

# Lake Huron Initiative: A Work in Process

**Presented by:**

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Office of the Great Lakes**



# Lake Huron Drainage Basin



- Areas of Concern**
- 1 St. Marys River
  - 2 Spanish River
  - 3 Saginaw River/Bay
  - 4 Severn Sound
  - 5 St. Clair River

- Legend**
- Cities/Towns
  - International Border
  - Tributaries
  - Lake Huron Basin

Prepared by: Environment Canada - Atmospheric Environment Branch, Geomatics Unit

# A Joint Strategic Plan for Management of Great Lakes Fisheries (GLFC, 1997)

- The Lake Committees will identify **environmental issues** which relate to or may impede achievement of their fish community objectives and will work with **other ecosystem initiatives**, such as LaMPs, in developing and furthering plans **for achieving, refining and assessing progress on environmental and fish community objectives.**

# Activities on other Lakes

- Lake Superior Bi-National Program
- Lake Michigan Lakewide Management Plan
- Lake Erie Lakewide Management Plan
- Lake Ontario Lakewide Management Plan





# Follow-up:



1998 - Lake Huron Watershed  
Conference

# Follow-up:



1998 - Lake Huron Watershed  
Conference

1999 - Lake Huron Workshop

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1998 - Lake Huron Watershed  
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1999 - Lake Huron Workshop

2000 - Lake Huron Stakeholders

# Follow-up:



1998 - Lake Huron Watershed  
Conference

1999 - Lake Huron Workshop

2000 - Lake Huron Stakeholders  
Workshop

2001 State of the Lake Symposium

# Lake Huron Initiative Steering Committee



- Michigan DEQ
- Michigan OGL
- Michigan Department of Natural Resources
- U. S. EPA-GLNPO
- GLFC's Lake Huron Technical Committee
- Lake Huron Centre for Coastal Conservation
- Environment Canada

# Lake Huron Initiative Goal



To restore and maintain the chemical, physical, and biological integrity of the waters, tributaries, and nearshore terrestrial and aquatic ecosystems of Lake Huron.

# Lake Huron Initiative Action Plan

March 2000



Prepared by:

Office of the Great Lakes  
Michigan Department of  
Environmental Quality



# The Action Plan



- Identifies key issues
- Recent successes
- Needed actions

# Critical Issues



- Critical pollutants/use impairments
- Fish & wildlife habitat
- Biodiversity

# Critical Pollutants/Use Impairments



- Contaminant Trends
- Fish Consumption Advisories
- Areas of Concern

# Contaminant Trends



- 1970s -1990s, persistent bioaccumulative chemicals of concern (PCBs, DDT, Dioxins) significantly declined
- Mid 1980s to present, concentrations have not declined significantly

# Critical Pollutants



PCBs

Chlordane

Dioxins

Mercury

DDT

Metals

Sediment/Suspended Solids

Nutrients (phosphorus)

Tritium

Pathogens (E. coli)

# Contaminant Sources



- For many persistent bioaccumulative chemicals, loadings from water sources lowest of all Great Lakes
- Air sources are the highest
- Contaminated sediments

