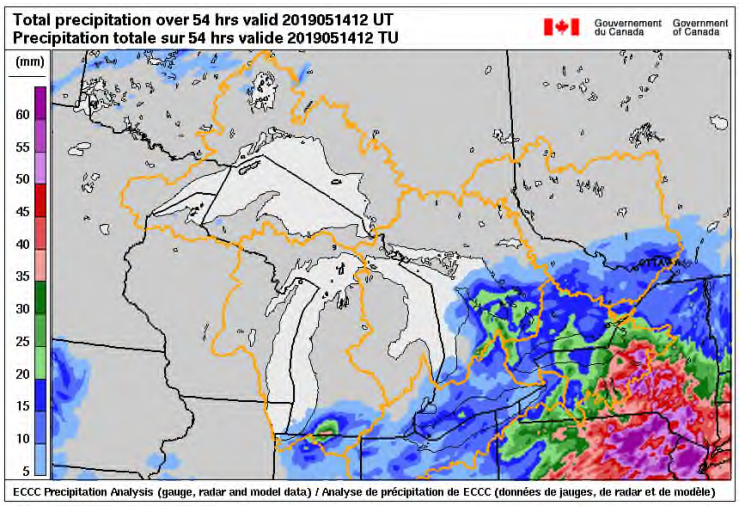
Lake Erie - Lake Ontario – St. Lawrence River

Daily Briefing* – 14 May 2019

****** Lakes Erie and Ontario received additional precipitation over the past two days; highest totals of 20 - 40 mm (0.8 - 1.6 in.) were largely restricted to southeastern portions of both basins.***



****** Ottawa River flows remain stable, but are expected to resume slowing receding in the coming days.***

****** Lake Erie levels have varied locally due to wind effects, but the lake-wide average has been relatively stable in recent days, whereas Lake Ontario continues to rise as high inflows and reduced outflows continue.***

****** Yesterday, St. Lawrence River levels around Montreal exceeded record-highs for this time of year***

****** Flooding continues in the lower St. Lawrence River, including some areas around Lake St. Louis and Montreal; flooding and other high water impacts continue to be reported around Lake Erie, Lake Ontario and the upper St. Lawrence during periods of active weather.***

- ***Lake Erie's level*** was 175.04 m (574.28 ft) yesterday. This is 73 cm (28.7 in.) above average, and 10 cm (3.9 in.) above the record-high for this time of year (the 2nd quarter-month of May, set in 1986).

- ***Lake Ontario's level*** was 75.67 m (248.26 ft) yesterday. This is 64 cm (25.2 in.) above average, 18 cm (7.1 in.) below the level recorded on this same date in 2017 and 21 cm (8.3 in.) below the highest level recorded on May 25th, 2017.

- ***Lake Ontario's outflow*** was maintained at 7300 m^3/s (257,800 cfs) yesterday. Further outflow adjustments will continue according to Plan 2014's maximum "F-limit", which balances high levels upstream on Lake Ontario and the upper St. Lawrence, with those downstream on Lake St. Louis and the lower St. Lawrence.

- ***Lake St. Lawrence's level*** was 73.63 m (241.57 ft) yesterday, which is 2 cm (0.8 in) below average.

- ***Lake St. Louis' level*** was an average of 22.51 m (73.85 ft) (recorded) yesterday and will continue to be maintained near 22.48 m (73.75 ft) by adjusting outflows according to the Plan 2014 F-limit.

* This product is primarily for internal use by water managers and responsible authorities along the shorelines of the Great Lakes and St. Lawrence River. This information is available to draw from and to support your own communications locally, but please note that this product is not for direct public distribution. See also pg. 21.

Recent Conditions (Yesterday)[†]

Water Levels [‡]

Location	Daily Mean Water Level (m) 13-May-19	Compared to: (Historical quarter-monthly statistics**)				Most recent year that WLs were:	
		Average	Last Year	Record High (Year)	Record Low (Year)	Higher	Lower
Lake Erie	175.04 m	+73 cm	+16 cm	+10 cm (1986)	+160 cm (1934)	RECORD	2018
Lake Ontario	75.67 m	+64 cm	+41 cm	-18 cm (2017)	+153 cm (1935)	2017	2018
Lake St. Lawrence	73.63 m	-2 cm	+7 cm	-44 cm (1973)	+63 cm (1987)	2017	2018
Lake St. Louis @ Pte Claire	22.51 m	+88 cm	+43 cm	+1 cm (2017)	+206 cm (1964)	RECORD	2018
Montreal @ Jetty #1	8.84 m	+158 cm	+95 cm	+1 cm (2017)	+341 cm (2010)	RECORD	2018

**Stats periods of record: Lake Erie/Lake Ontario: 1918-2018; St. Lawrence River: 1960-2018; Montreal: 1967-2018

Outflows

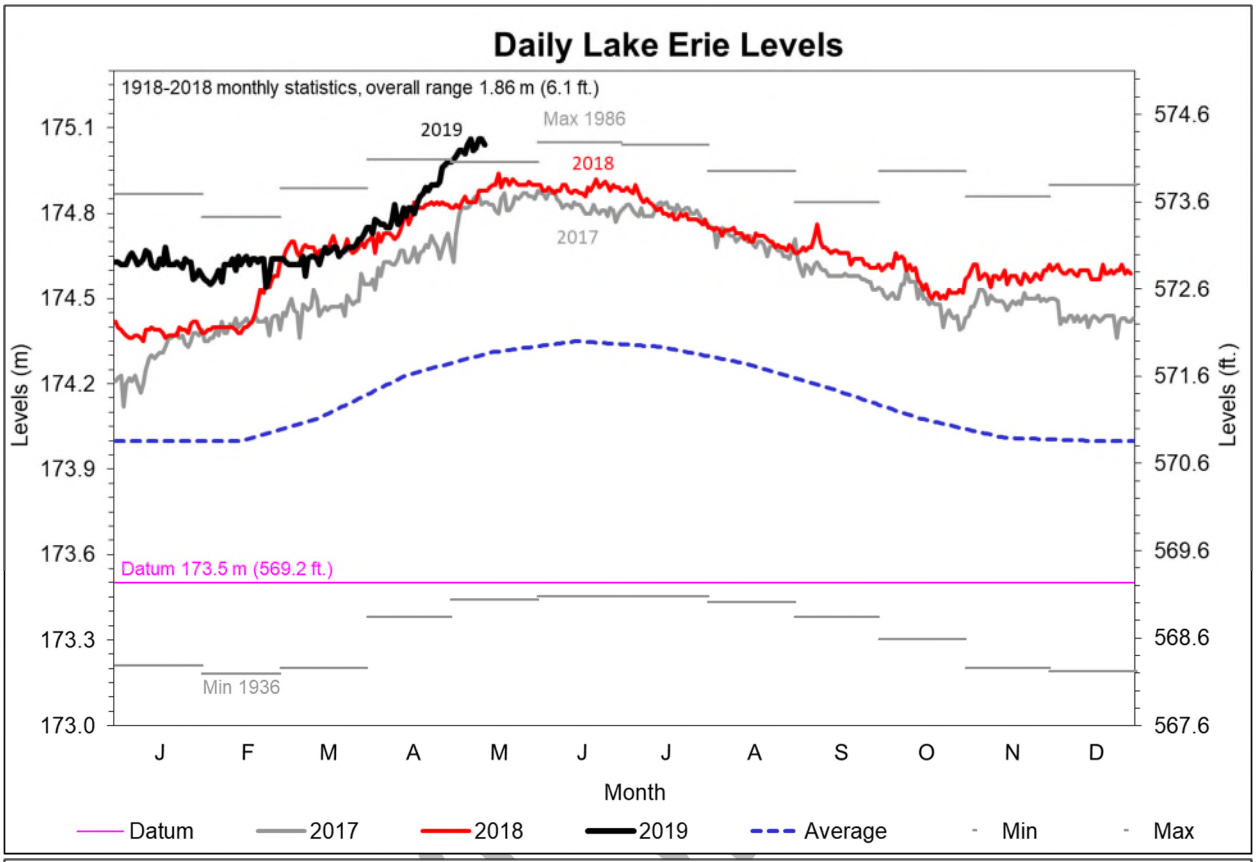
Location	Daily Mean Flow (m^3/s) 13-May-19	Compared to: (Historical quarter-monthly statistics**)			
		Average	Last Year	Record High (Year)	Record Low (Year)
Lake Erie	8050	+1750	+470	+70 (1974)	+3430 (1934)
Lake Ontario	7290	-50	-610	-2610 (1993)	+2220 (1965)
Ottawa River @ Carillon	8260	+4970	+2860	+590 (2017)	+7250 (2010)
Lake St. Louis @ LaSalle	12600	+2990	+1500	-60 (1974)	+6500 (1964)

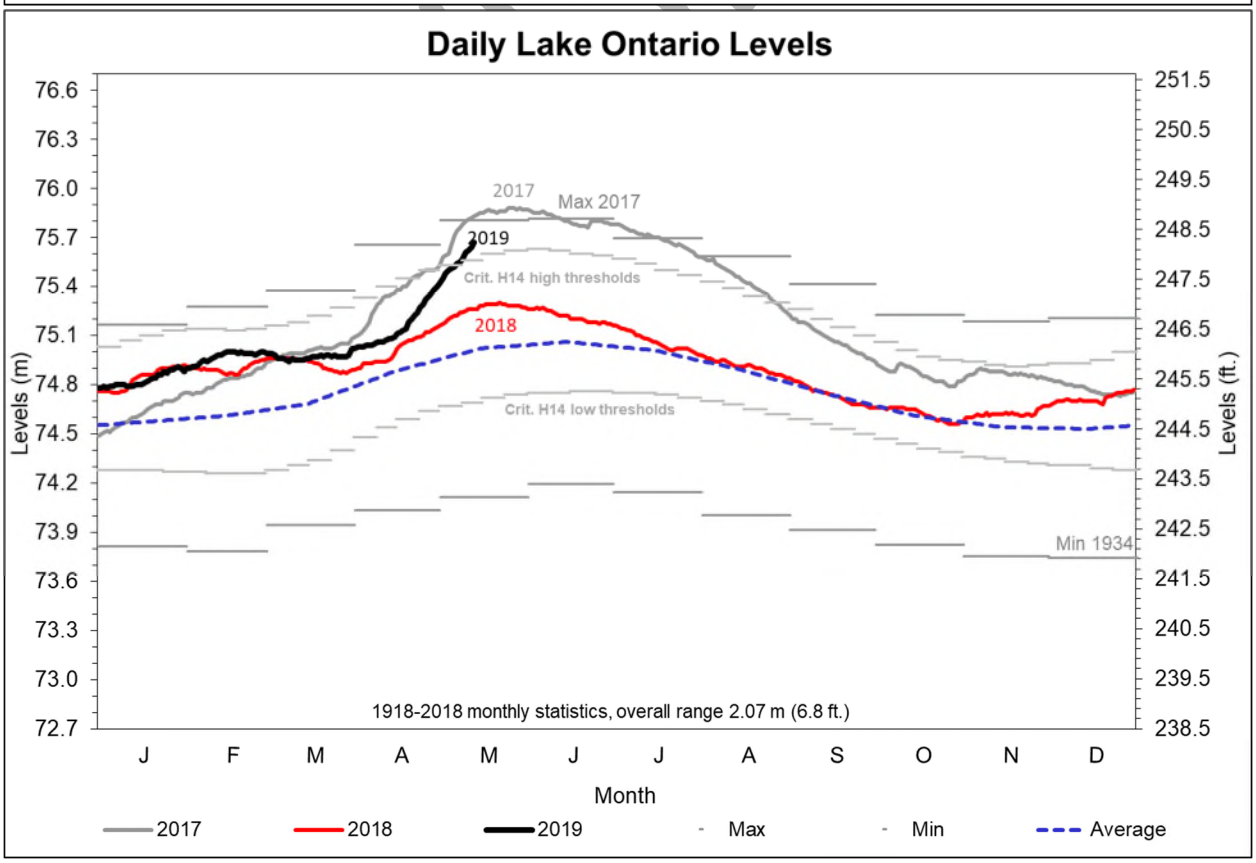
**Stats periods of record: Lake Erie/Lake Ontario: 1900-2018; Ottawa River: 1963-2018; Lake St. Louis: 1960-2018.

