Coastal Wetlands

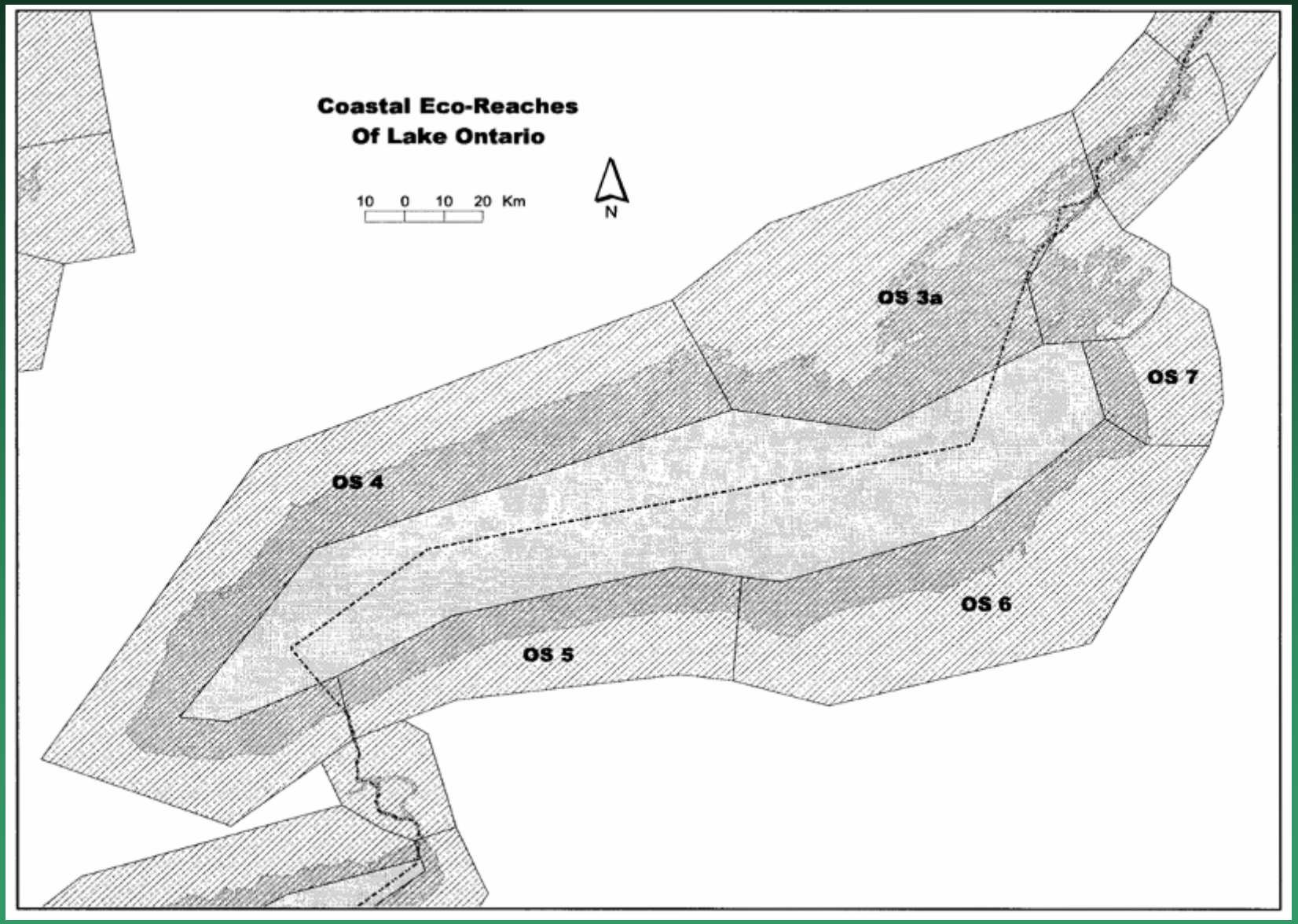
George Finney
Bird Studies Canada


Eastern Lake Ontario

SOLEC 1996

- Water level monitoring
- Sediment supply characteristics
- Concentration of nutrients and toxic substances
- Tissue concentrations of toxic chemicals or malformations in fish and wildlife
- Population characteristics of economically or socially valuable wetland species
- Presence of characteristic species with narrow environmental tolerances
- Presence and abundance of invasive species
- Changes in area of habitats or vegetation types over time
- *Biodiversity measurements*
- Changes in plant community characteristics
- Changes in faunal community characteristics
- Biotic community indices
- size, position and number of Great Lakes coastal wetlands
- Land-use characteristics in the vicinity of coastal wetlands
- Land use changes upstream in the watersheds of coastal wetlands with inflowing tributaries
- Fish consumption advisories for wetland-dependent species
- Certain health problems
- Commercial fish catches of wetland-dependent species
- Recreational opportunities
- *Number of employed persons in activities directly or indirectly related to coastal wetlands*

