2018 Water Report (WLLID AGM)

Water Quantity:

Wasa Lake water level monitoring takes place April to September.

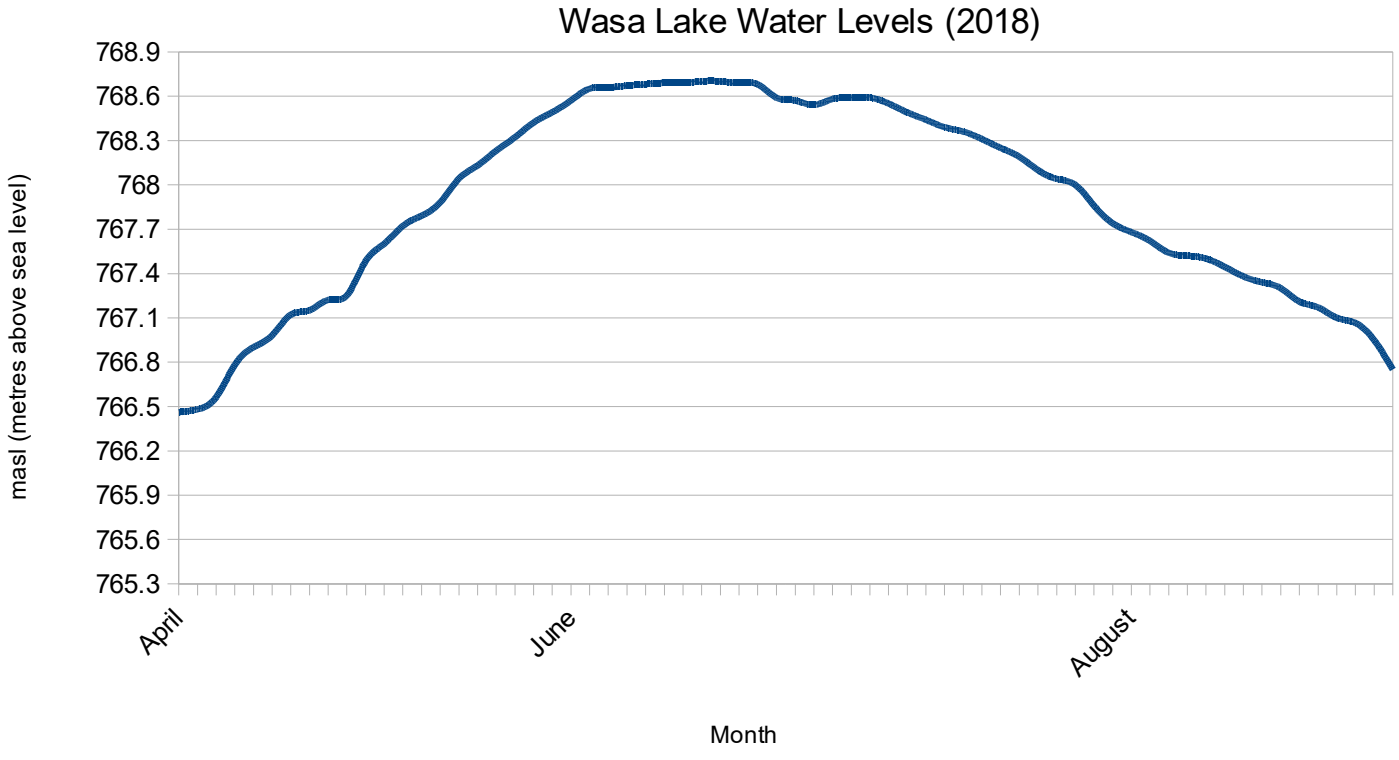
Data logger records well-water level six (6) times per day – 2am, 6am, 10am, 2pm, 6pm, 10pm

2018 max water level – 768.70 masl (12 June)
24cm (9.5”) lower than 6 year average 768.94

