

# Changing Dynamics of the Fish Community in Lake Huron

Lake Huron and Community Perspectives on Fish

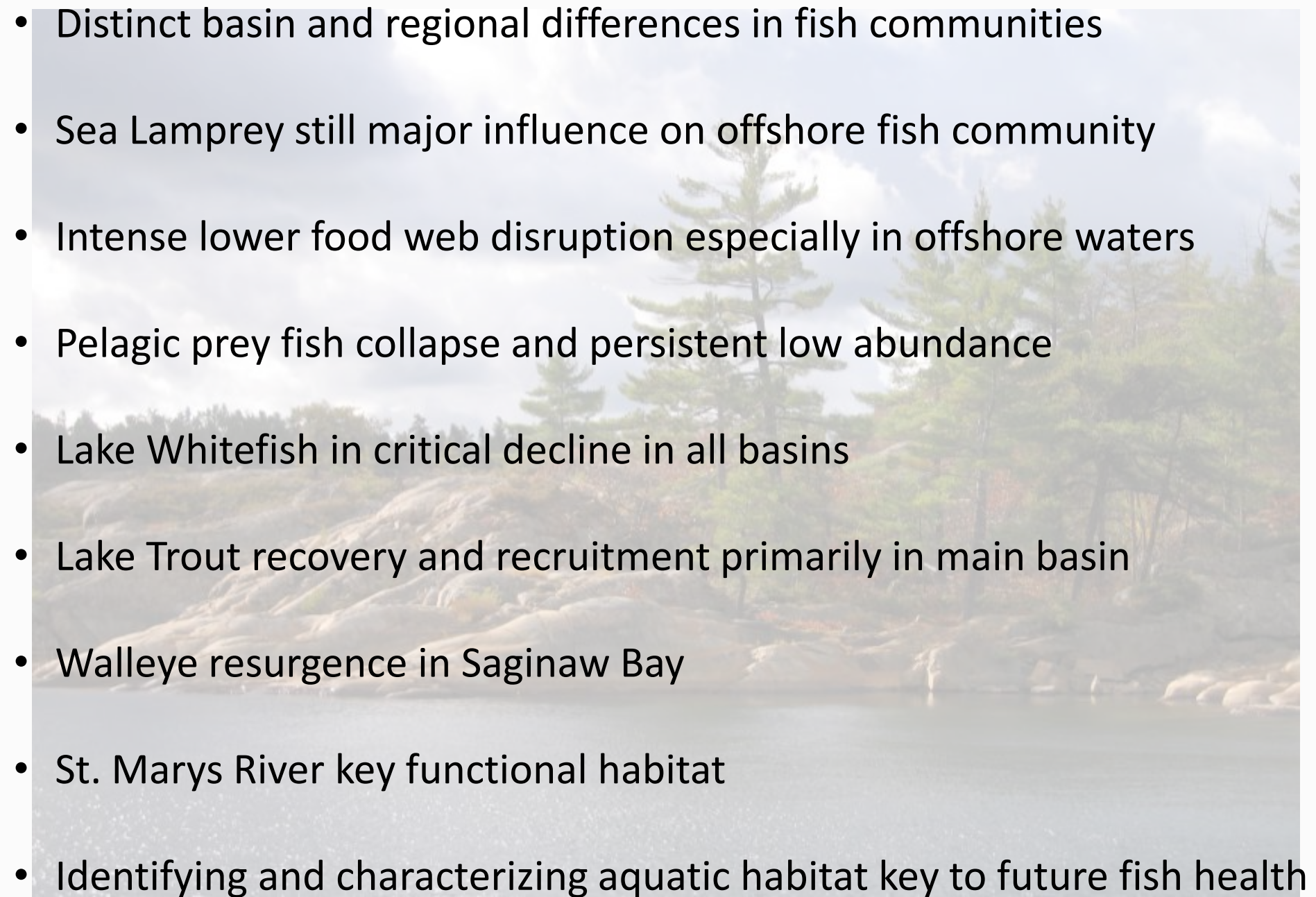
November 23, 2022

Arunas Liskauskas MNRF



Fathom Five  
National  
Marine Park



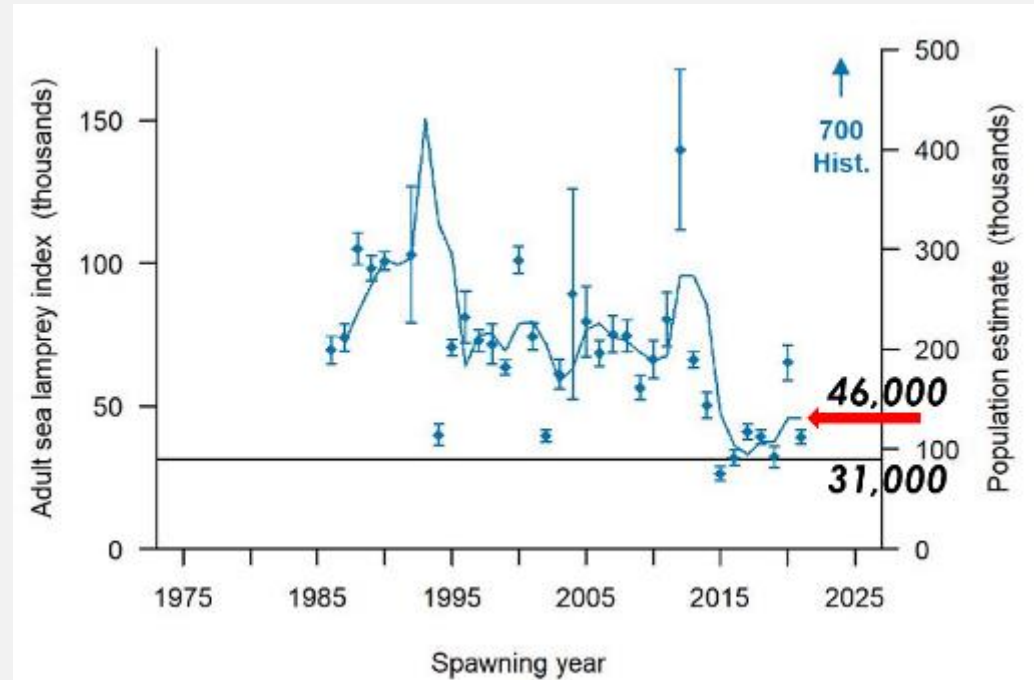
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- Distinct basin and regional differences in fish communities
  - Sea Lamprey still major influence on offshore fish community
  - Intense lower food web disruption especially in offshore waters
  - Pelagic prey fish collapse and persistent low abundance
  - Lake Whitefish in critical decline in all basins
  - Lake Trout recovery and recruitment primarily in main basin
  - Walleye resurgence in Saginaw Bay
  - St. Marys River key functional habitat
  - Identifying and characterizing aquatic habitat key to future fish health

