

The Great Lakes Regional Water Use Database

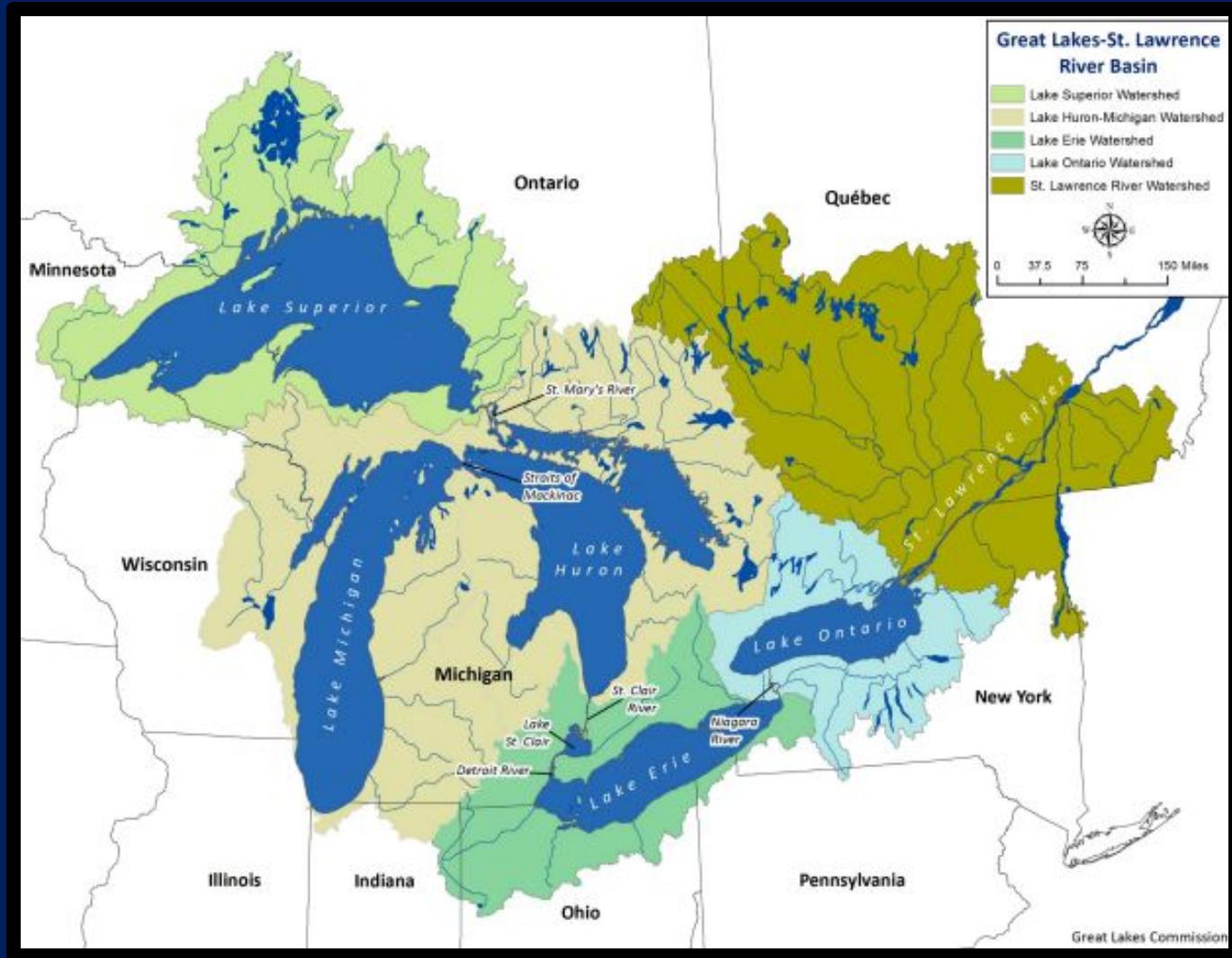
Data Collection, Analysis, and Reporting Protocols

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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

The screenshot shows the homepage of the Great Lakes Regional Water Use Database. The header features a background image of water droplets and the text "Great Lakes Regional Water Use Database". The left sidebar has a green header "INTRODUCTION" and a list of report types: Annual Reports (Recent, Archived), Summary Reports, Basin Reports, Jurisdiction Reports, and Use Sector Reports. Below this is a section for "CREATE YOUR OWN QUERY", "AGENCY STAFF RESOURCES", and "ABOUT THE DATA" which includes links for Data Fields, Consumptive Use Coefficients, Water use Sector Definitions, and General Definitions & Abbreviations. The main content area has a section titled "Introduction" with a "To get started:" link. It also contains a "About this website" section with detailed information about the database's history and purpose, mentioning the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement and the Interim State/Provincial Reporting Protocols. At the bottom, there is a "QUESTIONS?" section with a contact form for comments or questions, and the Great Lakes Commission logo.

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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?