

Developing a Cooperative Monitoring Strategy for Lake Ontario

2008 Intensive Year Planning Workshop

Kingston, Ontario

October 23 & 24, 2006

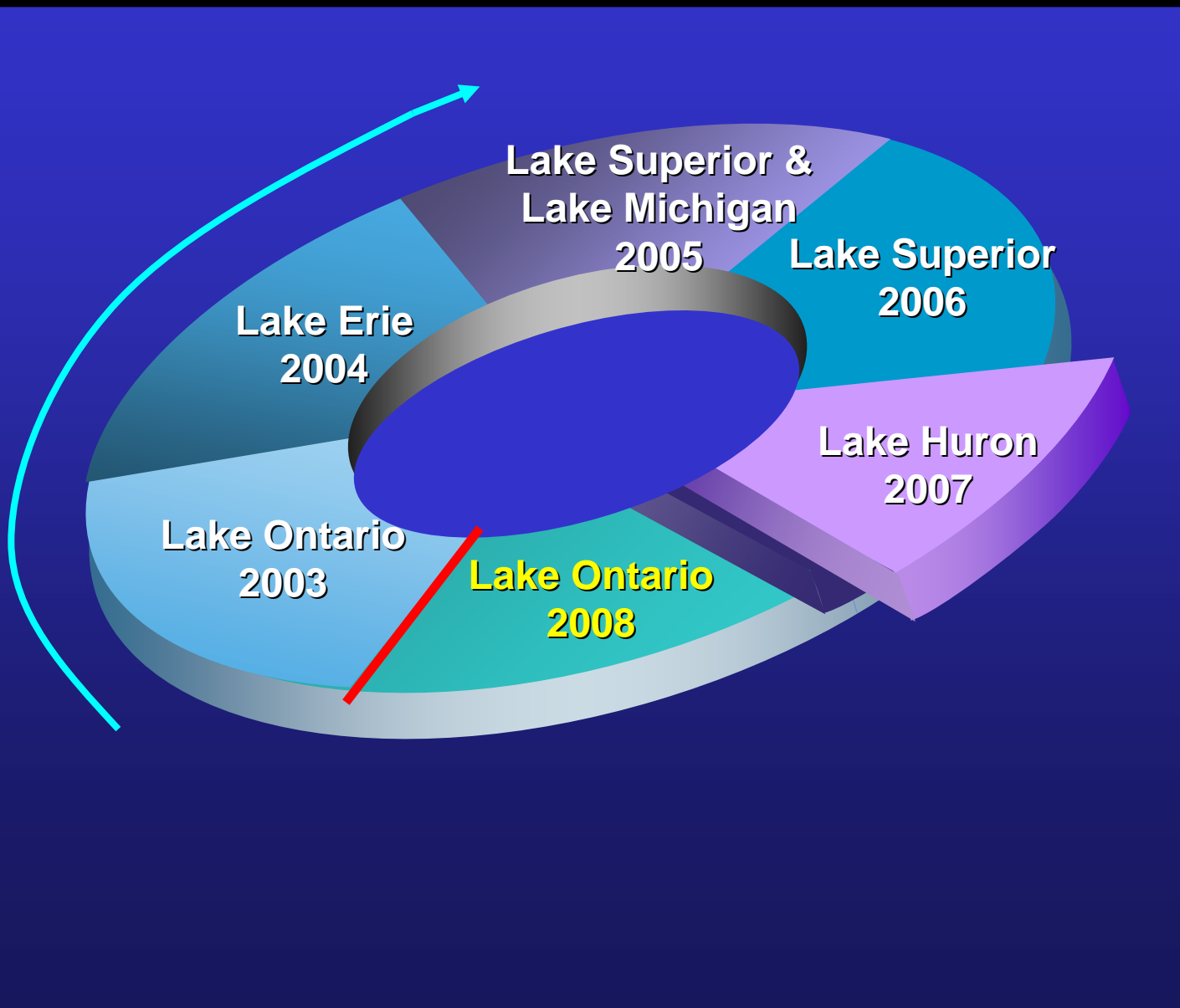


Lake Ontario Lakewide Management Plan



**International Joint Commission
Council of Great Lakes Research Managers**

5 Year Rotational Cycle for Great Lakes Cooperative Monitoring



Lake Ontario Lakewide Management Plan



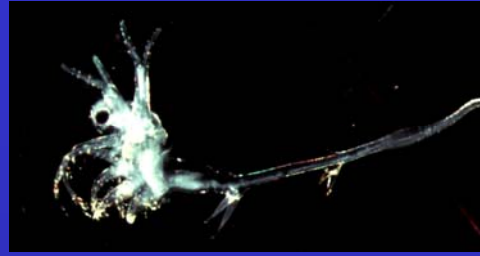
USEPA Region 2
NYS Dept. of Environmental Conservation
U.S. Fish & Wildlife Service



Environment Canada
Ontario Ministry of the Environment
Ontario Ministry of Natural Resources
