

WLLID AGM

Water Monitoring Report (2023)

As part of its mandate to monitor the quantity and quality of water at Wasa, WLLID volunteers undertake over 150 hundred hours per season measuring and sampling water.

From mid-May to early October, WLLID volunteers use several different measures to gauge the status of water, and any changes whether it be the level or what's in it. Ice-on and ice-off dates are also recorded.

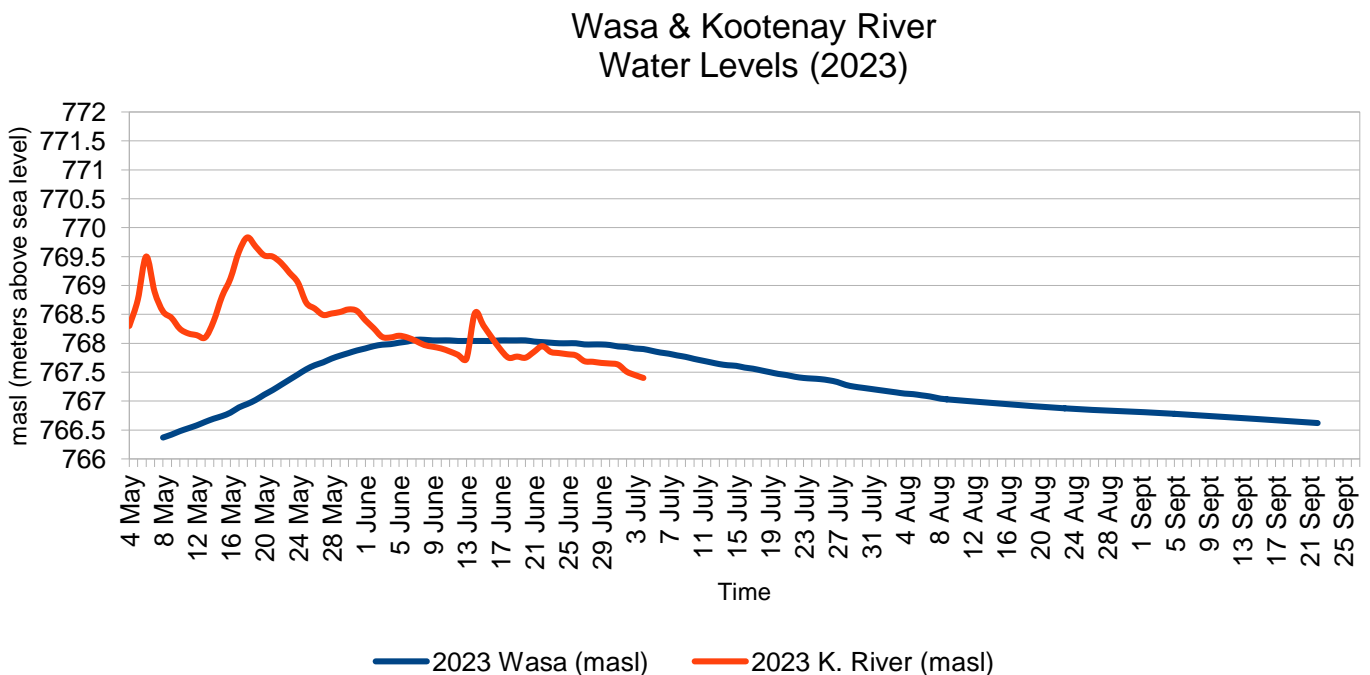
Water Level

WLLID takes daily depth readings at the lake and Kootenay River. These values are entered into a spreadsheet where changes in water level are recorded and graphed.

Reports on water levels are posted on the WLLID website (wasalake.ca).

The graph below shows the 2023 water cycle.

This year the Kootenay River level rose sooner than usual and fell back below the measuring gauge three (3) weeks earlier than in 2022.

