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Program Changes and Uncertainties	1	The Taku River Tlingit (TRT) Fisheries Department is doing its best to prepare for our 2020 field season. Due to the pandemic and resulting Alaskan border closure, there has been some program changes and ongoing uncertainty. We wanted to update everyone on the current status of the Fisheries Program and provide information on Taku salmon run projections. Please note that things are changing daily and uncertainties remain.
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2020 AFS Stock Assessment projects	4	Due to the closure of the Canadian/US border and the need for physical distancing, the Canadian portion of the Taku Smolt project has been cancelled for 2020. This project would have started on April 14th and employed 2 TRT technicians for a total of about 70 person days.
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## ***TRT Fisheries Department Program Summary for 2020:***

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. For 2020 we have been successful in expanding the scope of projects funded under the AFS program and have been successful at obtaining funding for several proposal-driven projects.

### ***Aboriginal Fisheries Strategy (AFS) Funding***

The following TRT Fisheries projects are associated with the AFS program:

- **AFS Core Funding :** This funding is the primary funding to support the core TRTFN Fisheries program including: Food Fish Monitor, Kuthai Lake weir, King Salmon Lake weir, and Nakina River weir projects (see page 4 for more details).
- **Tatsatua sampling project:** one TRT Fisheries technician to be involved in Chinook salmon sampling on the Tatsatua River downstream of Tatsatua Lake this August.
- **Taku Coho Test Fishery:** two TRT Fisheries technicians to be involved in the Coho salmon test fishery (dependent on escapement numbers). This work will occur in October.
- **Sloko Chinook Genetic Sampling:** Two TRT Fisheries technicians to support DFO in collecting genetic samples from chinook salmon on the Sloko River
- **Trapper Lake Assessment:** one TRT Fisheries technician to support DFO in assessing Trapper lake as a site for stock enhancement
- **Headwaters Coho Sampling:** one TRT Fisheries technician to support DFO in collecting genetic samples from Coho in upper Taku drainages
- **Taku mainstem investigations:** one TRT Fisheries technician to support DFO in assessing Taku main stem as a site for stock enhancement
- **Nahlin/Didudontu Chinook:** one TRT Fisheries technician to support DFO in collecting genetic samples from chinook salmon in upper Taku drainages



Photo: Logan O'Shea assisting with Coho genetic sampling 2019

## ***Projects funded under the Northern Endowment Fund for 2020:***

The TRT Fisheries Department successfully submitted proposals for two projects to be funded under the Northern Endowment Fund through the Pacific Salmon Commission:

**Kuthai Lake access improvement** will fund continued work on addressing sockeye access issues into Kuthai Lake. The purpose of this project is to address the decline of sockeye salmon in Kuthai Lake since 2006. Field assessments revealed that the decline in Kuthai sockeye is the result of access problems in the lower Silver Salmon River canyon: in years of too low water, salmon cannot make it upstream through the canyon to the lake. Another challenge for salmon trying to access Kuthai lake was the number of beaver dams in the Silver Salmon River.

Since the fall of 2018, a TRTFN Fisheries crew has been working in the canyon to improve passage for sockeye to Kuthai Lake. We have been taking a cautious approach (we don't want to fix a low-water problem only to create a high-water problem!).



Initial plans to undertake more rock work in the Silver Salmon Canyon this spring may need to be postponed until low water in the fall due to issues related to the pandemic. Meanwhile, the local trapper has been engaged to harvest beaver in the wetlands below Kuthai - as their dams had been impeding salmon accessing Kuthai Lake.

**King Salmon Creek passage improvement** will provide funds to address a partial restriction to salmon access on King Salmon Creek. Initial plans to undertake work this spring may need to be postponed until low water in the fall due to issues related to the pandemic.



Photos: (above) Silver Salmon Canyon. (Right) King Salmon Creek obstruction

## ***2020 AFS Stock Assessment Projects***

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. The Fisheries Department now uses underwater motion-activated video equipment on all our fish weirs. The advantage of using this equipment is that : 1.) it gives us a permanent record of fish moving through the weir that can be double-checked 2.) it allows the fish to pass through the weir at any time (fish are never being held up, and don't need to be handled) and 3.) reduces bear problems at weir as fish are not held in pens. The following are projects that the TRT has run for many years and intends to do so again this season.

**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 Fisheries Technicians



**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 Fisheries Technicians

**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 starts on July 30th and ends August 26th and employs 2 Fisheries personnel.



## ***TRT Salmon Enhancement Workshop***

On December 17-18, 2019 the TRTFN Fisheries Department hosted a workshop to inform TRT citizens and seek guidance on sockeye salmon stock enhancement (hatchery planting of salmon fry) in TRT traditional territory.. There were approximately 35 participants on day 1 and approximately 17 on day 2. The agenda for the two-day workshop included a series of technical presentations on day 1 from Mark Connor (TRT), Richard Erhardt (TRT Contractor), Sean Collins (Department of Fisheries and Oceans [DFO]), Steve Gotch (DFO), and Brian Mercer (Independent Contractor). Day 2 was exclusively for TRT citizens and support staff in order to strategize and provide feedback. The meeting was facilitated by Dennis Zimmermann at Tutan Hit (Health and Social Building at 5 Mile).



