



UFFCA
upper fraser fisheries conservation alliance

TECHNICAL MEETING AGENDA

March 21st, 2019

9:00 am - 4:00 pm

Sheraton 4 Points - Prince George

Lunch & snacks provided

**OBJECTIVE: Facilitate Community Engagement
Update on Fisheries and Environment Issues in the Upper Fraser**

Tier 2

1. Call to Order
2. Welcome and Introductions
3. Approval of Agenda
4. Review of Action Items
5. Technical Aspects of Fraser Sockeye and Pink Forecast – Les Jantz
6. Escapement Plan Options for Draft IFMP – Robin McCullough, Melanie Anthony
7. Spruce City Wildlife Association Introduction – Dustin Snyder
8. PSF Pacific Salmon Explorer – Charlotte Whitney
9. Boreal Initiative – Bev Sellars
10. Water for Governance/management and FHRI Update – Michelle Tung

Tier 1

1. UFFCA Roundtable



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In attendance:

Leonard English
Thomas Alexis
Jonathan Hand
Bev Sellars
Shamus Curtis
Dave Feil
Paul Grinder
Ashley Raphael
Michelle Tung
Dean Joseph
Pete Nicklin
Melanie Anthony
Kelsey Campbell
Christina Ciesielski
Christine Stevenson
Charlotte Whitney
Carl Frederick
Dustin Snyder
Guy Scharf
Andrew Meshue
Randy Billyboy
Robin McCullough
Pete Erickson

TNG
T'lazt'en/UFFCA
Esketemc
IBCC
UFFCA
NSTC
TNG
Saik'uz FN
UFFCA
Yekooche FN
UFFCA
DFO
UFFCA
CSTC
PSF
PSF
Lheidli T'enneh
Spruce City Wildlife
DFO
NSTC
TNG
DFO
Nak'azdli Whut'en



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Tier 2 Agenda – 9am – 3pm

1. Call to Order

Called to order at 9:11am.

2. Welcome and Introductions

Prayer and welcome – Carl Frederick.

3. Approval of Agenda

Agenda approved.

4. Action Item Review

- **Ongoing Action Item** – Gord to distribute presentations from December meeting.

5. Technical Aspects of the Sockeye and Pink Forecasting – Les Jantz

DFO hoping to receive feedback on 2 escapement plans. The 2019 forecast returns are fairly conservative; focused on p50 but look at p25 returns also. Hopeful that the warm blob and other factors are more favorable and that returns are favorable in 2019.

The p50 pink forecast is 5M; well below average (12.7M). Pink fry outmigration in 2018 was 192.2M; lowest observed, and less than half the long-term average of 431.9M.

The sockeye forecast at p50 is 4.8M; about historical average on cycle. Early Stuart forecast to be 66% 4-year old, 34% 5-year old, Nadina and Bowron forecast to be largely 4-year old. Summers will be a high amount of 5-year old; Stellako – 53% 4-year old, 47% 5-year old.

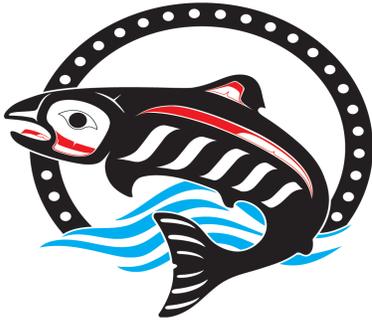
The Early Stuart group is one CU. 2019 forecast is 41,000 (80% PI, 18,000-92,000); forecast is driven by low escapements in 2014 and 2015.

Q – Has DFO science recommended to start at p25?

A – Will have to review but suggested that everyone be cognizant of recent year's poor returns. There is specific wording in the IFMP to caution towards p25. DFO starting to lose confidence in models, because we tend to end up below the p50. Test fisheries will start later to save fish. Fraser Panel meets (April) for pre-season planning, will model p25 and p50 to look at impacts on fishing.

Q – Why do we start season planning for p50?

A – It's identified in Chapter 4 of PST to plan based on p50 unless otherwise agreed upon by all parties. Even though US isn't willing to move off p50, we are making sure not to start fishing until we know what the return will look like. If the return is low, then we will start the model at p25, and will go to the US to discuss why the need to start at p25. US fisheries will start lower impact gill net fishery in late July, entrance of Juan de Fuca on the US side, usually doesn't catch a lot of fish. Once that goes for a week we will look at whether to start the big fisheries, and that's when we will start discussions on starting at p25.



