

GLCWC Summary Report

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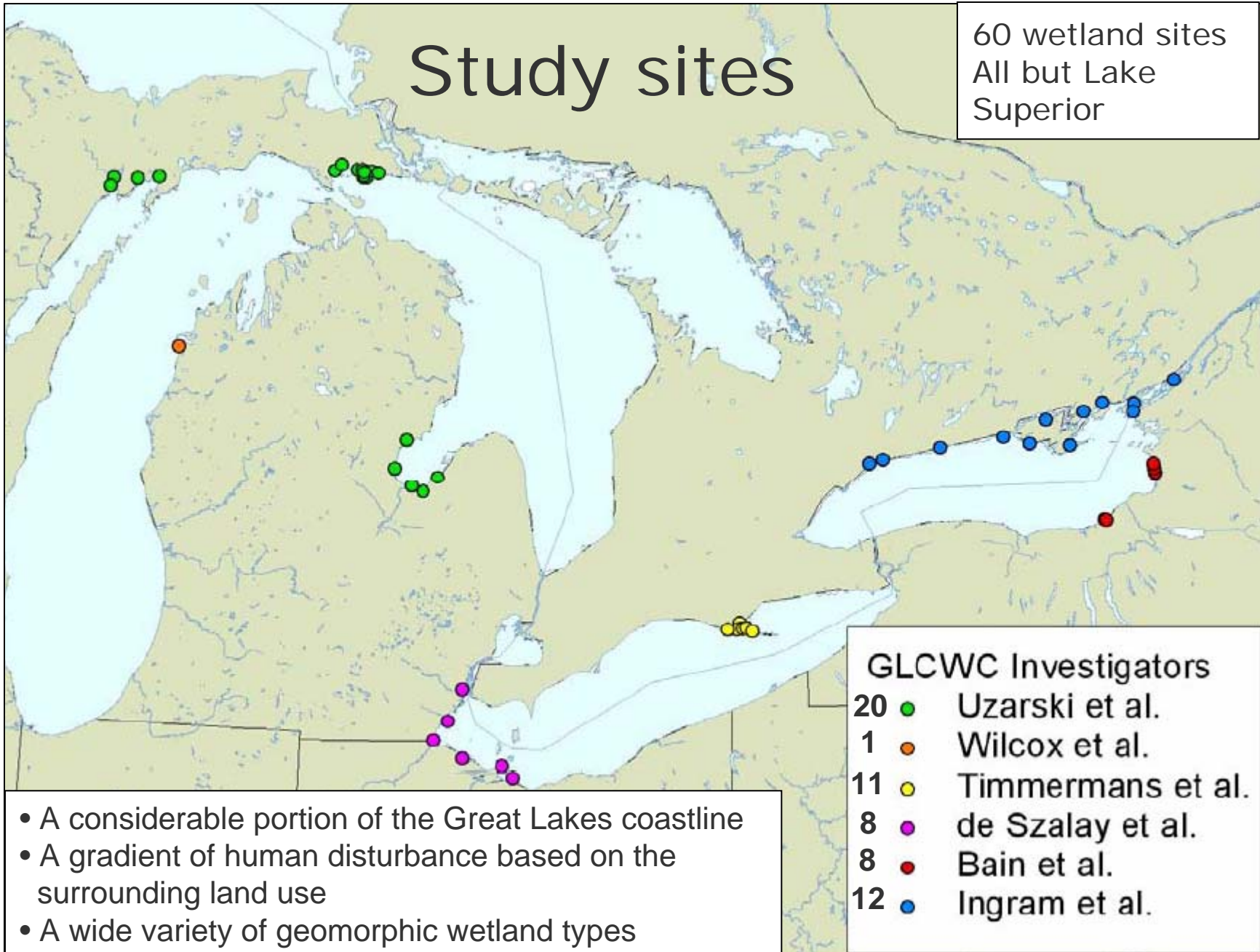
GLCWC Initiative

To develop and implement a sustainable, long-term, basin-wide monitoring plan for Great Lakes coastal wetlands

