Project Updates:

Water Quality and Quantity Monitoring Program (WQQ)

Endako Weir

Oct 21, 2021 | UFFCA Technical Meeting

Upper Fraser Fisheries Conservation Alliance

Water Quality and Quantity Monitoring Program

First Nations leadership in water governance and management

Upper Fraser First Nations asked UFFCA to expand our focus and build expertise on water and habitat.

WQQ program launched in 2015:

- First Nations leading on fieldwork, data, water governance and mgmt
- Information supports critical decision making, responding to climate change and other impacts, and asserting First Nations standards for watershed health (already being directly applied)
- Data sovereignty (ownership and control of data)

UFFCA's WQQ program is now one of the largest Indigenous-led water monitoring programs in BC!

Thanks to our high-capacity team and partner organizations!

New Developments / WQQ Focus for 2021

<u>New funding in 2021</u>: Healthy Watersheds Initiative:

- Secured funding for one year to continue/expand the program in 2021

Spring and summer focus: Technical upgrades and upkeep

- New stations installed
- Station repairs, upgrades, and replacement for priority stations
- NEW station type – “Real Time” stations (data sent by satellite daily; remote access to data; better quality data)

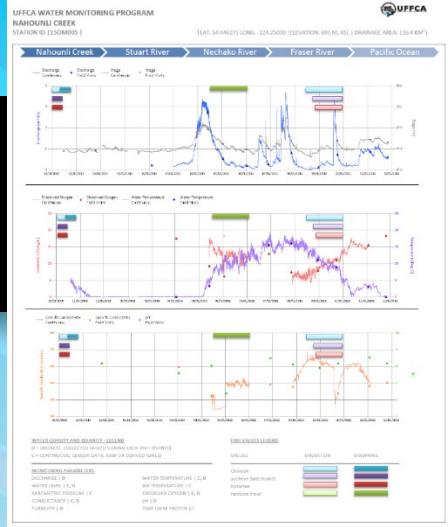
Fall and winter focus: Community engagement, data management

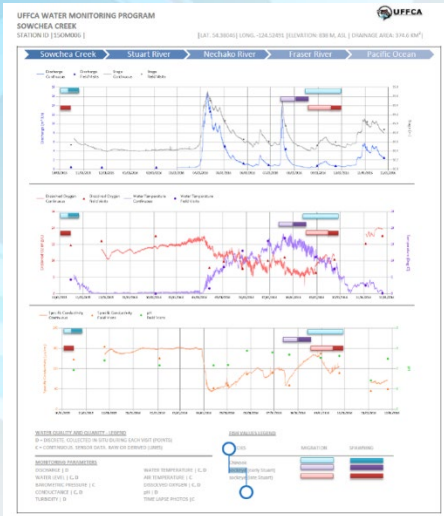
- Site visits, information sharing, talk to communities about data needs
- Focus on new data management software, and training

New Developments / WQQ Focus for 2021

<u>New in 2021</u>: *Aquarius Analytics* data management software:

- UFFCA has collected years of high-quality WQQ data, but data management (storage, analysis, sharing, etc.) is very challenging — a key limiting factor!
- UFFCA won a *Ripple Effect* grant—lifetime subscription (otherwise cost prohibitive, and rare for non-govt groups)
- Platform prevents data loss, and allows us to store, analyze, and present data within a single platform (otherwise requires several, and possibly external support)
- Direct data access—fills a critical gap to make data more accessible to communities to inform their water planning and decision making
- We'll focus on data management/sharing processes in the fall and winter





WQQ Work in 2021

Fieldwork:

- Data collection approx. every 6 weeks
- Most stations repaired and/or upgraded
- 3 stations upgraded to “Real Time” (data sent by satellite daily; better data/improved access); plans to add 2 more before December
- Field training throughout the field season

Data:

- Working on the backlog of data from 2019 and 2020
- Rebecca is training on the new Aquarius data software – steep learning curve!

Upcoming:

- Plan to add one RADAR station before December (new technology for us)

We’ve learned Upper Fraser streams are tricky to monitor, and we’re finding creative solutions

WQQ Stations and Updates (see map on next slide)

Completed in 2021:

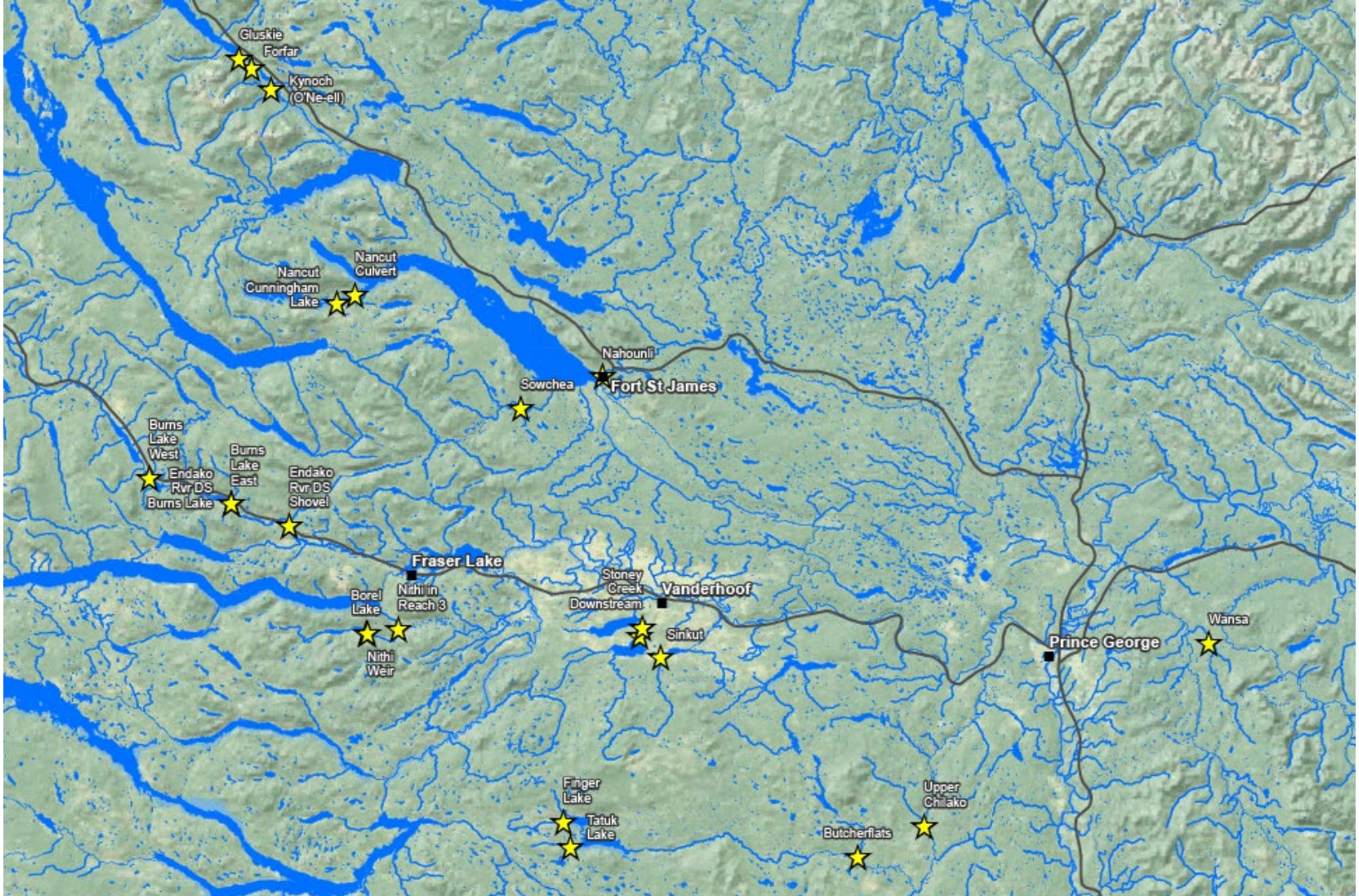
- NEW station: Endako River below Shovel Creek
- Upgraded: Endako River below lake
- Upgraded: Nithi River below lake
- Upgraded: Burns Lake East

Planned in 2021:

- Planned upgrade: Upper Chilako River (RADAR sensor/turbidity sensor station)
- Planned NEW station: Decker Lake
- Planned NEW station: Bowron River

Other Existing Stations:

- Wansa Creek
- Sinkut River
- Butcherflats Creek
- Nahounli Creek
- Sowchea Creek
- Forfar Creek
- Gluskie Creek
- Kynoch Creek (O'Ne-ell)
- Nancut Creek at Road
- Nancut Creek at Cunningham Lake
- Stoney Creek
- Finger Lake
- Tatuk Lake
- Burns Lake West


Gluskie
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Kynoch
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Nancut
Culvert
Nancut
Cunningham
Lake
Nahounli
Fort St James
Sowchea
Burns
Lake
West
Endako
Rvr DS
Burns Lake
Burns
Lake
East
Endako
Rvr DS
Shovel
Fraser Lake
Nithi in
Reach 3
Borel
Lake
Nithi
Weir
Stoney
Creek
Downstream
Vanderhoof
Sinkut
Wansa
Prince George
Finger
Lake
Tatuk
Lake
Upper
Chilako
Butcherflats

Endako Weir – Project Update

Issue:

- Erratic/low water levels in the Endako River during the summer when fish are spawning (due to climate change and other impacts)
- Results in poor spawning conditions in critical fish habitat (for kokanee and an endangered sub-population of Chinook)

Objective:

Build a weir to improve/stabilize flows in the Endako River, improving spawning habitat

- The weir was initially proposed 20 years ago, but didn't move forward for several reasons (political issues, complex design, etc.)
- Renewed focus with HWI funding

Lead First Nations partners:

Ts'il Kaz Koh (Burns Lake Band) and Stellat'en First Nation

Endako Weir – Work to Date

For permitting process:

- Hydrological study—examining how the water level in Burns Lake will change
- Review of groundwater interface with municipal wastewater
- Water monitoring stations:
  - Upgraded 2 existing surface water monitoring stations on the Endako (WQQ network)
  - Installed a new surface water monitoring station on the Endako (WQQ network)
  - Installed 3 new monitoring stations for groundwater (not WQQ)

Extensive engagement with:

- Ts’il Kaz Koh (Burns Lake Band)
- Stakeholders; residents of Burns Lake (public engagement process)

Endako Weir – Revised Timeline

The team hoped to complete the permitting process and begin construction in July 2021, with a goal of completing construction October.

However, studies completed in 2021 and the engagement process have raised new questions to be addressed prior to permit authorization and construction.

To be completed prior to authorization:

In-depth erosion study / Lakeshore survey—provides baseline condition of lakeshore before weir construction; addresses lake and water quality concerns

UFFCA will work with FNLRORD—study will involve local residents, and provide excellent data for Endako weir project and future projects to improve lakeshore management

We're optimistic the permit will be approved and weir construction will be <u>completed in 2022</u>

Photo: Winterized Level logger

THANK YOU! Questions?