

Arrow Lakes Reservoir: Summer 2024



**Presentation to Village of Nakusp Council
June 10, 2024**

2023/24 In Review

- Below average spring 2023 snowpack.
- Rapid (record) snowmelt in May.
- Record provincial drought in 2023.
- BC Hydro manages integrated system for winter 2023 & spring 2024 generation.
- Most reservoirs operated below average.
- Columbia River Treaty requires discharges to continue during the drought: Arrow Reservoir drafted to very low seasonal levels after June 2023.
- Record winter loads (again) observed and managed in January 2024.
- Arrow refills over the spring, but with low downstream discharges.
- BC Hydro imports approximately 1/5th of its generation, returning its large reservoirs to near or above average in the spring, prior to this year's spring snowpack melt.



Arrow Lakes Reservoir at Burton, September 2, 2023

2024 Outlook

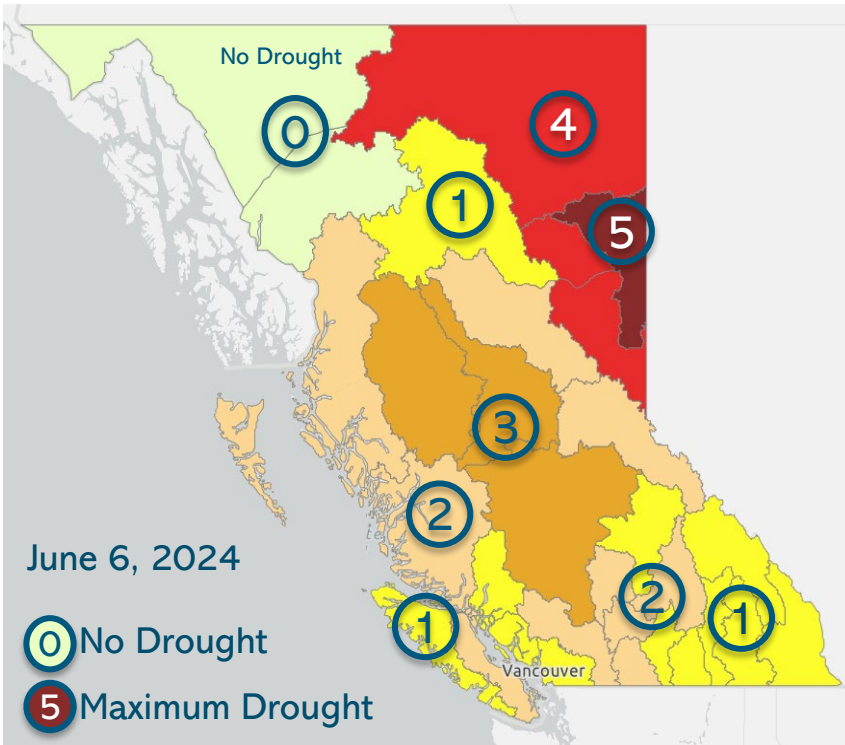
Summary:

- Provincial Drought Update
- Provincial Snowpack Update
- Arrow Lakes Reservoir Forecast