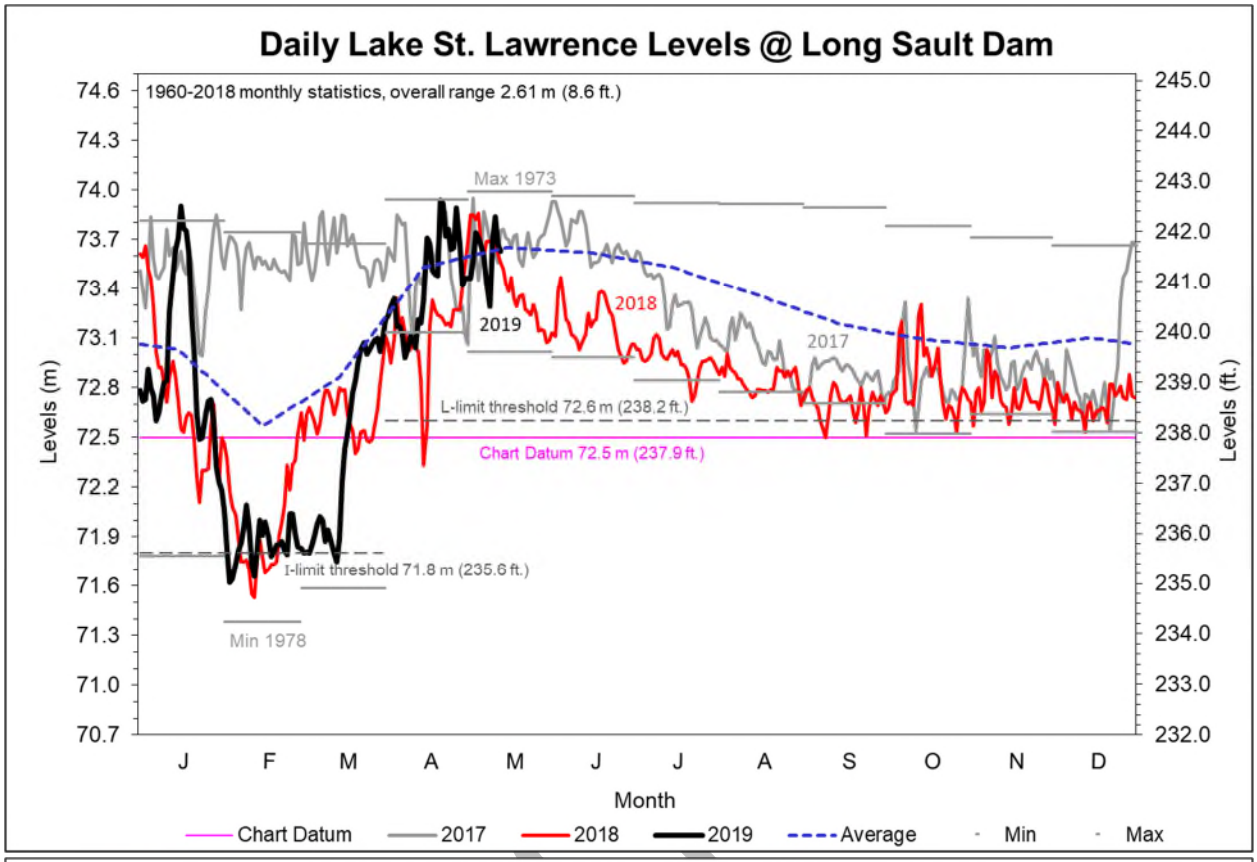
[†] All data in this document is considered "provisional". Historical statistics and comparisons to previous years are for reference purposes only, based on quarter-monthly data and do not reflect fluctuations seen in daily data.

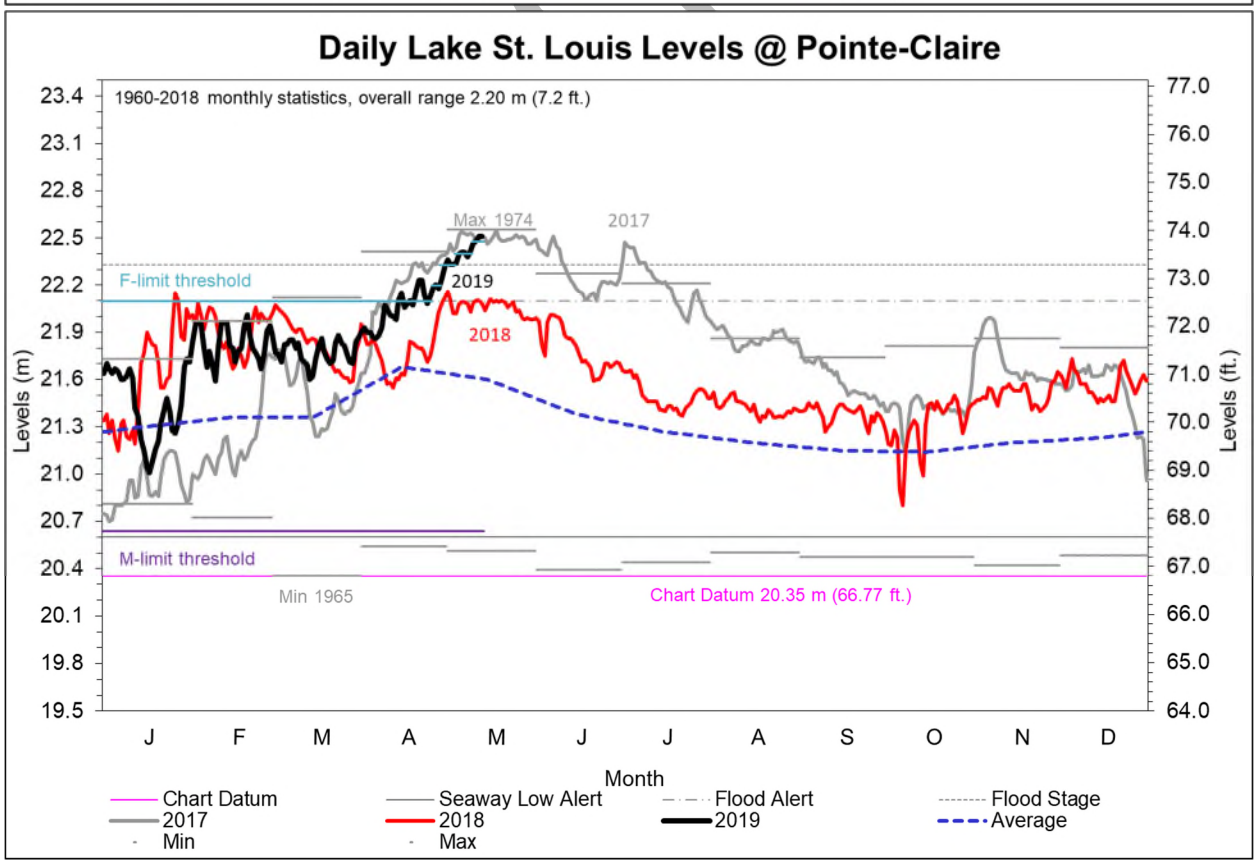
[‡] Water levels are referenced to International Great Lakes (Vertical) Datum 1985 (IGLD85). Note that local communities and government agencies may use other datums such as NAVD88, CGVD28 or CGG2013 – particularly when determining flood risk. Measured and forecast water levels in this report can also be subject to a high degree of uncertainty and, importantly, do not account for local variations due to wind and wave effects. For info on local conditions, please refer to the responsible authorities in your area, a short list is provided on pg. 20.

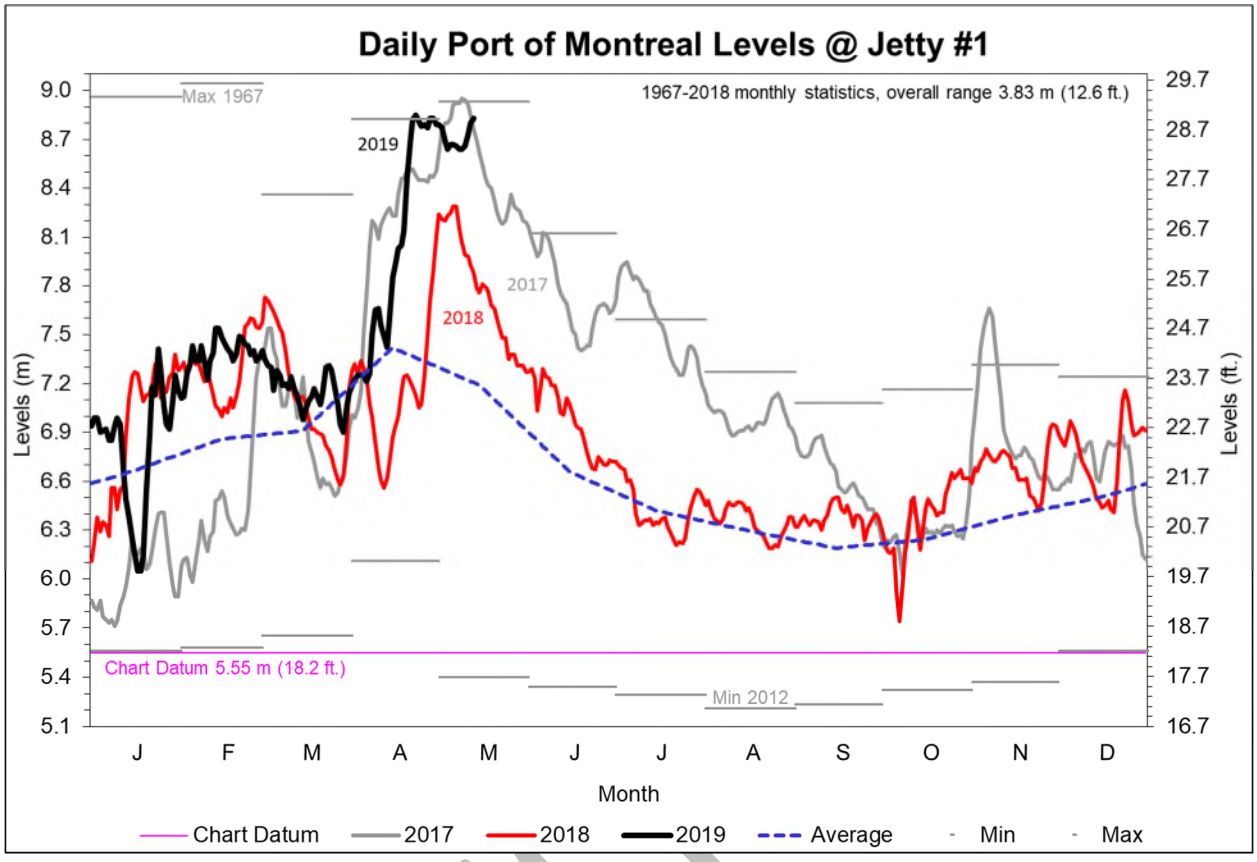
Levels


Daily Lake Erie Levels
1918-2018 monthly statistics, overall range 1.86 m (6.1 ft.)
Max 1986
2019
2018
2017
Datum 173.5 m (569.2 ft.)
Min 1936
Levels (m)
Levels (ft.)
175.1
174.8
174.5
174.2
173.9
173.6
173.3
173.0
574.6
573.6
572.6
571.6
570.6
569.6
568.6
567.6
J F M A M J J A S O N D
Month
Datum
2017
2018
2019
Average
Min
Max

