



A Pathway to Available and Accessible Data

Knowing Water Symposium
Paige Thurston
April 3, 2024

Land Acknowledgement

Living Lakes Canada prioritizes Reconciliation with Indigenous Peoples. We commit to respecting the rights of Indigenous Peoples by aligning our work with the goals of local Indigenous groups. We recognize the role and responsibility that Indigenous Peoples have to all land and the water that flows through it, and we honour that relationship by uplifting Indigenous voices in water stewardship.



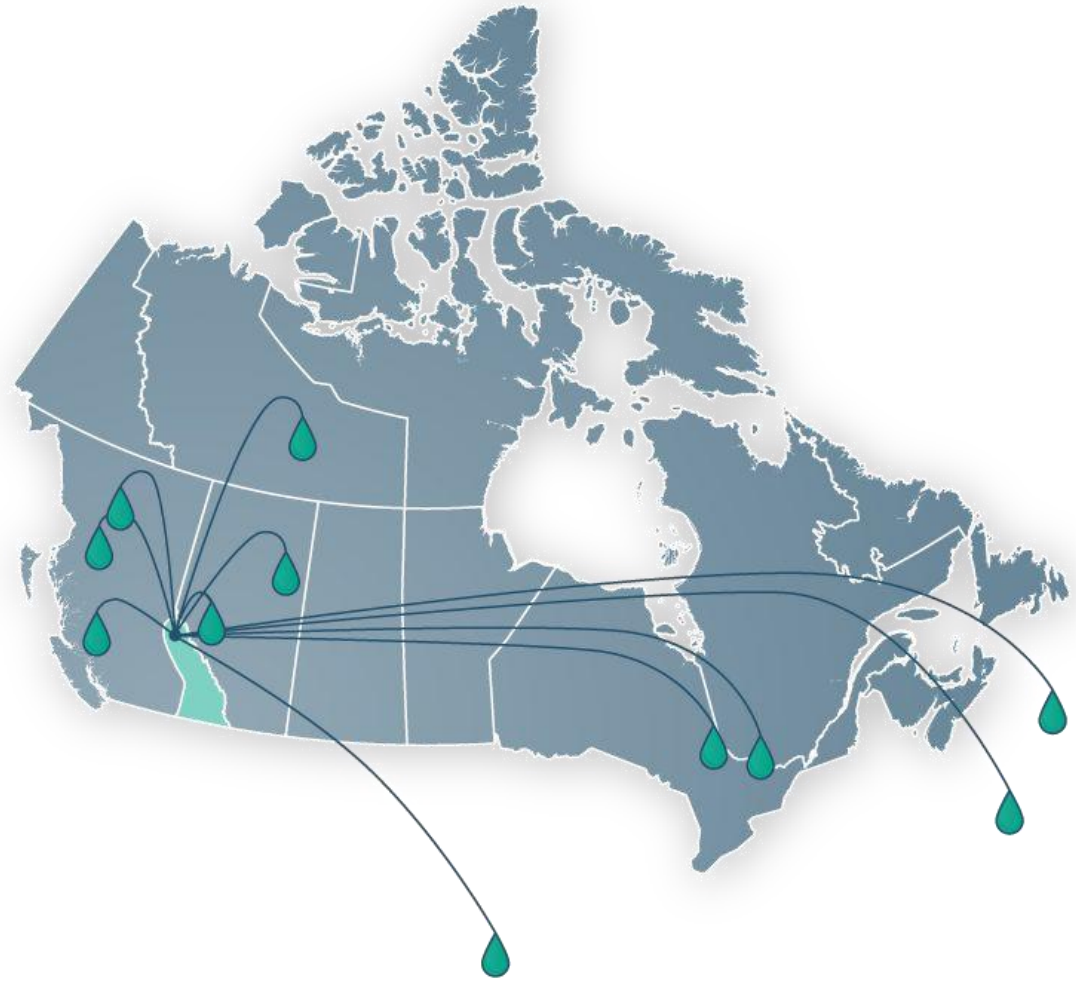
Living Lakes Canada

National

- Member of BC and Federal Water Coalitions
- National Lake Blitz
- STREAM (Sequencing The Rivers for Environmental Assessment and Monitoring)
- CABIN (Canadian Aquatic Biomonitoring Network)
- iTrackDNA (Targeted Environmental DNA Research)

Regional

- Columbia Basin Water Monitoring Framework
 - Columbia Basin Water Hub
 - Columbia Basin Groundwater Monitoring Program
 - High Elevation Monitoring Program
- Foreshore Integrated Management Planning
- Eastern Slopes Aquatic Monitoring Collaborative
- Yukon Lakes Monitoring



Understanding Open Data

What is open data?

“...data that can be freely used, re-used and redistributed - subject only, at most, to the requirement to attribute and sharealike.”