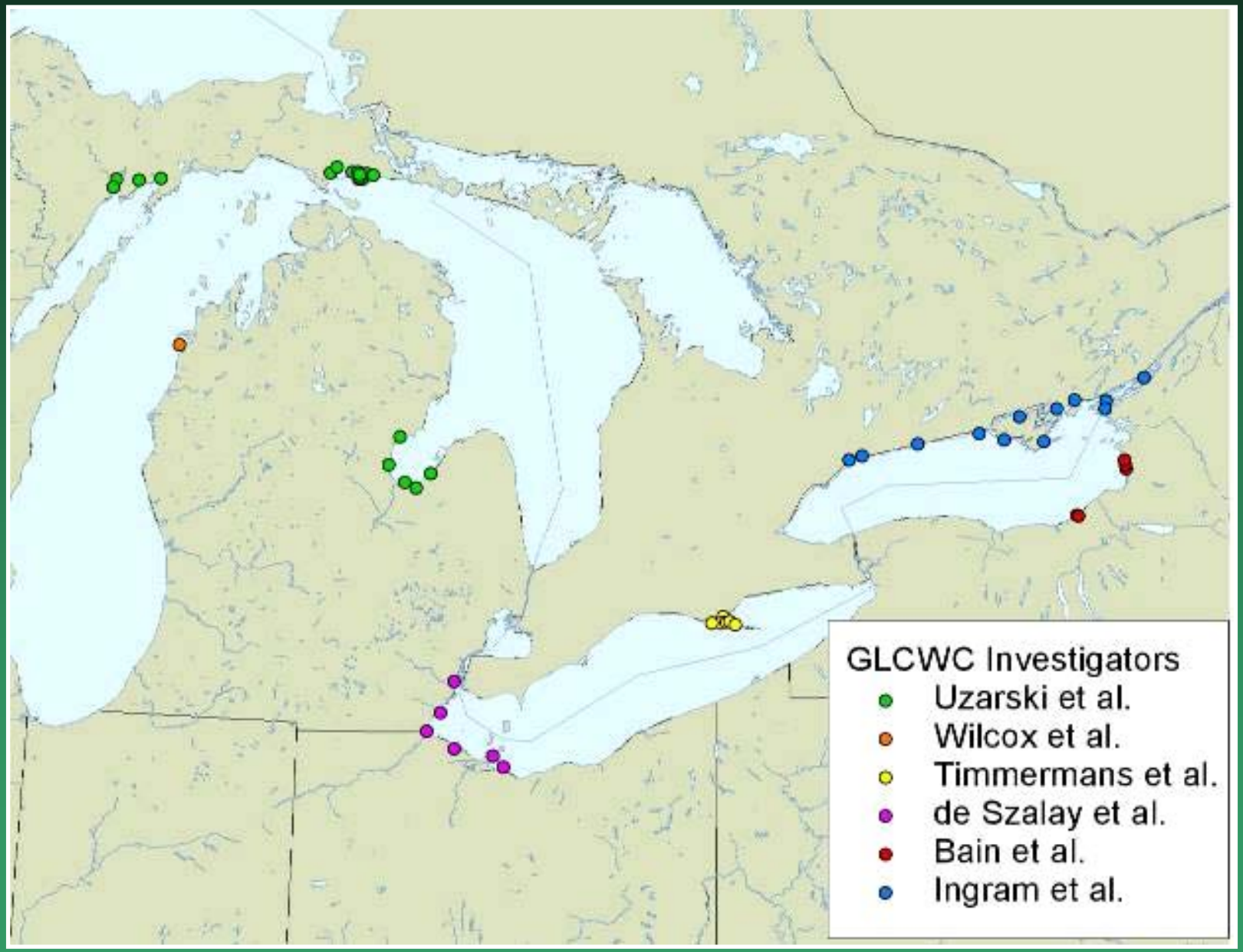
SOLEC 1998


Coastal Eco-Reaches
Of Lake Ontario
10 0 10 20 Km
N
OS 3a
OS 7
OS 4
OS 6
OS 5

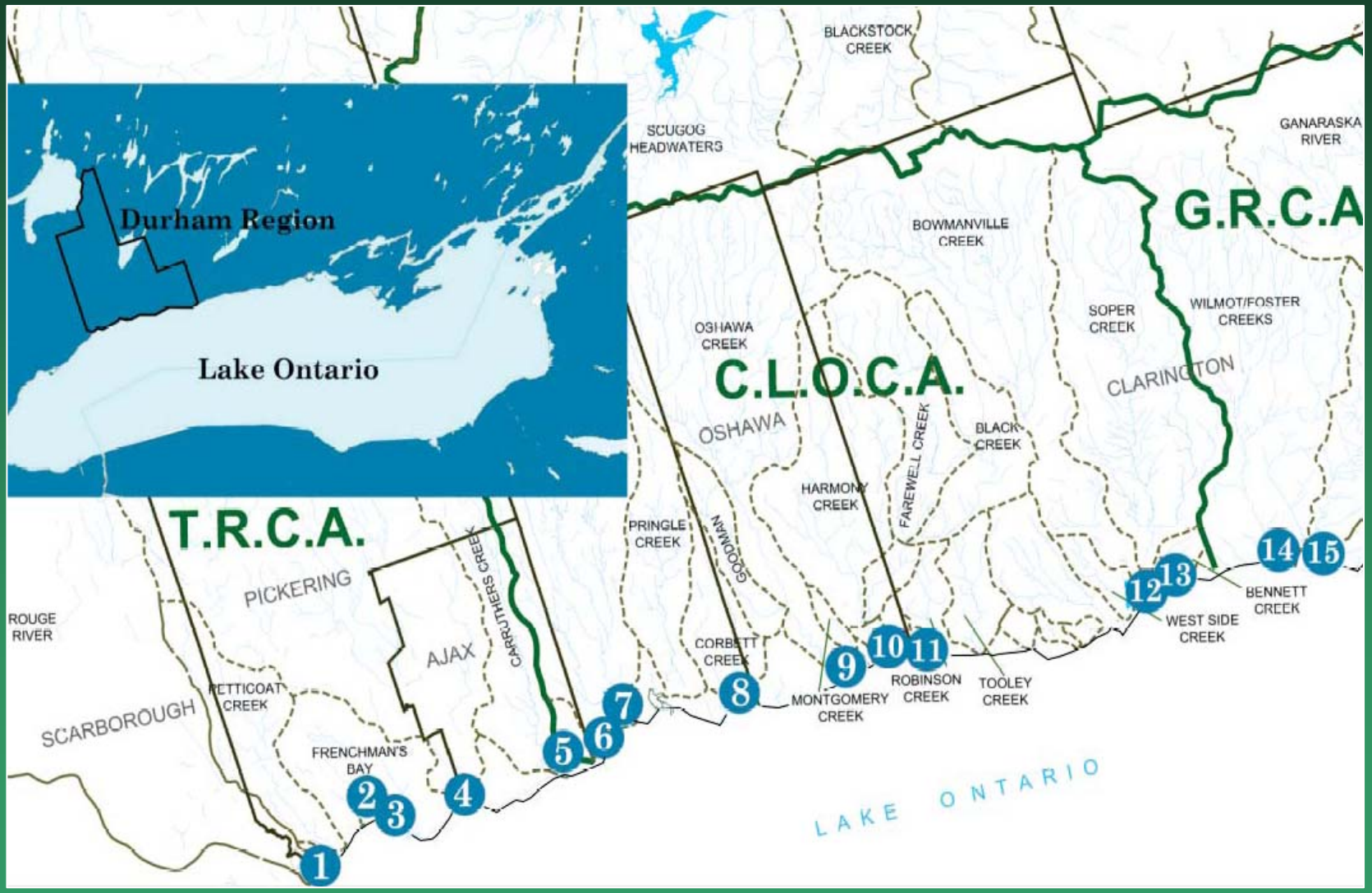
Great Lakes Coastal Wetlands Consortium

- Consists of several Great Lakes coastal wetlands researchers and policy makers
- Goals
  - Develop a long-term binational Great Lakes coastal wetland monitoring program
  - Expand monitoring and reporting capabilities under the Great Lakes Water Quality Agreement