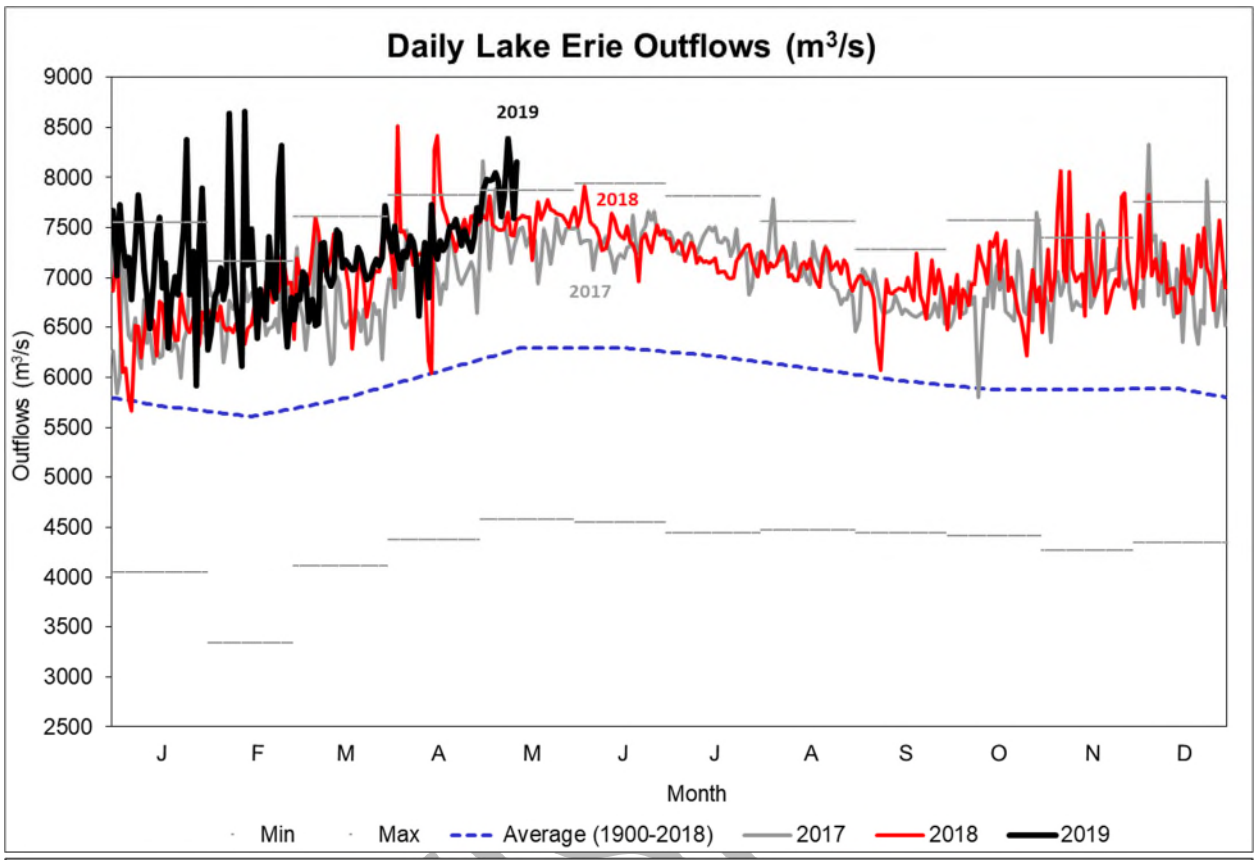

Daily Lake Ontario Levels
2017
Max 2017
2019
Crit. H14 high thresholds
2018
Crit. H14 low thresholds
Min 1934
1918-2018 monthly statistics, overall range 2.07 m (6.8 ft.)
Levels (m)
Levels (ft.)
76.6
76.3
76.0
75.7
75.4
75.1
74.8
74.5
74.2
73.9
73.6
73.3
73.0
72.7
251.5
250.5
249.5
248.5
247.5
246.5
245.5
244.5
243.5
242.5
241.5
240.5
239.5
238.5
J F M A M J J A S O N D
Month
2017
2018
2019
Max
Min
Average

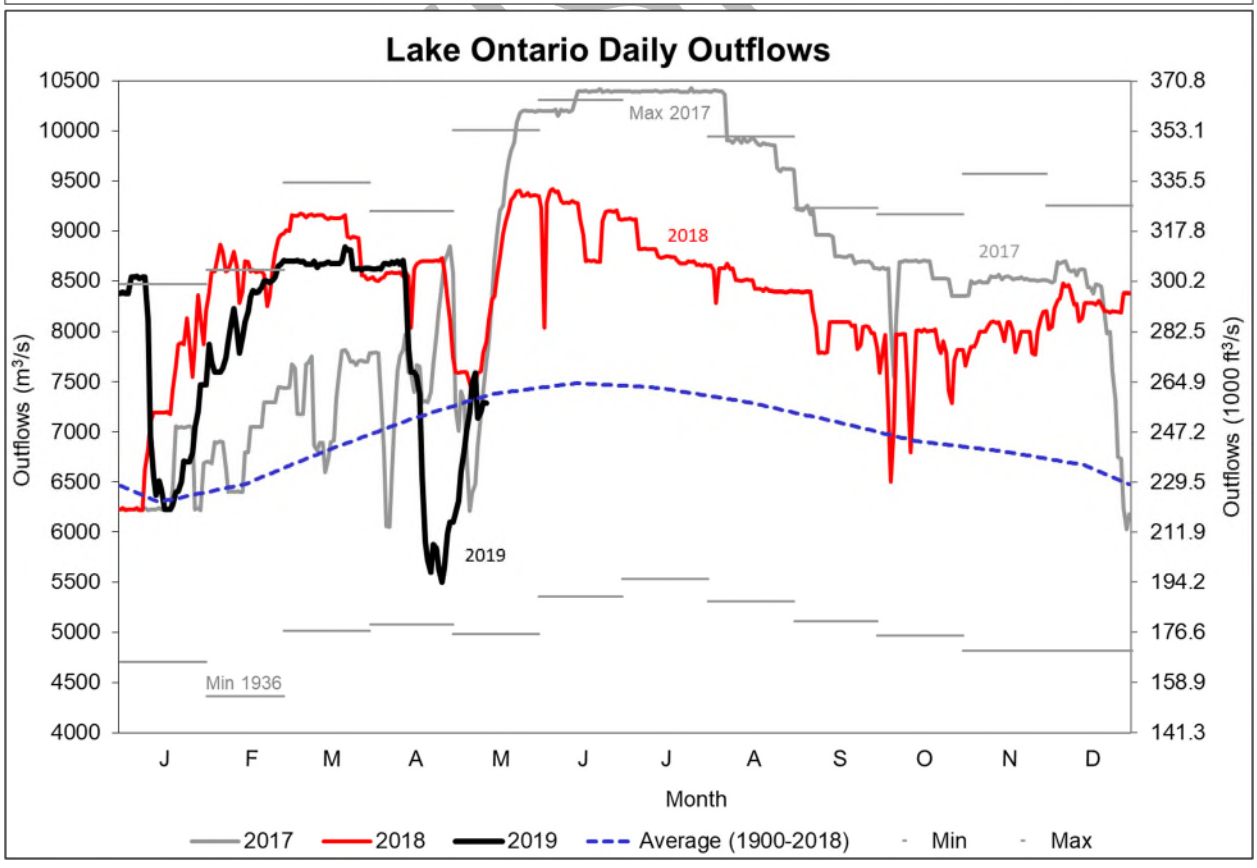

Daily Lake St. Lawrence Levels @ Long Sault Dam
1960-2018 monthly statistics, overall range 2.61 m (8.6 ft.)
Max 1973
2018
2019
2017
L-limit threshold 72.6 m (238.2 ft.)
Chart Datum 72.5 m (237.9 ft.)
I-limit threshold 71.8 m (235.6 ft.)
Min 1978
Levels (m)
Levels (ft.)
Month
Chart Datum
2017
2018
2019
Average
Min
Max

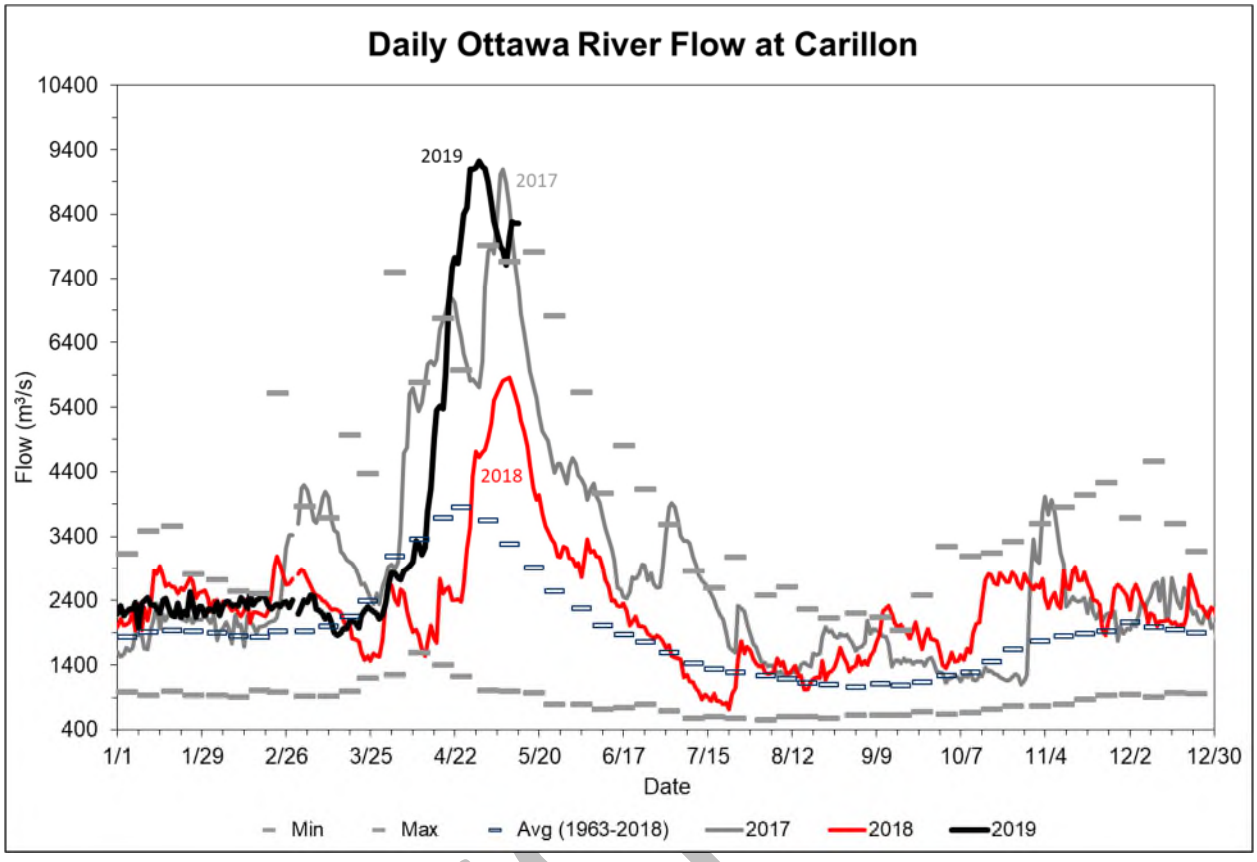

Daily Lake St. Louis Levels @ Pointe-Claire
1960-2018 monthly statistics, overall range 2.20 m (7.2 ft.)
Max 1974
2017
F-limit threshold
2019
2018
M-limit threshold
Min 1965
Chart Datum 20.35 m (66.77 ft.)
Levels (m)
Levels (ft.)
Month
Chart Datum
Seaway Low Alert
Flood Alert
Flood Stage
2017
2018
2019
Average
Min
Max


Daily Port of Montreal Levels @ Jetty #1
1967-2018 monthly statistics, overall range 3.83 m (12.6 ft.)
Max 1967
2019
2017
2018
Chart Datum 5.55 m (18.2 ft.)
Min 2012
Levels (m)
Levels (ft.)
9.0
8.7
8.4
8.1
7.8
7.5
7.2
6.9
6.6
6.3
6.0
5.7
5.4
5.1
29.7
28.7
27.7
26.7
25.7
24.7
23.7
22.7
21.7
20.7
19.7
18.7
17.7
16.7
J F M A M J J A S O N D
Month
Chart Datum
2017
2018
2019
Average
Min
Max