Six team investigation 2002:
Data collection on indicators in wetlands throughout the Great Lakes

Study sites

60 wetland sites
All but Lake
Superior



Indicator Sampling

Indicator metrics sampled (May – Sep 2002):



Fish



Macroinvertebrates



Birds



Amphibians



Plants



Water chemistry



Sediments



Landscape attributes

Project Goals

- Compile the results
- Assemble SOPs
- Perform indicator evaluation
- Make recommendations

Cost

Scoring (summed):

– Expenses:

< \$50 U.S. = 1

\$50-100 = 2/3

\$100 or more = 1/3


– Effort:


<  = 1


 = 2/3

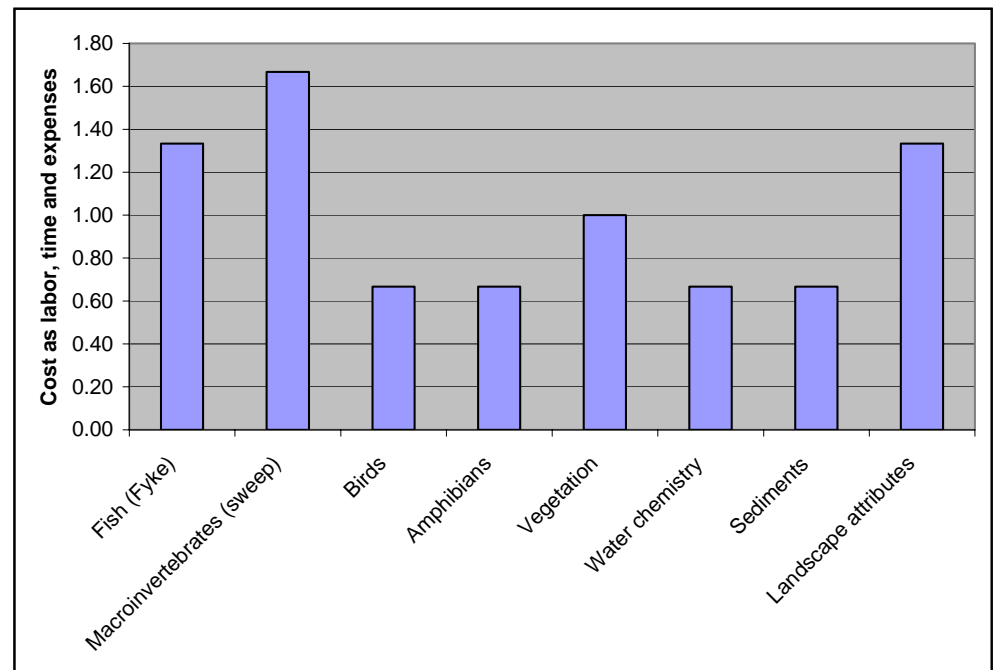
 or more = 1/3

– Labor:

 = 1

 = 2/3

 or more = 1/3

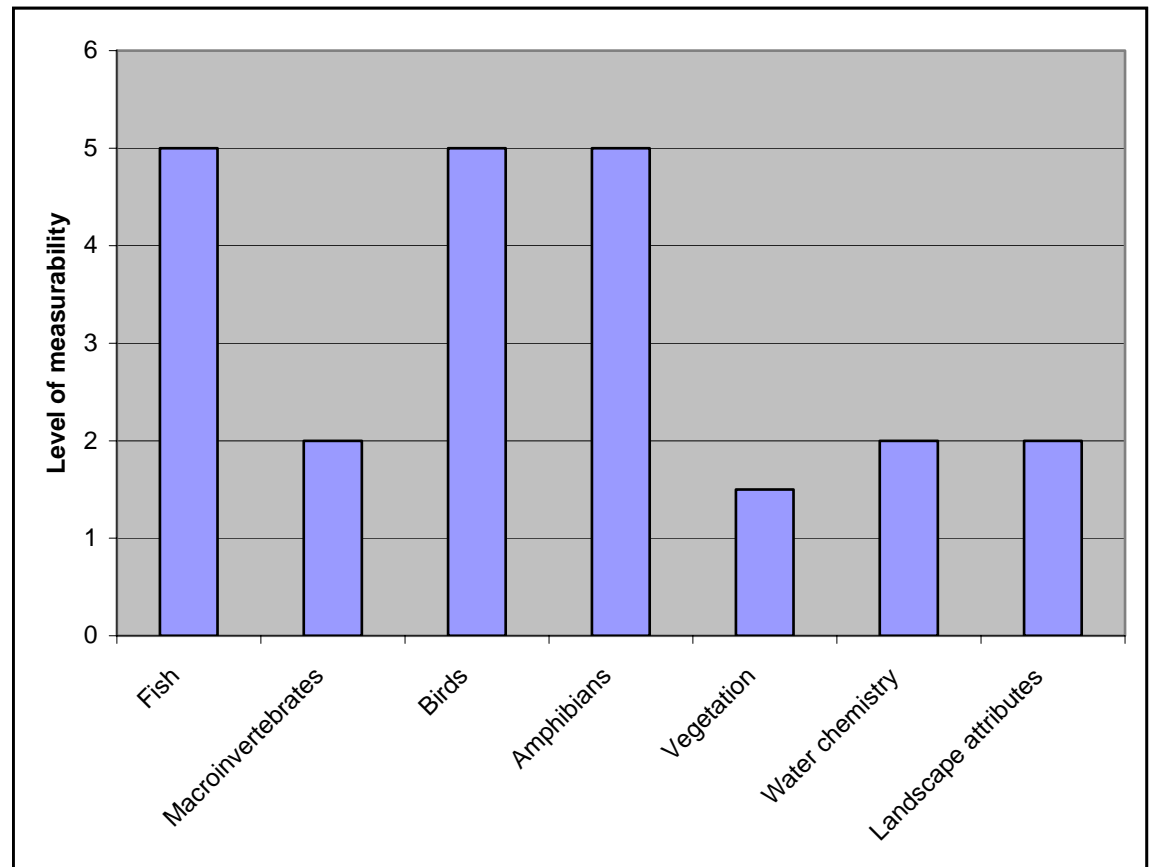


Weighting: Cost scores greater than 2 multiplied by 2

Measurability

- Scoring (averaged):
Values of 1, 2, or 3 for metrics:
 - Level of technical expertise
 - Ease of implementation

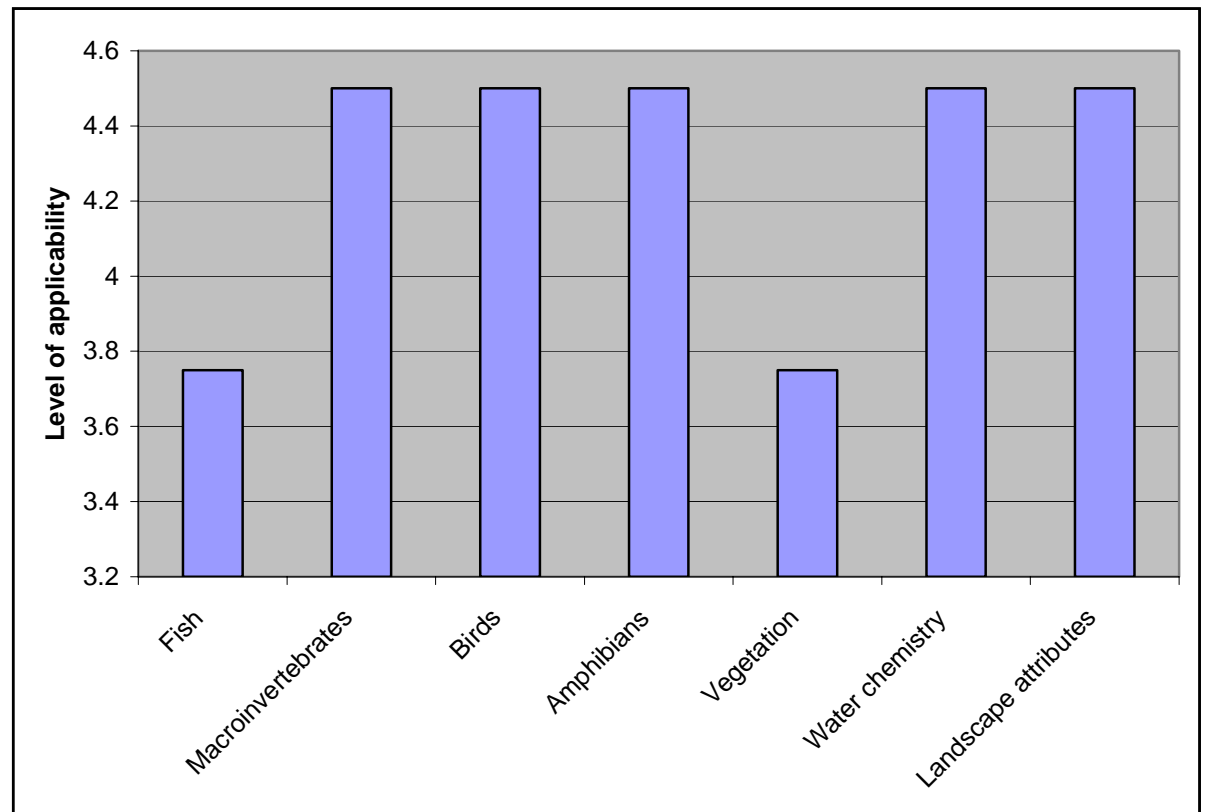
- Weighting:
Measurability scores greater than 2 were multiplied by 2