(Open Knowledge Foundation)



Importance of Open Data

Access

Collaboration

Transparency

Preservation

Stewardship

Considerations for Open Data

- **Indigenous Data and Knowledge**
 - CARE Principles (Research Data Alliance International Indigenous Data Sovereignty Interest Group, 2019)
 - First Nations Principles of OCAP® (First Nations Information Governance Centre)
- **Personal/Private Data**
- **Species or Habitats at Risk**
- **Security or Private Property**



FAIR Data Principles

F

A

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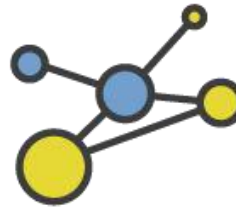
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Findable



Accessible



Interoperable



Reusable

(Wilkinson et al., 2016)
Image: nlm.nih.gov

The Importance of Accessibility

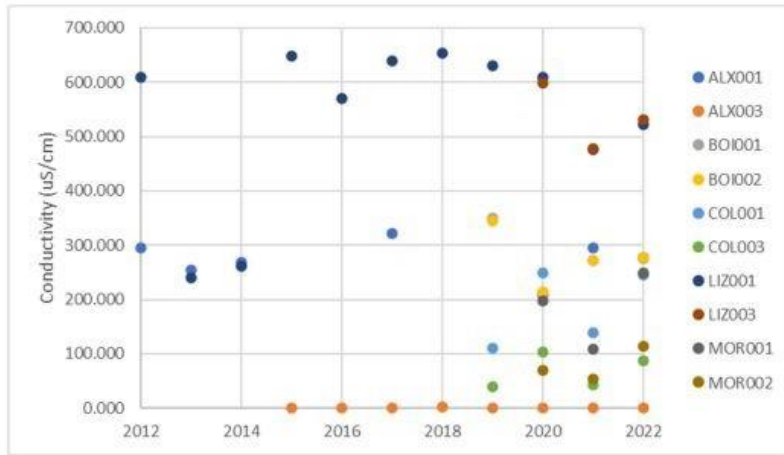


Figure 39. Conductivity levels measured at CBWM sites from 2012-2022.

Example of a chart in a .pdf report

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	date_time_sampled	date_analysed	sample_id	site_ID	latitude	longitude	analyte	method	unit_of_m	value_tpy	matrix	detection	values
2	2014-10-07 13:25	2014-10-15	ALX003_20141007_1325	ALX003	49.65521	-114.731	Solids, To	Sample ar	mg/L	actual	water	1	<1.0
3	2015-04-28 14:25	2015-05-06	ALX003_20150428_1425	ALX003	49.65521	-114.731	Orthopho	Sample ar	mg/L	actual	water	0.005	<0.0050
4	2015-04-28 14:25	2015-05-06	ALX003_20150428_1425	ALX003	49.65521	-114.731	Phosphori	Sample ar	mg/L	actual	water	0.005	0.0176
5	2015-04-28 14:25	2015-05-06	ALX003_20150428_1425	ALX003	49.65521	-114.731	Solids, To	Sample ar	mg/L	actual	water	4	5.3
6	2015-05-26 17:32	2015-06-03	ALX003_20150526_1732	ALX003	49.65521	-114.731	Solids, To	Sample ar	mg/L	actual	water	4	51.8
7	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Sulfate	Sample ar	mg/L	actual	water	1	12.5
8	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Orthopho	Sample ar	mg/L	actual	water	0.005	<0.0050
9	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Phosphori	Sample ar	mg/L	actual	water	0.005	<0.0050
10	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Solids, To	Sample ar	mg/L	actual	water	4	<4.0
11	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Hardness,	Sample ar	mg/L	actual	water	0.5	145
12	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Mercury, "	Sample ar	mg/L	actual	water	0.00001	<0.010
13	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Aluminun	Sample ar	mg/L	actual	water	0.003	0.0183
14	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Antimony	Sample ar	mg/L	actual	water	0.0005	<0.0005
15	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Arsenic, T	Sample ar	mg/L	actual	water	0.0001	0.00013
16	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Barium, T	Sample ar	mg/L	actual	water	0.001	0.0577
17	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Beryllium	Sample ar	mg/L	actual	water	0.0001	<0.0001
18	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Bismuth, "	Sample ar	mg/L	actual	water	0.001	<0.001
19	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Boron, To	Sample ar	mg/L	actual	water	0.05	<0.05
20	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Cadmium,	Sample ar	mg/L	actual	water	0.00001	<0.00001
21	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Chromium	Sample ar	mg/L	actual	water	0.001	<0.001
22	2015-07-14 15:10	2015-07-22	ALX003_20150714_1510	ALX003	49.65521	-114.731	Cobalt. To	Samole ar	me/L	actual	water	0.0005	<0.0005

Example of accessible .csv data.

Data Licensing

“A data licence is a legal arrangement between the creator of the data and the end-user specifying what users can do with the data.”

