

UPPER KOOTENAY
LOCAL REFERENCE GROUP
2023 ENGAGEMENT REPORT





J Siderius
KOKANEE SALMON IN THE COLUMBIA BASIN © JOANNE SIDERIUS

LAND ACKNOWLEDGEMENT

Living Lakes Canada acknowledges that our water stewardship work originated in the unceded traditional territories of the Ktunaxa, Secwepemc, Sinixt and Syilx Nations who have stewarded these lands for generations. Recognizing Indigenous People as the rightful caretakers of their unceded territories, we work to complement their intergenerational work and Indigenous-led water stewardship initiatives.

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Existing water monitoring networks in the Canadian Columbia Basin are insufficient to understand the complex impacts of climate change and other stressors on fresh water sources in the region’s diverse watersheds.

The goal of the Columbia Basin Water Monitoring Framework is to establish a unified monitoring network to support the tracking of climate and other impacts on water supply for communities and ecosystems. The data collected will be used to inform adaptive strategies for watershed management.

Integral to the process is the selection of monitoring sites using a Priority Monitoring Matrix which is developed to collate scientific and community priorities, identify synergies, and select sites which will meet multiple objectives, resulting in a nested, cost-effective approach to monitoring.

LOCAL REFERENCE GROUP OVERVIEW

The Columbia Basin can be divided into 10 hydrologic regions (HRs) reflecting broad differences in climate. In 2022, this project was implemented in 3 pilot HRs. In 2023, the project is being expanded to include the **Upper Kootenay Hydrologic Region**.

The Upper Kootenay Hydrologic Region includes the communities and areas surrounding:

- City of Cranbrook
- Yaqit ᑭa-knuqᑭi 'it
- ᑭaqam
- Skookumchuck
- Wasa
- Jaffray

Major water bodies in this region include the:

- Koocanusa Reservoir
- Wasa Lake
- Lazy Lake
- Premiere Lake
- St. Mary River
- Lussier River
- Flathead River
- Elk River (the Elk River Valley and surrounding areas were included in the 2022 Pilot Implementation of the project)



To inform site selection, a Local Reference Group (LRG) was assembled for the Upper Kootenay HR. An LRG is composed of individuals with interest in or knowledge of the HR. LRG Engagement ensures local values and interests are incorporated into and represented by the monitoring network.

A series of meetings were held in February and March 2023 in Wasa Lake, Cranbrook, Jaffray and online. In each meeting, participants were presented with a program overview and several discussion questions and activities. Attendees also completed a written survey. For those unable to attend the meetings, one-to-one interviews were conducted with interested individuals. Local First Nations bands were invited to participate in direct consultations in addition to the broader engagement meetings. Recognizing Indigenous People as the rightful caretakers of their unceded territories, Living Lakes Canada works to complement their intergenerational work and Indigenous-led water stewardship initiatives.

The feedback provided through this LRG engagement process will be paired with the results of the geospatial data gap analysis conducted by MacDonald Hydrology Consultants Ltd. (MacHydro), a specialized consulting company based out of Cranbrook, BC, to create the Priority Monitoring Matrix that will guide the selection of monitoring sites in the Upper Kootenay (UK) HR.

ENGAGEMENT OUTCOMES

This report provides a broad overview of the community engagement process. Sensitive information has been omitted. Some of the feedback provided is related to factors and concerns outside of the scope of this project; those inputs are still presented in this report as they may be of use for other projects or initiatives.

DEMOGRAPHIC BREAKDOWN

60 participants from a broad range of sectors and demographics participated in the UK LRG overall (Figure 1). This includes attending a meeting, participating in an interview, or independently completing the online survey. Out of the 60 LRG participants, 39 people completed the survey.