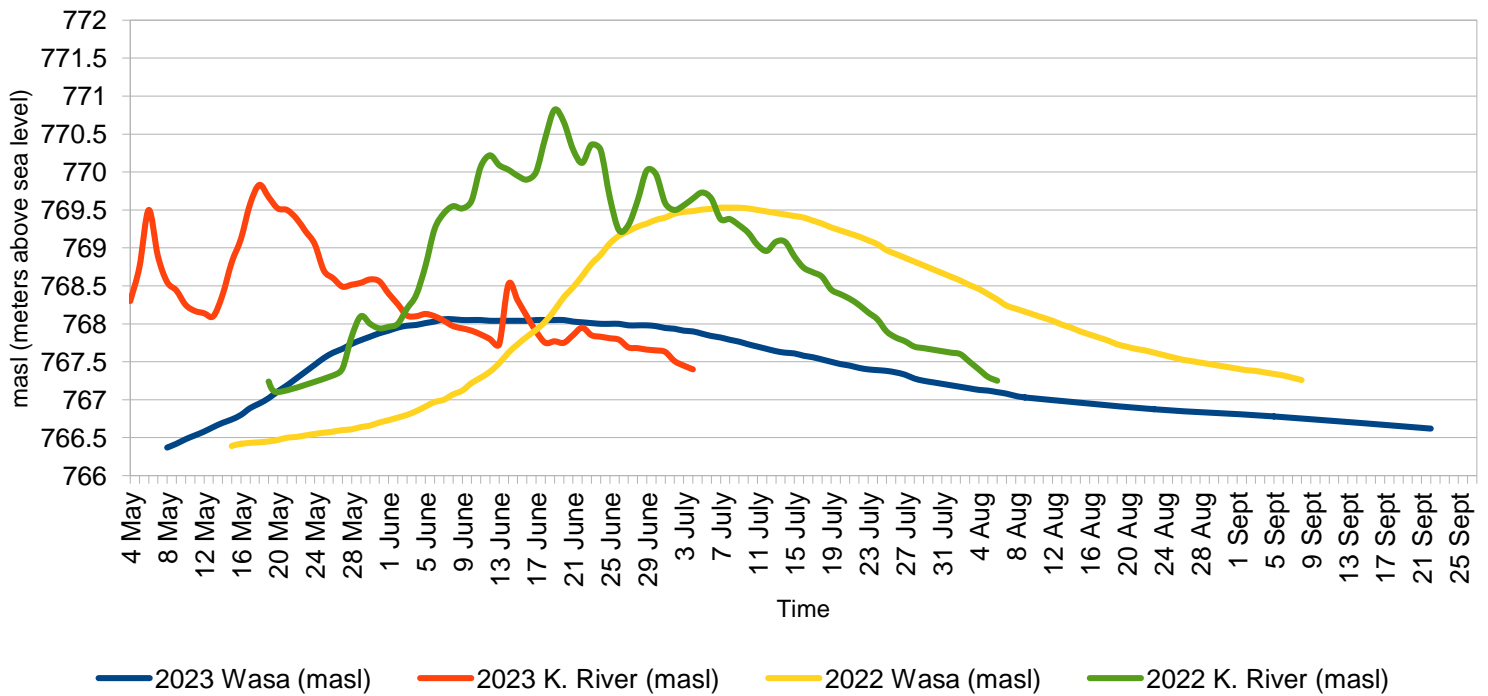


Comparison of 2022 and 2023 water levels are shown in the graph below.

This year, the Wasa water level peaked four weeks earlier and was 1.47 meters lower than 2022.

Further, the water level as of November 14th is where it usually is in early May.

Wasa & Kootenay River
Water Levels (2022 & 2023)



The chart below shows the peak water level at Wasa for the past twelve years.