Basin-Wide Applicability of Sampling by Wetland Type

- Scoring (averaged):
Values of 1, 2, or 3 for metrics:
 - Applicability across basin
 - Applicability across wetland types

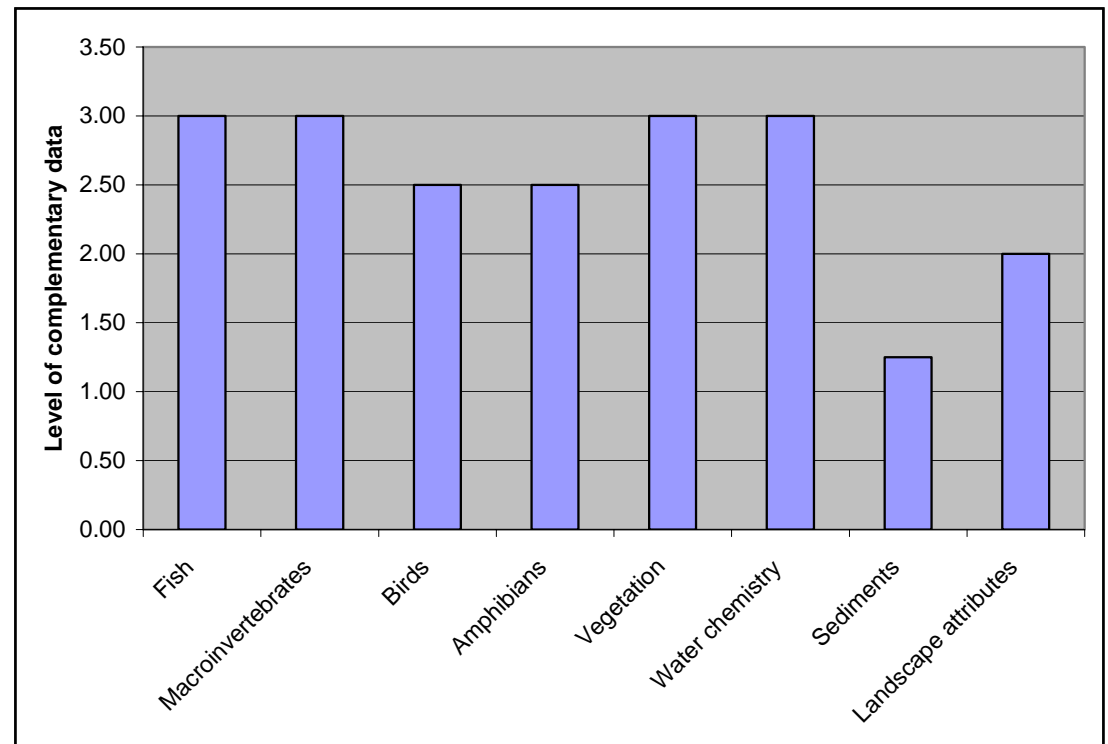
- Weighting
Applicability scores greater than 2 were multiplied by 1.5



