BACKGROUNDER

EXPANDING WATER MONITORING IN THE CANADIAN COLUMBIA BASIN

OVERVIEW FOR LOCAL REFERENCE GROUPS

WHY IS MORE WATER MONITORING NEEDED IN THE COLUMBIA BASIN?

- Climate change is impacting hydrological cycles in the Canadian Columbia Basin. Climate impacts that are taking place now are presenting as extreme temperature and precipitation, flooding, fire events and peak glacial melt.
- Water quantity, quality (temperature, acidity, turbidity, etc.) and timing of flow are changing.
- Climate impacts are also present in both high and low elevation lake ecosystems, soil moisture, wetlands, and groundwater aquifers in the region.

Existing water monitoring networks across the Columbia Basin pre-date the need for regional climate impacts monitoring and aren't sufficient for understanding the variability in hydrologic response to climate impacts (ie. how watersheds will react). The goal of the Columbia Basin Water Monitoring Framework is to establish a unified monitoring network based on a Priority Monitoring Matrix that reflects local priorities within a scientific water balance approach to support future local water budgets (ie. water allocation based on priority needs).

WHAT IS A WATER BALANCE APPROACH?

- In hydrology, a water balance equation can be used to describe the flow of water in and out of a system.

An expanded water monitoring network that provides the data required to measure the Basin's water balance is a strong foundation for responding to key environmental water concerns associated with the climate crisis. The proposed framework groups the Columbia Basin into 10 hydrologic regions (HRs) reflecting broad differences in climate (see Figure 1).

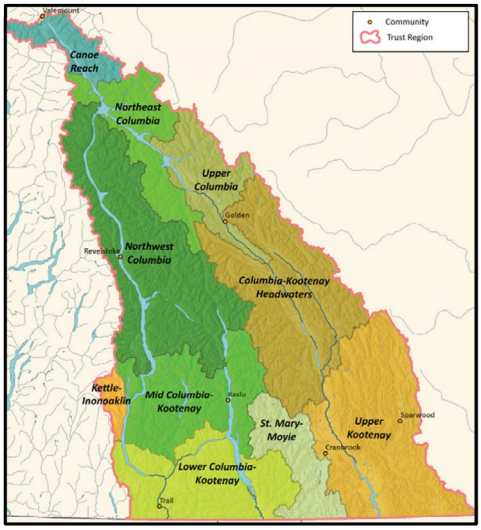

FIGURE 1. UCB HYDROLOGIC REGIONS AS INDICATED BY PATTERNS OF CLIMATE AND SURFACE RUNOFF.

WHAT IS A PRIORITY MONITORING MATRIX?

- A Priority Monitoring Matrix is the tool that will be developed to help prioritize watersheds for monitoring. Local knowledge and information in addition to the scientific water balance approach is required to develop a complete Priority Monitoring Matrix.

Scientific criteria related to watershed response will inform how focal watersheds are grouped. Within each grouping, specific watersheds for monitoring are then based on locally available information such as First Nations Traditional Knowledge and other local priorities. This localized expertise and knowledge will be provided by Local Reference Groups who will determine local priorities and gaps in historic and current monitoring, and identify the shortlist of actual proposed monitoring sites for their respective Area of Interest.

WHAT IS A LOCAL REFERENCE GROUP?

A Local Reference Group is a combination of all the different Water Holders within a specified hydrologic region. These Groups will be composed of individuals who have firsthand knowledge of an Area of Interest within a focal watershed, while at the same time ensuring that the range of values and interests of the region is represented. The Local Reference Groups can include but are not limited to:

- First Nations
- Industrial and non industrial water users
- water managers
- local watershed interests
- local environmental monitoring groups
- appropriate technical expertise (e.g., hydrology, fisheries, terrain/soils) drawn from local and provincial government staff, consultants and/or academic researchers.

WHAT IS THE ROLE OF A LOCAL REFERENCE GROUP?

Participants of the Local Reference Groups are invited to share and participate in knowledge-sharing and story-telling that will aid in the identifying of areas of concern. This approach will be carried out through various collaborative one-on-one meetings and activities that will be carried out by the Local Reference Group Coordinators. Participants will be able to provide local knowledge about an Area of Interest, such as:

- watershed histories and stories,
- occurrence of past extreme events,
- water demands,
- past watershed impacts from development,
- current and past water monitoring,
- sources of existing data,
- water quantity and quality issues,
- groundwater levels issues,
- current/historical wetland monitoring,
- changes in snow/precipitation,
- glacier changes,
- images, and
- various other forms of knowledge and information.

A Local Reference Group will be consulted throughout the process to ensure that the stories of community around water are told, and decisions are consistent with local on-the-ground conditions. Its participants are there to provide information on local needs and priorities, and to ensure that the final selection of monitoring sites and parameters will meet local needs.

If you are interested in participating in a Local Reference Group as part of the Columbia Basin Water Monitoring Framework, please contact:

Wendy Booth
Local Reference Group Coordinator
Columbia-Kootenay Headwaters
eklrg@livinglakescanada.ca

Living Lakes CANADA

Richard Johnson
Local Reference Group Coordinator
Mid Columbia-Kootenay
richard.slrc@gmail.com