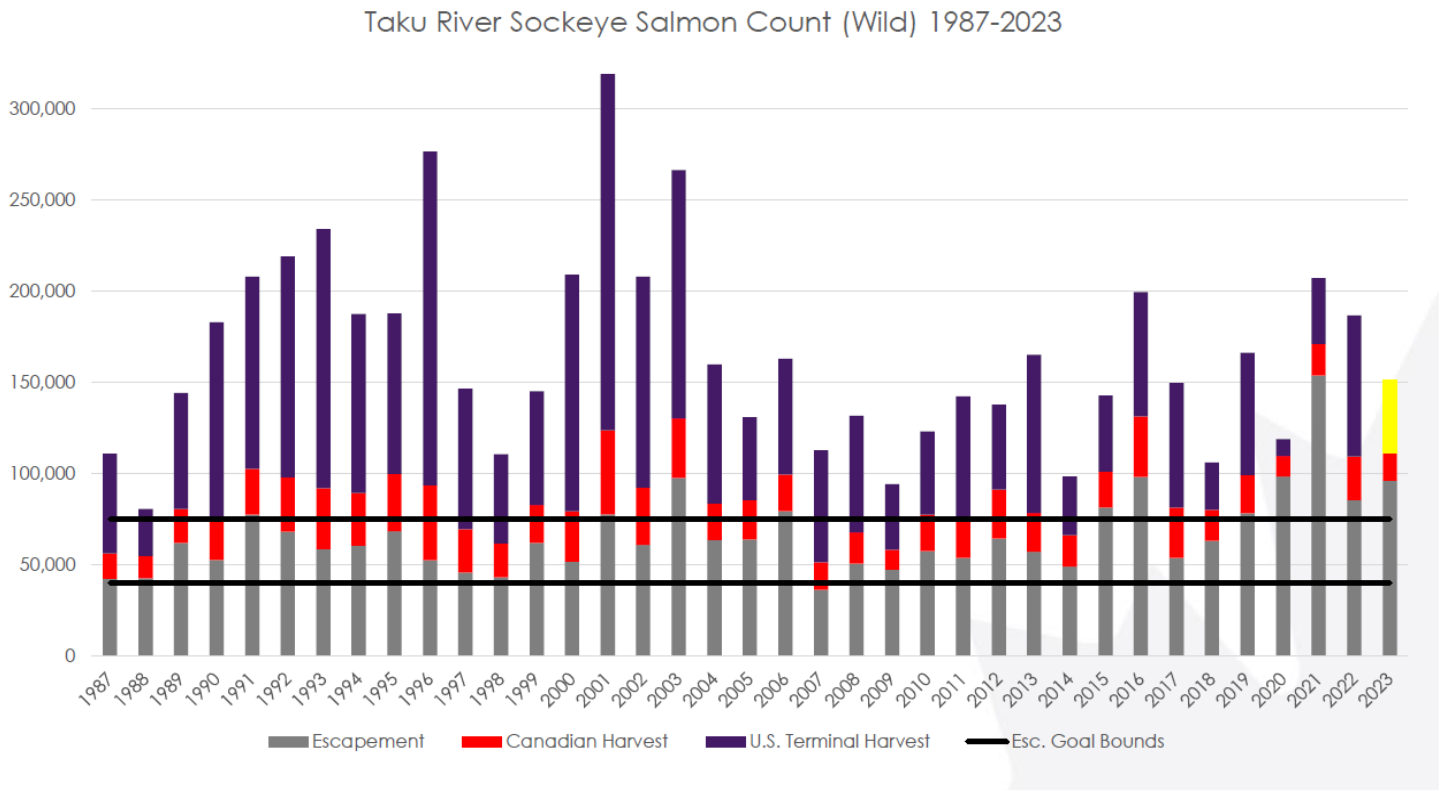
How are salmon doing in the Taku?

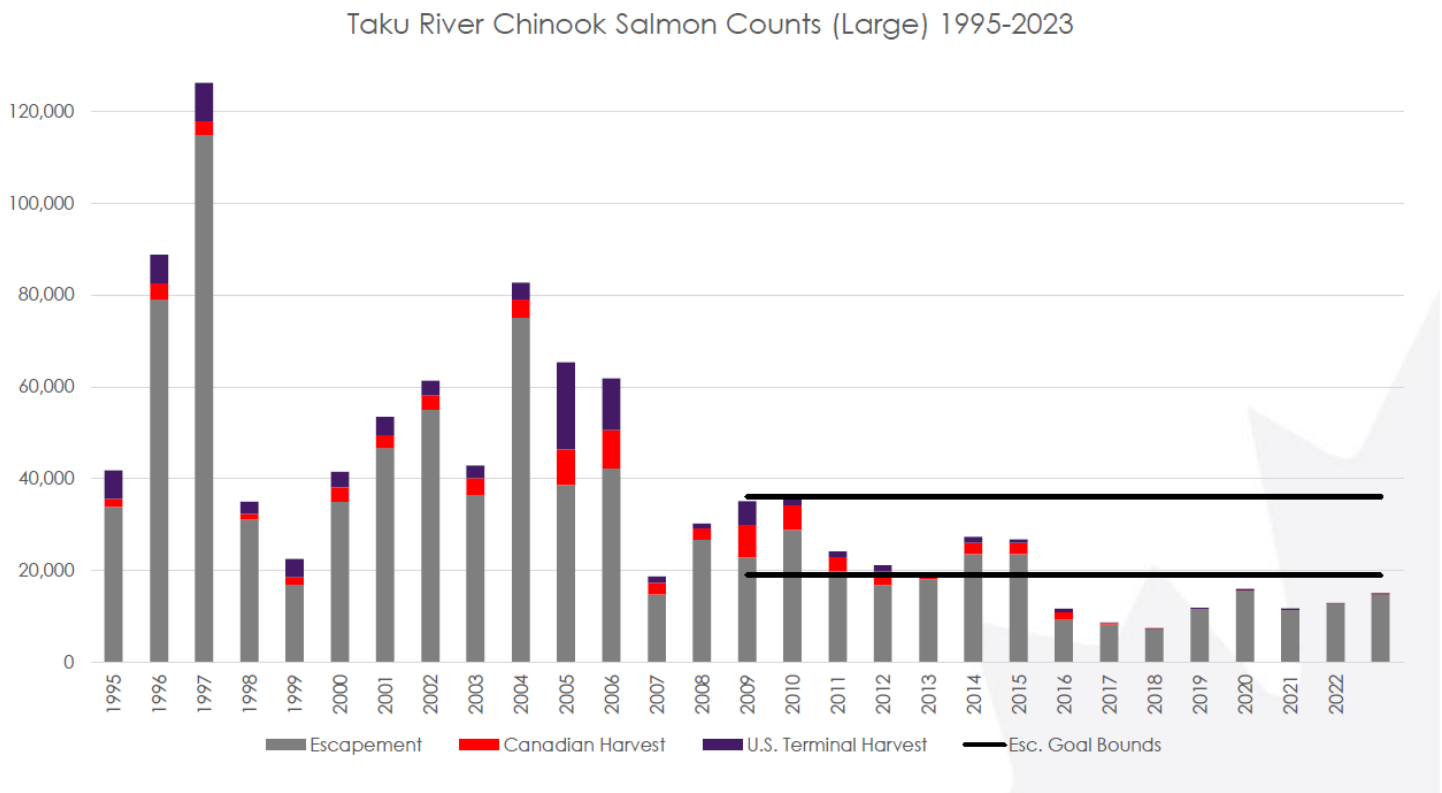
People often ask how salmon populations are doing in the Taku. The answer is that it is a bit of a 'mixed bag':

Chinook salmon numbers have not made escapement goals since 2015 ('escapement' is the number of fish that make it back to the spawning grounds). This is a bigger problem than just the Taku and many rivers are seeing this issue with chinook. There may be many reasons for this low escapement, but ocean survival seems to be playing a role.

Sockeye and coho numbers have remained healthy in the Taku, and escapement goals continue to be met. Having said this, there can be some specific stocks of concern. For example, returns of sockeye into Kuthai Lake have been very low since 2006 (with the exception of 2020). Our monitoring indicates that the issue with Kuthai is access thru the Silver Salmon Canyon. The TRT Fisheries department has been working with DFO to address this issue (see page 21).

