

WLTF Report to MLA

Members Issue 2017-6

Apr 7, 2017

Moving into the second week of April, extreme rainfall remains the sole risk for flooding and Environment Canada has just issued a rainfall alert for this Thursday. Total rainfall amounts of 20 to 35 mm are now expected in the watershed by Friday night. Last week's rain and melt has now reduced the snow pack to below normal levels, so the risk of flooding from snow melt is further reduced from last week. Lake levels are now normal for this time of year but are rising rapidly in response to rainfall and runoff from earlier this week. Predictions of precipitation effects remain difficult. The Ministry of Natural Resources and Forestry [MNR] has posted Flood Outlooks for rivers in the watershed including the Muskoka River and the Moon River/Bala Reach. Members at these locations continue to be advised to be prepared for high water due to potential rain.

How we got here:

Snow started early in winter and has produced above normal snow levels in the watershed. MNR initiated more aggressive lake lowering starting Jan7th and had achieved a drawdown level comparable to last year by Feb 23rd, some two weeks earlier than last year. Unprecedented warmth in February and two rainfall events – Feb 24/25 and March 1 – led to a dramatic water level increase. The water levels were then at an all-time high, compared to all records from 2002 to 2016, from March 1 to March 15. Colder, drier weather in mid-March had allowed MNR to lower Muskoka [at about 2cm/day] and Rosseau [at near 1 cm/day] to levels approaching this year's previous low. Two weeks ago, rainfall of near 25 mm [1 inch] halted the drawdown but also reduced the snow levels in the bush. Additional rain, in progress, is causing sharp increases in water levels.

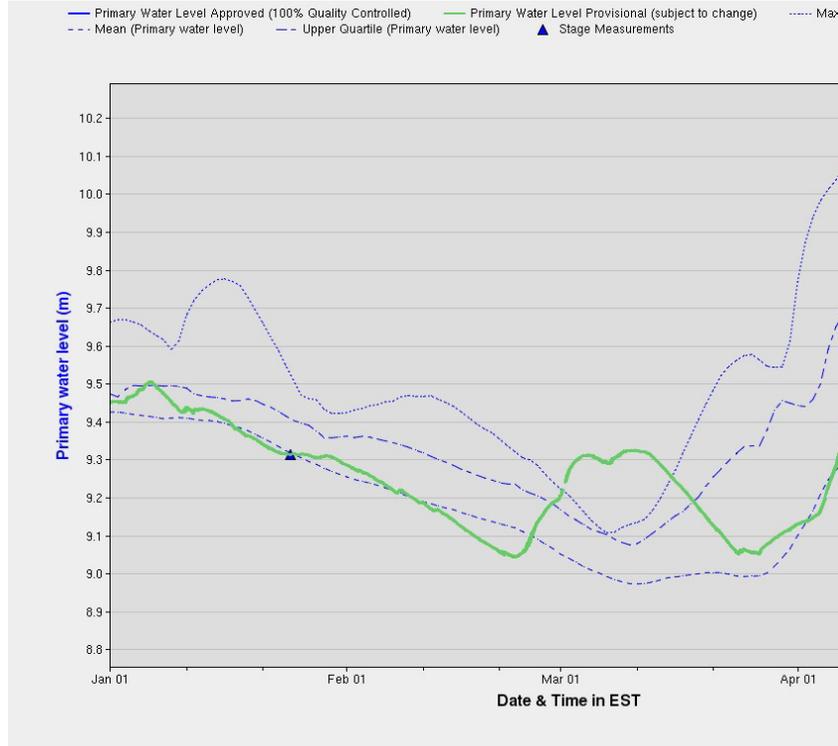
Lake Muskoka Update:

The graphs below show Lake Muskoka water levels are now 10cm [4"] above the average levels for the past 15 years. The average level is much below levels associated with heavy rains in 2016. But we are now a month later than the heavy rains of 2016 and very near to ice-out. Once the ground thaws, runoff will decrease significantly, soaking in instead of running off. The Muskoka River Water Management Plan [MRWMP] shows actual lake level is 40 cm [16"] above the target for this date [Gauge 8.95m] but 45 cm [18"] below the top of the Normal Operating Zone [NOZ – the water level zone deemed normally acceptable] [Gauge 9.8 m]. Currently lake level is still below normal summer level by 15 cm [6"]. The watershed remains vulnerable to significant rainfall events. The current weather forecast predicts imminent high rainfall. Recent and ongoing rain is causing the lake level to rise at about 10 cm [4"]/ day. This rate of rise translates into water levels near the top of the NOZ [Gauge 9.8m] by late next week. Actual conditions will depend on rain actually received and the rate that this runs off and flows through the watershed.

