



**UFFCA**  
upper fraser fisheries conservation alliance

**General Meeting**  
**December 13<sup>th</sup>, 2018**  
**9:00 am - 4:00 pm**  
**Uda Dune Baiyoh - House of Ancestors**  
**355 Vancouver St.**  
**Prince George**  
Lunch & snacks provided

**OBJECTIVE: Facilitate Community Engagement  
Fisheries and Environment Projects update for the Upper Fraser**

**Tier 2**

1. Call to Order
2. Welcome and Introductions
3. Approval of Agenda
4. Review of Action Items
5. Overview of Upper Fraser Salmon Stocks and Management – Pete Nicklin
6. Nechako Chinook and Sockeye Report – Dave Levy
7. Post Season – Robin McCullough
8. DFO Restoration Program – Sean Bennett (via phone)
9. Fisheries Habitat Restoration Initiative – Rebecca Broadbent
10. Wildfire and Water Interactions: John Rex (UBC, FLNRO) – Michelle Tung
11. Upper Fraser Zebra Mussel Project – Shamus Curtis

**Tier 1**

1. SCC Update – Marcel Shepard
2. PST Chapter 4 Negotiations – Gordon Sterritt, Marcel Shepert
3. FSMC – Darren Haskell, Thomas Alexis
4. COSEWIC Assessment – All
5. Forum Preparation – All



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In attendance :

Marcel Shepert	UFFCA
Bernice Cremo	Nazko FN
Frank Boucher	Lhtako
Kent Gerow	BLB
Dave Levy	UFCP
Andrew Meshue	NSTC
Pete Nicklin	UFFCA
Pete Erickson	Nak'azdli Whut'en
Keith West	Takla FN
Michelle Tung	UFFCA
Erwin Tom	WFN
Thomas Alexis	UFFCA/TI'azt'en
Jonathan Hand	Esketemc
Carl Frederick	Lheidli T'enneh
Shamus Curtis	UFFCA
Robin McCullough	DFO
Rebecca Broadbent	Nadleh Whut'en
Ashley Raphael	Saik'uz FN
Melanie Anthony	DFO
Guy Scharf	DFO
Randy Billyboy	TNG
Dean Joseph	Yekooche FN
Gord Sterritt	UFFCA



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Tier 2 Agenda: 9am – 2pm

1. Call to Order

Called to order at 9:30am.

2. Welcome and Introductions

Welcome – Carl Fredrick.

3. Approval of Agenda

Number 10 item moved later; agenda approved.

4. Action Item Review

Complete

5. Overview of Upper Fraser Salmon Stocks, Management and Biology – Pete N.

Upcoming meetings and a lot of information coming, will provide broad overview of general information and the end of the presentation will be focused on planning. Robin to cover post season and set up for Tier 1.

Presentation overview of salmon species and individual stocks including management fundamentals. 2004 maps that show regional distribution of species and age at return; sockeye 4th and 5th means they come bank 4 & 5 years; Chinook 5th year, Coho 3rd year, pink return odd years 2 years, steelhead 6th year.  
Action – Pete to pdf presentation for distribution.

Sockeye – support for Chilko/Taseko; Early Stuart (CU) COSEWIC endangered; Early Summers (CUs) Bowron – Endangered, Nadina – Not at Risk, Taseko – Endangered; Summers (CUs) Late Stuart – Endangered. All CU's that are Red or Red/Amber are classified Endangered (figure shown); Endangered CU's are part of aggregate management.

Comment - Scientific report; below Fraser Lake used to be a late and early Nadina, but calls them extradited.

Chinook - DFO management of Spring/Summer 5-2 major aggregate is complex; 3 key groups: Upper Fraser Springs - CU & DU Endangered, Middle Fraser Springs - CU & DU – Threatened, Middle Fraser Summer - CU & DU – Threatened; Upper Fraser – Red, Middle Fraser Springs – Red, Middle Fraser Summers – Amber; WSP Assessment (2015) - Amber (low productivity regime); Low productivity and ER, that is why it is considered amber - and is very low and hasn't been stable for the last 20 years; Spring/Summer 52 conservation concern; data deficiencies in escapement and overharvest outside of UFFCA.



