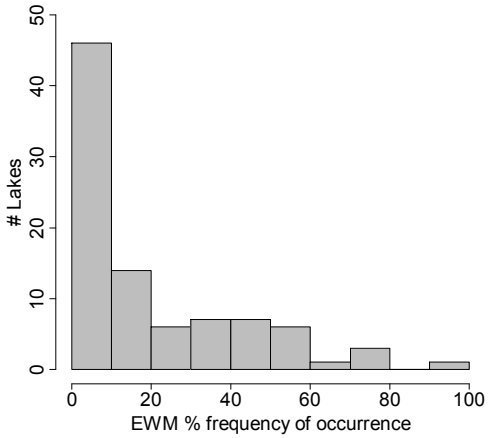
DEBUNKING EWM MYTHS

The non-native species Eurasian watermilfoil (EWM) has been recorded in around 540 Wisconsin waterbodies. We know where it occurs, but what are EWM populations in Wisconsin typically like? Research scientists have surveyed 92 lakes in order to answer that question. They found some interesting things…

➡ Myth: Where EWM occurs, it's a nuisance.
Fact: Most lakes with EWM have small populations.

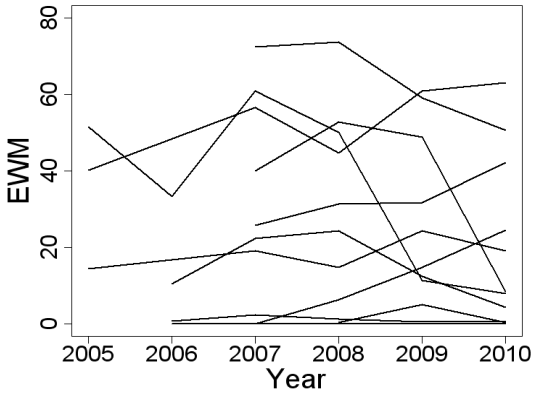


Higher EWM levels tend to occur in:
- Southern lakes
- Reservoirs more than natural lakes
- Lakes with shallow Secchi depth
- Lakes with shallow maximum rooting depth
- Drainage lakes

➡ Myth: EWM causes plant diversity to decline wherever it is introduced.
Fact: EWM has a complex, regional relationship with native plant diversity (sometimes negative, sometimes positive, sometimes no trend).

➡ Myth: EWM is unlike any native plant in Wisconsin
Fact: EWM distribution and abundance resembles that of many other native species (like coontail, elodea, and sago)

➡ Myth: EWM always increases to nuisance levels after it is introduced
Fact: EWM populations fluctuate



EWM populations trends in 11 unmanaged lakes

➡ Myth: Given the right ammunition, it is feasible to eradicate EWM from a lake.
Fact: Eradication is often an unrealistic management goal
Reasonable management goals should be set after careful consideration of available science as well as the costs and benefits of available treatment options

➡ Myth: EWM is so tenacious, once it's present, there's little to be done about it.
Fact: Early response can help keep populations low even in systems where EWM might be expected to do well.
To better understand the use of strategic management to control EWM, we are tracking population trends and management actions on 24 lakes in Wisconsin. This study will help us assess costs and benefits of EWM management over the short- and long-term.

➡ Myth: Hybrid EWM is more resistant to herbicides
Fact: There is no scientific evidence to support this conclusion.

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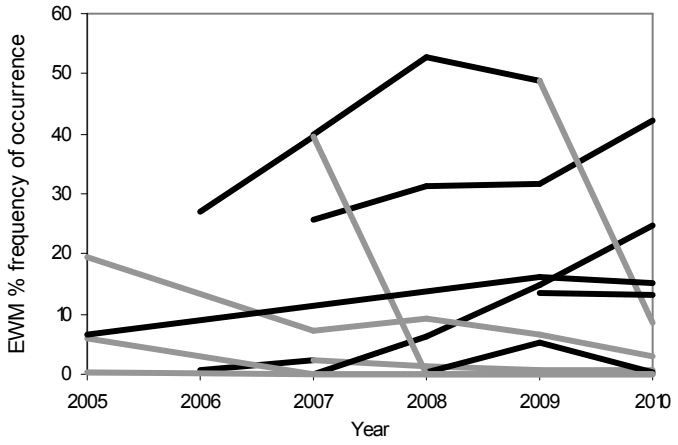
LONG-TERM EWM STUDY

