

The Importance of Science to the Protection of the Great Lakes

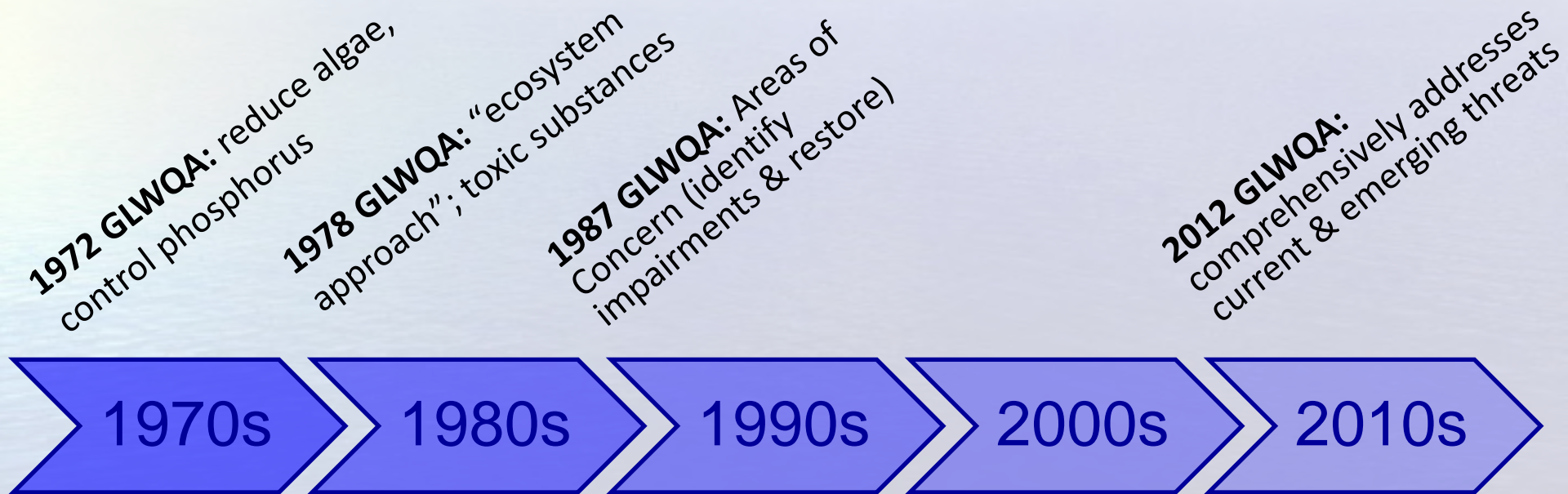
2012 Canada-U.S. Great Lakes Water Quality Agreement,
Science Annex
Report on Progress and Proposed Future Work

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What You'll Hear About Today

- **Commitments under Science Annex**
- **Progress and accomplishments during 2013-16**
- **Future Directions**

Science: Cornerstone of Great Lakes Water Quality



What are our commitments?

“contribute to the achievement of the General and Specific Objectives of this Agreement by enhancing the coordination, integration, synthesis, and assessment of science activities”

Diverse team of experts working together in the Science Annex

Science Annex Subcommittee and teams

Members from federal, provincial, state agencies, First Nations, Métis and Tribes

Coordinate research and monitoring activities supporting the GLWQA

Use ecosystem indicators for reporting on the state of the Great Lakes

Examine data and information management and sharing efforts to support GLWQA implementation

Consider how Traditional Ecological Knowledge can be integrated and help support GLWQA work

What have we done (2013-2016)?

Coordination & Integration:

- Binational lake-specific science and monitoring activities

Integration, Synthesis & Assessment:

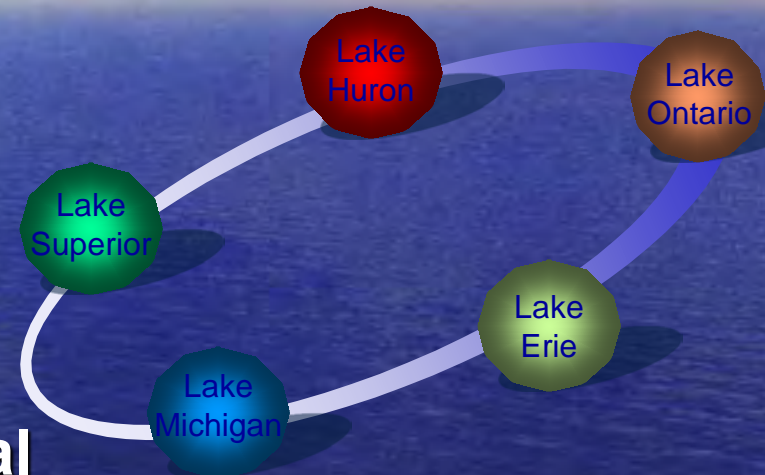
- Indicators and State of the Great Lakes

Integration:

- Data management and sharing

Cooperative Science & Monitoring Initiative (CSMI)

- Initiated in 2002 to coordinate monitoring
- Expanded to include research coordination (2006)
- Connecting channels added (2009)
- CSMI follows a 5 year rotational cycle
- CSMI does not set priorities



CSMI priorities are developed for lake specific needs

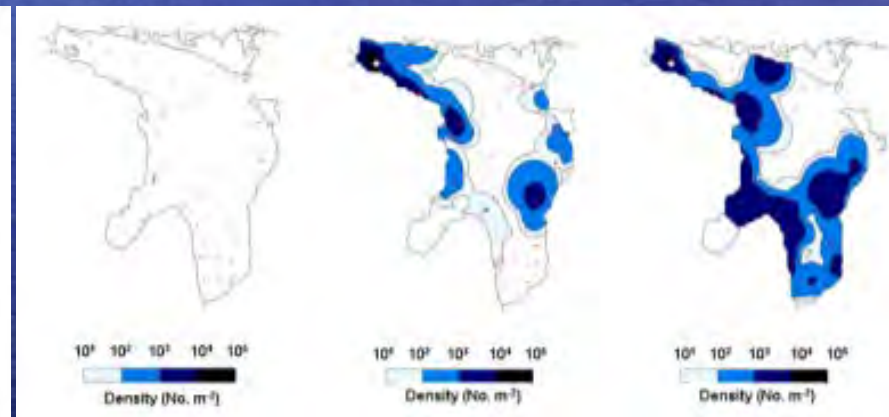
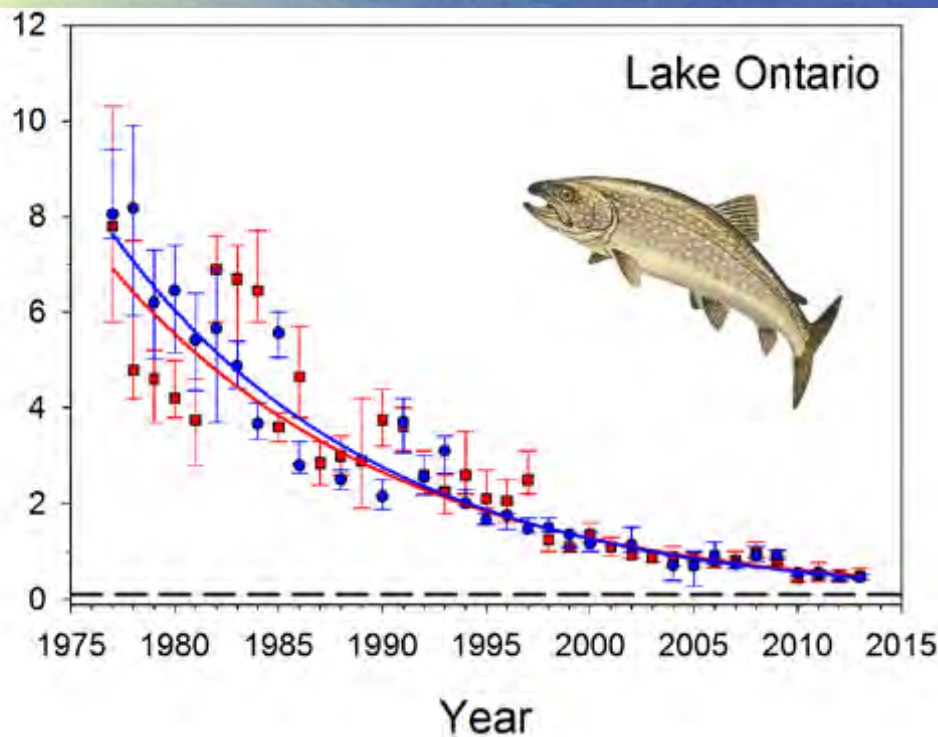
- Lower food web
- Energy flow from nearshore to offshore
- Seasonal changes
- Development of nutrient objectives
- Contaminants



