Standardizing Monitoring and Data Collection Tools and Training

"Currently, there is [an] insufficiency of data and a need for more collaboration around monitoring and data collection."[1]

Proposed Concept

Standardized salmonid and ecological monitoring and data collection tools and training coordinated and maintained through BC's Aboriginal Aquatic Resource and Oceans Management groups (AAROMs) and other First Nations partnerships established by communities without an AAROM

Description

The need for standardized monitoring and data collection has been identified by Indigenous and non-Indigenous leaders, governments, industry and others with an interest in protecting and rebuilding salmonid stocks, protecting and remediating salmonid habitat, and making more informed salmonid management decisions. This was a key recommendation of the Wild Salmon Summit, Indigenous Program Review (IPR) and the *Made-in-BC Wild Salmon Strategy*. This need is also reflected in strategies 1, 2 and 3 of the Wild Salmon Policy (WSP) Implementation Plan; however, the timeline proposed for a strategy to improve documentation of standards for data, methods and reporting of monitoring programs Plan is March 31, 2022. This does not seem timely for the health and recovery of salmon stocks and habitat or the BCSRIF program.

There are 18 AAROMs in British Columbia. As noted in the IPR phase one final report, most of these groups are actively engaged in scientific and technical research, monitoring and data collection, and stock assessments. Many First Nations are also involved in these activities through the Aboriginal Fisheries Strategy (AFS), the Aboriginal Fund for Species at Risk, and other initiatives. Lack of program funding and access to other sources of funding have been the main barriers to AAROMs and communities taking on more resource-related activities. In fact, the goal of participants in the AAROM program is to build and maintain their technical expertise across Canada's marine and fish-bearing waterways through science and Indigenous knowledge, monitoring, data collection, and first response.

In addition, the priority of First Nations for the AFS program is to provide meaningful resource management employment to community members. This core program is often used today to leverage other funding sources to help communities manage multiple resources, including fish, fish

[1] *Summit Report,* Wild Salmon Summit, September 19-21, 2018.

habitat, species at risk, water, cumulative effects, and more. The IPR phase two final report concluded that enabling managers and technicians to follow multiple career path options would help build and sustain Indigenous resource management capacity.

Workshop

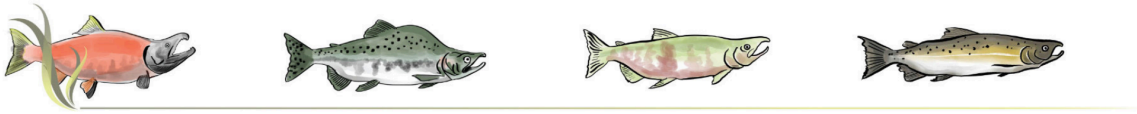
Following a discussion about the proposed concept and any required changes or input from AAROMs and First Nations without an AAROM, the workshop will focus on identifying the parameters and estimated cost of the project over three to four years.

For example, this project could include the following elements:

- Map an inventory of existing tools[2] being used by AAROMs and/or communities and organizations with AFS agreements for data collection and monitoring of:
  - salmonid fisheries
  - salmonid fish stocks, including any threatened, endangered or species at risk
  - salmonid fish habitat and water quality (including climate impacts, e.g., increasing water temperatures, reduced water levels in streams, creeks and rivers, etc.)
  - salmonid water flow damage and habitat obstructions and impacts (dams, culverts, agriculture, deforestation, aquatic invasive species)
  - land changes and vulnerabilities to riparian zones and habitats resulting from the activities of industries and the impacts of climate change[3]
  - other monitoring/data collection areas identified during the workshop
- Assess the current monitoring and data collection capacity of AAROMs and First Nations and the requirements to support full-time, meaningful employment in multiple resource monitoring and data collection areas
  - Cross-reference this analysis with other Institute-FNFC concepts[4] that receive BCSRIF funding
- Work with AAROMs and First Nations to establish the best tools for these activities and identify groups and/or communities requiring these tools
- Bring together AAROMs and federal and provincial partners to agree upon (co-develop):
  - the standardized tools required for data collection and monitoring to best inform salmonid and salmonid habitat management decision-making
  - the training[5] required to use these tools
  - a standardized job description of a salmonid and ecological resource monitor and data collector

While the Institute-FNFC workshop with AAROMs and First Nations may discuss existing monitoring and data collection tools, the inventory would be undertaken during phase one of the project by one or more participating AAROMs or communities. At the same time, other participating

[2] This inventory could build from information stored by DFO for confirmation by AAROMs and First Nations.
[3] This would be interlinked with the Institute-FNFC proposed *Concept #3: Risk Vulnerability* project
[4] This includes concepts #2, 3 and 4, and would likely inform the activities of concepts #6, 7 and 8.
[5] This exercise could leverage the results of a collaborative project presently being undertaken by the Institute to document Indigenous training and skills development courses offered at various institutions across Canada.



