


# Aquatic Invasive Species & What We Can Do

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# What is an “Invasive Species”

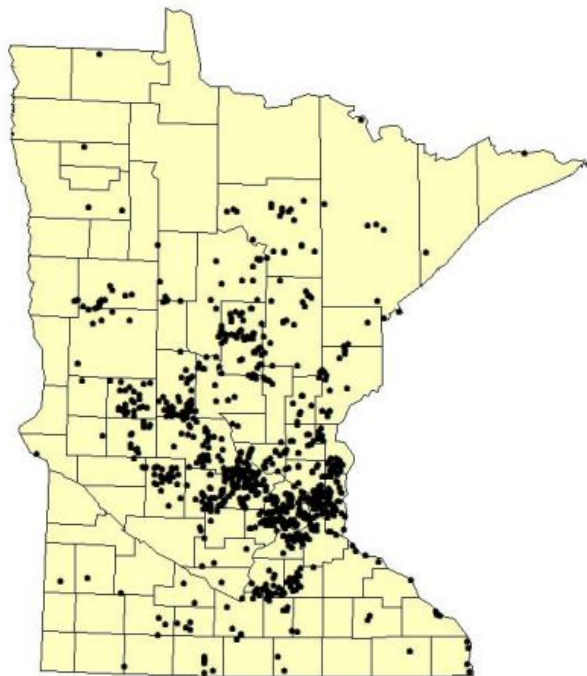
**“Invasive species are nonnative organisms that can adapt to life in a new environment and potentially cause economic loss, environmental damage or harm human health.”**

# Effects

1. **ECOLOGY:** compete with & may displace native species, reduce quality/quantity of habitat, alter ecosystem processes
2. **RECREATION:** can degrade water quality, interfere with recreation, and disrupt fisheries
3. **ECONOMICS:** terrestrial & aquatic invasive species costs the U.S. an estimated \$120 billion a year through damage & control costs

# MINNESOTA AIS HISTORY- PLANTS

- **Curly-leaf Pondweed**
  - ~ 750 MN water bodies
- **Eurasian watermilfoil**
  - 273 MN water bodies
- **Flowering Rush**
  - 27 MN water bodies
- **Purple Loosestrife**
  - Recorded in 77 of Minnesota's 87 counties at over 2,400 sites



# Eurasian Watermilfoil (*Myriophyllum spicatum*)

- Discovered in MN in 1987
- 12-21 leaflets
- Reddish stem
- Forms dense surface water mats
- Presently in over 270 water bodies in MN



# EURASIAN WATERMILFOIL

*Myriophyllum spicatum*



# Curly-leaf Pondweed (*Potamogeton crispus*)

- In MN since the early 1900's
- Curly leaves with small serrations
- Forms dense mats at water surface
- Abundant in early spring and dies back late summer



# Purple Loosestrife (*Lythrum salicaria*)

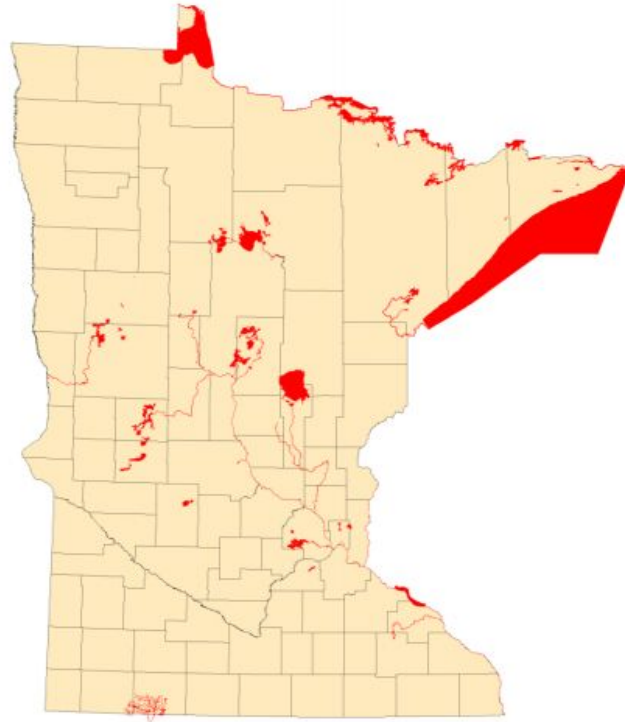
- Introduced in the 1800's as a garden plant
- Invaded wetlands/lakeshores, displacing emergent plants and reducing quality of habitat for wildlife
- Flowered spike, square stem





