

CHALLENGE: AQUATIC INVASIVE SPECIES



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Great Lakes Orientation

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www.glfc.org

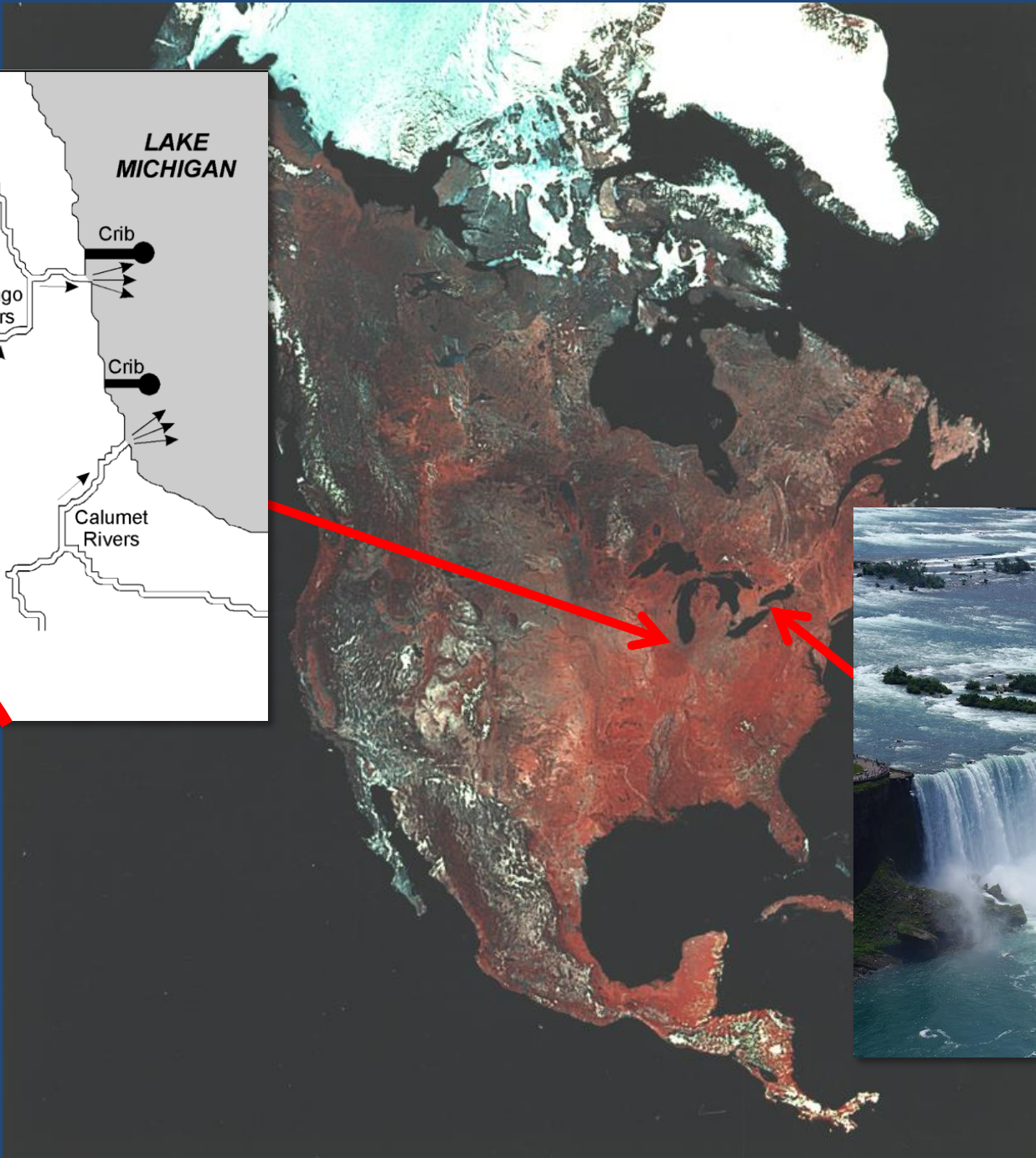
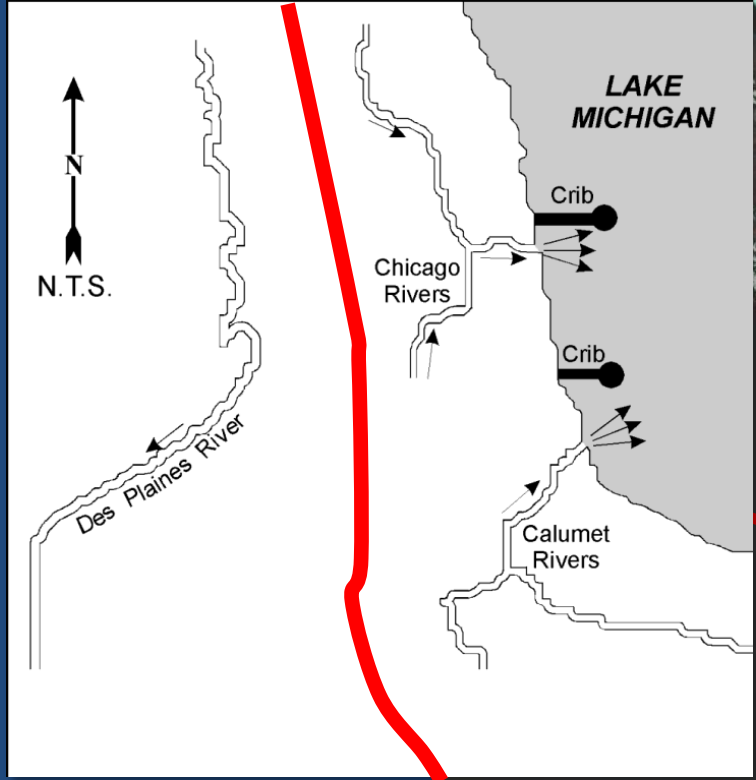
FOLLOW US:



@LampreyControl



LampreyControl



NATIVE

Lake trout
Lake whitefish
Lake Sturgeon
Brook trout
Burbot
Yellow perch
Walleye
Atlantic salmon
Sculpins
Cicsoes
Mysis
Diporeia

NON-NATIVE

NATURALIZED

(Purposefully introduced)

Chinook salmon
Coho salmon
Steelhead (rainbow trout)
Brown trout
Common carp
Atlantic salmon
Rainbow smelt

INVASIVE

Sea lamprey
Zebra/quagga mussels
Alewife
Round goby
Eurasian ruffe
Grass carp*
Spiny water flea
Fish hook flea
Bloody red shrimp

INVASIVE PLANTS

Phragmites

Reed canary grass

Purple loosestrife

Curly pondweed

Eurasian water milfoil

Eurasian frogbit

Narrow leaf cattail

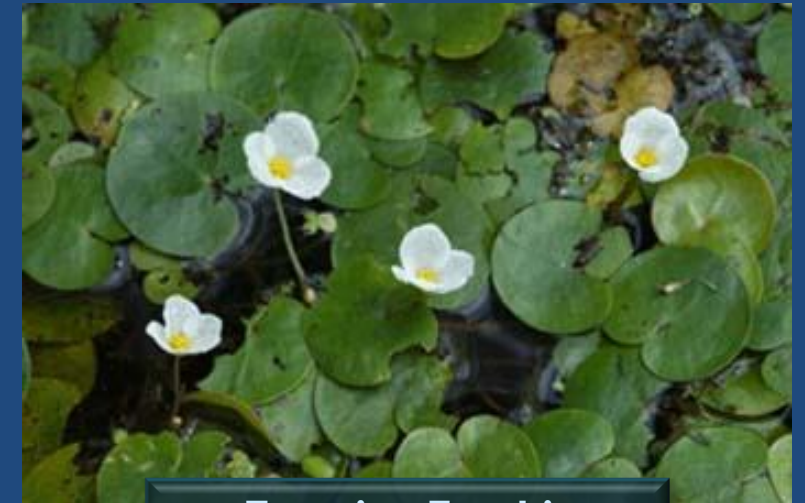
Marsh thistle



Phragmites



Eurasian water milfoil



Eurasian Frogbit

INVASIVE SPECIES VECTORS

- Ballast water
- Canals and waterways
- Trade of live organisms
- Recreational activities



ZEBRA MUSSEL



**SPINY
WATER FLEA**



ROUND GOBY



BLOOD RED SHRIMP

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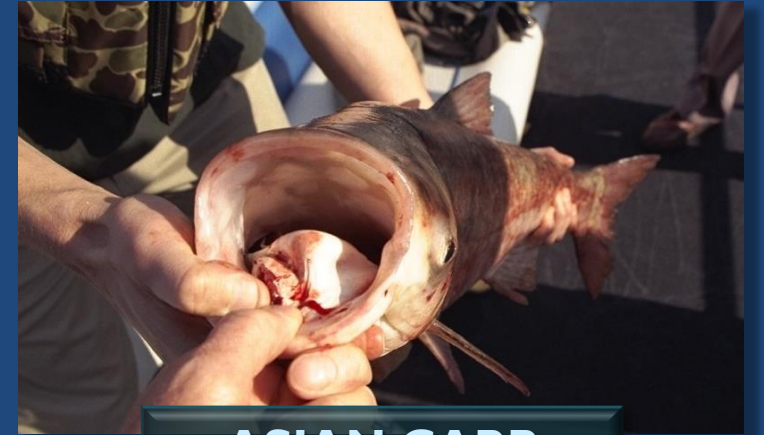
**SEA
LAMPREY**



**ASIAN
CARP**

INVASIVE SPECIES VECTORS

- Ballast water
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- Recreational activities



ASIAN CARP



LIONFISH



BURMESE PYTHON



SNAKEHEAD

INVASIVE SPECIES VECTORS

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GOLDFISH



GHOST SHINER



INVASIVE SPECIES IMPACT

ECONOMIC LOSS

- 50,000 foreign species in the US
- \$120 Billion in losses annually
 - \$5.4 billion from exotic fish
 - \$1 billion from exotic mollusks
- 42% of Threatened and Endangered Species at Risk

Source: Pimental, Zuniga, and Morrison (2005)



WHY SHOULD WE CARE ABOUT AIS?

BECAUSE WE'LL BE STUCK WITH THE PROBLEM IF WE DON'T!

- 180+ non-native species in Great Lakes (not all invasive)
- Only 2 can be controlled (!)



ALEWIFE



**SEA
LAMPREY**

THE FUTURE

- **PREVENT**
- Control
- Innovate
- Establish new laws & regs
- Monitor
- Conduct rapid response



Physically Separate Watersheds



**Manage
Ballast
Water**

RESOURCES

- Great Lakes Fishery Commission: Sea lamprey control
www.sealampreycontrol.org
- NOAA: GLANSIS (GLERL)
www.glerl.noaa.gov/glansis/
- USGS: Invasive species program
www.usgs.gov/ecosystems/invasive-species-program
- Great Lakes Commission: Aquatic invasive species
www.glc.org/work/invasive-species/
- National Invasive Species Council
<https://www.doi.gov/invasivespecies>
- Reduce Risk From Invasive Species Coalition
www.rrisc.org