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Q – How do you accommodate domestic priority when talking with the US? Especially FN priority?

A – The aboriginal exemption of 400,000 is taken off the top for Canada. So, if the numbers aren't there, then they don't get fish at all. We have 1.1M identified for FSC purposes, there are no planned fisheries unless we see that 1.1M Canadian TAC.

The Early Summer forecast is 465,000 (80% PI, 112,000-1,735,000); lower than average forecast driven by low brood year escapements. May have TAC available for domestic and international purposes. Bulk of production from Nadina last year in this area.

Q – When you see Pitt and some of the drivers, what are the implications for Upper Fraser stocks?

A – Pitt River would have an impact on management adjustment, in recent years, it been low. It's a prediction between estimates at Mission and what we see in the spawning ground, on route mortality is the key driver for this group, they don't do well in warm temperatures. Fraser Panel has not waited on Pitt for the MA; will be discussing again this year. Pitt is a Lower Fraser stock, not many people fish it, but the only impact would be on total run size and what the MA would be.

Summer forecast is 3,930,000 (80% PI, 1,553,000-11,187,000); higher than average forecast returns driven by higher than average brood escapements. Quesnel is expected to have large contribution of age 5-2 fish returning from brood year of 2014. Average escapement (all years) 570,000. Chilko make up 75% of return.

Q – Is there discussion about uncertainty in forecast 5-year old and 4-year old returns?

A – Rather than using historical relationship, we are generating a reduced 5-year-old return, but a high degree of uncertainty with these forecasts. Starting points, this is what we look at when looking at pre-season plans. June is when we're making decisions on FSC fisheries, commercial opportunities, follow those trends in-season rather than relying on this pre-season stuff.

Late forecast is 359,000 (80% PI, 111,000-1,265,000); lower than average forecast returns driven by lower than average escapements. When stocks return at very low levels (like Lates in 2018), we apply the LAER approach. We would generally not have directed fisheries on those stocks, Early Stuart being the exception. There are some directed fisheries on the Thompson Late run fish by the Secwepemc. It puts constraints on harvest for summer run abundance (10% LAER). For the folks lower in the river, they will be constrained on the front and back ends. They will have a short window which is usual for this cycle line.

Q – Is 1.1M for FSC a target, has that ever been reached? It would be good to see what's actually being caught in what areas and how that's laid out.

A – It's challenging to answer, there's a number of years, where we have economic fishery opportunities for FN in the Lower Fraser. They have the ability to convert FSC into commercial. We probably haven't had FSC harvest exceed 1.1M. When you include economic opportunity, and also get a commercial share of 3% added on to FSC total, it exceeds 1.1M. Majority harvest does happen in Lower Fraser, their share is just under 470,000. Marine 280,000, BC Interior has 350,000 for FSC harvest. The Lower Fraser get closer to allocation, other groups come close, but the Interior has never come close to 350,000. It all depends on abundance of fish returning to areas. Upper Fraser groups don't have access to late run fish. Distribution of fish can be a big issue for Interior groups.

Comment – Chilko is p50 because high numbers, all lower stocks swimming along with it will be impacted.

A – As mentioned, will look at the runs as they return, may change from p50, its only used for pre-season planning. When bad conditions, we wait and see how the fish are before we allow commercial or recreational fisheries. A lot of information comes from in-season calls on Wednesdays, once that starts happening, I'll start sending emails to be included on those calls.



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If LAER's kept at 10%, it will constrain lower groups, but also Upper Fraser groups; we will be looking for feedback from the Upper Fraser groups. The TAM cap at 60% includes fish that die on route (management adjustment – MA). Proposal to drop it to 50% - feedback needed; upper Fishery Reference Point, numbers are applied by the 60% TAM cap.

Q – You have 270,000 at 60%, and go at 300,000, where would run be, if allow fishing. Late Stuarts go to certain point then fishing allowed, then it goes down and brings our numbers down below what we want to come to the spawning beds. Shouldn't the numbers be reflected that the bottom end is being protected?

