

European Frogbit

New Aquatic Invasive to Ohio

Breann Hohman,
Watershed & Stewardship Coordinator



What is European frogbit?

Hydrocharis morsus-ranae

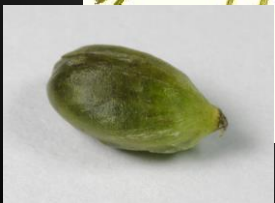
- Perennial
- Free floating – forms dense mats
- Found in calm water
 - Favors calcium rich
 - Eutrophic conditions
- Diecous (although usually one sex)



Identification

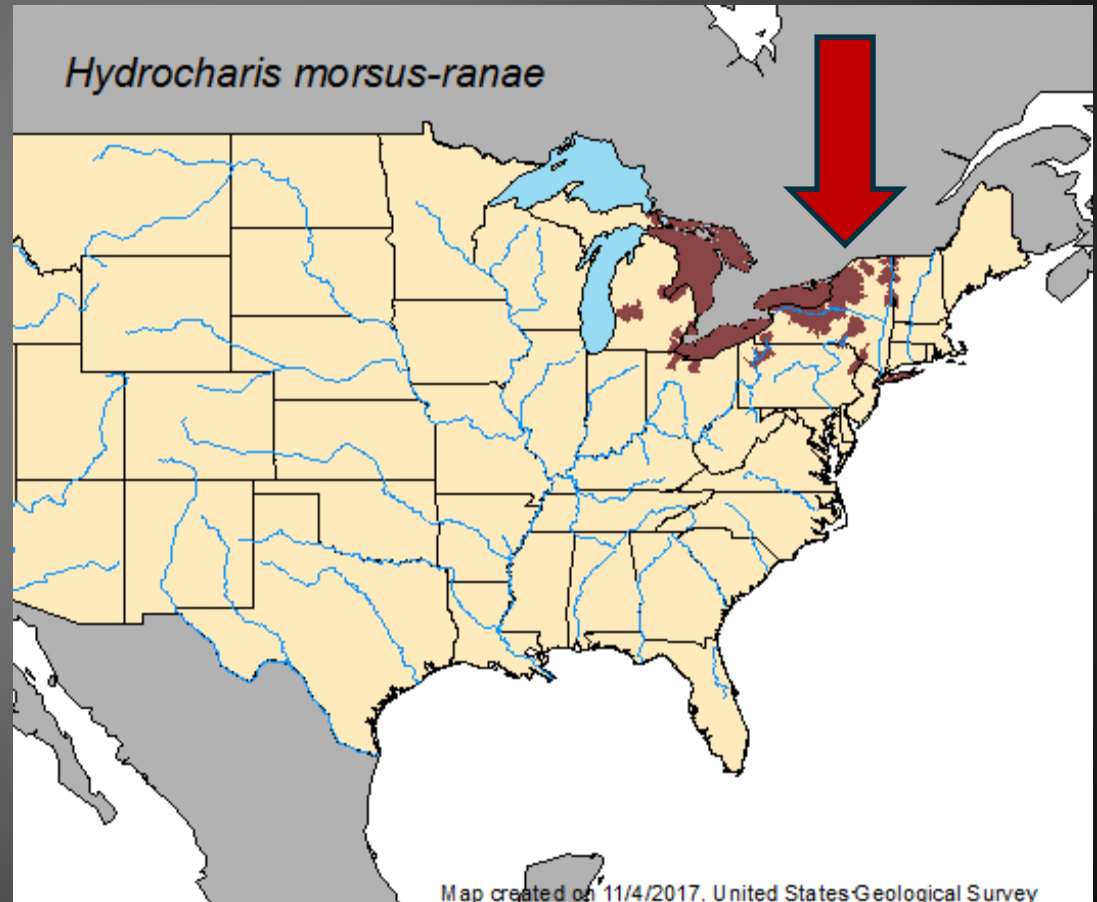


- Single white flower with 3 round petals and a yellow center
- Free floating
- Leaves are kidney-shaped to heart-shaped with a purple-red underside
- Leaves form a rosette then stolons
- Vegetative turions are main form of reproduction



History

- 1930's
 - Ottawa, Ontario CA
- 1974
 - New York, USA
- 1996
 - Michigan, USA
- Today
 - Lower Great Lakes
 - New England States
 - Washington State



How it spreads

- Water
 - Waves and currents
- Avian
 - Waterfowl and wading shorebirds
- People
 - Boats
 - Water gardening