Despite the increase in resources to control EWM, we lack the basic information necessary to set reasonable management expectations. Although EWM control efforts are often intended to "restore" an ecosystem, we have yet to demonstrate how this may be accomplished and we have yet to evaluate the associated economic and ecological cost. Thus, we are monitoring EWM and native plant population trends in 24 Wisconsin lakes in three ecoregions in order to assess the impact of best management practices over the short- and long-term. Here's what our data look like so far:

Managed **Unmanaged**

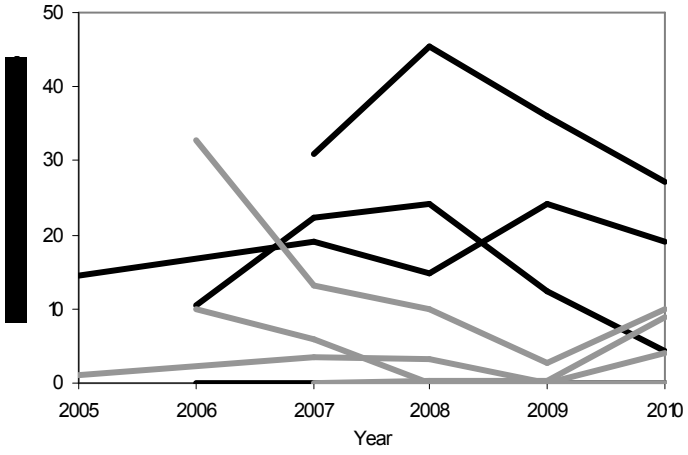
Northern Lakes New EWM Populations

- Variation in unmanaged systems
- Marked decrease in managed systems
- Effects on natives?



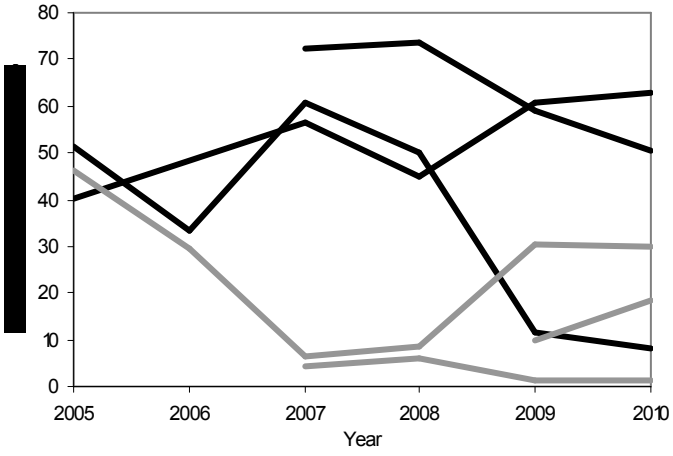
Central Lakes New EWM Populations

- Variation in unmanaged systems
- Marked decrease in managed systems
- Effects on natives?



Southern Lakes New EWM Populations

- Substantial variation in unmanaged systems
- Variation in managed systems
- Effects on natives?



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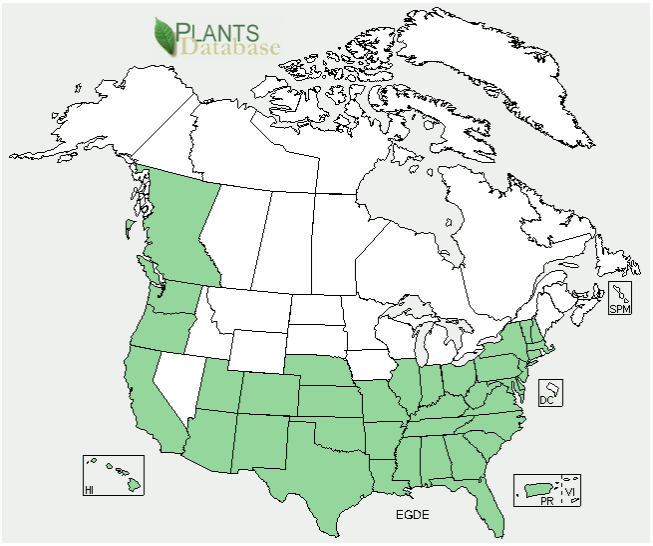
BRAZILIAN WATERWEED