Historic average high water mark (1996 – 2006) = 768.7 masl

Table One

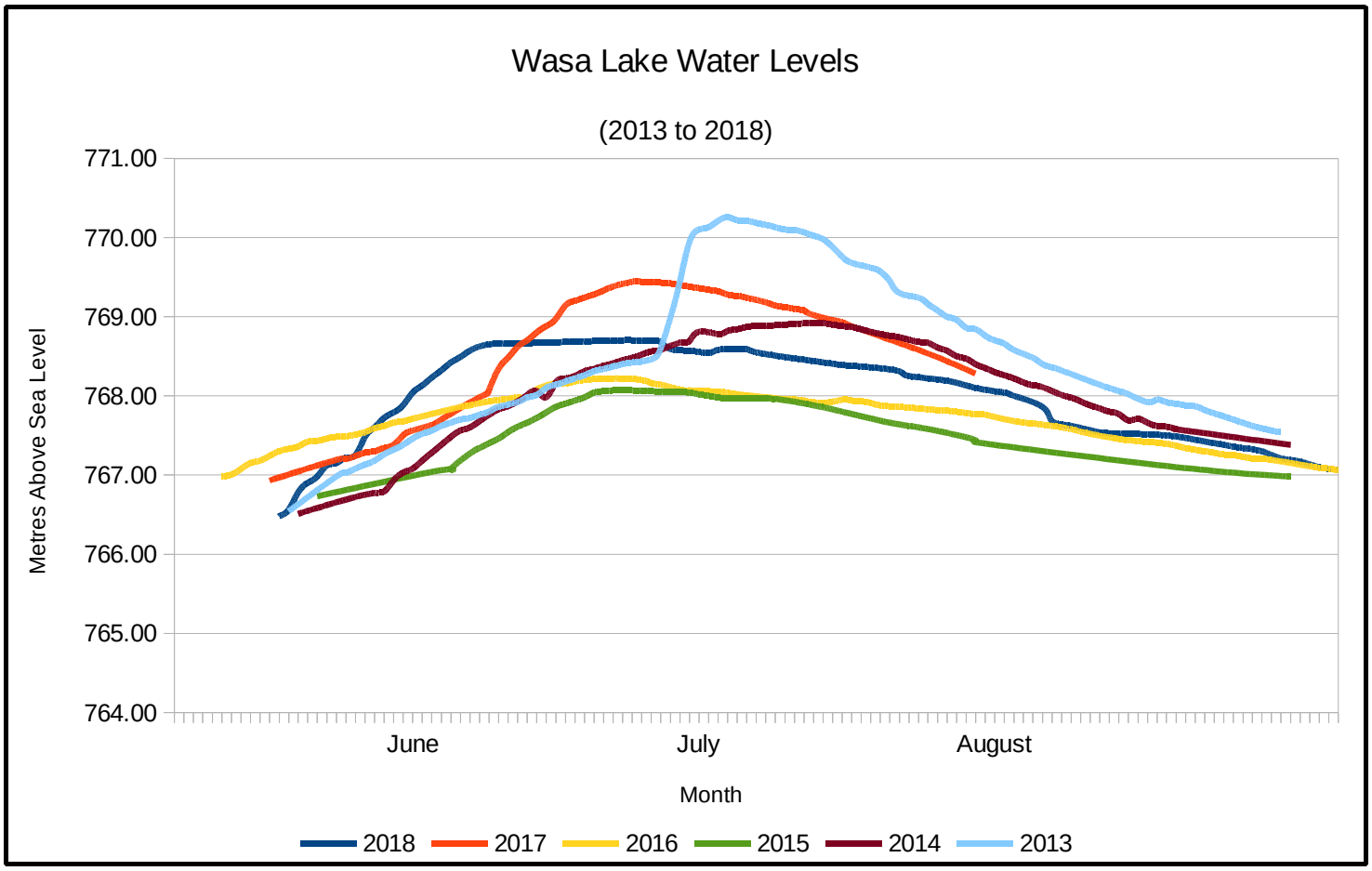
Year	Date	Highest Water (masl)
2013	28 June	770.26
2014	8 July	768.92
2015	17 June	768.07
2016	16 June	768.22
2017	19 June	769.44
2018	12June	768.70
2019	Projected	768.20
Avg		**768.94**



Due to a cool June 2018, water levels never reached the 6 year average.