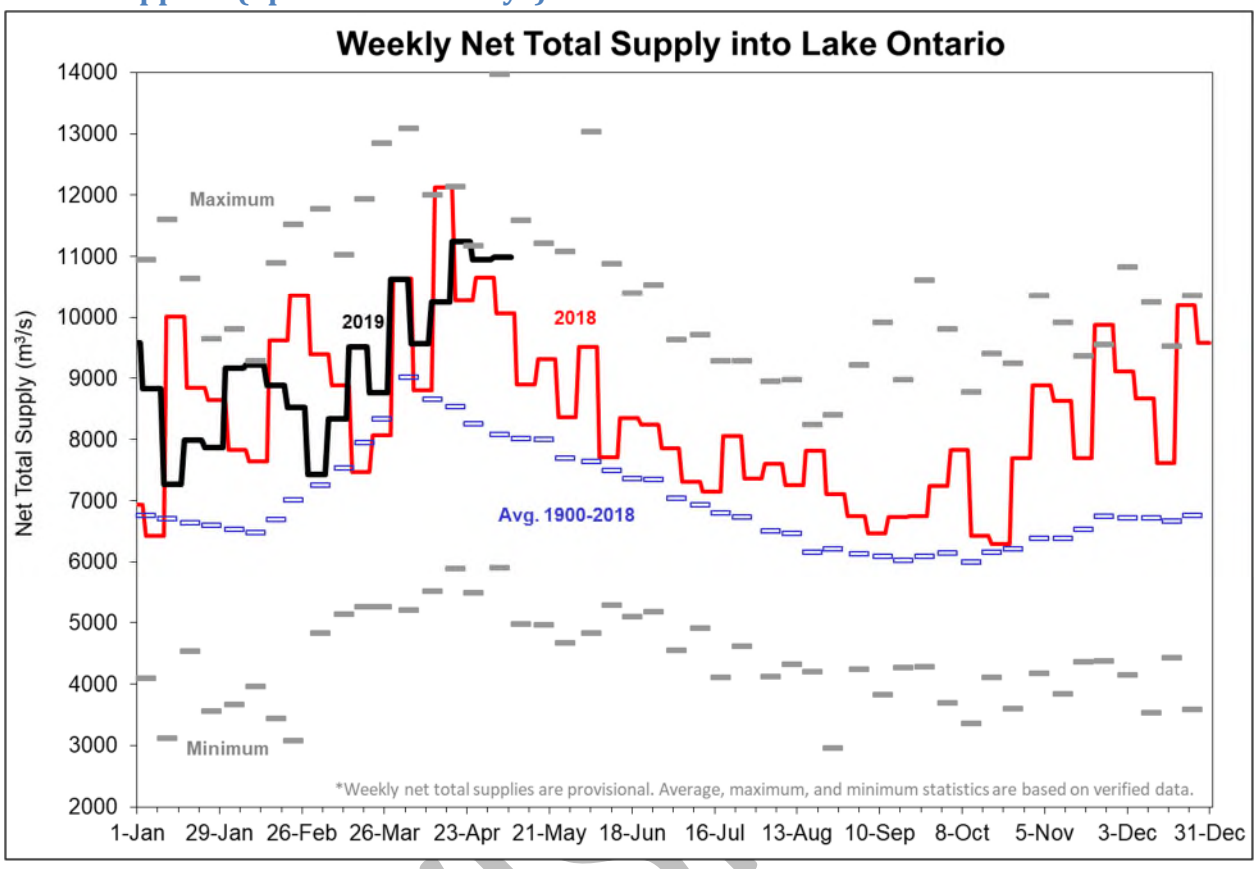
Flows

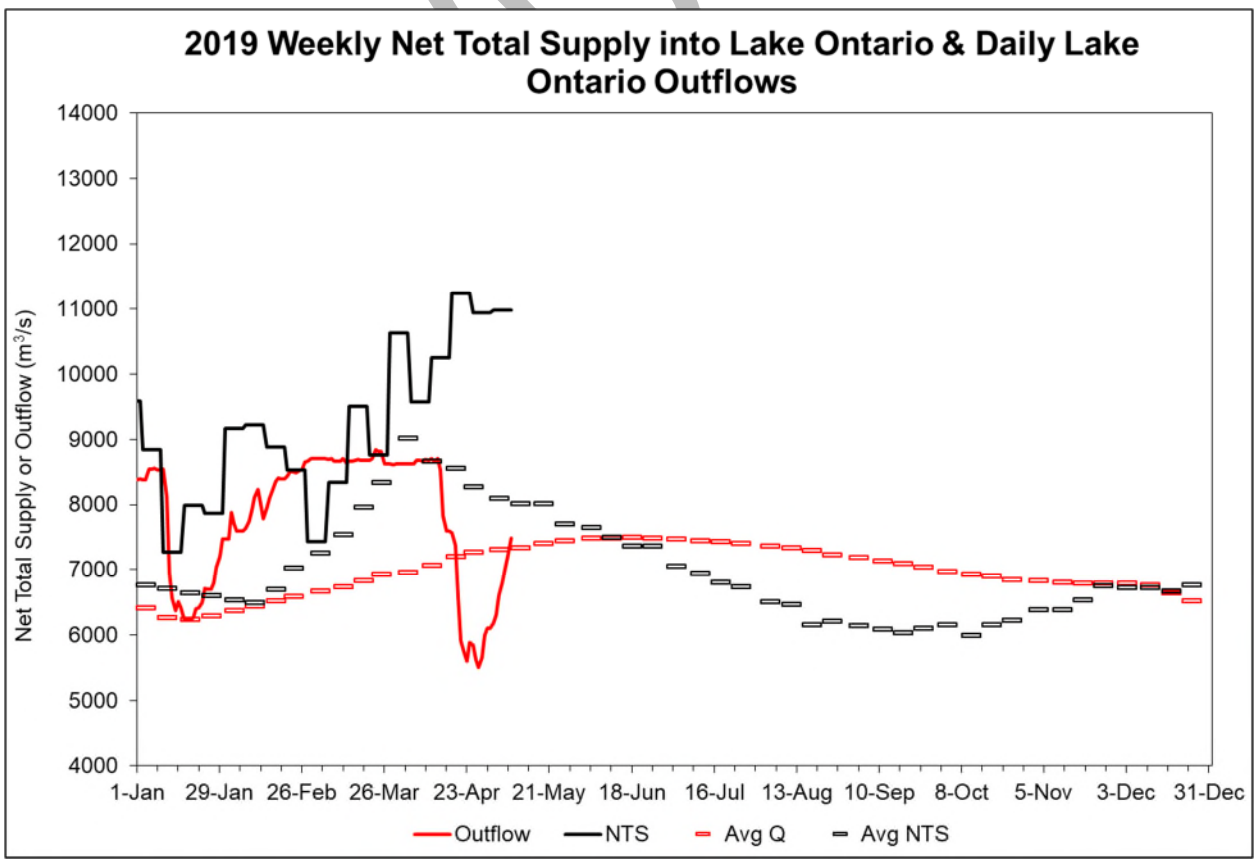

Daily Lake Erie Outflows (m³/s)
Outflows (m³/s)
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2019
2018
2017
J F M A M J J A S O N D
Month
Min
Max
Average (1900-2018)
2017
2018
2019


Lake Ontario Daily Outflows
Outflows (m³/s)
Outflows (1000 ft³/s)
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
370.8
353.1
335.5
317.8
300.2
282.5
264.9
247.2
229.5
211.9
194.2
176.6
158.9
141.3
Max 2017
2018
2017
2019
Min 1936
J F M A M J J A S O N D
Month
2017
2018
2019
Average (1900-2018)
Min
Max

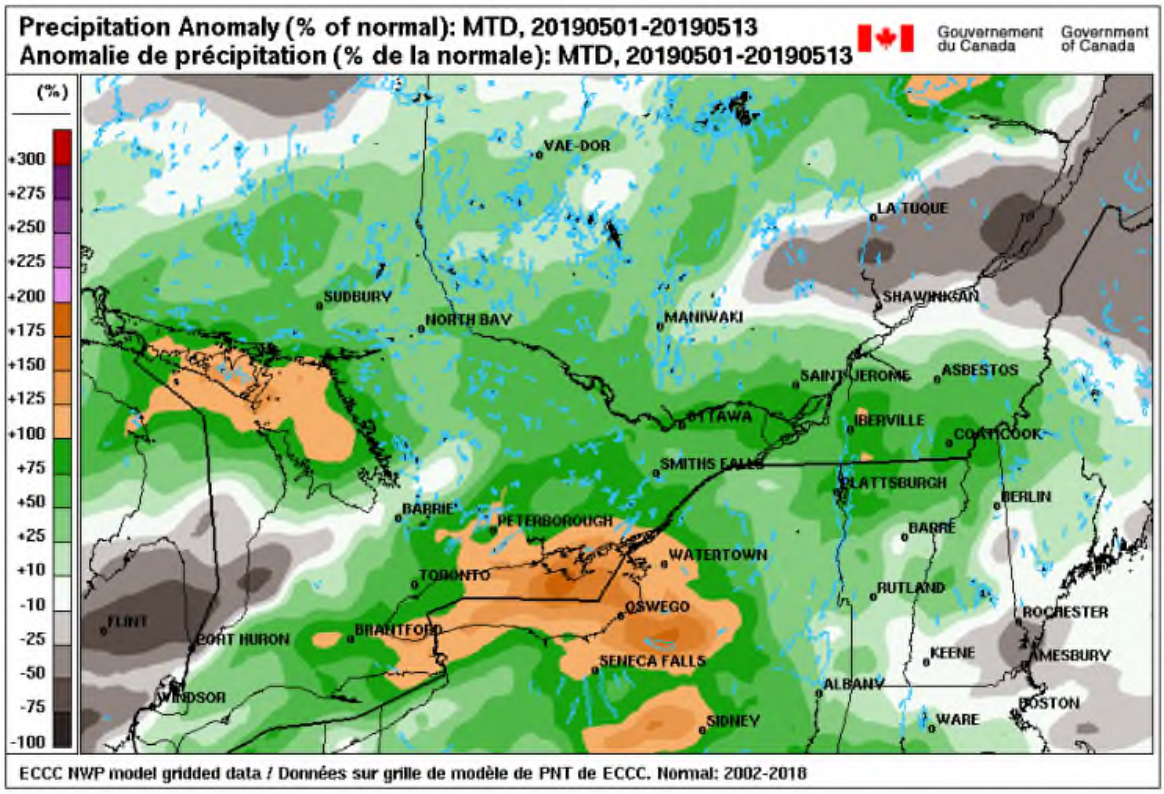


Water Supplies (updated Thursdays)

