

# Great Lakes Updates

*Invasive Species*

*Lake Sturgeon Restoration*

Ottawa County Water Quality Forum

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MICHIGAN STATE  
UNIVERSITY  
EXTENSION



Rainbow smelt



American eel



Common carp



Threespine stickleback



Rusty crayfish



Purple loosestrife



Zebra mussels



Eurasian ruffe



Round Goby

Photo Credit: David J...



Alewife



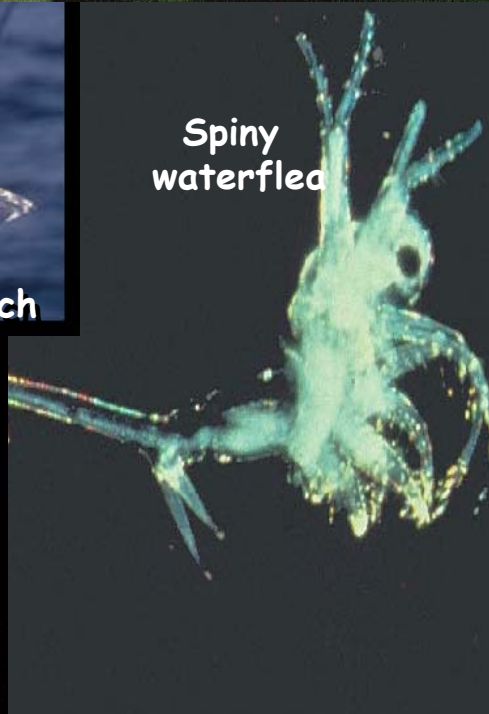
White perch



Sea lamprey



Corbicula



Spiny waterflea



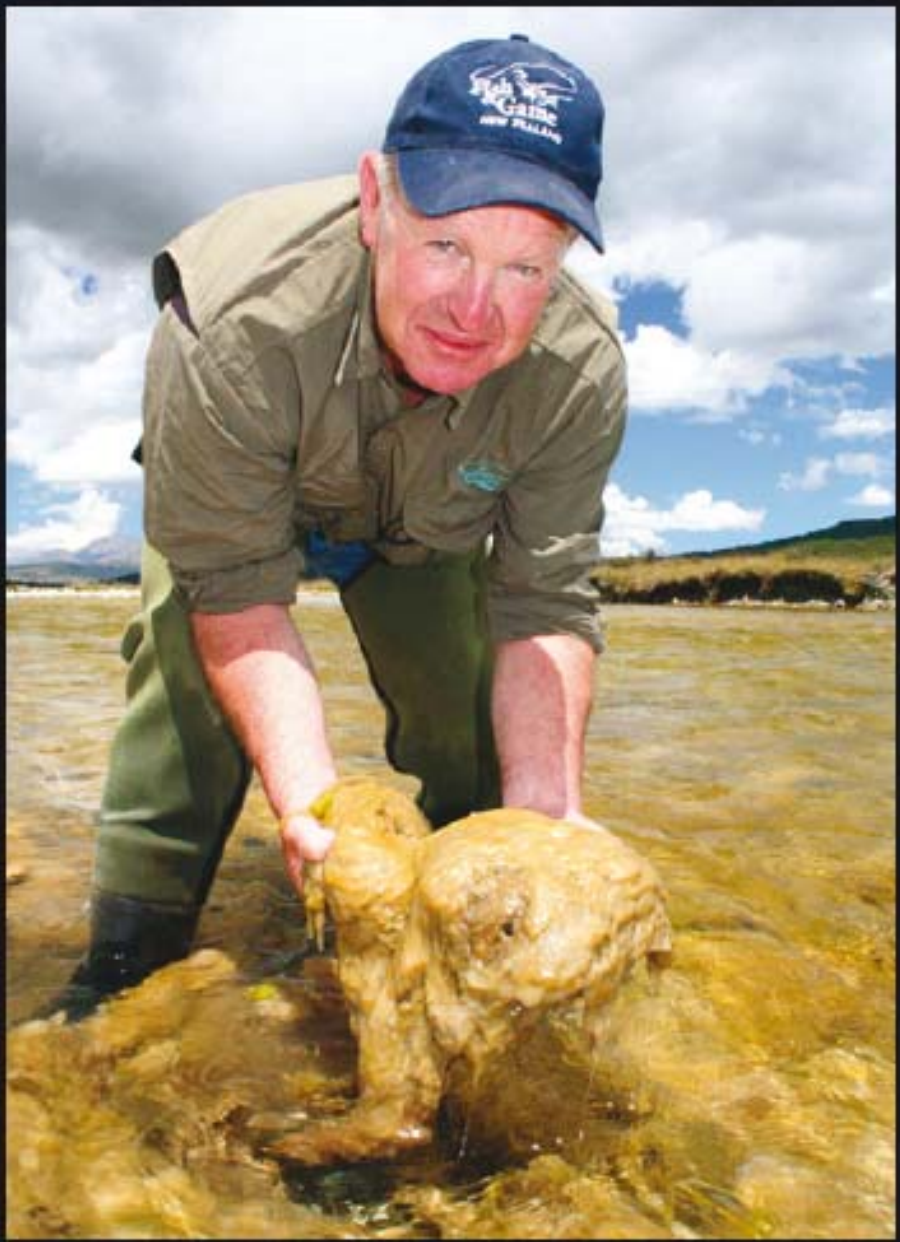
## New Zealand Mudsnail

- Grazes on attached algae
- Can pass through gut of fish or bird unharmed
- Lives in all types of river and reservoir habitats
- Self-cloning females
- Reaches densities of 300-700,000 per m<sup>2</sup>



## Didymo

- Diatom *Didymosphenia geminata*
- Smothers habitat in streams
- Anglers transport on waders
- Impossible to control
- Anglers asked to disinfect and dry waders after wading in infested river