# Sea Lamprey Control

**Adult Abundance is  
Increasing After  
Reaching a 30 Year Low**

**Infrastructure Upgrades  
and Ongoing Evaluations**

**How to Pass Non-  
jumping Fish?**



Nicolston Dam (Nottawasaga River)



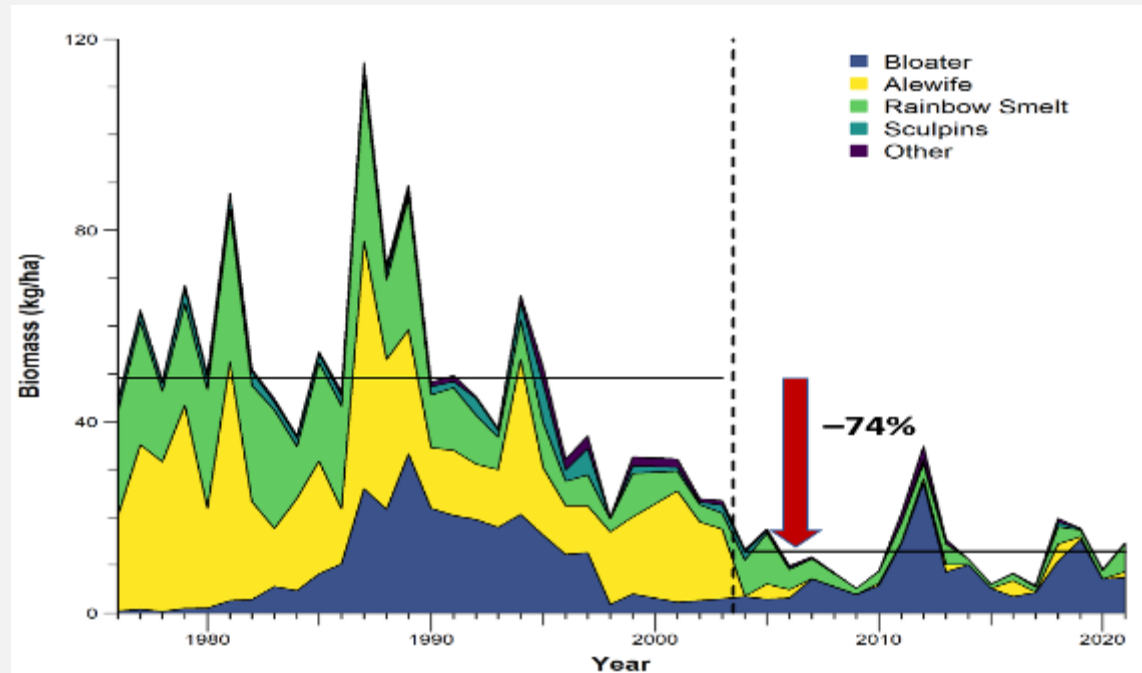
# FishPass

Boardman (Ottaway) River Dams Ecosystem  
Restoration Project, Traverse City, Michigan