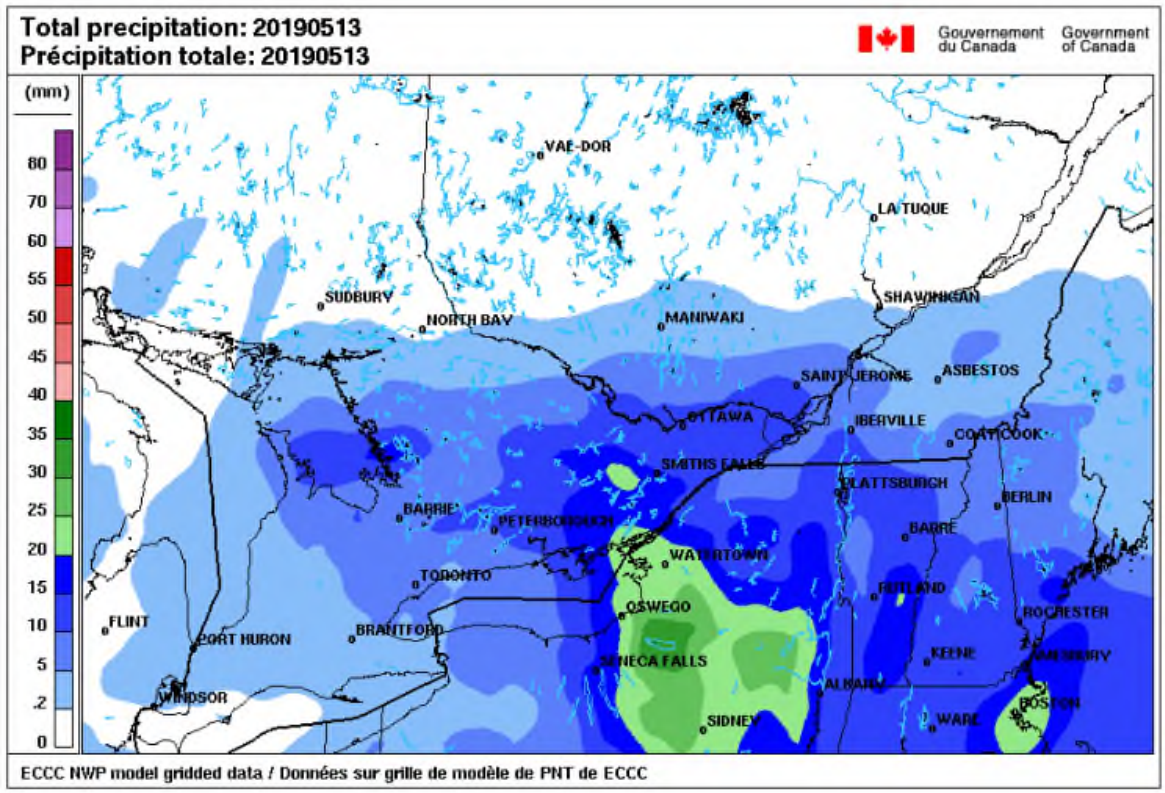




Precipitation Anomaly – May 2019 (to date)



Total Precipitation (yesterday)



Weekly Water Level Forecast

(Issued: Thursday, 9 May 2019)

** Next update: Thursday, 16 May 2019**

Lake Ontario Synopsis

Lake Ontario's level had been rising more gradually in recent days, but with rain in the forecast to start this coming week, it is expected to resume rising more rapidly over at least the next few days.

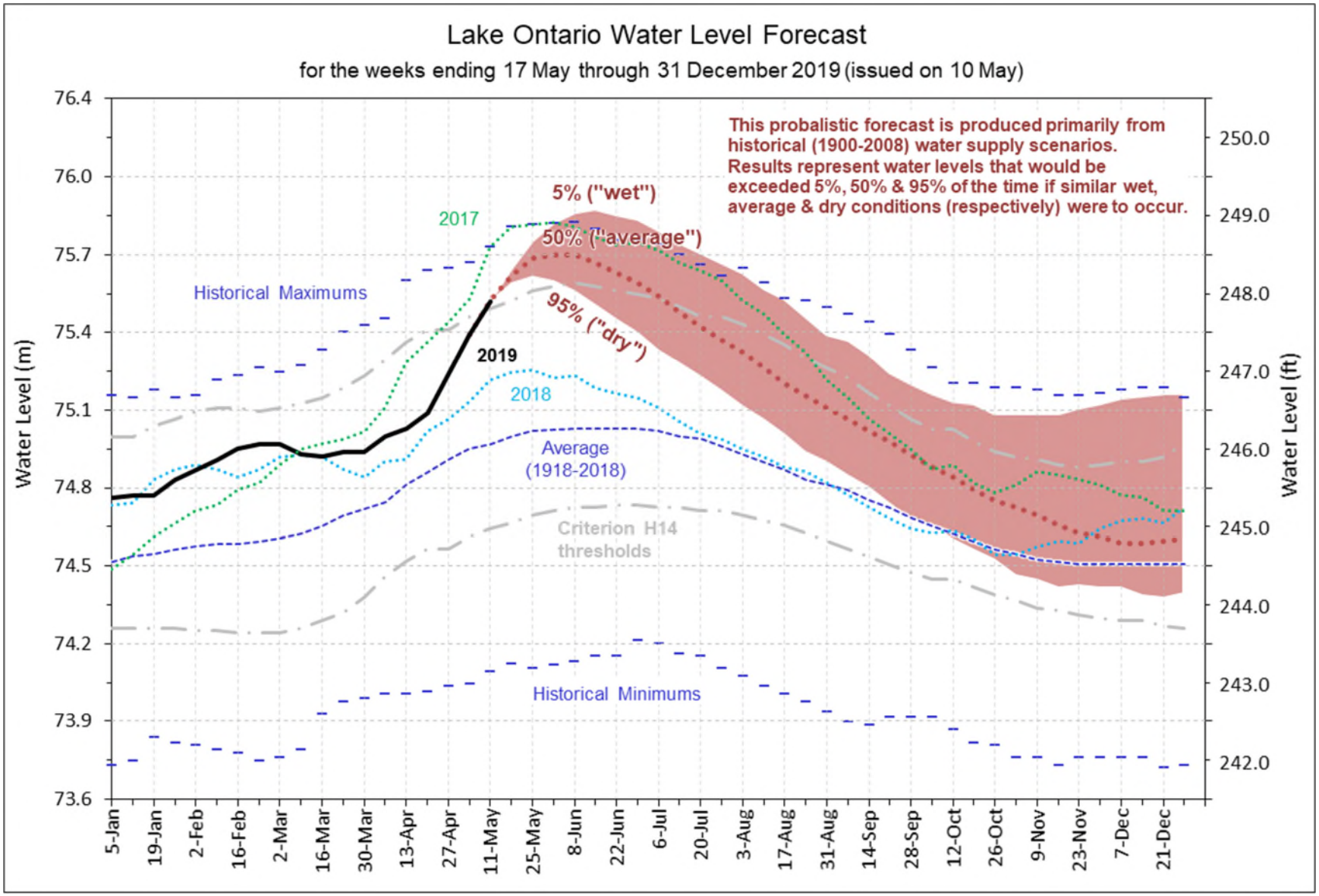
Today's Lake Ontario forecast suggests a 50% chance that levels will rise at least 10 cm (3.9 inches) during the coming week, with the potential for a greater rise under the wettest scenarios. Levels are already near critical values in some areas, but will remain below the extreme highs seen in 2017.

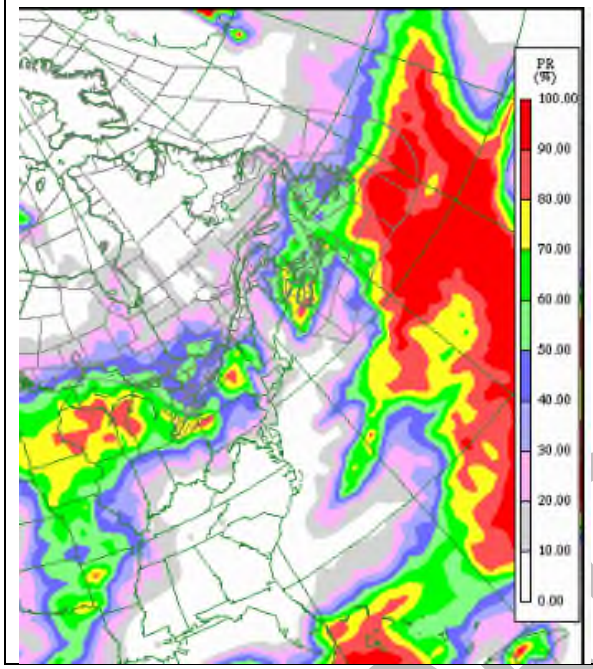
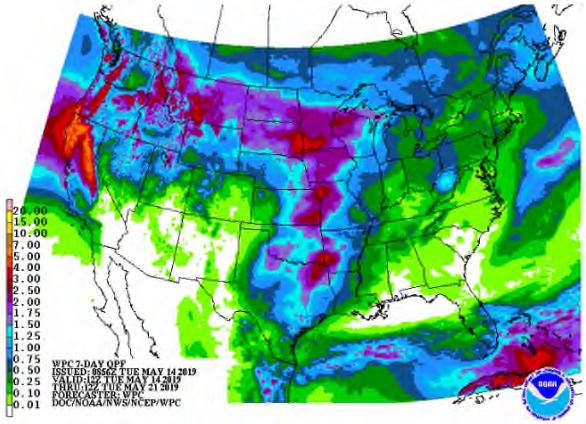
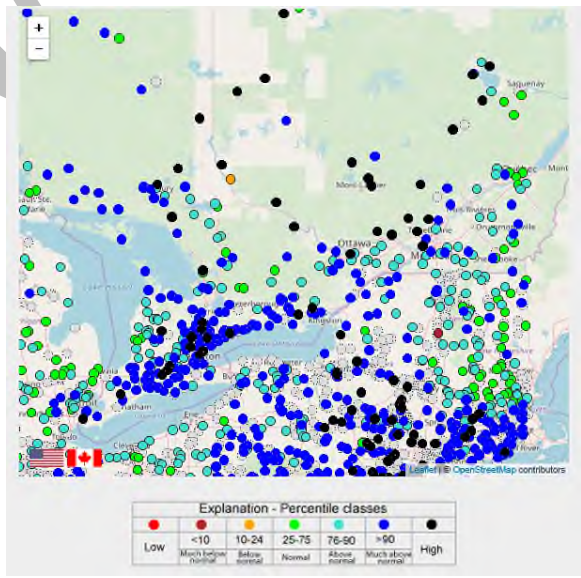
Longer-term, with well above-average inflows from Lake Erie expected to continue, and given average inflows to Lake Ontario, water levels are expected to continue rising for at least the next few weeks, before reaching their anticipated seasonal peak.

LAKE ONTARIO FORECAST

Forecast Starting Level: 75.56
(Week ending May-10)

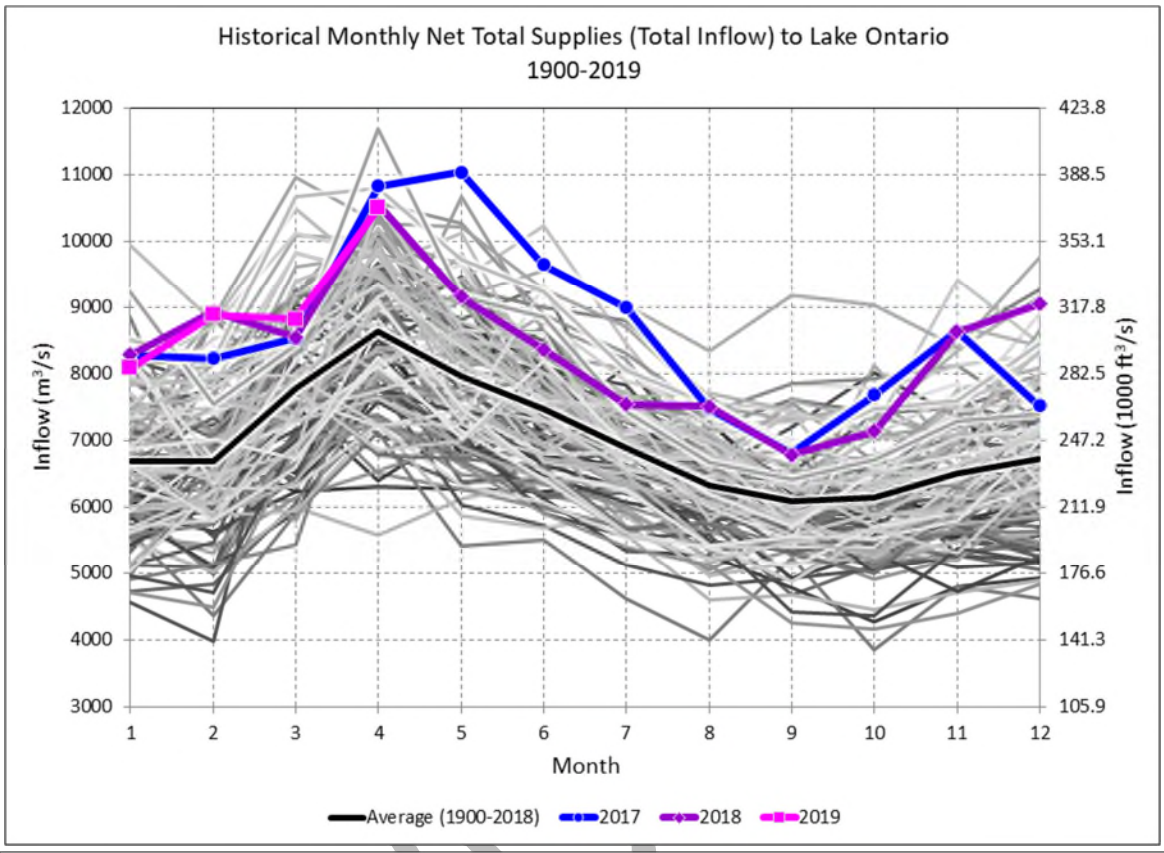
	End of Week Level (m)		
Week Ending Date	5%	50%	95%
May-17	75.69	75.66	75.63
May-24	75.80	75.73	75.66
May-31	75.87	75.74	75.64
Jun-07	75.91	75.74	75.60
Jun-14	75.92	75.71	75.55
Jun-21	75.90	75.67	75.49
Jun-28	75.88	75.63	75.44
Jul-05	75.84	75.58	75.37
Jul-12	75.79	75.52	75.32
Jul-19	75.75	75.46	75.27
Jul-26	75.71	75.41	75.21
Aug-02	75.67	75.36	75.15
Aug-09	75.61	75.30	75.10
Aug-16	75.57	75.24	75.04
Aug-23	75.50	75.19	74.97
Aug-30	75.43	75.14	74.93
Sep-06	75.41	75.10	74.88
Sep-13	75.35	75.05	74.83
Sep-20	75.28	75.01	74.77
Sep-27	75.24	74.96	74.71
Oct-04	75.20	74.91	74.68
Oct-11	75.17	74.87	74.63
Oct-18	75.16	74.82	74.59
Oct-25	75.12	74.78	74.55
Nov-01	75.12	74.75	74.49
Nov-08	75.12	74.72	74.47
Nov-15	75.12	74.68	74.44
Nov-22	75.14	74.65	74.45
Nov-29	75.16	74.64	74.44
Dec-06	75.18	74.61	74.44
Dec-13	75.19	74.61	74.41
Dec-20	75.20	74.62	74.40
Dec-27	75.20	74.63	74.42

