

Water Management

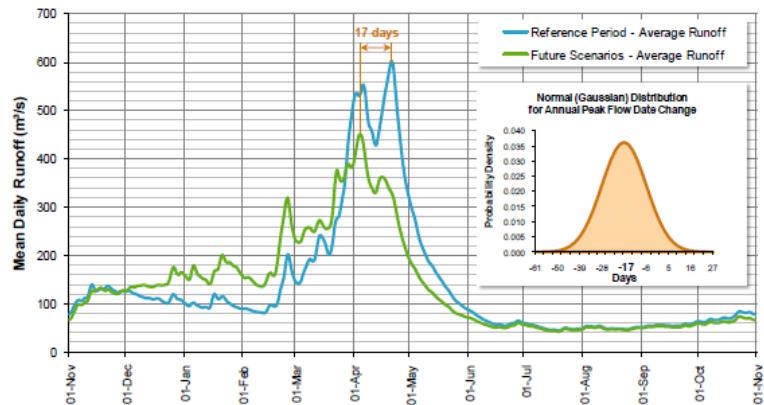


Water Management Goals	Objectives
<p>Reducing threats to public safety and negative impacts to public and private infrastructure from over-bank flooding, ice damage, extreme water level fluctuations, and high volume flows</p>	<ul style="list-style-type: none"> • Mitigate Flooding • Protect Infrastructure • Provide for Public Safety
<p>Contributing to the health of Canadians through the availability of drinking water for residents, cities and towns throughout the watershed</p>	<ul style="list-style-type: none"> • Manage for Water Supply (agricultural and municipal) • Manage for Water Quality (human health and aquatic life)
<p>Providing safe boating and navigation along the marked navigation channels of the Trent Severn Waterway</p>	<ul style="list-style-type: none"> • Provide Navigation
<p>Protecting significant aquatic habitats and species</p>	<ul style="list-style-type: none"> • Protect Natural Environment (wetlands, fish, wildlife, invasive species, species at risk)
<p>Optimizing the enjoyment of the water throughout the watershed by shoreline residents and visitors</p>	<ul style="list-style-type: none"> • Enhance Aesthetics • Optimize Recreation • Optimize Cultural Resources • Provide Public Access (physical access, access to information)
<p>Allowing hydroelectric generation plants to operate at plant capacity and meet demand for renewable energy insofar as possible</p>	<ul style="list-style-type: none"> • Optimize Water Power Generation

Competing Interests and Climate Change

- In the event of wet conditions:
- Public Safety can be endangered with increased water levels/flows.
- Resulting high flows can disrupt navigation along the waterway.
- High flows allow fish to spawn in elevated areas prone to declines.
- Excess spill at many hydro generating stations.

Figure 4-6 - Ensemble Average Mean Daily Runoff for the Future scenarios (2041–2070) and Mean Daily Runoff for the Reference Period (1970–1999)

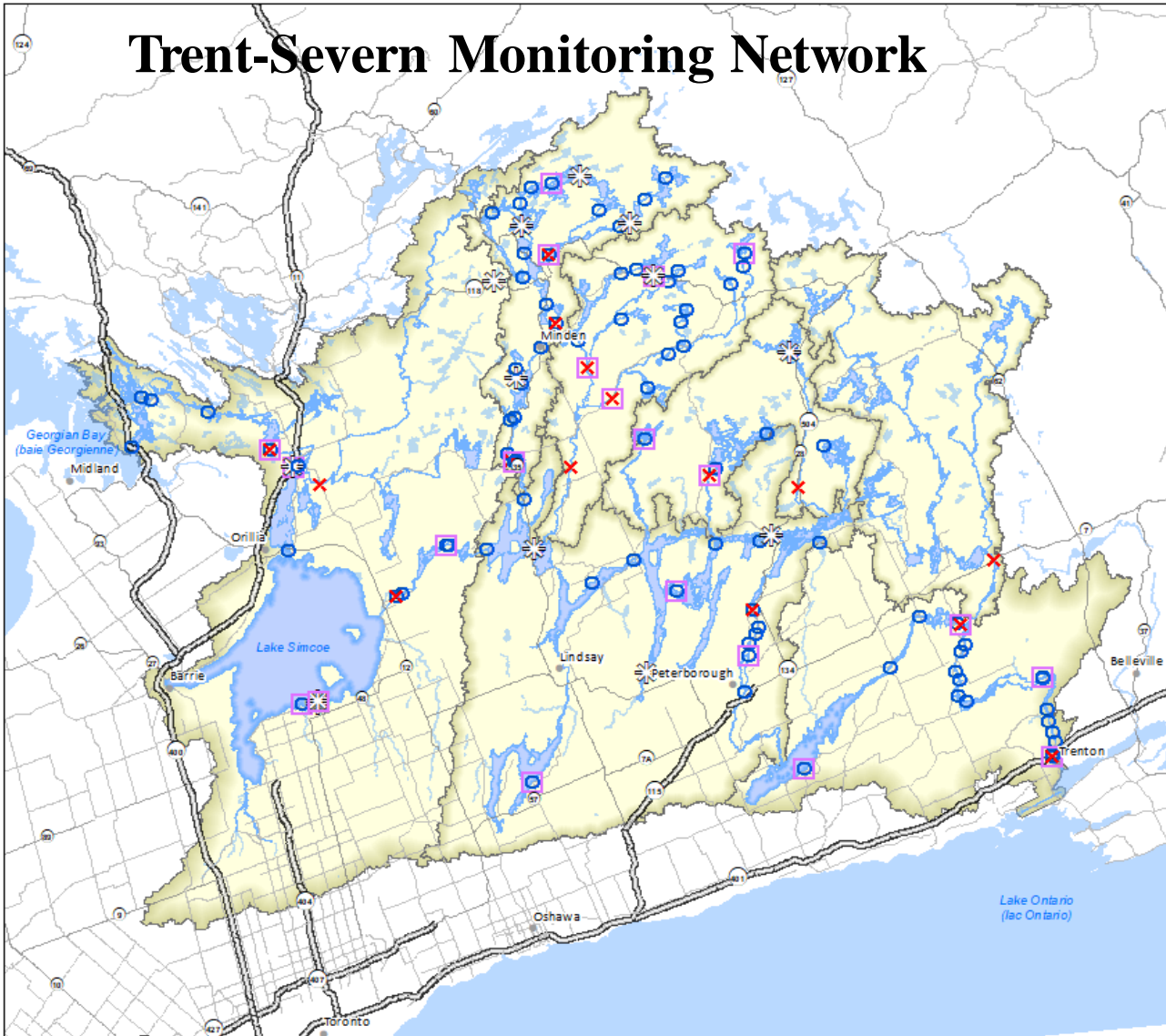


Competing Interests

- In the event of dry conditions:
- Public Health is not initially endangered,
- Water quality can be endangered.
- Navigation can be threatened as lake levels decline
- Fish spawn in shallow areas are in danger of being left dry.
- Reservoir lake levels drop more than normal.
- Hydro generation is diminished as water flow is reduced.



Trent-Severn Monitoring Network



Water Monitoring Network Across the Trent-Severn Waterway

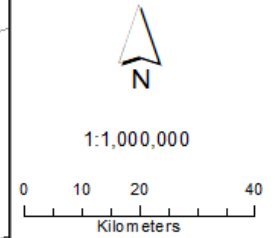
Legend

Water Management Gauges

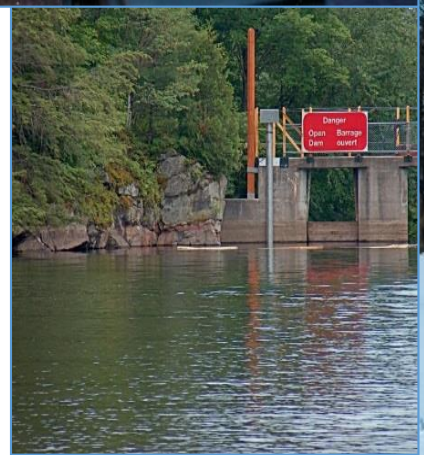
- Meter Type**
- ✕ Flow Gauge
 - Level Gauge
 - ◻ Rain Gauge
 - ✱ SWE

Roads

- ROADCLASS**
- Arterial
 - Expressway/ Highway
 - Freeway
 - watersheds



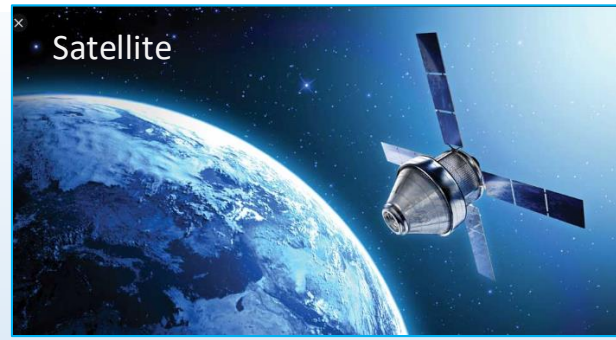
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Information provided on this map is for illustrative purposes only.



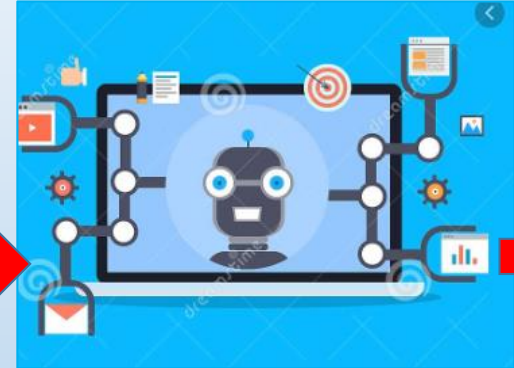
Water Management of Ontario Waterways



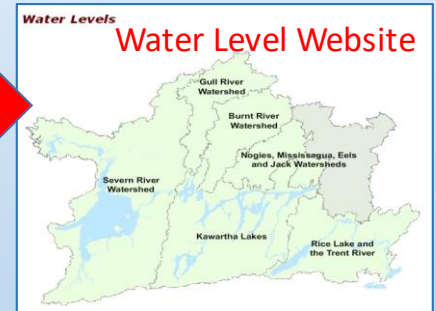
Daily Routine



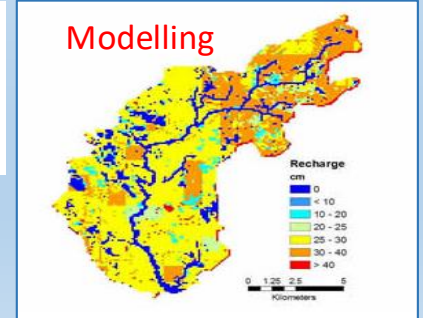
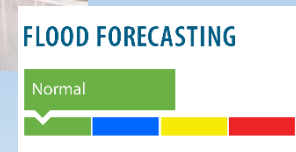
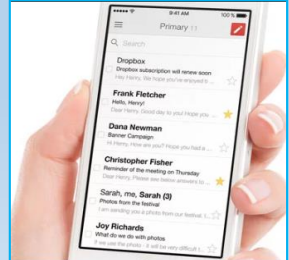
Automated Dialup Program
Electronic database
compiles automated
and manual data for
use by the Water
Management Team



