

Grand River Conservation Authority

Date: July 27, 2020

To: Members of the Grand River Low Water Response Team

cc: GRCA Management Committee, Watershed CEMCs

Subject: Low Water Conditions Report – July 27, 2020

Recommendation:

GRCA staff recommends a meeting this Wednesday July 29 to discuss moving Whitemans Creek and McKenzie Creek subwatersheds into Level 2. It is also recommended that the Mt. Pleasant Creek watershed is included in the Level 2 declaration.

Declared Conditions

The Grand River Low Water Response Team declared the Grand River watershed in a Level 1 low water condition on July 9th.

Precipitation

Precipitation across the watershed has been low in July. A few large thunderstorm systems have passed through the watershed producing intense rain fall in limited areas such as the Guelph Dam rain gauge. Overall rainfall has been sparse and temperatures high creating very dry conditions. Most of the watershed is now in a Level 2 condition based on rainfall.

Table 1: Precipitation conditions at GRCA climate stations as of the end of June

Precipitation Gauge	Current Precipitation		% of Long Term Average			Low Water Condition		
	27-Jul	Long Term Average	1-Month	3 Month	Last 18 Months	1 month	3 months	18 months
Shand	42.5	87.3	49%	85%	105%	Level 2	Normal	Normal
Conestogo	41.4	94.0	44%	80%	98%	Level 2	Level 1	Normal
Guelph	87.7	87.7	100%	97%	111%	Normal	Normal	Normal
Luther	62.8	95.4	66%	108%	108%	Level 1	Normal	Normal
Woolwich	33.8	75.9	45%	93%	104%	Level 2	Normal	Normal
Laurel	56.4	100.5	56%	81%	103%	Level 2	Normal	Normal
Shades	53.9	97.9	55%	64%	108%	Level 2	Level 1	Normal
Brantford	24.0	90.6	26%	59%	112%	Level 3	Level 2	Normal

Reservoirs and Flow Augmentation

Of the GRCA's seven large reservoirs five are used at this time of the year to augment river flows downstream. Conestogo, Shand and Luther are at the upper end of their normal operating ranges. The Guelph Reservoir is within its normal operating range although levels are dropping quickly. The Woolwich Reservoir is near the lower end of its normal operating level for this time of the year. This reservoir was filled late due to complications during the pandemic. The Woolwich Reservoir adds flows to Canagagigue Creek upstream of the community of Elmira.

Low flow targets are being met downstream of the major reservoirs. As of July 26th, augmentation accounted for approximately 80% of the flow through Kitchener, 40% of the flow through Brantford and 60% of the flow on the Speed River below Guelph. Augmentation levels have been fairly stable over the past two weeks.

Stream Flow

With the lack of rain and very hot conditions, stream flows have continued to drop especially in areas with high irrigation. Currently there are two major subwatershed that are in Level 2 conditions for stream flow: Whitemans Creek and McKenzie Creek.

McKenzie Creek, Whitemans Creek and Mt. Pleasant Creek are areas with high water use for agricultural irrigation and have received less than 25mm precipitation so far this month. In Whitemans Creek (Figure 1), flows dropped to Level 2 on July 22nd and have continued to drop over the past week and are sitting between Level 2 and Level 3. Flows in McKenzie Creek (Figure 2) dropped to Level 2 around July 6th and were lowest on July 16th when they were just above Level 3. Flows in McKenzie Creek have since increased slightly over time and are sitting just below Level 2 currently. Mt. Pleasant Creek does not have a flow gauge on it.

Flows in the Nith River and the Eramosa River are holding at Level 1.

None of the low flows have been field verified. Due to the pandemic, the GRCA does not have staff this summer to do stream gauging. The Water Survey of Canada has reduced field work, but are out in the field attending to critical issues. Low flows are difficult measure without field verification.

Forecast

There is very little rain in the forecast over the next week with a possibility of some rain (10mm) over the weekend. A rainfall of at least 25mm is needed to reduce irrigation demand for the short term. Temperatures are predicted to be seasonal this week and slightly below seasonal next week.