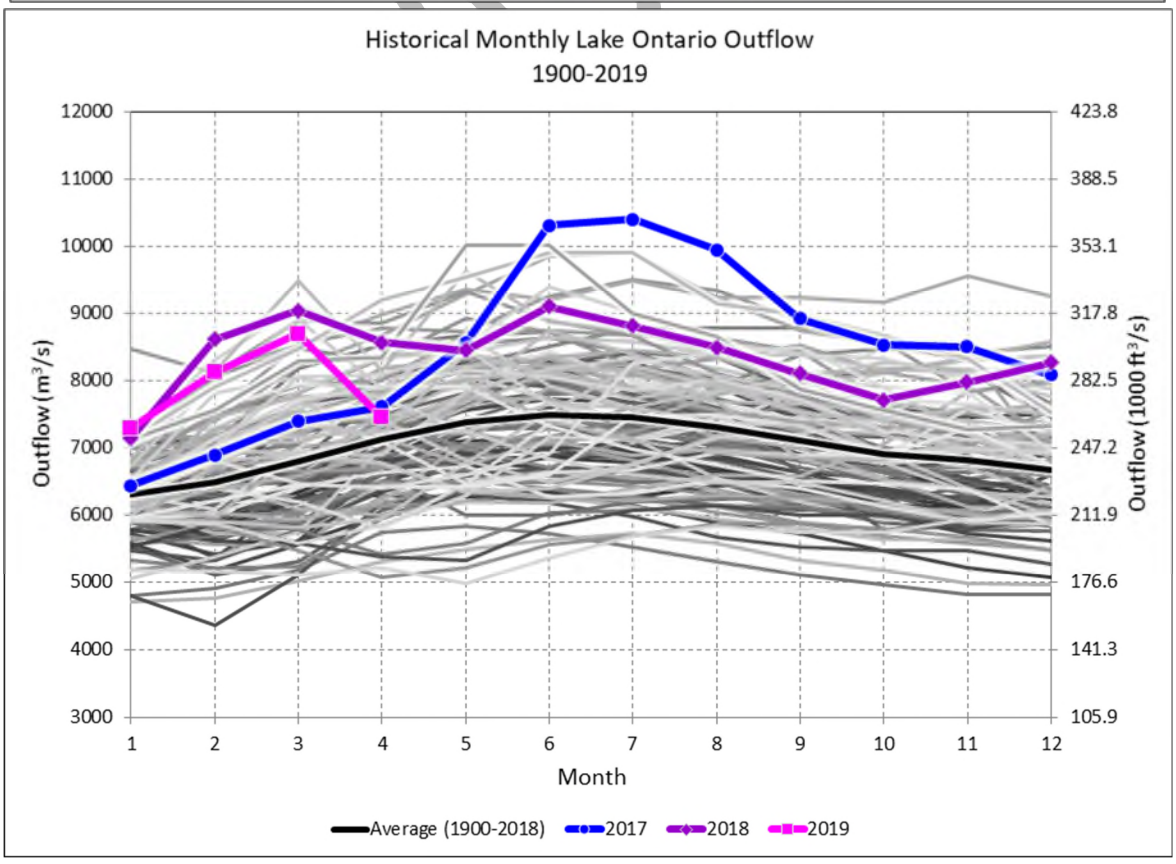

Lake Ontario Water Level Forecast
for the weeks ending 17 May through 31 December 2019 (issued on 10 May)
This probalistic forecast is produced primarily from historical (1900-2008) water supply scenarios. Results represent water levels that would be exceeded 5%, 50% & 95% of the time if similar wet, average & dry conditions (respectively) were to occur.
5% ("wet")
50% ("average")
95% ("dry")
2017
2019
2018
Historical Maximums
Average (1918-2018)
Criterion H14 thresholds
Historical Minimums
Water Level (m)
Water Level (ft)
76.4
76.0
75.7
75.4
75.1
74.8
74.5
74.2
73.9
73.6
250.0
249.0
248.0
247.0
246.0
245.0
244.0
243.0
242.0
5-Jan
19-Jan
2-Feb
16-Feb
2-Mar
16-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec

ECCC	*NOAA*	*USGS/ECCC*
North American Ensemble Forecast System (http://weather.gc.ca/ensemble/naefs/produits_e.html)	***Quantitative Precipitation Forecast*** (http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml)	***North American Water Watch*** (**https://watermonitor.gov/naww/index.php**)
Probability of precipitation accumulation over 25 mm through next 7 days	***Total precipitation (inches) through next 7 days***	***Real-time streamflow compared to historical streamflow for the day of year***
		