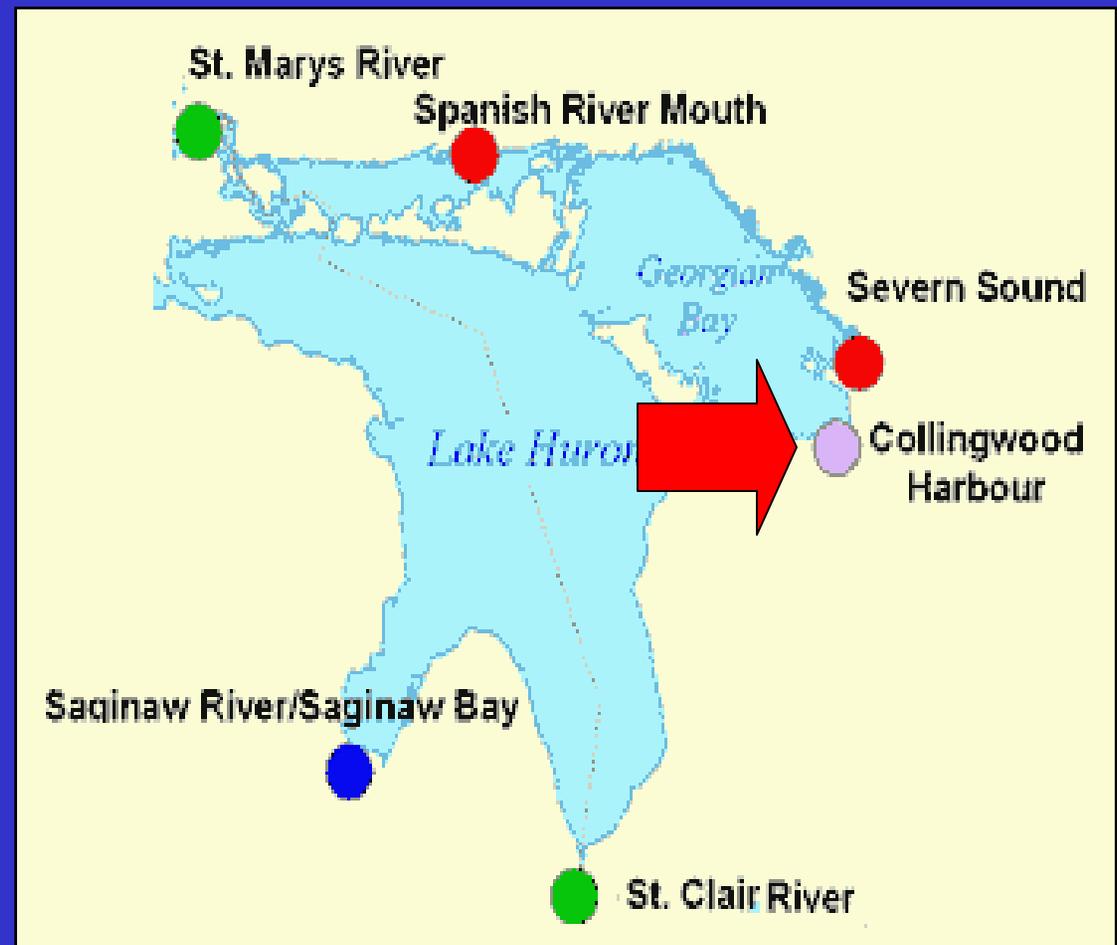
# Fish Consumption Advisories



- Lake Huron
- Saginaw River/Bay
- St. Marys River
- Spanish River
- Severn Sound
- St. Clair River

# Areas of Concern

- Collingwood Harbour (delisted)