Communicate information
to CA's, MNRF and EMS



Daily email to water managers

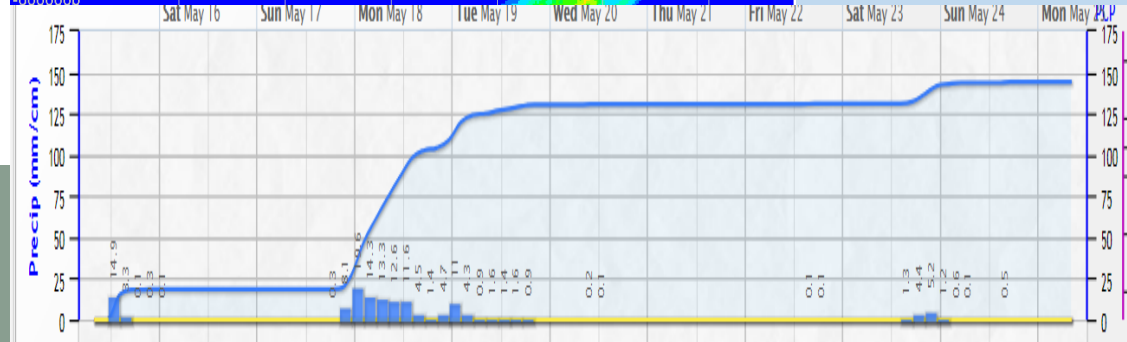
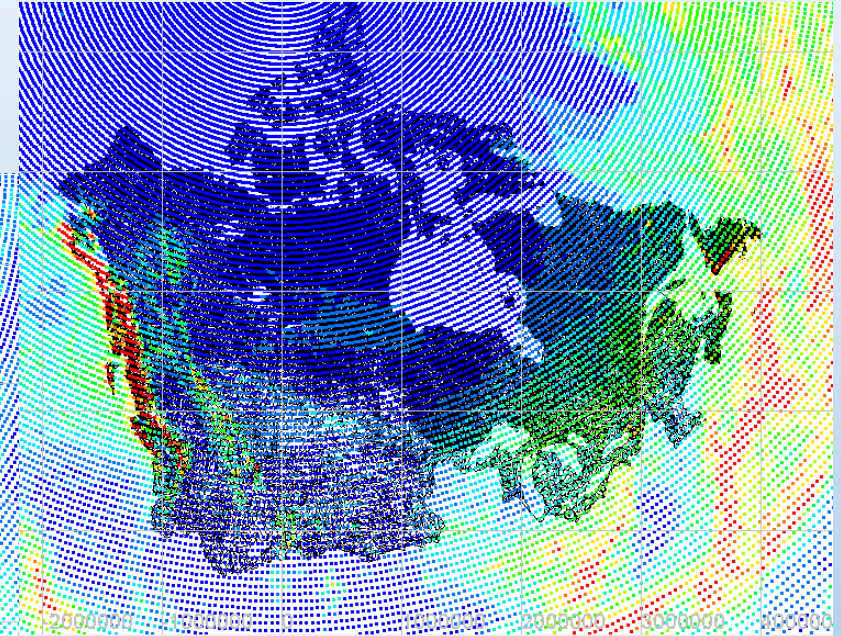
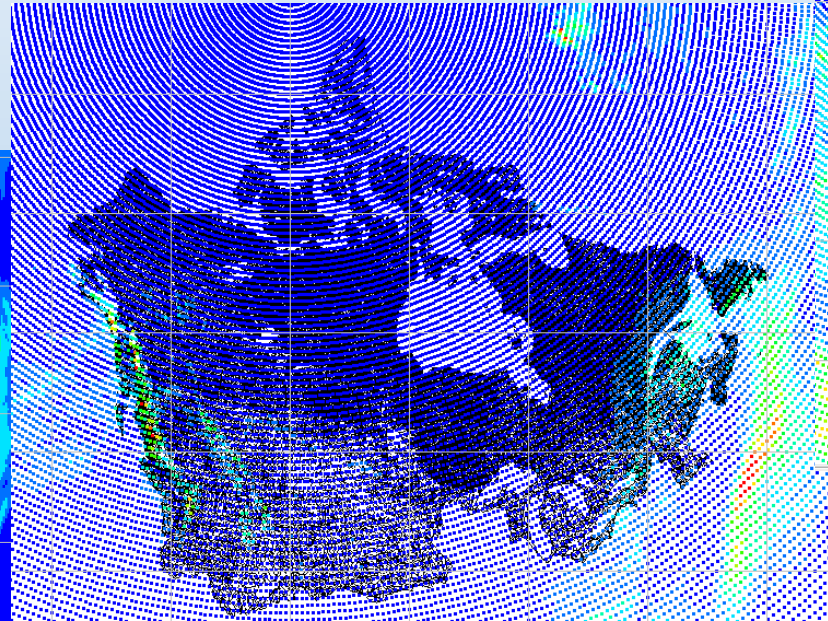
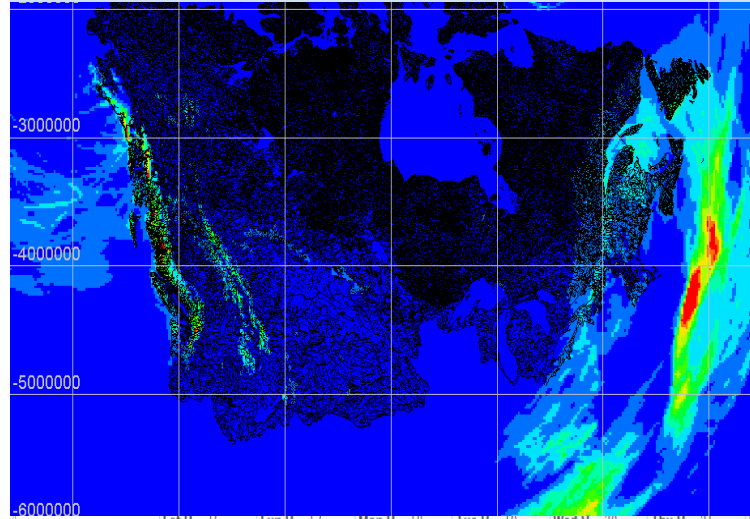


Weather Forecasts

10-day GLB Forecast: Day 10
High Uncertainty

10-day GLB Forecast: Day 3

2-day RGL Forecast: High Certainty



Daily Basin-wide Forecasted Precipitation (mm) / Precipitation quotidienne prevue par bassin versant (mm)

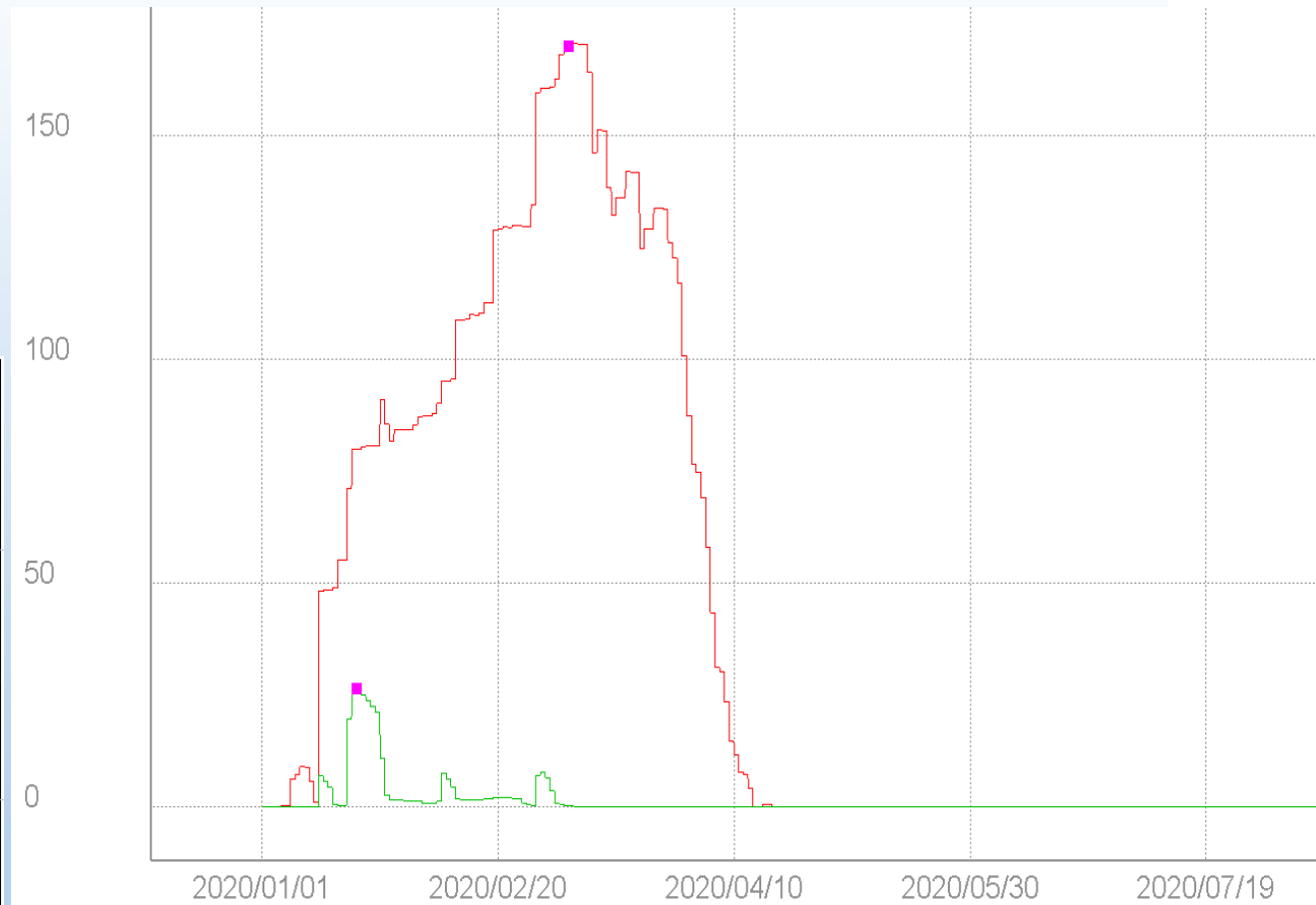
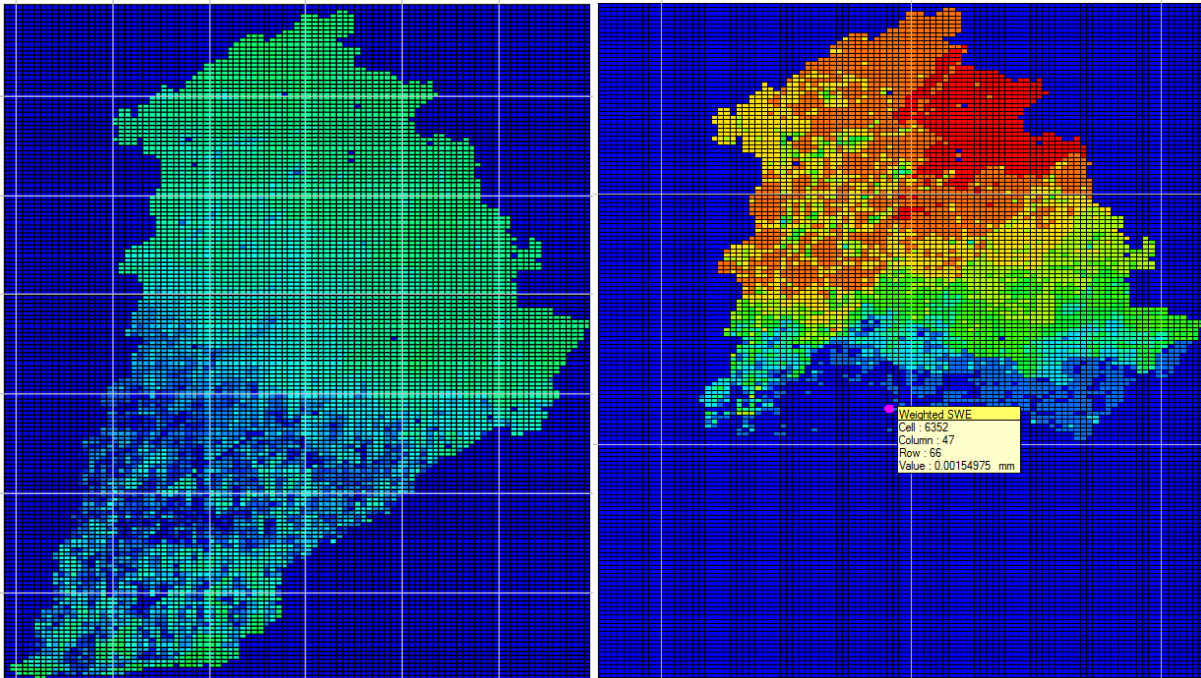
Basin/Bassin	20200519	20200520	20200521	20200522	20200523	20200524	20200525	20200526	20200527
Lake_Superior	0.0	0.0	0.0	0.1	5.4	8.8	1.5	6.8	4.1
Lake_Huron	0.1	0.0	0.0	0.0	0.2	0.8	5.5	7.5	6.6
Lake_Michigan	2.1	0.0	0.0	0.1	1.8	3.2	3.3	17.3	2.3
Lake_Erie	4.5	0.1	0.3	0.2	0.1	0.5	0.9	1.5	2.7
Lake_Ontario	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
Ottawa_River	0.0	0.0	0.0	0.0	0.0	0.0	3.0	2.5	3.7
Saint_John_River	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.5
Churchill_River_Lbrdr	0.2	0.2	1.0	1.5	0.0	5.2	8.7	5.3	0.0
Rideau_canal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Trent-Severn	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	2.0