The graphs on the following pages show the numbers of chinook, sockeye and coho in the Taku over time. The black horizontal lines indicate the escapement range. Any of the vertical bars that are below the lower black horizontal line indicates a year where escapement goals were not met.




Taku River Chinook Salmon Counts (Large) 1995-2023
120,000
100,000
80,000
60,000
40,000
20,000
0
1995
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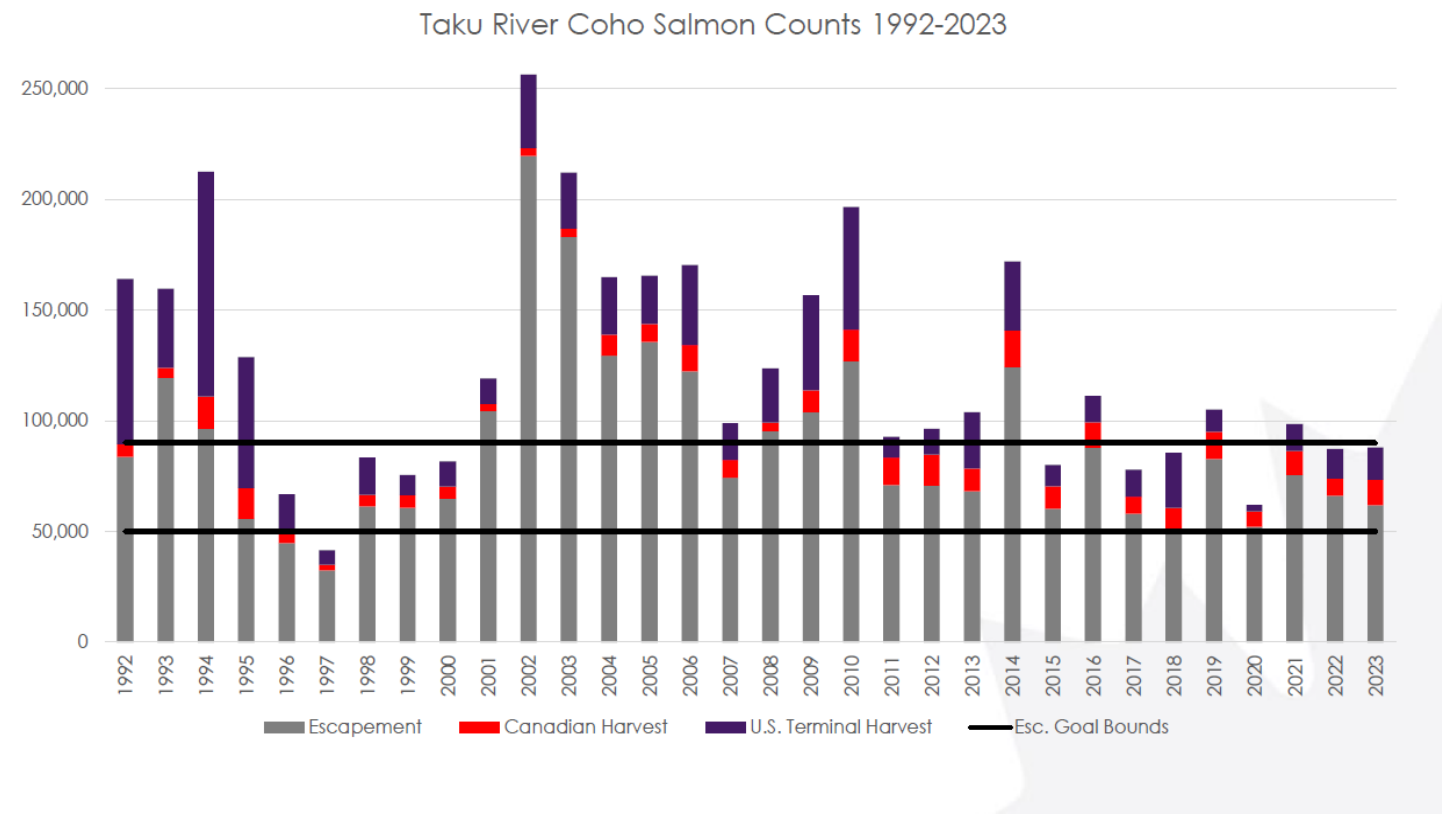
Escapement
Canadian Harvest
U.S. Terminal Harvest
Esc. Goal Bounds


Taku River Coho Salmon Counts 1992-2023
250,000
200,000
150,000
100,000
50,000
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2021
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2023
Escapement
Canadian Harvest
U.S. Terminal Harvest
Esc. Goal Bounds

Pacific Salmon Commission Update

Salmon in the Taku are managed thru the Pacific Salmon Treaty (PST). This treaty is overseen by the Pacific Salmon Commission (PSC).

We are pleased to welcome Jason Williams on board as the new (TRTFN appointed) primary member of the PSC Transboundary (TBR) Panel. Richard Erhardt remains as the alternate Panel member (for mentoring and continuity), and Mark Connor continues as our formal member of the associated TBR Technical Committee and Enhancement Subcommittee. (Jason, Mark, and Richard all attended the most recent February annual PSC meeting sessions held in Vancouver.)

The main issue discussed bi-laterally with Alaska at this year's meetings was a recently proposed Taku U.S. (federal) subsistence fishery. Note that 'subsistence' fishing n Alaska is available to all rural Alaska residents (not just First Nations). Although, the CAN side expressed general objection to proceeding with such, ultimately, we cannot dictate how US/AK divides up its allocation amongst domestic fisheries (and vice versa). So, this fishery will most likely proceed, as was anticipated, however, such will not change the allocations or allowable catches on either side. Also, we did manage to agree in principle upon stringent restrictions for this fishery, which would mirror that of the existing Alaska personal use fishery i.e., being only for sockeye to avoid Chinook interception. The PSC has tasked a subgroup of Commissioners to work out a few remaining details with the TBR Panel Chairs and reach a final resolution by April 1.

We look forward to providing you with more details on the Pacific Salmon Treaty (PST) status and process during our upcoming TRTFN fisheries workshop planned for April. In particular, we will be seeking your input leading up to PST re-negotiations scheduled to start in 2025.

2023 TRTFN Fisheries Projects Overview

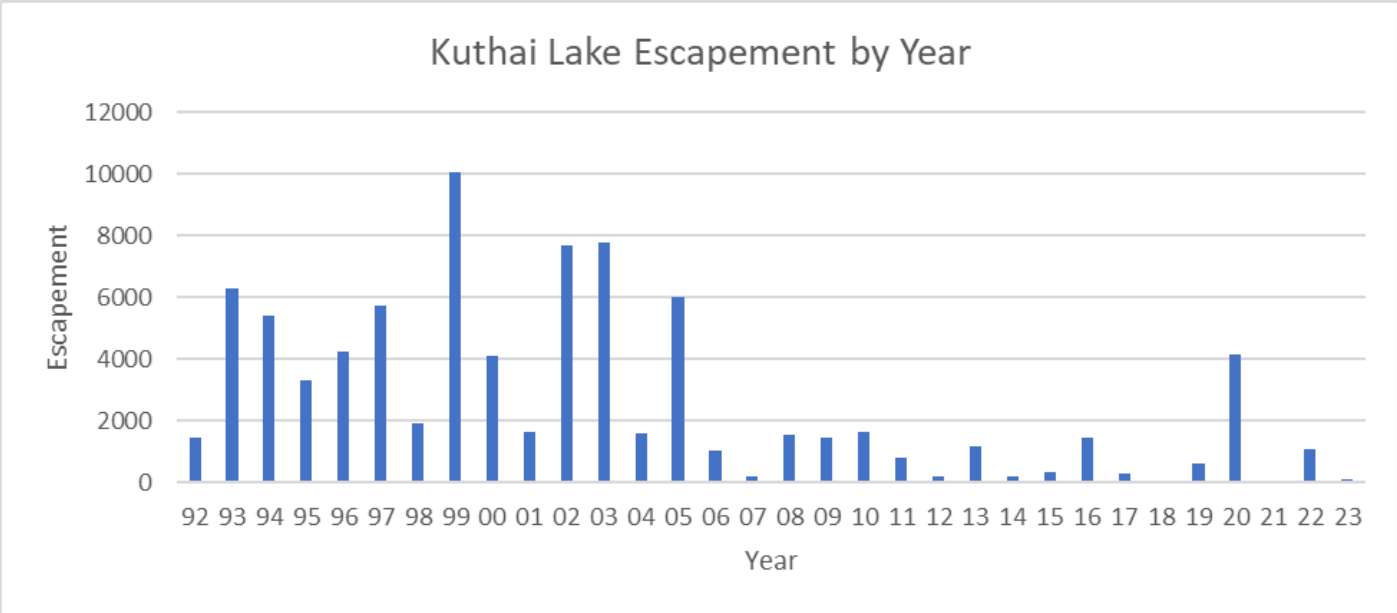
A summary of how the 2023 Fisheries program projects went is provided in the following pages.

