

Offshore: Potential Impacts to Benthos, Mussel Beds, and Fisheries

By

John E. Gannon

International Joint Commission

Great Lakes Regional Office

Windsor, Ontario, Canada

Toward Wildlife-Friendly Wind Power

Toledo, Ohio, June 27, 2006

HABITAT DEFINITIONS



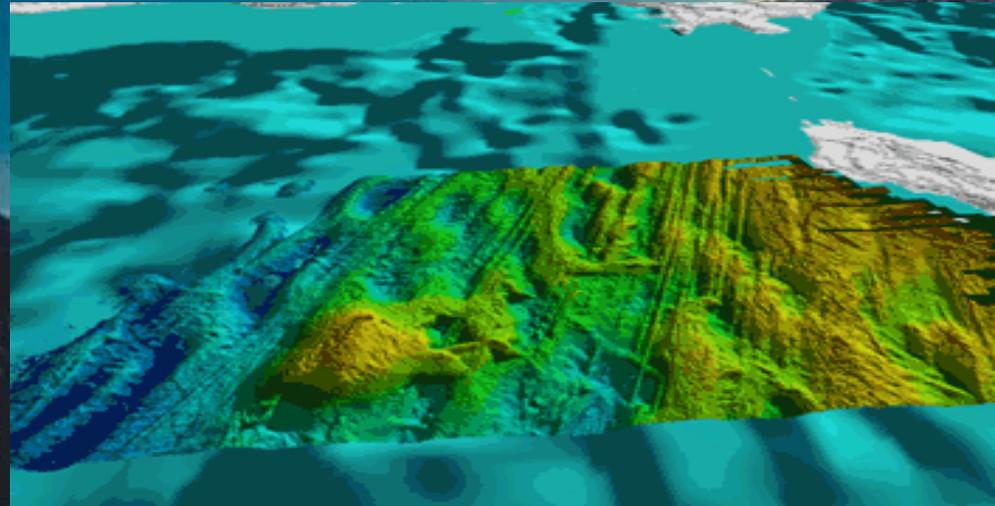
In the broad sense: Habitat is the total life support system for an individual organism. Habitat includes the physical, chemical, biological, and socio-economic components of a species' environment.