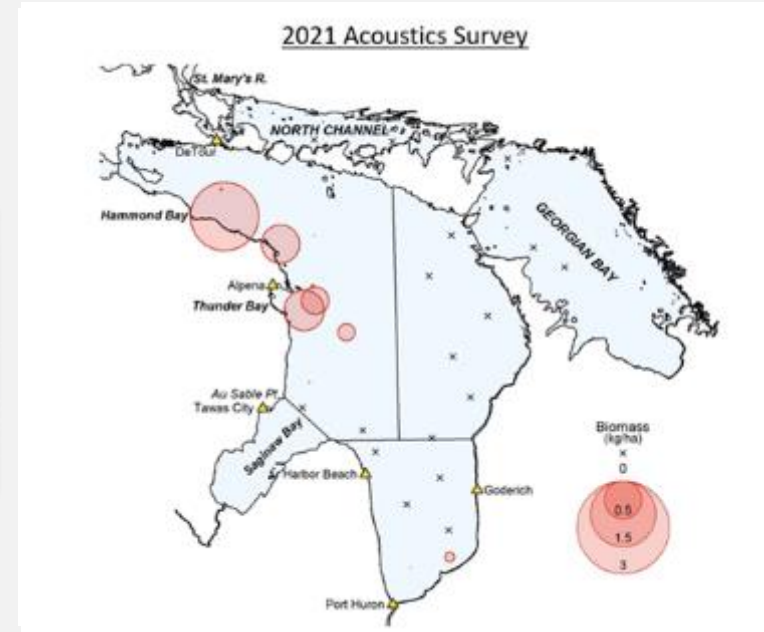


# Prey Fish Assessment

**Era of Decreased  
Offshore Productivity  
and Changing Fish  
Distributions**

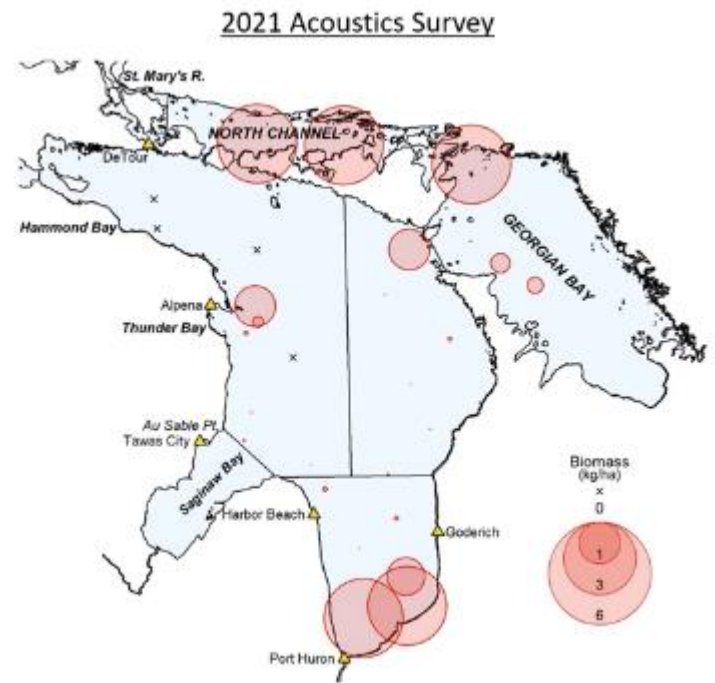


**Alewife**

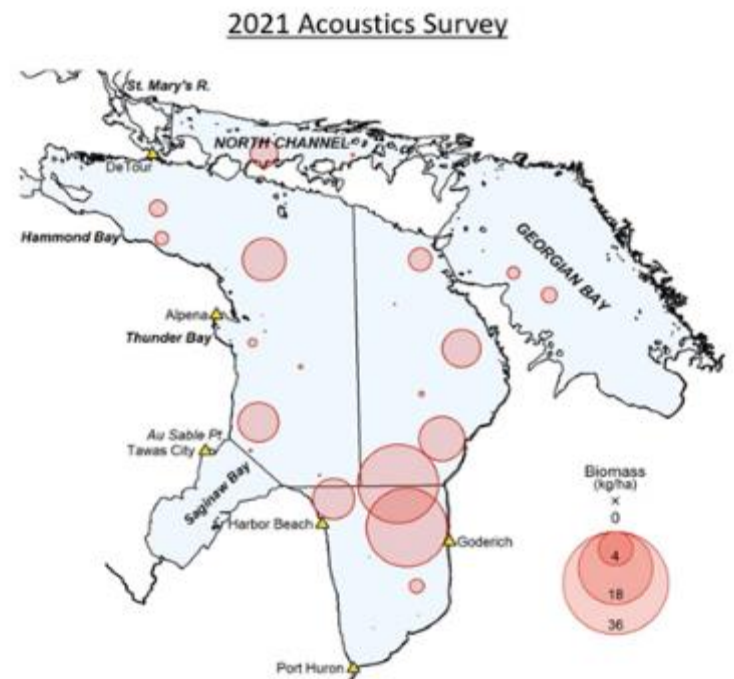




**Rainbow Smelt**



**Bloater**



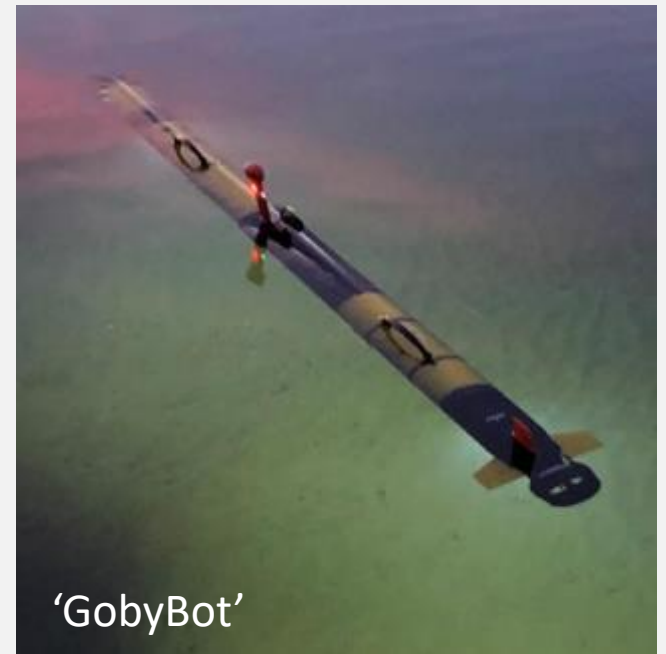




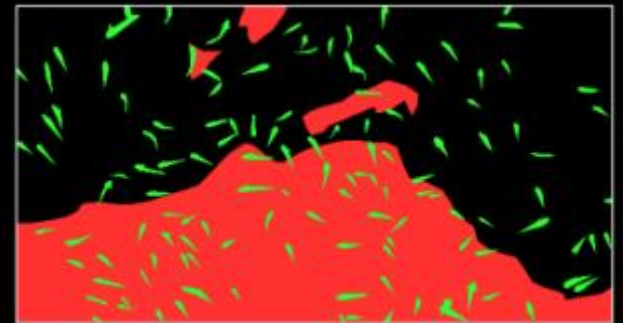
**Round Goby**

**Why are Round Goby so  
Difficult to Assess?**

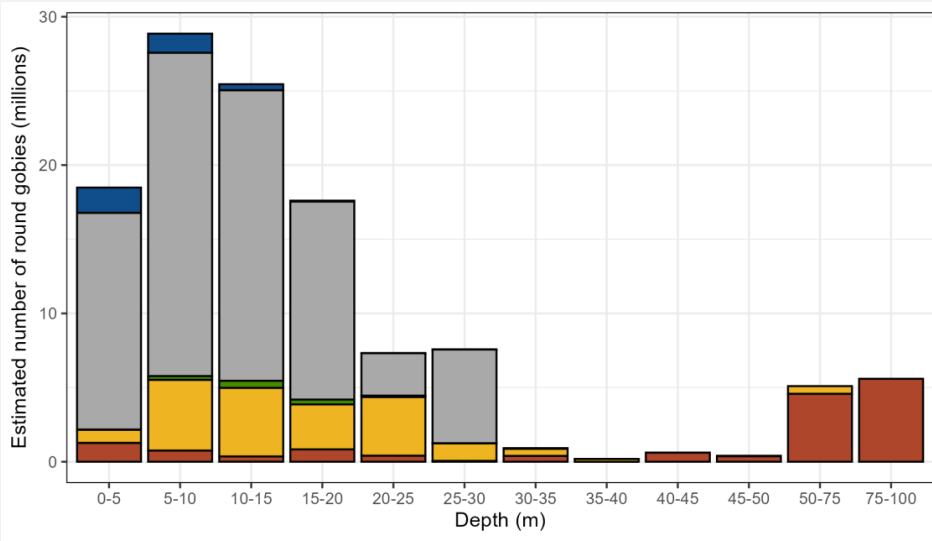
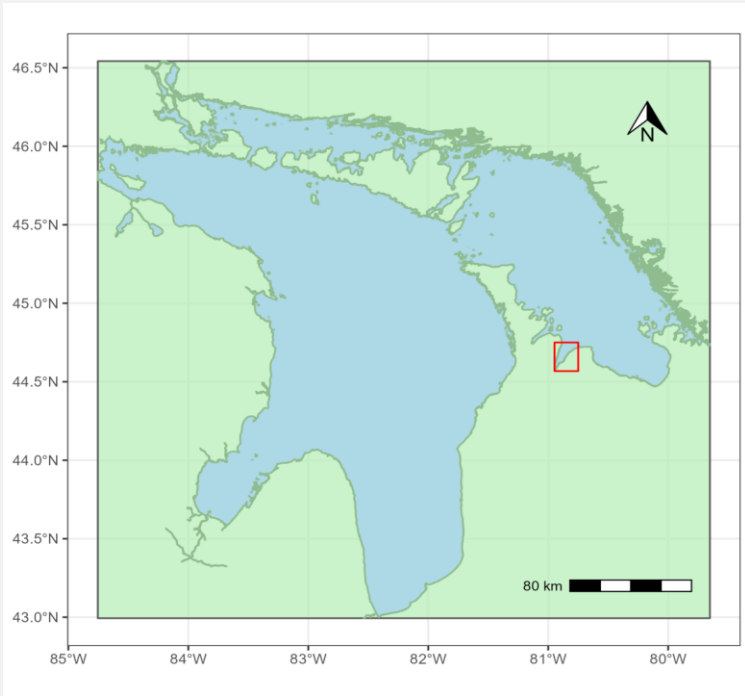
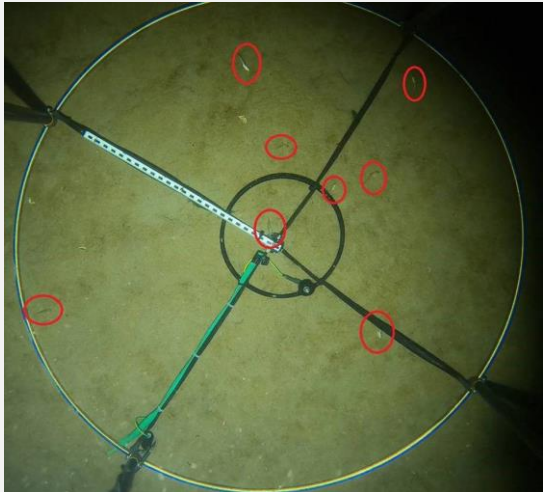
**Where Do They Go and  
When?**