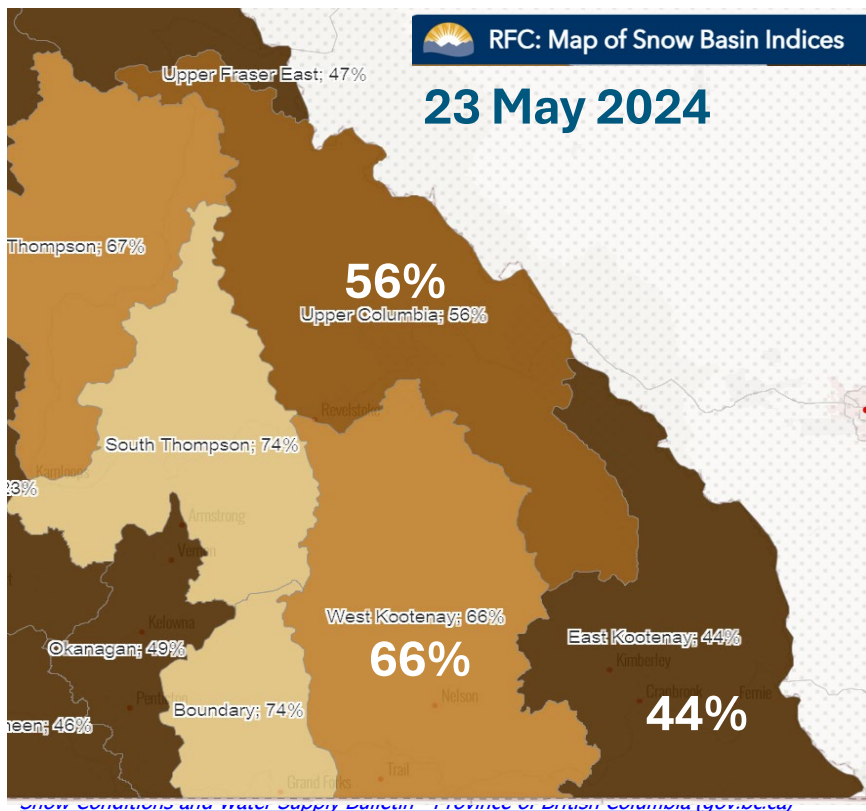
Hugh L. Keenleyside Dam

Current Drought Conditions



- Well below average precipitation (snow) this past winter.
- Approximately 63% of B.C. is in Drought Level 2 or higher because of last fall's dry conditions.
- Snapshot just as winter snowpack melt commences.

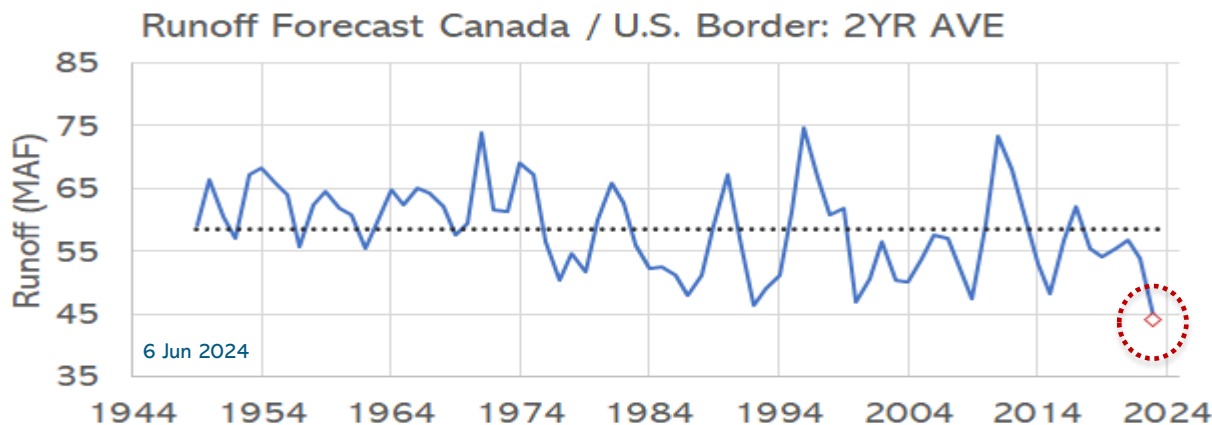
Spring Snowpack



- Provincial snowpack provides a much more challenging outlook.
- As of May 1, the provincial snowpack is extremely low, average 66% of normal. Last year, the provincial average was 91%.
- Columbia and Kootenays, in particular, are well below average.
- Prior dry conditions and below average snowpack combine for a low Water Supply Forecast (again).