Tracking the Progress through Ecosystem Indicators

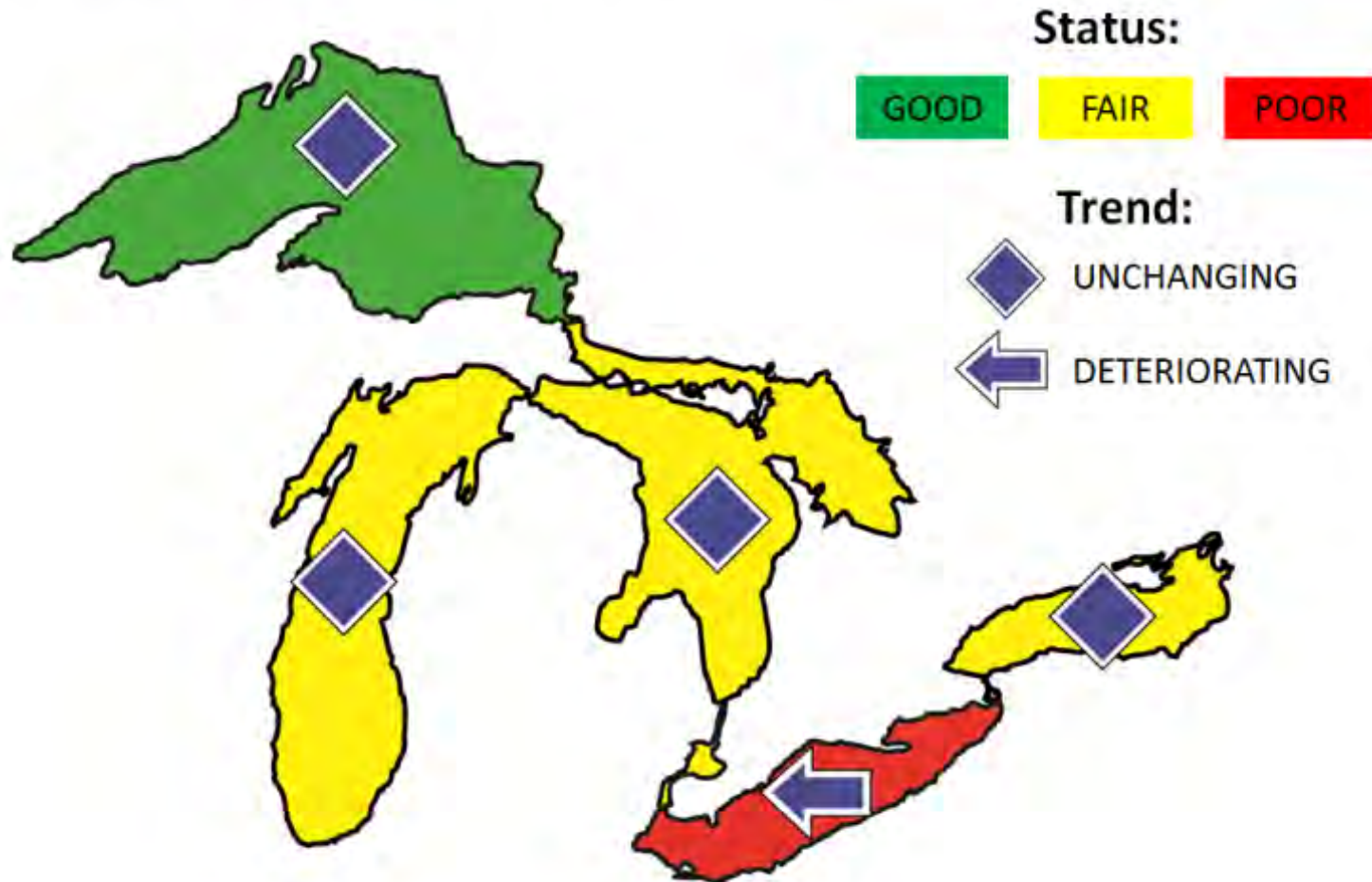
➤ PCBs in Whole Fish

➤ *Dreissenid* Mussels



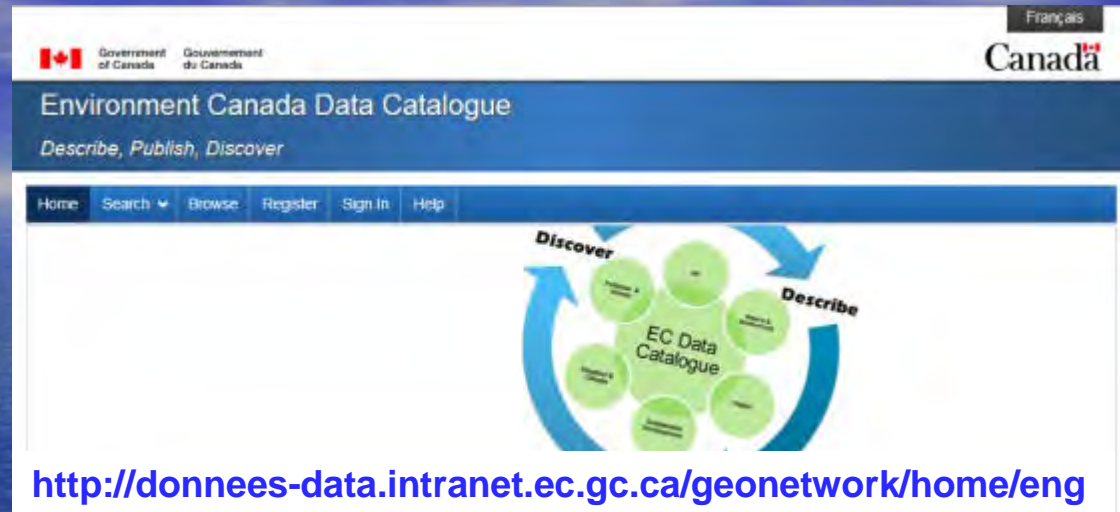