UK LRG Demographic Breakdown

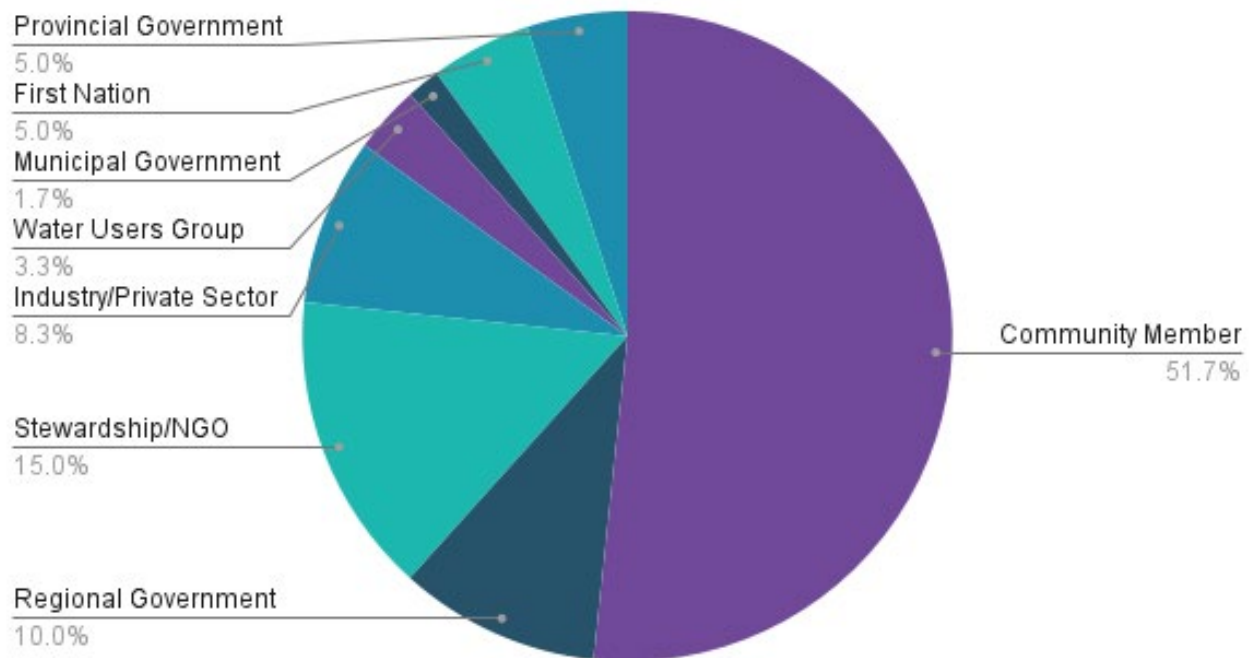


Figure 1: Participation in the Upper Kootenay LRG across sectors and demographics.

QUESTIONS AND CONCERNS ABOUT WATER AND CLIMATE CHANGE

At the in-person meetings, participants were asked to generate questions or concerns they have about water and climate change. Prominent themes were around water supply, emergency preparedness and the impacts of human activity.

Selected Questions and Concerns About Water and Climate Change From the UK LRG:

- How will watersheds be protected?
- What impacts does continued development have on groundwater?
- Is there any monitoring being done for agricultural land run off for pesticides and animal waste?
- After a fire what is the effect on a water body?
- How does logging affect stream flow?
- Are the local aquifers able to meet the needs of rural development?
- Potability of Rosen Lake – we can drink it now... how long will that last?
- Recent drought and extreme heat conditions in recent years requires a rethinking of water usage.
- How long will Lazy Lake be able to support fish?