Monthly Spaghetti Plots: Net Total Supply and Outflow

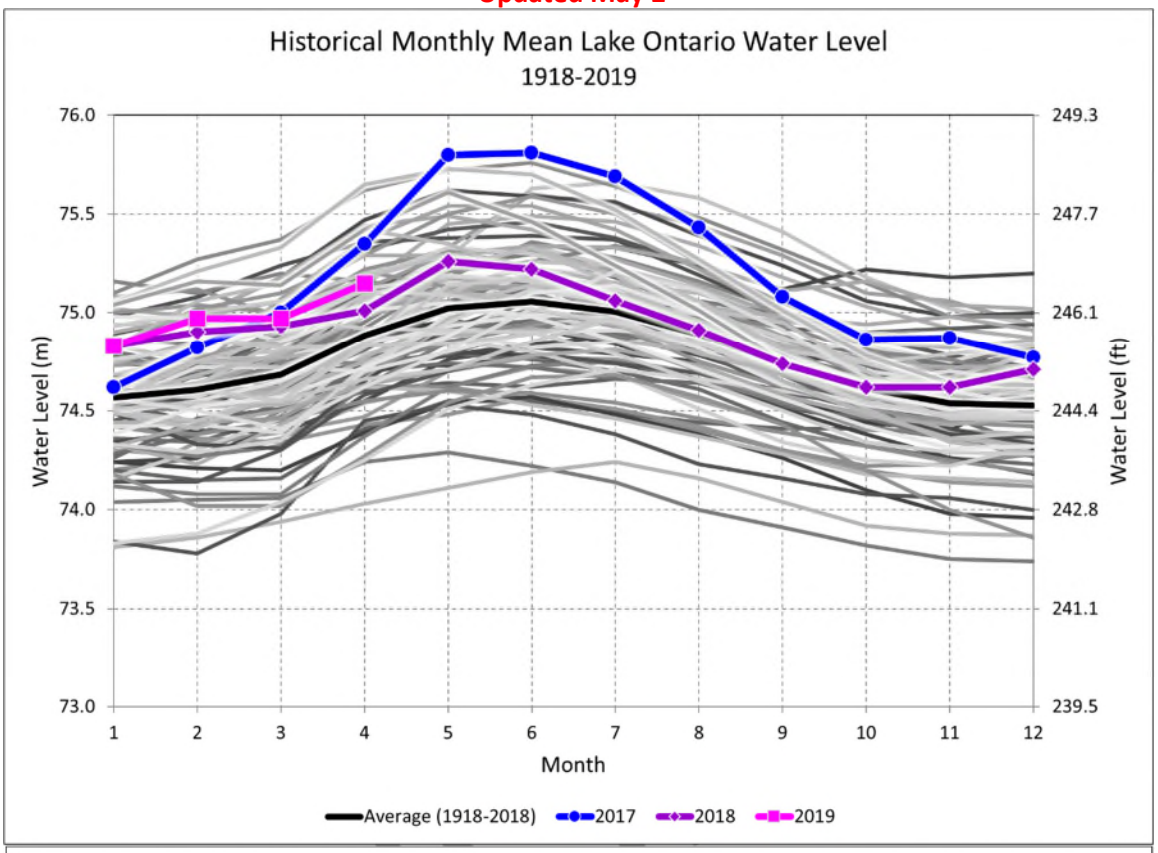
*** Updated May 2rd ***

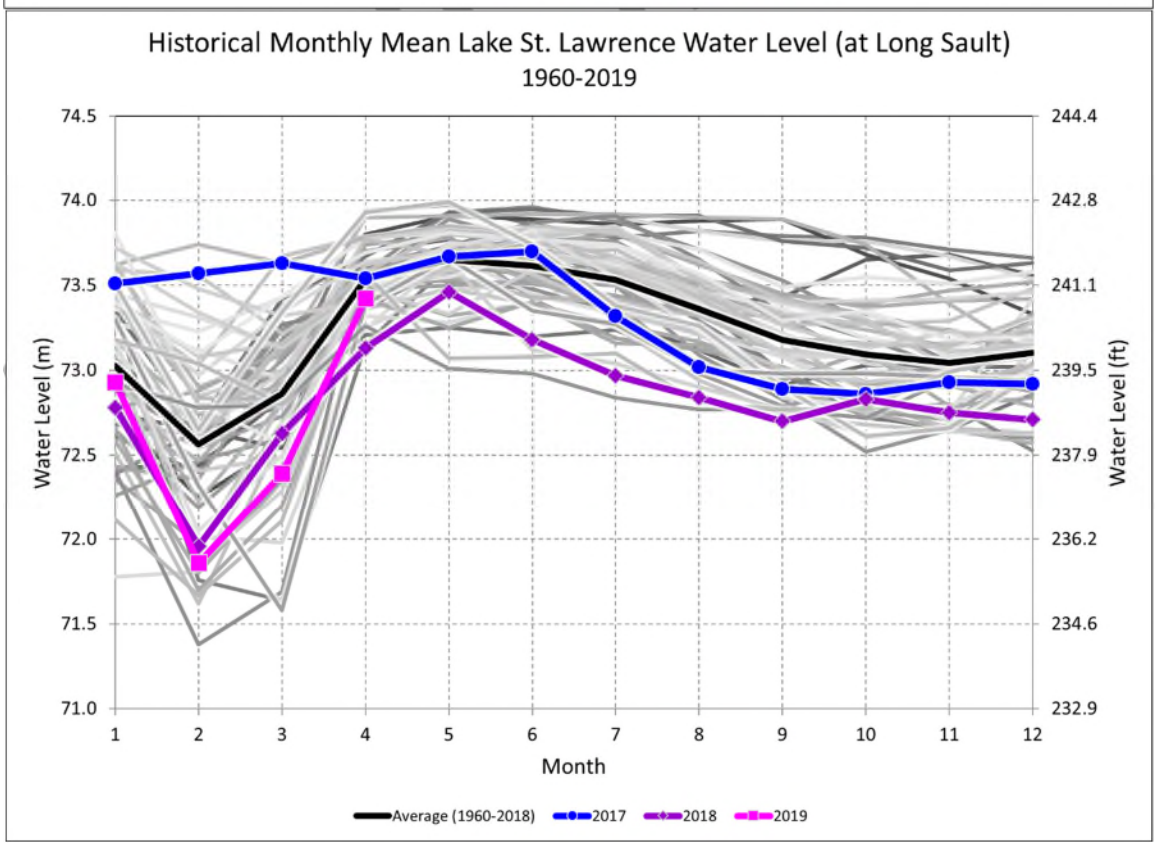


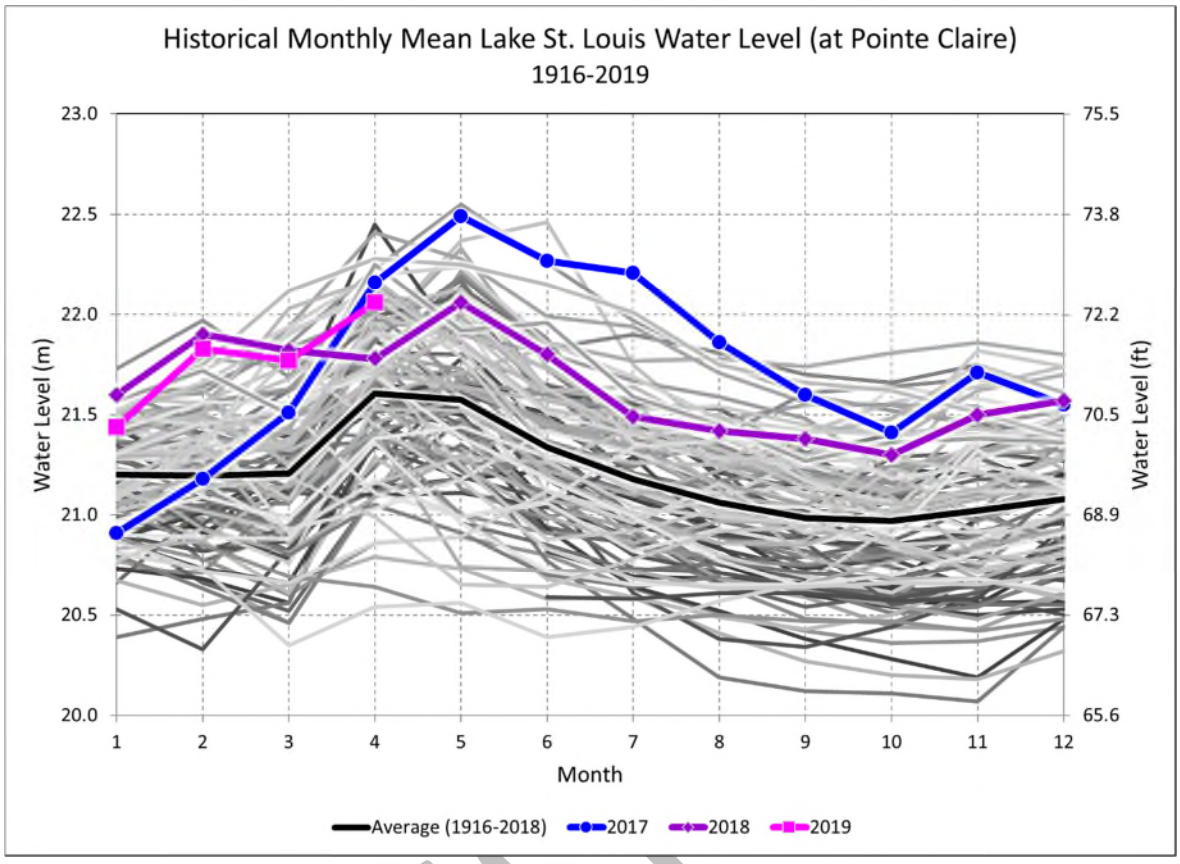


Monthly Spaghetti Plots: Water Levels

*** Updated May 2rd ***

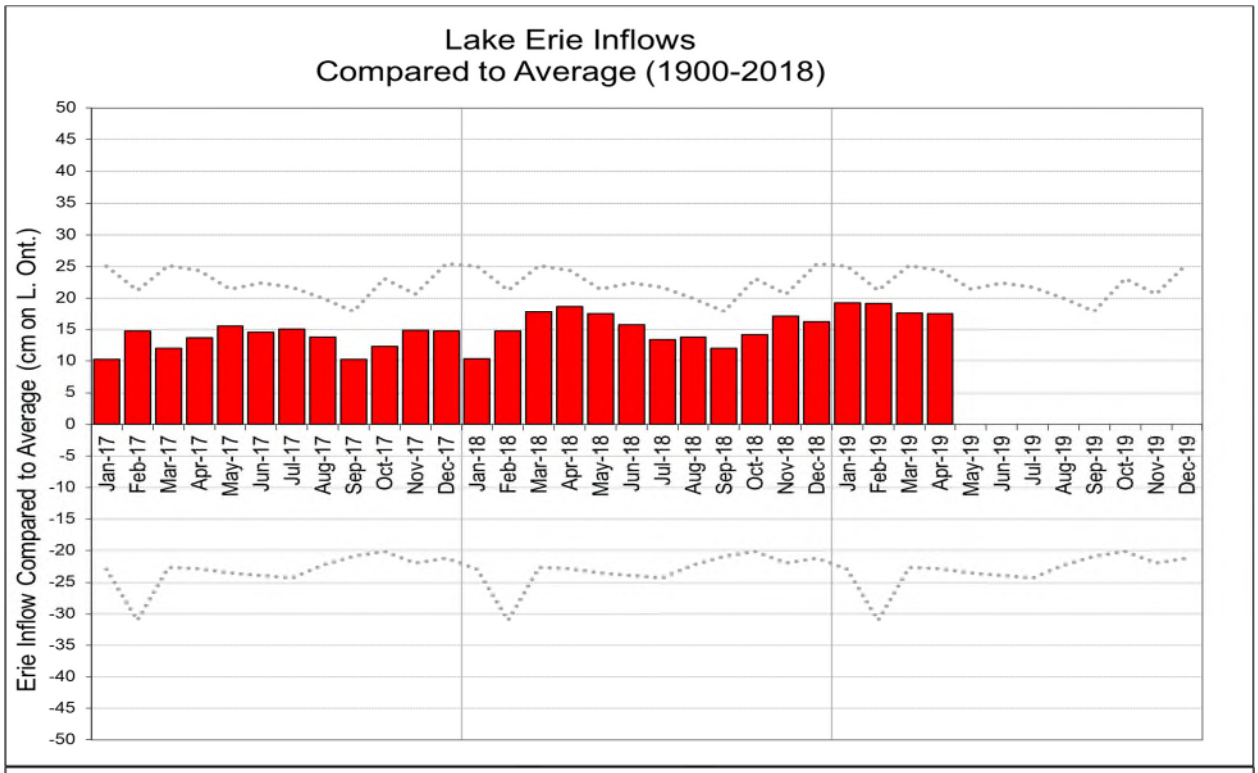


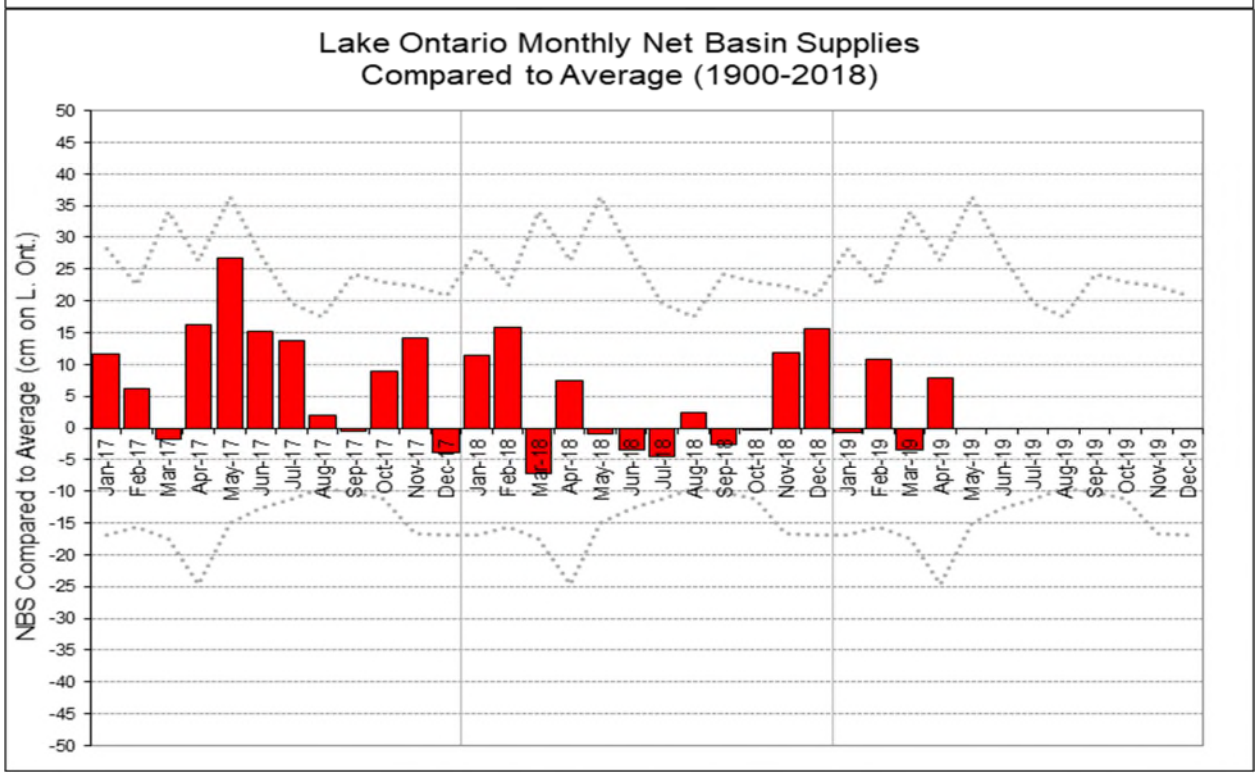


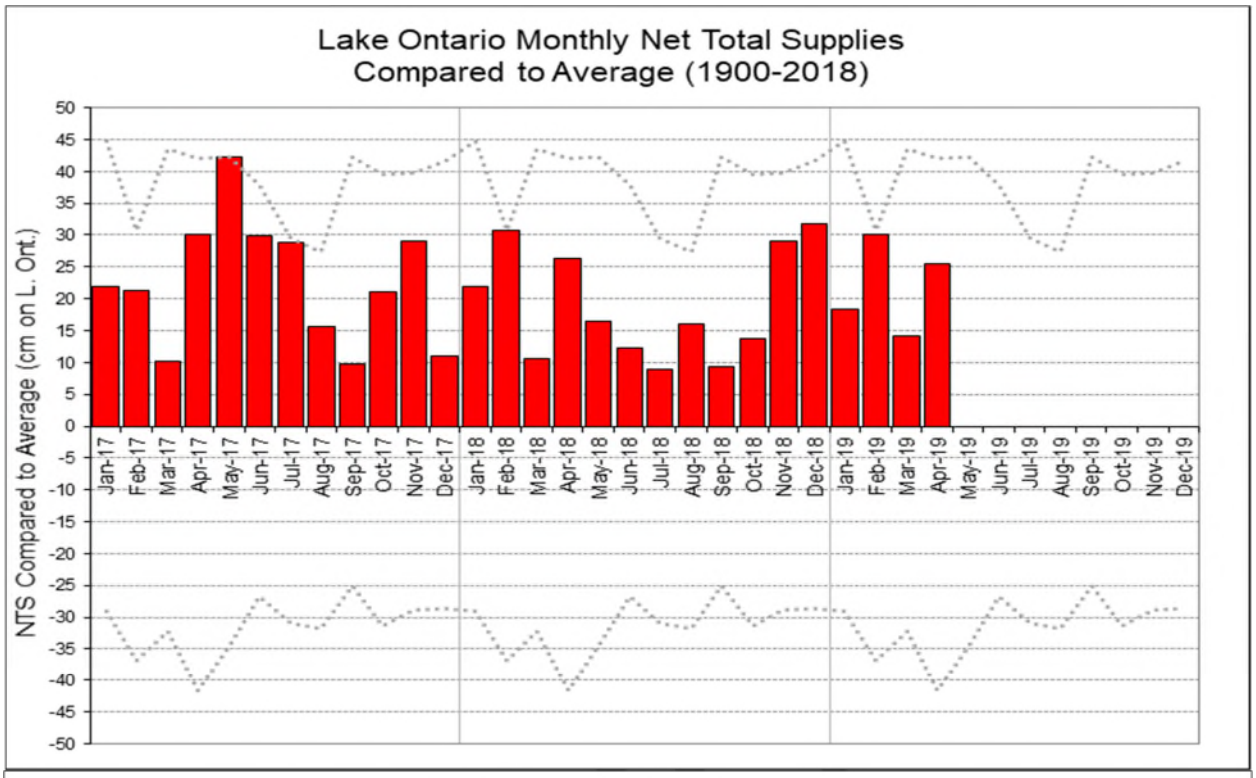

Historical Monthly Mean Lake St. Louis Water Level (at Pointe Claire)
1916-2019
Water Level (m)
Water Level (ft)
23.0
22.5
22.0
21.5
21.0
20.5
20.0
75.5
73.8
72.2
70.5
68.9
67.3
65.6
1
2
3
4
5
6
7
8
9
10
11
12
Month
Average (1916-2018)
2017
2018
2019

Monthly Departure Plots

*** Updated May 2rd ***






Lake Ontario Monthly Net Total Supplies
Compared to Average (1900-2018)
NTS Compared to Average (cm on L. Ont.)
50
45
40
35
30
25
20
15
10
5
0
-5
-10
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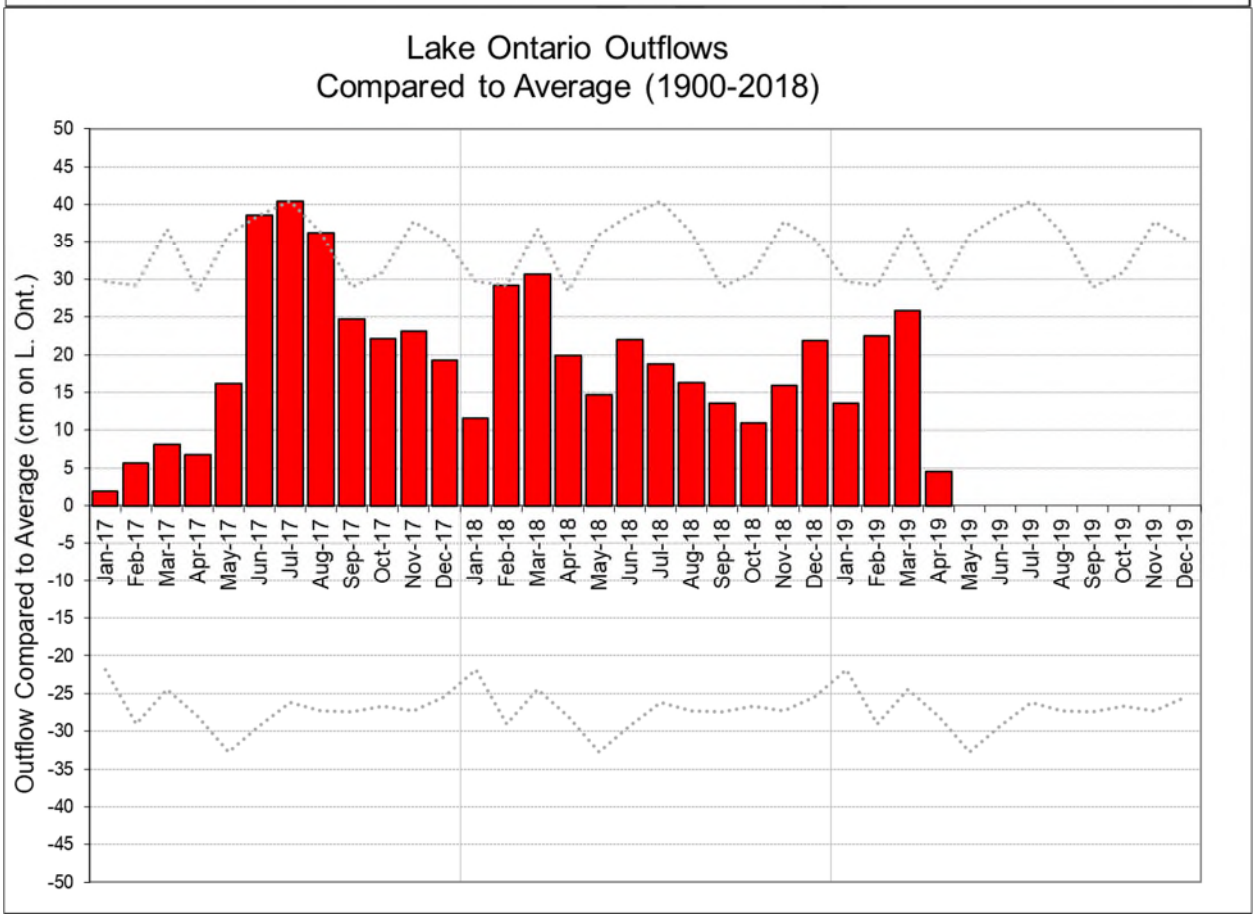
Lake Ontario Outflows
Compared to Average (1900-2018)
Outflow Compared to Average (cm on L. Ont.)
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Basin Map


Lake Ontario - St. Lawrence River
Drainage Basin (including Ottawa River)
Ottawa River
Lake Huron
St. Lawrence River
Lake Ontario
Niagara River
Lake Erie
Montreal, QC
Ottawa, ON
Cornwall, ON
Massena, NY
Ogdensburg, NY
Kingston, ON
Cobourg, ON
Toronto, ON
Oswego, NY
Syracuse, NY
Port Weller, ON
Rochester, NY
Buffalo, NY
Canada
U.S.A.
Legend
International Border
Moses-Saunders Dam
Carillon Dam
Ottawa River Watershed
St. Lawrence River Watershed
Lake Ontario Watershed
Upper Great Lakes Watersheds
N
0 45 90 180 Kilometers
Base Data Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Media Reports

NY National Guard putting more troops on Lake Ontario flood control duty
https://www.dvidshub.net/news/322075/ny-national-guard-putting-more-troops-lake-ontario-flood-control-duty

Quebec government gives green light to rebuild dike in Saint-Marthe-sur-le-Lac
https://globalnews.ca/news/5263859/quebec-government-gives-green-light-to-rebuild-dike-in-sainte-marthe-sur-le-lac/

Rising Ottawa River could break 60-year-old record
https://www.cbc.ca/news/canada/ottawa/ottawa-river-levels-update-flooding-1.5132065

City of Kingston taking a proactive approach to possible flooding: officials
https://globalnews.ca/news/5265215/city-of-kingston-possible-flooding/

Part of Jacques Cartier Park closed for rehabilitation work
https://www.cbc.ca/news/canada/ottawa/jacques-cartier-park-closed-flooding-1.5131358

Pembroke protecting infrastructure, assisting residents in jeopardy of flooding
https://www.pembrokeobserver.com/news/local-news/pembroke-protecting-infrastructure-assisting-residents-in-jeopardy-of-flooding

Flooding turns Ontario neighbourhood into island accessible only by boat
https://www.ctvnews.ca/canada/flooding-turns-ontario-neighbourhood-into-island-accessible-only-by-boat-1.4418663

Pierrefonds mayor wants province to build permanent dikes to protect against flooding
https://montreal.ctvnews.ca/pierrefonds-mayor-wants-province-to-build-permanent-dikes-to-protect-against-flooding-1.4418616

Bowmanville residents cleaning up after being hit by floodwaters
https://globalnews.ca/news/5264871/bowmanville-residents-cleaning-up-after-being-hit-by-floodwaters/

Lake Ontario and St. Lawrence River levels still likely to rise
