Great Lakes Commission
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RESOLUTION

Adopted March 6, 2024

Understanding Impacts to Great Lakes Agriculture and Water Use Under Changing Climate Conditions

Whereas, the Great Lakes Commission (GLC) is authorized to "collect, correlate, interpret, and report on data relating to the water resources and the use thereof in the Basin" and to consider "balanced development, use, and conservation of the water resources of the Basin" through the Great Lakes Basin Compact of 1955; and

Whereas, in cooperation with the Great Lakes and St. Lawrence River states and provinces through a collaborative partnership with the Great Lakes-St. Lawrence River Basin Water Resources Regional Body and Compact Council, the GLC reports annually on regional water use data including withdrawals, consumptive uses, and diversions by type of use, water source, jurisdiction, and watershed; and

Whereas, the changing climate has led to increased frequency and intensity of extreme heat events[1] and overdependency on groundwater resources resulting in public water shortages, irrigation bans, and decreased agricultural yields per acre[2]; which long-term will likely place more importance on maintaining soil health and food production in the Great Lakes basin; and

Whereas, changing climate conditions are not currently predicted to significantly alter the overall water balance of the Great Lakes basin; however, the region is experiencing fluctuating extremes and localized increases in precipitation and runoff, as well as greater usage and evaporation due to higher summer temperatures and lack of ice cover in winter; and

Whereas, changing climate conditions leading to increases in precipitation event frequency and intensity may contribute to both flooding events and localized drought conditions that will impact Great Lakes ecosystems, affect the lives and livelihoods of those who live in the basin, and affect how water and climate sensitive industries and economic sectors - such as agriculture - function in our communities; and

Whereas, climate trends within the Great Lakes basin indicate that average annual air temperatures have increased by 2.3 degrees Fahrenheit since 1951, leading to an additional one to two weeks of growing season across the region and additional temperature increases are forecasted in future decades[3]; and

[1] First Street Foundation. (2022). First Street Foundation's 6th National Risk Assessment: Hazardous Heat. Zenodo. https://doi.org/10.5281/zenodo.6980285. https://firststreet.org/research-library/hazardous-heat.

[2] The New York Times. (2023). America Is Using Up Its Groundwater Like There's No Tomorrow. https://www.nytimes.com/interactive/2023/08/28/climate/groundwater-drying-climate-change.html

[3] Hibbard, K.A., F.M. Hoffman, D. Huntzinger, and T.O. West. (2017). Changes in land cover and terrestrial biogeochemistry. In: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 277-302, doi: 10.7930/J0416V6X. https://glisa.umich.edu/resources-tools/climate-impacts/temperature/

Whereas, the GLC, through its Standing Committee on Climate Resilience and *Action Plan for a Resilient Great Lakes Basin,* is working to advance and coordinate climate resiliency efforts in the Great Lakes basin; and

Whereas, agriculture is a vital sector of the economy for the Great Lakes-St. Lawrence River region that relies on access to water resources and faces unique risks from climate change; and

Whereas, understanding climate related risks and impacts to the Great Lakes basin agricultural sector is critical to ensuring the security of both countries' agricultural economies, food systems, and rural communities, and the security, sustainability, and balanced use of the basin's water resources under future climate scenarios.

Therefore, Be It Resolved, that the GLC calls on partners and agencies with established jurisdiction and relevant information, including Great Lakes-St. Lawrence River Basin Water Resources Regional Body and Compact Council, to actively engage with the GLC toward building a coordinated scientific, technical, and economic understanding of:

- Current or baseline conditions for agricultural production in the Great Lakes basin, including acres in production, product types and yield, water use, and climate dependencies (i.e. growing days and rainfall needs) by product or commodity;
- Existing research on agricultural production in the Great Lakes basin that can inform future water demand forecasting;
- Region-specific predictions of potential agricultural production in the future including changes to acreage, product types and yield, and water use; and
- The ability of agricultural land to capture and sequester carbon and methods of measuring and documenting the extent of carbon sequestration over time; and
- The current state of groundwater management in the Great Lakes basin under the Great Lakes-St. Lawrence River Water Resources Compact and Agreement and state or provincial law or policy intended to assure sustainable, equitable and balanced use of the basin's groundwater resources; and

Be It Further Resolved, to assure balanced and meaningful insights on this complex issue, the GLC will consult with representatives from the following:

- Agriculture agencies and ministries;
- State and provincial water regulatory agencies and ministries;
- Indigenous communities;
- Agricultural stakeholders including producers or producer-led organizations;
- Academic institutions or agencies with specialized expertise in water or agriculture; and
- State and provincial climatologists; and

Be It Finally Resolved, this work will be coordinated with the GLC Standing Committee on Climate Resilience and that a report on the findings of this work and recommendation for moving forward, such as an addendum to the GLC *Action Plan for a Resilient Great Lakes Basin*, will be developed for consideration at a future GLC Annual Meeting.

Adopted at the 2024 Semiannual Meeting of the Great Lakes Commission, March 5-6, 2024, held in Washington, D.C. The resolution was passed unanimously.