

A Quick Presentation about Shorelines, Plants and AIS

Carrie Sanda
Douglas County AIS Coordinator



As many as 90% of the living things in our lakes and rivers are found along their shallow margins and shores.

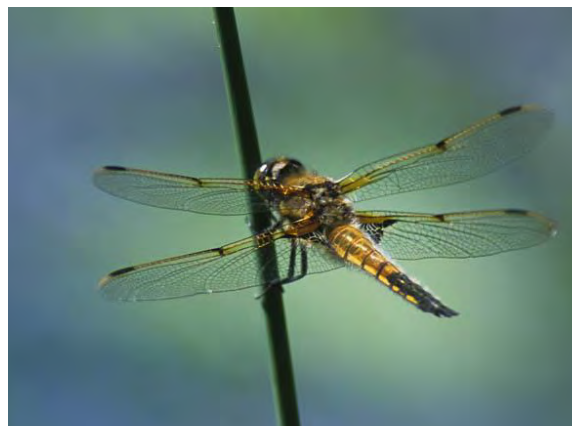
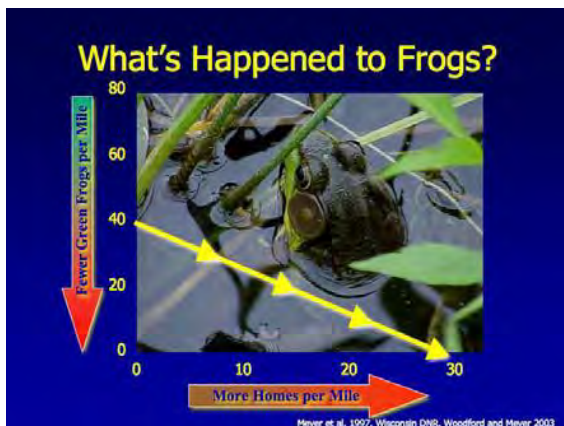


Lake edges are places where many creatures and plants must live to survive...



Vegetation in and along the water =
food, cover and nursery areas







Native insects (caterpillars, leaf worms etc...) are very important to birds for raising their young.



Most birds will never come to your feeder



Got Geese?

Buffers can help discourage pesky geese



Natural Beauty

- Numerous surveys indicate we like natural beauty -looking out at the lake-



Landscaped Beauty



Photo: Bill Bartodziej

Privacy

Buffers can provide both side lot and lake front privacy screens.



Some common aquatic plants



Invasive Species and Shorelines

- A healthy riparian zone acts as the “immune system” of the lake
 - Catches sediment, nutrients, slows the flow
- Disturbed areas on land and in the water are more likely to be invaded



Some common aquatic invasive species



Yellow Iris Control on ULSC



Project Overview

- Summer 2013
 - Frequency survey of 100 data points along the first ½ mile of the river outlet
 - Hand pulling & underwater cutting
- Summer 2014
 - Frequency survey of same data points
 - Hand pulling & underwater cutting
- Summer 2015
 - Frequency survey





To date a total of 24 bags (45 gallon) of Yellow Iris removed



Questions?

Thank you!!

csanda@uwsuper.edu

715-394-8525

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Some common aquatic invasive species



Invasive Snails



Curly Leaf Pondweed



Eurasian Water Milfoil



Yellow Iris



Freshwater Jellyfish



Japanese Knotweed



Phragmites



Spiny Waterfleas



Zebra Mussels (adults and veligers)

Invasive Species and Shorelines

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Questions?



Thank you!!

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715-394-8525

Aquatic Invasive Species

- Carrie Sanda, Douglas County AIS Coordinator
- Farrah Wirtz, AIS Program Assistant

Where Did They Come From?



Eurasia	77
Atlantic	18
Asia	12
Mississippi	7
Pacific/Southern U.S.	7
Unknown	18
Total:	139

(data taken from Mills et al. 1993)

8

How did they Get here?