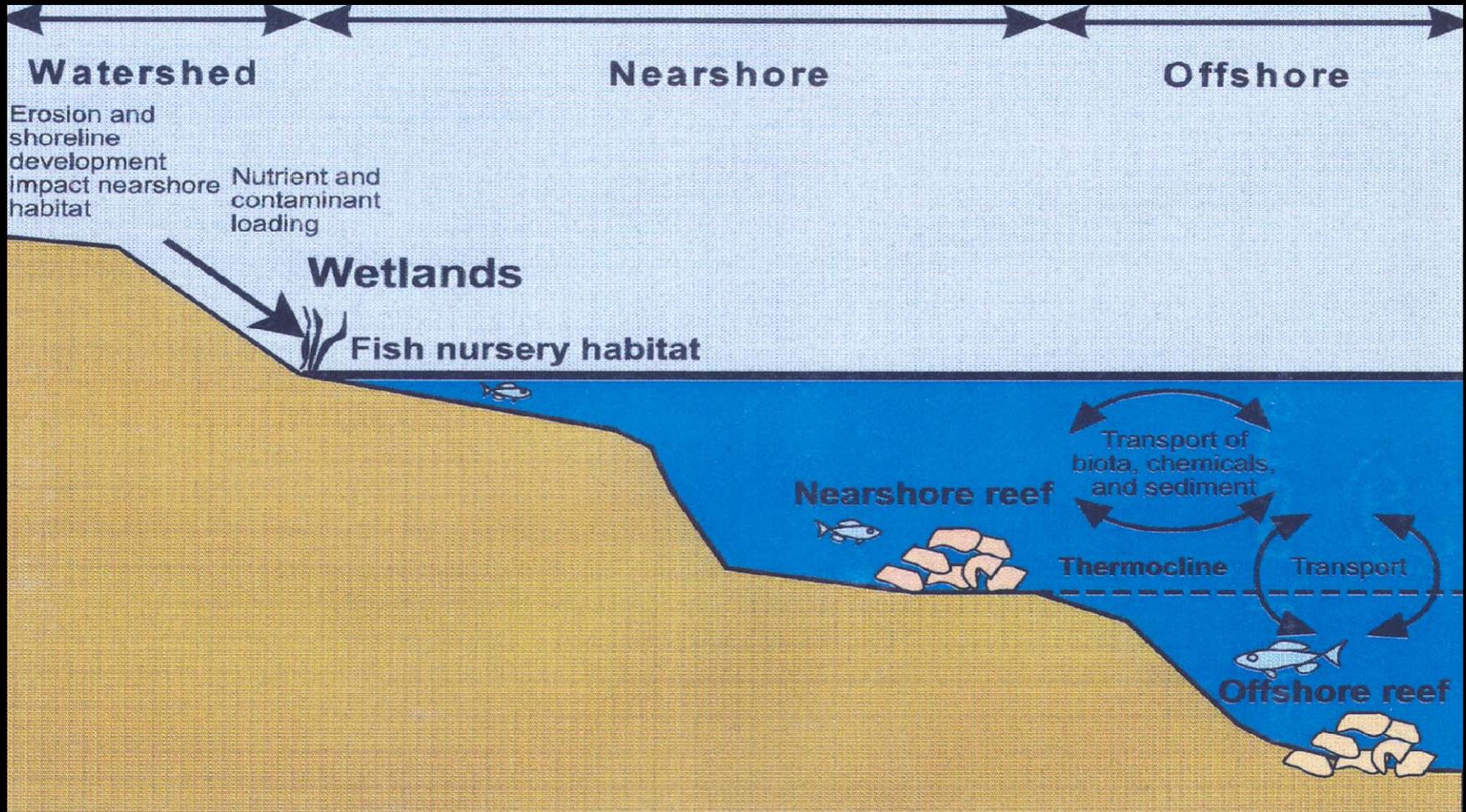
In the narrow sense: Habitat is the physical substrate and the biological community it supports.

Lakebed Habitat and Its Fragility

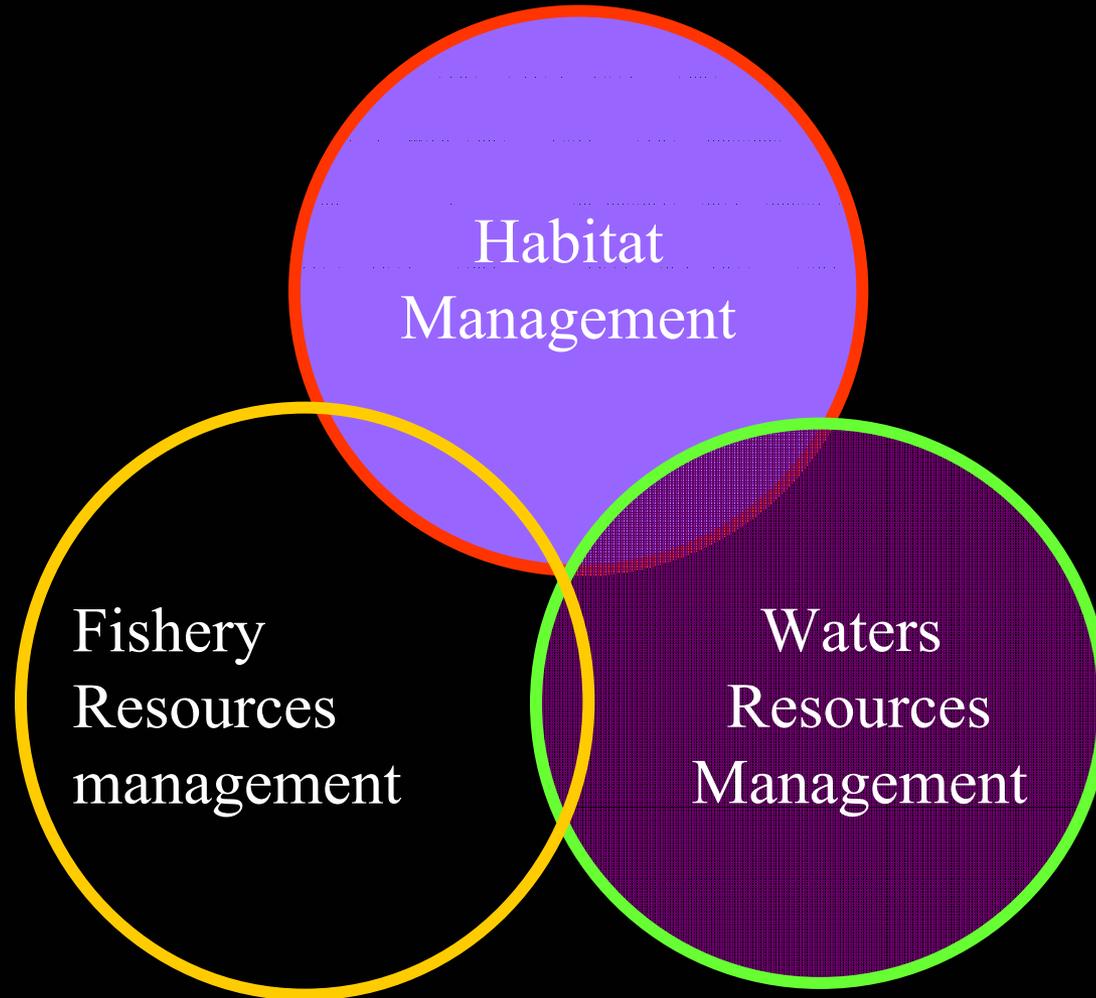
-  Provide a natural home for various fish, benthic organisms and aquatic wildlife
-  Need to maintain lakebed integrity & health
-  Can be easily damaged by improper human actions, e.g., construction projects
-  Related to many local and regional benefits:
 -  Environmental
 -  social & cultural
 -  economic