Kuthai Lake Weir

This project erects a weir at the outlet of Kuthai Lake to record sockeye salmon entering the lake to spawn. The project starts on July 4th and runs until Sept 3rd. Kuthai Weir employs 2 TRTFN Fisheries Technicians. The TRTFN has been running this weir since 1992.

As you can see by the graph below, sockeye returns to Kuthai have been depressed since 2006. The average run size (escapement) into the lake from 1992-2005 was 4,806 fish. The average escapement into Kuthai since 2006 is 953 fish. Investigations by the TRTFN Fisheries Department have determined that a significant cause for this reduced escapement is the result of access issues in the lower Silver Salmon River. We have been working to rectify these issues (see page 21) and have had some success. Based on observations at the canyon, it appears that passage was not an issue this year and most of the salmon observed made it thru the canyon.

A total of 125 sockeye made it into Kuthai in 2023. The first salmon arrived at the weir on July 14 .

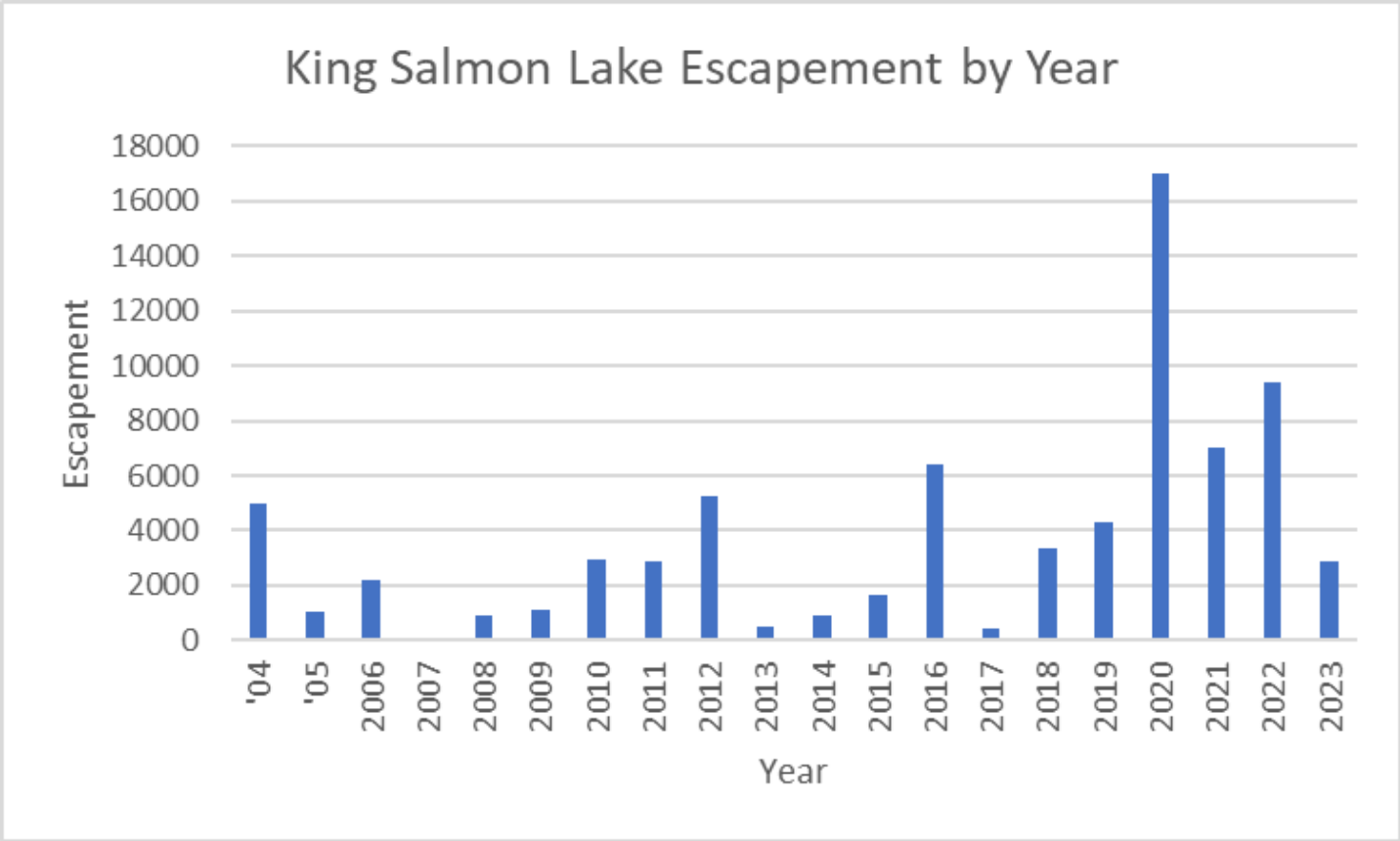


King Salmon Lake Weir

This project erects a weir at the outlet of King Salmon Lake to record sockeye salmon entering the lake to spawn. The project starts on July 5th and runs until Sept 4th. King Salmon Weir employs 2 TRTFN Fisheries Technicians.

Sockeye escapements into King Salmon Lake have been consistently good since 2018 (see graph below) even though there is a migration obstruction in the lower river (see page 22)

The average escapement into the lake since the weir started operating in 2004 has been 3,811 salmon. The first fish into King Salmon in 2023 was on July 15. An estimate of 2,900 sockeye made it into King Salmon Lake to spawn in 2023. This is less than the 10 year average, but still a decent return.



Nakina Carcass Weir

This project erects a weir across the Nakina River to try to sample 1000 chinook salmon carcasses for age (scales), length, sex and tags. The project started July 22th and ended August 28th and employed 2 TRTFN Fisheries personnel.

Since 2008, part of the duties of Fisheries crew at the Nakina weir has been monitoring the obstruction (several waterfalls) on the lower Silver Salmon River that has been restricting sockeye access into Kuthai Lake (see page 21). This year monitoring indicated that most of the sockeye heading to Kuthai made it past the obstruction.

For 2023 at total of 2303 chinook salmon were inspected . At total of 82 coded wire tags and 48 spaghetti tags were documented.

This year the Nakina weir crew installed an AI (artificial intelligence) enabled video camera to count and measure salmon coming thru the weir. The camera was a mixed success and we hope to build on lessons learned for next season.

Photo (left):

New AI video camera ready for installation

Photo (right): One of the bears enjoyed the view from on top of the installed AI camera. Luckily it did not affect the camera operation!

Canyon Island:

The TRT Fisheries Department provides one staff to support the Canyon Island fish wheels located just across the border in Alaska. This TRT staff person supports the Alaska Department of Fish and Game in tagging salmon for the mark-recapture program that is used to estimate salmon abundance on the Taku . More about mark-recapture to follow in this newsletter.

Photo (right): Fish wheel at Canyon Island

Tatsatua River Chinook Sampling:

This project collects age, sex and length data from Chinook on the Tatsatua River using rod and reel as well as a carcass weir. Chinook are caught and measurements and scales taken. The project hired 2 TRTFN Fisheries technicians and ran from August 23 to September 10th.

The crew was very successful and inspected a total of 414 chinook salmon. They also recovered 7 spaghetti tags, and 11 coded wire tags.

Photo (middle). Spawning dunes on Tatsatua River

Lower Taku smolt project

This project captures out-migrating chinook and coho juvenile 'smolts' and applies a small coded wire tag (CWT). These CWT's are used for estimating numbers of fish and stock identification, including in off-shore (ocean) fisheries. This is another joint project between TRT Fisheries, DFO and Alaska Fish& Game. Jason Williams was the TRT representative on this year's project.