Availability of Complementary Existing Research or Data

- Scoring (summed):
 - Number of data sources
1-2 = $\frac{1}{2}$ 3-5 = 1 >5 = 1.5
 - Locational data availability
US = $\frac{3}{4}$ CA = $\frac{3}{4}$ Both = 1.5

- No weighting performed



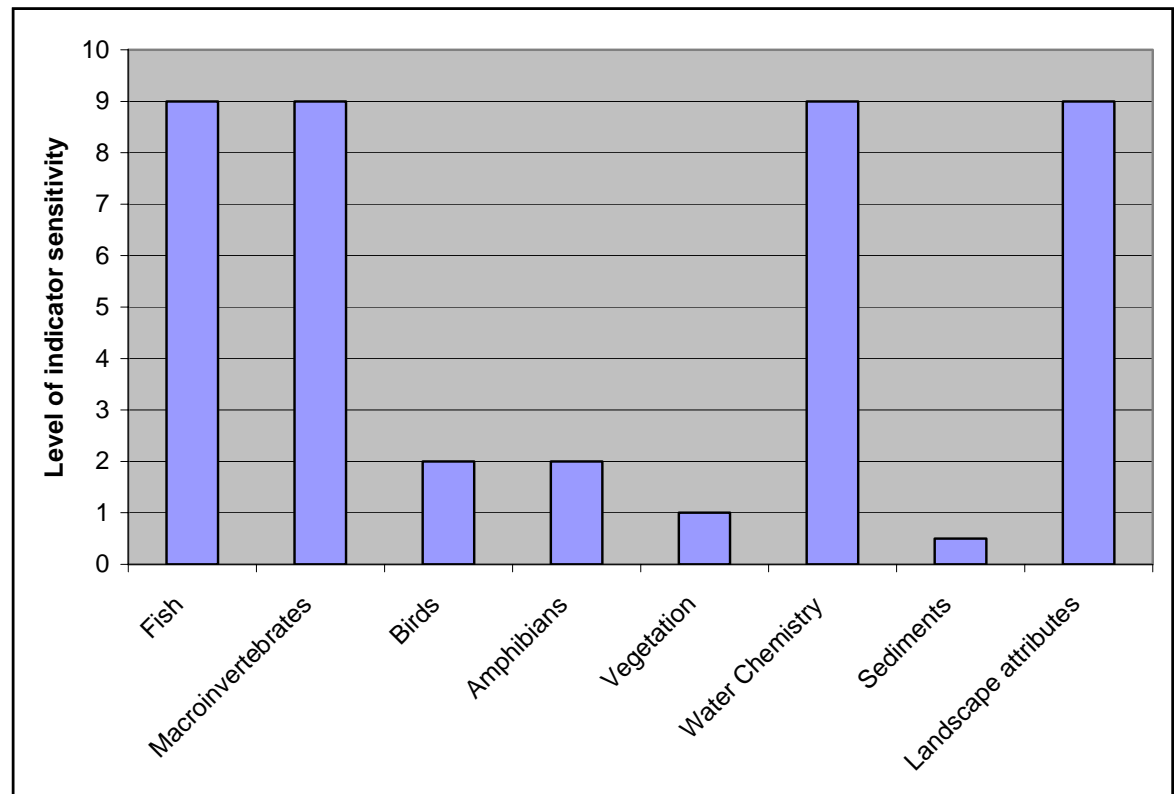
Indicator Sensitivity to Wetland Condition Changes