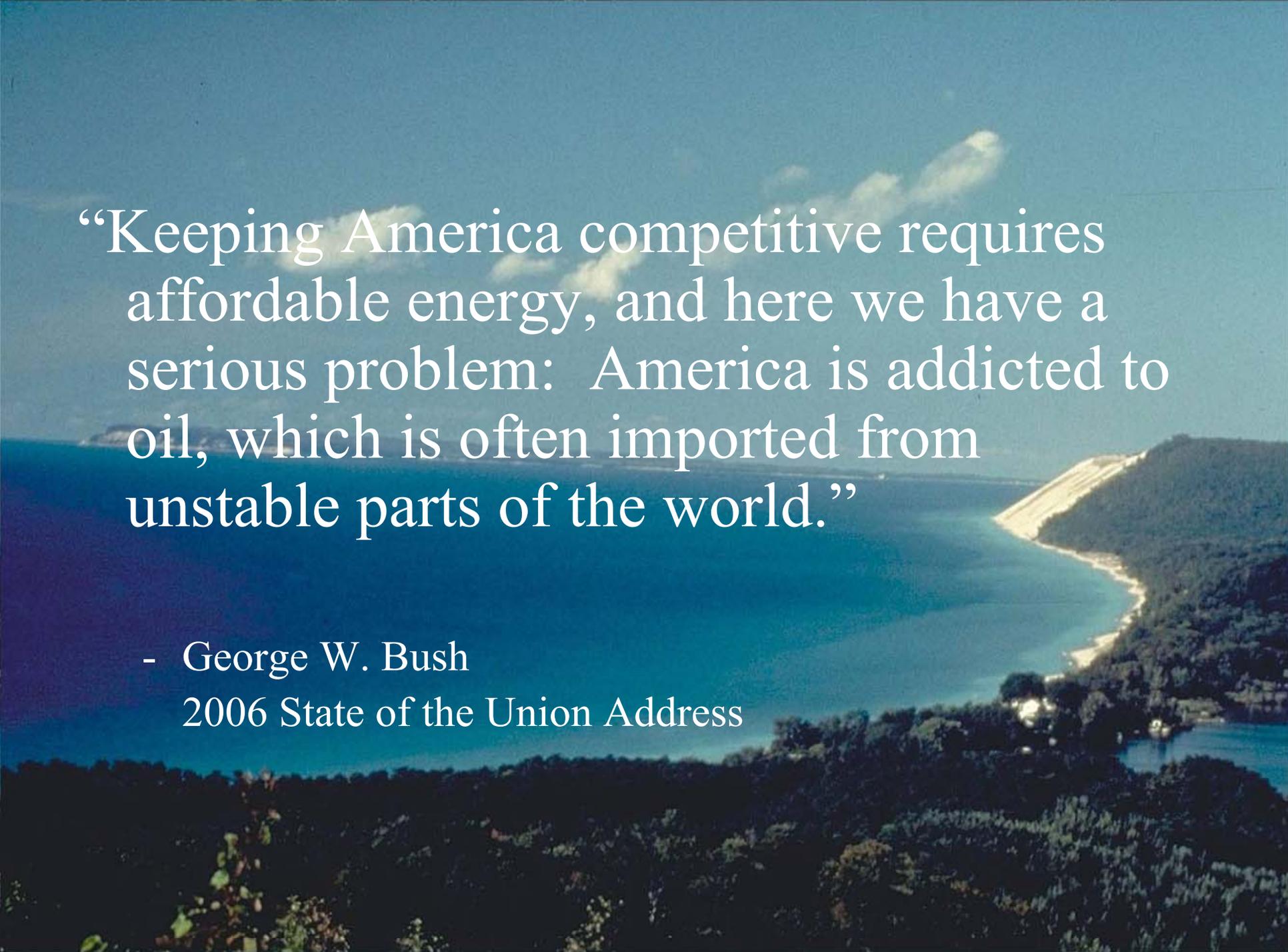


WATERSHED, NEARSHORE, AND OFFSHORE LINKAGES



Relations between Habitat, Fishery and Water Resource Management





“Keeping America competitive requires affordable energy, and here we have a serious problem: America is addicted to oil, which is often imported from unstable parts of the world.”

- George W. Bush
2006 State of the Union Address

Emerging Energy Issues

- 🐟 Present global environmental pollution from burning coal and other fossil fuels
- 🐟 Current and future worldwide crisis of energy resources
- 🐟 Renewable energy alternatives
- 🐟 Wind power development







The Who

 **GLFC initiative, 2004**

 **Project team**

 **John Gannon, IJC**

 **Steven Ugoretz, WDNR**

 **Chris Shafer, Cooley Law School (former MDEQ coastal programs czar)**

 **Dave Dempsey, GLFC member 1994-2001**

The Why

- 🐟 Increasing number of proposals to alter lakebed, esp. for energy projects
- 🐟 No commonality:
 - 🐟 Proponents may “shop” jurisdictions
- 🐟 Agency stance often reactive
 - 🐟 Tight budgets
 - 🐟 Literature, experience limited
- 🐟 Balancing public interests

The What

Objective #1

 Provide legal and ecosystem context for considering proposals for altering lake and riverbeds in the Great Lakes and connecting ecosystems.

The What



Objective #2



Recommend position statement (on cumulative impacts, acceptable materials and cost / benefits of such activities etc.) for consideration by GLFC and IJC and regulatory agencies.

The What

Objective #3

 Recommend guidelines for predicting, evaluating and avoiding or mitigating impacts to the ecosystem and to related human use.