THE AQUATIC COMMUNITY ASSOCIATED WITH NATIVE AND INVASIVE MACROPHYTES IN LAKE ERIE COASTAL WETLANDS

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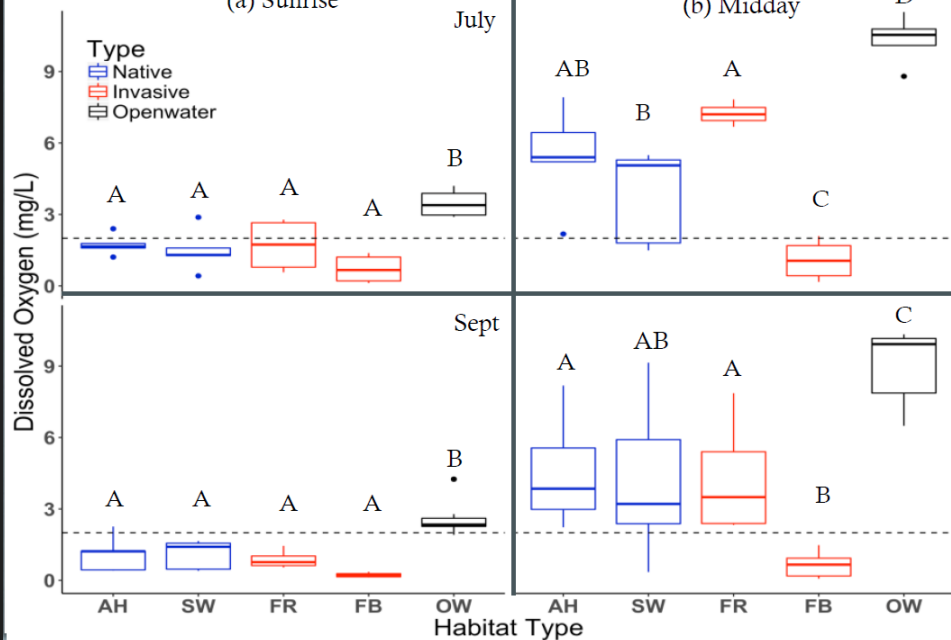
- Abiotic and biotic variables associated with selected nearshore aquatic vegetation communities
 - Native Species
 - Arrowhead (*Sagittaria spp.*)
 - Smartweed (*Persicaria spp.*)
 - Invasive Species
 - Flowering rush (*Butomus umbellatus*)
 - European frogbit (*Hydracharis morsus-ranae*)