The project ran from April 11-May 22. And applied 32,046 tags to coho smolts and 41,363 tags for chinook smolts.

Photo (right) Coho smolt

New Projects proposed for 2024 season:

The TRT will be running its AFS (Aboriginal Fisheries Strategy) program again this summer with sockeye weirs at King Salmon and Kuthai Lakes as well as a Chinook carcass weir on the Nakina River as well as participation at Canyon Island, Taku smolt project and chinook headwaters sampling.

A few of the new projects the TRTFN Fisheries Department hopes to undertake in 2024 include:

- Collaboration with DFO on a Coho test fishery that would provide food fish for TRT
- Expand the Salmon Resiliency Project to include working with a MSc student on a more detailed analysis into the Silver Salmon' watershed including setting up a climate station and assessing how water levels affect salmon passage.
- Work with Land Guardians to deploy buoys in Atlin Lake to monitor lake temperatures and water chemistry
- Working with the Pacific Salmon Foundation (PSF) on Artificial Intelligence that will help analyze salmon weir video. We will also work with PSF using a thermal-imaging drone to map water temperatures in areas of the Taku
- Develop a TRTFN Community Salmon Plan' (see page10)

Developing a 'Community Salmon Plan'

In the near future the TRTFN Fisheries Section will begin community meetings to develop a 'Community Salmon Plan'.

The purpose of this plan will be to:

- provide 'vision and management' direction from the TRT community to guide the Fisheries Section.
- Ensure Tlingit traditional values and knowledge are at the forefront of Fisheries management
- Prepare for upcoming re-negotiation of the Pacific Salmon Treaty

This plan will be developed over a series of workshops each focusing on a specific topic that may form a 'chapter' of the plan.

These workshops are envisioned to occur over 2 days for each topic. Day 1 will be focused on 'information download'. Presenters (e.g. scientists, managers) will be invited on day 1 to provide relevant information on the workshop topic. Day 2 will be focused on internal community discussions.

Community meetings will be held at Tutan hit on March 22 and 23, 2024. The focus of these meetings will be; Climate change: how we expect it to play out in Taku and what can we do about it? There will also be an open house in the TRTFN Whitehorse Office on March 21st, covering the same topic.

Stay tuned for an April workshop focusing on commercial and food fishing on the Taku.

What about climate change?

How climate change will affect salmon in the Taku and which areas will be most impacted is an area of great interest to the TRT Fisheries Department. Warming water can negatively affect salmon productivity and survival, and fluctuating water levels can impede salmon migration and impact critical habitats. We are seeing some of these effects already with salmon migration issues at places like the Silver Salmon and King Salmon Rivers (see pages 21-22). On the other hand, retreating glaciers can expose new river channels that could become future salmon habitat.

To help us better understand these oncoming changes and opportunities, we are working with scientists from Simon Frazer University, U of Montana, U of Washington and Round River Conservation Studies. Our studies include assessing water temperatures in the Taku, monitoring and assessing glacial retreat (with a focus on the Tulsequah valley), and conducting a vulnerability assessment to determine which watershed will be most affected by climate change and what we might be able to do about it.

More on the Salmon Resiliency project on the following pages.

Photo (above) A grizzly bear intently watches salmon jumping in the Silver Salmon canyon

Salmon Resiliency Project

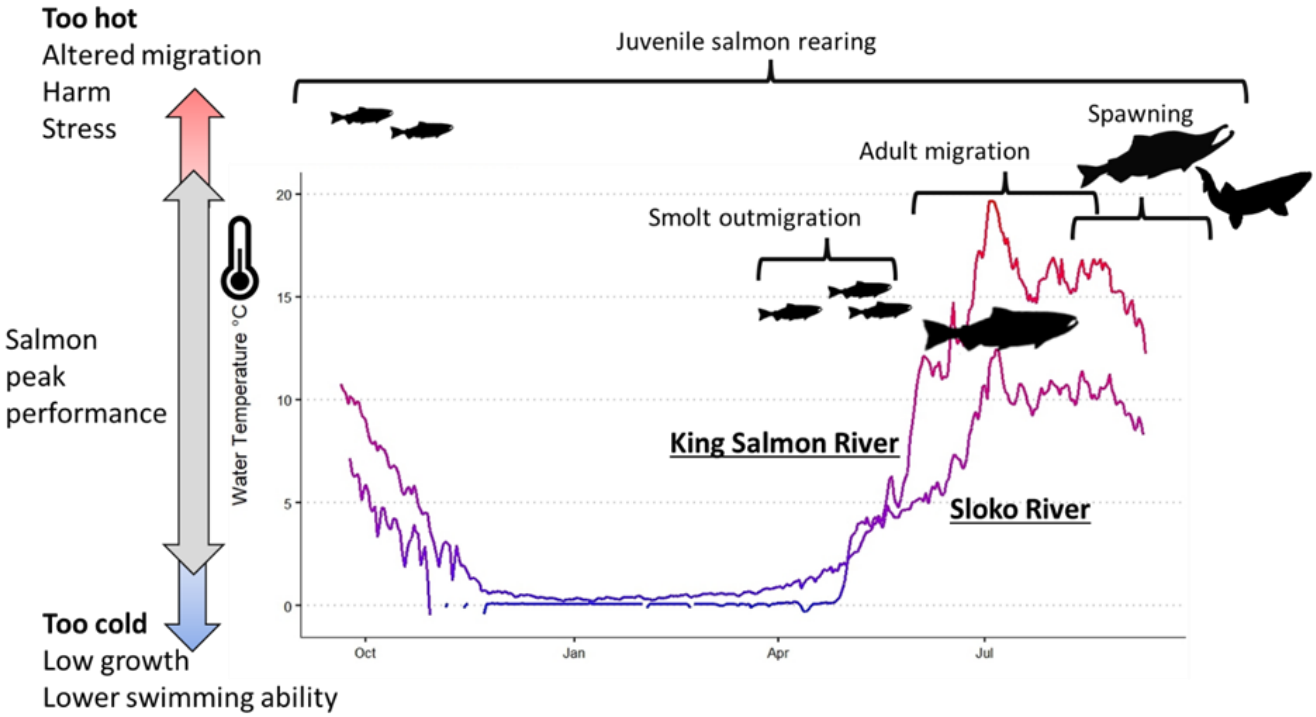
The Salmon Resiliency initiative was started in 2021 and is a collaborate project between the TRTFN, Simon Fraser University, the University of Montana and Round River. The overarching objective of the program is to ensure the long term health of Taku salmon in the face of climate change.

We continued and expanded our work in 2023 and provided opportunities for some Tlingit citizens assist get out on land and visit some of our remote sample sites in the Taku.

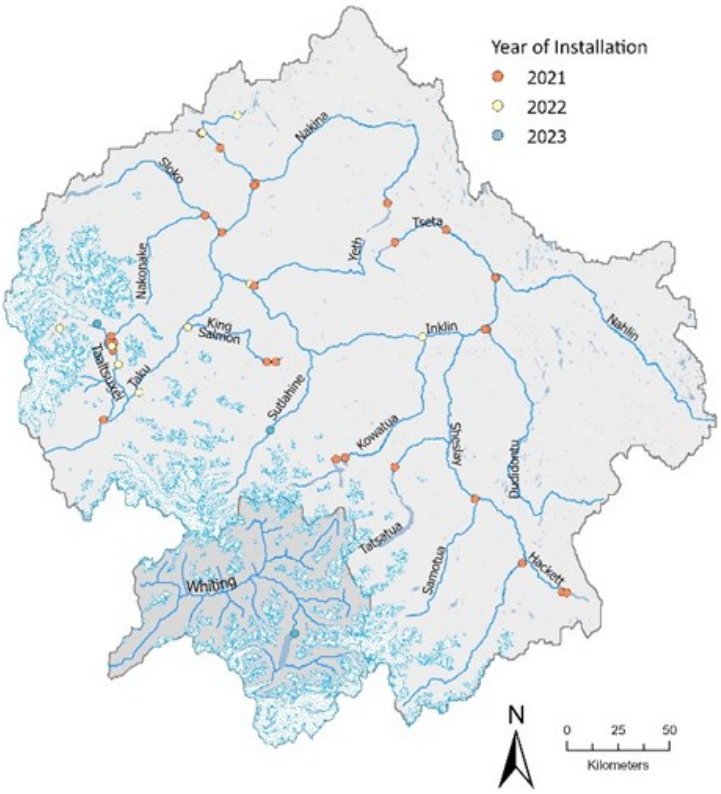
Water Temperatures of the Taku:

Background

One of the important ways that climate change is impacting rivers like the Taku is by warming water temperatures. Water temperature is critically important for sensitive fish such as salmon. If water temperatures are too hot (for example, greater than 20°C), adult and juvenile salmon may experience stress or even die if exposed for too long. If water temperatures are exceedingly cold (for example, less than 4°C), juvenile salmon growth may be hampered. The seasonal patterns of water temperatures also influence the timing of salmon runs, spawning, and egg emergence. Thus, salmon can be strongly influenced by water temperatures. However, the impacts of climate warming will be felt differently in different locations. The Taku Watershed is incredibly diverse, with regions draining wetlands, plateaus, steep canyons, icefields, and shallow lakes. These different habitats will respond differently to climate warming.