Indicator Evaluations

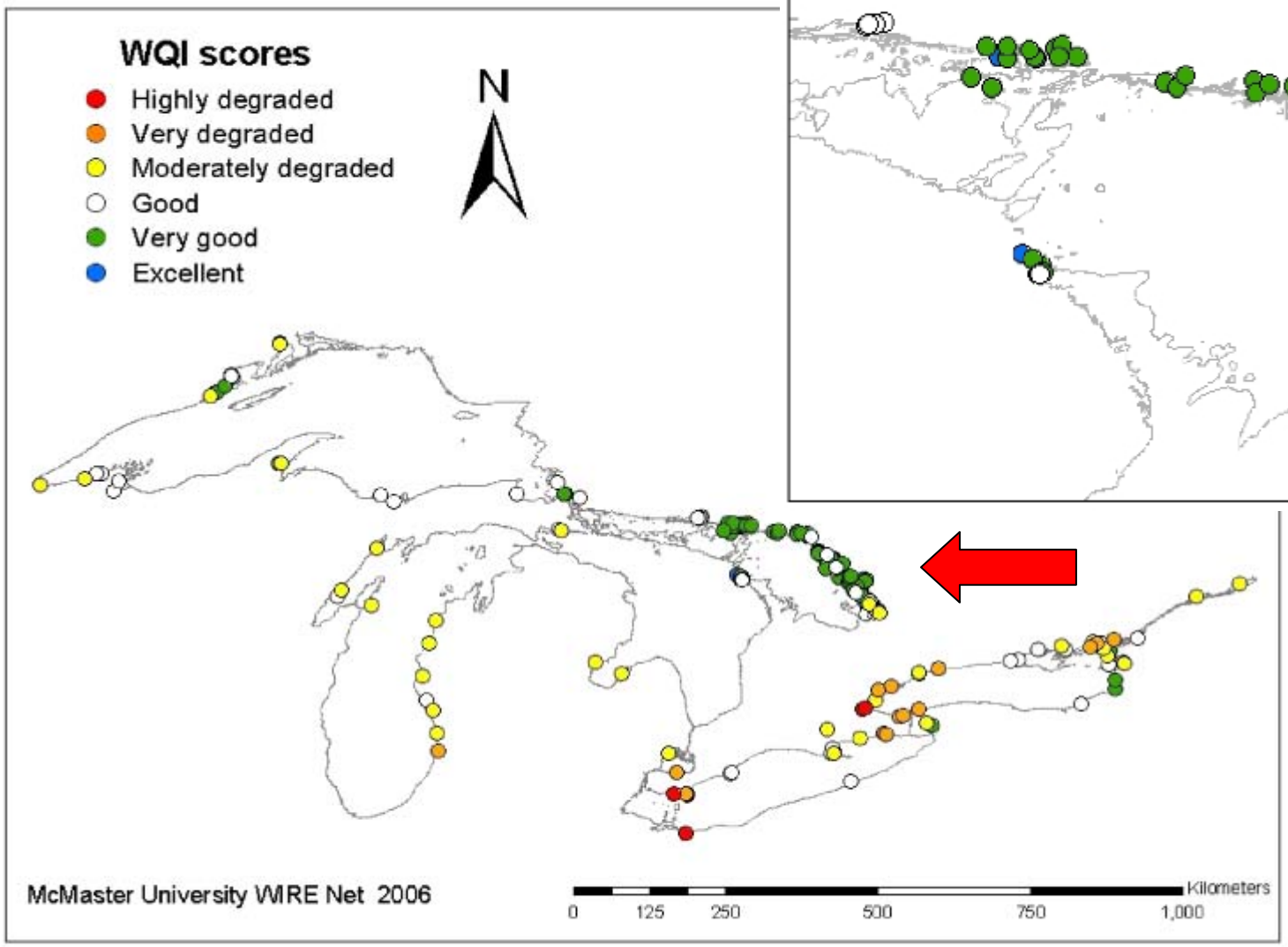


Durham Region Coastal Wetland Monitoring Project



Great Lakes Ecological Indicators Project

McMaster University Studies



Environmental Monitoring and Assessment Program (EMAP)

Indicator Suite Finalized

- Fish communities
- Invertebrate communities
- Plant communities
- Bird communities
- Amphibian communities
- Coastal wetland extent and composition