A – Bottom is 1.2M; objective of TAM is to make sure there's 1.2M of fish in the water before fisheries start. ER will increase depending on run size, but harvest is the number less the MA, less the test fishery catches. Say 600,000 fish would be available for harvest.

Q – Want to change these rules, we always get hit. Do we ask for a change in TAM rule, or harvest rate, or for everyone to leave us alone? What would be the best way to ask? We get next to nothing return.

A – Not one answer. You'll want to see a lower LAER, as it goes down, it puts constraints on all fisheries, and fisheries in mainstem at Williams Lake. As that number decreases, it increases conservation actions to protect Early Stuarts, Early Summers and Lates. You could increase Lower Fishery Reference Point.

Q – What is the process for determining TAM rules and options in draft IFMP? Is it an internal DFO process? Does Fraser Panel have a hand in that?

Q – It is internal. Jamie, I and others look at forecast, conservation issues, and in some years, we put forward 4 options. We try to keep it to two options. Look at brood year and use as an option again. Concerns flagged by science, we can lower TAM cap, to provide more protection.

Q – When considering TAM options, did the group use model to look at doubling LAER for specific stocks?

A – We didn't run the FRSSI model. So many assumptions go into that model.

Response – That's what the model is there for, it helps people decide, especially those of us who can dig into that information. I'm asked my thoughts on option 1 or option 2. Some things underlying are important questions for some of the stocks like Bowron.

Response – If you reduce TAM cap, it could cause a stock to collapse. Driven by fresh water impacts. There are two ends to this spectrum.

Comment – This is the furthest I've dug into this, do either options work for UFFCA or should the UFFCA be proposing something different. As I peel this off, I start asking these questions; asked Jamie questions but I need more information, do the due diligence of using the FRSSI model.

A – Did evaluate changes to LAER; long-term outcomes, assumptions of FRSSI, average productivity, it had very little impact for almost all stocks in the model. TAM cap discussion to increase to 70-80%, around 70% start to see big declines. Some stocks can withstand high exploitation, historically harvesting 70-80%.

Q – The comments I'm making on due diligence, I'm being completely objective. Options seem close together, but unsure on performance on some stocks on the other side. What if there was a p75 return for the summers? Do these things do the job they're supposed to do, and my initial feedback, is no they don't.

A – The other end of the spectrum, DFO seeking feedback on is ESSR. In the circumstance we have a p75 return, we will have a huge Chilko return. Won't be an ability at TAM cap of 60%, so it will strike up conversations on ESSR. So, what would optimal ER be on Chilko, or a management target. It will have impacts on low run years (Bowron), if we have large returns, we could have way too many spawners.

Q – What do you think of a sigmoidal curve? At the low return level, you'll have proportionally higher escapement, then as run gets larger the harvest increases.

A – We did try something similar, but don't have a specific answer. The whole group decided this kind of approach, through FRSSI, makes the most sense.



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Two options in IFMP provided, seeking feedback on these options or others. 2015 Brood year option, with one modification of 20% LAER to provide flexible access to summers. No changes to TAM caps (60%) except Summers. No changes to Lower/ Upper Fishery Reference Points. Option 2, reduced LAER to 10% except 20% on Lates, TAM cap at 50%. Upper Fishery Reference Points changed due to TAM cap drop. The Early Summer TAM lower in option 2 scenario. MA is part of TAM 60%, difference between 60 and 40-ish, is the impact of MA on TAM. Option 1, you get higher ER scenario. Option 2 - lower LAER, start at a lower point and stays. Projected spawners, roughly p25, achieving cycle line, as run size increases, you're exceeding cycle average. Based on forecast and escapements could get cycle average in brood year. We are predicting the escapements relative to cycle average and brood year. Predicted adjustment, escapement 22% of cycle average and 95% of brood year.

Q – In your opinion, do you feel option 2 will be the best?

A – Have to lower ER and impact, but other stocks going into negative situations, when some big numbers in stocks and have over spawners. FRSSI model tries to project the future, so will need to run scenario. What is the long-term productivity going to be, is the warm blob going to be with us forever? We're not sure.