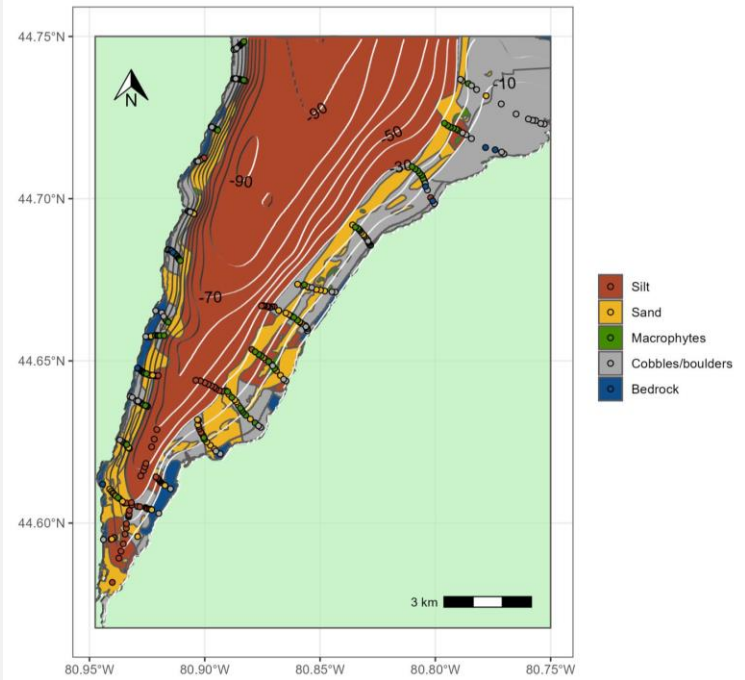
**'GobyBot'**



# Owen Sound Round Goby Assessment



**DAY** 118 million fish, 144 tonnes  
**NIGHT** 144 million fish, 237 tonnes



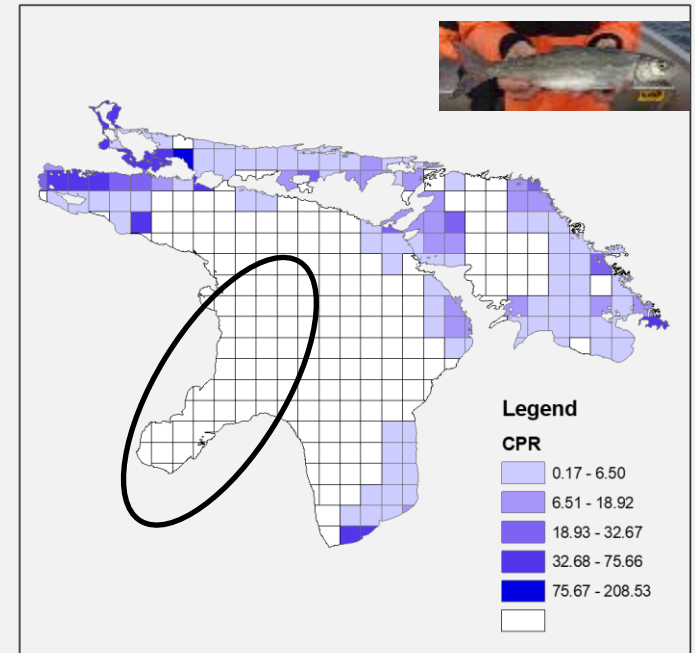
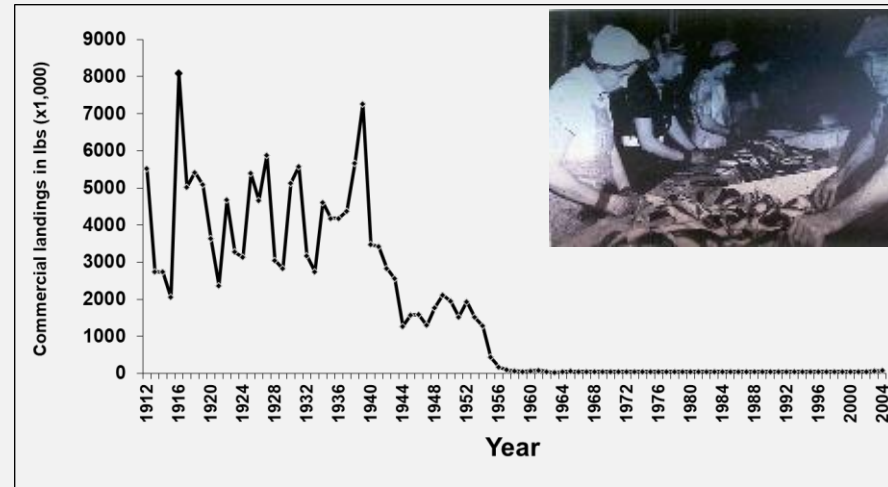


