

International Joint Commission

COUNCIL OF GREAT LAKES RESEARCH MANAGERS



Council of Great Lakes Research Managers

- Provides advice to the IJC on research programs and needs
- Created in 1984 to help the IJC provide effective leadership, guidance, support and evaluation of Great Lakes research as it applies to the Great Lakes Water Quality Agreement
- Provides a forum for the exchange of ideas about Great Lakes research management

Council Terms of References

- a.** Promote communications, cooperation, collaboration and coordination between researchers, agencies and Parties in addressing IJC priorities. Specifically the Council will encourage the promotion of interjurisdictional and interdisciplinary planning and coordination.
- b.** Encourage preparation and dissemination of syntheses of research findings to government and non-government bodies concerned with Great Lakes management.....
- c.** Compile and summarize current and planned research programs related to the implementation of the GLWQA... and promote the transfer of research findings to basin policymakers, resource managers and the public.
- d.** Identify research needs; establish priorities and identify gaps

IJC Council Membership

- **Membership is evenly divided between the United States and Canada, consisting of individuals managing federal, state and provincial research programs and representatives from academic institutions and private industry.**

Council of Great Lakes Research Managers

Canadian Members

- Harvey Shear (Co-Chair) – Environment Canada
- Robert C. Andrews – University of Toronto
- Alex T. Bielak – (NWRI) Environment Canada
- David Blakey – Env. Health Centre, Health Canada
- Daniel A. Bondy – Can. Wildlife Service, Env. Canada
- Jan J. H. Ciborowski – GLIER, University of Windsor
- Dale Henry – Drinking Water, Ont. Ministry of Environment
- Jacinthe Leclerc – Env. Conservation, Env. Canada
- Luis G. Leigh – Env. Economics, Environment Canada
- Cheryl Lewis -- Res. & Dev. Branch, Ont. Min. of Environment
- William Meades – Natural Resources Canada

Council of Great Lakes Research Managers

United States Members

- Stephen B. Brandt (Co-Chair) – NOAA, Ann Arbor, MI
- Leon M. Carl – USGS, Ann Arbor, MI
- Joseph V. DePinto – Limno-Tech, Inc, Ann Arbor, MI
- Chris T. DeRosa – Center for Disease Control, Atlanta, GA
- Edward L. Mills -- Great Lakes Research Consortium, NY
- Paul Horvatin – US EPA, GLNPO, Chicago, IL
- Thomas C. Johnson – University of Minnesota, Duluth, MN
- Jan A. Miller – U.S. Army Corps of Engineers, Chicago, IL
- James R. Nicholas – U.S. Geological Survey, Lansing, MI
- Jeffrey Reutter – Ohio Sea Grant, Columbus, OH

Bi-National Members

- Patricia Chow-Fraser – Int. Assoc. for Great Lakes Research
- Charles C. Kruger – G. L. Fishery Commission, Ann Arbor, MI

Research Vessel Coordination

- Annual workshops since 1997
- Developed action plan
- Created list serve & expanded web site
- Increased coordination & sharing of resources