Dept. of Fisheries & Oceans Canada

- Restore physical, chemical & biological integrity of the Lake Ontario Ecosystem.
- Address Lakewide Problems requiring coordinated binational actions.

Lake Ontario Invasive Species Impacts

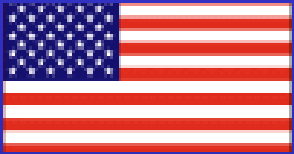


Invasive aquatic species threaten:

- Valuable Commercial / Recreational Fishery
- Efforts to restore naturally reproducing native prey fish, trout and salmon.
- Predictive ability of computer food web models

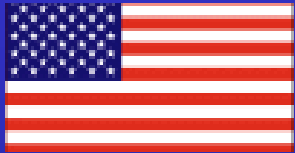


U.S. – Canada Great Lake Water Quality Agreement



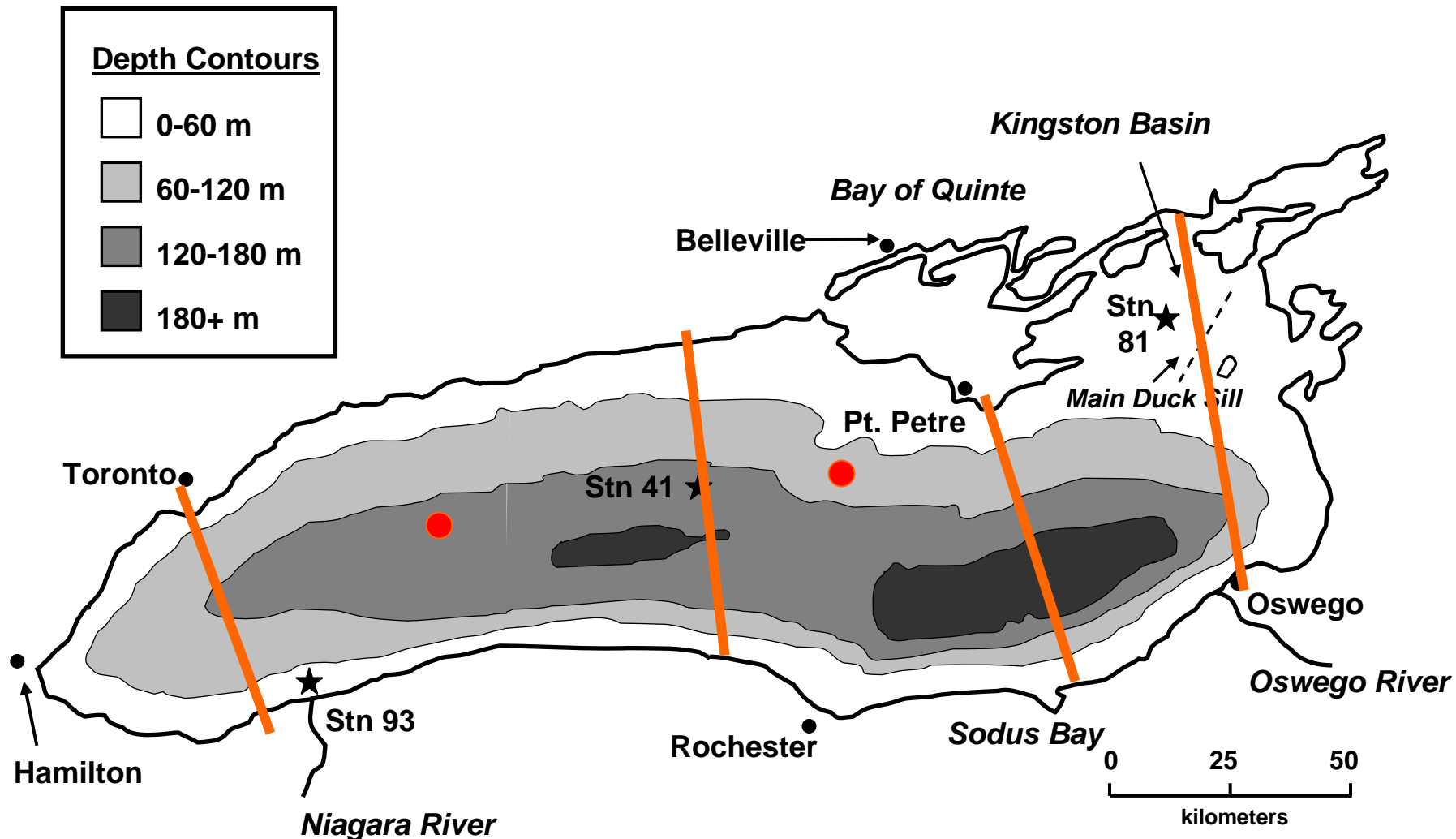
Lake Ontario Lower Aquatic Food Web Study (LOLA)