Options Summary – Summer run International TAC is anticipated for full forecast range (p25-p90); Early Stuarts and Late Run will likely be in LAER for the forecast range; Harvest of Summer Run TAC will likely be constrained by Early Summer and Late Run/Cultus. Under both options spawners show rebuilding even at low run sizes for all management groups, however Early Stuart and Late Run spawners are projected well below cycle average over the forecast range; Early Summer and Summer Run spawners are projected well above cycle average escapement over most of the forecast range.

Pink Escapement will not reach the escapement target until p50-p75; expect low TAC and ER at p50. Late Run Sockeye may constrain pink harvest in CA and US.

Q – What would be the component above Hell's Gate?

A – Don't have escapement plans anywhere in the Fraser, we estimate abundance at Mission, but can't quantify genetically. Historically, pink returns used to be bi-modal, estimated 25-40% of total pink return go into the Fraser above Hope. But we haven't seen the bi-mode pattern in recent years.

ESSR – Potential escapement objectives before ESSR fishery. Decision criteria is the projected escapements are above WSP Smsy and stock status is not red (WSP) or EN (proposed COSEWIC). Maximum harvest would be escapement above Smsy.

Q – Which papers are numbers coming from (WSP Smsy)?

A – 2011 or 2017 WSP. Robin will follow up with Jamie on where he got those numbers from.

Key ESSR Questions/Next Steps – How do we deal with the interaction between FSC, demo allocations and ESSR? Does the stock meet all criteria for ESSR fishery considerations? Initial Decision Criteria and ESSR Proposal Evaluation Template. ESSR catch accounting. Not included against LAER and ER targets? Not included against FSC sharing plans? What conditions are necessary to approve the sale of the harvest? Need to consider existing processes. What infrastructure and process are required to initiate an ESSR and what are the expected timelines (mandatory landing stations and permits, etc.)?



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Maximum sustainable yield (MSY) is largest average catch that can be captured from a stock under existing environmental conditions. MSY aims at balance between too much and too little harvest to keep the population at some intermediate abundance with a maximum replacement rate.

Comment – Upper Fraser FNs have stated that Early Stuart Sharing Tables won't work for us. There should be more opportunity out of these tables, they're not equal.

Q – Who is included below Port Mann vs above?

A – Above Port Mann goes up to Sawmill Creek.

Comment – Table has put Upper Fraser FNs in awkward spot and disadvantage. Numbers in the table are very low; catch monitoring program in this area is young. Trying to change now is difficult, DFO keeps defaulting to 1996. Until FNs come up with something different, will go with 1996. If you want to put more fish in mid/upper Fraser, has to be a decrease lower down. Very little incentive for Lower Fraser to curtail their harvest. If Upper Fraser FNs want something different, the air needs to be cleared and DFO should not use 1996 sharing arrangement. True negotiation should occur. Difficult to change, as seen at the Forum.

Response – Defines the challenge the department has to make, unilateral decision. Until something comes from FNs collectively, it makes the most sense. Could make a unilateral decision, but unsure how that looks. Don't think these impacts will be consumed in the Lower Fraser this year, not sure if TAC will be identified.

Chinook Letter – Summary of feedback provided at Forum. Complete feedback will be circulated. DFO working on compiling recommendations and drafting a letter to the Minister, anticipate Ministerial decision in early April. Fishery notices will detail management of spring fisheries. Tool reviewed at JTWG; measuring/evaluating impacts from various fisheries.

Comment – Suggest DFO be careful with using "reviewed" at JTWG. Legal framework, if ends up in court, document and meeting notes will be provided, weight of evidence would be if it was adequately reviewed.

Suggest removing "reviewed" and use "discussed". Contentious issue, there may be evidence collected.

Response – I would even recommend saying significant issues expressed.

Interior Fraser Coho 2019 forecast: naïve 3 model was close in terms of performance over time but the naïve 1 model was chosen because it captures the abundance signal through time. Coho SFAB Proposal – DFO received a recommendation from Integrated Harvest Planning Committee members to consider increasing the CDN domestic ER within the low status zone to utilize more of Canada's PST ER cap of up to 10%. DFO will not be accommodating this recommendation this year. Would need additional stock assessment information, Coho populations, spawning trends and discussion on allocation timelines.

Comment – Consultation with US has to happen. They need to know pre-season plan.