The How

Literature Review

-  Ecological considerations/impacts

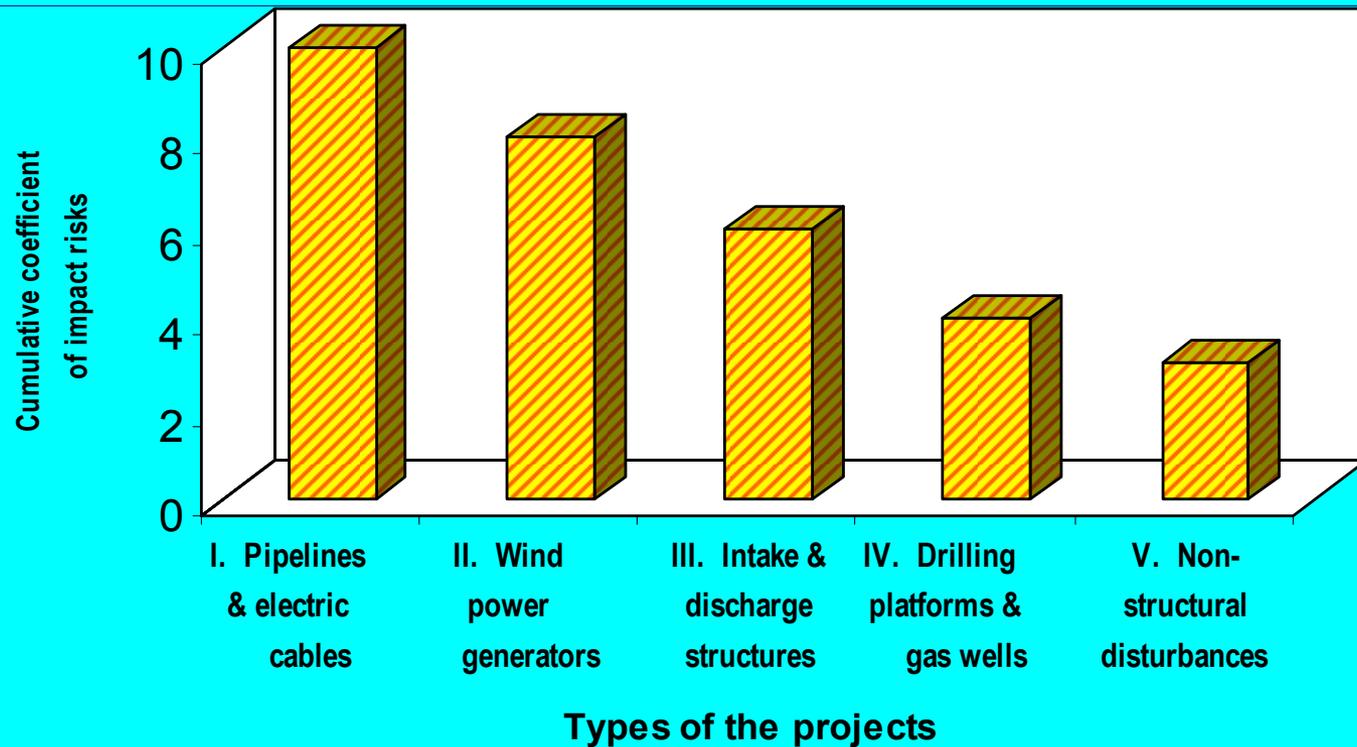
-  Legal/regulatory tools

Workshop

-  September, 2005 (Ann Arbor, MI)

-  Ecology/habitat and legal/regulatory attendees

Figure 1 Cumulative Coefficient of Impact Risks for Different Types of Lakebed/Riverbed Construction Projects



Workshop Products

-  Position statement
-  Evaluation Guidelines
-  Legal/Regulatory Framework

www.glfc.org/research/reports/dempsey.pdf

Potential Impacts on:

 **Mussel beds**

 **Benthos**

 **Fisheries**



Key Recommendations

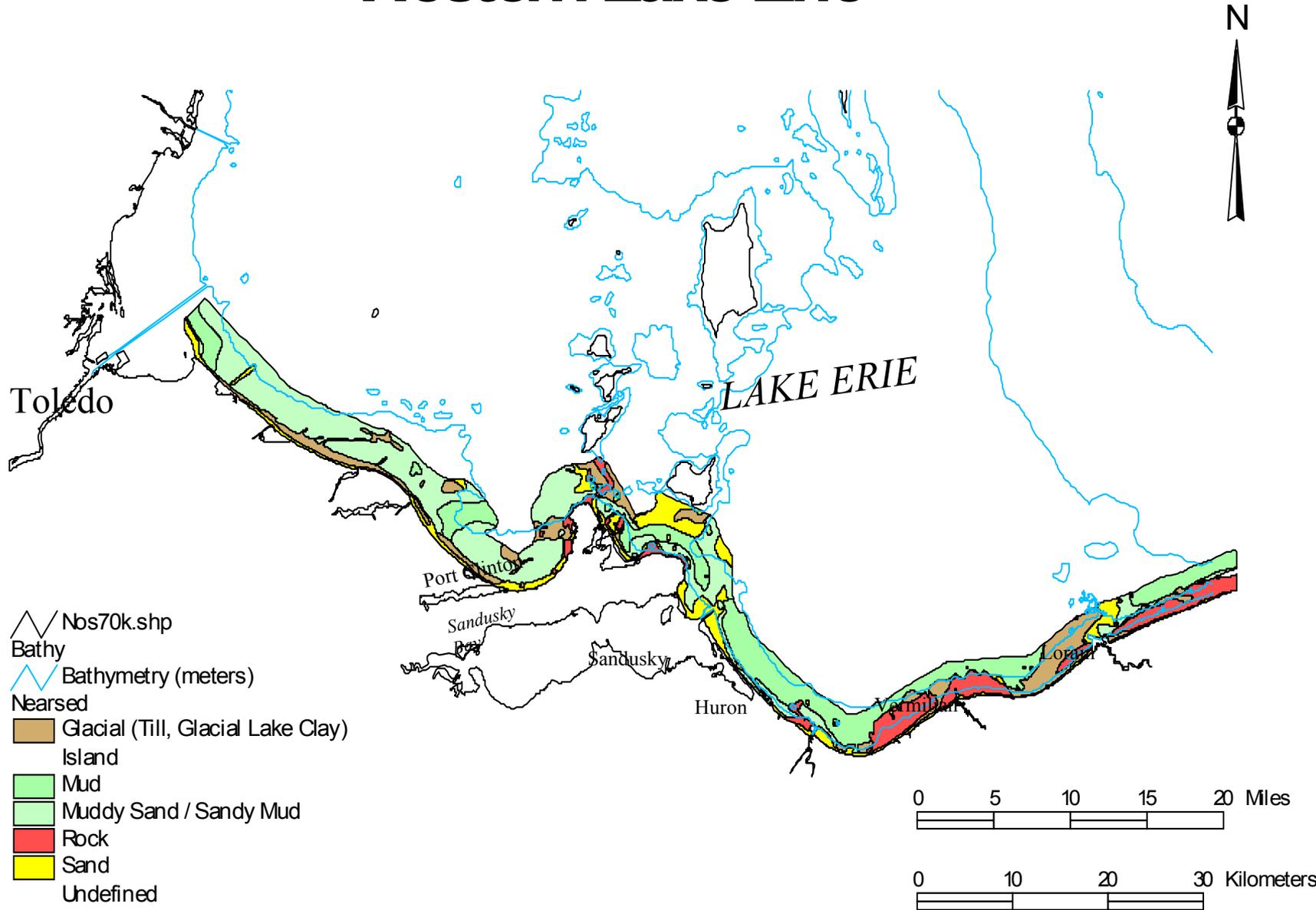
-  **The States and Ontario should use their existing legal authorities, and, where necessary, seek additional authority to adequately regulate all projects with potential, individually or cumulatively, to affect the public benefits of bottomlands.**

