

Governance Challenges to Addressing Algal Blooms in the Great Lakes

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Forum

Shared interests

Shared challenges



Lake Erie is Unique

Enormous Potential Serious Threats



Poster child for Nutrients and Algal Blooms

- The Smallest of the Great Lakes
- The Shallowest of Great Lakes (Western basin)
- The Most highly “developed”
- Home to the Largest tributary (Maumee)
- “Fishiest” (Home to 50% of Great Lakes Fish)

Clarifying terms

- Smallest, but not small!
 - Surface area - 9,940 square miles
 - Average depth: 62'
 - 241 miles X 57 miles

 - “Most Developed” Included agricultural Land
 - 70% of the Maumee Basin (4.5 million acres) is farmed intensively.

 - Due to warm Temperatures, consistently high nutrient loads and abundant spawning habitat Aquatic species can thrive.

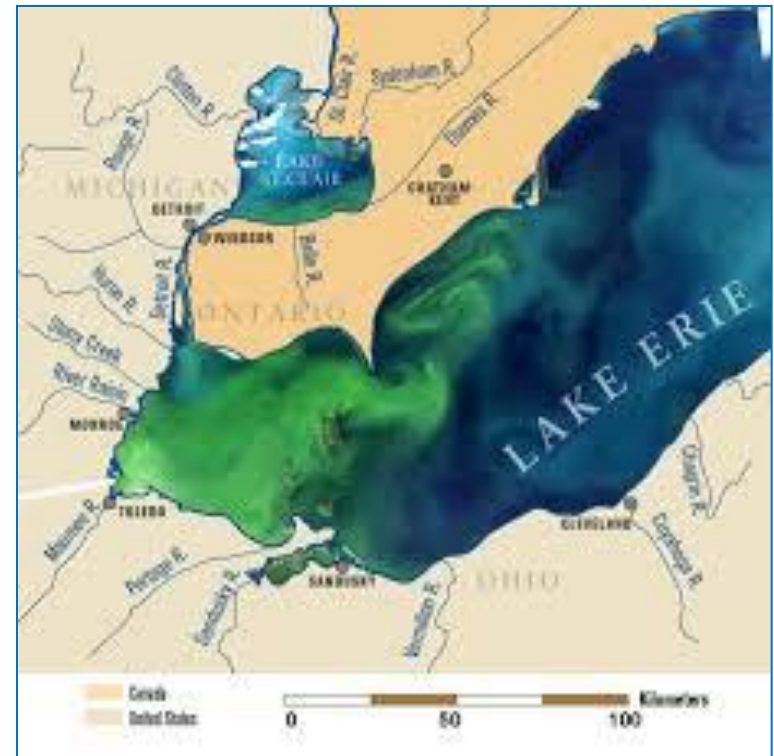
 - Combination of nutrient loads from Upper Lakes, Municipal sources and Agricultural sources can push total nutrient load to a tipping point

Nutrient tipping points

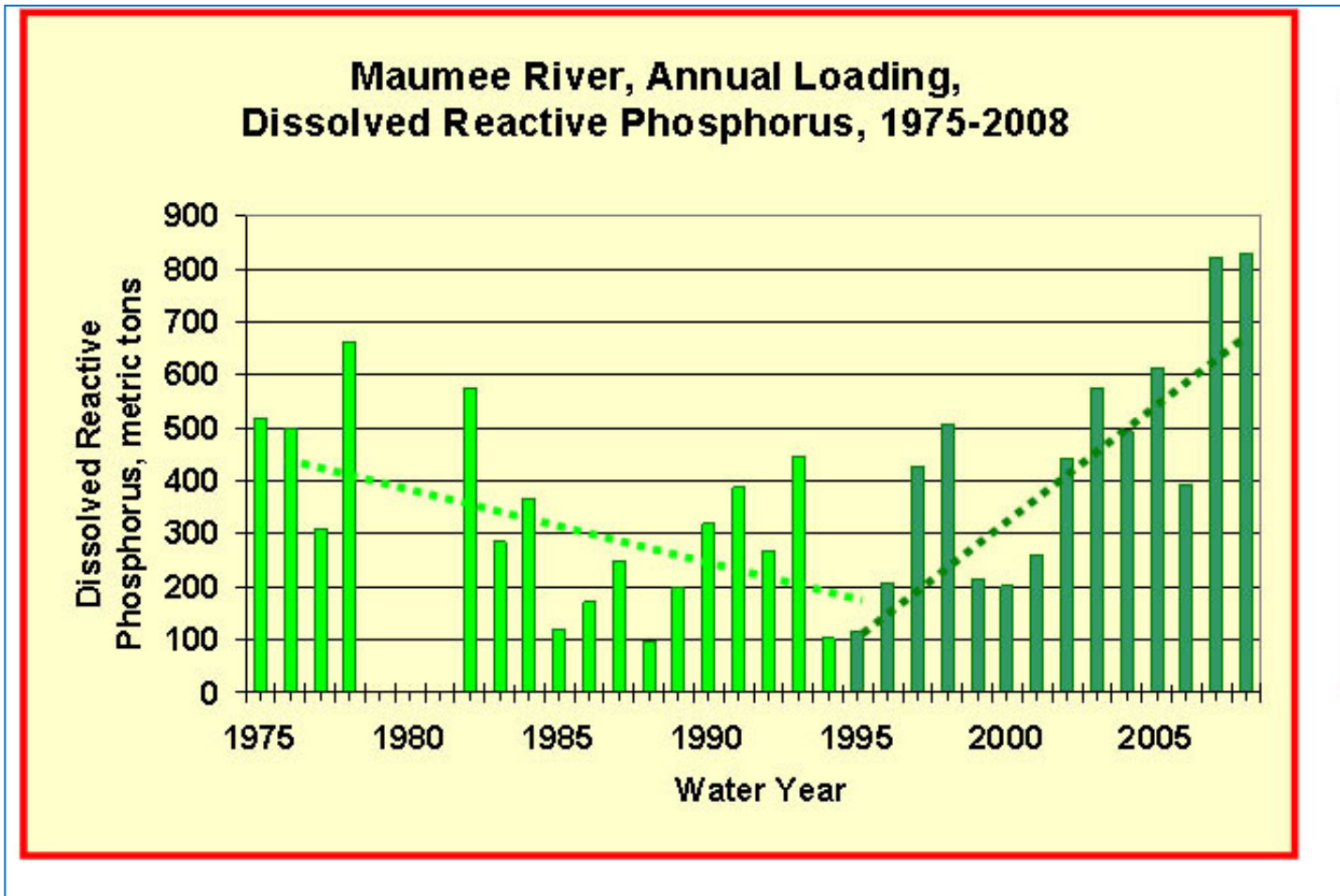
Been There! Done That!

