

WLTF Report to MLA

Members Issue 2017-8

Apr 21, 2017

MUSKOKA FLOOD WATCH 2017 **Issue 2017.8**

A persistent series of rain events has moved the Muskoka Lakes up to flood level over the past week. All except the highest docks are now underwater. With significant rain falling and predicted for the balance of today - April 20th, levels will increase again. A long stretch of dry days are now needed to allow levels to peak and then begin to diminish. As of today – April 20th - the Ministry of Natural Resources and Forestry [MNR] reiterated its Flood Watch for the District of Muskoka and extended its Flood Warning for the Moon River/Bala Reach to include the North and South Branches of the Muskoka River. Members are advised to act to mitigate damage from submergence and wave action.

Also, if travelling by boat, go slow to avoid adding wake damage to already fragile shorelines and waterfront structures.

What does this mean to you?

The level of each property owner's docks relative to lake level is unique to individual circumstances. The MLA strongly encourages property owners to relate their docks/boathouses to the nearest Environment Canada water level gauge [Beaumaris for Lake Muskoka; Port Carling for Lake Rosseau; Bala for Bala Bay]. If possible, measure distance from top of dock to water level and obtain water gauge elevation from muskokawaterweb.ca website under "checking water levels on your lake". Alternatively, the level can be guesstimated from summer levels provided below. The MLA appreciates that normal Spring level may be higher than some docks and that current water levels may allow wave action to wash over some docks now.

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. Four weeks ago, rainfall of near 25 mm [1 inch] halted the drawdown but also reduced the snow levels in the bush. Since late March a string of rainfall events have progressively increased water levels to flood level.

Lake Muskoka Update:

The graphs below show Lake Muskoka water levels are now tracking the maximum levels [set during 2002 to 2016] for this time of year and are rising. This lake level is 10 cm [4"] below the Muskoka River Water Management Plan [MRWMP] Flood level [Gauge 10.05m]. With water rising at several cm per day and today's significant rain - exceeding the official flood level will likely happen during. The only questions now are high will this flood go and how long will it last. Upstream lakes are also at historic maximum levels. Today's MNRF statement advised that there is still over 100 mm of snow water equivalent in the Algonquin Park area which is yet to melt and pass through Lake Muskoka. Over the past 5 years levels have reached 4 to 15 cm above the flood level and the return to "normal" levels has taken two to three weeks. Results this year will be, as always, dependent on weather conditions.