Mechanism	Number of Species	Percent ¹
Ballast Water Discharge	30	35
Cultivation	19	22
Stocked Fish	12	13
Unknown	9	10
Diseases and Parasites with Fish	9	10
Canals and Diversions	6	7
Aquarium Releases	4	5
Live Bait Releases by Anglers	3	3
Recreational Boaters	2	2
Railroads and Highways	1	1
Packaging Hitchhiker	1	1
Other Release	1	1

¹exceeds 100% since six species arrived via multiple pathways



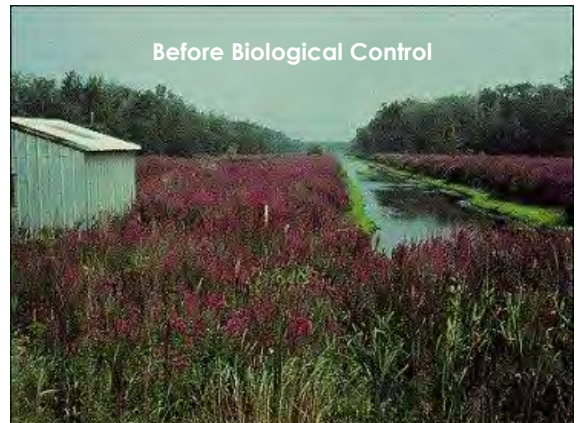
Purple Loosestrife

(*Lythrum salicaria*):

- Arrived in 1800's
- Brought by settlers for gardens
- Seeds in soil used as ship ballast



Before Biological Control





What can you do?

- Learn to identify correctly
- Monitor your own shoreline
 - Hand pull
 - Cut and bag flowering heads
- Raise and release beetles?

Zebra Mussels

- Native to western Russia
- Introduced by ballast water
- D-shaped shell
- Zebra-like stripes



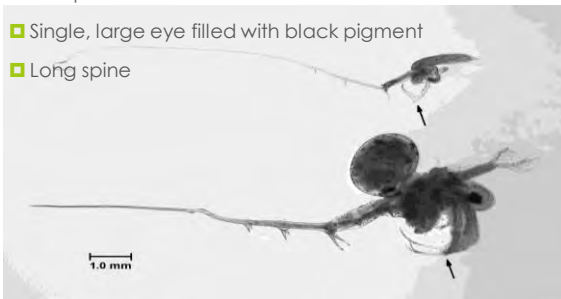
Quagga Mussels

- Can survive in waters unsuitable for Zebra Mussels
- Feeds year round
- Rounder in shape than Zebra mussels, paler color near hinge
- Can inhabit both hard and soft substrates
- May out-compete Zebra mussels
- Alters food web



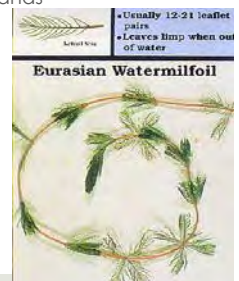
Spiny Water Fleas

- Arrived in ship ballast water in the 1980's
- Disrupt food chain
- Single, large eye filled with black pigment
- Long spine



Eurasian Milfoil

- Brought to U.S. via aquaculture or aquarium trade
- Can form dense monoculture stands
- Has delicate, feather-like leaves
- Usually has 12-21 leaflet pairs per leaf



Snails

- New Zealand Mudsail (ballast/aqua trade)
- Faucet Snail (ballast/ plants)
 - Intermediate host for an intestinal trematode that leads to waterfowl mortality
- Banded Mystery Snails (aquarium and boating)
 - Smaller than Chinese Mystery Snails
 - Reddish-brown bands
- Chinese Mystery Snails (aquarium release)
 - Introduced in 1891
 - 1.5 inches in length



Crayfish

- Rusty Crayfish (anglers)
 - Aggressive and "chase" away native species
 - Snip aquatic plants (Eurasian Milfoil)
 - Rust-colored spots on sides
- Red Swamp Crayfish (aquarium release)
 - Dark red in color with raised bright red spots on body and claws
 - Commonly sold in aquarium trade
 - Males can travel over land
 - Can reduce amphibian and native crayfish populations



Curly Leaf Pondweed

- Introduced when common carp were brought in the mid 1800's and/or aquarium trade
- Has alternate leaves
- Leaves are minutely toothed
- Wavy leaf edges



Asian Carp

- Brought into US to clean catfish farm ponds
- Escaped in 1993 due to flooding
- Spread through Mississippi River & its tributaries
- Voracious eaters, can cause native fisheries to collapse
- September 2011
 - Traces of Silver Carp DNA found below the St Croix Falls Dam
 - Bighead carp caught in lower Wisconsin River
- No young fish or other signs of reproduction have been found in Wisconsin waters to date

Asian Carp

-Bighead
-Silver
-Black
-Grass

Common Carp

-Present in Lake Superior for over a century

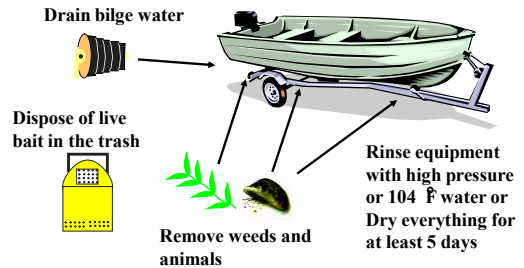


What Can I Do?