https://www.northcountrypublicradio.org/news/story/38657/20190513/lake-ontario-and-st-lawrence-river-levels-still-likely-to-rise

Part of Pickering waterfront park destroyed by high water levels in Lake Ontario
http://www.durhamradionews.com/archives/118989

Notes on Intended Audiences and Uses

This product is primarily for internal use by water managers and responsible authorities along the shorelines of the Great Lakes and St. Lawrence River. It provides a summary of current and expected water level conditions and operations related to the regulation of Lake Ontario outflows through the St. Lawrence River**.** This information is available to draw from and to support your own communications locally, but please note that this product is not for direct public distribution. Public information is available online through the ILOSLRB website and on Facebook:

- Current Conditions: www.ijc.org/en/loslrb/watershed/current-conditions
- Forecasts: www.ijc.org/en/loslrb/watershed/forecasts

Data in this document is considered "provisional" and all water levels are referenced to International Great Lakes (Vertical) Datum 1985 (IGLD85). Note that local communities and government agencies may use other datums such as NAVD88, CGVD28 or CGG2013 – particularly when determining flood risk. Measured and forecast water levels in this report can also be subject to a high degree of uncertainty and, importantly, do not account for local variations due to wind and wave effects. For info on local conditions, please refer to the responsible authorities in your area, a short list is provided below.

***** Emergency response is typically provided through your local municipality *****

Ontario

- *MNRF Flood Forecasting & Warning:* www.ontario.ca/law-and-safety/flood-forecasting-and-warning-program
- *Ottawa River Regulation & Planning Board:* www.ottawariver.ca/
- *Conservation Authorities:*

Lake Erie	Lake Ontario/Upper St. Lawrence River
Niagara Peninsula: www.npca.ca	Niagara Peninsula: www.npca.ca
Grand River: www.grandriver.ca	Hamilton: www.conservationhamilton.ca
Long Point: www.lprca.on.ca	Halton: www.conservationhalton.ca
Kettle Creek: www.kettlecreekconservation.on.ca	Credit Valley: www.creditvalleyca.ca
Catfish Creek: www.catfishcreek.ca	Toronto and Region: www.trca.ca
Lower Thames: www.catfishcreek.ca	Central Lake Ontario: www.cloca.ca
Essex Region: www.essexregionconservation.ca	Ganaraska Region: www.grca.on.ca
	Lower Trent: www.ltc.on.ca
	Quinte: www.quinteconservation.ca
	Cataraqui Region: www.crca.ca
	South Nation: www.nation.on.ca
	Raisin Region: www.rrca.on.ca

Quebec

- *Sécurité publique:* https://geoegl.msp.gouv.qc.ca/adnv2/
- *Comission de planification de la régularisation de la rivière des Outaouais:* www.rivieredesoutaouais.ca/
- *Ministère de l'Environnement et de la Lutte contre les changements climatiques:* https://www.cehq.gouv.qc.ca/prevision/previsions.asp?secteur=Archipel

New York State

- *National Weather Service:* https://www.weather.gov/buf/
- *National Oceanic and Atmospheric Administration:* https://tidesandcurrents.noaa.gov/
- *US Army Corps of Engineers:*
    - *Detroit District:* https://www.lre.usace.army.mil/Missions/Great-Lakes-Information
    - *Buffalo District:* https://www.lrb.usace.army.mil/Lake-Ontario-High-Water/