Watershed Snow

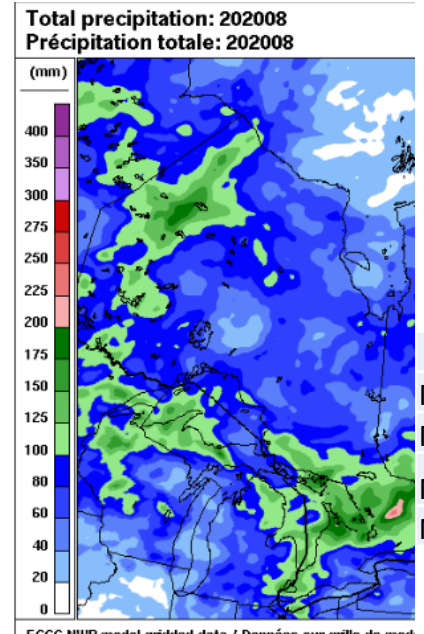
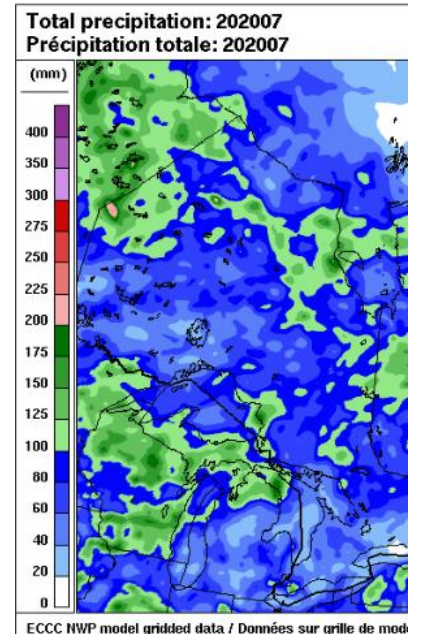
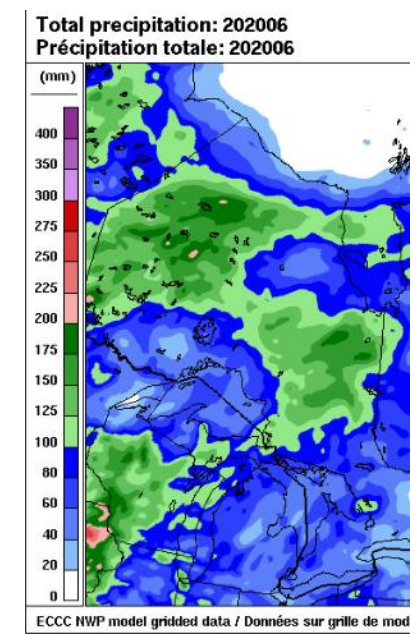
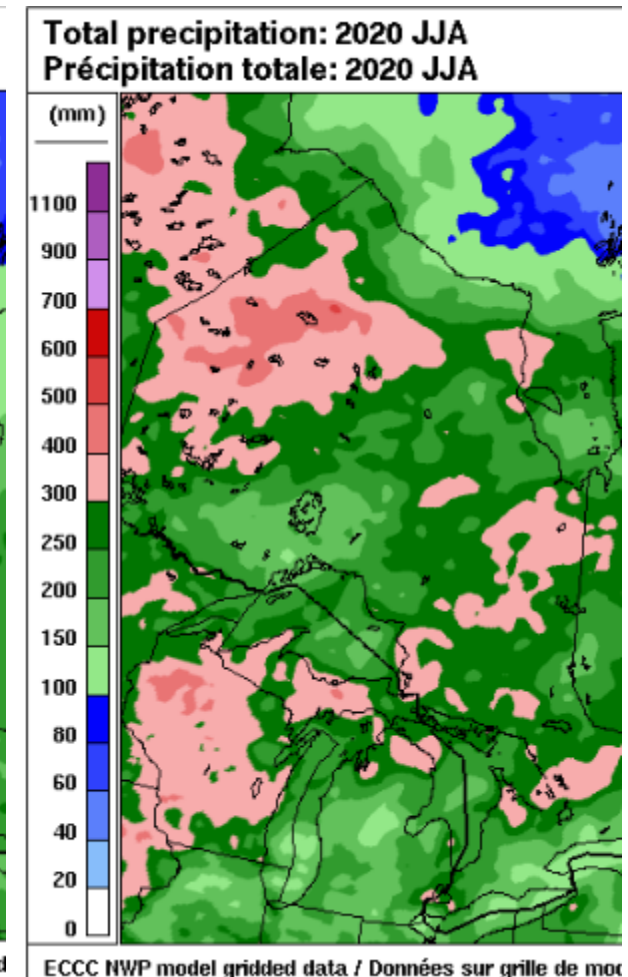
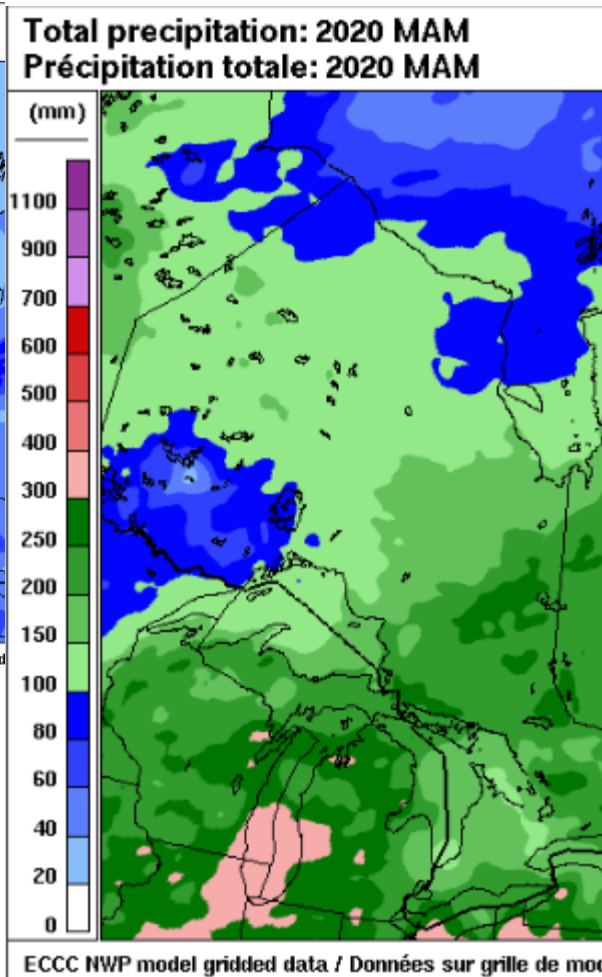
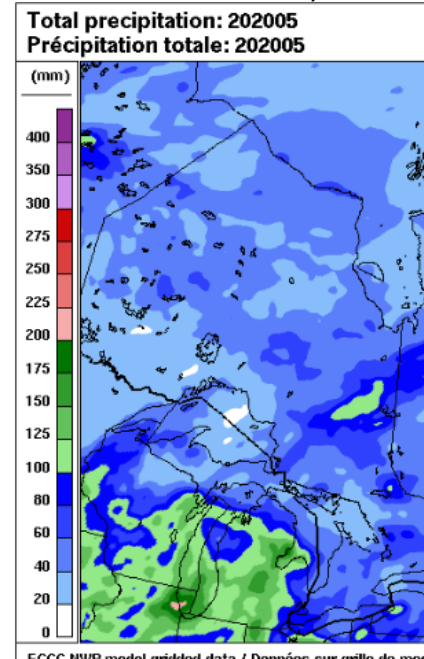
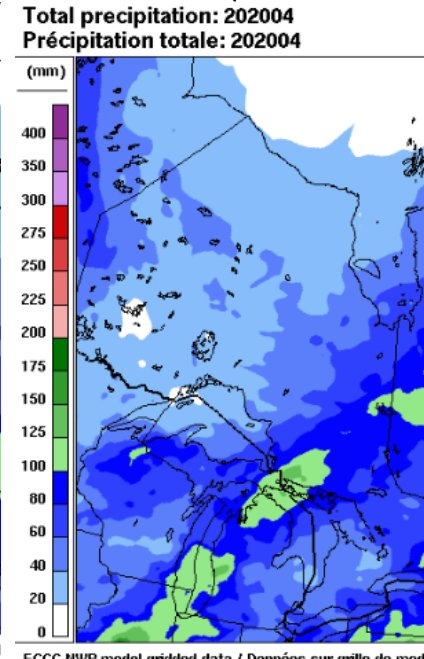
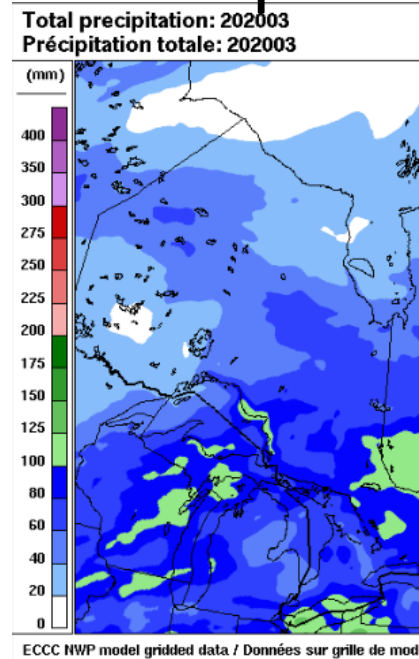
Snowmelt