Visit: www.glsciencevessels.org





Council of Great Lakes Research Managers

RESEARCH INVENTORY

THE GREAT LAKES - ST. LAWRENCE

Internet based, interactive database

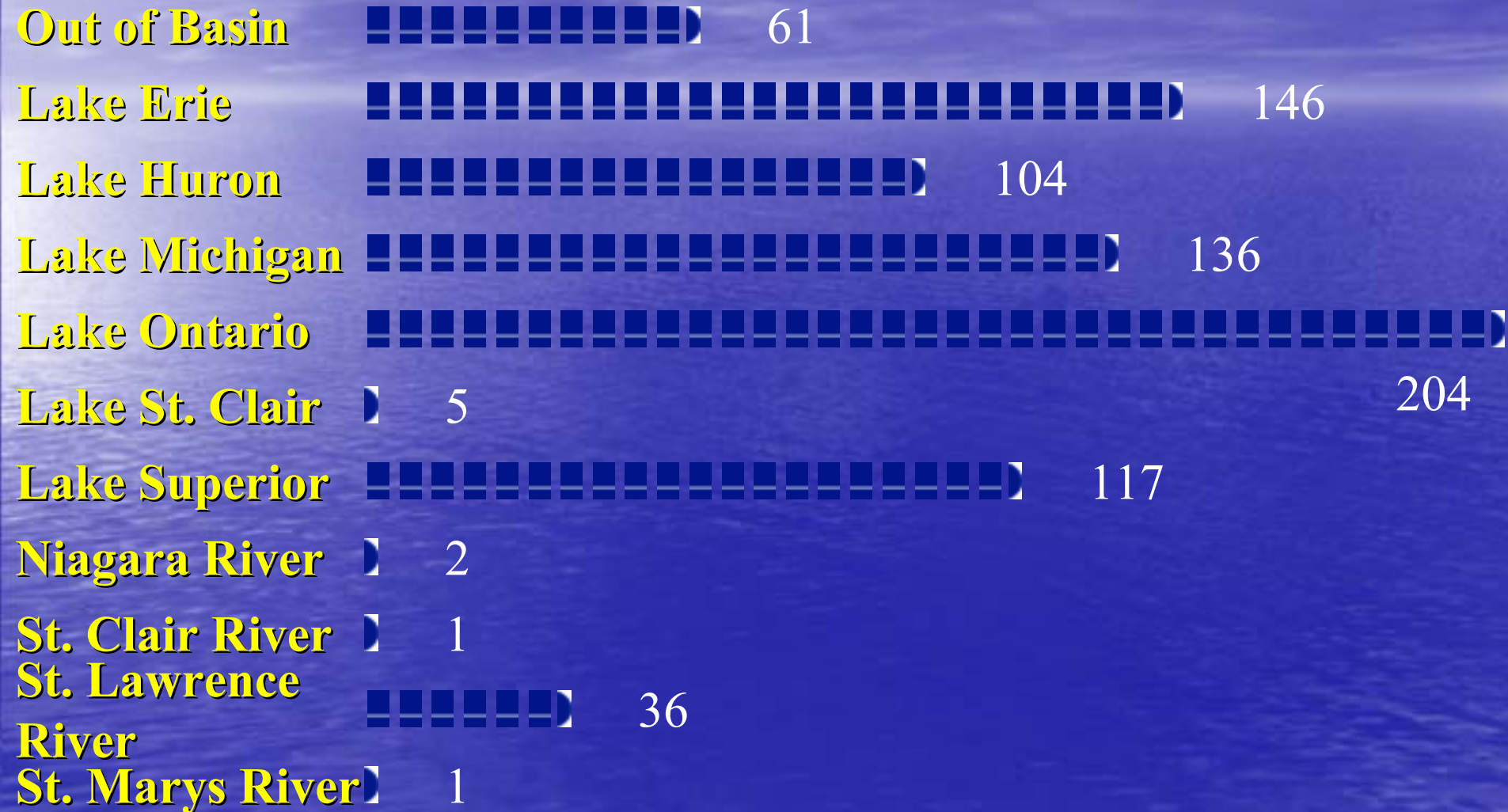
Over 600 Projects

Visit: www.ijc.org

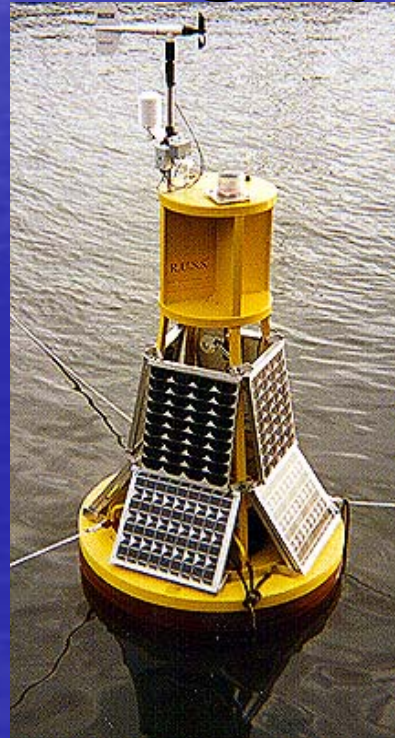
Click on:



Numbers of Studies By Basin



Integrated Great Lakes Observing System



IJC 2003-2005 Priority Cycle

**Council of Great Lakes Research
Managers should take the lead on:**

- 1. The Development an Integrated Great Lakes Observing System**
- 2. Develop a Long-Term Research Strategy**
- 3. The Coordination of a Grand-Scale, multi-agency ecosystem-level research effort on the Great Lakes IFYGL-2**

IJC and an Integrated Great Lakes Observing System

- **August 2000, Joint CGLRM/SAB Subcommittee formed**
- **September, 2000 Presentation to Commissioners**
- **2001-2, Workshop Funds received from IJC and National Sea Grant**
- **April, 2002 Formal Approval of Commissioners for Council Leadership**
- **2003-2005 IJC Priority on the development of an Integrated Great Lakes Observing System**

Integrated Great Lakes Observing System



Long-Term Monitoring and Assessment

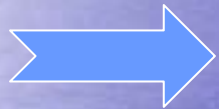
- Understanding and predicting changes in an ecosystem require baseline observations on natural scales of variability to:
 - Identify perturbations and changes
 - Put current trends into historical framework
 - Provide context to assess impact of predicted changes



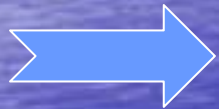
Great Lakes Observations

- What is really happening in the Lakes?
- How widespread is it?
- When did it start?
- What are the natural scales of variation?
- How do the lakes respond to extreme events?