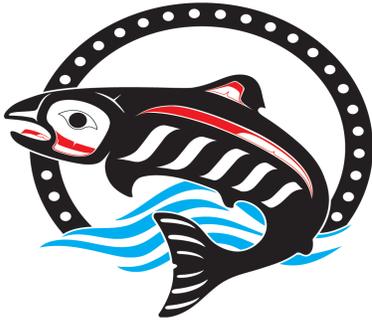
Response – It won't be a consultation, more of letting them know what our plan is.

Comment – DFO isn't in the business of allocating out impacts, we generate impacts using model in expected fisheries, there is no formal allocation format. Models are used to generate those impacts. It is a question in the IFMP, even though it's not happening, suggest including your feelings in IFMP responses.

Steelhead – Do not list is similar to 2018, 27-day window closure; List – 60-day closure, highly restrictive due to SARA prohibitions. 27-day closure based on assumption of average stock migration timing and speed; Albion return timing and DFO's estimate of migration speed, peak timing and spread to back out to marine waters and up river.

Q – When's the expected decision? A – We aren't sure, it's out of DFO's hands.

Q – What caused the rift between BC accusing DFO of not caring?



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A – Was brought up at IHPC; a disagreement in science advisory report, drafted by chair of CSAS (Jeffery Lemieux), who considered disagreement of those involved in how to proceed, many different opinions on wording. All feedback provided to chair, no second round after they compile feedback. Gets posted to CSAS website, typical CSAS procedure.

A – The big challenge is no data. Province providing views on fishery impacts for years but nothing to justify or base on, a real challenge. If making big changes, it would be nice to know what you're accomplishing, but we don't have that information. The province expands impacts in marine area, but they have no data to base those estimates on.

Q – Is there any plan to collect data in any fisheries this year? Also, marine area where there is Chum fisheries, A-Tlegay submitted an EOI to Nature Fund to collect data samples of steelhead catch, partnered with Area E and D, several steelhead populations in Johnstone Strait comigrating with Fraser stocks.

A – With purse seine catches, can clip fin to collect data from steelhead and keep the fish alive.

A – Under SARA, there are certain exemptions, and one of those is science.

Q – How long has this 27-day closure been in effect? A – Since last year.

Q – Can DFO increase the window closure even if steelhead isn't listed?

A – It would be a challenge to further increase the window, will result in impacts to sockeye fisheries and marine fisheries. FSC fisheries included. Fishers are saying they haven't caught steelhead, so it makes it hard to justify. But we are seeking feedback.

Q – Only options are the 27-day window closure if not listed and 60-day closure if it's listed? Seems like false choices; if you want reasonable closure for conservation of steelhead, we will also put at risk your traditional fisheries.

A – This closure butts up against Coho, most fisheries in Interior would be done, little impact on them.

Comment – “Window closure” not correct with what DFO is doing. There are open fisheries through the closure. Incorrect consultation, in particular a big concern is that there are proposed two openings in Lower Fraser of non-selective fisheries. It's a big concern if people are interested in conserving steelhead. A challenge the province has, is some of the data they need fall under federally managed fisheries, it goes back to how DFO has collected data and managing its own fisheries. If someone from the province was here, they'd be saying something about that. We've been talking about requests for data on steelhead and catches.

A – I wasn't specific to putting blame on who's not providing data, there are encounters in commercial and FSC fisheries in marine and Fraser areas as well, it's practice that hasn't been done well. In order to go to groups to propose the 60-day closure, need discuss benefits of such.

Q – Is the closure just FSC or does it include ocean sports fishing?

A – Outlined in IFMP, there are other closures, but marine rec is open, non-retention of steelhead. Recreational fishery doesn't catch steelhead, they're not biters. Do catch them in-river.

Q – Interception in the West Coast by CWT, do we have access to those samples? Are they doing the same practices, if they're being intercepted?

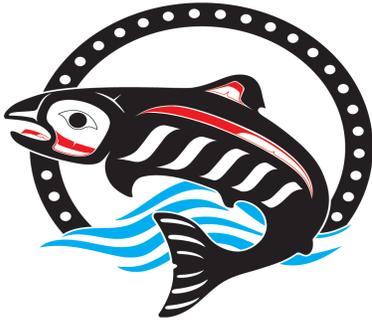
A – Should be part of CSAS assessment where significant modifications of terminal fisheries in inlets. Some bycatch issues dealt with. Collecting DNA samples will help with where fish are.

