

U.S. Federal Data and Regional Water Withdrawal Decisions

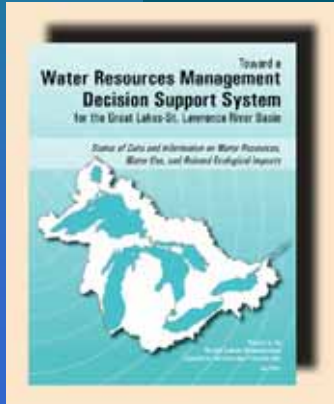
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Great Lakes Commission
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Overview of Great Lakes Water Resources Management Activities

- Great Lakes Charter (1985)
- U.S. Water Resources Development Act of 1986
- Nova Group Water Export Proposal (1998)
- Governors' Statement of Principles to Protect Great Lakes Water Resources (1999)
- Governor's Statement on Managing Diversions and Water Exports (1999)
- U.S. Water Resources Development Act of 1999 (John Glenn Great Lakes Basin Program)
- Governors' Annex to the Great Lakes Charter (2001)
- Water Resources Decision Support System (2003)

Great Lakes Water Resources Management Decision Support System Project



- ❖ Supported by the Great Lakes Protection Fund
- ❖ To address implementation of Annex 2001 to the Great Lakes Charter
- ❖ Includes broad partnerships of governmental agencies and stakeholders
- ❖ Final report published in May 2003

Federal Role in Great Lakes Water Resources Management

- IJC Boards of Control – Lake Superior, Niagara River, St. Lawrence River
- IJC Study Boards –
 - Diversions and Consumptive Uses (1981)
 - Levels Reference (1993)
 - Water Export, Diversions and Consumptive Use Reference (2000)
 - Lake Ontario – St. Lawrence River Study (2006)
- Great Lakes Water Resources Decision Support System (2003)
- Wetlands Permitting (Section 404 of the Clean Waters Act)

WRDA 1999 Section 455 (b)

Inventory federal agency information relevant to the Great Lakes biohydrological system, including:

- i. ground and surface water hydrology;
- ii. natural and altered tributary dynamics;
- iii. biological aspects of the system influenced by and influencing water quantity and water movement;



WRDA 1999 Section 455 (b) (cont.)

- iv. meteorological projections and the impacts of weather conditions on Great Lakes water levels; and
- v. other Great Lakes biohydrological system data relevant to sustainable water use management.



WRDA 1999 Section 455 (b) (cont.)

- vi. Consult with the states, Indian tribes and federal agencies, and request inventory information from the provinces and the Canadian federal government
- vii. Compile information inventories and analyze them for consistency and gaps
- viii. Submit a report that includes recommendations for improving the information base on the biohydrological dynamics of the Great Lakes ecosystem. Recommendations shall estimate necessary resources and funds



Report Outline

- Study Authority
- Purpose and Scope
- Prior Studies
- Plan Formulation Approach
- Description of Selected Plan
- Plan Implementation
- Summary of Coordination and Comments
- Recommendations
- Appendices



Appendices

- Physical Overview of the GLSL System
- Geology and Groundwater
- Surface Water Hydrology
- Open Lake, Interconnecting Waterways and Diversions
- Over-land Meteorology
- **Water Withdrawal and Use Data Information**
- Impacts on Habitats
- Impacts on Organisms
- Land Use and Land Cover Changes
- **Information Resources, Modeling and Data Exchange**
- Summary of Great Lakes Initiatives
- Project Participants

Information Inventory

Table J-8: Ecological Effects Models

Model	Description	Supporting Agency/Developer
ATLSS*	Across trophic level system simulation for the freshwater wetlands of the everglades and big Cypress swamp	Coordinated through USGS
ECCOFATE *	Model to investigate whether existing or planned chemical emissions can be expected to pose an ecological or human health risk,	Simon Fraser University (Frank P. Gobas)
ELM*	Everglades Landscape Model	SFWMD (H. Carl Fitz)
EXAMS II*	A fate and exposure model for assessing toxics in receiving waters	USEPA/CEAM
FGETS*: Food and gill exchange of toxic substances	Fish bioaccumulation simulation modeling for laboratory and field condition	USEPA/CEAM
HEP/HS*: Habitat Evaluation Procedures/Habitat Suitability Indices	Species based-evaluation method that determines the quality and quantity of available habitat and measures the impact of land or water use changes on that habitat	USEPA/CEAM
HES*: Habitat Evaluation System	Community-based evaluation technique to assess the impacts of development projects for aquatic	USEPA/CEAM

Decision Support System Findings/Tasks

59 Discrete Tasks Identified:

- ✓ 7 to support advanced groundwater modeling
- ✓ 7 to support improved watershed modeling
- ✓ 11 to improve accounting of water supplies and diversions
- ✓ 7 to improve water use accounting
- ✓ 19 to support advanced modeling of habitat impacts
- ✓ 3 to support land use impact assessments
- ✓ 5 to support information integration and access

Water Use Data and Information Findings

7 Findings:

1. NWUIP Improvements
2. Water Withdrawal Reporting
3. Water Use Uncertainties
4. Water Use Estimations
5. Water Use Direct Measurements
6. Consumptive Use Estimation
7. Demand Forecasting

Information Integration and Access Findings

5 Findings:

- 1. Clearinghouse Node**
- 2. Metadata Standards**
- 3. Metadata Postings**
- 4. Regional Data Exchange**
- 5. Decision Support Model Integration**

Alternative Implementation Options

- **“Without Plan – No change”**
- **“Minimum Investment”**
- **“Selective Implementation” Scenario**
- **“Enhanced Implementation” Scenario**
- **“Full Implementation” Scenario**