To understand which parts of the Taku may be particularly vulnerable to climate warming, we launched an extensive water temperature monitoring program in September 2021. Since then, we have collected over 580,000 hourly water temperature measurements from 41 unique sites (see map at right). This work—a component of the **Salmon Resiliency Project**—represents a collaboration among the Taku River Tlingit First Nation Fisheries Program (TRTFN), Simon Fraser University (SFU), University of Montana Flathead Lake Bio Station (FLBS), and University of Washington (UW). Funding for this project comes from a combination of funds from FLBS, SFU, TRT Fisheries, and UW.



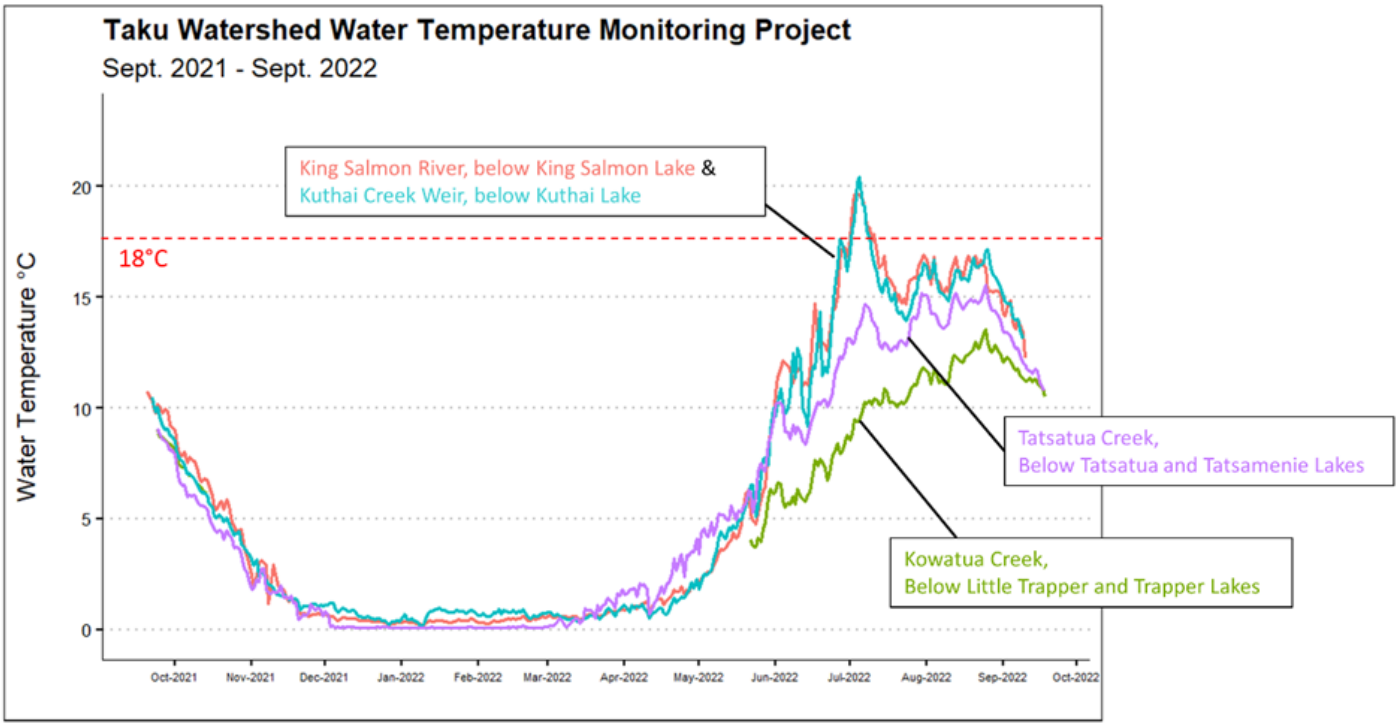
Salmon Resiliency team members at the outlet of Whiting Lake getting ready to install a new water temperature logger.

Sockeye salmon spawn in a clear, groundwater-fed channel of the Taaltsux éi Héen (Tulsequah River)

Highlights

- The Taku River watershed has an **enormous diversity of water temperatures** ranging from 0°C during the winter at many sites to 23°C at the Kuthai Lake Weir site in July 2023. Different habitats experience a variety of seasonal patterns of warming and cooling. Stewardship and protection of these diverse habitats will help provide salmon the space and time to adapt to and maintain the overall resilience of the system.

- **Headwater lakes** play a significant role in downstream water temperatures that are experienced by fish such as sockeye salmon. Streams below lakes that receive runoff from glaciers remain relatively cool year-round (for example, Tatsatua and Kowatua Creeks), while streams below lakes that do not receive glacier runoff tend to get very warm (for example, King Salmon River and Kuthai Creek). Some of these water temperatures reached levels that, depending on the sensitivity and run-timing of the salmon populations, could pose stress to salmon. These warm sites warrant further attention as they may be vulnerable to future climate warming or heat waves.



- Some watersheds **remain very cold** throughout the year. Their suitability for salmon is likely limited to some degree by excessively cold water, and some climate warming will likely increase salmon productivity. An example of a cold watershed is the Taaltsuxéi Héen (Tulsequah River), which is a fed by a proglacial lake that remains in direct contact with the Tulsequah Glacier. The clear, groundwater-fed channels in the Taaltsuxéi Héen floodplain provide somewhat warmer waters and are commonly used for rearing and spawning by salmon and Dolly Varden.