(Danish National Forum for Research Data Management)

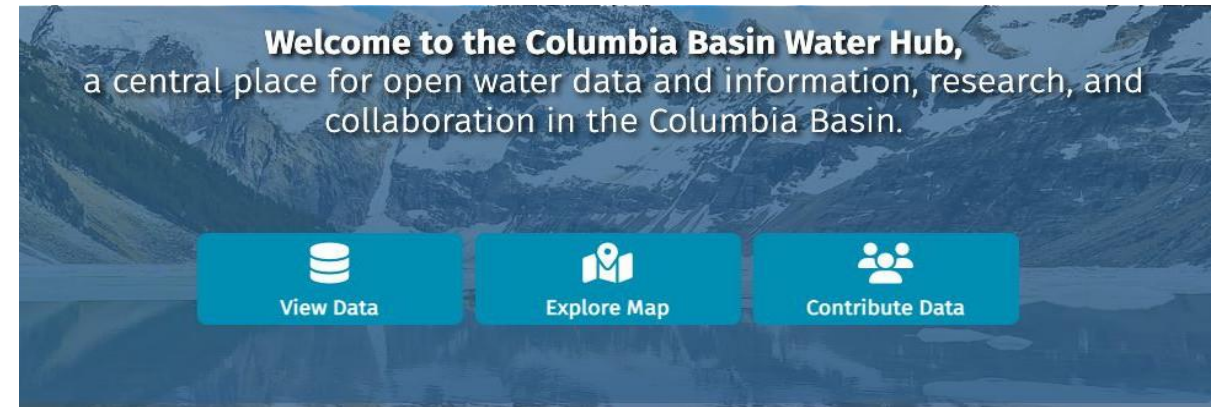


A photograph of a stream with a water level gauge and a metal weir structure. The gauge is a white vertical board with blue markings and numbers, showing a water level of approximately 5.5. The weir is a long, narrow metal structure with a series of holes, positioned across the stream. The stream is surrounded by mossy rocks and fallen leaves.

COLUMBIA BASIN WATER HUB

The Role of The Columbia Basin Water Hub

- A central place for water data
- One-to-one data management approach.
- User friendly and intuitive
- Increase data accessibility and visibility.



Visit cbwaterhub.ca

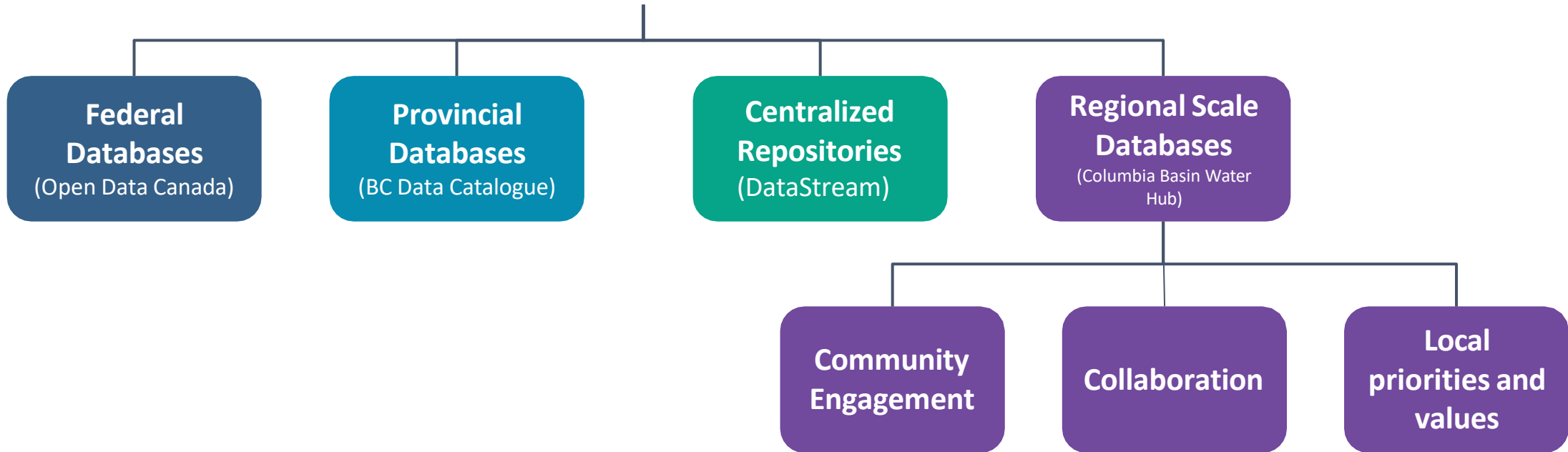
The Columbia Basin Water Hub in the Real World

- Use Cases
 - Government Decision Making
 - Pacific Salmon Foundation
 - Niagara College
 - Consultants and stewardship groups



Where do I put my data?

Database Options



Get Involved



Visit the Columbia
Basin Water Hub
at cbwaterhub.ca

Become a
contributor

Thank you!

Follow us & learn more



Contact us

paige@livinglakescanada.ca

Visit our website

www.livinglakescanada.ca