Climate Change and Water Questions and Concerns by Theme

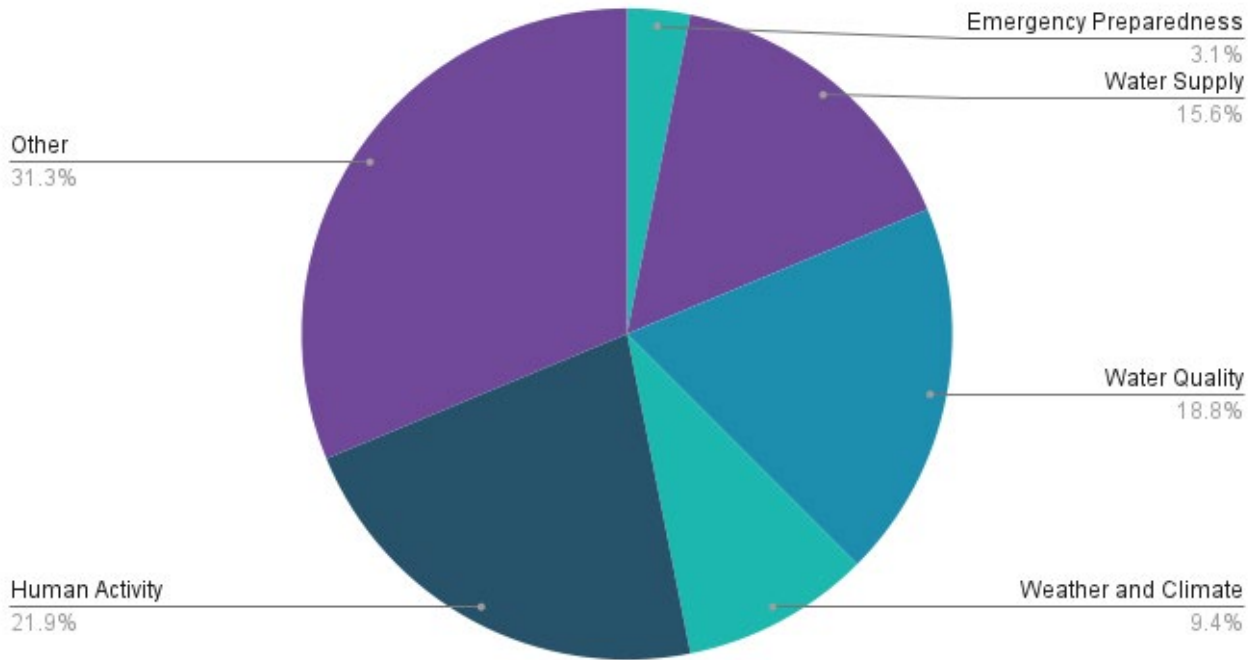


Figure 2: Themes of community concerns and questions from the in-person meetings.



Figure 3: Word cloud of keywords from the climate and water supply questions activity at the in-person LRG meetings. Words mentioned more frequently appear in a larger size.

LOCATIONS OF CONCERN

Through the survey, meeting discussions, map activities, and interviews, participants had the opportunity to suggest specific streams, creeks, lakes, ponds, watersheds and aquifers they would like to see monitored. They were also invited to share local knowledge, concerns, and identify opportunities for collaboration.