Tracking the Progress through Ecosystem Indicators

Lake-by-Lake Overall Assessments



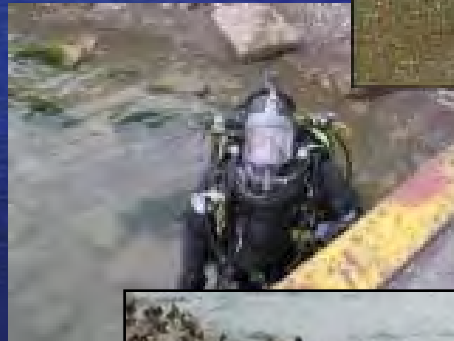
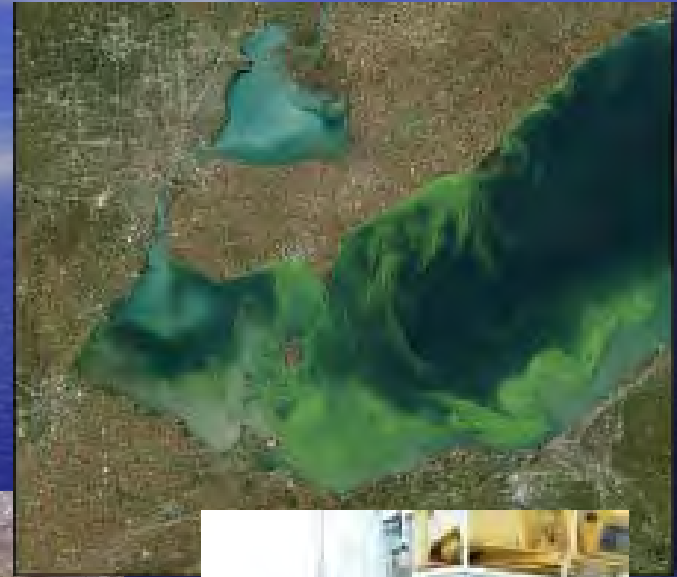
Data Management and Sharing