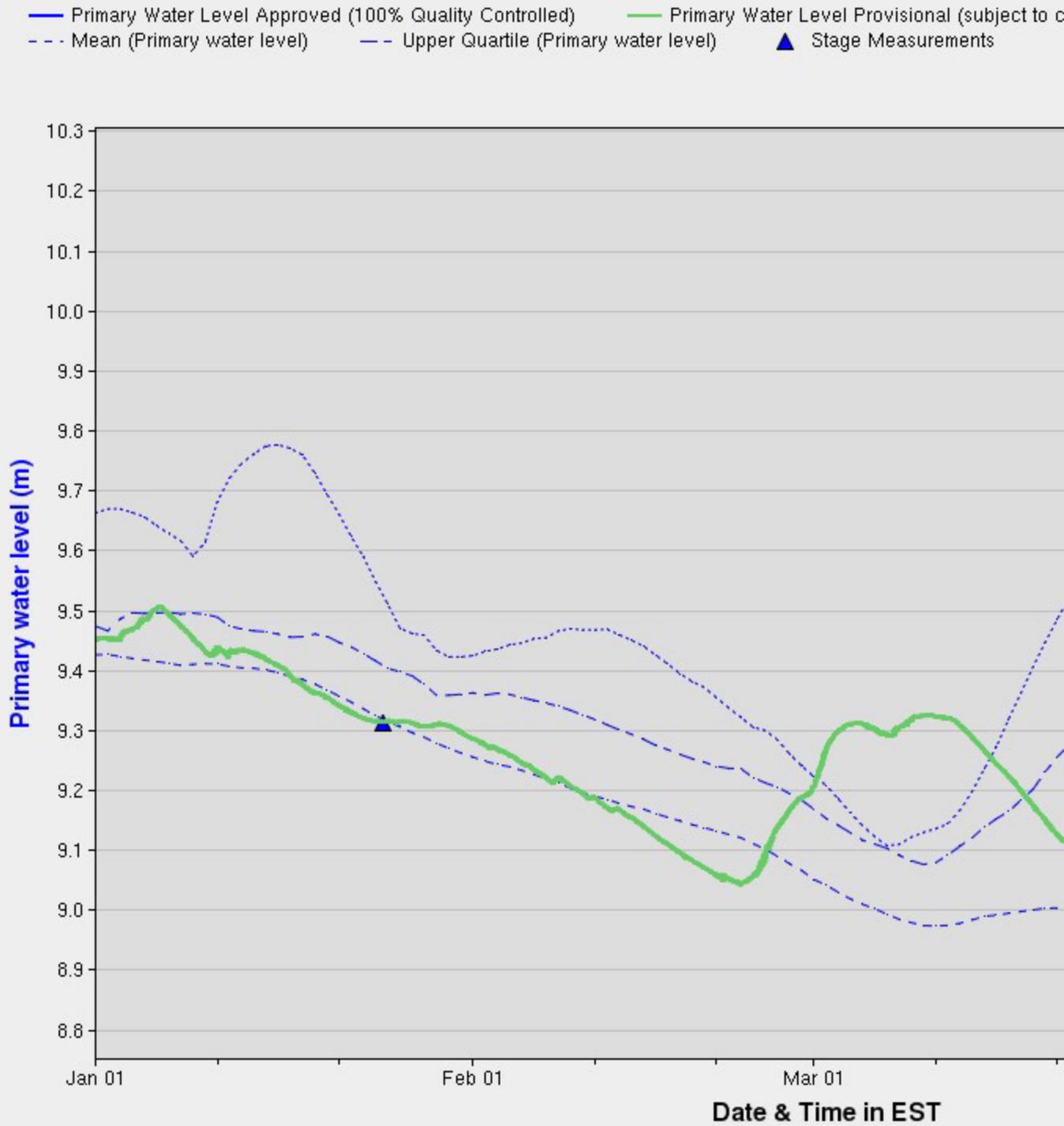
Property owners are advised to take action to mitigate high water effects on their property.

Figure 1: LAKE MUSKOKA – 2017 WATER LEVELS [meters above gauge 02EB018]