# Cisco

**Historically Prominent Prey  
Fish Especially in Saginaw Bay**

**Current Distribution Restricted  
to Discreet Embayments and  
Rivers**

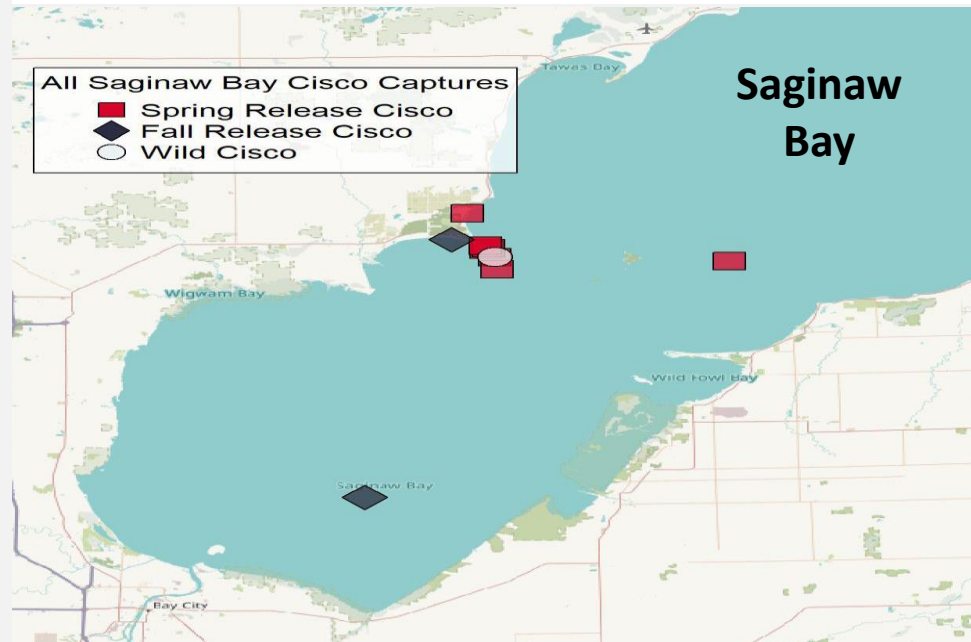
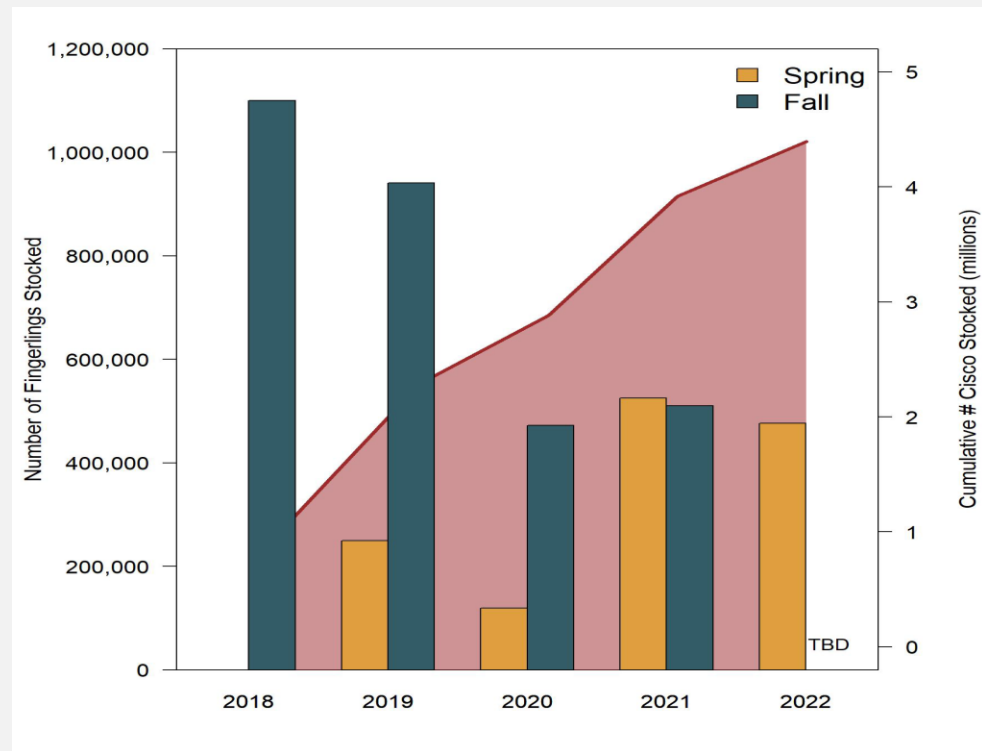
**Approval to Utilize  
Rehabilitative Stocking in 2015**



# First Broodstock Collection in 2017

## First Stocking in 2018

Over 4.0 million stocked  
by 2022



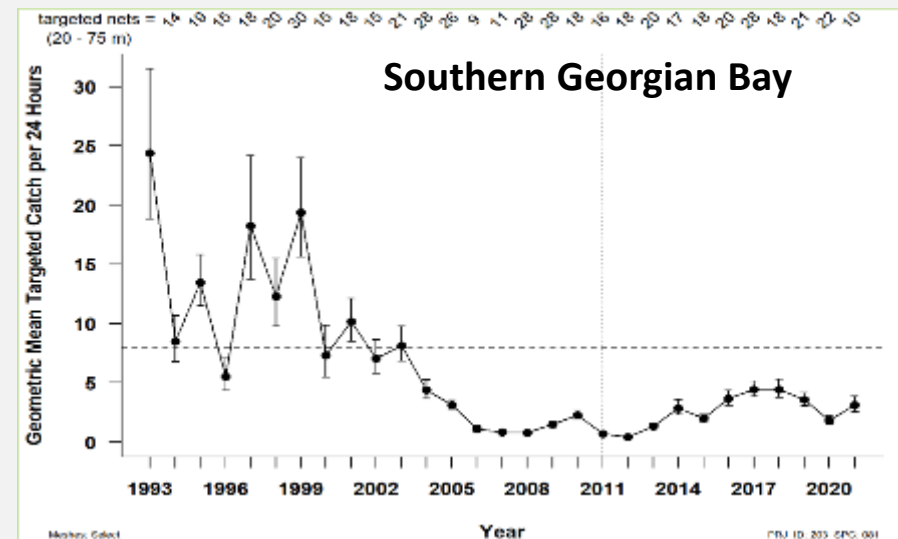
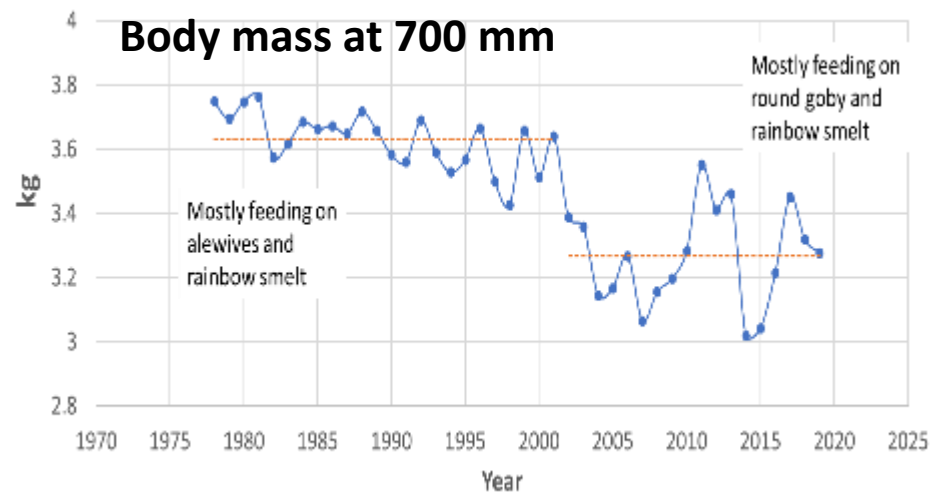
# Lake Trout