- Learn how to ID species
- Actively look for them
- Early detection → earlier control → reduced control cost
- Property values
 - 2009 study 13% decrease in land values after invasion by EWM
- Importance of CBCW
- Proximity to source lake (Lake Superior)

Prevent the Spread

***BEFORE launching..... BEFORE leaving**



What to do if you find AIS

- 1) Collect a Specimen
- 2) Preserve in Freezer
- 3) Contact AIS Coordinator or WDNR



Aquatic Invasive Species Workshop

- Identify
- Monitor
- Report
- Sign-up sheet

All of us need to get involved in preventing the spread of aquatic invasive species.



Remember, its up to us !

Thank You!

Carrie Sanda

Email: csanda@uwsuper.edu

Telephone: (715) 394-8525

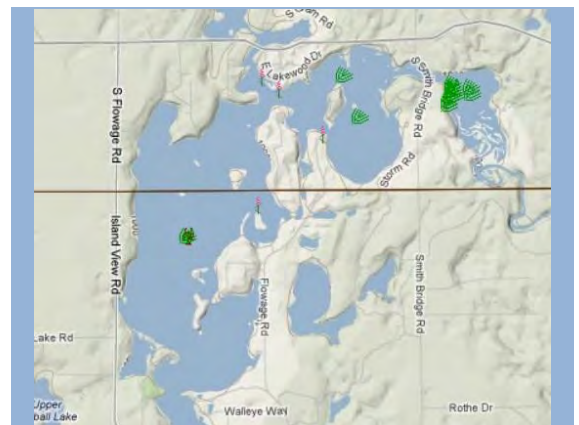
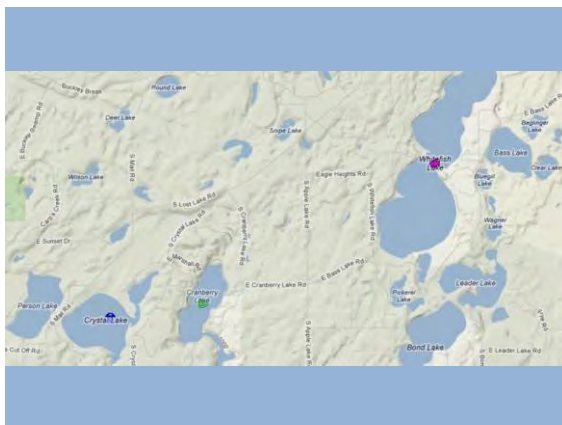
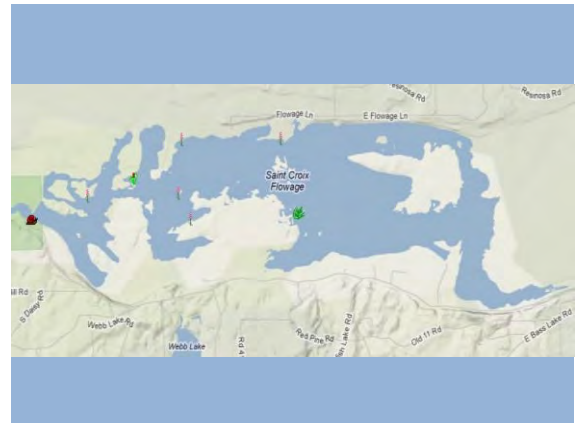
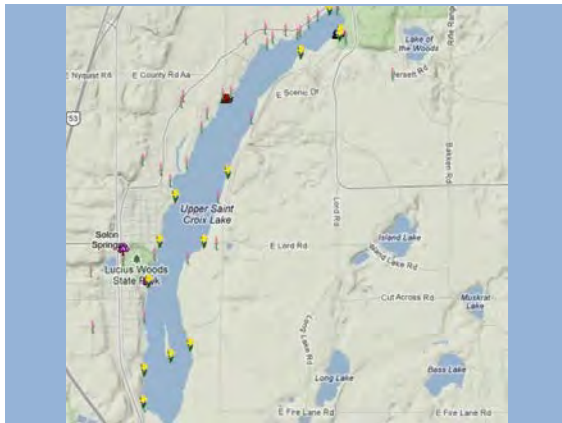
Southern Douglas County AIS Report