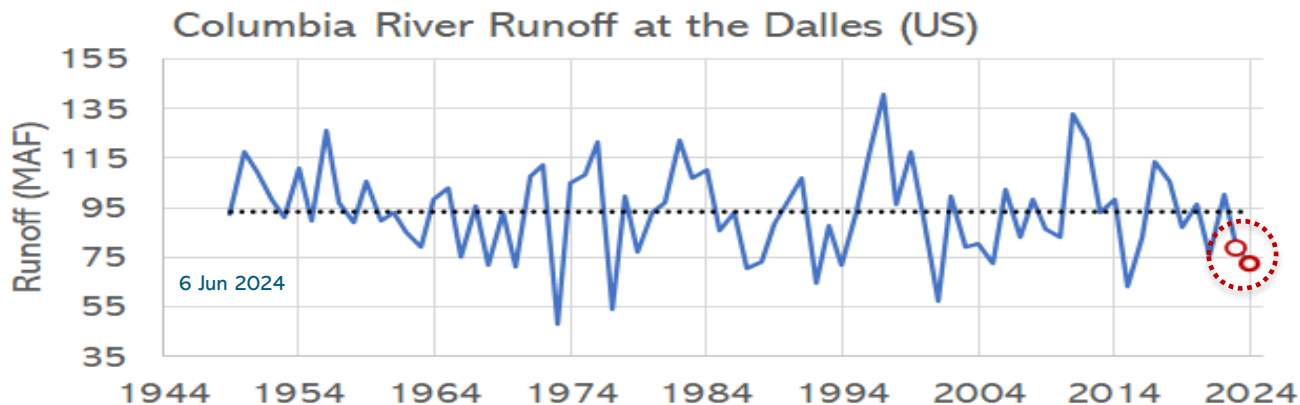
Canadian Water Supply Forecast

- Water Supply Forecast:
 - Actual inflow to date and remaining forecast between April and September.
- 2023 was the 6th lowest on record, mostly because of the summer drought.
- 2024 forecasted 3rd lowest on record, driven (now) by low snowpack.
- Combined 2-year average: Lowest since the 1950's.



U.S. Water Supply Forecast

- Similar conditions to Canada: Very low again.
- US Water Supply Forecast influences Columbia River Treaty Arrow discharges.
- 2023 was the 16th lowest on record, mostly because of the summer drought.
- 2024 forecasted the 10th lowest on record, driven (now) by low snowpack.
- Combined 2-year average: 4th Lowest since the 1950's.



Arrow Lakes Reservoir

- This year's refill of Arrow Lakes Reservoir is already challenging due to low snowpack.
- If dry conditions persist, in either the Canadian or US basins, Arrow Reservoir could reach levels this August, like in 2023.
- Arrow is currently forecasted to peak between 1,430 to 1,435 feet this month. A flatter profile relative to 2023.
- BC Hydro understands how difficult these summer levels are from stakeholders, First Nations, local government, and industry.
- Where possible, managing to higher levels remains important after meeting system reliability and regulatory obligations.

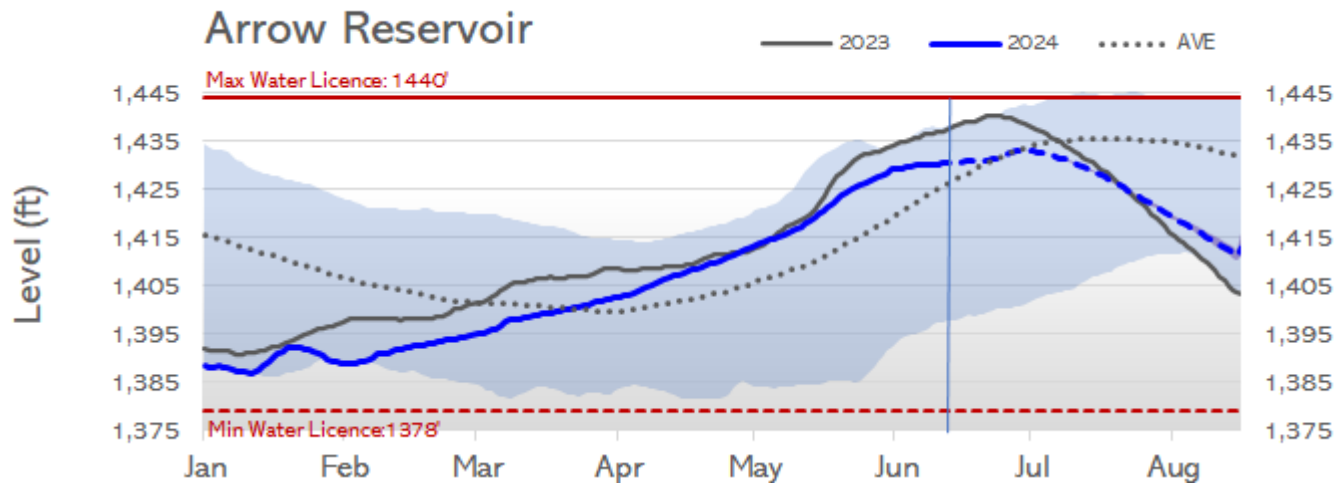


Arrow Lakes Reservoir, October 2023

The normal licensed range for Arrow Lakes Reservoir is between 440.1 metres (1,444 feet) and 419.9 metres (1,377.9 feet). The reservoir can be operated up to two feet above its normal maximum level (to 440.7 metres or 1,446 feet) if approved by the Comptroller of Water Rights. Arrow Lakes Reservoir provides 7.1 MAF of Treaty storage.