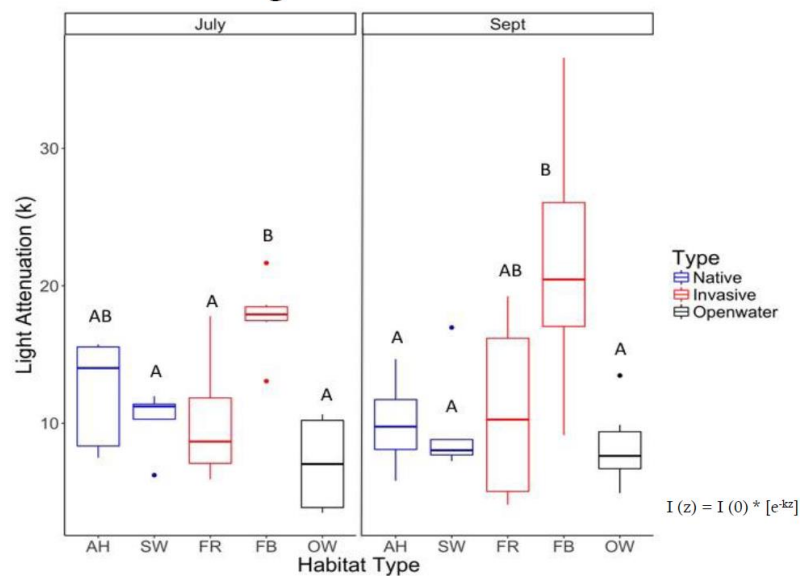
Dissolved Oxygen

(a) Sunrise

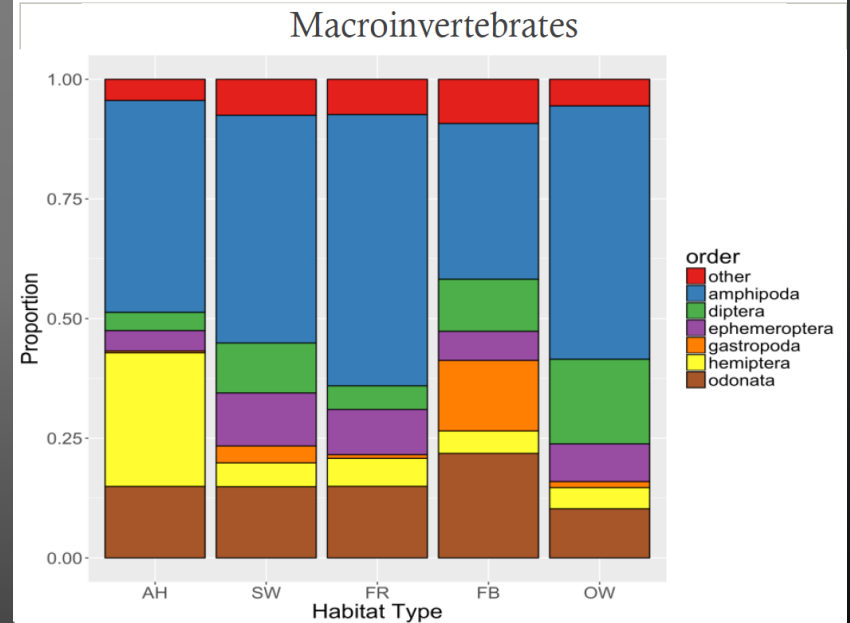
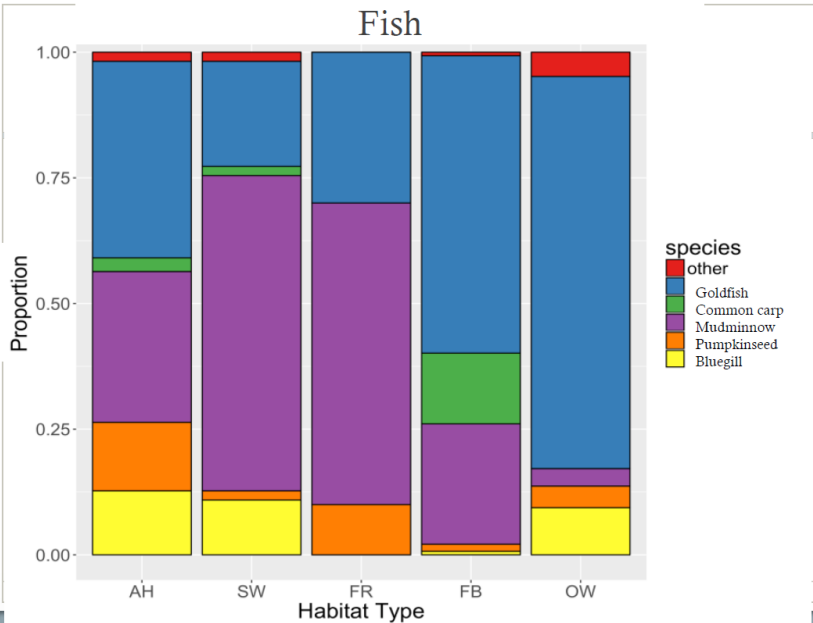
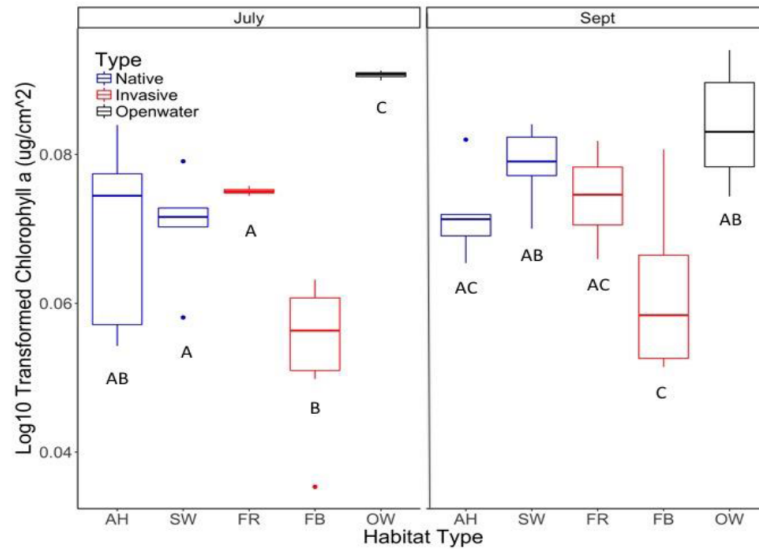
(b) Midday