(*Egeria densa*)



Egeria densa distribution in the United States obtained from the USDA Plants Database.

Description

- Submersed aquatic perennial
- Leaves 1-3 cm long, up to 5 mm wide
- Whorls of 4 to 8 leaves
- Short internode distance

Reproduction

- Fragmentation
- Vegetative: Double nodes produce roots, branching and lateral buds

Similar Species

- *Elodea* spp.
- *Hydrilla verticillata*

Ecosystem Impacts

- Reduced occurrence of native sp.
- Native seed bank lower in diversity and density under *Egeria densa* canopies
- Provides poor habitat for fish
- Changes in biotic and abiotic conditions cause a response on multiple trophic levels

Recently Found

Online Resources

- USDA - http://plants.usda.gov
- USGS - http://nas.er.usgs.gov
- WDNR - http://dnr.wi.gov/invasives/plants.asp
- http://www.ecy.wa.gov/programs/wq/plants/plantid2/ http://www.maine.gov/doc/nrimc/mnap/features/invasives.htm
- http://www.weedscience.ncsu.edu/aquaticweeds/

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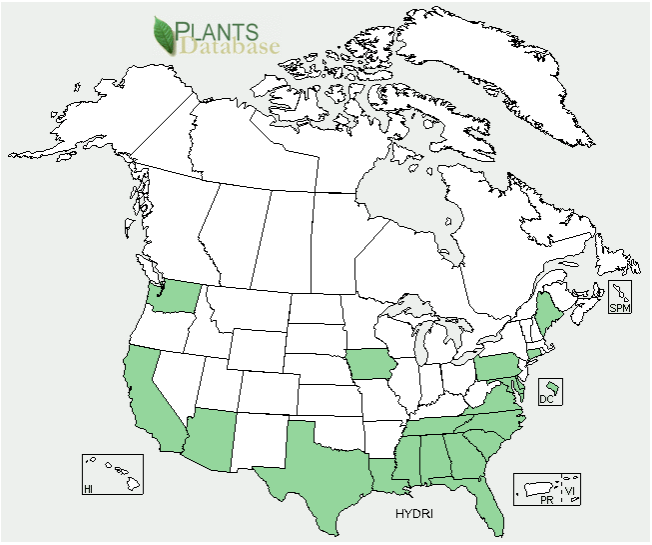
HYDRILLA

(*Hydrilla verticillata*)



Hydrilla verticillata distribution in the United States obtained from the USDA Plants Database.

Description

- Submerged aquatic perennial
- Stems are can grow up to 9 m long
- Leaves are visibly serrate 6 to 20 mm long, 2 to 4 mm wide.
- Conspicuous spines on underside of leaf

Reproduction

- Fragmentation
- Propagules: tubers & turions
- Vegetative: clonal expansion

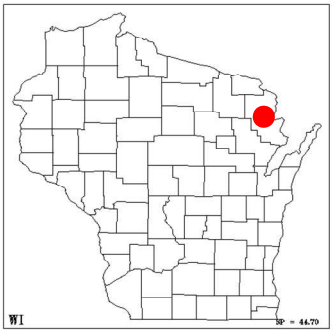
Similar Species

- *Egeria densa*
- *Elodea* spp.