- Many data management platforms and data sharing tools in use
- How can we better coordinate & identify tools useful for GLWQA work?
 - Pilot evaluation tool for Nutrients Annex

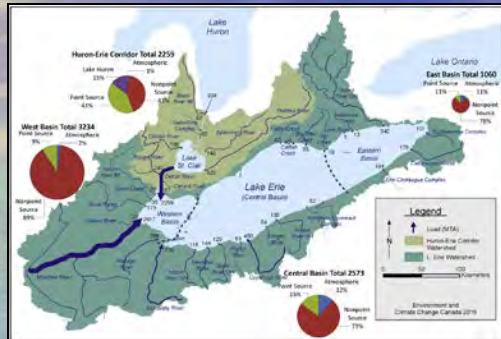


Other science accomplishments

- Monitoring for setting P targets in Lake Erie
- Assessment of state of the Cladophora science
- Assessment of connecting channels

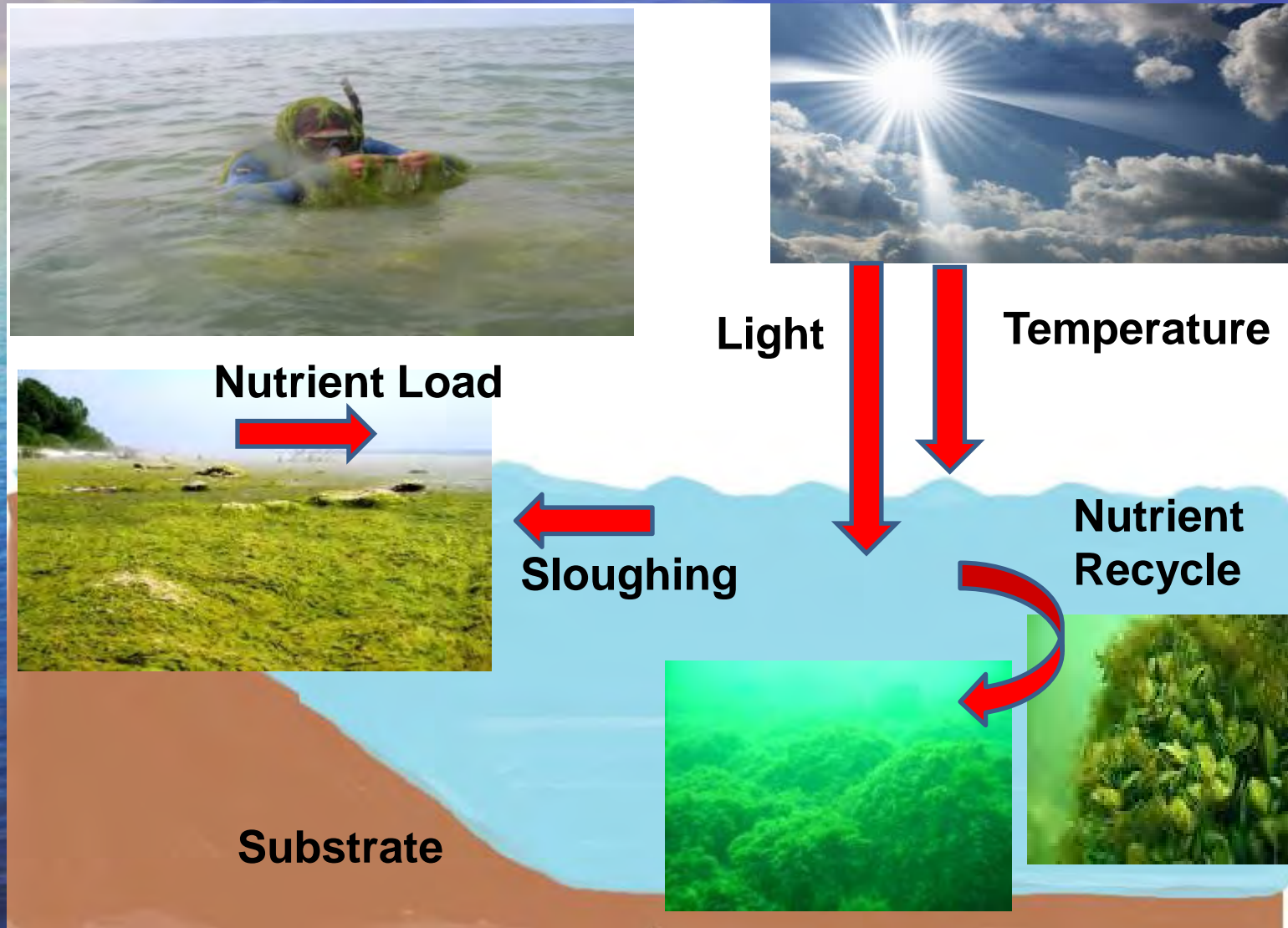


Nutrient objectives in Lake Erie



- Binational monitoring was the backbone for setting targets
- New research and monitoring will track the progress of phosphorus load reductions
- Assess the lake response to load reductions