Fish Community Indicator

Invertebrate Community Indicator

Plant Community Indicator

Marsh Monitoring Program

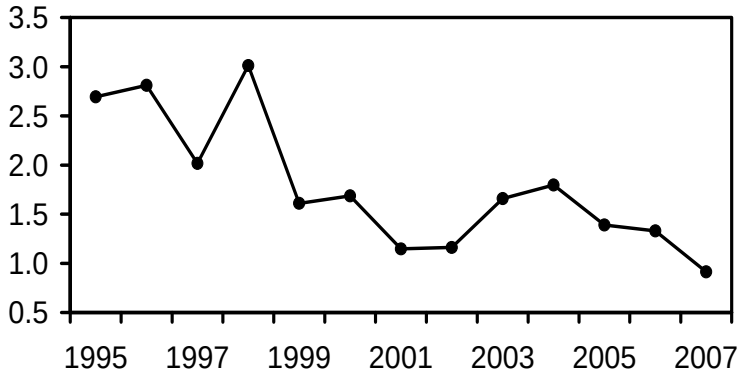
Great blue heron

BIRD STUDIES CANADA
ÉTUDES D'OISEAUX

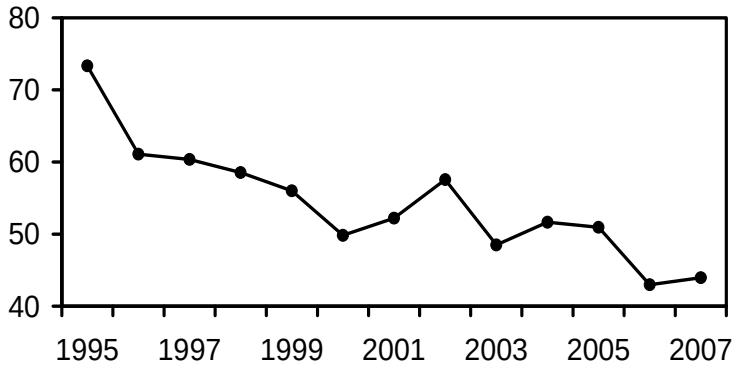
MARSH MONITORING PROGRAM

Bird and Amphibian Community Indicators

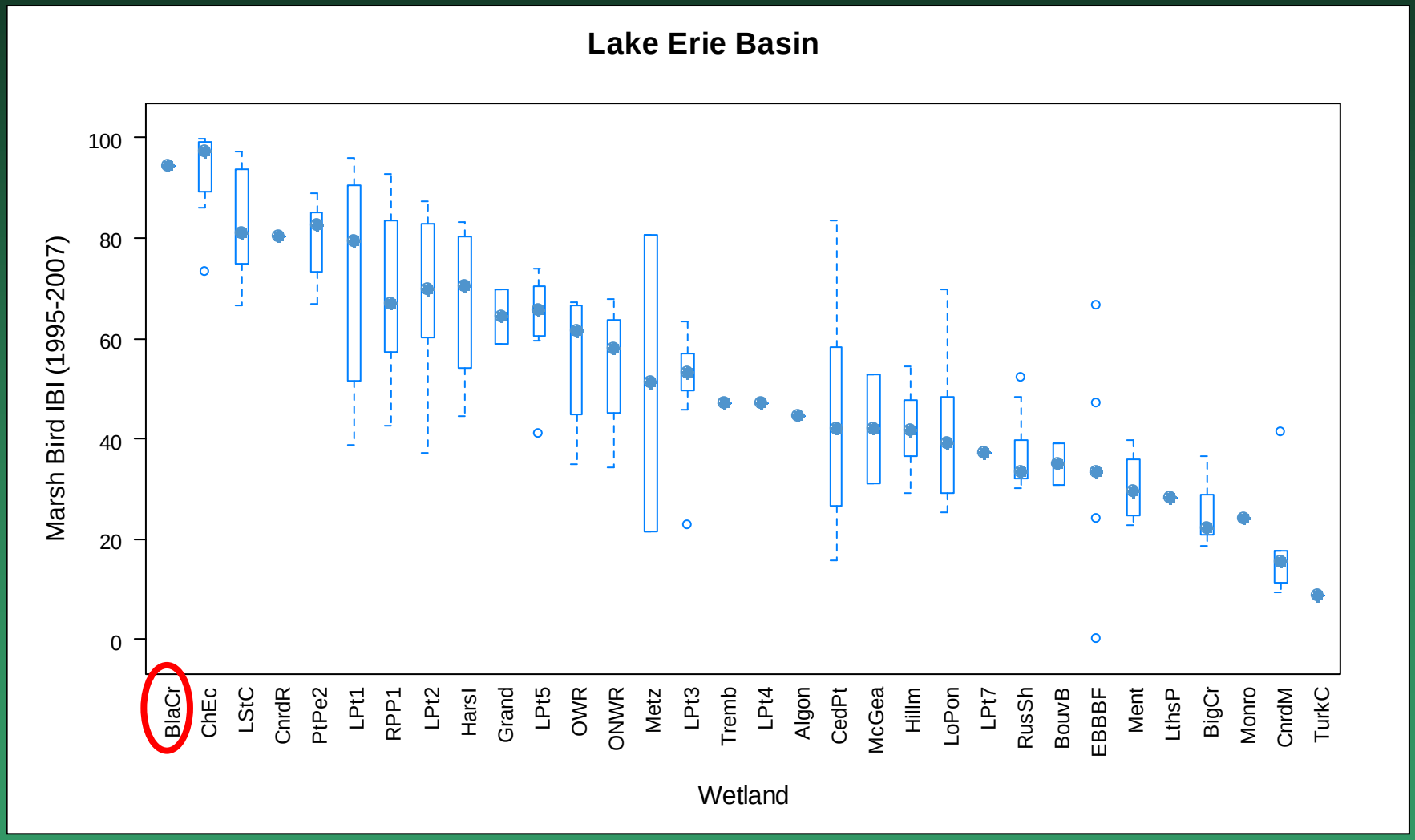
Pied-billed Grebe
-7.1 (-4.3, -9.7) P <0.001