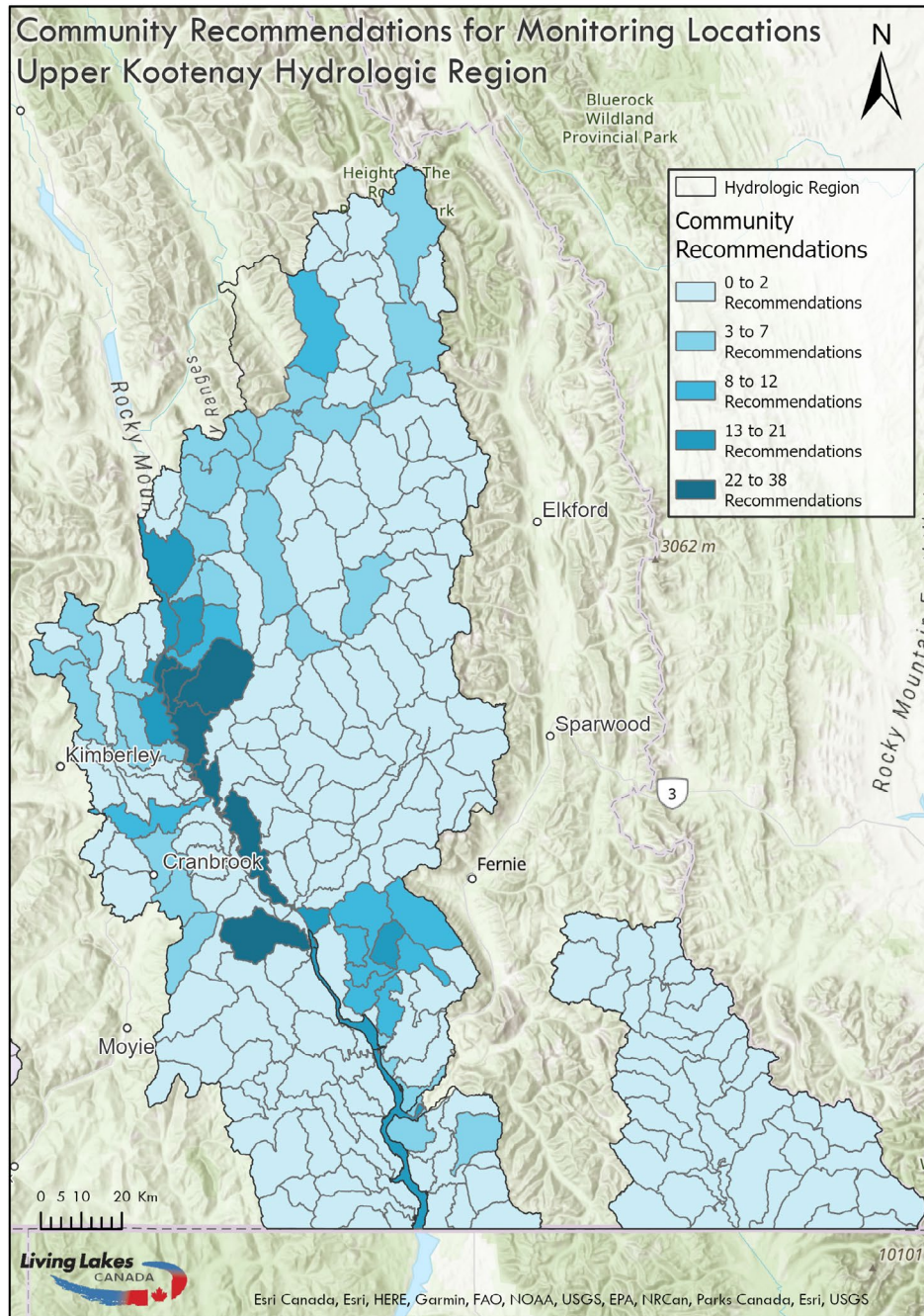


Figure 4: This map highlights watersheds and locations which LRG participants recommended for increased monitoring of various types.

These are the locations most frequently recommended by the LRG. All other locations recommended have been recorded and will be considered for site selection. Note that several of these locations may already be monitored, and others may be outside of the scope of this project.

For monitoring of **STREAM FLOW** (quantity), participants frequently recommended:

- Lewis Creek
- Kootenay River
- Haha Creek
- Little Sand Creek
- St. Mary River
- Sand Creek
- Cherry Creek
- Elk Creek
- Goat River
- Lussier River
- Kikomun Creek

For monitoring of **STREAM WATER QUALITY**, participants frequently recommended:

- Kootenay River
- Elk Creek
- Sand Creek
- Lewis Creek
- Haha Creek
- Little Sand Creek
- St. Mary River

For monitoring of **LAKE LEVEL**, participants frequently recommended:

- Lazy Lake
- Rosen Lake
- Wasa Lake
- Koocanusa Lake
- Northstar Lake
- Tie Lake
- Whiteswan Lake
- Baynes Lake

For monitoring of **LAKE WATER QUALITY**, participants frequently recommended:

- Lazy Lake
- Wasa Lake
- Northstar Lake
- Rosen Lake
- Tie Lake

For monitoring of **WETLAND WATER QUANTITY AND QUALITY**, participants frequently recommended:

- Ha Ha Creek Wetland
- Bummer's Flats
- Columbia Lake Wetland
- Wolf Creek Wetland
- Wasa Slough
- Cherry Creek Wetland

MONITORING PRIORITIES FOR WATER QUANTITY AND QUALITY

In addition to specific locations, the survey asked residents to identify values or conditions that would merit additional monitoring for various parameters. Watersheds which meet these criteria will be identified in the Priority Monitoring Matrix.

For lake and stream **WATER QUANTITY** (lake level or stream flow), participants identified the top 3 priorities for monitoring as lakes and streams that are sources of drinking water, fish habitat, and impacted by agriculture.