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Pink Salmon return odd years (2019); adult escapement enumeration not conducted, and in-season run size estimates generated through PSC. Juvenile assessment/estimates generated in Lower Fraser for forecast. Distribution in upper Fraser observed at least to Quesnel River; Quesnel area this year; Bowron? Nechako – yes; No WSP status due to data deficiencies - make recommendation to DFO to increase adult enumeration.

Steelhead RPA/SAR complete - Science completed and waiting for List/Do Not List under SARA: Consultation closed Dec 2; data deficiencies and extreme conservation concern.

Interior Fraser Coho - 3 - 5% Canadian ER; allocation priority; data deficiencies; low productivity regime.

Key points for UFFCA: Focus on Sockeye & Chinook; food security, it is a disaster; need catch monitoring info specific to Upper Fraser; need to develop escapement goals by stock; increase understanding of Management Adjustment data and information and en route mortality; development of recovery plans to address Endangered CU's; Upper Fraser Indigenous Groups to provide feedback on Harvest needs/conservation concerns. For Chinook need exploitation/mortality rates for marine area for Spring & summer 5-2's, decreased harvest outside Upper Fraser area and increased monitoring in Marine area; address data deficiencies; elevation of 25 - 35% reduction for South Coast Chinook.

Q – What is the status and changes of where the leverage points of Upper Fraser Indigenous people to synthesize to bring changes? - here is an opportunity to make changes.

A – There are opportunities for change, hard with existing tools. 4 years ago pushing for conservation but didn't work. Chinook continuing to decrease. Only thing that makes a difference is to communicate, “our needs aren't being met, there is infringement on our harvest”. This is unfortunately what it would take.

Q - Tier 1: How can we fit into the funding dynamic?

A- Joint Executive Meeting – raised issue of endangered Chinook; need a number of bilateral meetings. Warned that Upper Fraser Chinook being caught and try to scale back on fisheries. But blamed it on the habitat; have to focus on the stocks because they are demising.

Q – Instead of making submissions, is there any way to accommodate our concerns or a shift in the process without going to court?

Q – Need to express to leadership, who should make an announcement. we haven't been able to make changes, but it has not been fully coordinated with the Upper, Middle, and Lower Chiefs. The AAROM bodies have been working with the chiefs.

Comment – The amount of effort - focus is going to be fish, but process is broken. Worry about 1972 to now, have lost a generation who doesn't know how to fish. Concern of the continued participation on a broken system where the government doesn't want to change.

Comment – Bring Chiefs, all Bands to come together, UFFCA would support but do not have the resources.

Comment – Recommendation to the UFFCA Strat Plan to include the Chief Leadership.

## 6. Nechako Chinook Report – Dave Levy

UFFCA Chinook and Sockeye Salmon Conservation in the Netka Koh (Nechako) River in Northern BC - September 2018. The UFFCA \_NFCP Salmon Conservation Project – Report: [www.nfcp.org](http://www.nfcp.org)



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UFFCA conservation needs to be the focus. Combine interested in Chinook Salmon and work together.

The NFCP focuses on Nechako Chinook and sockeye conservation; Wild Salmon Policy 2017 classified Early and Late Stuart endangered. Need a plan to take it to the next step and focus on conservation.

UFFCA-NFCP Report Recommendations included recovery planning process for Early and Late Stuart sockeye, feasibility evaluation for a Nechako Chinook conservation hatchery and CWT tagging, and improved marine fishery monitoring.

Assessments include: Cohen Commission (2009) multi-year review, WSP (2012 & 2017), COSEWIC (2017) sockeye; All show declining numbers.

Fraser sockeye productivity decreasing; Focus on Early & Late Stuart that remain amber and red (no improvement). Early Stuart returns per spawner declining; Causes for declines in Early and Late Stuart is no “smoking gun” but include cumulative effects, poor ocean productivity, and migration stressors (long) and enroute loss. Doesn’t appear to be factor of lake productivity. Also, minimal management response with 60% mortality of the stocks including maternal effects of spawning health on progeny.