**Evidence of natural reproduction widespread**

**Main Basin Trends Differ Between the North and the South**

**Implications of Reduced Growth and Condition**

**Increased Abundance in Southern Georgian Bay**



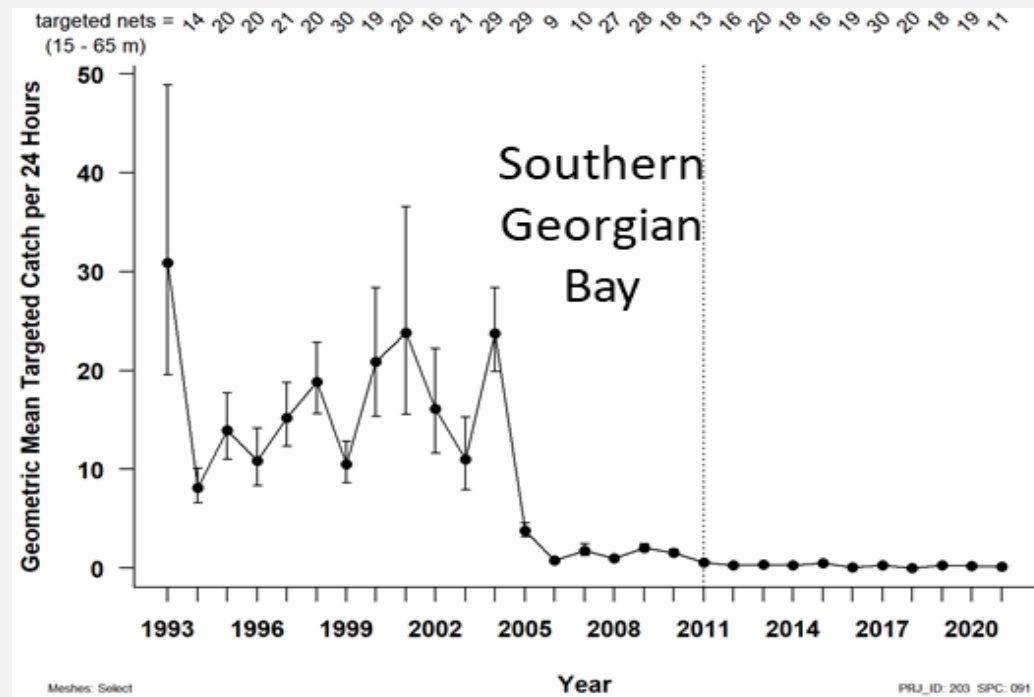


# Lake Whitefish

**Most important species  
targeted in the  
commercial fishery**



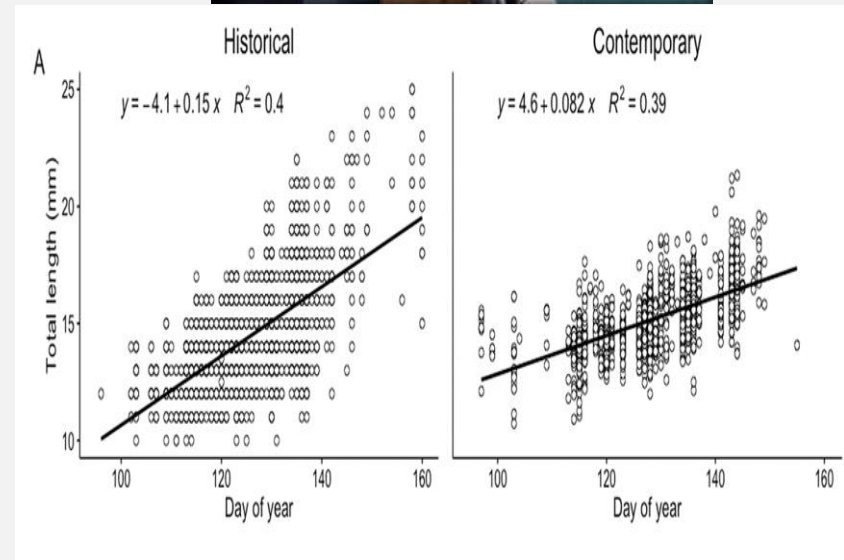
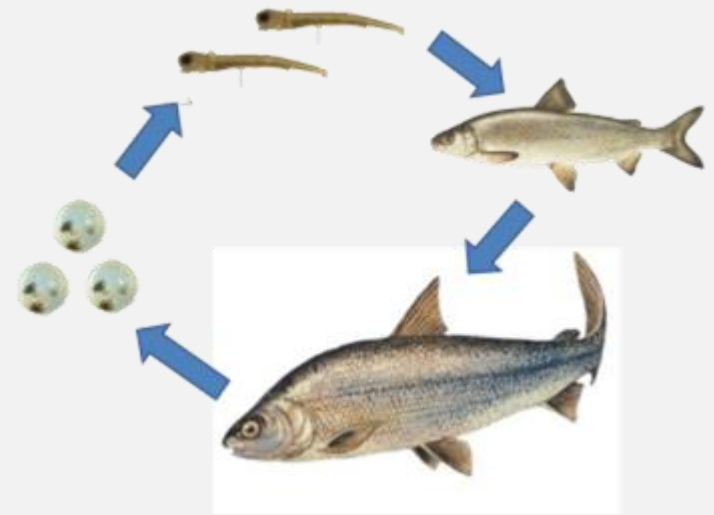
**Abundance and  
recruitment continue to  
decline since reaching  
historic highs in the late  
1990s**