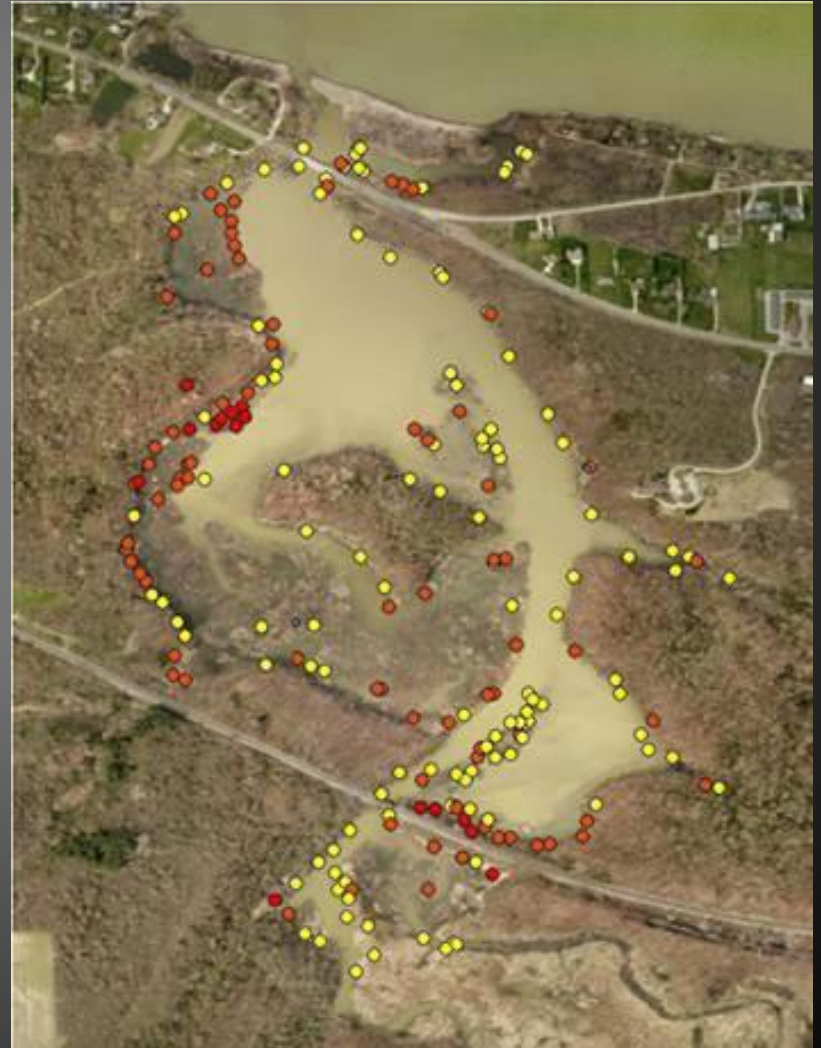
Light Attenuation



Primary Productivity- Periphyton



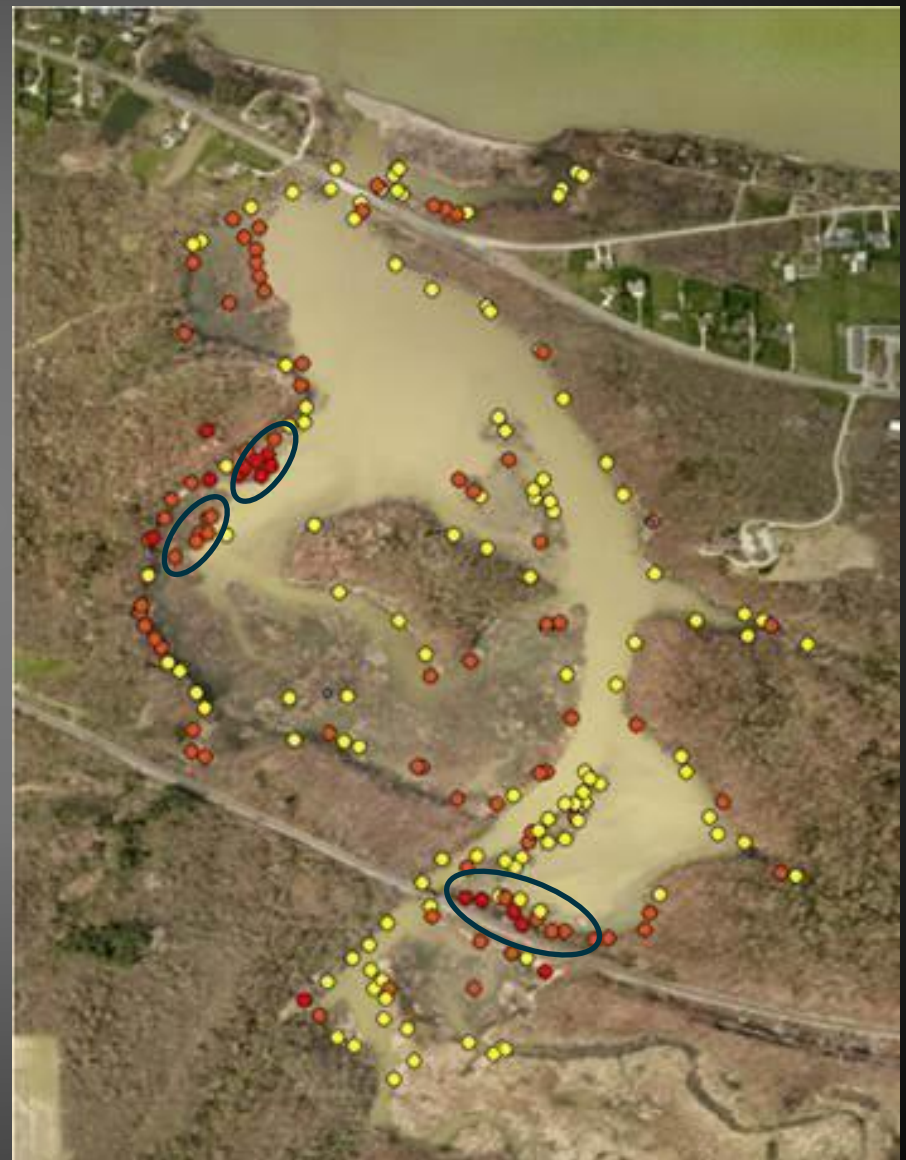
Old Woman Creek



Control Methods

- Mechanical Removal
 - Hand-pulling
- Shading
 - Must be greater than 70%
- Herbicides
 - Endothall, diquat, triclopyr,
 - Roundup? Imazapyr?
- Biological
 - Grass carp?