**Fish and Game New Zealand**

Confirmed presence of *D. geminata* in the United States and Canada. A total of 401 samples are included. Records are based on data from USGS National Water Quality Assessment (NAWQA), EPA Environmental Monitoring and Assessment (EMAP), and samples from other studies. (Map by Karl Hermann, Sarah Spaulding, and Tera Keller)

**Since 2005:**  
South Dakota  
Vermont  
Tennessee  
Virginia  
New Hampshire  
Maryland  
New York

**JANUARY 2009**



**Legend**

- Didymosphenia geminata Observed
- Canada
- United States
- Mexico



# Asian Carp

Coming soon to a river near you?



# Reproductive Requirements

- Silver carp: 64-72° F
- Bighead carp: >72° F
- Both require a rise in water level (or turbidity?)
- Both require ~30 miles of free-flowing river upstream of lake/bayou



Figure 29. Map of Lakes Erie, Huron, St Clair, Michigan, and Superior indicating rivers lacking dams and having a minimum length of 100 km that may be suitable for spawning by Bighead (*Hypophthalmichthys nobilis*) and Silver (*H. molitrix*) carps. Map developed by C. Lowenburg, U.S. Geological Survey.



# Lake Michigan



Cal-Sag and Chicago Sanitary and Ship Canal showing details of the connection to the Mississippi River Basin via the Illinois River and the location of the Aquatic Nuisance Species Barriers.