Comparatively:
2012 water level max @ 770.50 masl 2013 peak @ 770.20 masl

Multi-year rise and fall of Wasa Lake.



Data Logger 10 April, 2019:

temp = 12.6C	kPa = 94.2	well level = 5.78 m =	**766.41 masl**
		Staff gauge =	**766.43 masl**

2019 Forecast:
As of April 1st, BC River Forecast Centre reported the snow pack at Floe Lake in the Upper Kootenay River basin = **79%** of normal (source: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/river-forecast/asp_summary_2018-19.pdf)

Projected 2019 peak water level = **768.20**, 50cm (20”) lower than last year.

Depending on temp and rain in May and June, water levels could be more in line with 2015 & 2016.

Water Quality:

What lake users and residents need to know and understand is that the activities done on land and in the water directly affects the lake.

Testing takes place from May to Aug, twice (2x) per month.

Data gathered includes:
date, time, air temp, weather, water depth, Secchi depth, water temp at 1, 5 and 10 metres below surface and 1 metre above bottom, O^2 at 1, 5 and 10 metres below surface and 1 metre above bottom

Table Two (2018)

	May	Jun	Jul	Aug
Water depth (m)				
(@ south end)	11.8	11.5	11.2	11.3
Avg. Water Temp (ºC)				
1m below surface	18.5	19.0	20.9	23.1
1m from bottom	8.3	10.9	11.8	13.2
Avg. O^2 mg/l				
1m below surface	7.26	7.16	7.55	7.89
1m from bottom	5.01	6.94	5.52	4.76
Secchi (m)				
below surface	4.9	6.0	7.1	7.3

Secchi numbers indicate the clarity of the water.

Temperature and oxygen levels indicate the health of the water required to sustain aquatic life. Wasa water levels of O^2 are slightly lower than Provincial government standards.

BC Government Water Quality Guidelines recommend 5 to 8 mg/L O^2 as a range. 5 = instantaneous minimum, 8 = 30-day mean minimum.
(Source: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/wqgs-wqos/approved-wqgs/dissolvedoxygen-or.pdf)

E. coli testing was done in 2018 from June to August. Three locations were targeted, Main Beach, Campers / Dog Beach and Ceder Road boat launch.

All 6 tests came back well below the Provincial standard for recreational waters, less than 200 E. coli / 100 ml of water. The water samples were analyzed by Interior Health Authority (IHA). In all cases, the level of E. coli was below IHA recommended levels and deemed “acceptable.” If the numbers were to get close to or exceed the Provincial standard IHA would investigate.

Wasa water E.coli readings: one reached 7 E. coli / 100 ml. All others were either 4 or 5.

WLLID urges all residents, especially lake front property owners, to maintain adequate and modern septic systems to prevent any increase in fecal matter entering the lake.

Phosphorous and nitrogen testing were not done in 2018.

The last test in 2017 showed phosphorus levels ranging from 0.003 to 0.006 mg/l. Provincial standards recommend phosphorous levels between 0.01 to 0.03 mg/l for the water to remain uncontaminated by algae blooms.

Nitrogen levels in 2017 ranged from 0.25 to 0.40 mg/l. Provincial guidelines suggest nitrogen levels to protect freshwater aquatic life is 3.0 mg L-1 and the maximum concentration is 32.8 mg L.

Increases in these nutrients is attributed to leeching and run-off from over-fertilization of non-native grass, shrubs and lawns close to the lake. Excess nutrients will cause algae blooms and increased plant and weed growth, ex. native milfoil.

Ice-on / Ice-off
Full lake ice coverage occurred by 19 November, 2018

Shore ice melt started 27 March reaching 25% open on 31 March

In 2019, ice off occurred on April 3, 11 days earlier than last year
Full ice-off in 2018 was 14 April