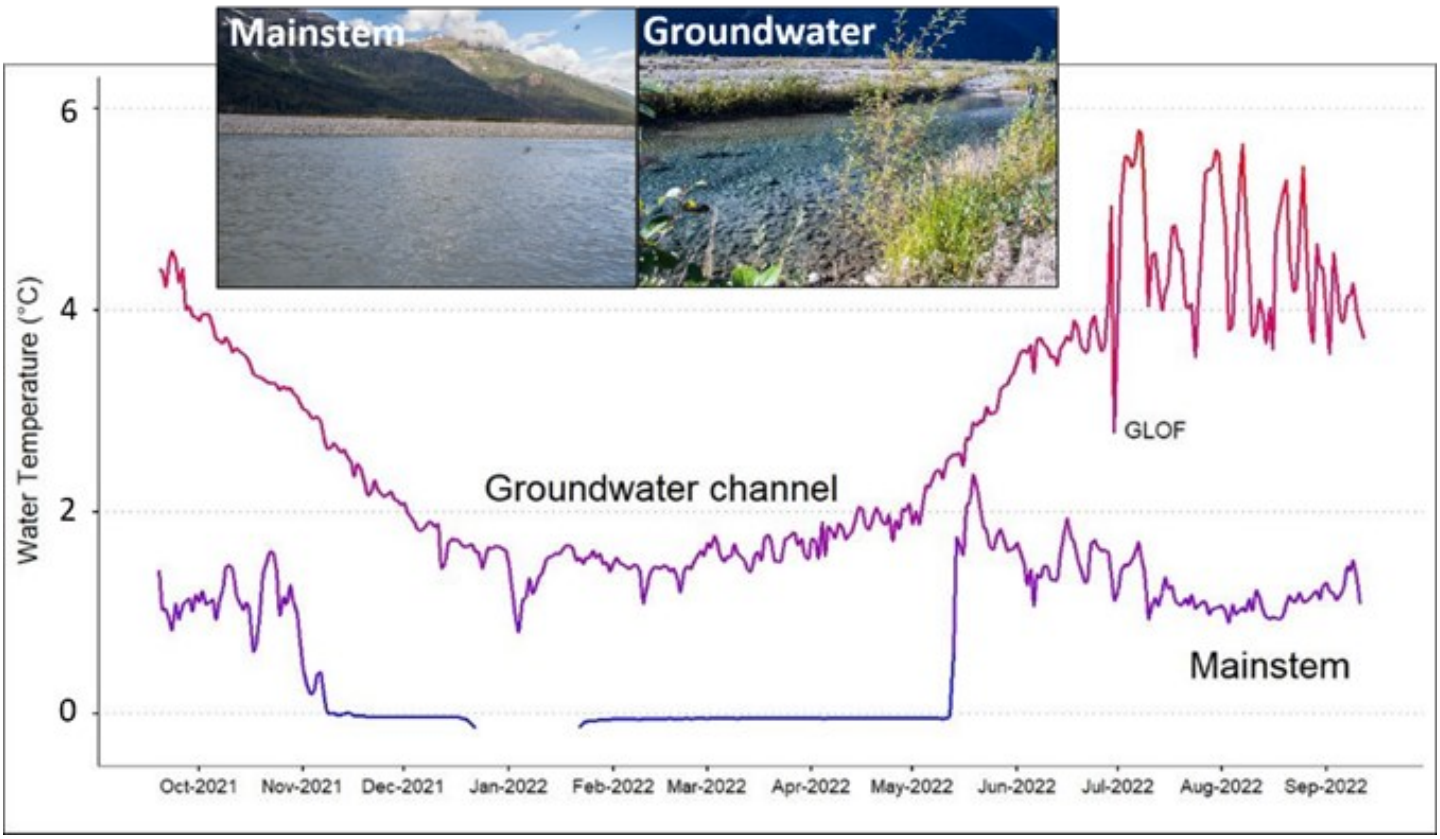
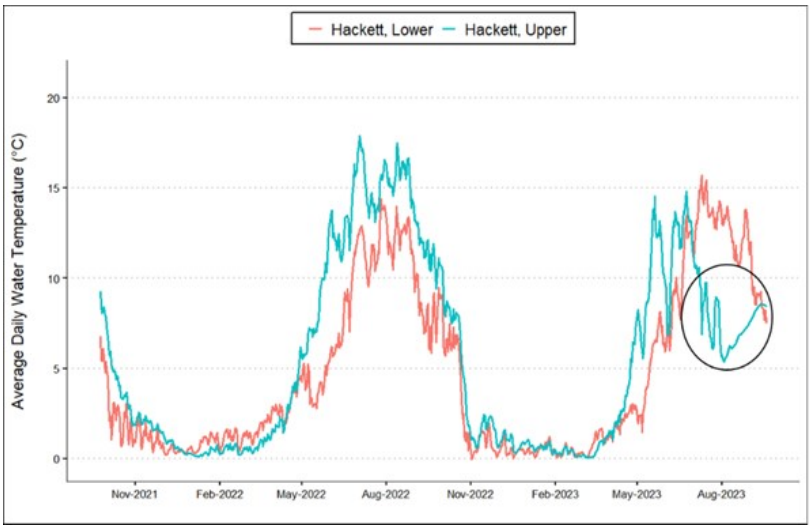
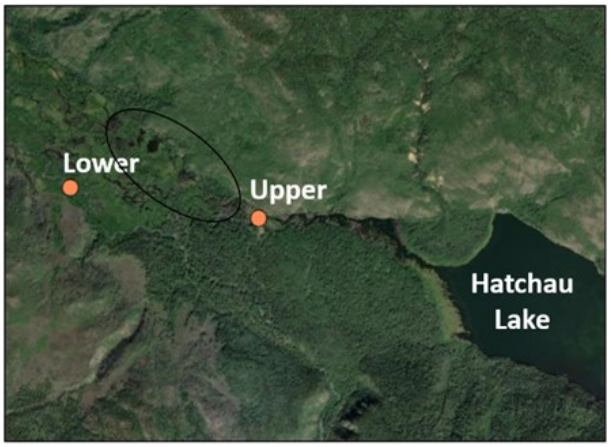


Photo (right) Dolly Varden from King Salmon Lake

- Wetland habitats punctuated by beaver ponds create **complex water temperature patterns** that are difficult to predict. For example, the apparent collapse of one or multiple beaver dams in the Hackett River watershed (black circle in map below) during summer 2023 drained an extensive area of wetlands and caused a significant drop in water temperature that was not observed in summer 2022. Although the lower and upper water temperature monitoring sites (see map) are only separated by about 2.5 river kilometers, the upper site experienced a major drop in water temperature (black circle on graph) that was not visible at the lower site.





Looking forward

- These data are informing an ongoing Taku River salmon climate vulnerability assessment led by Round River Conservation Studies.

- Temperature loggers, which have a battery life of approximately 5 years, will continue to be downloaded and redeployed every September with community members to understand how water temperature vary across years with different weather conditions (for example, high vs. low snowpack).

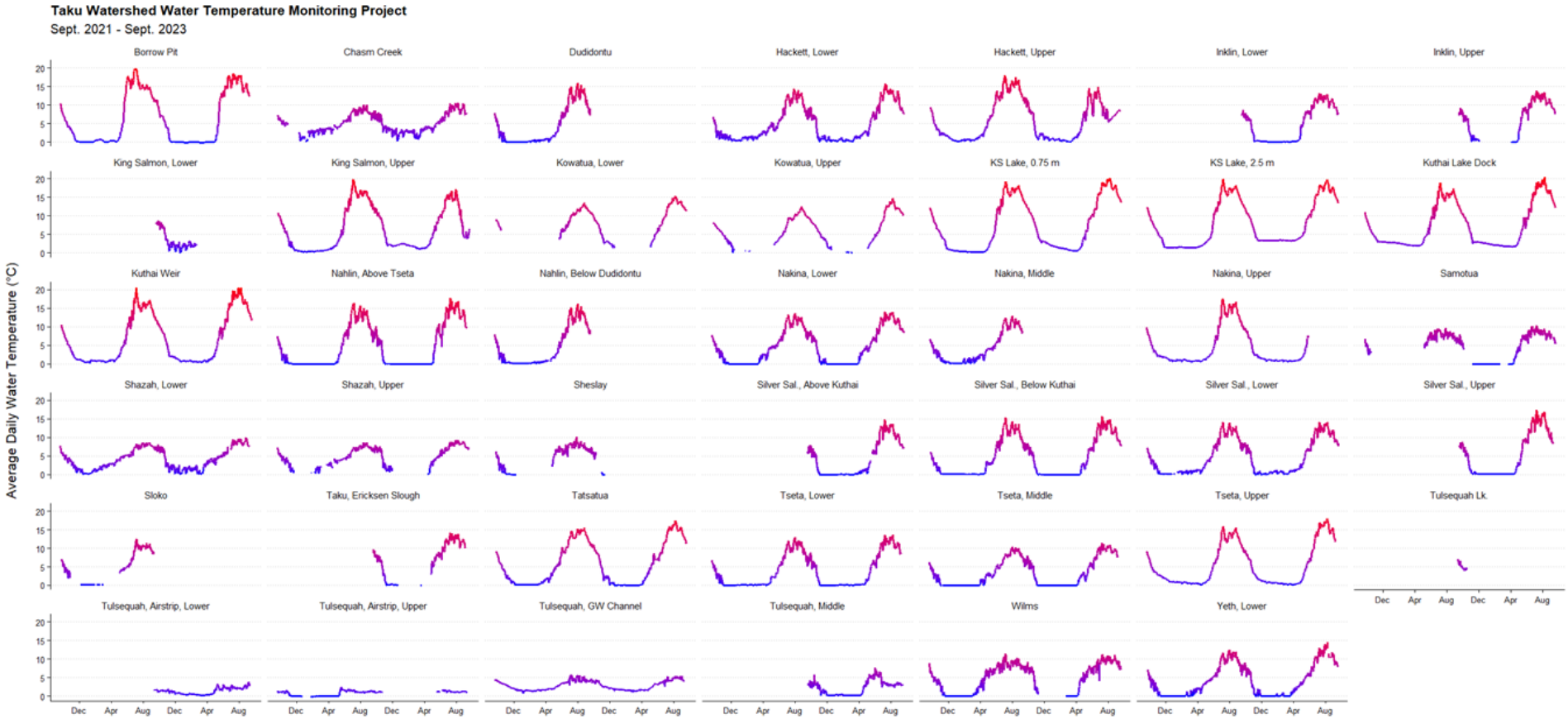
Data collection summary

- 42 out of 48 temperature loggers successfully downloaded and redeployed.
- 3 new temperature loggers were installed in 2023, including the Whiting and Sutlahine Rivers.