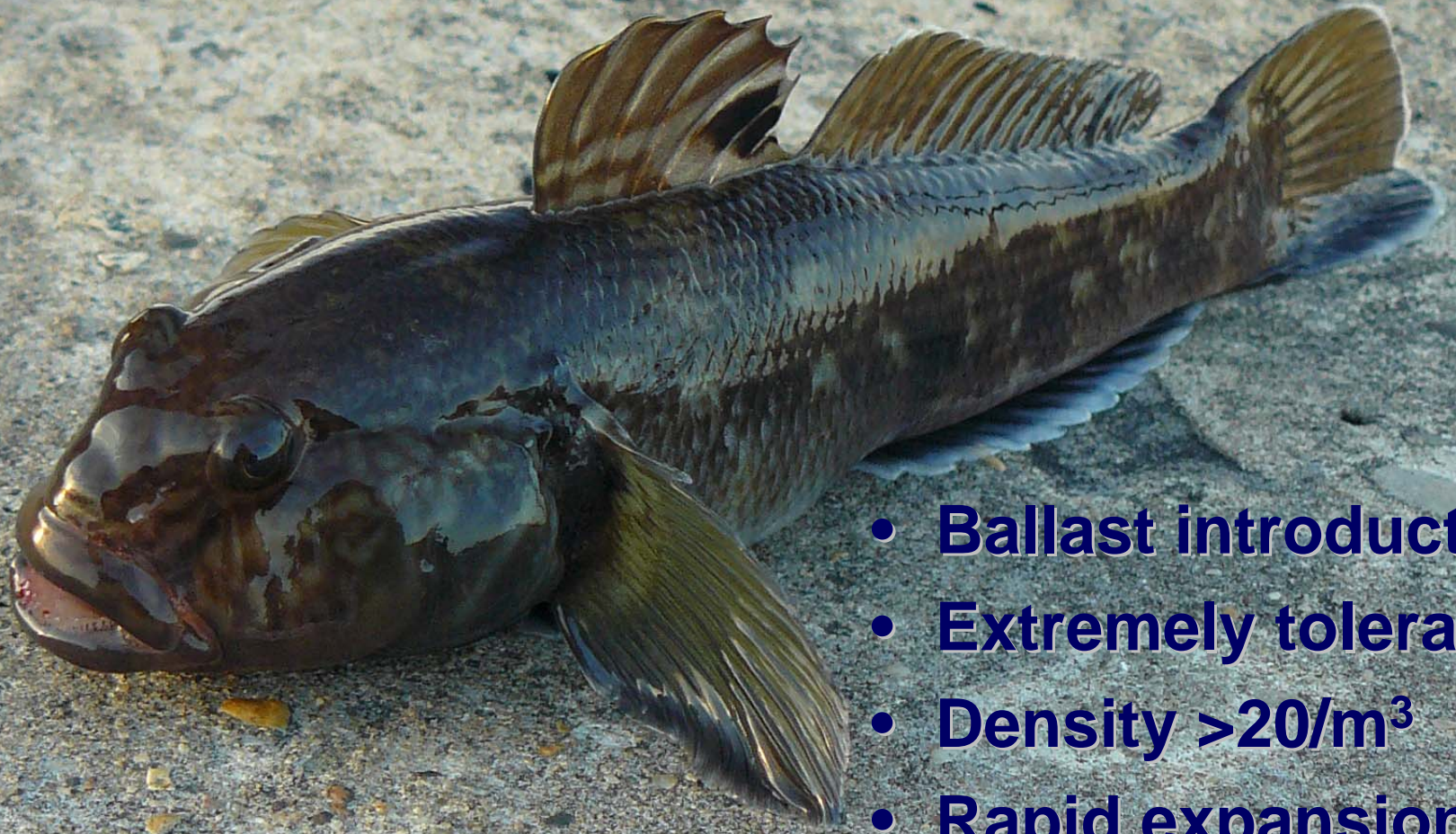


Image from Alliance for the Great Lakes

# An ounce of prevention...



# ROUND GOBY



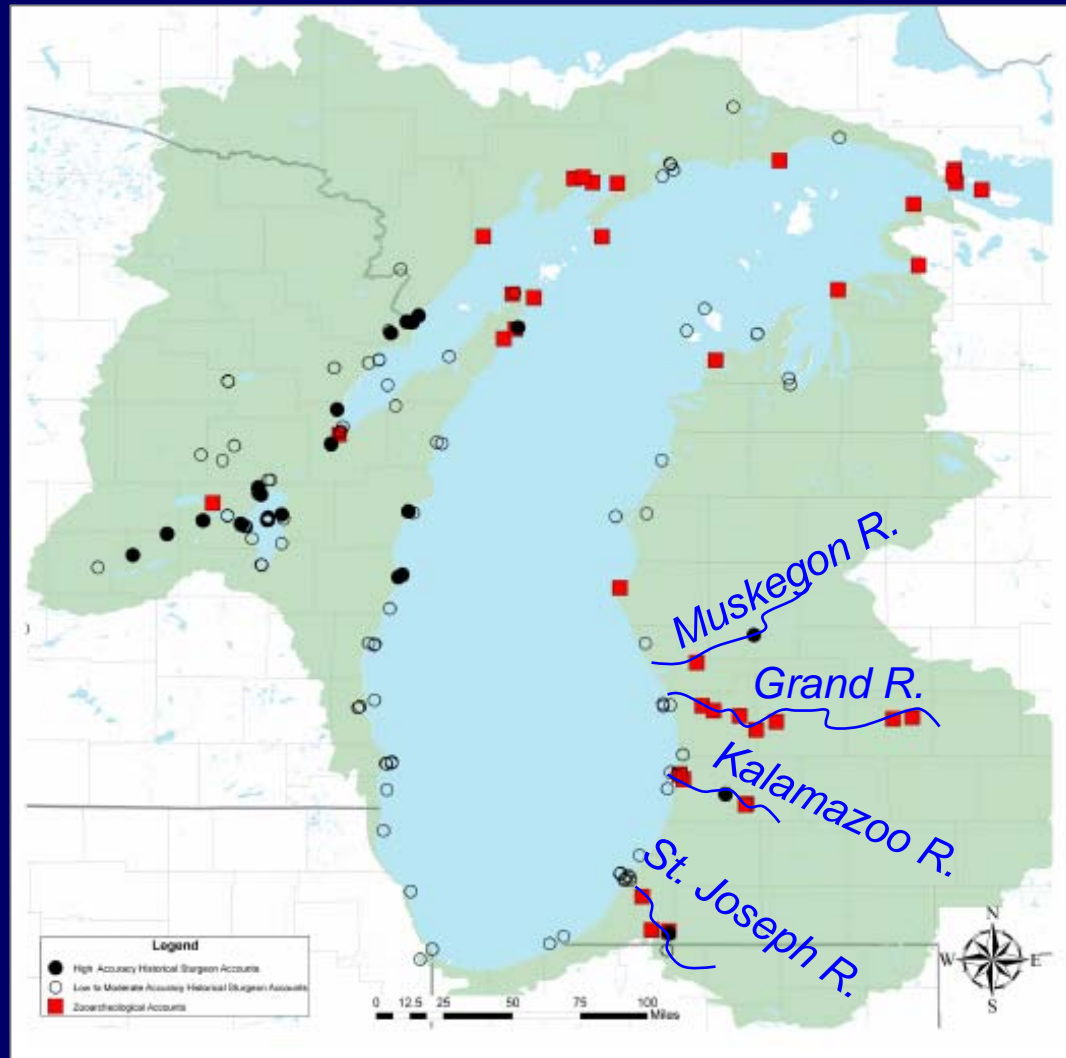
- **Ballast introduction**
- **Extremely tolerant**
- **Density  $>20/m^3$**
- **Rapid expansion since 1990**



# Demise of a Fishery...



# Historic Sturgeon Distribution



# Is Sturgeon Restoration Possible?

**Habitat Concerns**

**Low Numbers of Adult Spawners**

**Increased Benthic Productivity**

**Lamprey Parasitism**

**Poaching of Spawning Adults**



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- A photograph showing a man in a brown shirt and sunglasses kneeling on a rocky pier, handling a large, silvery fish. He is surrounded by other people, some of whom are taking photos with their mobile phones. The pier is made of large, light-colored rocks and is situated over a body of water. A green metal railing is visible in the foreground.
- **30 days in jail**
  - **\$2,298 in fines**
  - **50 hrs. DNR work**
  - **Fishing license suspended until 2012**

# Current Activities

Display at Outdoor Discovery Center

Tribal Wildlife Grant for Early Life History

Poaching Prevention and \$1,000 Reward

Volunteer Sampling for Eggs

Habitat Improvements?



MDNR Photo