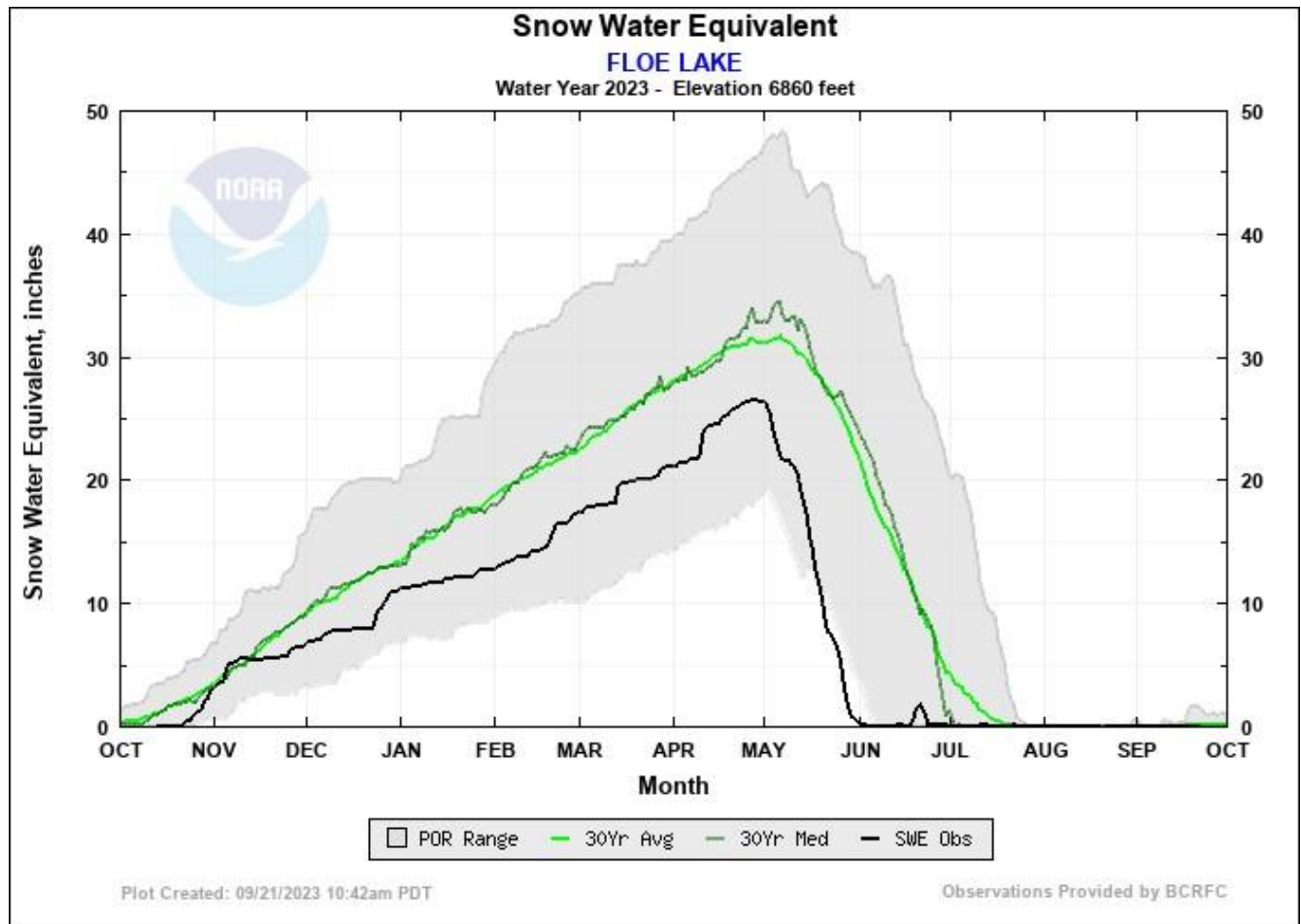
In 2023, peak water was similar to 2019 and 2015, and was the second lowest peak water level since 2013.

Year	Peak Water Reading (masl)	Difference from previous year
2023	768.06	-1.47
2022	769.53	0.69
2021	768.84	-0.58
2020	769.42	1.37
2019	768.05	-0.65
2018	768.70	-0.76
2017	769.46	1.22
2016	768.24	0.15
2015	768.09	-0.85
2014	768.94	-0.49
2013	769.43	-0.57
2012	770.00	
AVG	768.90	

WLLID statistical analysis on historical water levels at Wasa shows that upwards of 86% of the variability in that level is accounted for by the amount of snow water equivalent measured at Floe Lake, which is located in the Kootenay National Park.

(<https://www.nwrfc.noaa.gov/snow/snowplot.cgi?FLKQ2>)

This past spring, the snow water equivalent at Floe Lake was only 81% of normal. In 2021, the snow pillow had an additional 10 inches of snow water equivalent compared to this year.



As freshet progresses, rising water levels are used to calculate an estimate of the expected peak water level. WLLID releases this estimate on June 1st, which is posted on the WLLID website, and in the newsletter.

Water Testing

A number of parameters are used to gauge the quality of water, which has a direct impact on aquatic life, water fowl, and people using the lake.

Starting in mid-June, WLLID volunteers take weekly measurements of dissolved oxygen (DO) and temperatures at one meter intervals from the surface to the bottom at a location in the SE portion of the lake known as Deep Station.

Secchi readings, used to determine water transparency, are also taken at the same time. Data recording sheets are filled out and a spreadsheet contains all data readings. We are doing this study in conjunction with the BC Lake Stewardship Society.