Priorities for Lake and Stream Water Quantity Monitoring

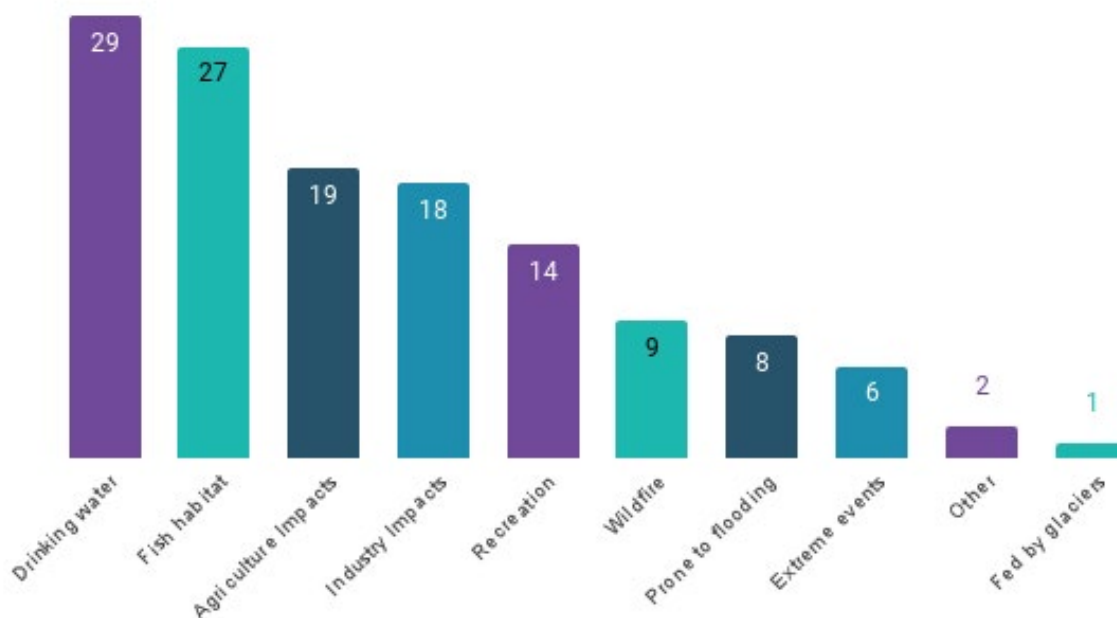


Figure 5: Survey responses for the question “More WATER QUANTITY monitoring should be completed on lakes or streams that are:”

For lake and stream **WATER QUALITY**, the top 3 priorities for monitoring were lakes and streams that are sources of drinking water, fish habitat, and used for recreation.

Priorities for Lake and Stream Water Quality Monitoring

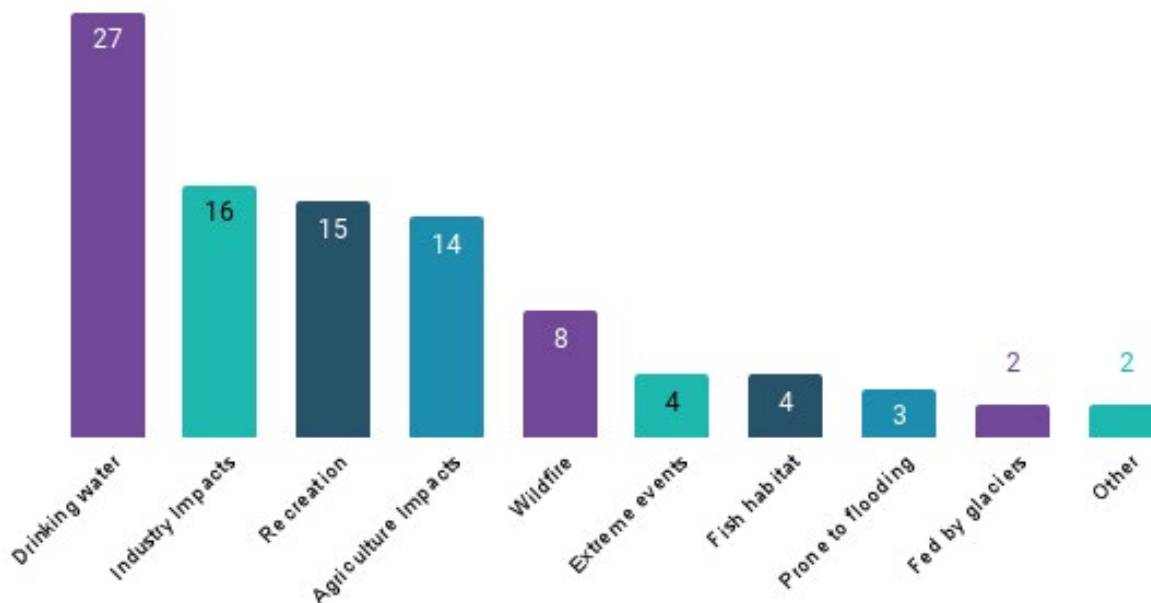


Figure 6: Survey responses for the question “More WATER QUALITY monitoring should be completed on lakes or streams that are:”

GROUNDWATER

Concerns about aquifer depletion, reduced supply in wells, over-allocation and increasing demands on groundwater, contamination or pollution, a lack of knowledge about surface-groundwater interaction, and concerns about aquifers in the South Country region were themes related to groundwater. Other specific aquifers and locations of concern were also identified.

HIGH ELEVATION

Participants expressed concerns about melting glaciers and declining snowpacks, as well as the impacts of industry and wildfire on high elevation ecosystems.

CULTURAL CONSIDERATIONS

Participants highlighted the need for Indigenous perspectives to be included in the project. Liaising with local landowners, collaborating to complement existing monitoring efforts, increased youth engagement, and an awareness of Agricultural Land Reserve were also suggested.

LAKE HEALTH

The health of local lakes, and the impacts of recreational boating were prominent concerns in the UK LRG. Algae in lakes was another common concern.