Past: Nov 12 2019

Snow Acc. Peak March 8

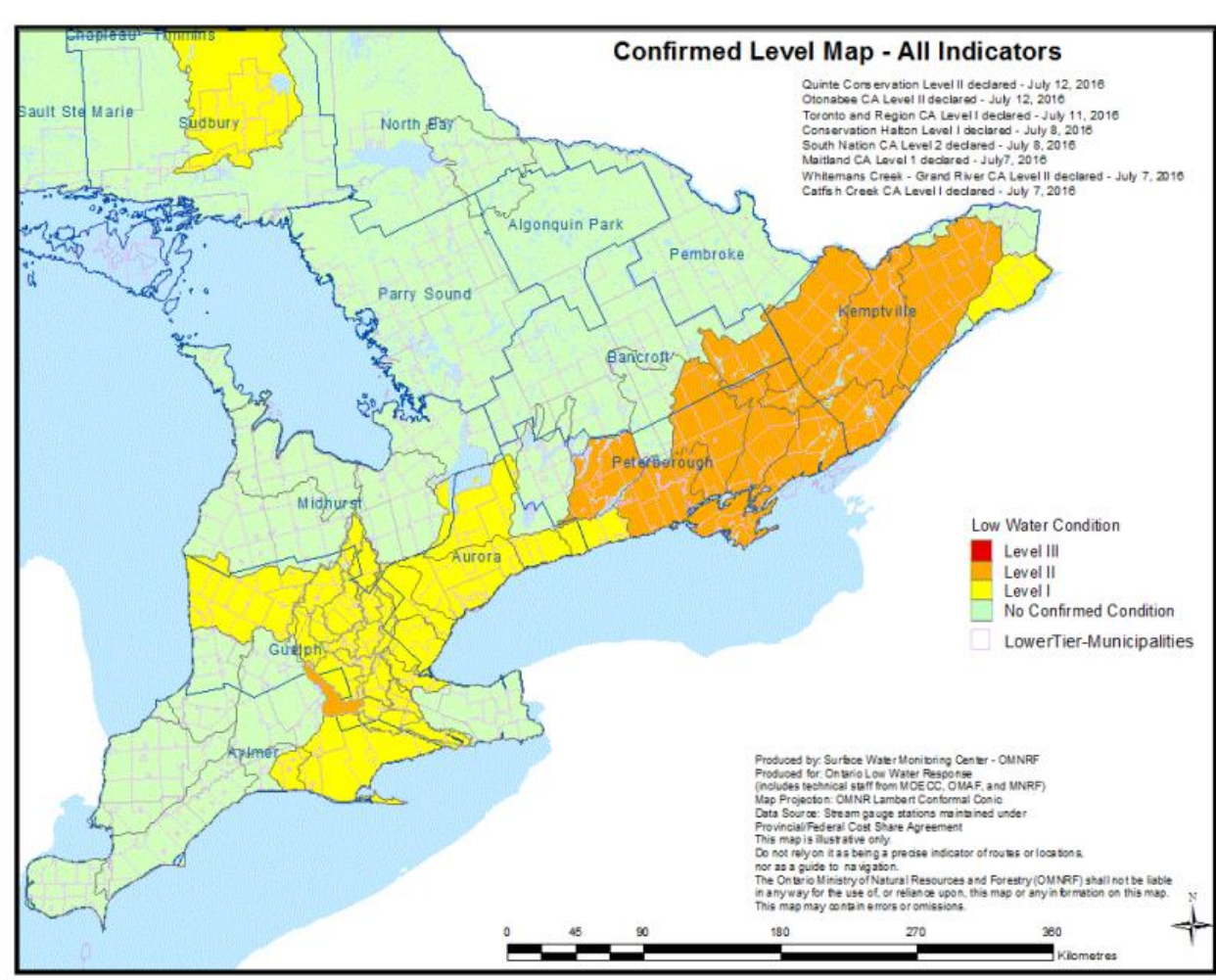
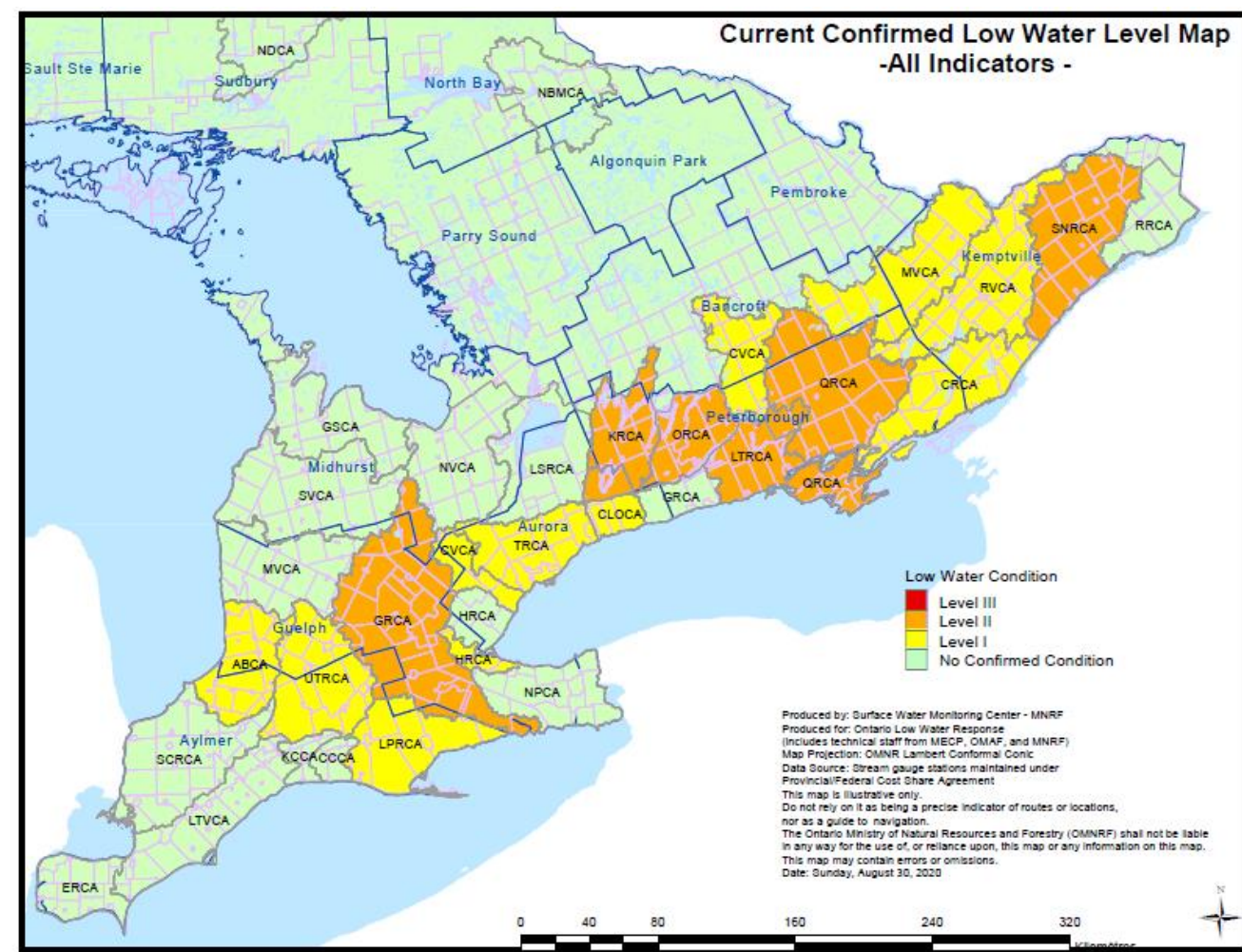


Precipitation (source Environment Canada)