# MINNESOTA AIS HISTORY- ANIMALS

- **Zebra Mussels**
  - ~ 75 lakes and rivers infested, another 150 designated as infested
- **Faucet Snails**
  - ~ 34 MN water bodies
- **Spiny Waterflea**
  - ~ 60 MN water bodies
- **Invasive Carp**
  - St. Croix River in 1996
  - Mississippi River in 2008
  - No documented reproduction



# Spiny Water Flea (*Bythotrephes longimanus*)

- Very small zooplankton (< ½ inch) native to Eurasia discovered in 1982, Lake Ontario
- Eat native zooplankton; alter lake planktonic communities and thus fisheries (food chain disruptor)
- Has a long tail with spines, difficult for some native fish to consume

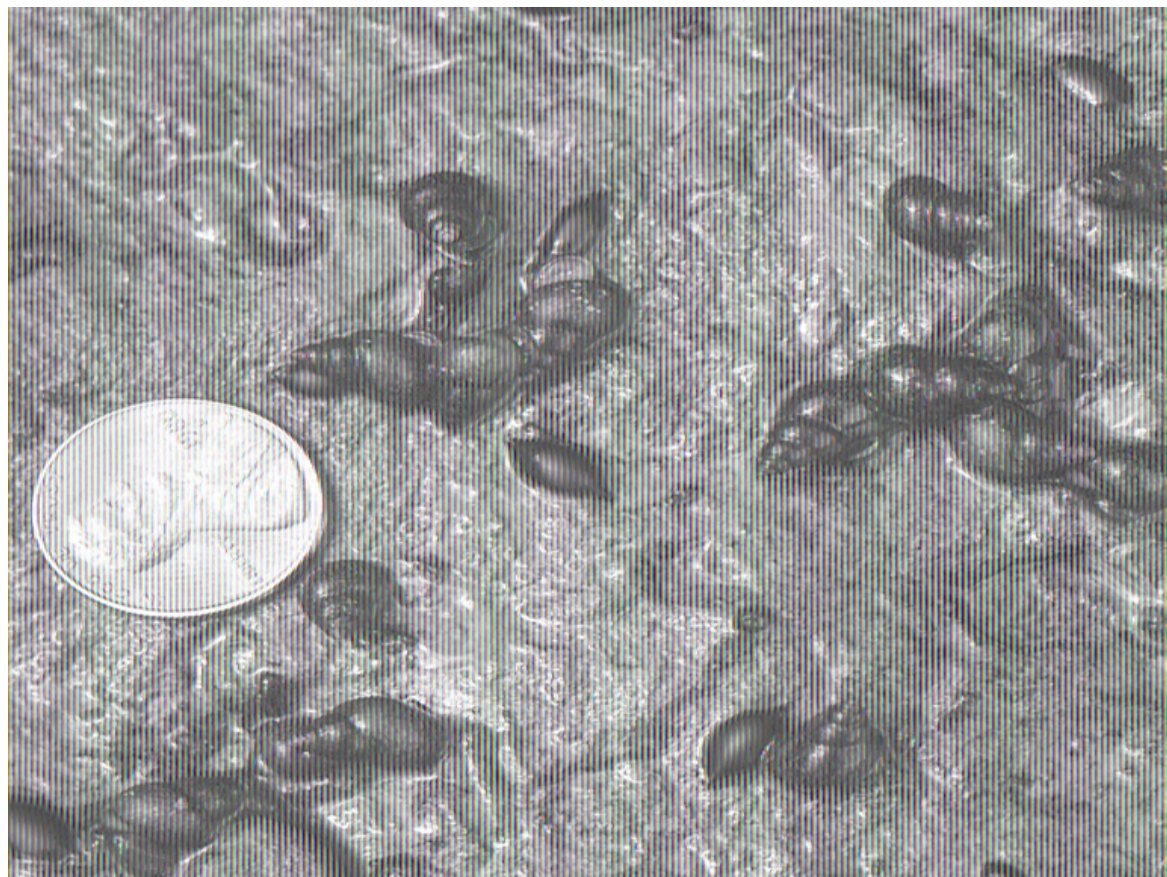


# Faucet Snails (*Bithynia tentaculata*)

- Native to eastern Europe, introduced through the Great Lakes
- Snail is an intermediate host for three intestinal trematodes (parasites) which kill other aquatic species
- Outcompete native snails
- Found in the Mississippi Crow Wing, and Shell Rivers