2017 actual – green line

Average [2002-2016] – lowest blue dashed line

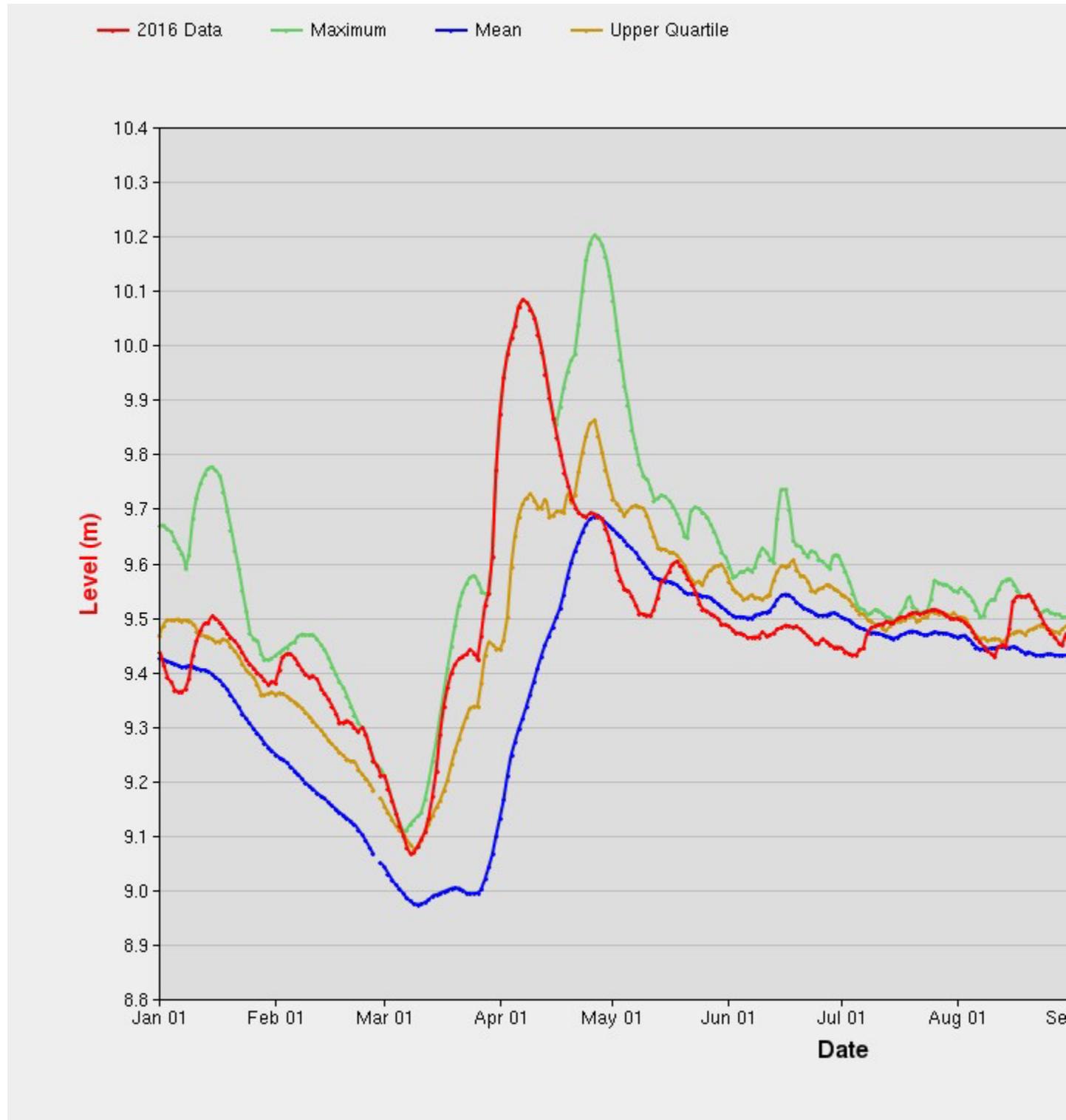
Maximum – uppermost dotted blue line



For reference, Normal Summer levels: 9.35m to 9.65m; Normal Drawdown level 8.95m; Flood