Q – When harvesting, can impact traditional fisheries, so if you rely on rainbow trout it does implicate you?

A – There hasn't been much discussion on kelt and if SARA listed. 60-day closure, we're not talking about it at all mostly because of lack of data. Comment – It's beyond kelt.

Q – The 25-35% reduction, is there a formal response yet?

A – No; haven't gotten DNA information yet, we only have harvest information now.



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Covered in agenda item 5.

7. Key IFMP Updates – Robin/Mel

Covered in agenda item 5.

8. Spruce City Wildlife Association – Dustin Snyder

Founded in 1970 with goal to better fish, wildlife, and habitat within the Omineca Region; started raising Chinook in 1977; Chinook enumeration fence; Mule deer collaring/Grizzly diversionary feeding; McMillan Creek Stewardship Group; Membership as high as 400; 100% volunteer.

Hatchery rebooted; smaller scale, 1000 Quesnel Chinook fry. Brood capture/hatchery – old but good, failures/successes, community needs, education/stewardship. Community involvement like back country clean-up, trout releases, salmon send off, Chilako rec site, tours, school groups, family ice fishing day, town hall, guest presenters.

Pushing for change with government and staff. What's next includes the Endako River Chinook partnership with CSTC, increased egg-take to 10,000 on Nechako River, community fishing pond, Omineca Wildlife Action Roundtable, fish habitat projects, building on partnerships, continued advocacy.

Q – Through sportfish advisory board, you sent a letter to regional board about Chinook?

A – Yes, board of directors of Spruce City sent letter stating there be zero harvest on 52 Chinook except for Upper Fraser FNs. Brought to the local SFAC, where it was passed unanimously; brought to Nanaimo and was not supported. Focused on one phrase, poor marine survival. But we still refer to that letter regularly, we submitted it to the Minister. We sent in our input for the options 1 and 2 proposed.

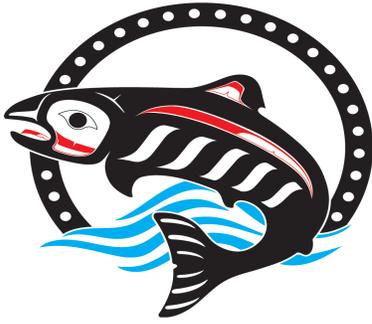
Comment – It's awesome what you're doing, will open a lot of doors for FNs to enhance fish that are depleted. We are on board.

Comment – Interested in local sport groups you work with. Important for FNs to look at relationships with local sport groups for similar interests, and to develop and submit letters for that collaborative voice.

9. PSF Pacific Salmon Explorer – Charlotte/Christine

The Pacific Salmon Explorer is a data-driven tool to look at salmon populations. The goal is to strengthen and make available baseline scientific information for 52 wild Pacific salmon CUs and their habitats. Use WSP policy, science-based framework for monitoring and assessing status, inspired our methods and approach. Also use WSP's conservation units. Also working to incorporate traditional and indigenous knowledge. The tool allows a look at population and habitat status by CU, biological status, risk of habitat degradation based on pressure indicators. Provides timely access to salmon-related issues. Also, can download up to date summary reports, and salmon-related data sets.

Democratizes data, provides free timely access in centralized location and improves access to data to support FNs fisheries management, provides ongoing snapshot of current status of CUs and identifies/highlights major data and knowledge gaps. Status can leverage to acquire resources for monitoring to address data gaps and which salmon populations may require conservation and management intervention to promote their recovery. Can inform strategic planning efforts for salmon (e.g. Priority Threat Management).



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Q – When going through data and synthesizing, can you use platform to put data in one place, but also recommendations in one place? A collective idea of what could/should be done?

A – The closest thing we're getting to that is the priority threat management, what people think about threats and management responses. It would be a great thing to add to the online portal.

Q – Quantifying status, does that mean you'll do something in addition to DFO's?

A – Yes, but we are lining it close to DFO.

Process includes project planning/partner engagement, data compilation/synthesis, population/habitat assessments, visual results in PSE. Upper Fraser tech meeting #1 will focus on population and habitat assessments; #2 finalize assessments, project communications, followed by public release and outreach.

