Elk River Watershed Qukin ʔamakʔis Collaborative Monitoring Program

Interim Monitoring Working Group

Third Meeting - Sept 23, 2022 - Draft Meeting Notes

Attendance

1. Anne-Caroline Kroeger, Program Manager, *Elk River Alliance*
2. Kaileigh McCallum, Junior Ecologist, *Elk River Alliance*
3. Maggie Finkle-Aucoin, GIS & Database Assistant, *Living Lakes Canada*
4. Jon Bisset, Senior Biologist, *Jon Bisset & Associates*
5. Dwayne Minton, Impact Assessment Biologist, *BC Ministry of Environment and Climate Change Strategy*
6. Cait Good, Senior Lead - Aquatic Sciences, *Teck Coal Limited*

Survey Monkey Results: September 23, 2022

Theme	Score/36	What
T1	**21**	Flooding and drought as Climate Changes to Hydrological cycle (Planning effectively to manage floods (peak flow & turbidity) and drought (base flow & high temp)
T2	11	Drinking water supplies (Planning effectively to manage supplies of clean and abundant drinking water)
T3	9	Consuming fish (Planning effectively to safeguard fish as a safe source of food for human consumption)
T4	**15**	Fish populations (Planning effectively to safeguard fish species diversity and abundance)
T5	11	Non-Indigenous land uses (Planning effectively to integrate cumulative effects of multiple land uses (e.g. mining, forestry, tourism, fishing pressure))
T6	6	Non-Indigenous sense of place & authentic experience (Planning effectively to safeguard sense of place and experience of 'untouched nature')
T7	**12**	Ktunaxa traditional land uses and rights (Planning effectively to protect traditional Ktunaxa land uses)
T8	8	Ktunaxa spirituality and culture (Weaving Ktunaxa spirituality and culture into planning process)

Establishing Early Years Priorities: ***Presentation of Preliminary Monkey Survey Results***	Stella and Anne-Caroline sent out a Monkey Survey to the 14 Monitoring Working Group Members, and 6 individuals responded. Respondents were asked to rank 8 Monitoring Themes, by answering 6 questions. The maximum possible score for each Monitoring Theme was 36/36, if every single respondent was to respond 'yes' to every single question. Theme #1 on Climate change's impacts on flood & drought obtained the **highest score** of 21/36, Theme # 4 on Fish populations the second highest score, of 15/36, and Theme #7 on Traditional Ktunaxa land uses, the third highest score, of 12/36.
Establishing Early Years Priorities: ***Validation of Preliminary Monkey Survey Results***	Dwayne Minton, Impact Assessment Biologist with the BC Ministry of Environment, Jon Bisset, Senior Aquatic Biologist Consultant and Cait Good, Senior Aquatic Sciences Lead at Teck Coal, feel like the Monkey Survey shows an "**emerging consensus**" on 3 highest priority themes: T1, T4 and T7. However more "**validation**" is needed using input from a "broad representative swath of communities" to accurately represent the entire community and represent all interest groups/right holders, namely fly-fishing outfitters, and Ktunaxa Nation/Tobacco Plains Band members. Only Ktunaxa can speak for Ktunaxa's monitoring priorities, so we need to ensure we reach out to their representatives with this Monkey Survey. The Monkey Survey questionnaire is a good starting point to be used in a large public forum. While validation for more immediate priorities is needed, down the road, all 8 themes will need to be addressed. Cait **warns against dropping any theme entirely,** on the basis that it is a "non-priority". Instead, Cait is in favour of finding the "priority themes" to focus on in the early years based on resources available and would like to come back to "**lesser priorities"** to fit them in later on, working our way down the priority list as more funding/resources are available. Monitoring theme T2 on drinking water supplies, for instance, is emerging as a lesser priority, as it is only relevant to municipalities at the moment, however it is a serious management issue to them and not less worthy for that matter. Similarly, the monitoring theme T3 on safe fish consumption is emerging as a lesser priority, as it is only relevant to Indigenous people, with the wider community not consuming fish as fish is released when catched by non-Indigenous, however Indigenous people do consume fish and this issue is perhaps very important to them.
Framing Monitoring Questions: ***General direction***	Dwayne wishes for the Monitoring Collaborative to produce information at both **long** and **shorter time scales,** i.e. otherwise we risk losing support from communities. For instance, Dwayne supports the collection of hourly real-time water temperature data to satisfy fly-fishing outfitters' need to forecast fishing closures over fishing season. Climate change programs only become useful after 30 years of data, at the earliest, and, while these longer datasets matter, they might not interest communities so much. Cait echoes Dwayne's comments - let us try to find different ways to use the same dataset over different time scales. Jon emphasizes that while communities may not value the longer records, it is still