Comment – Dave did a report suggesting feed fry to increase survival of Late Stuart. More fry to increase survival; lake fertilization would make the fry bigger.

Q – Did we get weight results, looked like they were in good shape?

Comment - Sockeye migration stressor when it gets over 20 degrees, it becomes lethal. Every year above the 20 degrees. Climate change also driver.

Nechako Sockeye: Ample evidence of poor status; WSP guidance for rebuilding for CU’s in red zone; COSEWIC Endangered Status; SARA List/Do Not List process. Look to 2016 UFFCA workshop for recommendations

Comment – Need to develop recovery plan.

Chinook: Mid Fraser Summer 52 Chinook have insufficient data. There was a COSEWIC Assessment of Chinook Salmon in Canada Dec 3, 2018; if listed under SARA it will be illegal to harm them.

Southern BC Chinook declining. Was an Expert Panel report; harvest rate and freshwater taken off table. Synchronous decline implies production bottleneck in shared habitat - marine habitat conditions; insufficient information on hatcheries and disease. DFO response a commitment to develop Integrated Strat Plan for BC Chinook; collaborative, bi-lateral DFO - FN process with a technical working group; TOR completed 2013.

Nechako River Chinook escapement trends show doing reasonably well but escapement decrease. UFFCA-NFCP report recommendations include improvement of marine based monitoring of Upper Fraser Chinook.

Comment – CSTC has been approved for funding.

Response – Need to have discussions with DFO.

Q – Can we use the dam?



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A – To moderate the temperatures; target 20 degrees and the duration of excursions has been below; we try to take cold water to cool the water down. If you take a smaller amount of water, it heats up faster.

Comment – In terms of a comment made, 2017 report competed 2018, intention was to do the work. It was met with mixed reaction. They want us to do a feasibility report and to build a recovery plan. Chinook application for 50,000 fish - it was approved for 10,000 eggs to raise to eye stage; will move ahead.

Comment – Feasibility and strategic enhancement; hatchery needed.

Comment – Recommendation #2 gets some back push from DFO; numbers show Nechako is different; this is why we came up with this recommendation. It attracted media. It fills data gaps with tags and conservation intervention. In discussions with DFO, you can say Nechako is unique and you need Chilko. DFO reviewed this report and didn't have any comments.

Comment – Encouraging that Early Stuarts went back in river, hasn't been the same, caused by the fires.

Comment – We indicated DFO comprehensive data and Aboriginal review and to invest in Aboriginal first - hope they take recommendation seriously. The province is getting in to salmon and providing funding.

Q – Do we have indicators? A – On Middle Fraser springs.

Comments – recovery plans should be completed in 6 months.

Comment – UFFCA Executive Director will be included in joint consultation with the community.

Comment – Report well done by Dave Levy. He promoted report on PG Citizen and CBC Radio interview.

## 7. DFO Post-Season – Robin et al.

Upper Fraser River FSC Catch Monitoring Program sockeye: Chilcotin and Chiko Rivers 31,510; Deadman Creek to Chilcotin Confluence 2,441; Chilcotin and Chilko Rivers 34,322; Deadman Creek to Chilcotin 5,210; Chilcotin confluence to Naver Creek 5,208.

Q – Is it normal that the number nearly doubled? A – Yes, it is normal.

Chinook raw catch: Deadman Creek to Chilcotin confluence 3; Chilcotin and Chilko 74.

Q – How does this compare to recent years Chinook harvest? A – It is pretty low.

Comment – over harvest occurring elsewhere, this is why I stated that.

Comment – Should be adding the efforts where caught but very little caught here.

Response – DFO has a table that breaks down per day and point.

### **2018/19 Post Season Overview**

Chinook: assessed by COSEWIC in November 2018; 13 populations found to be declining; 8 Endangered, 4 Threatened, 1 Special Concern; Spring and Summer 5 2 Chinook have assessed as endangered. Chinook 2018 Management Measures and assessment: CWT Data (March), DNA samples (January); key information for stock composition in catch. Looking ahead to 2019, likely further actions to protect chinook and provide prey for SRKW; measures to be considered in all fisheries. Provide feedback to the letter sent by DFO.