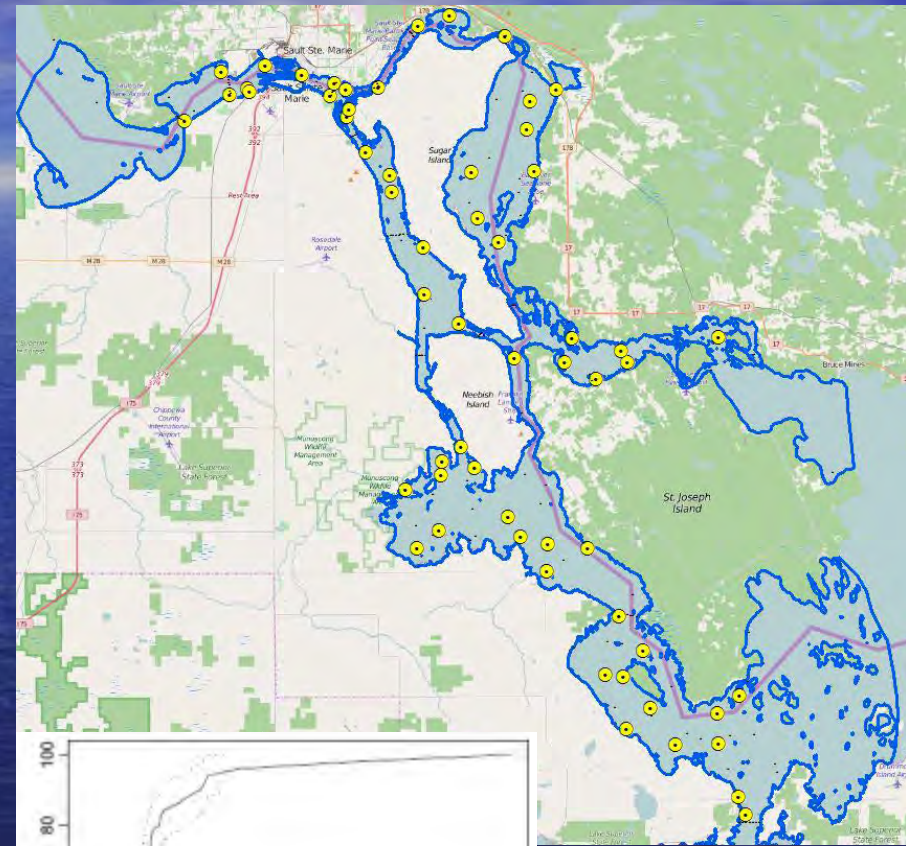
Assessment of Cladophora Science



Connecting Channels Assessment



**Huron-Erie Corridor
Water Quality**



**St. Mary's River
Sampling Design**

What's Next?

- **Continue coordinating CSML activities**
- **Synthesis of data and information for reporting on ecological indicators**
- **Data Management and Sharing platform**
- **Enhance Science coordination**
- **Traditional Ecological Knowledge**

Science is Collaborative !



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Climate Change Canada

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Questions?

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