Key Recommendations

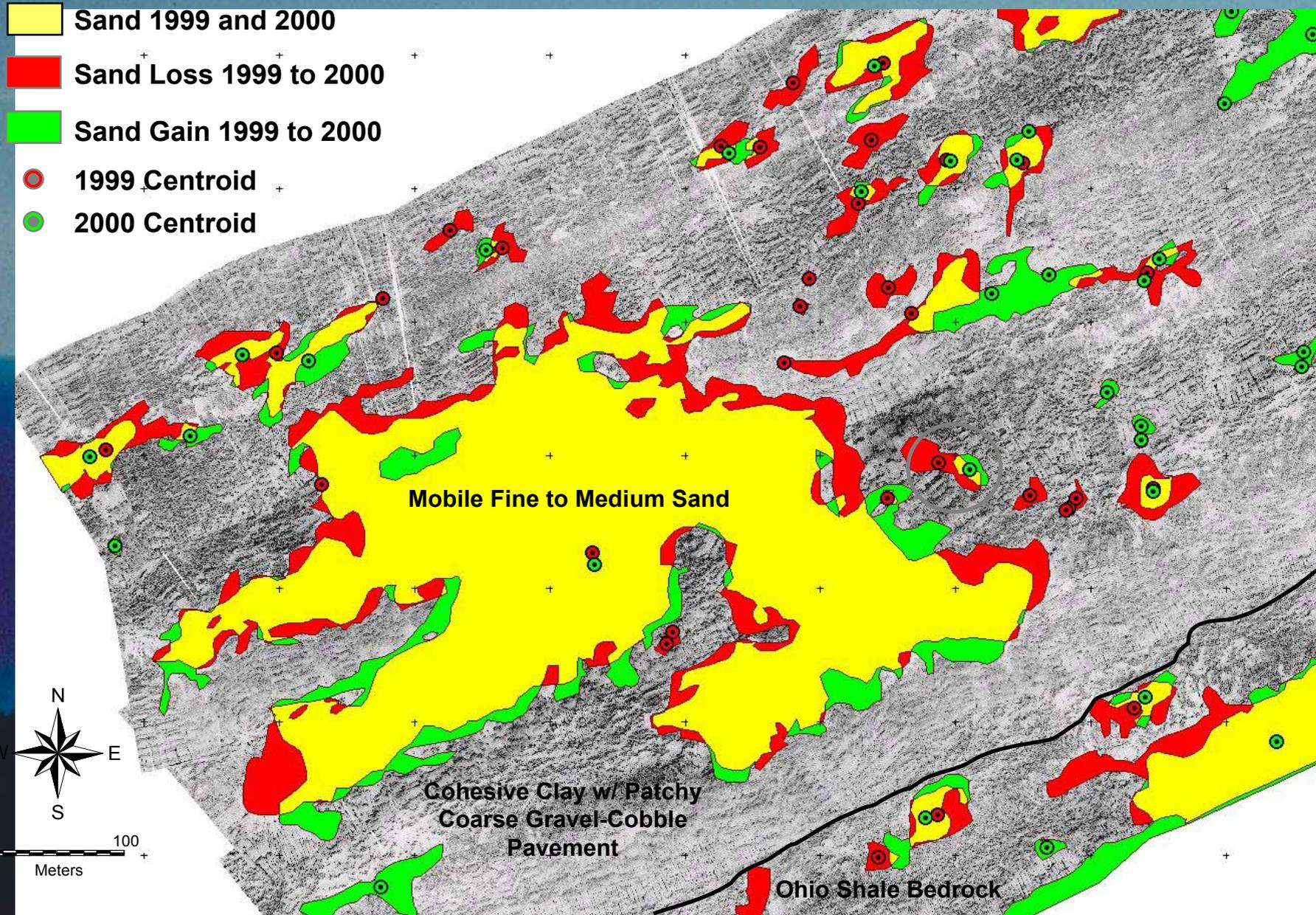


Identify and map areas that should be protected from any significant lakebed alterations, due to the sensitivity of their biological, physical, archaeological, or other values, and designate them for legal protection;

Nearshore Sediment Distribution Western Lake Erie



Painesville-on-the-Lake



Key Recommendations

-  Promote the siting of alteration projects in areas that can tolerate such disturbances;
-  Prevent, or where necessary, minimize or mitigate degradation of aquatic habitat for fish and other aquatic organisms from proposed uses;
-  Prevent or where necessary, minimize or mitigate adverse impacts to water dependent birds, and other wildlife from proposed uses;

Key Recommendations

-  **Prohibit uses of the lakebed that are not water dependent;**
-  **Require a demonstration of clear and substantial public benefit, including but not limited to environmental benefit, before authorizing such uses;**

Key Recommendations



Apply or enact mechanisms to collect fair market value for the use of bottomlands to assure the public is compensated for lakebed alterations, including lease costs;



Require long-term ecological monitoring paid for by those who undertake projects that alter lakebed habitat, and provide for adjustment or disapproval of projects that impair the trust values of bottomlands.

Hope for the Future



Ecological Restoration



**Environmentally Sustainable
Economic Development**



QUESTIONS?

gannonj@windsor.ijc.org

www.glfc.org/research/reports/dempsey.pdf