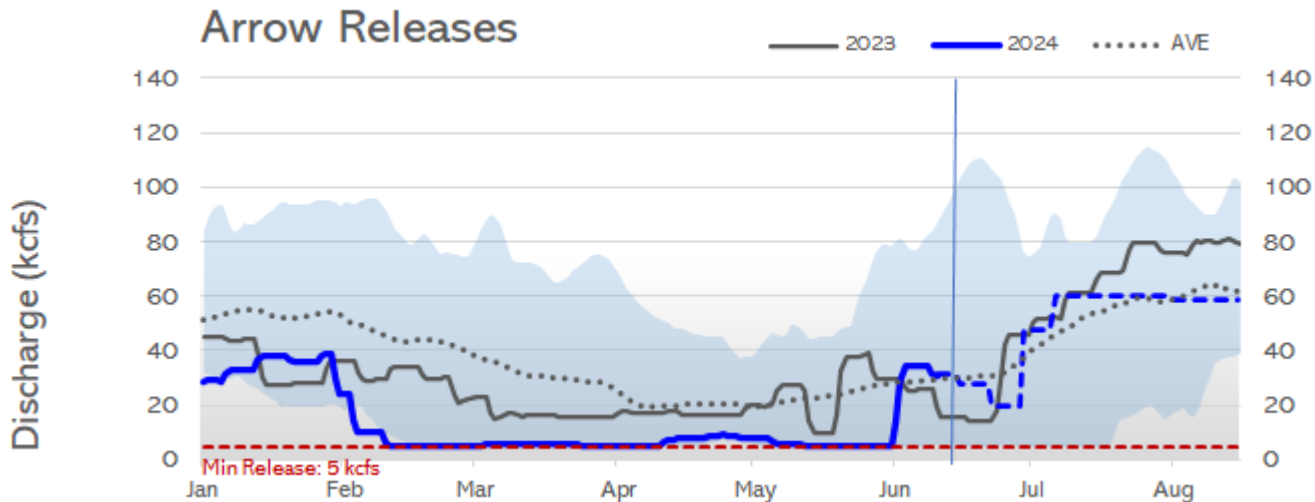
Arrow Lakes Reservoir

- While Arrow is currently above average, this is prior to the (much reduced) winter snowpack runoff.
- If dry conditions persist, even with average precipitation, Arrow could reach levels above or similar to last August because of low snowpack.



Arrow Lakes Releases

- Discharges from Arrow were lower this spring, which helped raise levels prior to this this freshet.
- Discharge across this summer are currently forecasted to be near average, subject to changes in water supply forecasts and precipitation in Canada and the U.S.



Local recreation

- The Nakusp boat ramp is usable to an elevation of 421.5 metres (1,382.87 feet).
- Based on the current forecast, we expect that the boat ramp will remain usable throughout the recreation period and the rest of the year.
- Information from the Village of Nakusp provided that the floating dock in the swimming area is usable up to 436 metres (1,430 feet), and the swimming area is considered usable up to 435 metres (1,427.1 feet).
- Based on the current forecast, the floating dock and swim area should remain operational until mid-July.

Target recreation levels

- Although we are not regulated to meet recreation levels on the reservoir, as part of the Columbia River Water Use Plan, there are target reservoir levels for recreation between 437.4 metres and 438.9 metres (1,435 feet and 1,440 feet) from May 24 to September 30.
- We completed construction and upgrades of boat ramps for recreation to reduce impacts of a lower reservoir level of 434 metres (1,424 feet) during the recreation season.
- We recognize that the forecasted levels will likely not meet the Columbia River WUP soft constraint targets for recreation this year, particularly in an extremely low inflow year or a provincial drought.
- It is also recognized that the ability to meet the WUP objectives for Arrow in any given year is subject to water conditions and regulatory requirements.

Recreational Boat Access: Arrow Lakes Reservoir

Boat Ramp	Lowest operational elevation
Anderson Point	426 metres (1,399.02 feet)
Burton	426.4 metres (1,398.95 feet)
Edgewood	426.76 metres (1,400.13 feet)
Fauquier	425.66 metres (1,396.52 feet)
McDonald Creek	427 metres (1,400.92 feet)
Nakusp	421.5 metres (1,382.87 feet)
Shelter Bay	423.86 metres (1,390.62 feet)
Syringa Creek	422.87 meters (1,387.37 feet)

Questions



For more information

- Read our recent Spring 2024 Columbia River Operations Summary, available online at bchydro.com.
- Go online to bchydro.com to see near real-time water level information for various locations around our reservoirs.
- Sign up to receive weekly water level forecasts by email by contacting southern-interior.info@bchydro.com.
- Call our toll-free reservoir information line at **1 877 924 2444** to get Columbia basin reservoir level and river flow information by phone. This recorded message is updated every Monday, Wednesday, and Friday.