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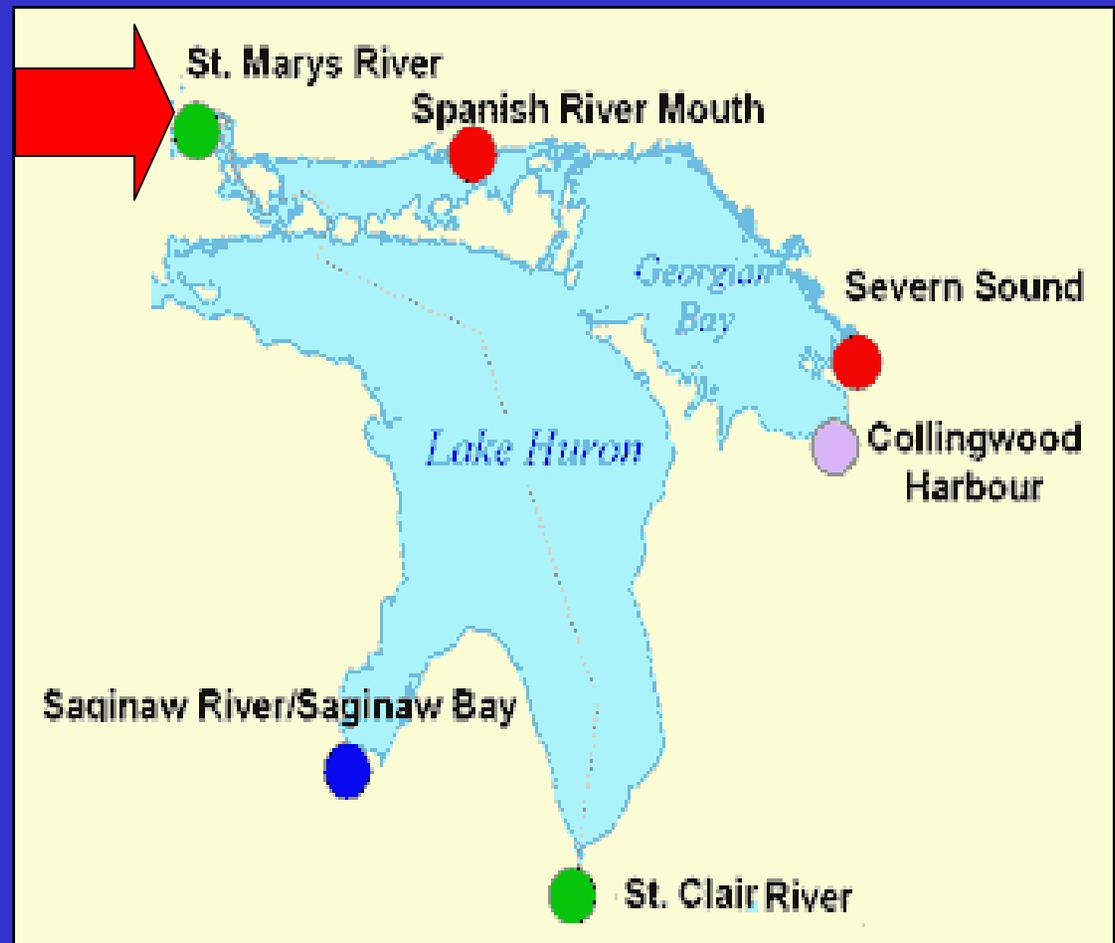
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- Severn Sound
- Spanish River
- St. Marys River
- Saginaw River/  
Saginaw Bay