- The team is beginning to outline a scientific paper that will analyze all of the data collected to-date and thoroughly describe current water temperature patterns across the Taku watershed. We strive to continue providing plain language summaries and useful outreach products for TRT leadership, staff, and community members.

- All water temperature data collected through September 2023 are displayed on the next page.

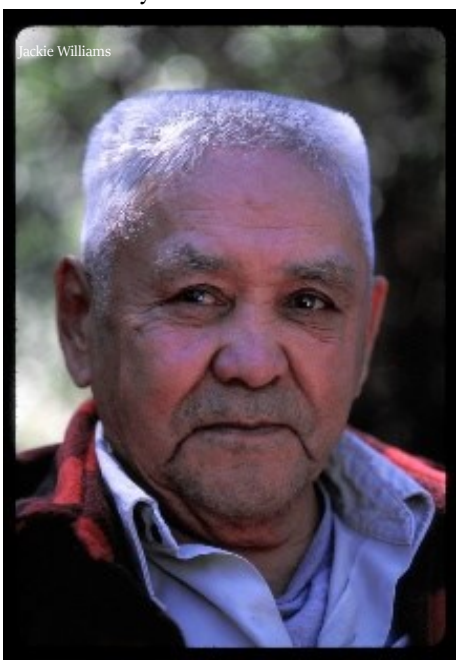
Seasonal patterns of daily average water temperatures from Sept 2021- Sept 2023. Site names are shown above the data. Warmer water temperatures are shown in red colours, cooler water temperatures are blue/purple. Missing data represents periods when loggers may have malfunctioned, been lost, or were scoured away from the stream channel.



Summary of new research from the Taaltsux éi Héen (Tulsequah

A new paper by TRT Fisheries and collaborators brings together Indigenous knowledge, satellite image analysis, and on-the-ground research to understand how the Taaltsuxéi Héen (Tulsequah River) is changing. Flowing into the lower Taku River 105 kilometers south of Atlin, the Taaltsuxéi Héen originates at the toe of the Tulsequah Glacier, which has been retreating at a rate of approximately 100 meters per year since the 1980s. This retreat uncovered a large, deep, and cold lake that has grown rapidly in size since the 2010s. The authors of this paper explored how the loss of glacier ice and growing lake have created changes to habitat for important species such as salmon.

The paper begins by summarizing historical scientific literature and knowledge from the late Taku River Tlingit elder, Jackie Williams, who lived much of his life along the banks of the Taaltsuxéi Héen . Among Jackie's many important observations, he noted that the Tulsequah Glacier retreated 8-10 kilometers since the 1930s. The ecosystem changed dramatically over Jackie's life. Taaltsuxéi Héen means "root garden" in Tlingit, likely referring to a plant species of edible vetch that is often found in rocky habitats. But, due to forces such as damming by beavers, glacier retreat, and changes in streamflow, Jackie believed that Flannigan's Slough, located where the Taaltsuxéi Héen and Taku River meet, transformed from a gravel flat where roots were traditionally harvested to a rich wetland habitat for moose, beavers, and muskrats.



Traditional knowledge information from Jackie Williams (1930-2018) is making an important contribution to Tulsequah research

The paper also describes measurements of the headwater lake, river, and river floodplain collected over the past several years. The headwater lake is over 120 meters deep, 3 kilometers long, and very cold—less than 1 degree Celsius. While this is likely too cold to currently be important habitat for sockeye salmon that use lakes to grow as juveniles, it is expected that the lake will eventually become important sockeye habitat as it warms and clears in response to the shrinking of the Tulsequah Glacier. Downstream from the lake, the authors used satellite images to determine that vegetation along the river increased 14% from 2003 to 2017. This is another sign that floods—which burst out once or twice a year from ice-dammed lakes created by the Tulsequah Glacier—are lessening in power and decreasing the movement of rocks on the floodplain, allowing soil to accumulate and vegetation to grow in greater abundance. Near the end of the paper, the authors note that the Taaltsuxéi Héen becomes warmer and clearer as distance from the glacier increases. Salmon and Dolly Varden appear to more commonly use these warmer areas, which include clear channels fed mostly by groundwater seeping out of rocks on the floodplain. The authors expect that the river will continue to warm and become increasingly better habitat for salmon over the rest of this century.

When asked to describe what a glacial river looks like, many people will use words like cold, muddy, and powerful. And this is true. This paper also demonstrates that the floodplain of the Taaltsuxéi Héen is changing quickly and is very diverse, including wetlands, clear and warm side channels, and dense vegetation. Since current (New Polaris) and historical (Tulsequah Chief) mining operations are present in the Taaltsuxéi Héen , it is important for land-use planning and management to carefully con-

Photo (right) Taaltsuxéi Héen (Tulsequah River)Valley.

Tulsequah Glacial Retreat Research

Climate change is rapidly altering the Taku Watershed, posing challenges but also local opportunities for salmon. One hotspot of change is the Taaltsux éi Héen (Tulsequah River) watershed, where glacier retreat is leading to rapid ecosystem evolution. Over the next 100 years, the retreat of the Tulsequah Glacier will likely change the amount and quality of river and lake habitat available for salmon. By studying and observing oncoming changes, this information can increase understanding and support TRTFN leadership in the proactive stewardship of the watershed and its salmon into the future. In the fall of 2022 and 2023, we began studying fish and their habitats across the Taaltsux éi Héen. Over the two years, we sampled a range of habitat types and categorized them as mainstem or off-channel. In total, we sampled 81 sites. At each location, we measured turbidity (NTU) and temperature (°C) and identified and measured the fork length of all fish caught. The Taaltsux éi Héen is a dynamic and complex river system that provides several fish species diverse habitats with varying temperatures and water clarity. As the distance from the glacier increased, we observed that the abundance and diversity of fish increased, water temperature increased, and turbidity decreased. Salmon species were primarily found in off-channel habitats compared to the mainstem. As these temperatures are in the cooler range for salmon species, our findings are promising for salmon in the future within the Taaltsux éi Héen. As climate change occurs in the Taaltsux éi Héen and temperatures become warmer, habitats may become increasingly suitable for salmon.

Kuthai Lake Access Issues

Sockeye salmon numbers returning to Kuthai Lake to spawn have been depressed since 2006 (see page 5). In response the TRT Fisheries Department initiated an investigation into the causes of the low returns in 2015. It was determined that access through the Silver Salmon Canyon was the problem. Since then the TRT Fisheries has been working in collaboration with DFO to address this issue. In the last several years we have been conducting rock work in the canyon to facilitate salmon passage and a working group has been established to deal with this issue. Monitoring at the canyon in 2023 found that sockeye were able to pass, so we are hopeful that we may have solved the problem.

Kuthai Lake is a very productive Lake. We are optimistic that once we have solved the access issue, salmon numbers will rebound. In the mean time we continue to monitor and if needed, do more work in the canyon.

Photo (right) Crew working in the Silver Salmon canyon.

Photo (left) shows the main obstruction on the Silver Salmon River prior to rock work. The red line indicates the area removed by the TRT crew. Photo on the right shows the same obstruction after rock work.

King Salmon Lake Access Improvement

Although sockeye salmon returns into King Salmon Lake have been good in recent years (see page 6), radio telemetry and field assessments in 2021 found that fish were being slowed down at a log jamb combined with a small waterfall (about 1.7 m high) located on the lower reaches of the King Salmon River.

In collaboration with DFO, the TRT Fisheries Department sent in a crew in October 2023 to remove materials from the obstruction to allow for fish passage.

With climate change we are seeing more variation in water flows (high water years and low water years) and this can result in challenges for fish access into spawning areas. The TRT Fisheries Department is responding to these challenges and are building monitoring plans and expertise to address them in the future as they arise.