Property owners are advised keep aware of changing weather conditions and to be prepared for

high spring water by the end of next week.

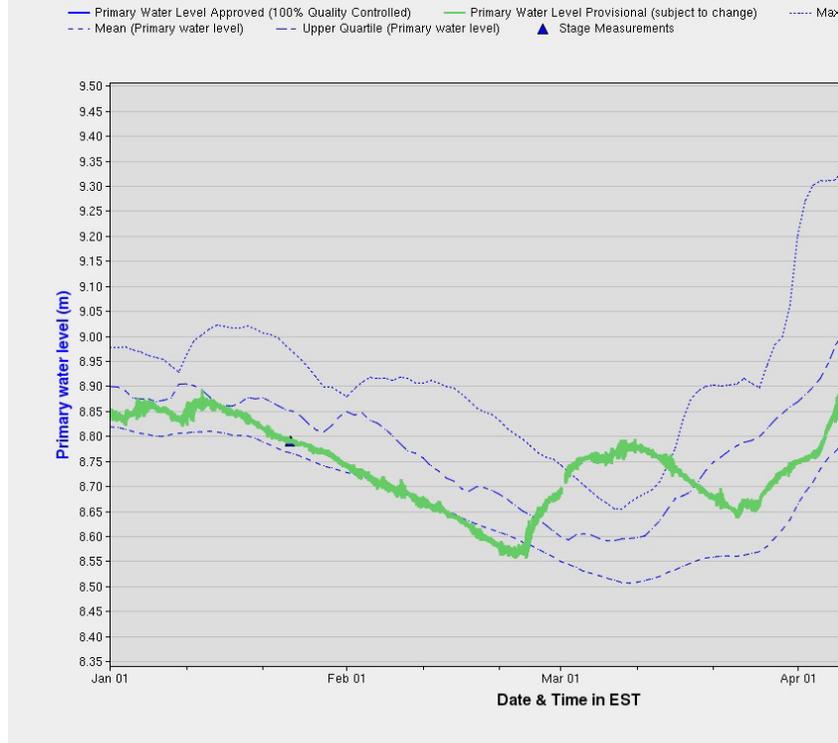
Figure 1: LAKE MUSKOKA – 2017 WATER LEVELS [meters above gauge 02EB018]
2017 actual – green line Average [2002-2016] – blue dashed line



For reference, Normal Summer levels: 9.35m to 9.65m; Normal Drawdown level 8.95m; Flood L

FIGURE 2 – Historic Water Levels for Lake Muskoka 2002 – 2016

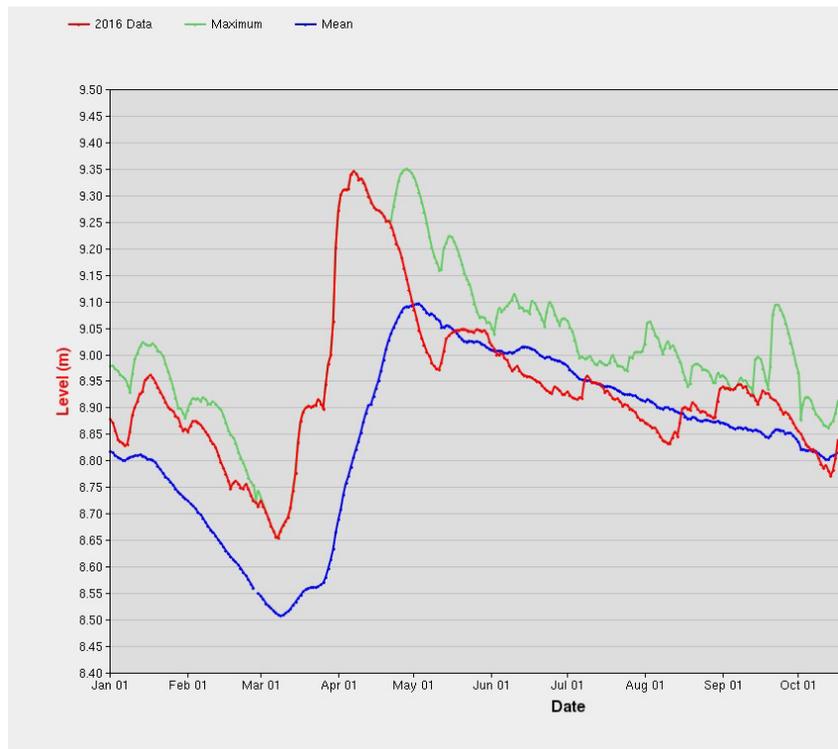
Average [2002-2016] - blue solid line 2016 actual – red line Maximum [2002- 2016] – green line