Sockeye final in season FN catch relative to goals: Marine around 300,000, Lower Fraser FN 366,000 - 90% of their share, but Upper Fraser catch low due to the wild fires.

Comment – US caught 110% of their share.

Early Stuart preliminary potential escapement 48,389 of which 22,307 returned. Early Summer preliminary escapement: 787,091; 382,849 males, 403,374 females, 868 jacks. Nechako spawners observed in Glacier



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Creek for the first time on this cycle line. Nadina-Francios: 256,705 spawners; largest on record; over 4 times BYE and well above historic cycle. Nadina spawning success was 66.7%; well below long term average of 90.%. Bowron: 8,406 spawners; below BYE (12,064) but above cycle average (6,024); spawning success was 98.7%; above the long-term average and likely effect of wildfires.

Steelhead Management Actions in 2018: FSC was open with options to reduce incidental impacts to steelhead through areas and gear modifications to be discussed with FN.

Q – What is the Steelhead mortality rate in relation to the encounter rate?

Comment – Concern observed sockeye that are pail and 50% die-off. How is the mortality of Chinook and steelhead including death from fences (rotary screw)? Reduce death rates.

Preliminary Outlook: Expectation that returns of many stocks may continue to be influenced by effects of large-scale variability in ocean conditions. Webinar coming up to discuss environment conditions; and what is expect this year. Fraser sockeye outlook is low overall but variation in stocks. Fraser Chinook is very low returns expected. Interior Fraser Coho low returns expected. Fraser Pink below average returns expected. Presented IFMP consultation timeline; should have received IFMP letter outlining main planning priorities.

Recovery Potential Assessments for SARA process occurring for multiple species - for involvement contact Paul Grant [paul.grant@dfo-mpo.gc.ca](mailto:paul.grant@dfo-mpo.gc.ca)

Fisheries Management Framework Initiative - fish stock provisions and rebuilding plans – webinars to come.

#### 8. DFO Restoration Program - Sean Bennett BY PHONE

Work with FN and Non-profit groups to produce fish. Habitat restoration such as fixing culverts, work with Industrial groups to fix highways etc. Approach restoration groups with an idea, and can help manage the project, or can be involved from the start to end. Currently have around 8 projects including on the Stoney River and Willow, and also work with Spruce City on small hatchery (Justin Snider). Commit to work with Prince George area and try to make a commitment to come to PG. There are some restoration funds from outside sources - government; habitat restoration, rumors of more funds coming down the pipe.

Comment – It would be good to make some time to come to meet in person.

Response – Would be able to come to a meeting and outline the three projects in the area.

#### 9. Fisheries Habitat and Restoration Initiative Update – Rebecca Broadbent

Water Quality and Quantity Monitoring Program: monitor of changes to 11 small streams and 2 lakes in the Northwest and Omineca Regions. Additional water quality concerns have been raised by community members for Stoney Creek and Nahounli Creek.

Nithi River Weir Operation Management Plan and Habitat Restoration - weren't able to get an agreement through the province regarding the safety this year; fish could not get through the fence.

Routine Effectiveness Evaluation - Island Lake fire happened that happened beside the Weir. Pictures showed the effect of the wildfire; the fire guard was pushed through and left there. A fire was spotted by



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crew in Sept. A natural spring was disrupted by fire and were running over the roads. The Nithi River very yellowish; sediment observed from the fire and roads.

During monitoring they came across 9 beaver dams, 3 were inactive.

Q – The sediment, did you pick that up by water testing? It's the wildfire fighting that has impacted the rivers, I would assume there is recovery funding available.

A – There is some data - yes there is funding available.

Comment – We wanted to basically control of the levies.

Comment – We had funding from province and were interested in low flow and sockeye. This would have been a good project that looks at water flow and can collaboration with UFFCA/CSTC.

We were going to pilot the project to address low water and how it affects the species. We collected data doing transects across the creek bed and can track how the banks are shifting. We found a simple method, and you can train in one day. Also got information from the province on how they manipulated the weir.