What do we need?



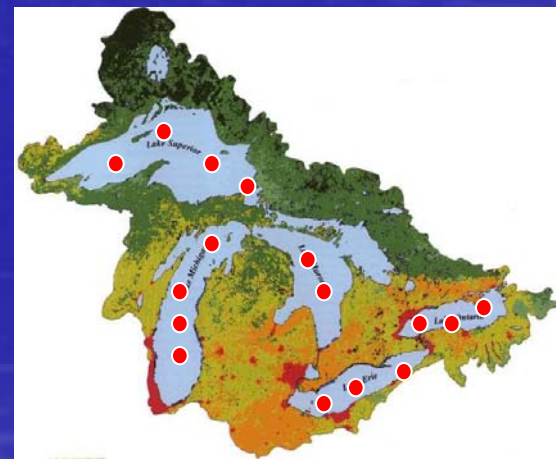
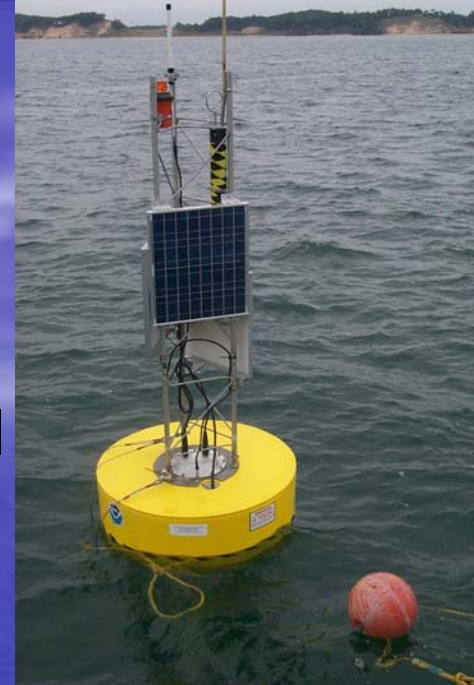
*Coordination of Existing
Observing Systems*