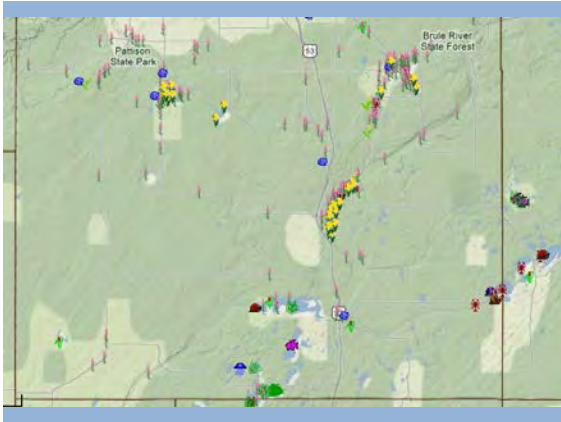
Carrie Sanda

Douglas County AIS Coordinator
Outreach Specialist, Lake Superior Research Institute

Douglas County AIS Program (at a glance)

- WDNRA AIS Control Grant
- Workshops
 - CBCW
 - CLMN
 - Project RED
 - Purple Loosestrife Biocontrol
- AIS Monitoring
- AIS Control Projects
- Education and Outreach
 - Booths at Events
 - CBCW Inspector
 - Presentations
 - News Stories
- Steering Committee





Douglas County AIS Program (at a glance)

- WDNR AIS Control Grant
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Presentations to Lake Associations



Purple Loosestrife Beetle Bonanza



Purple Loosestrife Beetle Bonanza

- Helps students become responsible, environmental citizens.
- Engages students in addressing a real life environmental problem.
- An exciting & fun hands-on learning experience.
- Learn about plants, insect life cycles, invasive species, wetlands & more!



The Purple Loosestrife Beetle Bonanza Project is an opportunity for students to help the County address Purple Loosestrife infestations. Students will help grow the plant and cultivate populations of beetles for release in area wetlands. The project will break down as follows over the 2012-2013 school year:

- September: Purple Loosestrife & AIS presentation/activity (one class period)
- September Field Trip: Dig up rootstock from area wetland (<2-lbs, dependent on funding)
- February: Plant rootstock, classroom lesson/activity (one to two class periods)
- April: Adult beetles placed on plants, classroom lesson/activity (one to two class periods)
- Late May Field Trip: Bring beetles to infested area (<2-lbs, dependent on funding)

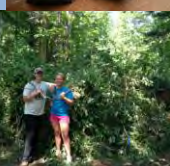
DSCAF
Four Cedars Environmental Fund

Space is limited, so sign up now!



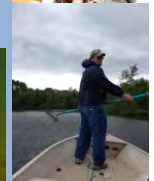
Lucuis Woods Weed Pulling Days

- Pulling Buckthorn, Honeysuckle, Purple Loosestrife



AIS Monitoring

- 8 Inland Lakes/season
- New findings
 - Purple Loosestrife, Bear Lake
 - Banded Mystery Snails, Lake Nebagamon
 - Chinese Mystery Snails, Upper Lake St. Croix
 - Yellow Iris, Upper Lake St. Croix



Purple Loosestrife Biocontrol

Wisconsin Point – 2012

Nemadji River – 2013



Yellow Iris Upper Lake St. Croix



Phragmites Gordon/St. Croix Flowage



Douglas County Perspective

- Project priority
 - Balancing work between Lake Superior & inland
- Expanding outreach to new audiences
- Address control projects
 - EWM/CLP
 - Phragmites
 - Purple Loosestrife
- Work with Steering Committee

Thank You!

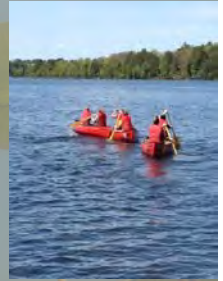
Questions?