	important to collect long-term data to address climate change questions - Jon asks that we **clearly articulate why we find it important** to work on **different time frames**. Dwayne is in favour of **trend/baseline monitoring**, with numerous end-uses of data, instead/over **cause-and-effect monitoring**, which has more limited end-uses of data, or status monitoring or even effectiveness monitoring. Trend-based monitoring questions are simple and aim for continuous data.
Framing the Monitoring Question: ***Hydrology***	Dwayne, Cait and Jon Bisset are **in favour** of monitoring **in-stream flow needs**/environmental flow needs. Jon Bisset advocates that the monitoring of flows should be done at the scale of the Elk River Watershed, while targeting Fairy Creek and streams at risk of over-allocation. Ron Ptolemy's work highlights that most of the East Kootenay streams are naturally **flow limited (for fish) in the winter** which makes them vulnerable to overuse/overallocation.
Framing Monitoring Question: ***Fish Pop.***	Will Warnock from the BC Ministry of Forests is already leading a large scale **fish population study** in the Elk Valley. Jon Bisset is aware of this study and says that this is actually a **very good** fish population study - its target is to tag 25,000 WCT fishes, following Carl Schwarz's recommendations from the Simon Fraser University, yielding a 25 % error estimate in the WCT population estimate. Cait thinks our Collaborative Monitoring Program might perhaps assist with fundraising to help this study succeed but is unlikely to be able to take on a lead role. It would be **unrealistic** - **financially speaking** - for the Collaborative Monitoring Program to undertake fish population tagging studies. These get real expensive, really fast, with COSEWIC estimating cost at $1M - $1,5M per year. It would also be **unethical** - and **counterproductive** - to undertake additional fish tagging as oversampling of fish by scientists is a real threat to the viability of fish populations. Jon Bisset explains that the average lifetime of fish are 20 to 30 years, and the statistics show that, in the Elk Valley, fish are being catched 200 times on average in their lifetime. The benefit of monitoring fish population using tagging studies easily outweighs the costs in terms of increased mortality to fish. Jon Bisset is aware of a second smaller fish population study of the BC Ministry of Forests, and led by Heather Lamson. Heather's study is based on DNA sampling, is a much smaller mark/recapture study nonetheless contributing valuable long term data. Heather is sampling live fish and capitalizes when possible on harvested fish/fish mortalities (i.e. otoliths) to decrease sampling frequency - and fish mortality. Cait, Jon and Dwayne are **in favour** of the Monitoring Collaborative undertaking **CABIN** monitoring to assess fish habitat quality: CABIN has many advantages as it is easy to get volunteers signed on, easy to understand, builds the broader CABIN regional database, is really powerful without increasing costs and being too intrusive on the system. Dwayne, Cait and Jon Bisset also very much **in favour** of monitoring **water temperatures** as

	this would also produce a second long-term data record on fish habitat quality, offering multiple end-uses of monitoring data and this consisting in non-intrusive monitoring work.
Framing Monitoring Question: ***Ktunaxa traditional land uses***	John notes that the work done regarding the Ktunaxa land use monitoring theme and Ktunaxa cultural and spiritual values should be carried out by Indigenous communities. Anne proposes for the Monitoring Collaborative to conduct qualitative interviews with formal Knowledge Holders or unofficial knowledgeable Ktunaxa citizens in parallel to collecting quantitative data using Western monitoring methods. Kelly Munkittrick and Jim Clarricoates would perhaps help bridge monitoring methods from Traditional Indigenous Knowledge (TK) and Western Scientific Knowledge (SK).
Designing Monitoring Program: ***General advice***	The Monitoring Collaborative will need to acknowledge that many themes are done i.e. already addressed. Perhaps the Monitoring Collaborative's role will be to "**see how all pieces fit together**", i.e. show how all existing monitoring programs and studies connect. When and where gaps are identified in existing monitoring programs/studies, our role would be to "fill those gaps" by going in the field. This is in line with Cait's, Dwayne's and Jon's ask for the Monitoring Collaborative Program to be **efficient with its resources**, i.e. not duplicate monitoring efforts**.** To achieve collaboration between monitoring programs, the Collaborative Monitoring Program should focus on building relationships, building awareness of existing monitoring programs and data already being collected and building awareness of data already being shared and how this data can be accessed. Cait believes Teck's flow data for instance is already shared on government portals. In summary, the Monitoring Collaborative needs to clearly explain what data is already available. The Program should also "**build trust in data"** by being honest about limitations in data collection. Dwayne would be in favour of "**duplicating 1-2 monitoring locations"** to show **consistency in methods** among different Partners - while this would not expand the monitoring network, it would certainly build trust among partners on data quality. Anne additionally suggests developing collaborative training programs on field methodology, involving perhaps Elk River Alliance, its volunteers, Teck and its consultants. Kaileigh McCallum could lead training sessions on CABIN and small stream hydrometric monitoring.
Structure of Monitoring Working Group	Themes overlap, ie. T4 Ktunaxa and T7 Fish populations, i.e. themes are not mutually exclusive, and as a consequence it is preferable for the Monitoring Working Group **to continue working as a whole**, rather than splitting up into smaller groups with specialized expertise. One-to-one discussions on the side are necessary however and should happen. A "**strongman**" is needed going forward with Step 3 of the *Adaptive Monitoring Framework* to lead the Design of the Monitoring Program, with this Monitoring Working Group weighing in on the strongman's ideas and proposals. Hiring a consultant to act as a strongman is an idea Cait, Jon and Dwayne are in favour of.

Closure and Next Steps	Step 2 requires validation through additional outreach. Anne to seek validation of her three monitoring priorities from the broader community, by sending Monkey Survey out to the broader community, with input from Fly-Fishing Outfitters and Ktunaxa citizens critical as important interest groups/right holders. Step 2 to be framed in early years as a simple trend-based question that can be answered using non-intrusive, rigourous monitoring methods of water flows (following BC RISC standards), water temperature and CABIN (ECCC's protocol). Step 3 needs to build complementarity with existing monitoring programs. To advance complementarity, partnerships to be developed with Teck, City of Fernie and BC ENV, to establish data-sharing and implementation agreements to advance hydrometric and fish habitat (CABIN) monitoring in the Elk Valley. Complementarity will help recognize existing monitoring programs - clearly presenting these, showing what data is coming out of these, what data is publicly shared under these, and what this data looks like. This will highlight the value to what is already being done, and perhaps we can then see how to build on what is already done. Step 3 needs a strongman, i.e. a consultant hired by Elk River Alliance who can drive Step 3 and come forward with a comprehensive powerful monitoring program design to be put forward to this Monitoring WG for comments and discussion.