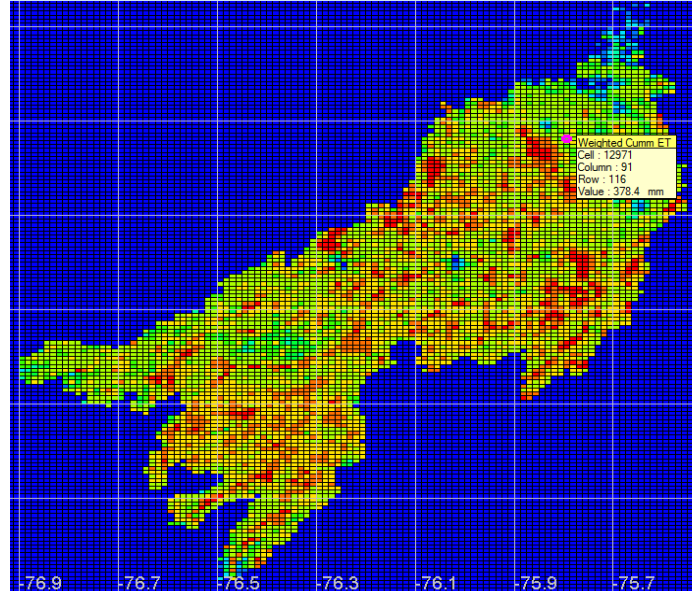
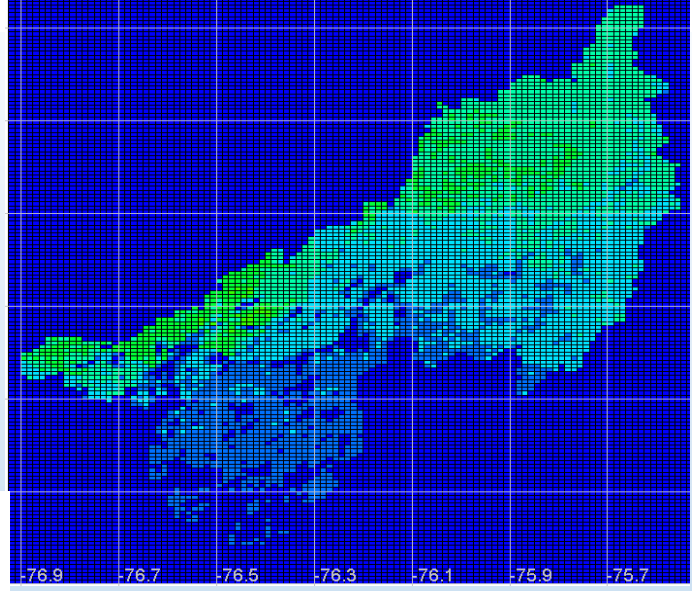
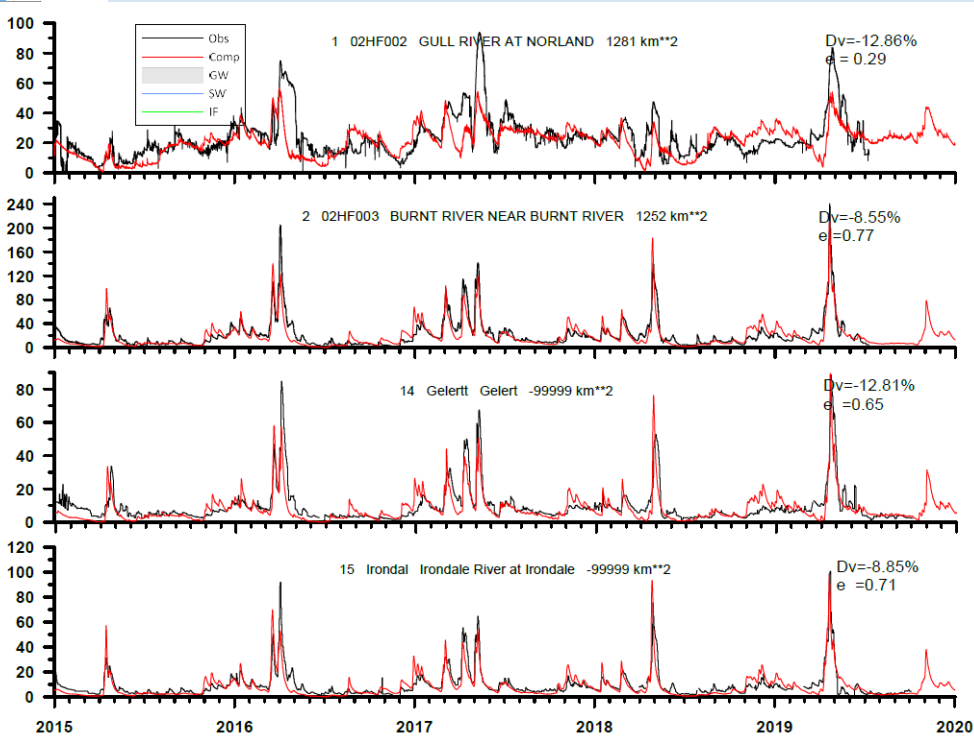
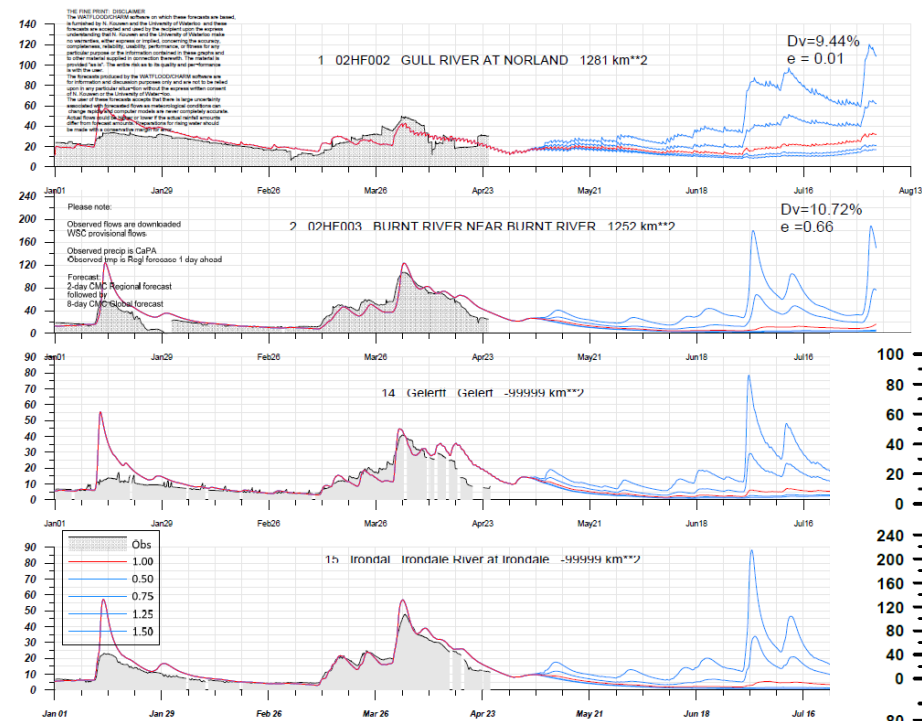


	Mar.	Apr.	May	MAM	June	July	Aug.	JJA
Mean	75	76	93	245	97	87	90	273
Maximum	170	146	190	506	241	160	167	568
Minimum	13	29	34	77	24	16	15	55
Normal	31	61	81	173	80	71	77	228

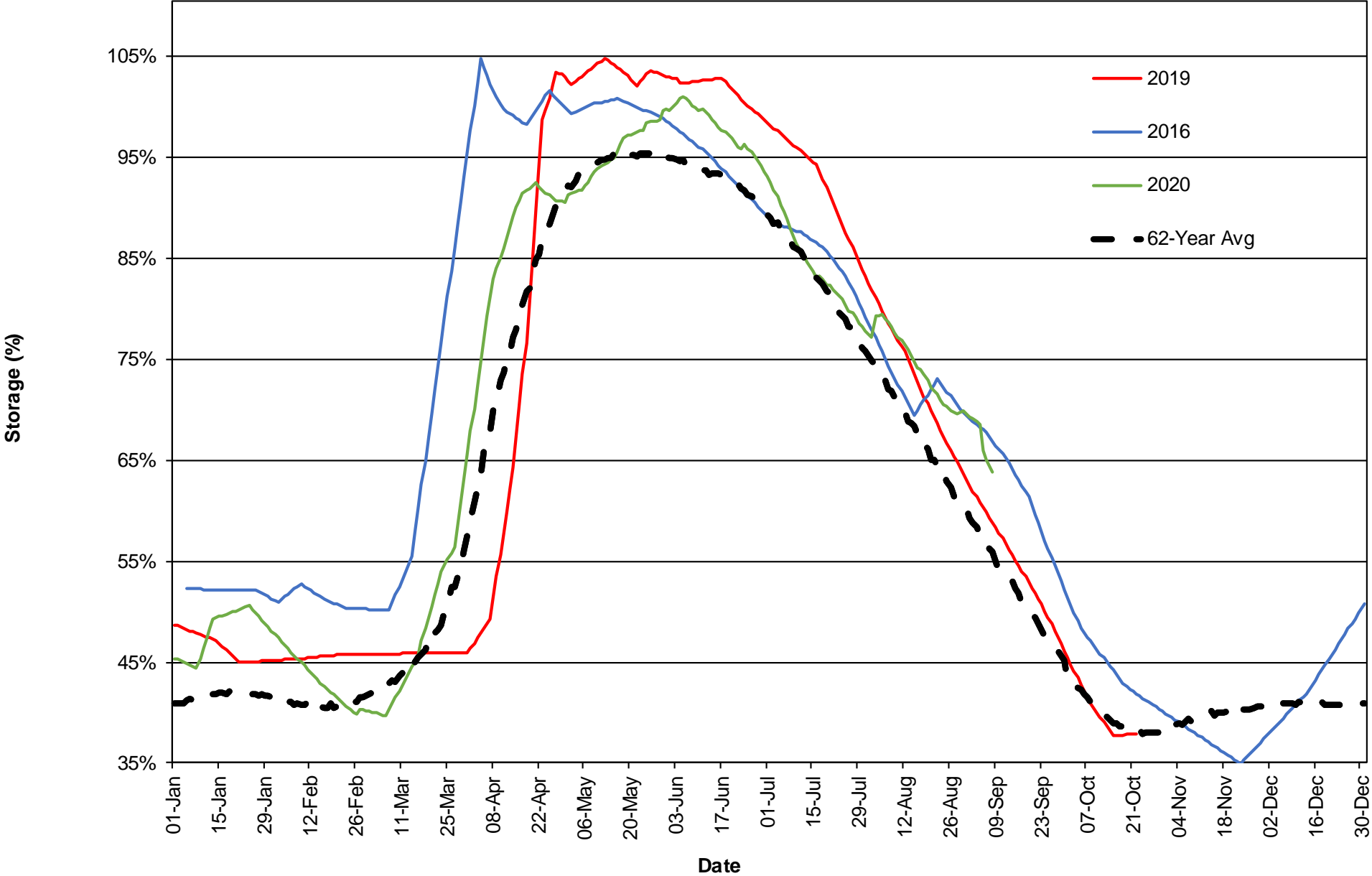
Low Water Conditions (source Surface Monitoring Center)