# Rusty Crayfish (*Orconectes rusticus*)

- 5 inches long, rusty-colored spots on carapace; claws with black tips
- Native to Ohio River valley, discovered in Minnesota around 1960
- Feed on fish eggs and young, destroy vegetation
- Outcompetes native crayfish



# Zebra Mussel (*Dreissena polymorpha*)

Freshwater mussel native to eastern Europe

“D” or shaped shell with brown & yellow stripes

Lives 3 to 5 years

Byssal threads that can attach to nearly anything



# Great Lakes Invasive Fish

## Eurasian Ruffe

Up to 5 inches

Native to Eurasia

Spines make eating these difficult for natives

Outcompetes native fish



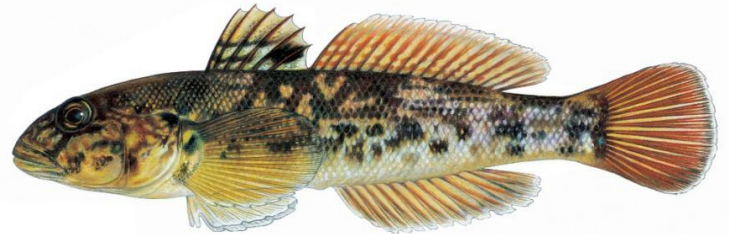
## Round Goby

3 – 10 inches

Native to eastern Europe

Single pelvic fin; black spot on fin

High densities; eat eggs of fish





# Great Lakes Invasive Fish

## White Perch

7 to 12 inches

Native to Atlantic coast

Invaded Great Lakes thru canal

Compete with native fish and eat their eggs

## Sea Lamprey

12 to 20 inches

Brown/black with circular mouth

Similar looking natives

Can kill fish

# Great Lakes Invasive Fish

White Perch



Sea Lamprey



# Invasive Carp

- Feed on algae and other microscopic organisms
- Brought to the US for aquaculture pond management
- Moving northward up rivers such as Mississippi
- Often outcompeting native fish for food



# Silver Carp



Up to 60 lbs

Silvery skin

Individuals caught on the Mississippi & St. Croix Rivers

Impacts “Flying” fish – can leap 10 ft; direct harm to people Compete with native fish



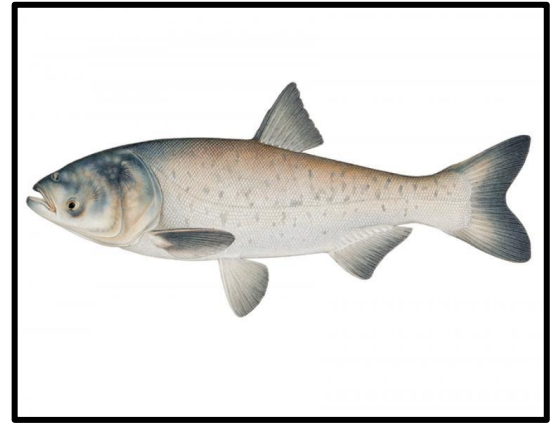
# Bighead Carp

Large, up to 5 ft long & 100 lbs

Caught in Mississippi & St. Croix Rivers

Impacts Compete with native fish (perch, ciscos, etc) for plankton

Which also affects the fish (walleye, etc.) that eat those species





EDRR – Early Detection Rapid Response Plan

PLANTS - controlled with various success using herbicides or mechanical means – Control Grants also offered

Fish and invertebrates more difficult to control due to non-target mortality



# What Can We Do?



# Thank You For Listening

Lund, Keegan. "AQUATIC INVASIVE SPECIES ." *AQUATIC INVASIVE SPECIES* , 2010,  
[mnerosion.org/wp-content/uploads/2010/10/Aquatic-invasive-PSpecies-Keegan-Lund-MN-DNR.pdf](http://mnerosion.org/wp-content/uploads/2010/10/Aquatic-invasive-PSpecies-Keegan-Lund-MN-DNR.pdf).