Columbia Basin GROUNDWATER Monitoring Program

Helping understand groundwater systems to ensure long-term water sustainability for nature, communities, and watershed stakeholders.

Why is groundwater important?

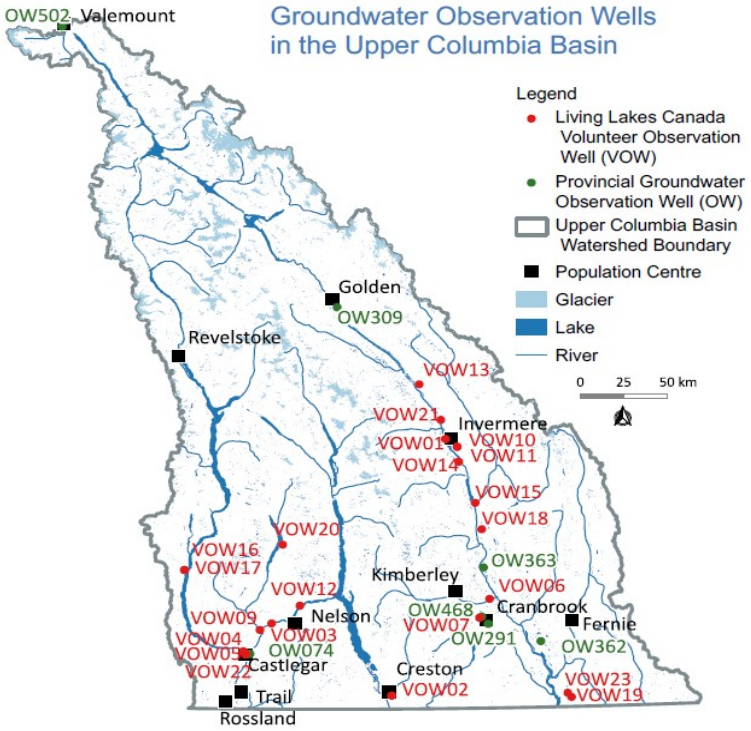
Groundwater is used in the Columbia Basin for domestic, agricultural, industrial, and commercial purposes. Groundwater helps maintain water levels and water quality in wetlands, streams, rivers, and lakes. It is vital for maintaining healthy ecosystems, including habitat for fish, waterfowl, and wildlife. Careful management and allocation of groundwater is becoming increasingly important as populations continue to grow, demand increases, and pressures such as climate change intensify.

Groundwater in the Columbia Basin

We know that mountains are important sources of freshwater for lowlands. However, the storage and flow of groundwater in mountain environments is generally poorly understood. In the Basin, groundwater occurs in sediments (e.g., sand, gravel) and bedrock. Its distribution and supply are variable and depend on the geology, proximity to areas of recharge and discharge, and climate. In many areas within the Basin groundwater is hydraulically connected to surface waters and feeds wetlands, streams, rivers, and lakes.

Why monitor groundwater?

Groundwater systems are dynamic and adjust to short and long-term changes in climate, groundwater withdrawals, and land cover. Data are needed to understand how groundwater responds to these changes and ensure supply is available for people and for flow to surface waters.



The Columbia Basin Groundwater Monitoring Program aims to monitor groundwater across a range of climatic, geological, topographical, and hydrological conditions and water use intensities throughout the Basin. It complements the Provincial Groundwater Observation Well Network, which has a limited number of observation wells in the Basin.

This program is supported by the following funders and partners:

Hydro Geo Logic · TD Friends of the Environment Foundation · Columbia Basin trust · real estate foundation BRITISH COLUMBIA · BRITISH COLUMBIA · vancouver foundation · Watersheds BC · RBC · GW SOLUTIONS · JR DRILLING LTD

Contact Living Lakes Canada to:

- Discuss volunteering your well for monitoring
- Make a donation to the program and receive a charitable tax receipt
- Learn more about groundwater in your area
- Get assistance accessing data

livinglakescanada.ca/projects/groundwater/
groundwater@livinglakescanada.ca
250-309-8325

How the program works

1 The program partners with well owners to establish Volunteer Observation Wells.

Well owners can include homeowners, water supply system operators, municipalities, First Nations, farmers, ranchers, industries, park operators, and land trusts.

Criteria for Volunteer Observation Wells:

- Meet construction standards
- Likely available for 10+ years
- Well owner agrees to share data
- Provides data on seasonal and annual groundwater level trends and/or data that contribute to water management practices

2 Water level sensors and data loggers are installed and maintained to collect hourly water level measurements.

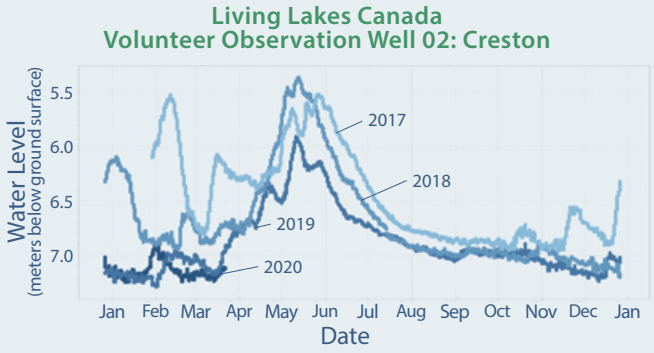
Well owners can download or view water levels via a free app that uses Bluetooth technology on their iOS or Android™ device.

Long term data are used for a variety of purposes such as:

- Analyzing and forecasting water level trends
- Monitoring changes in groundwater recharge and storage
- Monitoring effects of climate variability and groundwater withdrawals
- Understanding groundwater-surface water interactions

3 Data are downloaded, reviewed and analyzed.

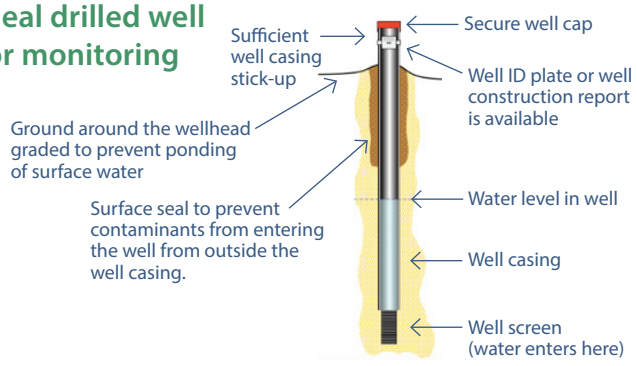
Living Lakes Canada visits the wells to maintain the water level sensors and data loggers. Downloaded hourly water level data are analyzed to determine seasonal and yearly variations. An annual report is produced.



4 Data are shared publicly on the Columbia Basin Water Hub and the BC Real-time Water Data websites.

www.cbwaterhub.ca &
http://aqrt.nrs.gov.bc.ca

Ideal drilled well for monitoring



Living Lakes Canada acknowledges our water stewardship work originated in the unceded traditional territories of the Ktunaxa, Lheidli T'enneh, Secwepemc, Sinixt and Syilx Nations who have stewarded these lands for generations.

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