

The graph below shows updated ECCC water levels predictions based on two global climate change scenarios:

RCP 4.5 = Some mitigation of climate change impacts over the period in question (2025-2095).

Extreme highs: upper range up to 2 feet above 2019/20 levels; extreme lows: lower range down to 3 feet below 2013 levels.

RCP 8.5 = Business-as-usual with only minimal action on climate change.

Extreme highs: upper range up to 7 feet above 2019/20 levels; extreme lows: lower range down to 3 and a half feet below 2013 levels.

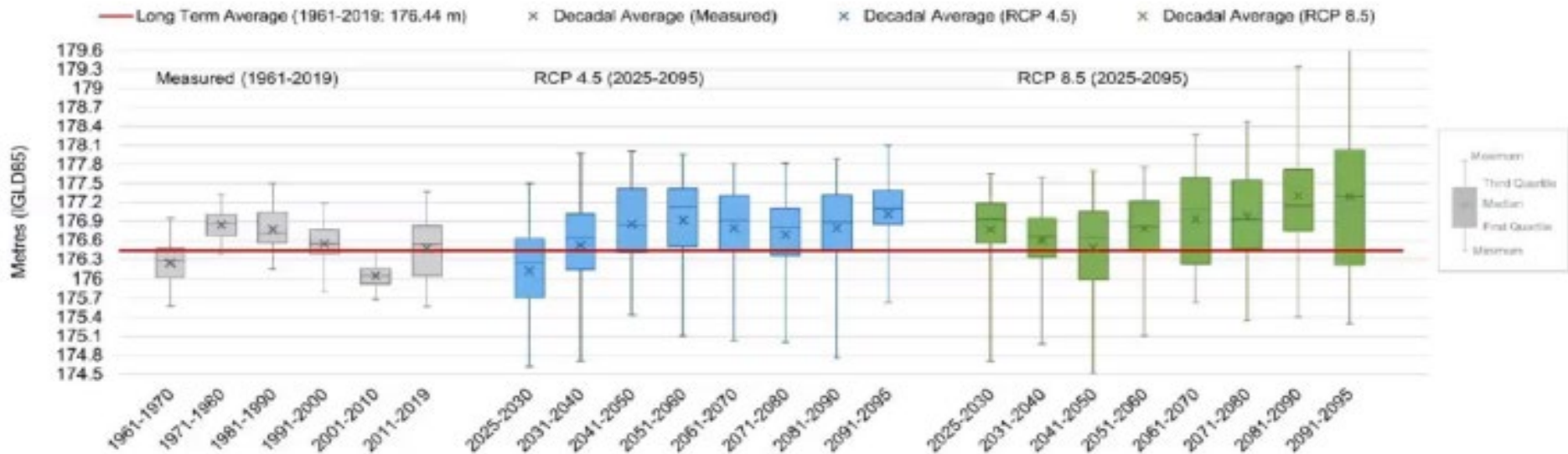
Given the lack of progress globally in reducing greenhouse gas emissions (they are still increasing), the business-as-usual scenario may be more realistic, and it therefore might be **expedient to plan for the extreme water level events that are predicted to arise under RCP 8.5.**

The way to interpret this graph is that:

- the boxes represents a probability of 50% for water levels to fall in that range for the relevant 5 or 10 year time periods;
- the lines up and down each represent a probability of 25% for water levels to fall in those ranges for the relevant time periods.

The major change from the previous advance release of findings from this ECCC study in 2019 is that the variability in predicted extreme low water level events is considerably greater.

Lake Michigan-Huron: Historical and Projected Decadal Mean Lake Levels



This graph shows historical and projected lake levels for Lake Michigan-Huron by decade as a box and whisker plot. Projected lake levels under both climate change scenarios (RCPs 4.5 and 8.5) are presented side by side. Historical lake levels are presented in grey between 1961 and 2019. The red line shows the long-term average reported for Lake Michigan-Huron between 1918 and 2019 as a point of reference. Future lake levels are projected for the period between 2025 and 2095. Projections under six RCP 4.5 models are presented in blue and projections under seven RCP 8.5 models are presented in green.

Date: 2/22/2021

Data Sources: Historical data were retrieved from the NOAA-Great Lakes Environmental Research Laboratory (GLERL). Projections were developed by Environment and Climate Change Canada (ECCC) using dynamically downscaled data from the Coupled Model Intercomparison Project Phase 5 (CMIP5) available from NA-CORDEX, the North American component of the international Coordinated Regional Downscaling Experiment program sponsored by the World Climate Research Program (WCRP). Projections were developed as part of the Assessing and Enhancing the Resilience of Great Lakes Coastal Wetlands study under the Great Lakes Protection Initiative (2017-2022).