- Scoring (summed) for metrics:
 - Indicator response to degradation (Good/Poor)
 - IBI functionality across space/time (Good/Poor)
 - Demonstrated use throughout Great Lakes (Y/N)
 - Demonstrated use in multiple wetland types (Y/N)

Good = 1, Poor = 0

Y = 0.5, N = 0

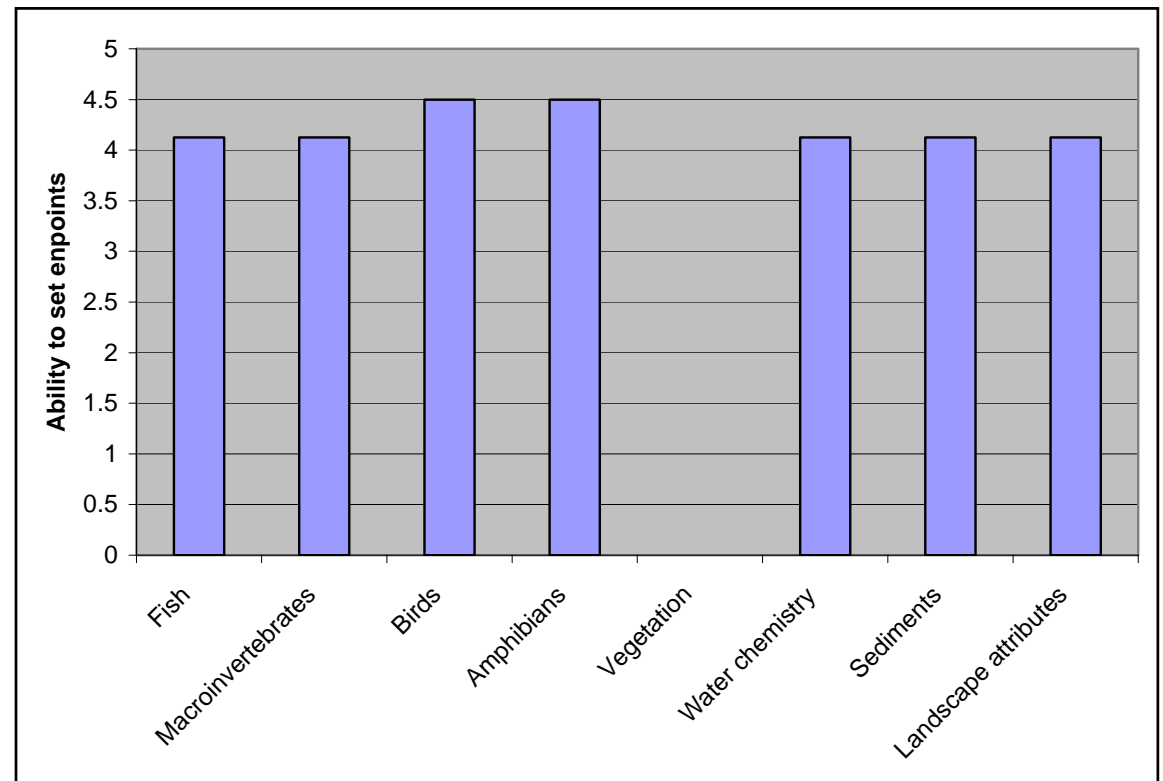
- Weighting:
Sensitivity scores greater than 2 were multiplied by 3



Ability to Set Endpoints or Attainment Levels

- Scoring (summed):
 - Existence of endpoints:
 $Y = 2.5$ $N = 0$
 - Length of sampling period:
 ≤ 1 year = 0.25 2-4 years = 0.375 5+ = 0.5

- Weighting:
Attainment scores greater than 2 were multiplied by 1.5



Overall Indicator Scoring

Recommendations (>20):