Spring 2006 Final Recommendations



LOLA Sampling Locations (28 Stations)

April, August, September & October Sampling Events



Lake Ontario Lower Aquatic Foodweb Study (LOLA)

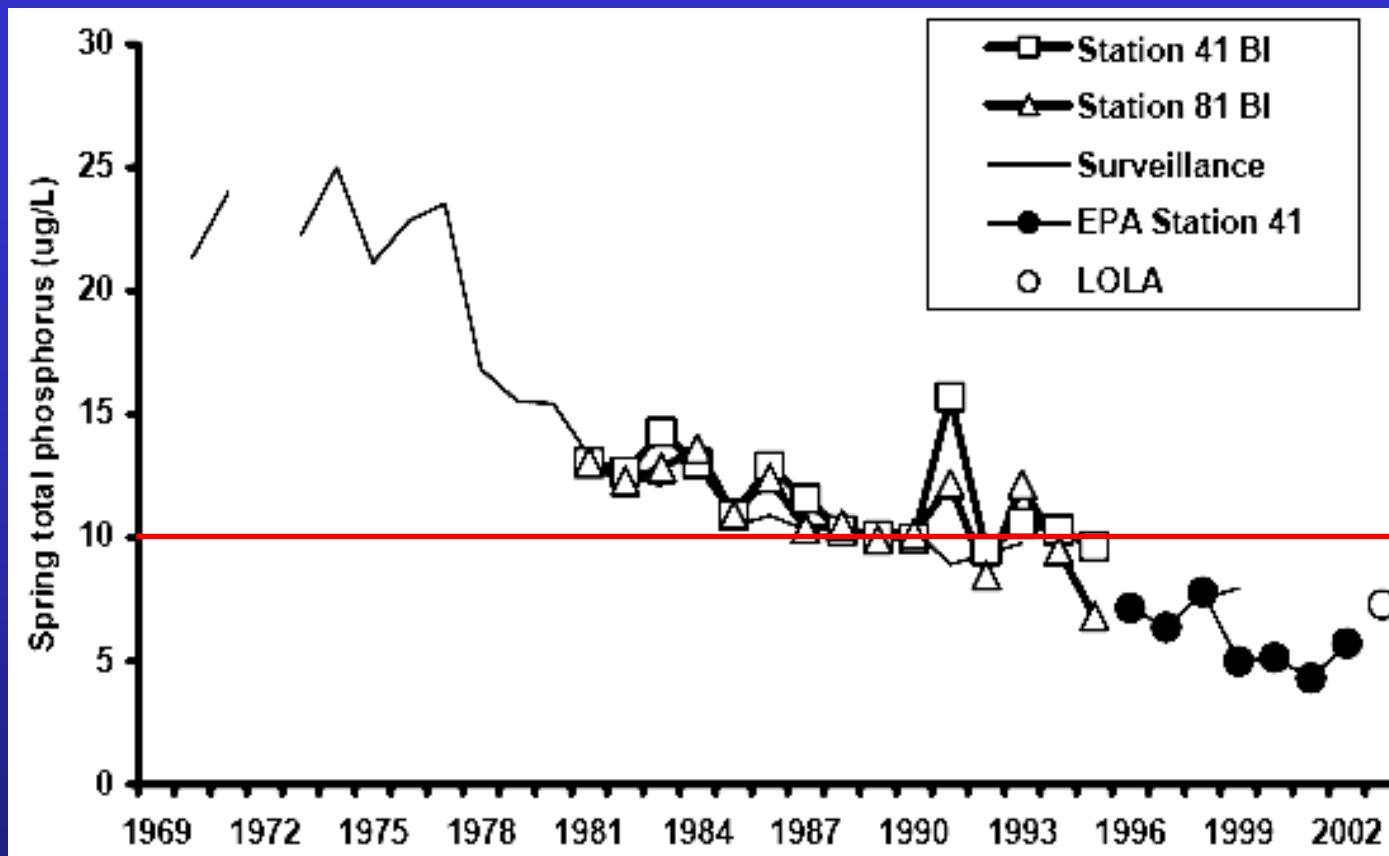
Understanding Changes in a Post Zebra Mussel Foodweb

Project Partners

- EPA Great Lakes National Program Office
- Department of Fisheries & Oceans Canada
- EPA Office of Research & Development, Duluth
- Great Lakes Fishery Commission
- National Oceanic & Atmospheric Administration
- Ontario Ministry of Natural Resources
- Cornell University
- University of Toronto
- State Univ. of New York, ESF



Open Lake Spring Total Phosphorus Well Below Target