- Surrounded by major cities, Lake Erie has become over saturated with nutrients before
- In 1970, Characterized as a dead lake.
- Following Many \$Billions of investment in improved sewage systems
- By the mid 1980s, - Greatest Example of ecosystem recovery.

Since 1995, Dissolved Phosphorus increasing once again



Data shows the unexpected problem



Nations come together to address Great lakes issues

- Great Lakes Water Quality Agreement (GLWQA) 1972, 1978, 2012
 - Commit U.S. and Canada to unified effort to protect and restore Great Lakes
 - Clean water Act (CWA) 1972, 1977, 1987
 - Authorizes USEPA and state governments to address point sources.
 - Canadian Environmental Protection act.1988,1999
 - Canada Ontario Agreement Respecting the Great Lakes.

Effective infrastructure to address major Point sources

- USEPA works with State environmental agencies to address point sources of nutrients
- Environment Canada works with Ontario provincial watershed conservation authorities.
- Proven, effective method to reduce nutrient pollution from municipal and industrial sources.

Lake Erie's Algal Problems reappear

- Emergence of Dissolved Phosphorus as a key concern, illustrates shortcomings of environmental management structure.
- Nonpoint sources present a different set of challenges for agencies.



Addressing Nonpoint agricultural Pollution tests the structure

- Voluntary incentive programs have been the default tools.
- Incentive tools are effective for those who are environmental minded.
- May not be effective in reaching those who are major emitters (livestock operations and those using intensive tillage practices)
- Jurisdictional issues arise, as states have differing environmental laws / standards.

Jurisdictional conflicts in addressing watershed concerns

- Ohio recently adopted a program to subsidize the export of livestock manure to other watersheds in Indiana and elsewhere.
- Soil and Water Conservation Districts (organized by County jurisdictions), called upon to administer “Watershed in Distress” programs rely upon Local funding from state and counties.

Western Lake Erie Basin Partnership

- An experiment in multi-jurisdictional governance
- Includes multiple agencies in multiple States
 - Michigan, Indiana, Ohio and Federal Government
 - Involves USACE, NRCS, SWCDs, EPA, Ag Departments, Environmental Protection Agencies, Conservation / Environmental Interest Groups
 - Conflicting priorities and, policies and procedures among the governance entities are a drag on effective action

Great Lakes Restoration Initiative (GLRI)

- GLRI – Congressionally funded initiative to restore the Great Lakes
- Contains strict guidance from Congress - to avoid allocating funds to Canadian projects.
- Strict Pre-Approval required for any funds allocated toward binational projects.
- Canadian expenditures for binational projects require pre-approval.

Beyond Institutional challenges

- Logistical challenges abound , especially in Lake Erie (5 U.S. States, the Province of Ontario, 2 National Governments)
- Complexities of scheduling among 5 Departments of Ag, 5 Environmental Protection, 5 Depts. Of Natural Resources, ECT.
- Myriad of Federal Agencies, USACE, USDA, Fish and Wildlife. Coast Guard, Port Authorities

International Water Resource

- Passports required to visit colleagues
 - Customs service, TSA
 - Special arrangements / agreements are needed to conduct international research and monitoring.
 - Many funding sources are nation- specific.
- Forward Planning and pre-clearance procedures are a must.
 - Webinar technologies help to promote information sharing
 - All Parties involved in restoration are committed to cooperation

Difficult process.
Worth the effort!



Thank You!

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Ohio Environmental Council

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