Daily and Seasonal Forecasting



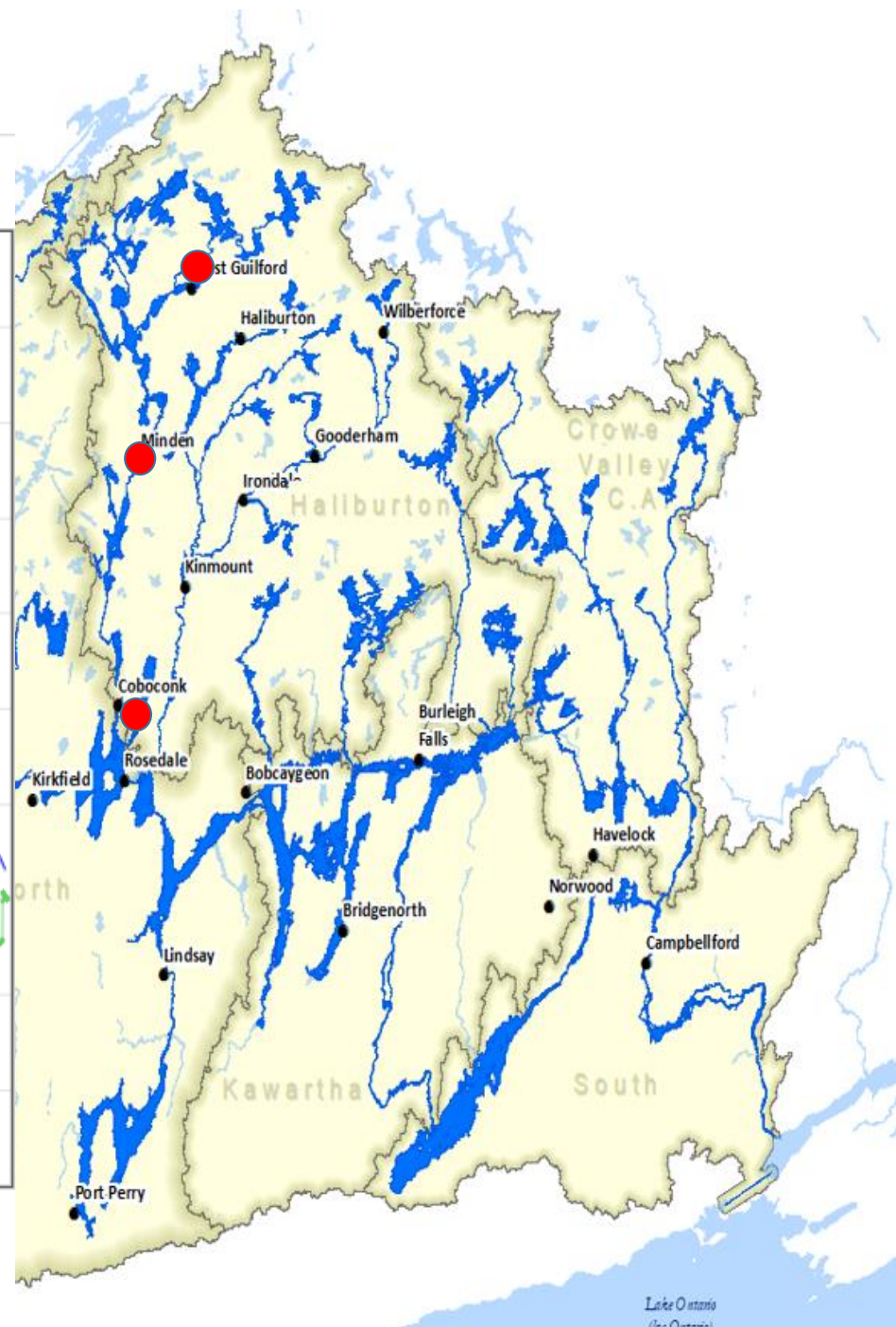
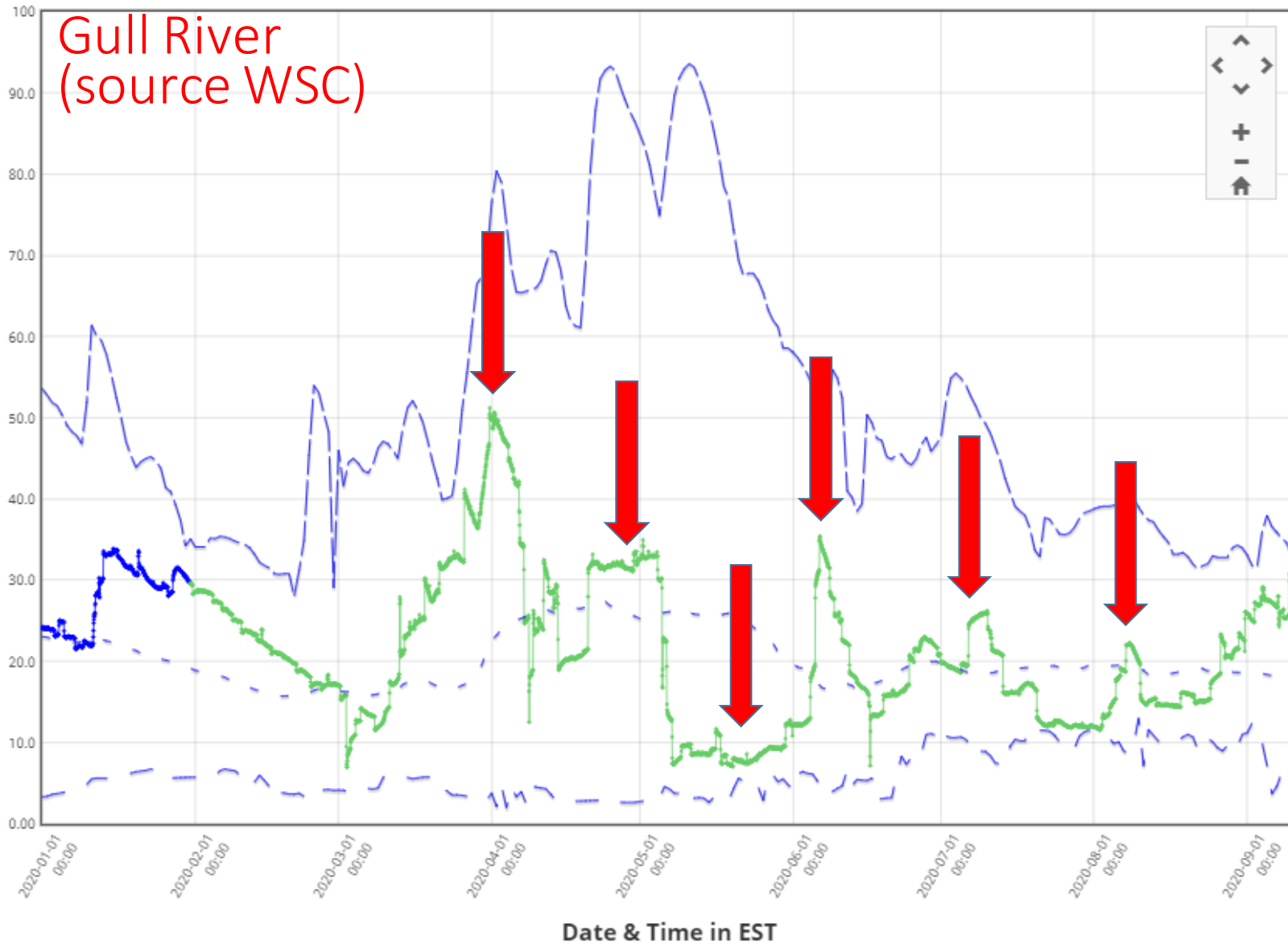
Haliburton Storage Summary

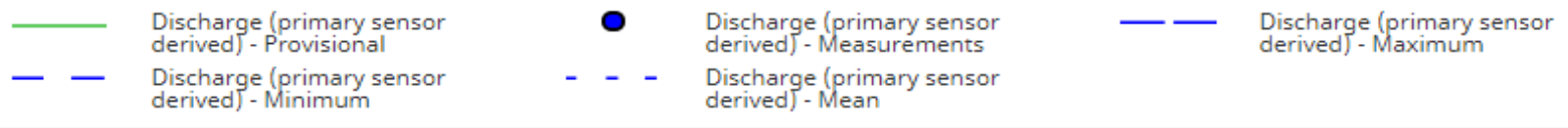


- Discharge (primary sensor derived) - Final
- Discharge (primary sensor derived) - Provisional
- Discharge (primary sensor derived) - Maximum
- - Discharge (primary sensor derived) - Minimum
- - Discharge (primary sensor derived) - Mean

Discharge (primary sensor derived) (m3/s)