#### 10. Wildfire and Water Interactions – John Rex (UNBC, FLNRO); Michelle Tung

UFFCA reached out to John Rex from UNBC for information on climate change, forest disturbance, and hydrologic response. Forest fire is an issue but wanted to talk about hydrologic affects.

Discuss factors affecting hydrological response by scale including Climate change and watershed characteristics. Scales of Influence are climate and weather, watershed characteristics, disturbances (fire, pest, human), and hydrologic response. The north area climate change has been extreme events occurring close together; spring flooding and record fire season were experienced - how does it affect the species? Contact - Northern BC Climate Change (Vanessa Ford).

2018 spring precipitation was normal followed by July/Aug fires extreme drought; stream observed without water for the first time.

Watershed characteristics include size, slope, soils, shape, drainage, density, storage. Disturbance like forest cover change supersede on the landscape; disturbance and hydrologic response. Three phases are living, grey phase, and clearing; Mountain Pine beetle for example.

Q – Increase peak flow; what happens to the low flow in that situation? Rivers can be extremely challenged as it relates to salmon.

A – If the weather pattern stays the same the less recharge. Example is Fool Creek study in Wyoming that studies peak flow. Look at large areas regenerating, that could be pressing.

Q – Nutrient difference down to the 10 to 20%? What about following a burn what is nutrients taken out?

A – Brown water nutrients it can be the water flow, with wild fire - there are erosion getting to the stream.

Wildfire potential hillside and stream response: Forest fire effects one watersheds very with 1) burn severity and burn areas and; 2) climate/weather.

Q – How does the run off affect the salmon species?

A – Nutrients could be detrimental. 100-hectare burn, doesn't mean whole 100 hectares burned.



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Forest Change: Loss of canopy decrease interception, evaporation can cause runoff; loss of litter decrease interception exposes soil to rain drop impacts causing runoff and erosion; loss of later degrees of surface roughness increases runoff; loss of soil organic matter can increase erodibility. Increase soil water regency, decrease infiltration and increase runoff. McClure lake fire didn't have any rain and didn't see any sediment; as for Kelowna fire, there was rain following the fire creating a water proof soil and everything runoff.

Watershed Planning and Management BC water tool ([www.bcwatertool.ca](http://www.bcwatertool.ca)); water, groundwater, surface water data reports. Reviewed Omineca tool; identifies normal, low, high-risk data. Assessment approach including indicators, potential response and attenuation, hazards (people, sediment, peak flow). Indicators assessed; forest cover, snow load, wetlands/lakes (buffering). Sediment hazards; road density, cattle/private land use, equivalent clear-cut area (ECA). Assessment of risk, classic definition; peak flow and risk to fish.

Next Steps: Compilation of useful tools for assessment

Comment – 2017 wildfire, moose population dropped, some dying of starvation. Affecting fish species.

Comment – We have been affected by the wildfire; we are getting coastal deer in our area.

Adaptation to Climate Change Team; look at fire and freshwater adaptations; regional water management strategies; causes of climate change like CO2 and other gasses. 2016 was hottest on record.

Observed changes in Canada include flooding (costal, river, and rain based); heat, drought, melting glaciers, warmer summers & colder winters, less rain in summer & more in winter, more intense storms, and changes in river flow.

Fire can destroy vegetation shading streams that help keep fish cool in hotter summers. Sediment increase after fires an overwhelm fish and aquatic habitats and the new waste materials fill spaces where fish lay eggs, can damage gills. Migration routes can also be blocked or altered. However, some fire-deposited nutrients and NW salmon tough, adaptable, evolved to benefit from fire.

Long-term impacts for drinking water systems could include debris, algal blooms, changes to taste/colour/smell, and ecosystem shifts.

#### 11. UF Zebra Mussel Project – Shamus C

Postpone to next meeting

#### 12. Summary of Tier 2 Action Items

- **Action** – Pete will pdf his December presentations and send to members.
- **Action** – Steve to pdf his presentation and send to Sharmayne to be distributed to the members.
- **Action** – Shawn Bennett attend next UFFCA meeting and outline projects that funding.
- **Action** – Michelle provide wildfire and water interactions presentation to the membership.