Some resources (honoraria, travel) available to support FN involvement. Modest available to support targeted efforts to synthesize existing data directly relevant to project.

Data compilation, limited metadata in many formats, NuSEDS data to be expanded/ standardized to account for different sampling efforts, catch data to be attributed. Next, will identify metrics and benchmarks (higher and lower, assess and report on biological status looking at stock recruitment or historic spawners (more precautionary approach) methods. Visualizing CSAS and COSEWIC status assessments; habitat assessments, feeds into WSP policy #2, identify spawning habitats via expert knowledge, identify habitat indicators (forest disturbance, water licenses, riparian disturbance, road development, etc.)

Q – Where is DFO with respect to status assigned? Status assessment go through quite a process with CSAS. WSP implementation plan, moving forward, what can we expect? It's favorable for us to know things are going through this rigorous process to assess status.

A – We have a population science advisory committee that's made up of DFO members that reviews everything. Will include CSAS information it's available.

Comment – PSF will be coming up with CU's and may be different than the information of status information coming from CSAS.

Q – A lot of indicators, are under provincial jurisdiction, have they come to the table at all?

A – No, but we do get information from provincial databases. We like to engage with them more.

Q – Any thoughts on steelhead?

A – Yes, applying for grants and plan to expand to include steelhead, not immediately.

Q – There is a lot of supplemental data you can look at too. In circumstances where there is abundant supplement data, how much capacity would you have to deal with that data?

A – I guess it would be the format it comes in.

Response – It would be GIS data that would be very reflective of indicators.

Response – I would love to keep this dialogue open to take in these suggestions.

Response – Province has some good land use metrics; should try a pilot, I think we need this.

Q – Will there be satellite imaging available? An area that's red, could you zoom in for detail?

A – Can choose what layer you want to look at as far as assessment, there are different base maps.

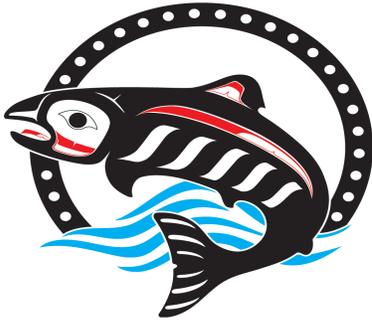
Q – Is funding secured for Fraser watershed? A – Yes, and in the process of applying for funding.

Q – Ideas on involving coastal and marine areas in terms of pressures and indicators?

A – Will be starting with what we have, but modifying PSE in the future, it's definitely on the radar. Information exists, would be good to map some potential pressures at the least.

Q – How are you setting habitat benchmarks and what is the time scale?

A – Some are published benchmarks; some are relative benchmarks and change based on region. For forest disturbance for example, look back 60 years, but it's relative to different pressures.



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Comment – My hope is to have UFFCA biologists to identify and deal with relative gaps, agree or confirm them, have some oversight so FNs are bound into this but also some limitations.

Fraser engagement has included LFFA, UFFCA, Secwepemc Fisheries Commission, Nicola Tribal Council, Nlaka'pamux Nation Tribal Council, and St'at'imc Tribal Council.

Next, confirm interest/involvement, coordinate community meeting, collect spawning location information, confirm technical meeting and participants, follow up with Charlotte Whitney cwhitney@psf.ca.

Q – As you go through this process, can you have the data sets available?

A – Yes, it's efficient to have information available at first tech meeting. Having the draft PSE site and visualize data and status assessments. Can pass information and time to provide feedback. In addition to physical printed maps, have a habitat mapper tool, you can play with the habitat data.

Q – Is there any crossover with Fraser Watershed Initiative?

A – Will be attending Finn's meeting, high level discussions, don't know level of detail they're working on.

Comment – CSTC and the province are going through a sophisticated process right now looking at sensitivity impacts on habitats, if it's already established, you may want to tap into that.

10. Boreal Initiative – Bev Sellars

Working on initial stages of project, as from discussion this morning, this will fit in. Governments work in silos, don't look at the whole picture. FNs are starting to work in silos as well. There's no big picture, not paying attention to the spawning grounds. Our NR department put together a map on mining around Quesnel Lake, important spawning grounds to us. There's no indigenous knowledge used in our areas. Salmon don't have borders. Unify the voice of indigenous people from the coast, Alaska to California.