PROJECT OUTCOMES

In terms of anticipated benefits and outcomes from the project, participants saw value in:

- Data leading to improved decision making, particularly around water usage and allocation
- Easier access to data
- Improved coordination between monitoring groups
- Safe and sufficient water supply for humans and ecosystems
- Networking to address the impacts of recreational boating
- Improvements to industry practices

PREFERRED RESOURCES

Survey respondents were interested in accessing the data from the program in a variety of ways, with the primary interests being:

- Charts and graphs
- Scientific reports
- Interactive maps
- Blog or social media content

Preferred Resources for Accessing Project Data

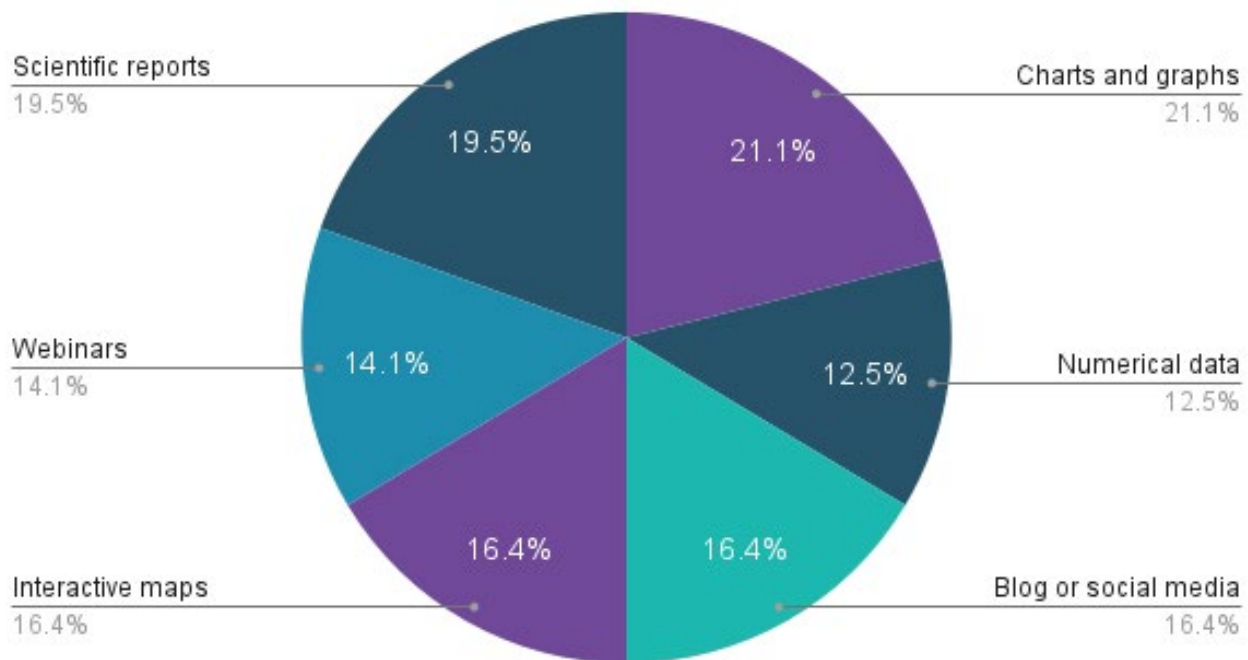


Figure 7: Survey responses for the question “Which of the following resources would be the most useful for you to interpret the data resulting from this program?”

WHAT'S NEXT?

- ⇒ Living Lakes Canada is currently developing a Priority Monitoring Matrix, which collates the LRG feedback and the results of the data gap analysis to guide monitoring site selection.
- ⇒ A shortlist of sites will be developed later this summer using the Priority Monitoring Matrix and shared with the LRG for review.
- ⇒ Final site selection will be informed by LRG feedback and the results of site reconnaissance.
- ⇒ Monitoring implementation will be phased, with some monitoring being initiated in Fall 2023, and further monitoring will be implemented in the following years.
- ⇒ Preliminary data from the project will be made available in 2024 through the [Columbia Basin Water Hub](#) database.

As multi-year data records are required for statistical analysis and subsequent application of data for decision making, this project is an investment in long-term benefits to water stewardship and climate resilience. Applications of the outputs of this project will continue to develop in the following years of the project.

CONTACT

If you have any questions, please contact:

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For updates and resources about the

CBWMF, visit the project page:

www.livinglakescanada.ca/cbwmf



WASA LRG MEETING © LLC PHOTO