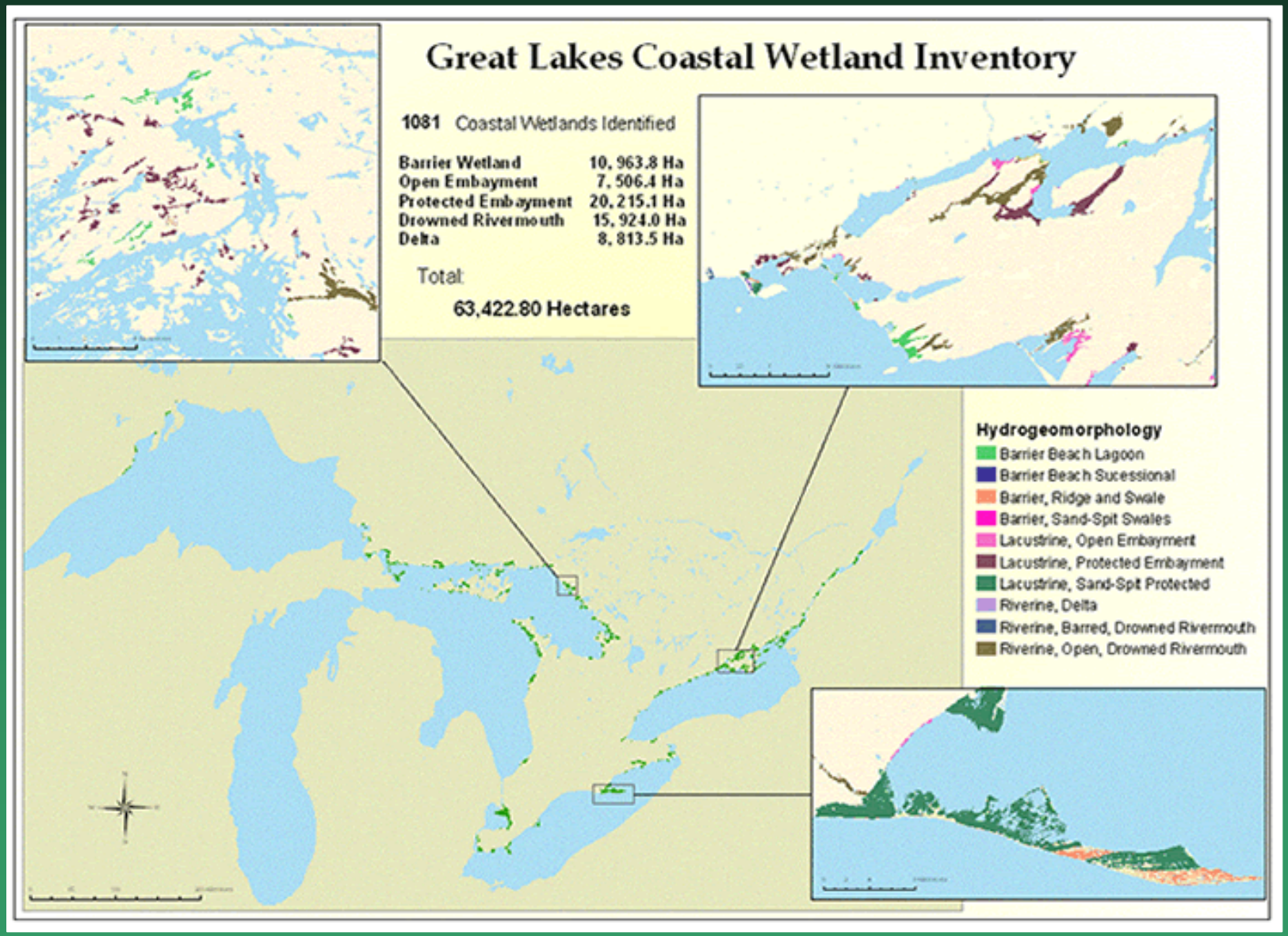
Chorus Frog
-1.6 (-0.8, -2.4) P < 0.001



Bird Community Indicator

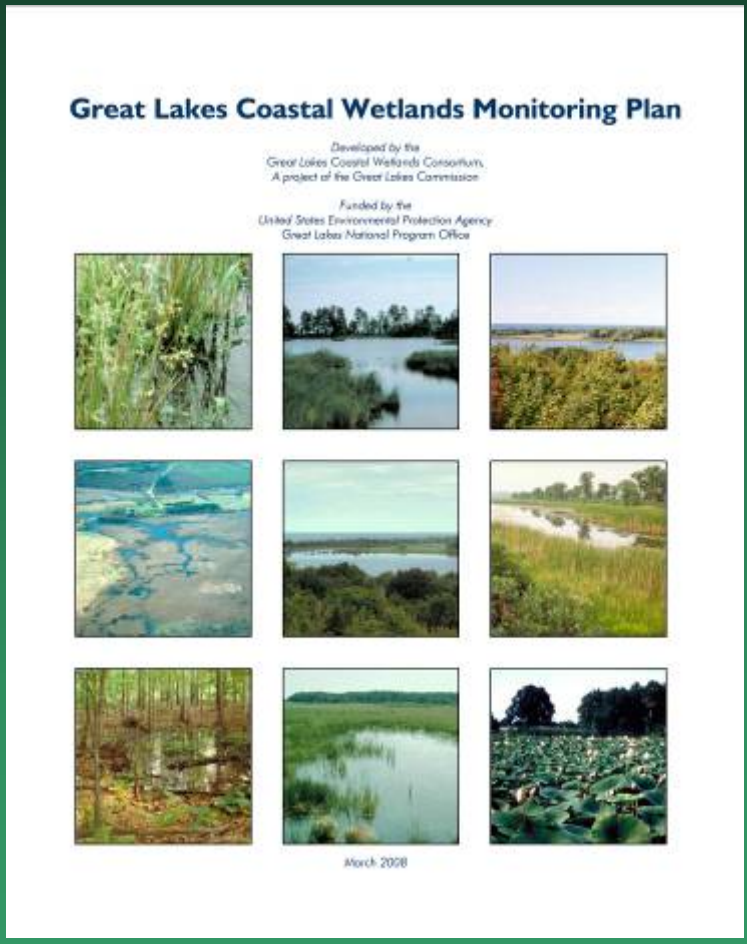


Extent and Composition



Monitoring Plan

- Map of the 217,000 hectares of known coastal wetlands
- A new coastal wetland classification system
- Field-tested sampling protocols for accepted indicators
- A proposed sampling design
- A database to house future data
- Implementation strategies and potential partners



Next steps

- Partnerships and implementation
- Open and accessible central database
- Concise methodology manual
- Sampling design refinement
- Funding sources

Acknowledgments

- Many partners have helped develop a Coastal Wetland monitoring system but there is still some way to go.

- Ryan Archer, Bird Studies Canada
- Karen Rodriguez, U.S. EPA
- Danielle Sass, ORISE Research Fellow