Photo (left) This log jam was causing access challenges for salmon heading to King Salmon Lake

Photo (right) In October 2023 an opening was made in the log jam to allow for salmon passage.

Food Fishing at Inklin Camp

This summer, TRTFN Land Guardians hosted their second annual Salmon Resiliency Camp Héen Tlein. The purpose of this camp is to reconnect to our river and our land, as well as to deepen our relationship and understanding with our salmon relatives.

The Salmon Resiliency Project started in 2017, with a series of community interviews to collect traditional knowledge, observations, and concerns about salmon and their habitat. During those interviews, we heard participants voice significant concerns about losing the connection to the watershed, as well as our salmon culture. We worked with TRTFN partners and allies to secure funding and start our Salmon Resiliency Camp and ran our first full camp in 2022.

This camp is meant to bring our community back into the watershed. During this camp, we focus on setting nets, cleaning and processing salmon, smoking, and sometimes drying fish. Most importantly, we are building capacity and helping community members to build a relationship with one of our most sacred areas in the territory. We are also working to show the importance of the work that has been laid out before us as Taku River Tlingit descendants and uphold our responsibility as stewards of the watershed. There is no better classroom to teach our citizens about our land use plans and Indigenous Protected and Conserved Areas.

Highlights from this past summer include witnessing several community members' first trip to the watershed, sharing stories, catching, and processing salmon, engaging in creative art projects, and participating in long conversations over Tlingit visions and dreams for the territory.

The Inklin food fishing camp project will run again in 2024.

Some Background on How Salmon are Managed in the Taku

Salmon from the Taku River drainage are caught by US and Canadian fishers. Sockeye are the primary commercial species. The number of fish each country is allowed to catch is set out in the international Pacific Salmon Treaty. Right now Canada gets about 20% of Taku sockeye and Alaska gets 80%.

Commercial salmon fishing in the Taku is managed by determining how many salmon above the 'escapement' can be harvested. Escapement refers to the number of salmon that 'escape' to make it back to the spawning areas. The 'escapement goal' refers to the number of salmon that are needed to return to the spawning areas to ensure the salmon population is sustained.

Photo: Fish wheel

The amount of commercial fishing allowed is determined based on an estimate of how many salmon are returning to the river. One of the major ways biologists use to determine how many fish are returning is with the 'mark/recapture' method.

Mark/recapture:

Salmon are captured in a 'fish wheel' located just across the Canadian border in Alaska. The current of the river turns the wheel and salmon are captured in the baskets. Salmon are tagged, measured and sexed. The fish are then released back into the river to continue their upstream migration to the spawning areas. The number of tags recaptured in the commercial fishery and weirs is used to calculate the salmon run size.

In simple terms, the mark recapture method uses the proportion of tags collected relative to the number of tags put on salmon to determine the population of salmon. For example, let's say the fish wheel puts out 100 tags and the commercial fishery captures 200 fish total, 50 of which have tags. So this means the fishery has caught half the tags (100 tags put out, 50 recovered = 1/2). Therefore we estimate the fishery has captured half the fish in the river. Since the total number of fish caught by the commercial fishery was 200, we estimate that the total run size during that time was 400 fish (200 x 2 =400). This is a simplistic presentation, in reality things like drop-out rate (number of fish who die after being tagged) needs to be factored in. This estimate is done every week during the commercial fishery and is used to determine how much fishing can be done. The amount of fishing is regulated by the length of 'Openings'. An Opening is a period of time a fisher is allowed to fish. So a 2 day Opening means you can fish for 2 days.

This in-season adjustment to the catch (openings) is why we want to know every week from our camps how many tags have been recovered at the weirs.

In many regions sockeye salmon spawn only in lakes. However, in the Taku we have some sockeye that spawn in lakes and other populations that spawn in rivers (mainstem spawners). There are 4 main sockeye spawning lakes in the Taku drainage (Tatsamine, Little Trapper, Kuthai and King Salmon). All the 4 sockeye lakes have weirs. The purpose of these weirs is to:

- Collect precise information on the number of returning salmon
- Count the number of tags in the returning population of salmon (part of the mark/recapture work)
- Sample some of the returning salmon for sex and length
- Collect scales for aging the fish sampled
- Use this information to get a picture of (reconstruct) the run characteristics (ages, sex ratio, numbers)

Fish scales are collected for aging the salmon. Salmon grow at different rates during the year (slower in winter) and this shows up on their scales as rings (Annuli). You can count the annuli and age the fish much like you can age trees by counting their rings. The reason we want to know the age of fish is to determine the age composition of the run because this helps us predict what future run sizes will be.

Salmon return to spawn at different ages, but the proportion of the run that returns in any year stays about the same. Therefore if you know what the age composition of the run is in any year it helps you predict what future run sizes will be.

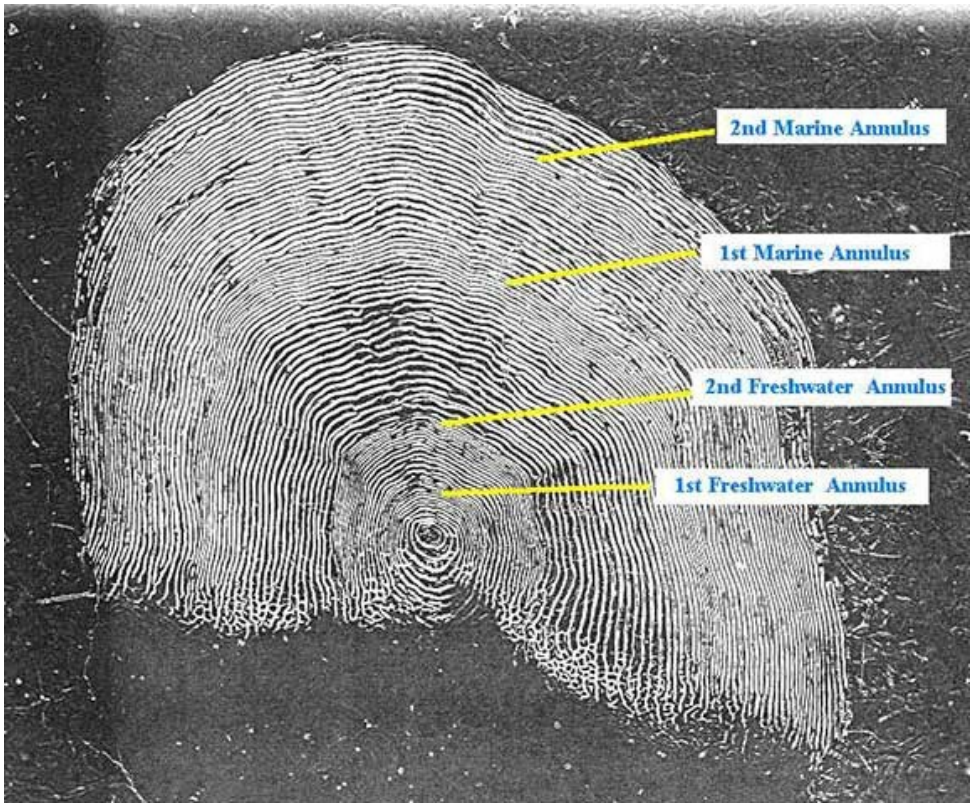


Photo (right) Example showing annuli of a fish scale

Summary of 2023 Taku River Salmon Run:

The following tables summarize last season's 2023 Taku River salmon run :

2023 Taku salmon escapement* :

	Chinook	Sockeye	Coho
Escapement estimate	14,755	103,296	100,409
Management target	25,500	58,000	70,000

***** The escapement is the number of fish that 'escape' to make it back to the spawning grounds

Taku River Salmon Run Forecasts 2024

Below are the forecasts for the 2024 Taku River salmon terminal runs.

Looks like a good year for sockeye in 2024!

Species	**Preseason terminal run Forecast**	**Average run size (10 year)**	**Escapement Goal (range)**
Chinook	17,300	15,000	19,000 - 36,000
Sockeye (wild)	200,000	150,000	40,000 - 75,000
Sockeye (enhanced) |	7,000	10,000	n/a
Coho	123,000	98,000	50,000 - 98,000

Gunalchéesh !

Thanks for taking the time to read up on what the TRT Fisheries Department is up to these days. If you have any questions, concerns or information you would like to see presented in our next newsletter please don't hesitate to contact us:

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Taku River Tlingit Fisheries