All testing results are available on the WLLID website as well as the Columbia Basin WaterHub. (<https://data.cbwaterhub.ca/>). Historic and current water data is housed there so that any person can view and graph water level changes going back to 1996.

Before and after each summer long-weekend (July, August, September), a WLLID volunteer collects water samples from six public beaches. These samples are sent to Interior Health (IH) for E. coli testing. Results, for the most recent 60 days, are posted on the IH website: <https://services.interiorhealth.ca/publichealthprotection/watersamples.aspx>

This past summers results are shown in the following chart.

2023 E. coli Test Results

	20 Jun	26 Jun	4 Jul	17 Jul	26 Jul	1 Au	8 Au	15 Au	21 Au	30 Au	6 Sept
Pine	<5				<5	<5	5	<5	5	5	<5
Main	<5	<5	<5	<5	20	<5	5	<5	<5	<5	<1
Horseshoe	<5	<5	<5	<5	<5	<5	5	32	<5	10	<5
Campers – Dog	<5	<5			5	<5	5	<5	<5	45	<5
Dog	<5	<5	<5	<5		<5					
Cedar	<5	<5	<5	<5	<5	<5	5	<5	<5	14	<5
Spruce	n/a	n/a	5	<5	5	<5	5	<5	<5	50	<5
Ida's Cove	n/a	<5	<5	<5							

Algae

Algae growth in the water at Wasa has seen a noticeable increase over the past few years.

In April 2023, a large algae patch was observed in Ida's Cove. After consultations with BC Algae Watch, WLLID determined the patch was not toxic.



[\[https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/algae-watch\]](https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/algae-watch)

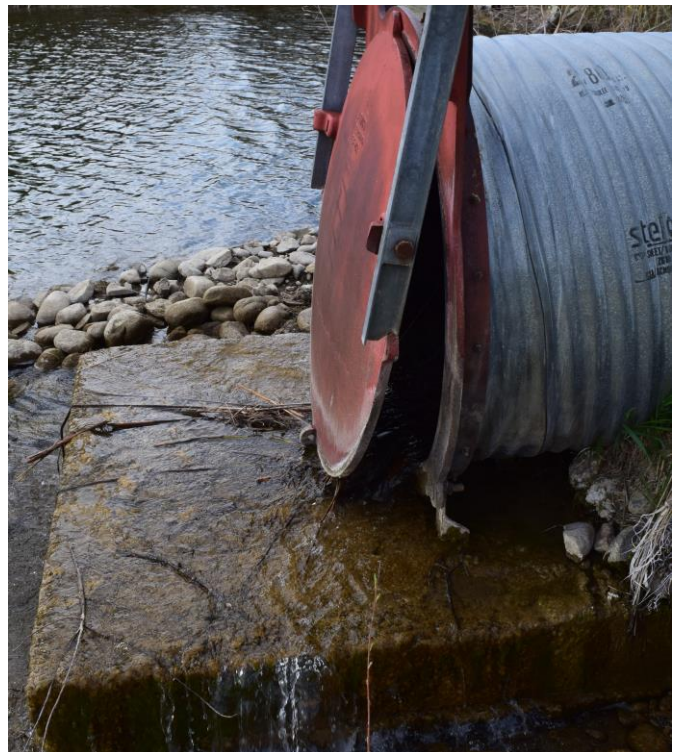
WLLID volunteers spent a Saturday morning removing the algae, packing it into garbage bags and trucking them to the dump.

A second algae bloom occurred in early October. It was in the water on the east-side off Birch Road. It was also determined to be non-toxic.

Cameron Pond Culvert

WLLID volunteers responded to a residents concern regarding the lack of water flowing through the Cameron Pond culvert into the slough.

Upon inspection, a blockage created by otters, muskrats or beavers reduced the water flow. After the obstruction was removed the flow returned to normal.





Ice on – Ice off



Each year, WLLID volunteers monitor the Fall date when ice coverage is complete and in the Spring when ice melts leaving open water.

The chart below reports the off/on dates for the past six (6) years.

Year	Off	On
2023	March 9	
2022	March 28	14 November
2021	March 19	5 December
2020	March 23	29 November
2019	April 3	27 November
2018	April 14	19 November

Volunteers

If you would like to become a volunteer and help with water monitoring for the 2024 season, please contact the WLLID at admin@wasalake.ca. Training sessions will begin in late May or early June, depending on water levels.

The WLLID Board thanks all volunteers for their assistance in monitoring water at Wasa.