BC Water Funders
COLLABORATIVE

- Pooling Water Knowledge Webinar Series -

Water Monitoring and Reporting in BC: Regional Perspectives

Tuesday January 30, 2018
12:00pm to 1:15pm

Weblink for recording: vimeo.com/253517893
Password: bcwatermonitoring (case sensitive)

BACKGROUND

In early 2017, several funders of the Collaborative launched an initiative aimed at helping to building our collective knowledge and fostering discussion around a shared vision for water monitoring and reporting in BC

Last Spring, the group undertook a province-wide inventory landscape scan of existing water monitoring data collection efforts in BC. The objective of this landscape scan is to collect meta data associated with different water monitoring and reporting initiatives and to begin compiling a high-level summary and database of which organizations are collecting data, what type of data is being collected and how that data is shared. The research was undertaken by Carol Luttmer with the guidance of a Steering Committee which includes representatives from Okanagan Basin Water Board, Pacific Salmon Foundation, Columbia Basin Trust, Environment Canada, Living Lakes Canada, First Nations Fisheries Council and the BC Ministry of Environment. So truly a collaborative undertaking.

In December, the Collaborative convened a small roundtable of water funders, government representatives and thought leaders to start to initiate a conversation around the current gaps in the landscape and the opportunities for collaboration around water monitoring and reporting in BC.

Today's webinar is intended to further contribute to this ongoing dialogue by profiling some of the lessons learned in specific regional watersheds.

PRESENTERS

Dr. Martin Carver, PEng/PGeo, PAg, Hydrologist & Principal, Aqua Environmental Associates,

Dr. Carver presented on his report, *Water Monitoring and Climate Change in the Upper Columbia Basin* which he prepared for the Columbia Basin Trust.

BIO: Dr. Carver is a hydrologist and conservation planner with over 25 years' experience in water resources. He has a PhD in applied hydrology and geomorphology from UBC. His work focuses on environmental impact assessment and monitoring, and detection of environmental change, particularly in light of climate change. He works in western Canada and lives in Nelson, in the Upper Columbia Basin.

Dr. Gilles Wendling, P.Eng, Principal, GW Solutions,

Dr. Wendling presented on the *Peace River Regional District Water Quality Baseline Project* prepared for the Peace River Regional District and the Treaty 8 Tribal Association. Gilles also introduced us to data visualisation and interpretation tools used in several watersheds.

BIO: Dr. Wendling completed his Ph.D. in 1991 and has nearly 30 years of experience in hydrogeology consulting. He has been involved in over 1,000 projects as a consultant. Early in his career, he dealt both with contaminated groundwater (clients from the mining and oil and gas industries) and drinking water. Dr. Wendling started his own firm, GW Solutions, in 2005 in order to have the freedom to focus on water supply and watershed protection. GW Solutions is focusing its activities on aquifers and watersheds, at a larger scale, and on surface water and groundwater interaction. GW Solutions conducts a large portion of its activities working with First Nations.

QUESTION & ANSWER PERIOD

1. **Have there been any discussions with the Province about improving the accessibility of water quality data?**

   Martin: Accessibility varies greatly with the data type and particular database. Some data also involves the federal government (CABIN +). I think the Province is aware of the challenges. At times, addressing these challenges is not straightforward. Technological issues are often involved which can be pricey especially when it is to be applied provincially. It's clear that accessibility of water quality data varies with the data set or database. For example, EMS is a bit clunky but I believe the Province is aware of the issues. Technology often becomes an issue for trying to do a robust provincial system. The Province also just launched a public version of Aquarius which offers a real-time data portal online. Currently the Ministry of the Environment's Knowledge Management Group is working on a multi-agency Water Information Systems Project to look at improving water information systems.

1. **Both of you have worked closely with First Nations communities on some of these issues. I am wondering if you can speak to some of the challenges and opportunities that exist for Indigenous communities seeking to improve water monitoring and reporting to aid decision-making.**

   Gilles: Often with First Nations communities there is a lack of internal resources/funding. There is often reliance on industry/project-related funding which can be challenging in terms of timelines and other constraints. There is also the political aspect of First Nations needing independence because some of their discussions about water quality are related to arguing with the Province about impacts to lands/waters and rights. Sometimes these discussions are related to treaty negotiations so the political/legal aspects can be quite strong. One other aspect/challenge is sharing information that may be confidential and/or related to traditional knowledge.

There are opportunities as well. Systems where data can be managed and stored and accessed appropriately are out there. For example, DataStream is a data management system where First Nations can participate and upload their info and maintain ownership. Another opportunity would be to promote community-based monitoring in First Nations communities, which may match well with the way that First Nations are connected to the land. Through continued and expanded funding support, we can bring First Nations to the table to help with better data sharing and management.