Douglas County AIS Report

Carrie Sanda
Douglas County AIS Coordinator

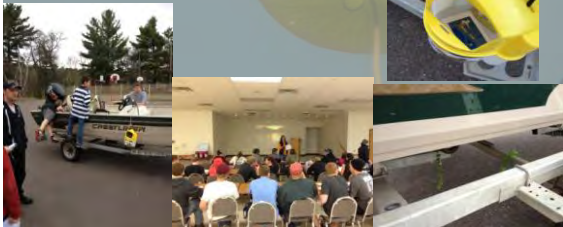
Agenda

- Workshops
- Events
- Purple Loosestrife BB
- AIS Monitoring
- Invasive Species Control
- Newsletter



Workshops

- Clean Boats Clean Waters



Workshops

- Purple Loosestrife Biocontrol



Workshops

- Citizen Lake Monitoring Network



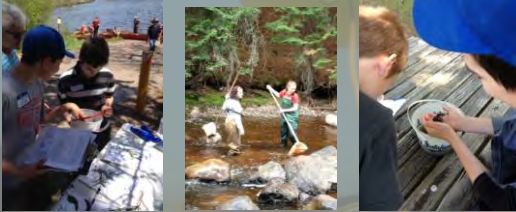
Events

- DC Fish & Game League Expo
- Brule Hatchery Family Fun Day
- Lake Superior Day
- Science Night at UW-Superior



Events

- Earth Tracks at the LS Zoo
- Drummond School Eco Education
- JAWS Fishing Tournament
- Northwest WI Lakes Conference



Purple Loosestrife Beetle Bonanza

- Duluth Superior Area Community Foundation Grant



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AIS Monitoring

- Monitor 5-6 lakes each season
 - Look for invasive plants, snails, zooplankton
 - Zooplankton tows
 - Meander survey
 - Snorkeling survey



Monitoring for:



Invasive Snails



Curly Leaf Pondweed



Eurasian Water Milfoil

Others...
-Purple Loosestrife
-Hydrilla
-Phragmites
-Yellow Iris



Freshwater Jellyfish



Zebra Mussels (adults and veligers)

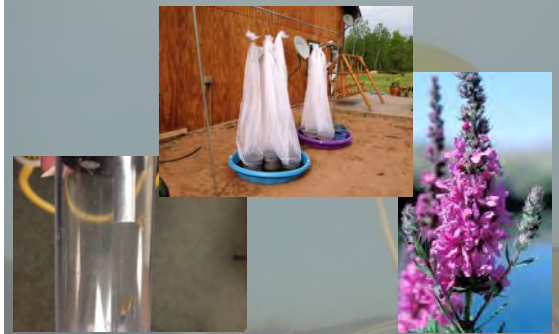


Spiny Waterfleas

2013 Monitoring Season

- Rock Lake (WDNR)
- Lyman Lake (WDNR)
- Little Sand
- Leader Lake
- Amnicon Lake
- Upper Ox Lake
- Bearegard Lake

Purple Loosestrife Biocontrol



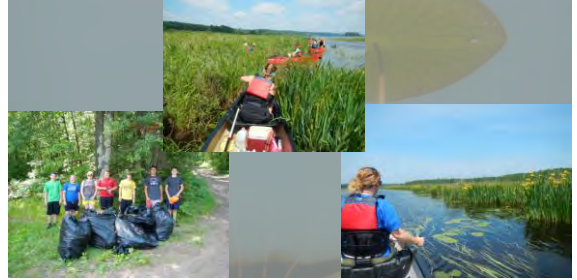
Invasive Species Control

- Phragmites
- Lucius Woods Weed Pulling Days



Invasive Species Control

- Yellow Iris on Upper Lake St. Croix



Monitoring
Beauregard Lake

Newsletter

- Annual
- Douglas County AIS Listserv

Thank You!

Questions?

Aquatic Invasive Species

- Carrie Sanda, Douglas County AIS Coordinator
- Farrah Wirtz, AIS Program Assistant

Agenda

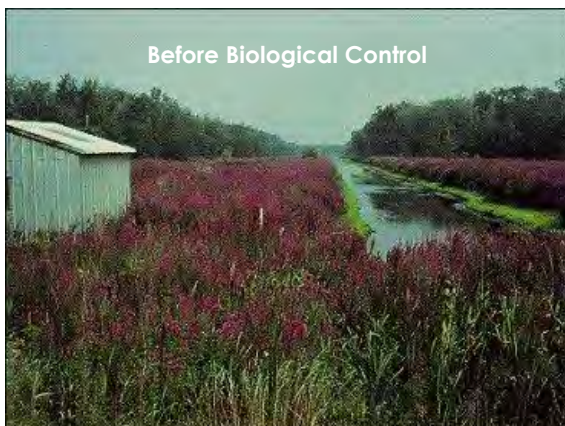
- Purple Loosestrife
- Other AIS
- AIS Monitoring Workshop