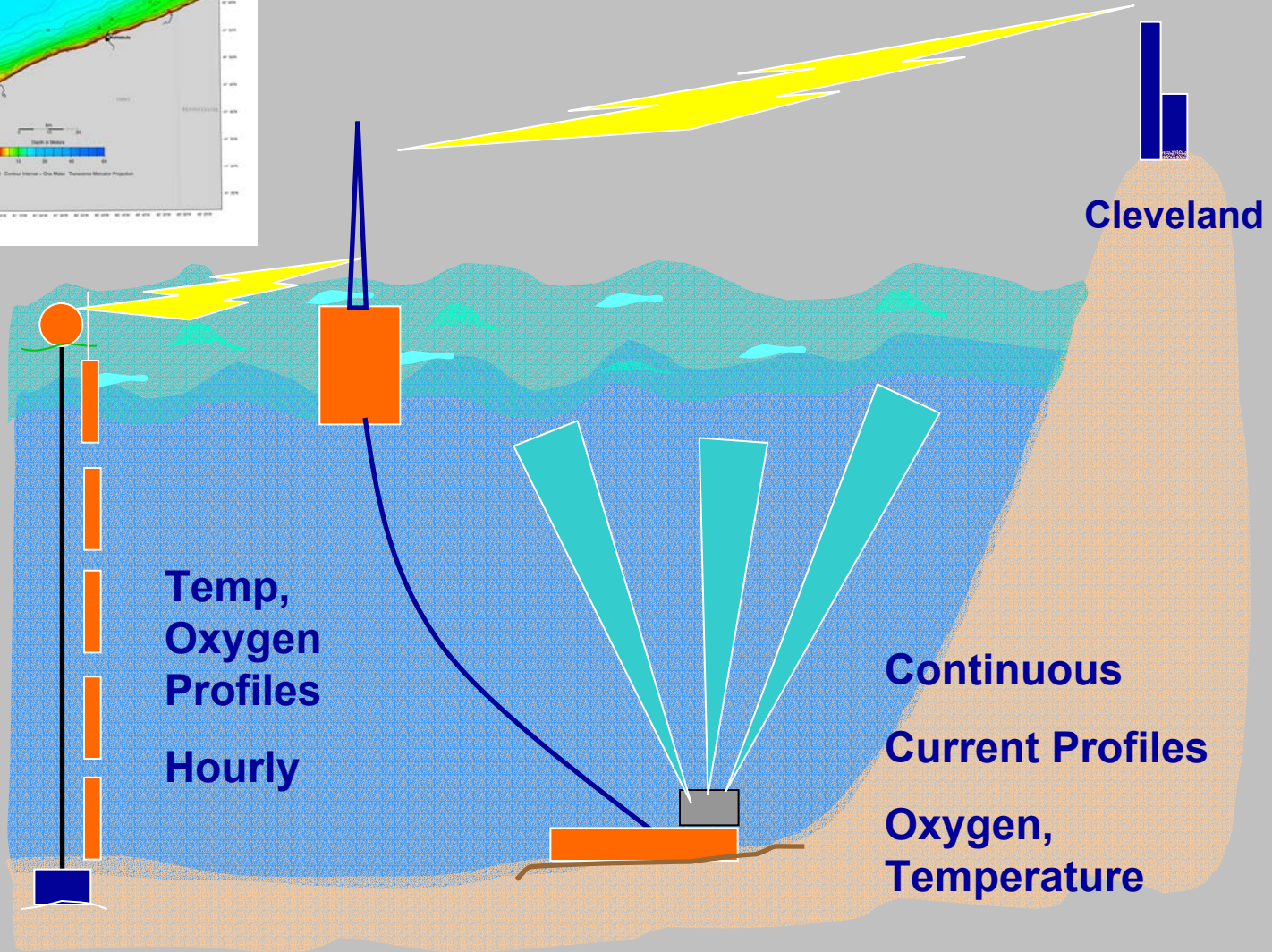
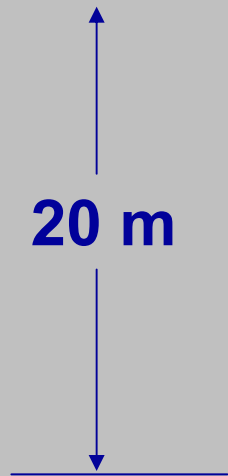
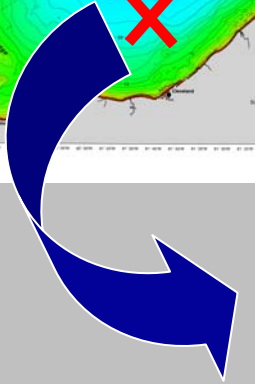
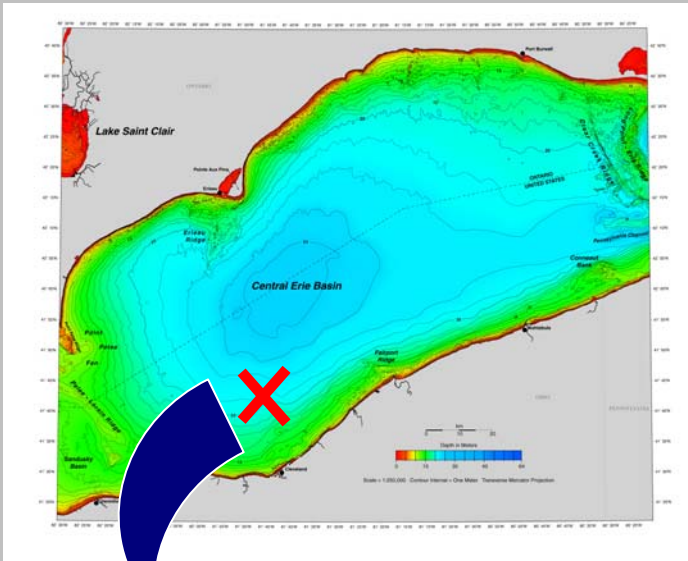
*Development of in-lake
capabilities*

What is the Overall Goal?