**Research Directed at Growth,  
Feeding Ecology, Depth  
Distribution, Harvest**

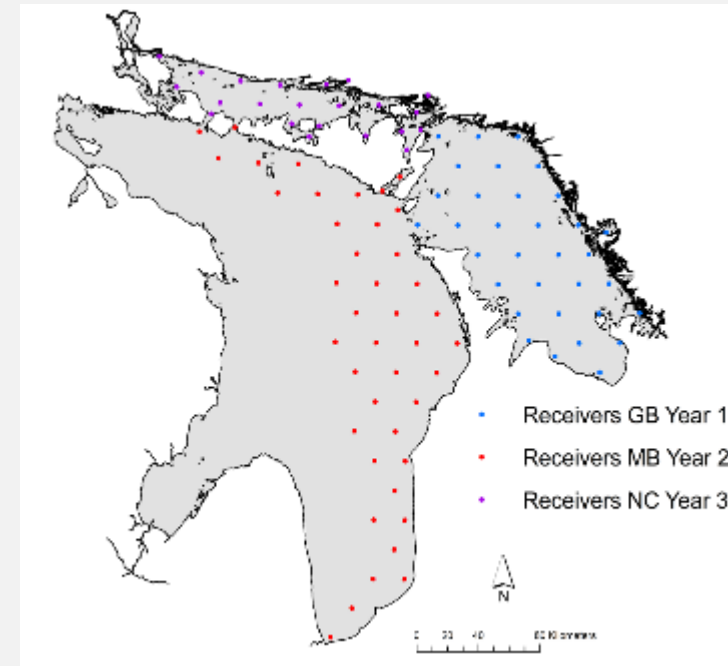
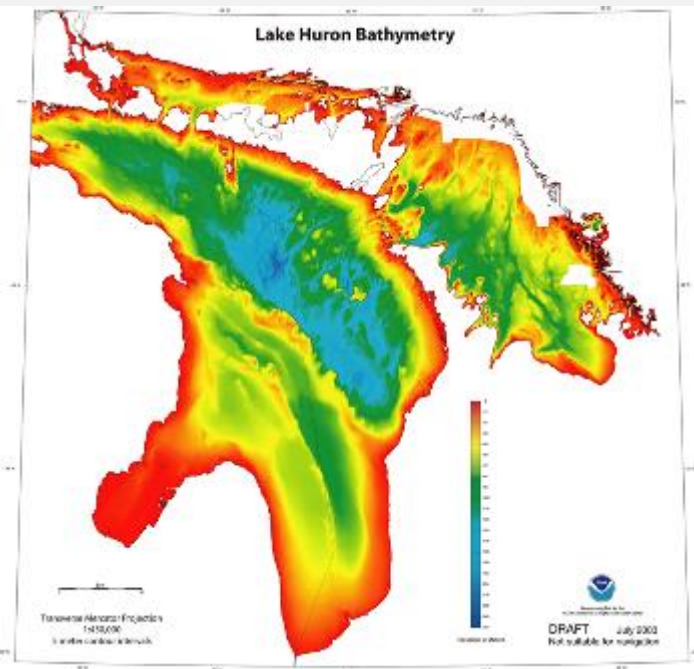
**Expanded and Enhanced  
Studies of Early Life History  
Survival and Growth**

**Evidence of Successful  
Hatching but Post Larval  
Survival Uncertain**



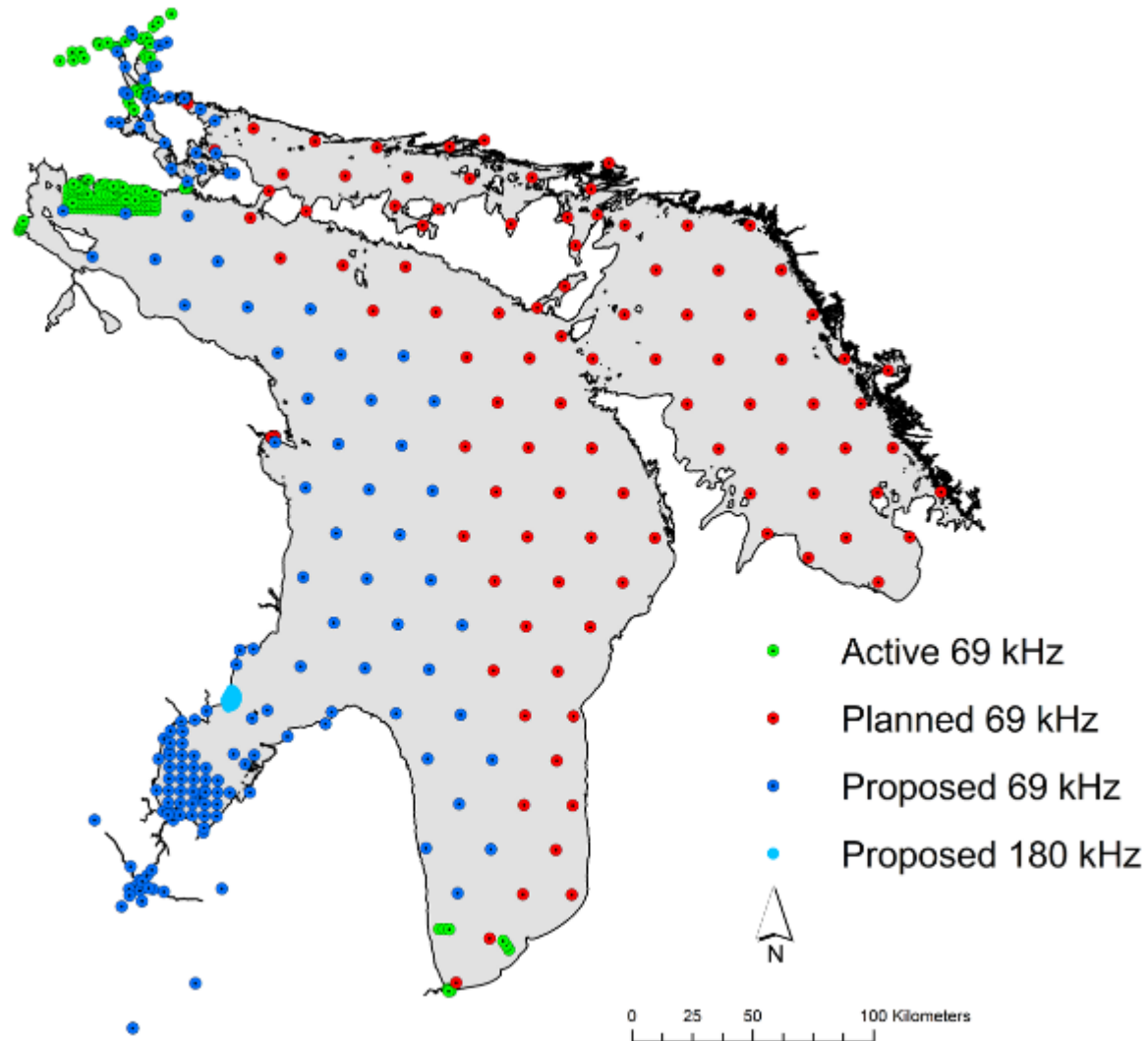
“Together with Giigoonyag”