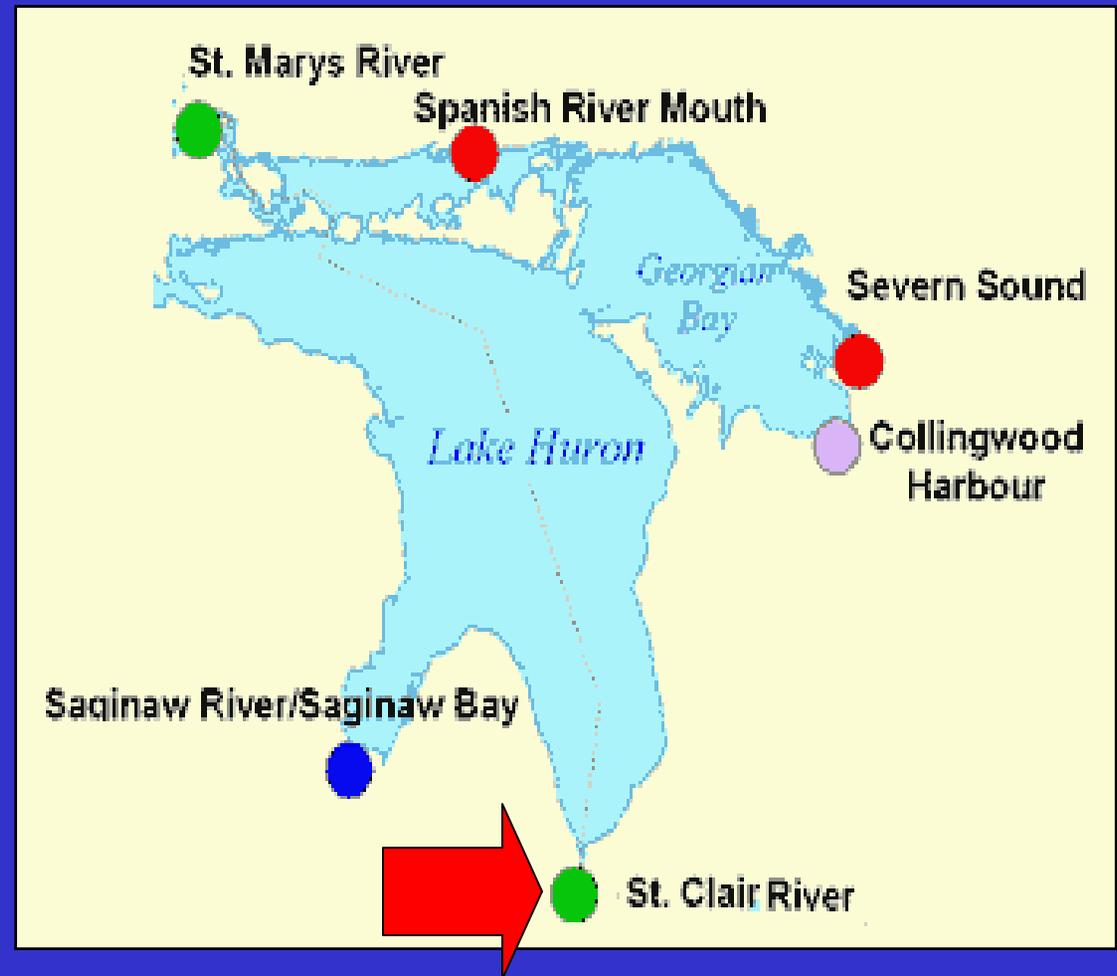
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# Fish & Wildlife Habitat



