



## TIA Water Levels Update – End of March 2021

By the TIA Water Levels Committee

From the Thousand Islands Association's Water Levels Committee: here's what we know at the end of March 2021 about water levels and precipitation in the St. Lawrence River Basin and the Great Lakes upstream. (Note: The term "average" means the long term 100 year average)

### Great Lakes

- Local water supplies to all Great Lakes were **much drier than normal** so far in 2021.
- Water levels of all the **Great Lakes remain high**, even with current dry conditions. Lake Ontario is the exception and is still at below average levels as spring begins.
- With high outflows continuing from Lake Erie, **Lake Ontario continues to see above-normal total water supplies.**

### Lake Ontario

- Lake Ontario's **mean level** was 8 cm/3" below average in February, tied for the 40<sup>th</sup> lowest same month mean level on record, and **59 cm/23" lower than last year!**
- Lake Ontario fell 8 cm/3" in February, a month it rises 3 cm/1" on average.
- Lake Ontario's **March level began 14 cm/5.5" below average**, tied for the 35<sup>th</sup> lowest beginning-of-March level on record, 60 cm/23"+ lower than last year.
- **Lake Ontario Outflows** averaged 7,970 m<sup>3</sup>/s, **about 1,500m<sup>3</sup>/s greater than typical.**
- The flow deviations (authorized by the IJC) removed in February a total of 2.4 cm/1" from Lake Ontario, relative to strict adherence to Plan 2014.
- **With deviations** for *both* January and February, a total of **only 9.4 cm/3.7" was removed from Lake Ontario**, relative to strict adherence to Plan 2014.

### On The River & Lake – late March

- Recent levels are around **0.5 ft. above chart datum** on the Alexandria Bay NOAA buoy.
- **Current river levels are a full foot and a half below the best we could do last year** (2 ft. above chart datum).
- We're in the **best low water position in years**, prior to the spring flood season.
- Quote from the ILOSLR Board on March 1st regarding the **reduction in the flood risk:**

*"The risk of flooding on Lake Ontario and the upper St. Lawrence River has declined from moderate in December 2020 to low. In December, the risk analysis*

*indicated a 28% chance of water levels exceeding a threshold at which damages occur in many shoreline communities. The risk is now down to 8%."*

#### **Why is the Water So Low? – Precipitation Data – US Army Corps of Engineers**

- It's been **REALLY dry** so far in 2021 and **pretty dry** the previous **12 months**.
- The **12 months** of March 2020 – February 2020 saw **only 84% of average precipitation** for the Lake Ontario basin (5.5" below the 12 month precipitation average).
- **January**, the Lake Ontario basin saw **49% of average precipitation** (1.38" less than average). **February was 55%** (1.07" less than average).
- Through **March 21<sup>st</sup>**, precipitation levels are **only 10% of monthly average (1.66" less than average)**.
- Between the extra water released through flow deviations and the first quarter dry weather, **we are a full 8" below average for this time of year**.
- The **last time** mid-March levels were this low was **2015**, with an **extra 3" lower**. Going back another 12 years, it was 6" lower in 2003.

#### **What about the Near Term Future? – Spring/Summer 2021 Water Levels**

- We will still have higher than average in-flows coming from Lake Erie.
- **The Seaway opened 3/22**, so to ensure safe navigation, the Board dropped river outflows back to the L-Limit starting on 3/20.
- Where we go from here depends on the **precipitation plus the timing of the Ottawa River freshet**. The latest 6 month forecast probability curves cover a wide 3 foot range:
  - **50% "average" wet/dry conditions:** we will see monthly water levels **3" below average through August**.
  - **5% chance** of *really wet* conditions: we could see a **very high peak of 248 ft**.
  - **5% chance** of *really dry* conditions: peak levels would be above 245 ft. (2+ feet over chart datum).
- Moses-Saunders outflows usually are reduced at some point for the Ottawa River freshet, holding some water in the Upper St. Lawrence so down river around Montreal does not flood.
- Therefore the **Wildcards** are: the timing, magnitude and duration of the Ottawa River freshet, *plus* whether it rains heavily in the region along with that melting.

#### **A Possible Long Term Lower Water Trend?**

- Solar storm activity appears to finally be picking up from the 12 year cycle's solar minima. This *may* decrease the precipitation in the Great Lakes region, maybe.
- Much depends on the near term and long term precipitation trends:
  - **IF** we keep getting 12 month periods (like our current one) with 5.5" less precipitation than average, we'll be entering a **low water cycle**.
  - **IF** precipitation slides back to average... then we'll probably be bouncing around fairly **near average water levels**.
  - **IF** we get a really wet weather period again – we'll **return to high water levels!**