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Figures

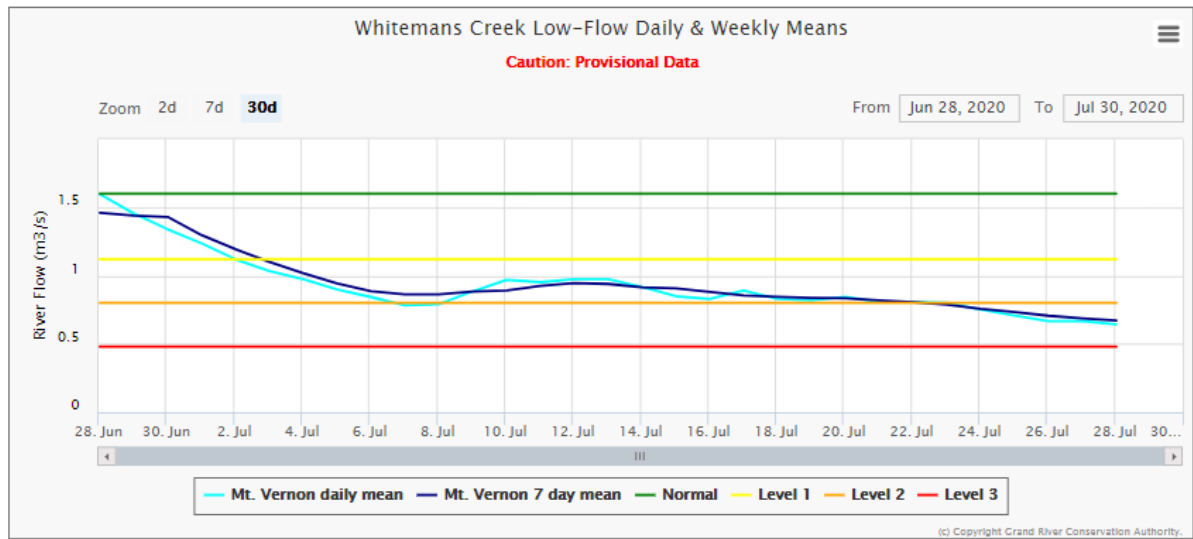


Figure 1: Low Water Web Chart Whitemans Creek

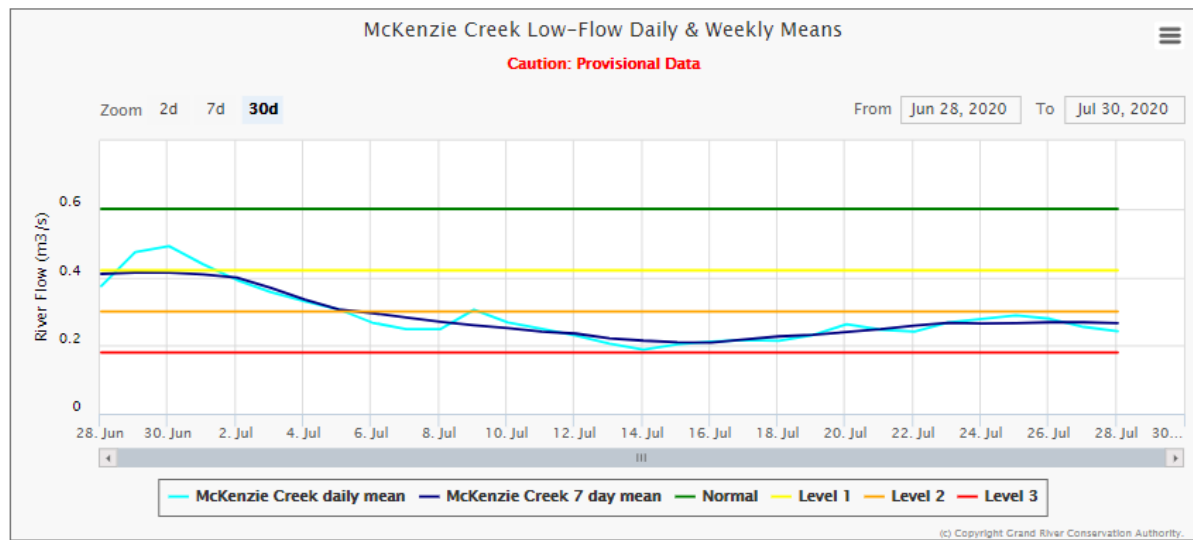


Figure 2: Low Water Web Chart McKenzie Creek