## Critical Issues

- Open lake habitat
- Nearshore habitat
- Tributaries
- Non-native species

# Fisheries Issues

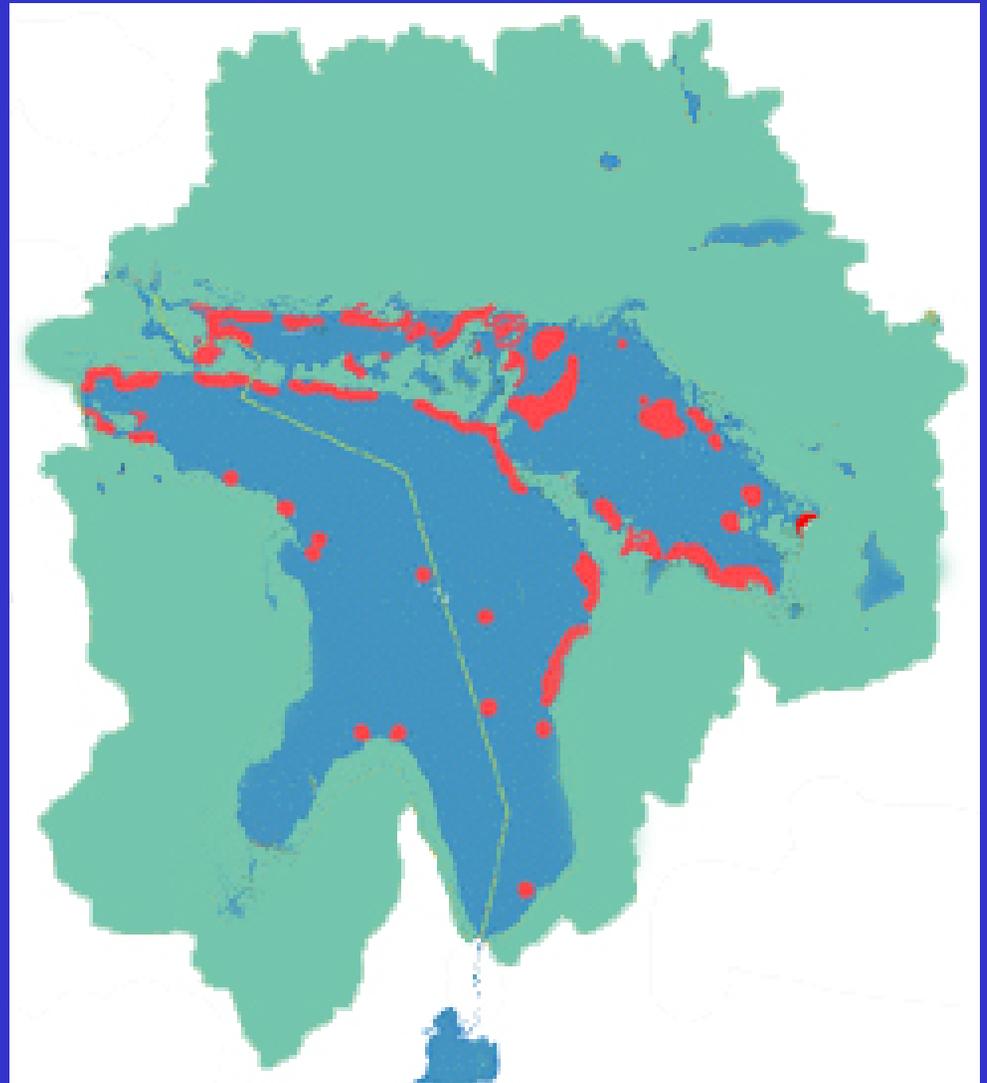


## Reasons for Concern:

- Degradation and loss of historical habitat in tributaries
- Degradation and loss of near shore habitat
- Non-native species, over-fishing, and reproduction failure

# Open Lake Habitat

- Historical versus current lake trout spawning areas



# Nearshore Areas

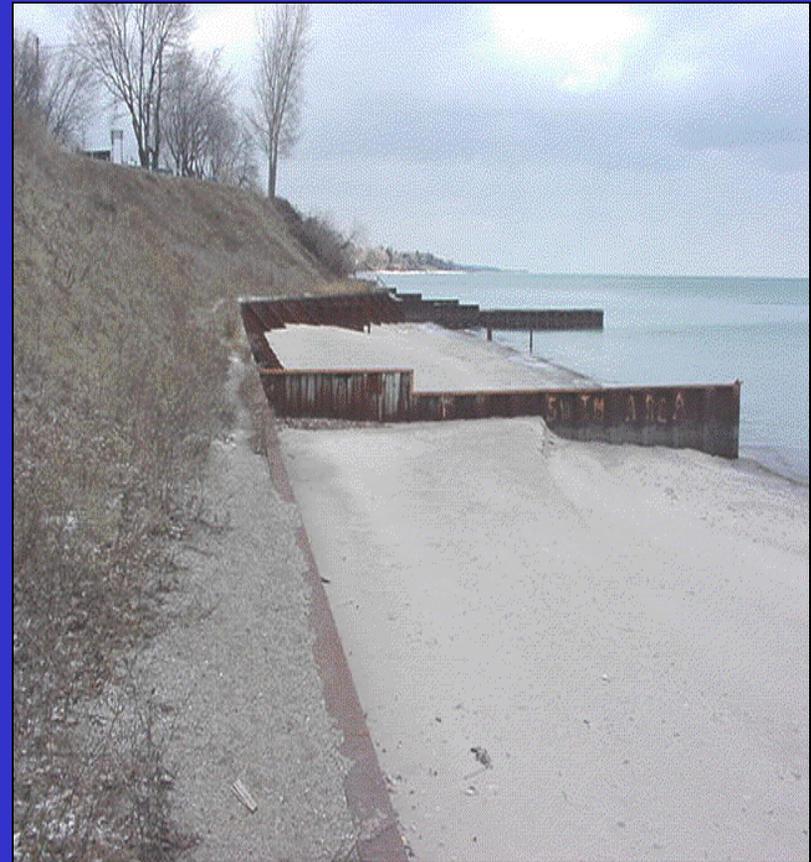
- The nearshore area habitats at one time, encircled the lake
- Where these remain, they are an important resource for fish and wildlife



Courtesy of Lake Huron Centre for Coastal Conservation

# Nearshore Areas

- Many areas have been altered for shoreline protection, transitional vegetation is now gone
- Loss of connectivity
- The cumulative impacts of structures is increasing



