

The Great Lakes Regional Water Use Database

Data Collection, Analysis, and Reporting Protocols

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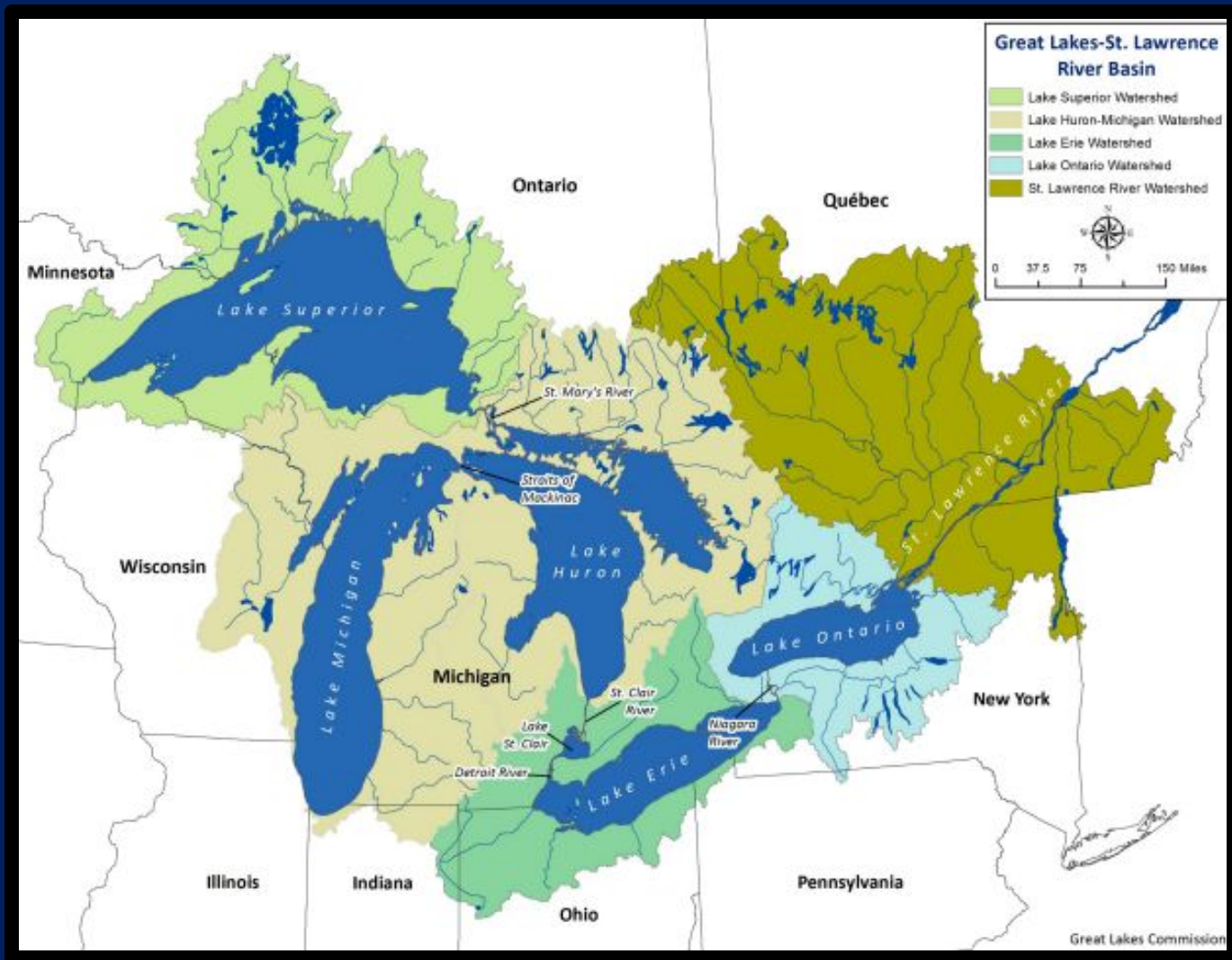
Great Lakes Commission

2022 National Water Use Data Workshop

Salt Lake City, UT

Presentation Overview

- History
- Background
- Collection Procedures
- Reporting Protocols
- Data Analysis
- Annual Report



History of the Water Use Database

1985

- Great Lakes Charter signed, calls for formation of Water Resources Management Committee

1987

- Great Lakes Commission chosen to serve as water use database repository

2001

- Great Lakes Charter Annex established as supplementary agreement to the Charter

2005

- Great Lakes-St. Lawrence River Sustainable Water Resources Agreement established

2008

- Great Lakes-St. Lawrence River Water Resources Compact signed

Background

- Binational effort to report on Great Lakes water use
- Each state and province is coordinating amongst themselves
- Reports for years 1987-1993 and 1998-2020
- Water Use Data Managers
 - Coordinate effort to report data
- Two Great Lakes compacts
 - Great Lakes Basin Compact established the GLC in 1955