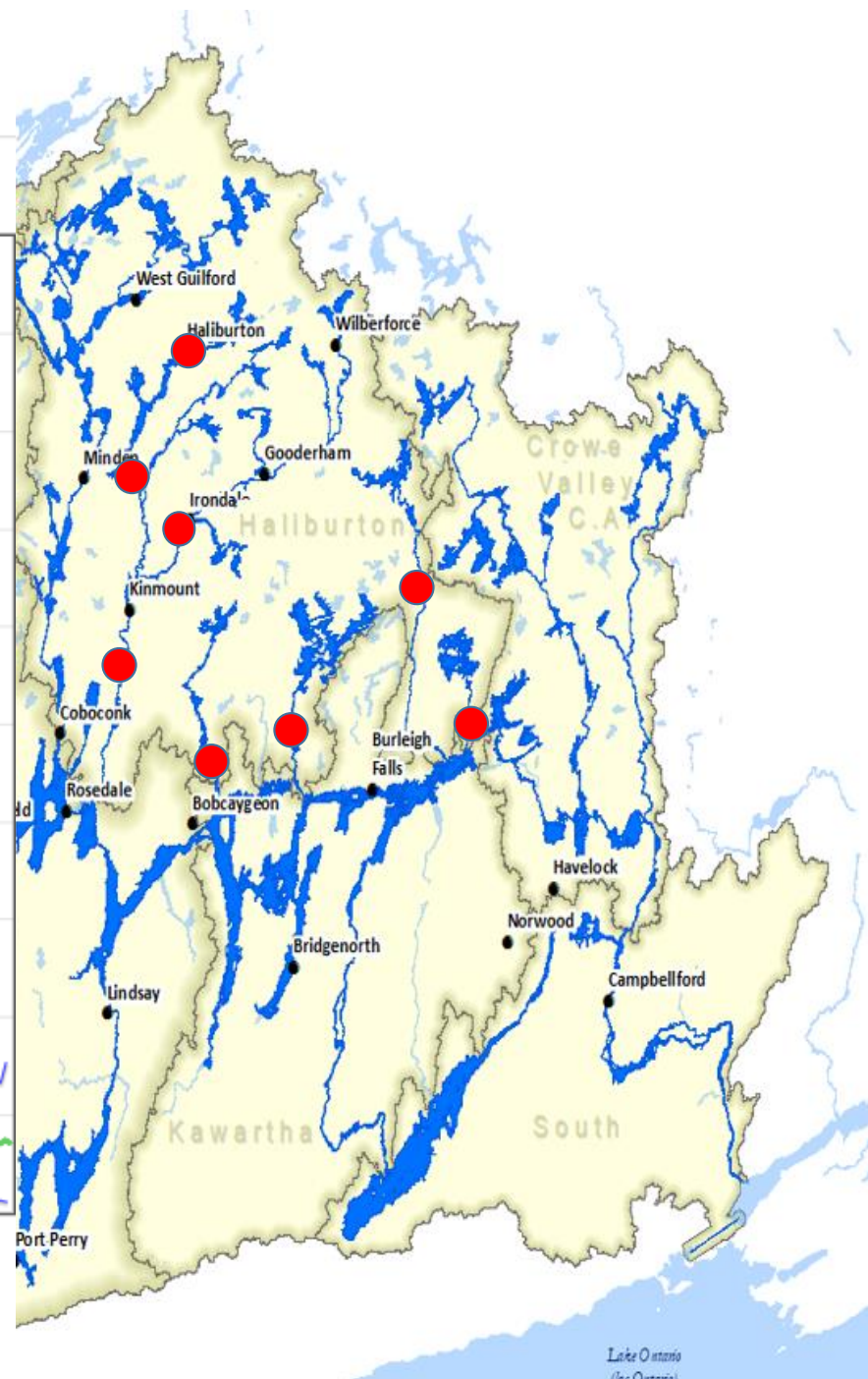
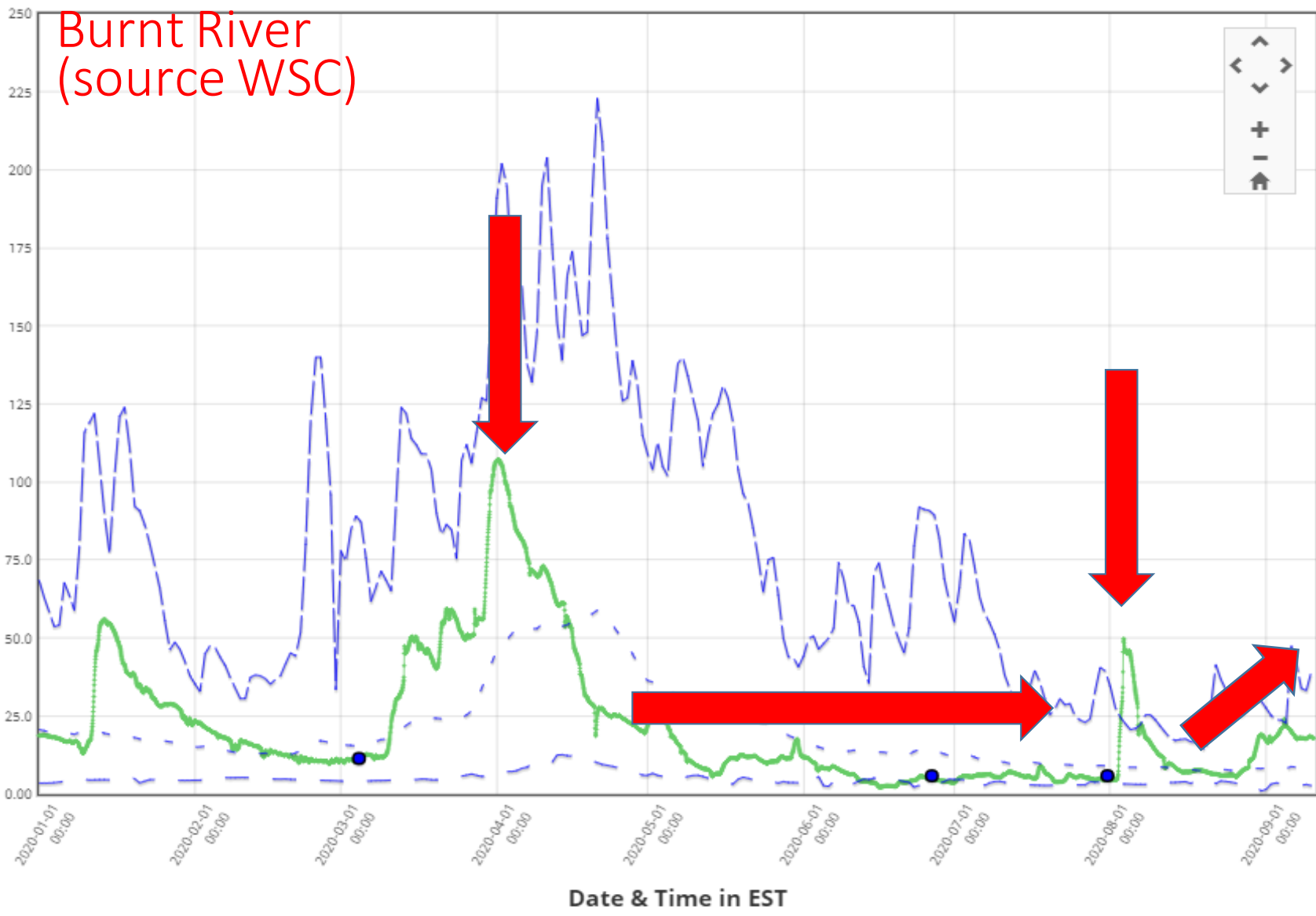
Gull River
(source WSC)



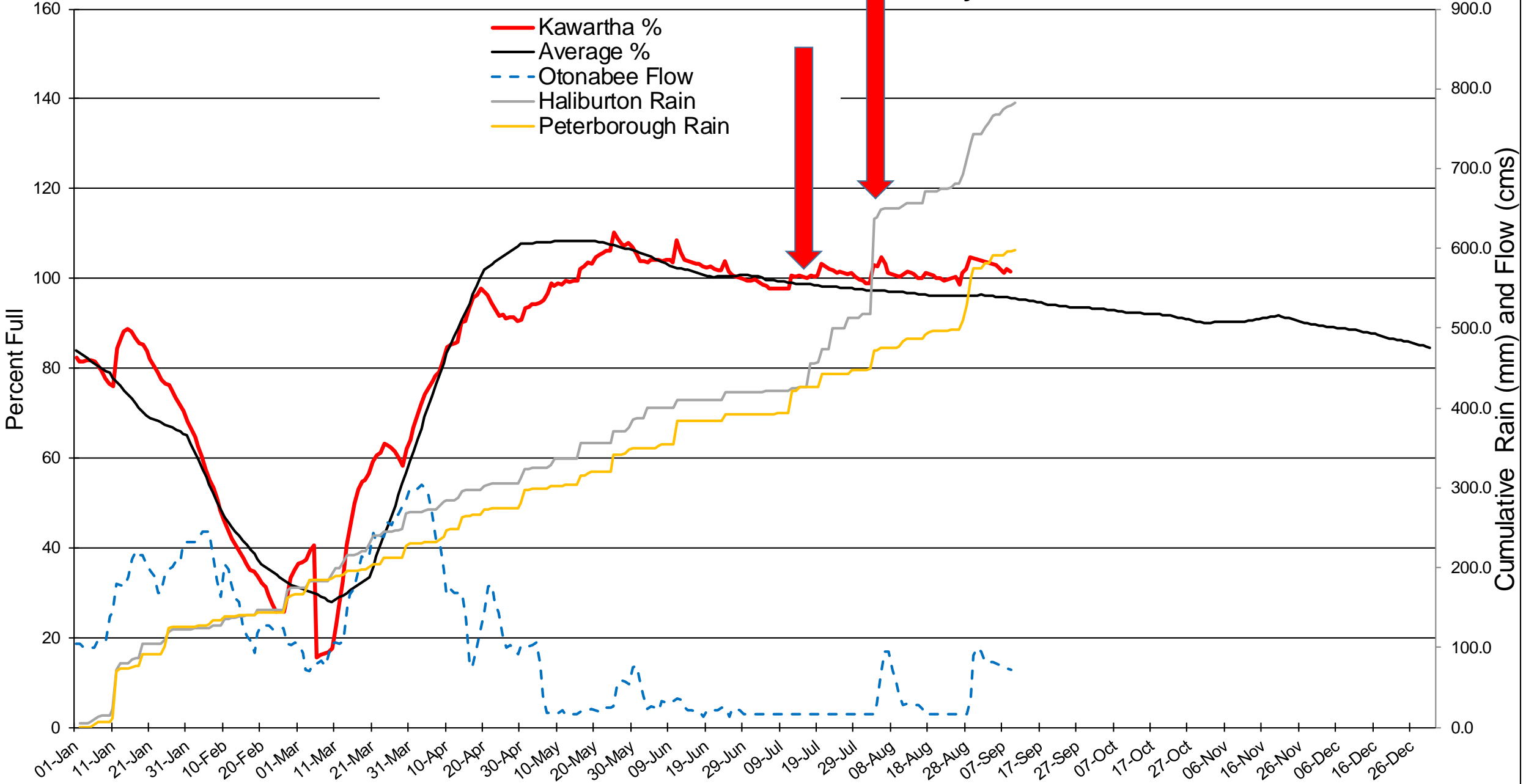


Discharge (primary sensor derived) (m3/s)