- Collect long-term, data on physical, biological, chemical, and meteorological conditions in the Great Lakes.
- To develop versatile, portable Observatories
- Deploy the Observatories in each Lake and integrate with existing observations
- Develop partnerships (Feds/Universities/States) to operate and maintain the Observatories
- Common, core database
- Real-Time Data Display for users

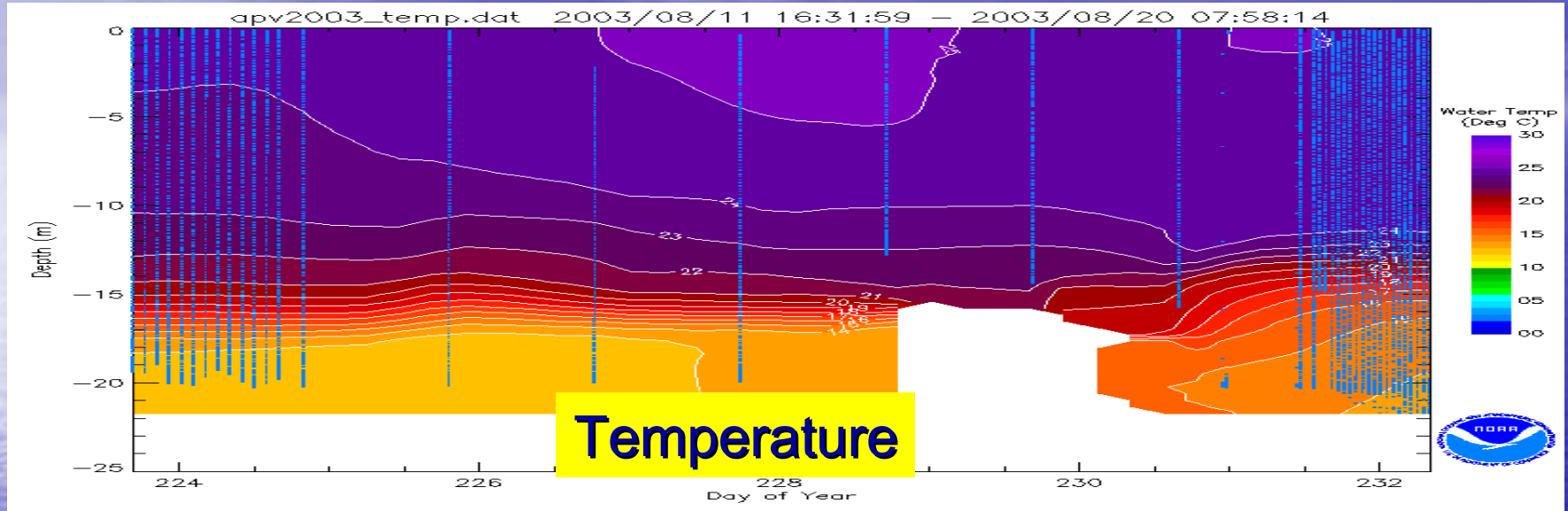


Lake Erie Observation Buoy

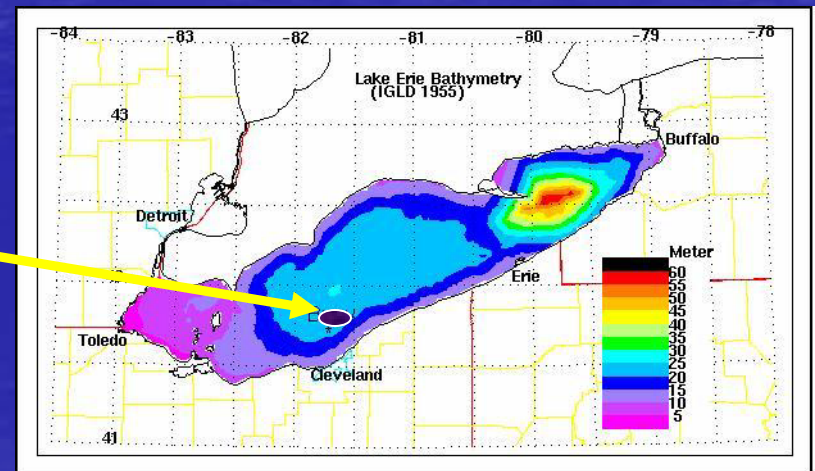


Lake Erie Observation Buoy

(www.glerl.noaa.gov/obs)