Nearshore Coastal Zone Remains Problematic

- Shoreline communities alarmed by algal blooms
- Cyanotoxin & Botulism concerns
- Eutrophication – Dreissenid relationships?



2006 LOLA Final Recommendations

Programmatic Development

- Establish a Binational Lower Food Web Task Force
- Coordinate annual monitoring & reporting of existing fixed station programs.
- Intensive lakewide surveys every 5 years
- Reconsider monitoring needs of nearshore zone

Role of Lower Aquatic Food Web Task Force

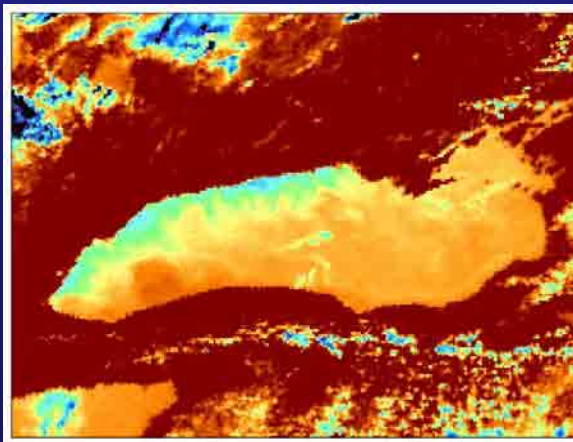
- Advise the Lake Ontario LaMP & GLFC
- Improve coordination & reporting
- Promote use of new technologies
- Work to secure funding