There's a guardian program they're trying to get started in Canada. The common denominator will be measuring the health of the Pacific Ocean and food resources. When you use land, it goes into the water, the indigenous knowledge needs to be incorporated into that.

40 years ago, we noticed a change in the salmon. Now, catch a salmon and it's exhausted; getting into spawning stages before getting to spawning ground.

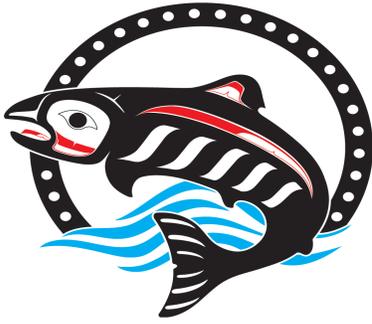
Our plan is to not take your voice away from you or make decisions for you; want to amplify our voice to help salmon survive. Can pressure governments against mines around Quesnel Lake or anywhere else, we have to change the way we do things. With UNDRIP and indigenous voice, we can do that.

Q – Do you have an email so we can get updates?

A – Let me know who to send emails to, I will send updates. Meeting in Tulalip, Washington in Fall. Crucial to get knowledge out. International Boreal Conservation Campaign is the website you can visit.

11. Water Governance/Management and FHRI – Rebecca Broadbent/Ashley Raphael/Michelle Tung

Water Quality & Quantity – concerns raised by community members for Stoney Creek and Nahounli Creek; 6 stations were installed. Nahounli Water Quality Sampling because potential inputs from industrial activities upstream and storm water discharge. Stoney Creek water quality sampled – Concern for low water quality due to deforestation and range land use upstream, potential seepage from the Saik'uz sewage lagoon and agricultural



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land use. Nithi Weir (Reach 3) measured for discharge; continuous water level logger data, YSI salt tracer to allow track discharge. Nulki and Tachick Lake Health.

Nithi Weir – Management of flows on Nithi River, weir installed at the mouth of Borel Lake 20 years ago but forgotten for 17 years. Installed hydrometric stations below weir (3 years of data) downstream, and in lake. Completed weir clean up, water monitoring, habitat restoration, developed a weir management plan.

Objective: set environmental flow needs; manage flow for fish. 3 years of discharge showed higher than normal freshet in 2018; uncertainty with province as they received letters from ranchers thinking the big freshet was because of the weir, and the very wet year we had in 2016. In 2018/19 wanted to pilot weir management plan; operate weir flows, monitor downstream flows (meet flow predictions), monitor habitat (is flow enough), monitor fish (is this helping fish passage). Then learn, adapt and refine management plan.

Objective to understand habitat and flow changes downstream of weir; water quality/quantity monitoring; Routine Effectiveness Evaluation (REE). Wildfire and Freshwater hardens soil, reduce ability to absorb water when rains; loss of trees and plants and decreased canopy reduce rain absorption, destabilize slopes, change water temperatures, contaminants in ash. Temporary water quantity increases due to more Run off; large Pacific Northwest fires (US) increased post-fire annual river flow for up to 5 years, even in areas with recurring drought; annual river flow changed and, in most cases, increased when a 5th of basin or more burned by wildfire.

2018 wildfires will impact water quality/flows; aiming to collaborate with BC to operate weir to look at water storage and manage flows; continue to collect hydrometric and habitat data.

Q – Are we talking to the province right now?

A – I will be as have new/good data, plan on contacting them before freshet.

Comment – Another place where this initiative could be applied is McKinley Creek weir, as of right now DFO manages the weir. They manage the weir for the land owners, not the fish.

Q – Thinking about risk, ranchers downstream put pressure on the province, maybe address them individually with why the weir is beneficial to them.

Q – Will there be funding? UFFCA is looking for funding to continue this program.

A – We've applied to Coastal Restoration Fund to continue this work, but as of right now we will piece some dollars together to keep it going in the mean time.

12. Summary of Tier 2 Action Items

Ongoing Action Items – Gord to distribute presentations from December meeting and developing a SharePoint for sharing presentations.

Ongoing Action Item – Pete to include CSAS Pink review in his IFMP response, need for 4-week window closure for early sockeye.