For reference, Normal Summer levels 8.88m to 9.03m; Normal Drawdown level 8.58m; Flood Le

Figure 4 - Historic Water Levels for Lakes Rosseau & Joseph 2002 – 2016

Average [2002-2016] - blue solid line 2016 actual – red line Maximum [2002- 2016] – gree



MRWMP Flood Level = 9.28 m Top NOZ = 9.13 m April 1 to May 20th

Bala Reach/ Moon River Update:

With significant rain since March 25th and significant rain now predicted by Environment Canada flows through Bala are now increasing and will likely exceed the flows experienced earlier in the year if current trends continue. Natural flow restrictions between the main part of Lake Muskoka and Bala Bay [at Wallis Cut, Jannocks narrows and Coulter Narrows] continue to cause a level difference of 20 cm [8“] or more. Lake levels in Muskoka are now increasing rapidly in response to rain earlier this week and further increases are expected following the significant rain currently predicted by Environment Canada. Increased flows through the spillways will occur as a result. Members are advised to keep aware of weather conditions and to be prepared for flooding.

Snow Core information

Snow core data contained in the April 3rd MNRF Watershed Conditions statement shows average snow water content is now below normal. This amount of snow water content indicates that normal drawdown levels are likely sufficient to absorb the melting ice and snow. Rainfall amounts now far outweigh snowmelt considerations.

Weather Information

ALERT! Environment Canada has just issued a Special Weather Statement regarding rainfall. “Significant widespread rainfall amounts of 20 to 30 mm are likely by Thursday night [April 6th]. Some area may exceed 40 mm. Rainfall warnings [issued when over 50 mm is expected] may be required.” Temperature-wise, the current weather forecast calls for daytime highs over the next week ranging between 4°C to 19°C and overnight lows between -5°C to 9°C.

MNRF Statements

On Monday, April 3rd MNRF issued a “Water Conditions Statement – Water Safety” for the Muskoka River Watershed which applies until April 7th. In part this statement says “A Flood Outlook is in effect for the Muskoka River Watershed including the South Branch of the Muskoka River, the North Branch of the Muskoka River, the Big East River and the Moon River/ Bala Reach.” “The North and South Muskoka Rivers, the Big East River and the Moon River/Bala Reach are expected to react quickly to the influx of water from precipitation expected over the coming week.”

Ice Damage

Several instances of boathouse/dock damage have been reported this year, following days when rapid temperature rise has caused the clear, uninsulated ice to expand and shove. The forces involved [on the order of 5 tons per lineal foot] far exceed the strength of normal shoreline

structures. Ice expansion is dependent on the unusual coincidence of rapid temperature rise, clear ice without insulating snow cover and ice adhesion to the shoreline. Frequent thaws and rains have made these conditions more common this year. The damage has occurred at structures which did not have bubblers in place to provide a protective gap of open water beside the cribbing. Alternatively, cutting a trench in the ice beside the structure can also relieve forces from ice expansion. Members are advised to be aware of this damaging phenomenon which is unrelated to any wind or water level changes at the reported locations.

Summary

The Muskoka Lakes and Bala Reach remain vulnerable to significant rainfalls over the next week, and significant rainfall is forecast. The predictions for rainfall make water level increases likely. It is too early to tell how high water levels will rise in response to this rain and whether flooding will occur. The current rate at which lake levels are rising translates into lake levels near the top of the Normal Operating Zone by end of next week.

Shoreline property owners continue to be advised to take precautions to protect their shoreline structures and personal property.