2006 LOLA Final Recommendations

Upgrade Technology & Monitoring Approaches

- Utilize Remote Sensing Technologies
- Incorporate food web bio-markers
- Evaluate new lower Food Web assessment tools
- Mesh field assessment with experimental studies



Workshop Objective

Develop 2008 Cooperative Monitoring Plan

Major LaMP & GLFC Needs

- Characterize lower aquatic food web status
- Improve characterization of “near-nearshore” zone
- Conduct lakewide lake trout assessment
- Incorporate new monitoring technologies
- Build new partnerships



Great Lakes Mission Impossible

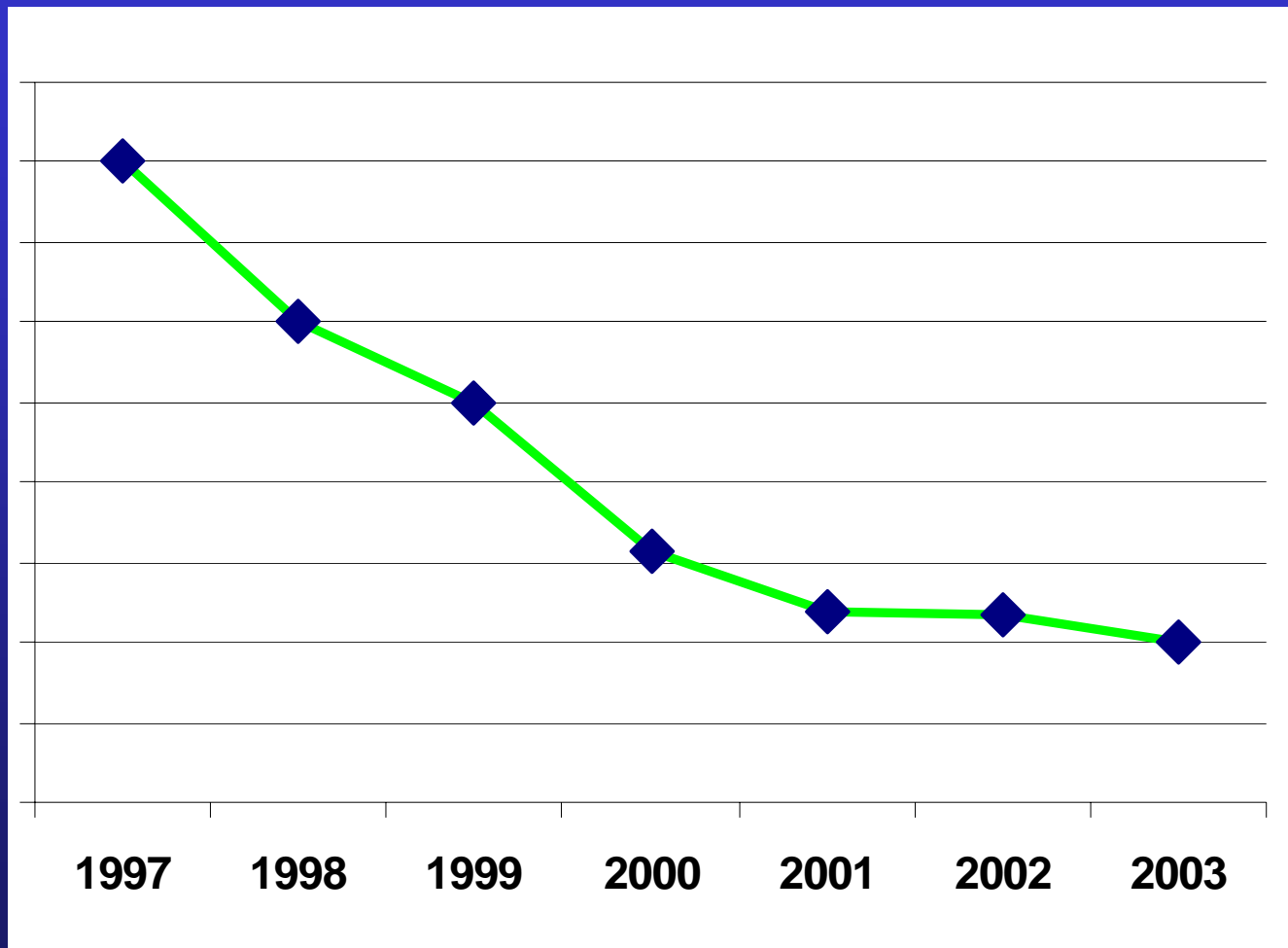
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“ This Lake Ontario monitoring project is extremely important but it has no budget, no support staff and it’s due tomorrow. ”