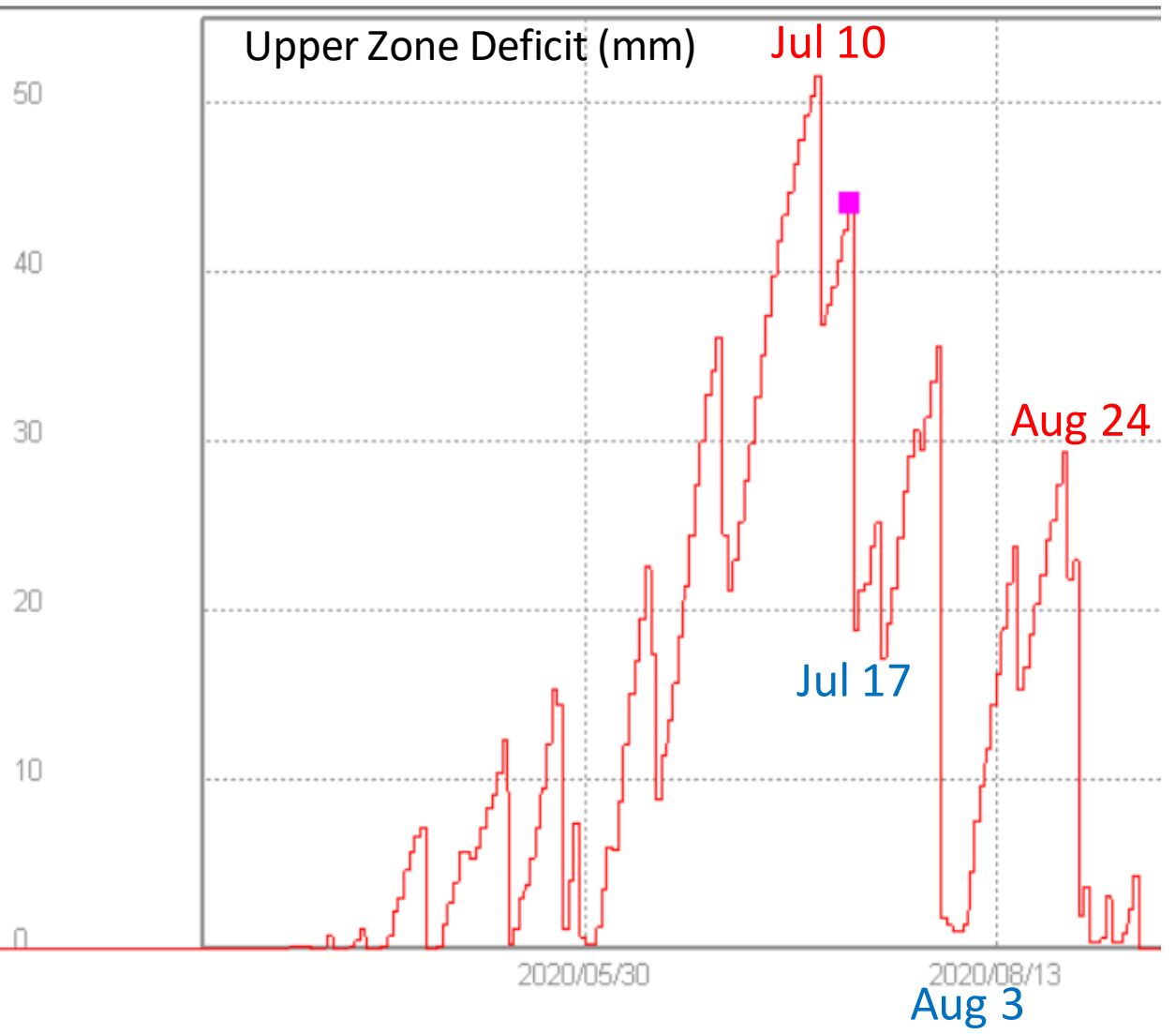
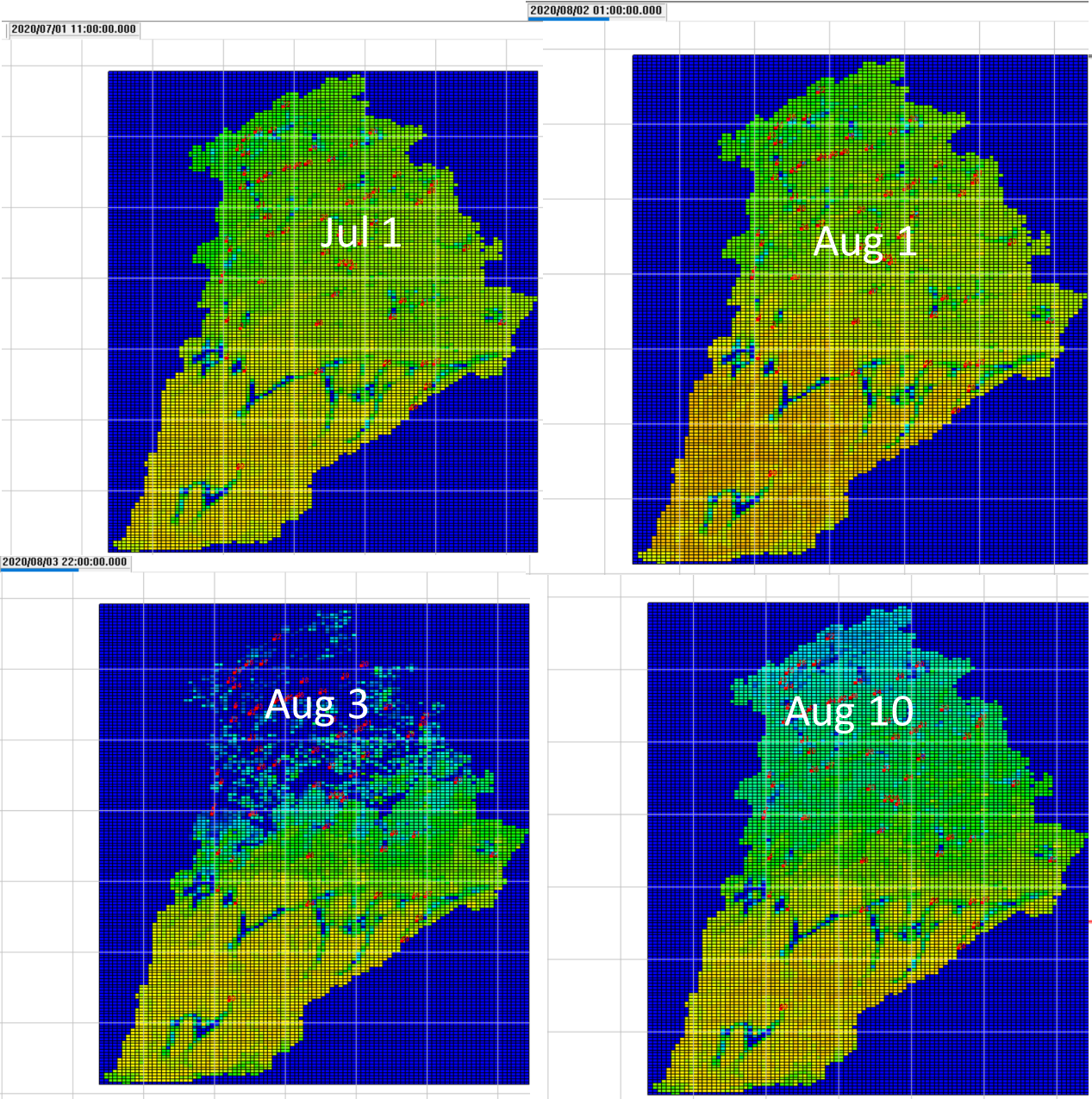
Burnt River
(source WSC)



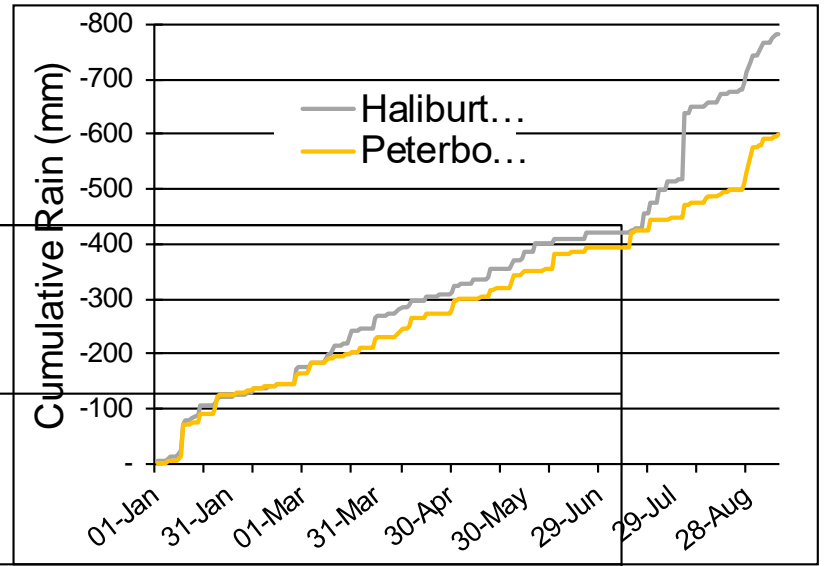
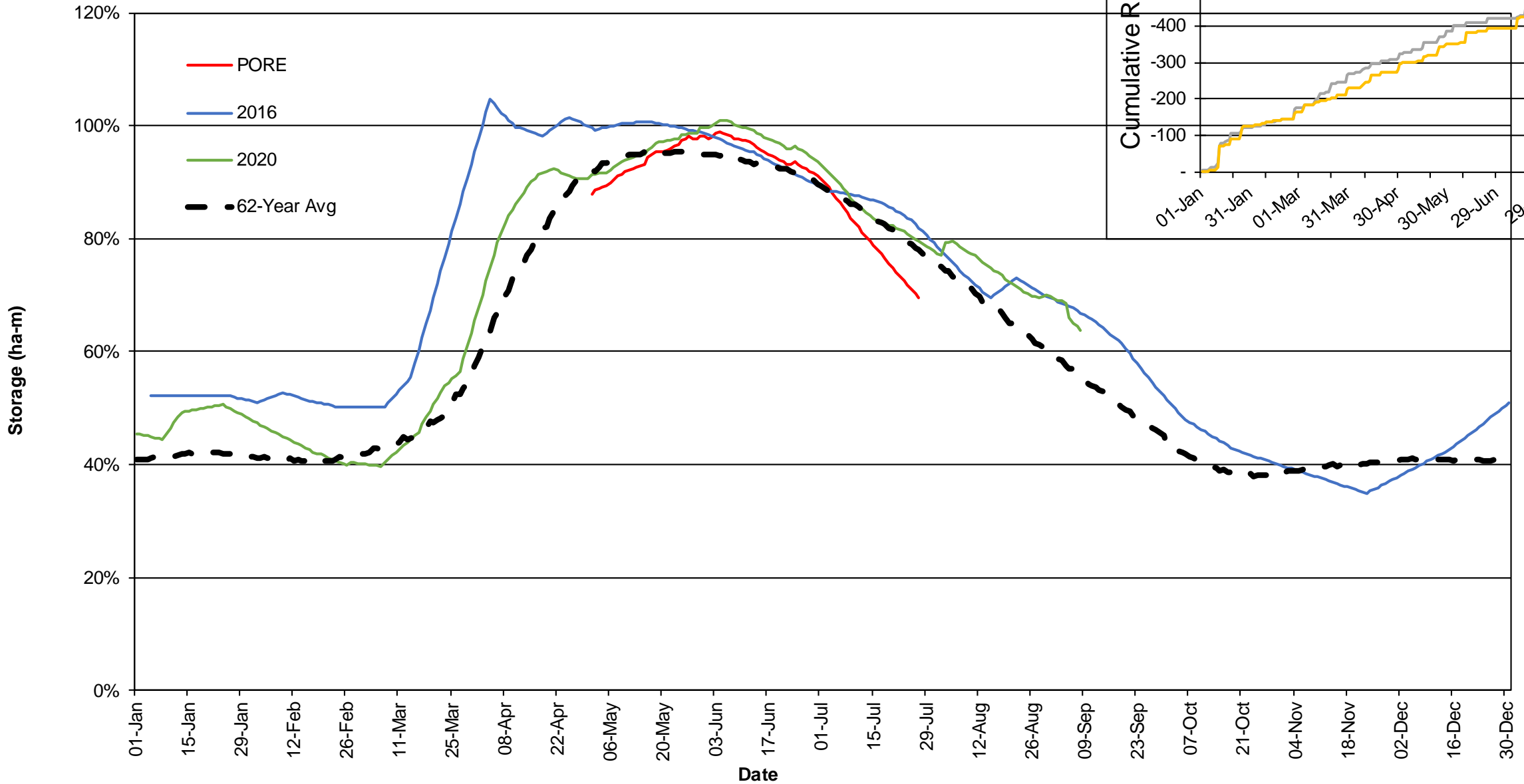
Kawartha Lakes Summary



Localized Precipitation and Drought Conditions



Haliburton Storage Summary



Thank you