# Coastal Wetlands

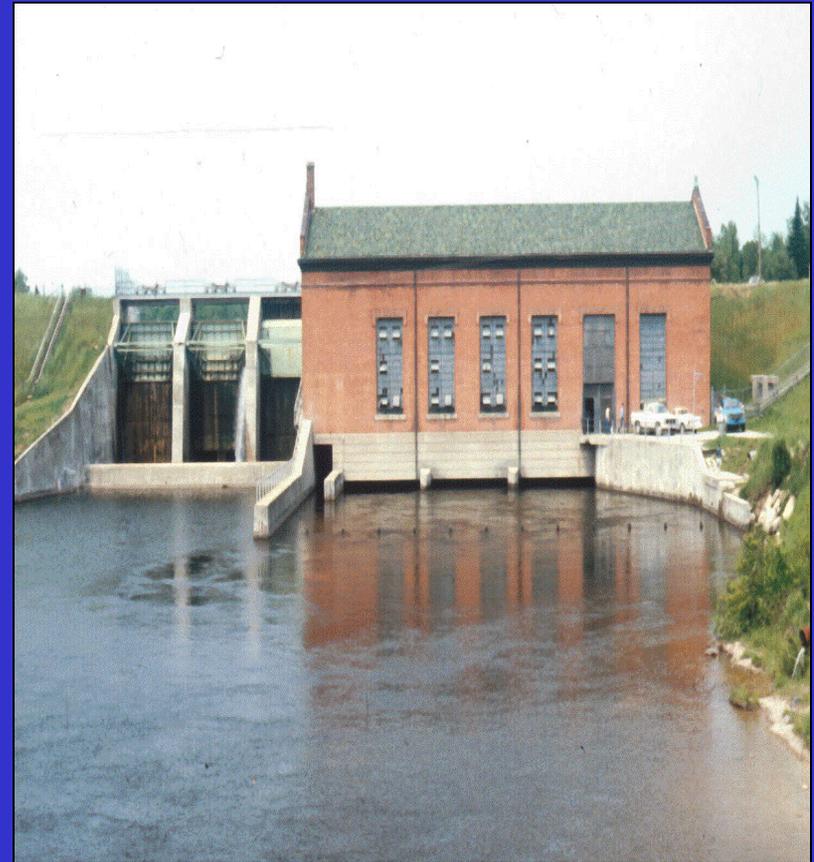
- Most losses have been around small urban centers on the lakeshore
- Losses has been due to agriculture, cottage development, road construction, dredging and channelization



Courtesy of Kate Ter Haar

# Tributary Concerns

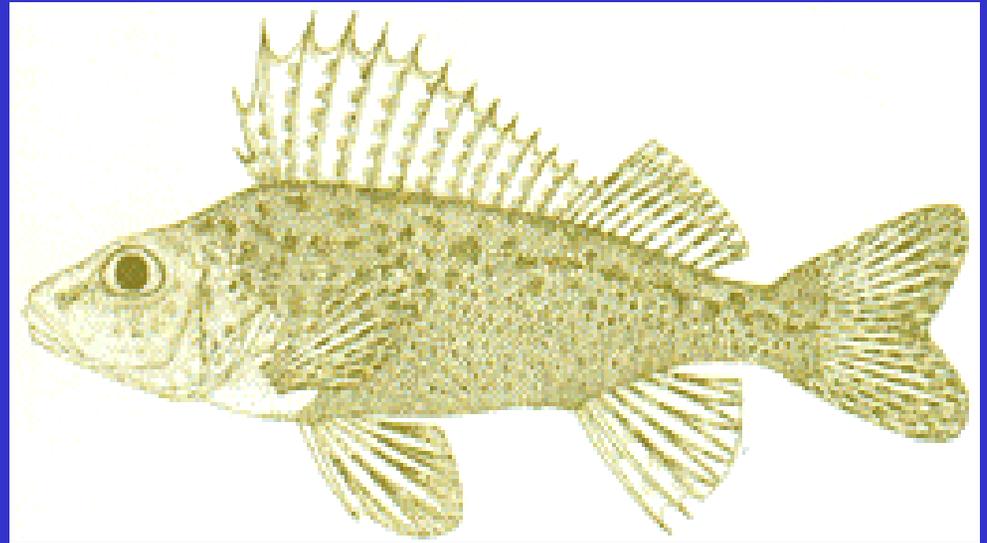
- Historically, sources of cool, high quality water for spawning and nursery habitat
- Fish excluded from many tributaries through construction of dams
- Sediment and other nonpoint sources