Level 10.05m on above figure.

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



MRWMP Flood Level = 10.05 m

Top NOZ = 9.8 m for Mar 27 to May 16th

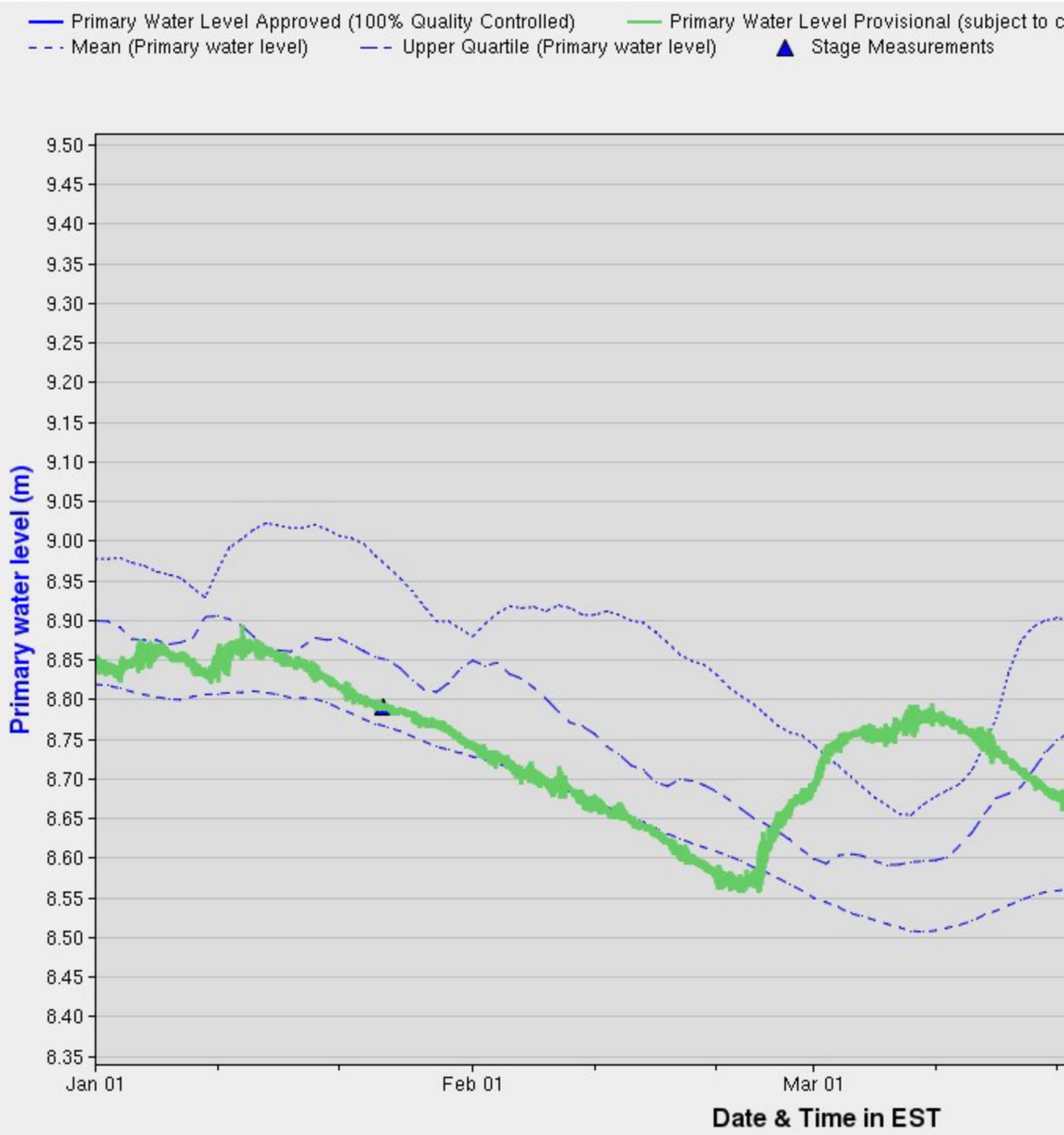
Lakes Rosseau and Joseph Update:

The graphs below show Lake Rosseau and Joseph water levels are now 9 cm [3.5"] below the maximum levels for the past 15 years and rising. This lake level is 11 cm [4"] below the MRWMP flood level [Gauge 9.28m]. The stepwise increase in water levels over recent weeks corresponds to successive rain events followed by enough dry days to allow outflow at Port Carling to "catch up". Regrettably, each time drawdown is about to commence, another rain event has occurred. Yet another significant rainfall is in process today – Thursday, April 20th. This rain will likely move lake levels to just under the flood level within a couple of days. Lakes Rosseau and Joseph do not have to contend with inflow from upstream lakes, only the runoff from the immediate 798 km² sub-watershed. Dry days forecast over the next week should allow water levels to finally crest and start to retreat. As always, changing weather conditions can change these expectations.

Property owners are advised to take action to mitigate high water effects on their property.

Figure 3: LAKE ROSSEAU/JOSEPH WATER LEVELS 2017 [above gauge 02EB020]

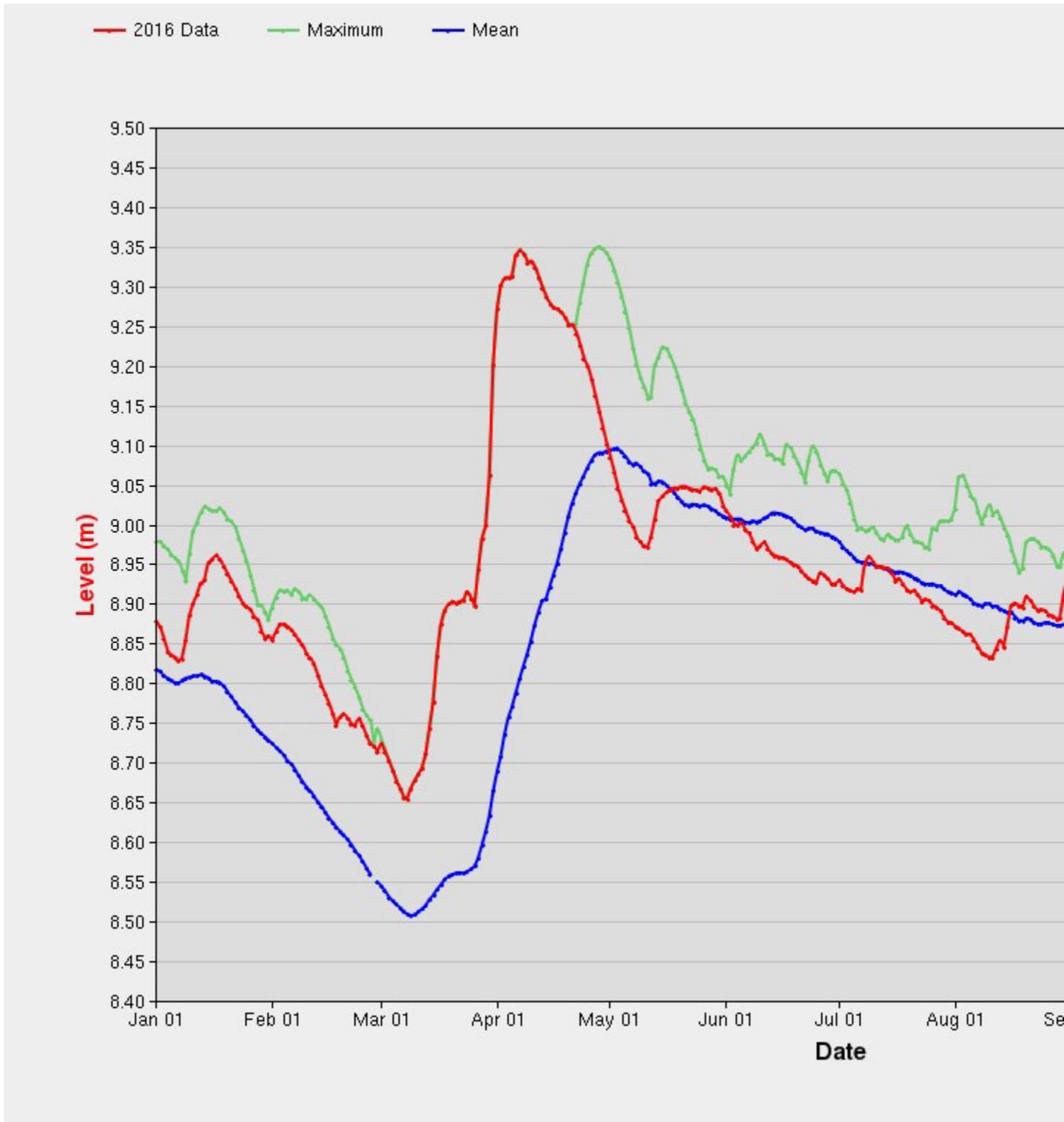
2017 actual – green line
average [2002-2016] – blue dashed line
maximum – blue dotted line



For reference, Normal Summer levels 8.88m to 9.03m; Normal Drawdown level 8.58m; Flood Level 9.28m on above figure.

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

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



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

Bala Reach/ Moon River Update:

Flows into the Bala Reach are now 330 m³/sec - well above the 280 m³/sec flooding level - and will likely increase as high water is passed through the watershed system from snow melt in Algonquin Park and the flood levels in upstream lakes. A Flood Warning was re-issued by MNRF today and remains in effect. These conditions are expected to last for as long as Lake Muskoka remains above "normal levels". Members are advised to take action to mitigate effects of ongoing flooding.

Snow Core information

Recent statements by MNRF advise that over 100 mm of snow water equivalent remains in Algonquin Park. Most of the snow has melted through the balance of the watershed.

Weather Information

The weather forecasts for Thursday includes 15 to 25mm of rain. The remainder of the week is expected to be dry. Cooling temperatures by mid next week may produce light snow. Temperature-wise, the current weather forecast calls for daytime highs over the next week ranging between 5°C and 15°C and overnight lows between -1°C to 5°C.

MNRF Statements

On Thursday, April 20th MNRF issued a "Flood Warning" for the Moon River/Bala Reach area and extended this warning to the North and South Branches of the Muskoka River. A "Flood Watch" has been issued for the rest of the watershed. The flood watch means that the potential for flooding exists within specific watercourses.

Ice Damage

Although the ice is now out, members are advised that damage did occur over the winter due to ice expansion. 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

Bala Reach has exceeded flood levels for the past week and water levels are expected to increase further over the next week. Lake Muskoka is expected to reach the flood levels experienced in recent years over the next week. Lakes Rosseau and Joseph are expected to crest somewhat below previous year's flood levels. These flood and near flood levels are expected to persist through the next week.

Shoreline property owners are advised to take action to mitigate flood effects on their shoreline structures and personal property.