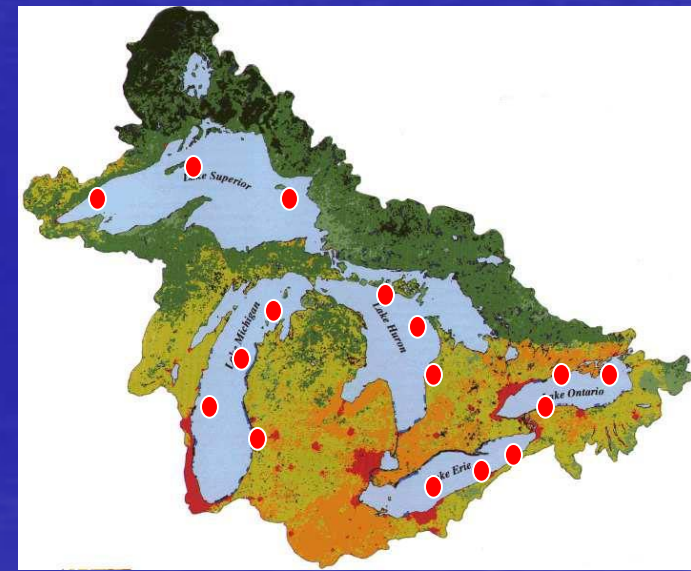
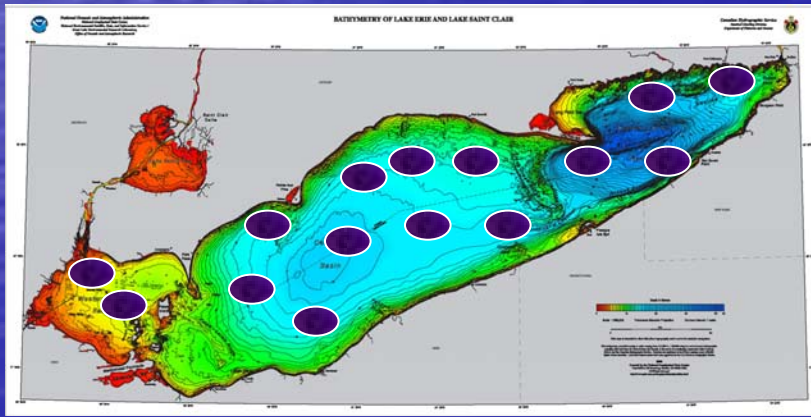


Buoy



Next Steps?

- Work with users to identify and focus the needs
- Identify technological capabilities
- Work within existing Great Lakes structures to identify partners
 - IJC Council of Great Lakes Research Managers
 - Great Lakes Fishery Commission
 - Great Lakes Commission
 - Sea Grant Extension
- Workshop and Planning Teams



Workshop: Development of an Integrated Coastal Observing System for the Great Lakes

- **Funding:** National Sea Grant Program and IJC Council of Great Lakes Research Managers
- \$20k – 2003
- **Colleagues:** NURP, Wisconsin Sea Grant

Workshop: Development of an Integrated Coastal Observing System for the Great Lakes

WORKSHOP GOALS:

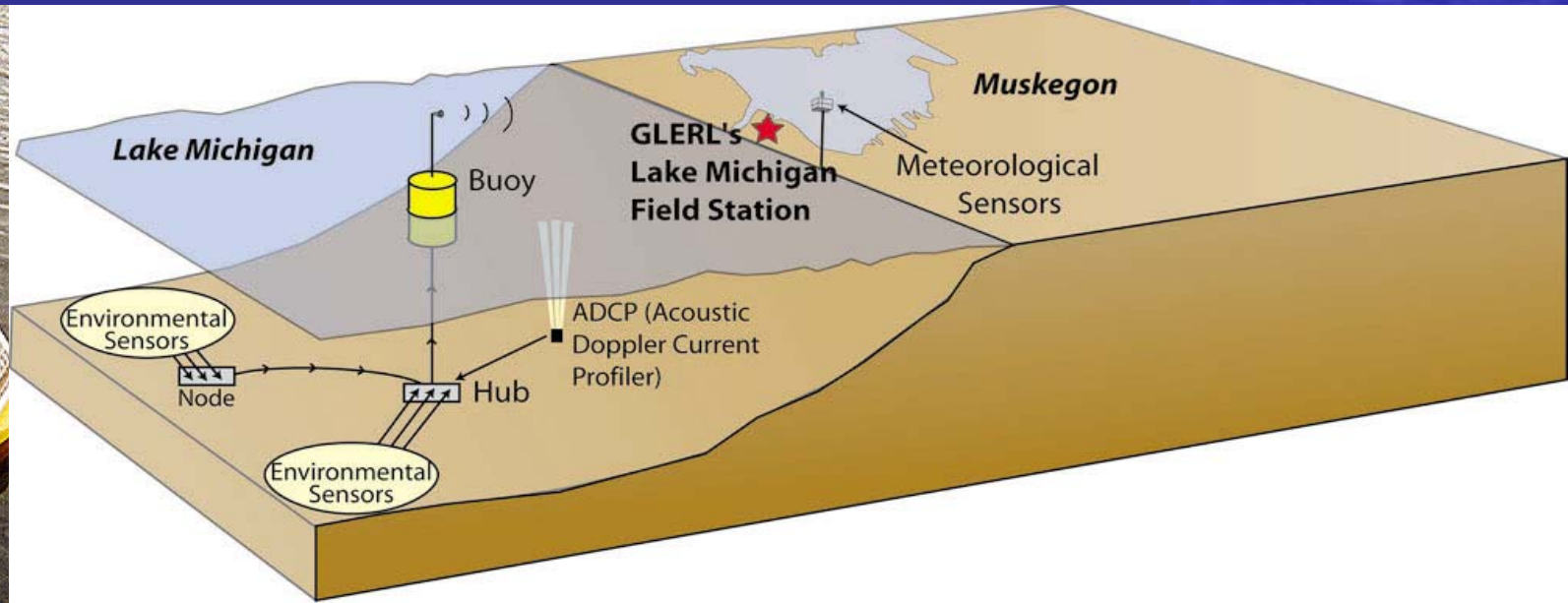
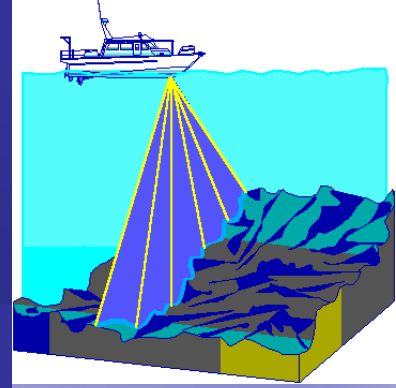
- **Assess State-of-the-Art and Future Sensor Technology**
- **Assess Data Transmission, Visualization and Analyses Approaches**
- **Evaluate what may be applicable to and needed in the Great Lakes and set up an interagency plan for the development of an observing system for the Great Lakes**



Questions?

The Future

- Great Lakes Research Strategy
- Binational Coordination
- Plans of a Great Lakes Observing System
- Proposed International Field Years of the Great Lakes



Research Needs:

Basic quantitative understanding of:

- Food webs and Invasives
- Physical – biological – chemical interactions
- Space and time scales
- Large-scale forces (e.g. climate variability, episodic events)
- **This will require:**
- Whole-lake studies
- Long-term observations
- Applications of new technologies
- Focused research strategy

Ecosystem Forecasting

Goal:

To develop and implement the capability to provide timely and continuing predictions of the impacts of chemical, biological and physical changes on ecosystems and ecosystem components.

These can range from predictions of physical characteristics such as the distribution of hypoxic water to ecological characteristics of Great Lakes ecosystem structure.

Potential Issues

e.g. Lake Erie

Eutrophication – anoxia – chemical cycling – climate variability – food webs

Forecasts:

HABs

Anoxia

Fish production

Contaminant levels

IFYGL

International Field Year for the Great Lakes

1972-73

Lake Ontario

Objective:

“to provide, through increased knowledge, a scientific basis for better management of Great Lakes resources and environmentally sensitive activities”

U.S. – Canadian program, over 150 tasks and over 500 articles published.

IFYGL-2

Large-scale three - five year program focused on ecosystem understanding and forecasting

- **Interagency / International collaboration and resource commitment**
- **Focus on a major issue(s)**
- **Use Council of Great Lakes Research Managers to spearhead the effort**