New York Great Lakes Basin Program Support

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Putting Together a Great Proposal

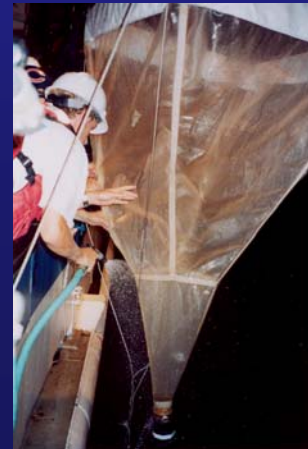
Competing for diminishing resources & winning

- Binational, multi-partner, government + academic
- “Horizontal integration” of existing efforts
- Leverages resources
- Links to key government program objectives
- Promotes long term effort



Lake Ontario Cooperative Monitoring

People make it work!



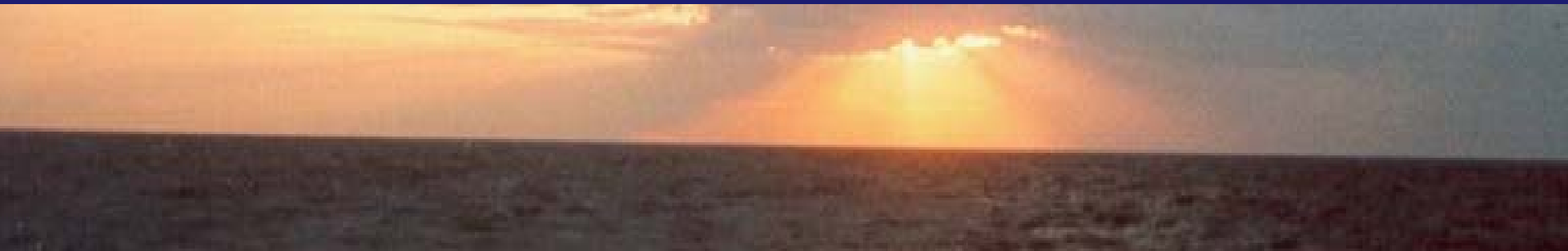
Recommendations for a Binational Approach to Lake Ontario Lower Aquatic Foodweb Monitoring

- Establish a Lower Aquatic Food Web Task Force to better coordinate annual monitoring & reporting of existing fixed station programs.
- Conduct intensive lakewide assessments every 5 years.
- Better understand watershed impacts on nearshore coastal waters.
- Incorporate new remote sensing, assessment tools & technologies.
- Mesh field studies with experimental studies.



Lakewide Management Plan Priorities

- Reduce Toxic Contaminant Inputs
- Restore Naturally Reproducing Native Species
- Control Exotic Species
- Conserve & Restore Habitat



Measuring Progress: Lake Ontario Ecosystem Indicators

- Critical Pollutant Indicators

Concentrations in Water, Fish & Gull Eggs



- Lower Foodweb Indicators

Nutrients, zooplankton, prey fish



- Upper Foodweb Indicators

Populations: Bald Eagle, Lake trout,
Herring Gulls, Mink & Otter