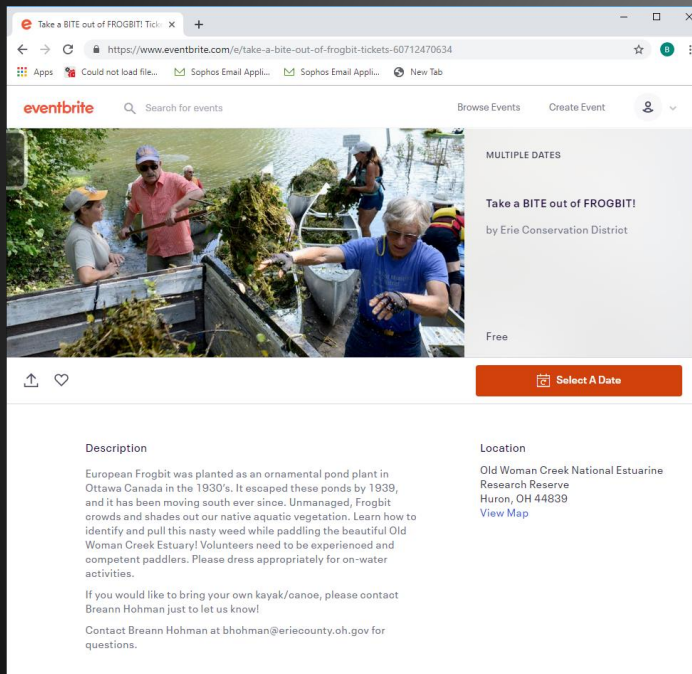
2019 Removal & Monitoring

- Removal

- Trained Volunteer Strike Team
- Staff pulling
- 2 public pull events, 1 school group
- Herbicide treatment in early July

- Monitoring

- Estuary Survey – June/September
- Post Herbicide Survey Plots



Prevention, Early Detection & Rapid Response!!



Questions?