After presenting the different types of possible enhancement (or current projects), the TRT participants distinctly related:

1. A high level of support for access improvement projects (such as Kuthai Lake and King Salmon Creek);
2. A comfort level of endorsing enhancement which is conducted for stock restoration purposes;
3. A consistent discomfort with enhancement which is conducted specifically for production purposes. In particular, the utilization of a hatchery, without significant conservation objectives or results. They also clearly had issues with the “pressure” of having Taku sockeye enhancement tied directly to the bi-lateral Pacific Salmon Treaty (PST) harvest sharing agreement.

A letter outlining the above TRT concerns has been sent to DFO and follow-up discussions are underway.

Photos (above) chinook fry. (Right) coho fry



## *Salmon Resiliency and Tulsequah Research*

The Taku River Tlingit First Nation Lands Department in collaboration with the University of Montana (UM) has initiated (2019) an aquatic health monitoring program in the Tulsequah Valley.

The purpose of this program is to generate the data necessary to evaluate the effectiveness of any future remediation at the Tulsequah Chief mine site. The success of mine remediation work may depend on improving our understanding of the dynamic nature of Tulsequah River valley in response to a rapidly changing climate.



Therefore, any evaluation of conditions at the mine site is best

done with an understanding of the overarching changes to habitats occurring in the valley.

Through the TRTFN *Salmon Resiliency Project*, (funded through the Taku/Atlin Conservancy) it has been identified that developing a better understanding of how ecosystems and salmon may respond to climate change is an important component of ensuring long term salmon resiliency in TRTFN Traditional Territory.

The TRTFN is currently working with associates of the UM and Simon Fraser University (SFU) to build on the aquatic monitoring currently underway and to explore potential for long term research in the Tulsequah drainage. Long term research and monitoring objectives may include:

- Monitoring the effectiveness of remediation at the Tulsequah Mine site. This work could help trigger and inform management response if water quality objectives are not being met
- Using predictions of climate change and glacier retreat, to examine the trajectory of salmon habitat quality and quantity in the region. This work could help inform forward-looking salmon fisheries management and habitat conservation.

Through the initiatives outlined above, the TRTFN technical staff are intending to position the TRTFN to take the lead in monitoring remediation effectiveness at the Tulsequah Chief mine site.

A site visit to the mine site with TRTFN, SFU and UM associates is planned for summer 2020, to further discuss research options, priorities and future collaboration.

## ***Continuing Concerns with Chinook Stocks in 2020***

It has been over a decade since SE Alaska has seen decent chinook salmon production.

Studies have shown that the recent downturn in Chinook production appears to be largely due to poor marine survival. Chinook are dying at higher than normal rates between the time juveniles migrate to the ocean, and before the resulting adults return to the river. In recent years marine survival for Chinook has been less than half of historical levels. The specific reasons for this reduced survival are unclear, but may include multiple factors.



As shown on page 8 of this newsletter, the Chinook escapement (the number of salmon that make it to their spawning areas) estimate from 2019 did not meet the escapement goal. The Taku Chinook forecasted run size for 2020 remains much lower than average. As a result there will once again be no directed commercial fisheries for Canada or the U.S. during the 2020 season. There will also be no retention of any Chinook in the sport fishery. The issues with Chinook are not just in the Taku and are a larger regional issue.

### ***Update on the Pacific Salmon Commission (PSC):***

The bilateral (CAN and US) Transboundary Panel of the PSC had two meeting sessions in January and February of 2020. In attendance was our Panel representative, John D. Ward (TRTFN Spokesperson) and Alternate Panel member Richard Erhardt (TRT Fisheries Contract Biologist.)

Negotiations for another 10 year Chapter term (which started in 2019) were previously completed, so it was largely business as usual. Post-season results of the salmon fisheries, escapements and enhancement program were reviewed. Subsequently, pre-season outlooks, management strategies and enhancement plans were discussed.

The Transboundary Panel also deliberated extensively on technical results of the Taku sockeye escapement goal review. Despite getting close on terms, they were unable to reach a bilateral recommendation, so the issue was referred to the PSC Commissioners for final resolution.

Also to note, Mark Connor (TRT Fisheries Coordinator) attended both meeting sessions (fall and spring) of the PSC Transboundary Technical Committee and Enhancement Subcommittee, as an official member.

## ***Summary of 2019 Taku River Salmon Run:***

The following tables summarize last season's 2019 Taku River salmon run :

2019 Taku salmon escapement\* :

	Chinook (large)	Sockeye	Coho
2019	11,558	76,722	82,865

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

2019 Taku River Canadian commercial catch:

	Chinook (large)	Sockeye	Coho
2019	0	21,376	12,145
Average (2009-18)	1,857	23,254	9,530

## ***Taku River Salmon Run Outlook 2020***

Here are the forecasts for the 2020 Taku River salmon runs:

Species	Run Forecast	Average run size (over last 10 years –large)	Escapement Goal (range)
Chinook	12,400	19,400	19,000– 36,000
Sockeye	139,000	147,900	Under review
Coho	122,000	111,000	50,000-90,000

## **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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***Stay healthy , follow the protocols and keep positive, these challenges will pass!***