Purple Loosestrife

(*Lythrum salicaria*):

- Arrived in 1800's
- Brought by settlers for gardens
- Seeds in soil used as ship ballast



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AIS List

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- Importance of CBCW
- Proximity to source lake (Lake Superior)

Aquatic Invasive Species Workshop

- Identify
- Monitor
- Report
- Sign-up sheet

- State funding
- Recent AIS findings
- New prevention methods
- State AIS monitoring, overall AIS trends for spread
- Asian and Silver Carp
- AIS monitoring results on Lake Nebagamon

Carrie Sanda

■ Email: csanda@uwsuper.edu

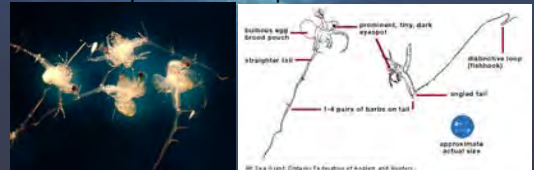
■ Telephone: (715) 394-8525

Spiny Water Fleas & Whitefish Lake

Carrie Sanda
Douglas County AIS Coordinator
July 5th, 2013

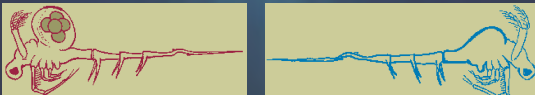
Info about waterfleas

- First discovered in Lake Huron in 1984
- Established in all of the Great Lakes by 1987
- Accidentally introduced through ballast water
- Has caused a decline in the population and biodiversity of native zooplankton



Identifying Characteristics

- The tail spine is its distinguishing feature and separates it from all other zooplankton.
- The head has a single, large eye filled with black pigment and a pair of mandibles.
- Four pairs of legs. The first, longer pair are used for catching prey, other for grasping. Swimming antennae propel the animals through the water.
- Have a hard exoskeleton but they only shed their body covering; keep the tail spine.



Behavior and Effects

- Eat smaller zooplankton like *Daphnia* which are less
- The food source for fish is less
- Fish studies show
- More water at night to avoid predation.



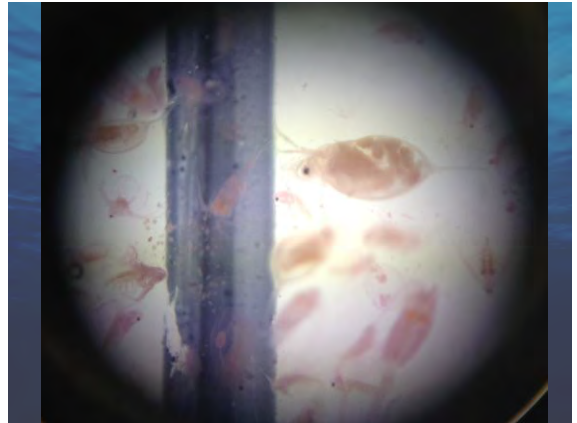
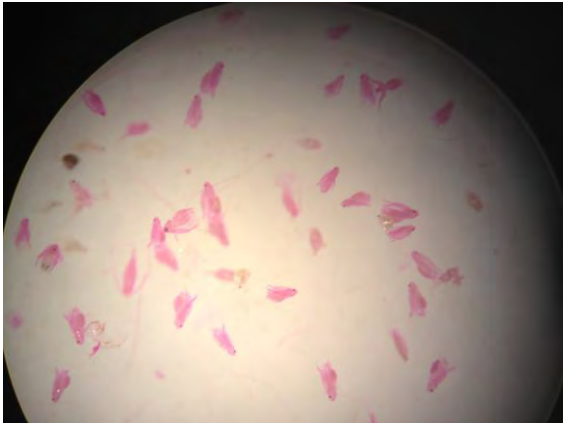
How they Spread

- Spread to inland waters when gear is infested with egg-laden females. Eggs can establish new pops.
- Eradicating established infestations is impossible.
- Clumps look/feel like gelatin with tiny black spots.
- Prefer deep lakes but can establish in shallow waterbodies.
- Abundant during summer