## Lake Whitefish Acoustic Telemetry Project



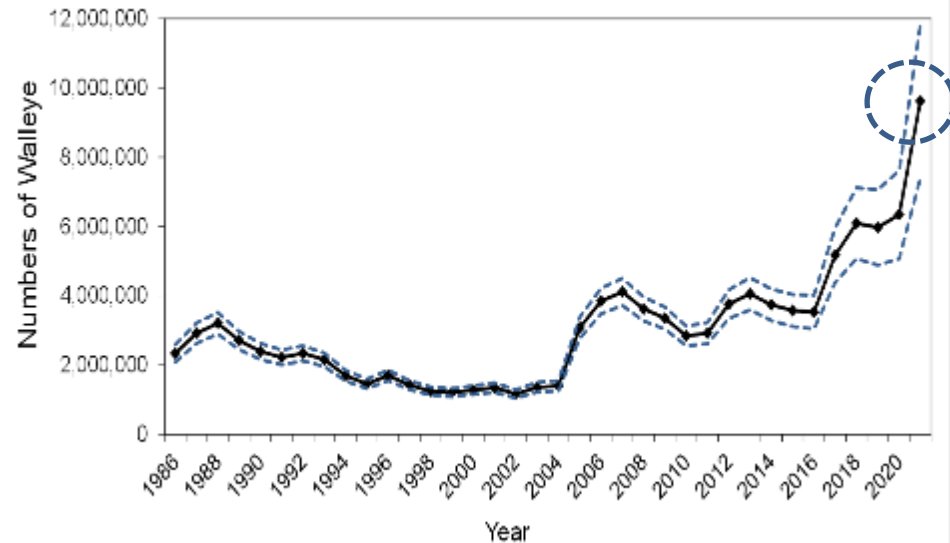


# Existing and Proposed Acoustic Arrays in Lake Huron



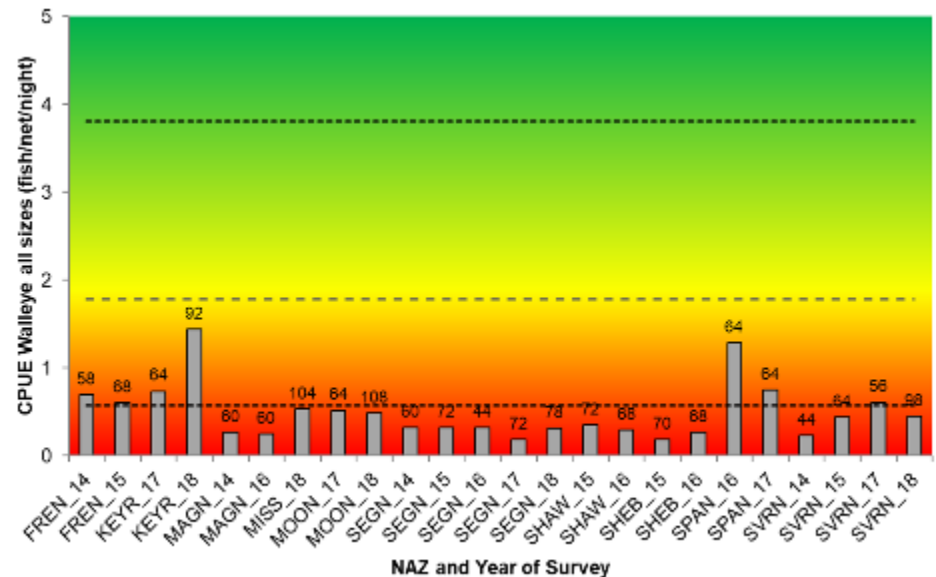
# Walleye

## Saginaw Bay Walleye Stock Status Robust



## Ontario Walleye Populations Status Variable

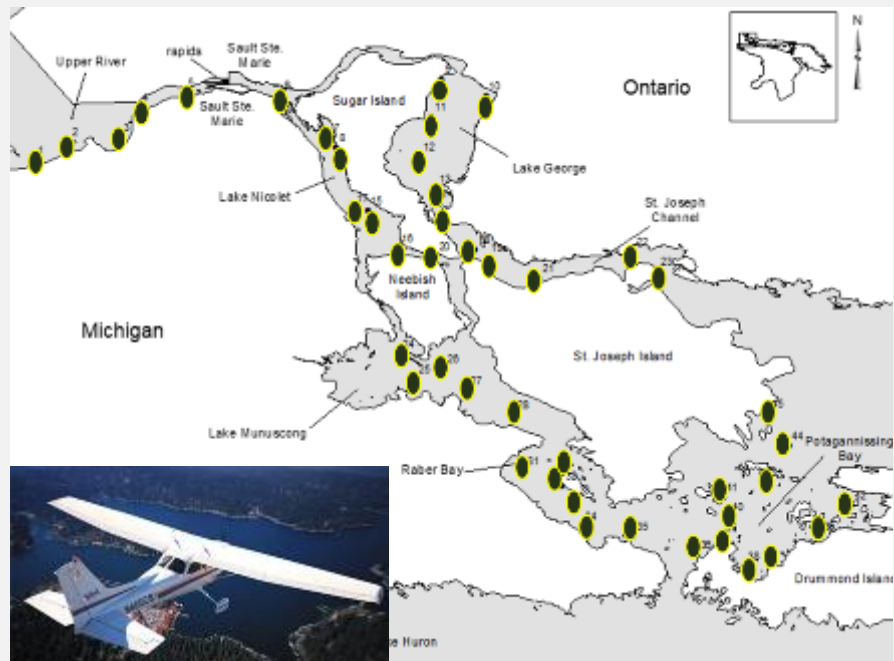
## Ontario Management Plan in Development



# St. Marys River

## River Wide Creel and Fish Community Survey in 2022

Ongoing Every 5-7 Years  
since 1975





# Sturgeon

## Saginaw Bay Rehabilitative Stocking has Commenced

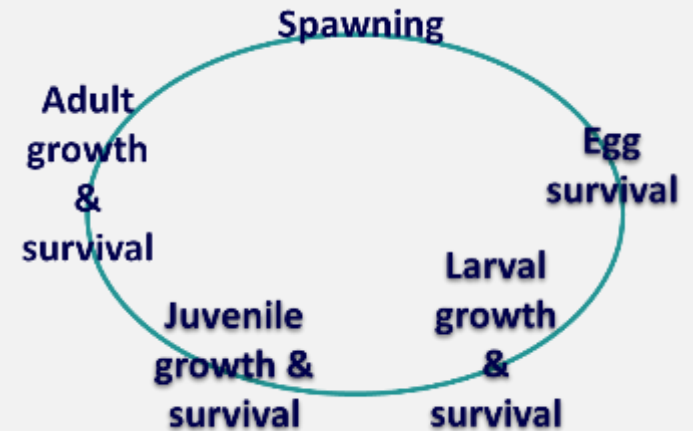


# Habitat

Summary of Condition by General Objective	Status
Drinking Water Swimming and Recreational Use Groundwater	<i>Good</i>
Chemical Contaminants	<i>Good/Fair</i>
→ Fish and Wildlife Consumption Habitats and Native Species Nutrients (and algae) Other Substances/Materials	<i>Fair</i>
Invasive Species	<i>Poor</i>

(SOGL, 2017)

## CLC Environmental Principles Functional habitats



LHC Environmental Priorities  
[http://www.glfcc.org/pubs/lake\\_committees/huron](http://www.glfcc.org/pubs/lake_committees/huron)





Little Rapids, St. Marys River



Lock 45, Georgian Bay



<https://www.michiganseagrant.org/saginawbayreef/>



Photo: Martin Szekuda (The Airborne Angler)

Coreyon Reef, Saginaw Bay