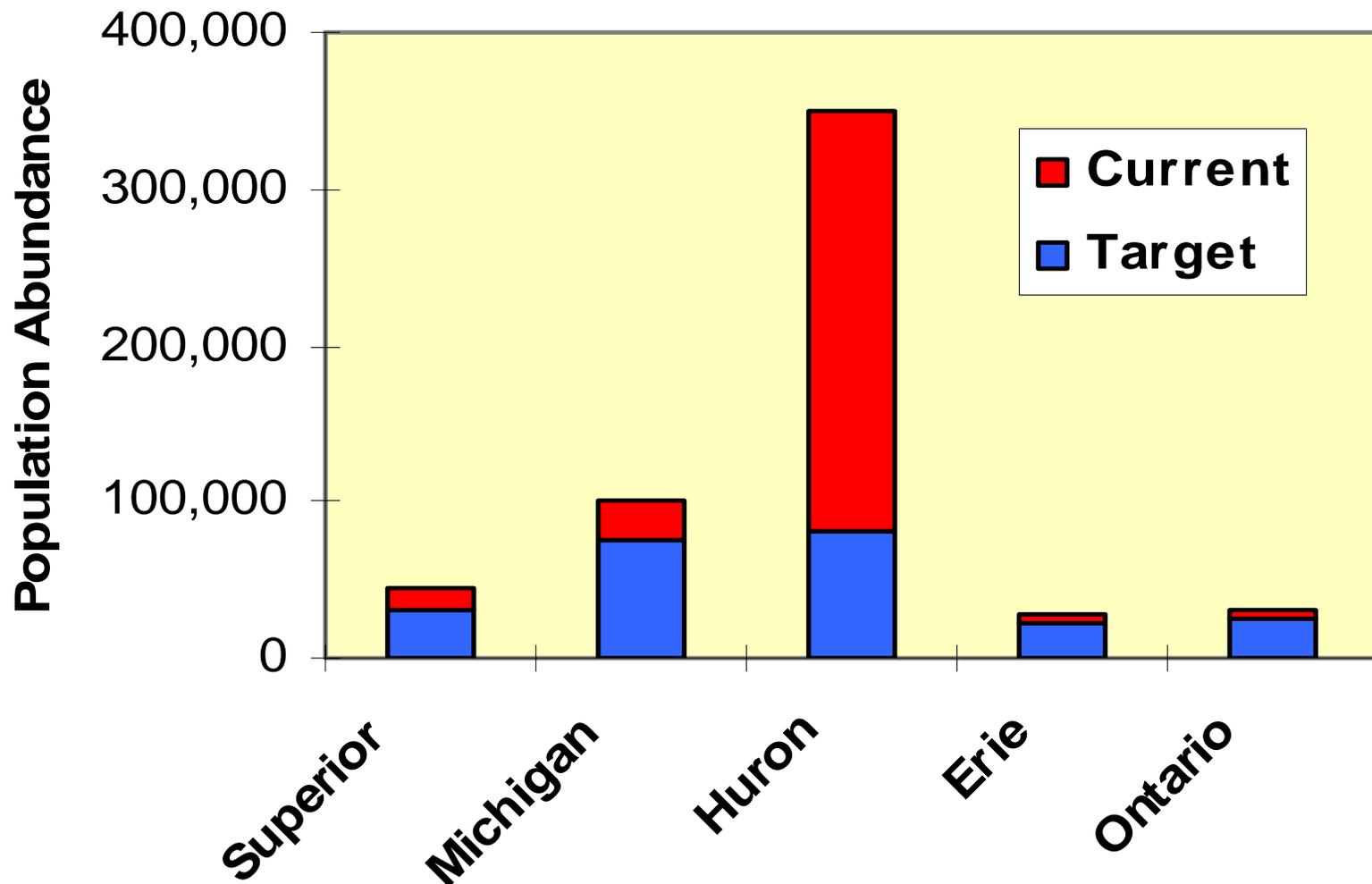
Courtesy of Michigan Department of Natural Resources

# Non-native Species

- Non-native species causing significant stress include the sea lamprey, zebra mussel, round goby, and purple loosestrife