Monitoring for Waterfleas

- Three samples collected from three sites, ideally from the deepest points of the lake
- Tow the net for 120 seconds behind a boat

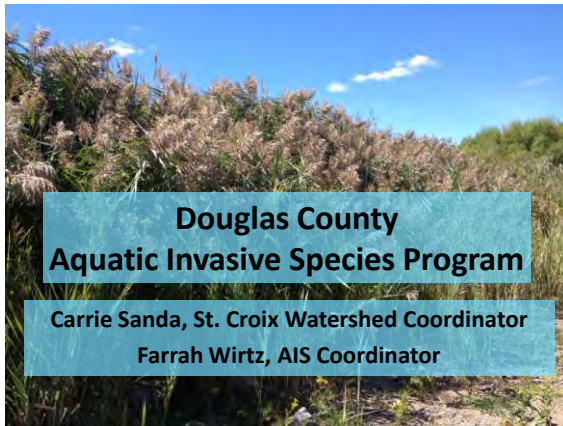


Results of Tows

- Tows completed in 2011 and 2013
- No Spiny or Fishhook Waterfleas or their parts detected
- Additional tow this summer
- Continued monitoring in the coming years to check for presence is needed

Thank You!

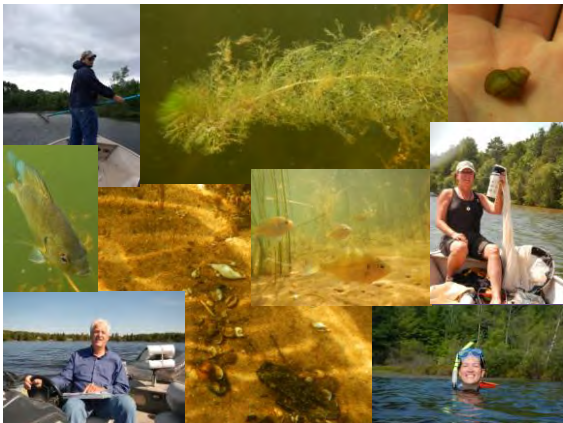
Carrie Sanda
csanda@uwsuper.edu
715-394-8525





AIS Monitoring

- Monitor 7 lakes each season
- Aquatic plants, snails/mussels, fish, zooplankton
- New findings
 - Purple Loosestrife, Bear Lake
 - Mystery Snails, Lake Nebagamon & Upper Lake St. Croix
 - Yellow Iris, Upper Lake St. Croix



Control Work



Purple Loosestrife
Biological Control



- 1 Known infestations
 - County Road B in Foxboro

Before

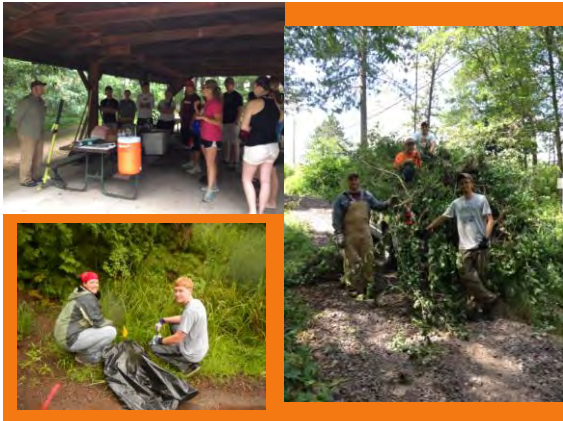


After



Lucius Woods Invasive Species Control

- Partnership between AIS Program, Forestry Department, Solon Springs School, NCWMA
 - 2012 & 2013, 5 days
 - Buckthorn, European Bush Honeysuckle, Black Locust, Purple Loosestrife



Yellow Iris Control on ULSC



Project Overview

- Summer 2013
 - Frequency survey of 100 data points along the first ½ mile of the river outlet
 - Hand pulling & underwater cutting
- Summer 2014
 - Frequency survey of same data points
 - Hand pulling & underwater cutting
 - Wild Rice Seeding
- Summer 2015
 - Frequency survey
 - Wild Rice Seeding



24 bags of Yellow Iris removed
= 1,080 gallons

Upcoming

- Funding for additional 2 years to continue the AIS Program
- Expanding the Purple Loosestrife Beetle Bonanza
- Capstone Projects
- Japanese Knotweed control

Thank You!

Carrie Sada

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