AAROMs or communities would be nominated to research and analyze the most cost-effective, modernized and adaptable-to-future technology tools to bring forward in a collaborative session of all participating groups and communities, as well as federal and provincial partners, to agree upon the standardized tools to be adopted. The inventory and research work would be completed over FY2020-21. The collaborative session would take place early in FY2021-22, and the acquisition of agreed-upon standardized tools and training would follow in the same fiscal year (and, possibly FY2022-23).

A fourth element of the project would involve establishing a data-usage protocol with federal and provincial government partners to ensure that the information collected is used to inform resource management. This protocol may (or may not)[6] enable data to be shared on the open data Pacific Salmon Explorer portal and/or other databases, such as the long-term ecological monitoring database. This exercise would take occur during FY2021-22 and FY2022-23.

It is expected that once trained and equipped with the standardized monitoring and data collection tools, existing program funding (through AAROM, AFS, AFSAR and other federal and provincial funding initiatives) would be used to retain these monitors. The final year of this project (FY2022-23 or FY2023-24) could be used to identify the federal and provincial funding programs that could be used by AAROM groups and/or First Nations communities for any future needs and/or this need could be integrated into the National AAROM Committee workplan. Participants in this project may also wish to consider using the final year of BCSRIF funding to pilot related economic opportunities for AAROMs and First Nations, such as offering at-sea observer, biological sampling and/or dockside monitoring services through government procurement vehicles.

Why is this Concept Being Considered?

There is widespread support for standardized data and a common database platform to support resource management decision-making. At present, there are multiple initiatives and funds used to collect data and for monitoring activities, but no standardization or centralization of the information that results from these activities. At the same time, it is difficult for First Nations to navigate all of the potential programs and opportunities to keep data collectors, monitors, and technicians meaningfully employed.

A national network of AAROMs has been formed and is regularly meeting to advance their workplans, expertise (capacity building) and Indigenous-set priorities. The Department has also committed to act upon the recommendations put forth during IPR, which include supporting greater access by First Nations to programs, tools, protocols and training that support their participation in environmental monitoring and decision-making – and enabling communities to share capacity-building best practises and identify areas of potential collaboration.

As a joint DFO-Province initiative, BCSRIF is an opportunity to break down silo'd data and information gathering by different levels of government and sectors which prevents a holistic

[6] The decision to share information on an external platform rests with individual First Nations and/or AAROMs.

approach to be taken to the management of salmonids and habitat. AAROMs and BC First Nations can bridge the data gaps using standardized collection and monitoring tools across the Province, including in marine, near-shore, coastal, and riparian zones.

Over the long-term, this activity would provide DFO and provincial agencies access to standardized data collection and monitoring services across BC either through funded programs or procurement.

Alignment with BCSRIF Priorities

This project would invest in existing organizations that are already set up to build and expand the technical and scientific capacity of First Nations in BC. It may also invest in new First Nations aggregates or collaborations established to collect data and/or monitor salmonids or habitat of shared interest. Overall, this project leverages what has been funded over the past few years and what is currently being funded by DFO and the Province to ensure consistency and standards for monitoring and data collection programs in the future.

Alignment with Other Initiatives (Potential Partners)

BCSRIF support may be used to augment the funding or activities of other programs.

- **Indigenous Habitat Participation Program**

  One part of this $50M grants and contributions fund is intended to increase collaborative activities in monitoring (conservation management) and data management. This could be complementary to the BCSRIF funding (e.g., to ensure data management of 'data collected.')

- **Environmental Stewardship Initiative**

  In 2014, this initiative began to develop new stewardship projects with 30 First Nations to establish positive environmental legacies and to generate high-quality, accessible and trusted environmental information which balances traditional Indigenous knowledge and practices with the western approach to environmental management. The proposed Standardized Monitoring and Data Collection Tools and Training project would equip First Nations that are participating in shared stewardship projects with additional/complementary capacity and tools.

- **BC's Fish and Fish Habitat Inventory Standards**

  Fish and fish habitat inventories provide information about fish distribution and the condition and capability of supporting habitats. Fish and fish habitat inventories require a number of standards to ensure that information collected meets a desired level of quality. The Resources Information Standards Committee has fish sampling standards, fish habitat sampling standards and associated field forms and waterbodies, and location information standards.

- **BC's Cumulative Effects Framework**

  The cumulative effects framework is a set of policies, procedures and decision-support tools that help identify and manage cumulative effects consistently and transparently across BC's natural resource sector. This initiative has resources for training, data collection and monitoring.