Water Chemistry

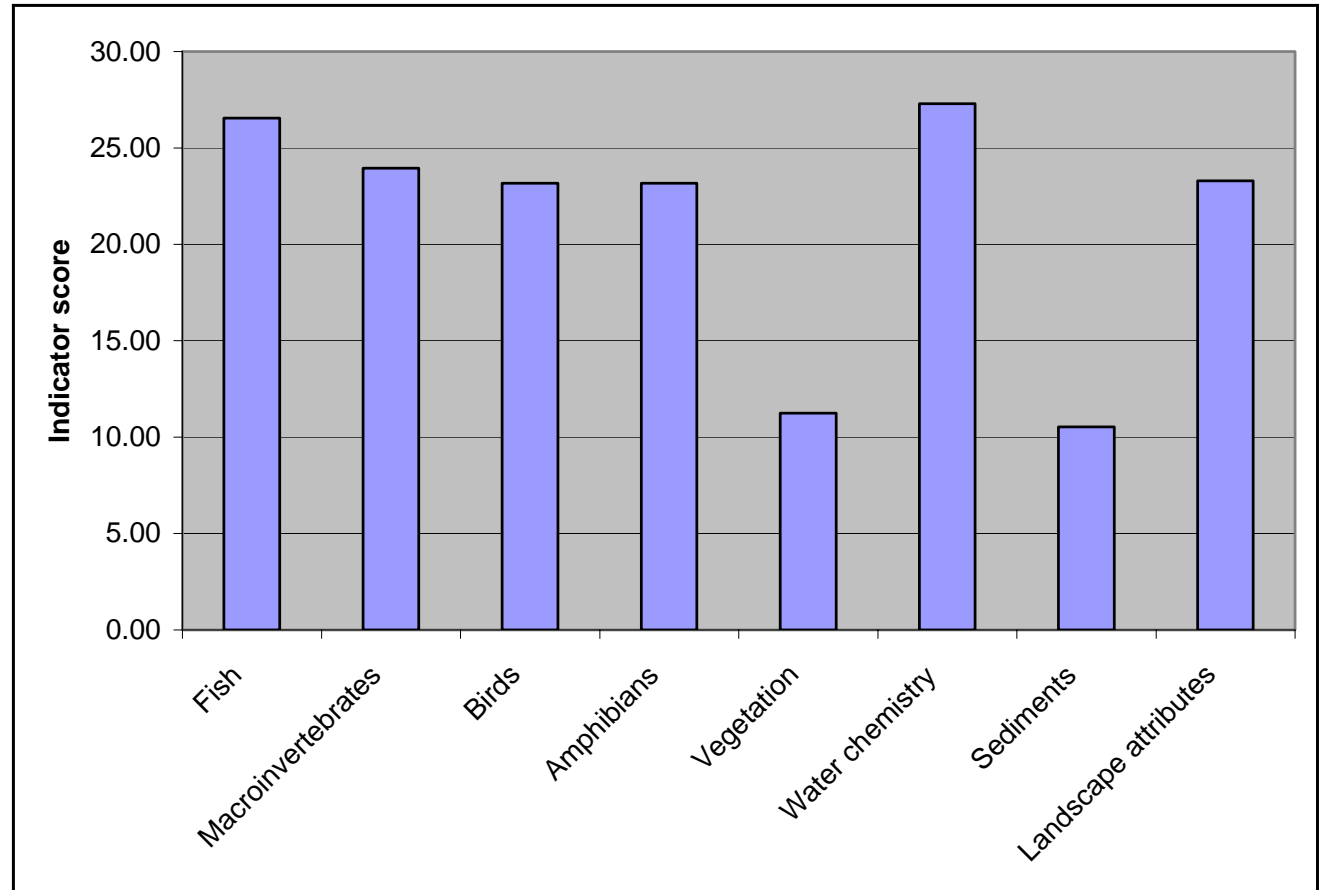
Fish

Macroinvertebrates

Landscape Attributes

Birds

Amphibians



Optimizing for Cost

- Removed applicability, complementary data and attainment
- Weighted labor, effort and expenses, measurability and indicator sensitivity more heavily

Recommendations:

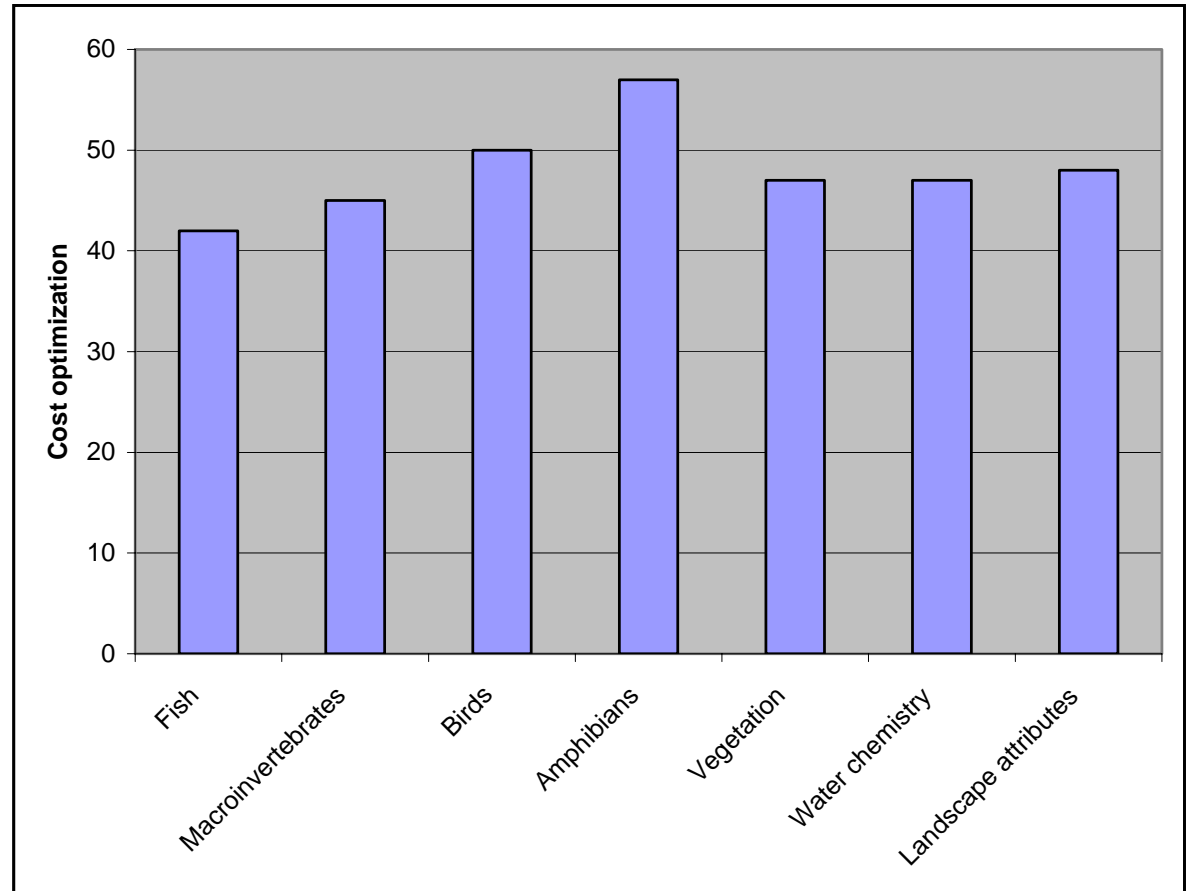
Amphibians

Birds

Landscape attributes

Water chemistry

Vegetation



Conclusions / Recommendations



Based on overall indicator evaluation, we recommend that monitoring programs include water chemistry, fish, macroinvertebrates and landscape attributes.

- Highest degree of sensitivity, applicability, measurability and complementary data availability for the lowest cost

If cost is a limiting factor, we recommend that monitoring programs sample amphibians, birds and landscape attributes

Acknowledgements

A photograph of a pond with lily pads and tall reeds under a blue sky with white clouds. The pond is filled with green lily pads and tall, thin reeds. The sky is bright blue with scattered white clouds. The text 'Acknowledgements' is centered at the top of the image.

- Great Lakes Commission
- Project teams: Joel Ingram, Don Uzarski, Steve Timmermans, Ferenc de Szalay, and Doug Wilcox