Collection Procedures

- Water users report monthly Withdrawals, Consumptive Uses, and Diversions to relevant State/Provincial program
 - Process differs by jurisdiction (registration or permitting)
 - Users report via forms (paper or online)
- Users drawing over 100,000 gallons per day averaged over a 30-day period required to report
- Compliance
 - Rates have generally increased over time
 - Percentage of active facilities with the capacity to withdraw over the threshold that have reported

Reporting Protocols

- First reporting protocols developed in 1987
- Reporting Protocols revised in 2009; fully implemented in 2012
 - initial attempt to establish a common base of data called for in the Compact and the Agreement
 - Continues historic practice of reporting to the GLC as a regional database
- Calls on jurisdictions to submit accurate and comparable data on:
 - Sector; Source; Watershed; Measurement (Withdrawals, Consumptive Use, Diversions, and Return Flows)
- Jurisdictions report data to the regional database annually
 - Submit data by August 15th for the previous calendar year (2021 data was just submitted)

Database Contents

Jurisdiction	Watershed	Use Sector	Source	Measure
<ul style="list-style-type: none">• Illinois• Indiana• Michigan• Minnesota• New York• Ohio• Ontario• Pennsylvania• Québec• Wisconsin	<ul style="list-style-type: none">• Lake Superior• Lake Michigan• Lake Huron• Lake Erie• Lake Ontario• St. Lawrence River	<ul style="list-style-type: none">• Public water supply• Commercial and institutional• Irrigation• Livestock• Industrial• Power production (once-through cooling)• Power production (recirculated cooling)• Off-stream hydroelectric power• In-stream hydroelectric (optional)• Other	<ul style="list-style-type: none">• Great Lakes surface water• Groundwater• Other surface water	<ul style="list-style-type: none">• Withdrawals• Consumptive use• Diversions in/out of the basin• Intra-basin diversions

Data Analysis

- Regional database website formats uploaded data into tables
- Managers provide comments to explain reasons for changes in values, percentages
- GLC staff conducts metadata review calls
 - Quality Assurance with each jurisdiction
 - Highlight changes from previous years
 - Ensure no reporting or data entry errors
- Data visualization
 - Once data is reviewed, GLC staff pulls data from database
 - Format data into tables and figures used in report

The Water Use Database Website

- Reports based on:
 - Year
 - Basin
 - Jurisdiction
 - Use sector
- Users can create own query to find data relevant to them
- Data information
 - Description of data
 - Definitions
 - Consumptive use coefficients

Site created and maintained by the Great Lakes Commission | www.glc.org

Great Lakes Regional Water Use Database

Introduction

To get started:

- Just click on the left to select the type of report you'd like to generate.
- Click [Upload Data](#) to manage your state or provincial data (for registered data managers only).

For more information on data definitions and agency contact information, browse the links on the left.

About this website

Welcome to the **Great Lakes Regional Water Use Database**, providing comparable water use information on withdrawals, diversions and consumptive uses. This database supports the states and provinces in implementing Article 4 of the Great Lakes-St. Lawrence River Basin Water Resources Compact and Article 301 of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement. Under the Compact and the Agreement, the parties (states and provinces) are required to report water use information to the regional database repository and aggregated information will be made available to the public on an annual basis. In 2012, the database was redesigned to comply with the Interim State/Provincial Reporting Protocols to the Regional Water Use Database, adopted by the Regional Body and Compact Council on December 8, 2009.

The Great Lakes Regional Water Use Database has been around for over 20 years! Originally, it was established by the Great Lakes states and provinces in response to the recommendation of the Great Lakes Charter of 1985, which calls for a uniform, consistent base of data of Great Lakes water withdrawals, diversions and consumptive uses. Beginning in 1987, water use data have been submitted to the repository on an annual basis and reports provided to assist the jurisdictions in Great Lakes-St. Lawrence River water resources planning and management. As specified by the Water Resources Management Committee in its 1987 report, *Managing the Waters of the Great Lakes Basin*, the database catalogs withdrawals by water use category, sub-basin and jurisdiction.

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Annual Water Use Report

- Overview of data quality improvements
- Great Lakes regional water use by:
 - Water use sector
 - Lake watershed
 - Jurisdiction
 - Withdrawals, consumptive uses, and diversions
- Publicly available on regional database website
 - <https://waterusedata.glc.org/index.php>
- Report completed each year on November 15
- Presented at Regional Body and Compact Council meeting in December

Acknowledgements

- Thank you to:
 - Western States Water Council Water Information Management Systems (WIMS) Group
 - U.S. Geological Survey
 - Interstate Council on Water Policy
 - Internet of Water
 - Conference of Great Lakes and St. Lawrence Governors and Premiers
 - Peter Johnson, Deputy Director
 - Great Lakes Commission
 - Tom Crane, Deputy Director
 - Water Use Managers

Questions?