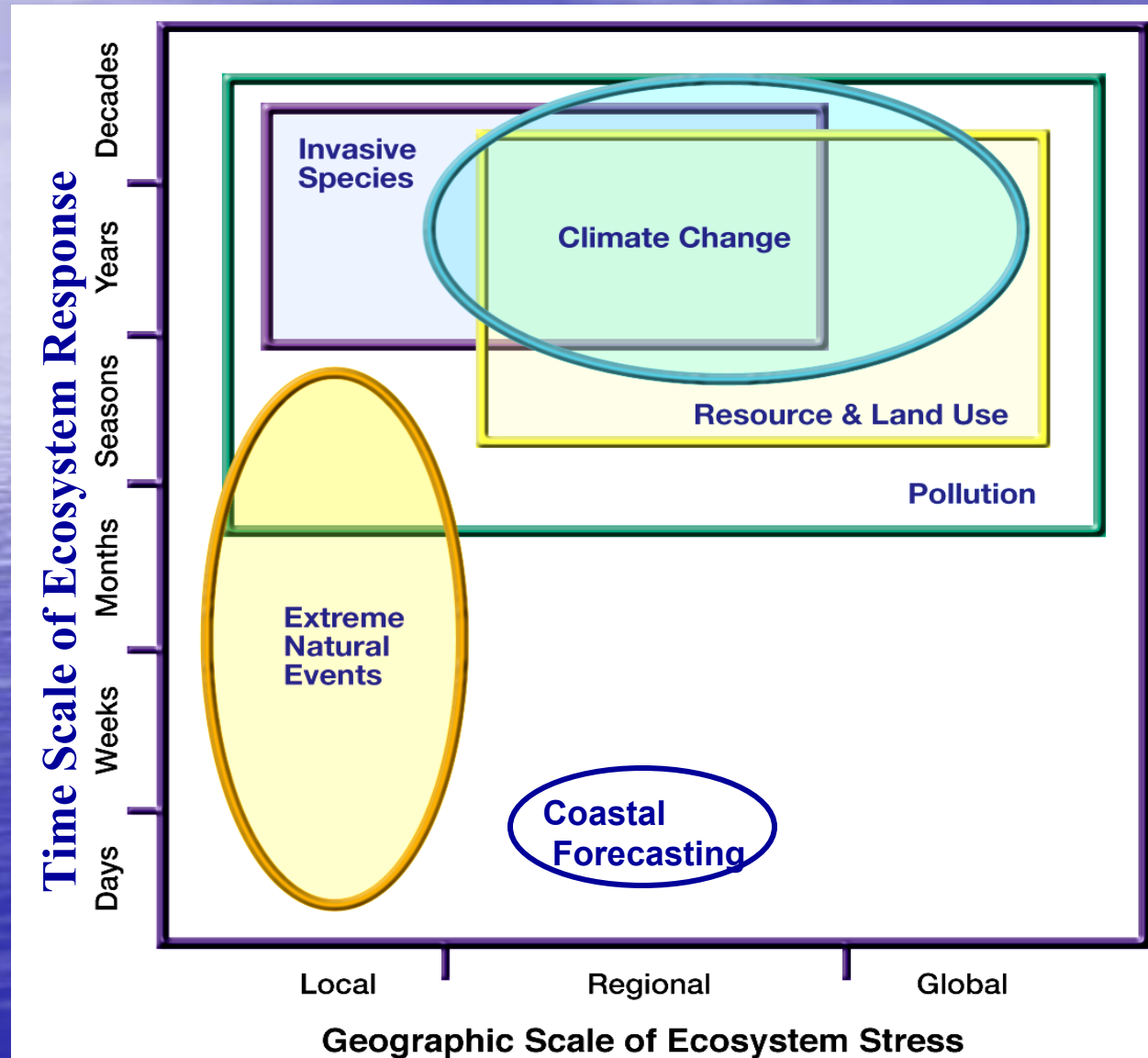
Ecosystem Forecasting

What will happen in the future? (e.g. Will there be Hypoxia in Lake Erie next year?)

When will it happen?

At what spatial scales?

Different Time and Space scales.



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- Created in 1984 to help the IJC provide effective leadership, guidance, support and evaluation of Great Lakes research as it applies to the Great Lakes Water Quality Agreement
- Provides a forum for the exchange of ideas about Great Lakes research management

Council of Great Lakes Research Managers General Objective

“ to enhance the ability of the Commission to provide effective leadership, guidance, support and evaluation of Great Lakes research programs with particular reference to programs required or funded pursuant to the provisions of the GLWQA.”

(Terms of Reference)

Recommendations:

1. Develop Ecosystem Forecasting Capability
2. Develop an Integrated Great Lakes Observing System
3. Conduct a Grand-Scale, multi-institution, ecosystem-level research effort on the Great Lakes **IFYGL-2**

Why Should the Council take this on?

1. The Council has Research Coordination and Assessing Research Needs responsibilities
2. Results will greatly aid IJC goals and an Ecosystem Approach
3. The Council is the natural leader on this
4. Actions will make the Council more relevant to IJC and the Great Lakes Community..A mechanisms for **Reinventing the Council**
5. The activities will bring national/international recognition to the Great Lakes

■ **Recommendation to IJC for 2003-2005 Priority Cycle:**

- Council of Great Lakes Research Managers should take the lead on the development of an Integrated Great Lakes Observing System
 - Provides advice related to Annex 11 of the GLWQA
 - The Council has Research Coordination and Assessing Research Needs responsibilities
 - Results will greatly aid IJC goals and an Ecosystem Approach