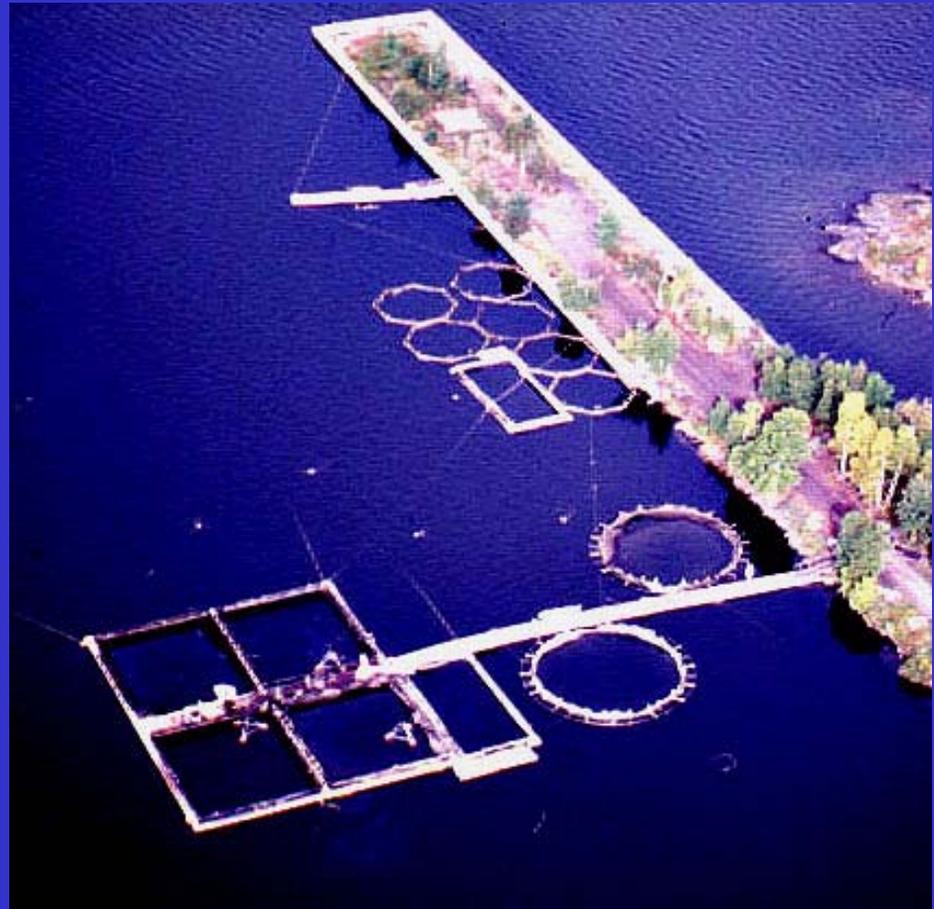


## Lamprey Populations and Targets (State of the Great Lakes - 1995)



# Fish Farming - Aquaculture

- Concern from a fisheries and environmental perspective
- Now accounts for over 60 percent of rainbow trout production in Ontario waters



Courtesy of Ontario Ministry of Natural Resources

# Biodiversity Issues

- From a biodiversity perspective, there are specific areas of Lake Huron that deserve special protection



# Biodiversity Issues

- Misery Bay



# Biodiversity Issues

- Misery Bay
- Saginaw Bay



# Biodiversity Issues

- Misery Bay
- Saginaw Bay
- Mackinac-Manitoulin area



# Biodiversity Issues

- Misery Bay
- Saginaw Bay
- Mackinac-  
Manitoulin area
- Georgian Bay



# Biodiversity Issues

- Misery Bay
- Saginaw Bay
- Mackinac-Manitoulin area
- Georgian Bay, and
- Bruce Peninsula



# Key Actions Now Underway

- Michigan and Ontario are developing a bi-national GIS system
- Dredging the Pine (DDT) and Saginaw Rivers PCBs)
- Protecting habitat in the Saginaw Bay watershed
- Implementing the \$170M CREP in the Saginaw Bay watershed



# Actions Needed



- Control atmospheric inputs
- Prevent the introduction of non-native species
- Restore lost habitat
- Continue progress in AOCs
- Secure funding for lamprey control
- Assist local protection/restoration efforts
- Research changes in lower trophic levels
- Control pathogens (E. coli) in Saginaw Bay and SE Lake Huron

# Future Lake Huron Initiative Actions



- Identification and implementation of Lake Huron indicators
- Monitoring coordination
- Update of the Lake Huron Initiative Action Plan

# Lake Huron Initiative



- For additional information regarding Lake Huron and the Lake Huron Initiative go to:

<http://www.deq.state.mi.us/ogI/huron>

A photograph of a sunset over a large body of water, likely Lake Huron. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water's surface. The sky transitions from a deep orange near the horizon to a clear, pale blue at the top. The water in the foreground shows gentle ripples and a reflection of the sunset colors.

**Lake Huron Initiative:**

**A Work in Process**