Martin: As Gilles mentioned, monitoring and reporting work with First Nations is often under great pressure and tight timelines due to regulatory requirements associated with major industrial projects. On the opportunity side, First Nations are working from a very strong legal and rights foundation which can really support good water data.

1. **Can you speak to your longer term (5-year) vision for water monitoring and reporting in BC?**

Martin: A major piece would be that data is made public. There are two ways of looking at desired vision - it could be a singular outcome like a data hub using open source raw data that is easily accessible and includes data from multiple sources. A broader and more distributed outcome could involve building on existing strengths across the province such as the First Nations-led system in the Liard basin, the data hub in the Columbia basin and strong planning focus in Okanagan watersheds. We could have distributed and complementary examples demonstrating how data monitoring and reporting can be done more effectively. The gold standard would be a Provincial Water Board with regional systems and standards in basins around the province but all operating under a broader provincial standard.

Gilles: My vision would be that, as there is no ownership of water, similarly all info about water would be fully shared. That could mean that whenever a sample is submitted to a lab - from a mine or a streamkeepers group - that the data automatically becomes available to the public. I also like the idea of a water board. It's important that we have a structure that is viewed as independent and not biased - this is very important for building trust and promoting First Nations coming to the table and being open and sharing information. Another point to consider, however, is that this work is not cheap. Properly accessing data, managing data and designing tools and making tools available for interpretation is not cheap. We need proper and adequate funding in budgets so that water is really taken care of.

1. **What are some key considerations for the Province of BC in implementing a longer-term vision - what is the role of the Province in supporting regional initiatives?**

Martin: There is lots that the province could do, including playing a strong role in making data publicly available. Setting standards is also an important provincial role, but we don't want to suffocate the data we have available by imposing overly rigorous standards. We have to be careful and tiered with our standards and QC requirements. Then when data are made available, it can also tiered in having different levels of analyses for that data depending on the end user - that could all be set out by regulation.

Gilles: We want data to build as thorough a picture as possible. In terms of access to data, we want accessibility to allow us to cover the whole known history of a given river, water body etc. With new

regulations, there should really be encouragement when someone operates under a permit to consider the full suite of available data so we can compare with neighbouring water bodies or watersheds. We need to break down the siloed approach in data management and promote integration of data both in time and spatially.

1. **What advice do you have for funders who want to see progress on monitoring and reporting? Given limited resources, how can funders best support the shared vision for monitoring and reporting?.**

Gilles: Keep going with what you're already doing! This current initiative is important to continue to support. I also believe it is important to promote communication between various collectors of information. Carol Luttmer identified all the sources who are collecting data, so how can we promote sharing of that information and come up with a recommended location where that info should be stored. In the next 2 or 3 years, it's very critical that we come up with an idea of where that repository should be. Another idea is creating a pool of experts in data access and data management so that groups with very little resources (e.g. streamkeepers) can have access to people with knowledge of data for years and be more efficient in the way they do work and can get more of a return on their investments.

Martin (via email): The Roundtable approach is a great initiative to keep underway. It's also important to build on what is already happening. Need appropriate databases to store the data. Is EMS suitable? We also need locations where it is made accessible. This is likely best to be a democratic data hub like what is arising in the Columbia Basin - support that, then the template can later spread around the province. I recommend enabling communities and citizen science efforts through regional/provincial technical support and seed funding. There is so much untapped and undertapped community- and regional-level initiative that just needs enabling and supporting. We need to once again value basic data gathering, with station locations selected/designed systematically and emphasising future climates. We could also encourage government to convert and make available the enormous amount of data that is not accessible – either because it is in problematic formats or it is in some way proprietary or not made available when it could/should have been (EAO data?). Lastly, let's remember that it's not just about water data, it's also about land data because to understand and simulate water processes, we also need adequate accessible land data (e.g., soils).

6. **In the course of your work, is there an issue with data reliability and variable QA and QC?**

Martin: We know that data from certain providers has strict standards. For example, the Water Survey of Canada is the gold standard and we have a good sense of how reliable it is. With other datasets, there is more variability. If we expect top standards for all data we'll lose lots of data that could be useful for some purposes. So the answer is there's an issue but it's with the data that we're generally not using and that we could start to use.

Gilles: I would also be very cautious about putting the bar for QA and QC too high. It could result in rejecting data that could be very useful later on. I believe in creating clouds of data points and then as you go deep into your interpretation then you can start weeding out some of the information. But we should take as much information as possible to start with. Critical information can come from simple collection methods (e.g. non-professional streamkeepers). We don't want to lose that data just because it doesn't meet a strict QC standard.