Ecosystem Impacts

- Displaces native species; reduces biodiversity
- Forms inhospitable monocultures
- Hinders recreation

Recently Found



Online Resources

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- WDNR - http://dnr.wi.gov/invasives/plants.asp
- www.ecy.wa.gov/programs/wq/plants/plantid2/
- www.maine.gov/doc/nrimc/mnap/features/invasives.htm

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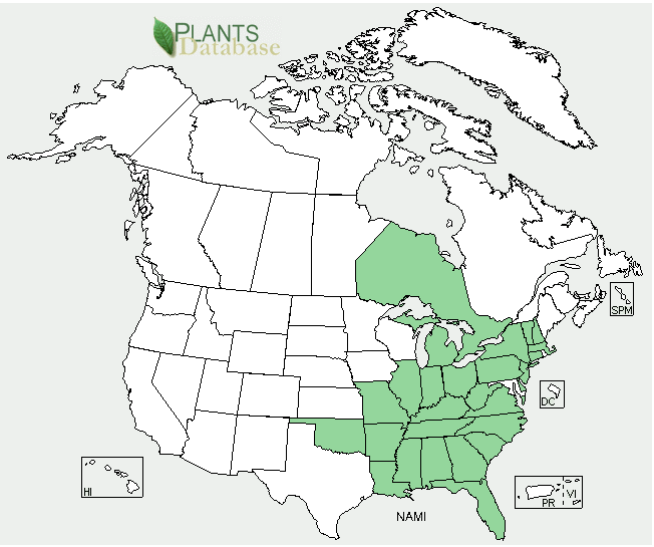
BRITTLE NAIAD

(*Najas minor*)



Najas minor distribution in the United States obtained from the USDA Plants Database.

Description

- Submersed aquatic annual
- Stems up to 2.5 m long and highly branched
- Leaves visibly toothed and recurved, 1 mm wide and 0.5 to 3.5 cm long

Reproduction

- Seeds (Very prolific)

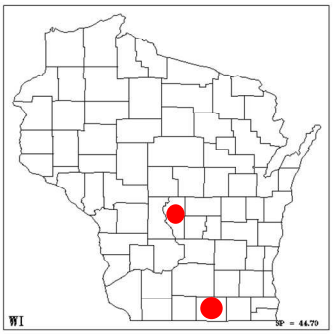
Similar Species

- Native *Najas* spp.

Ecosystem Impacts

- Replaces native *Najas* species
- Monocultures exclude native plants
- Dense stands hinder swimming, fishing, boating, recreation
- Reduced discharge capacity of channels

Recently Found



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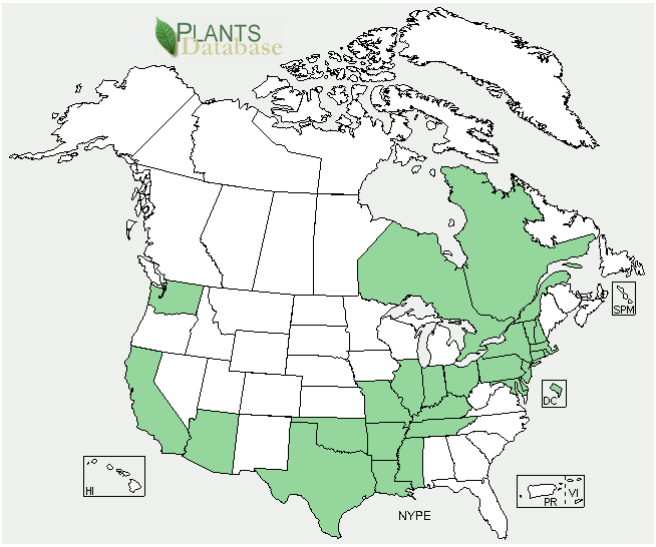
YELLOW FLOATING HEART
(*Nymphoides peltata*)



Nymphoides peltata distribution in the United States obtained from the USDA Plants Database.

Description

- Bottom-rooted perennial
- The floating heart-shaped to almost circular leaves are 3-10 cm long
- Flowers are bright yellow, 5-petaled and distinctly fringed

Reproduction

- Seed
- Vegetative: clonal expansion

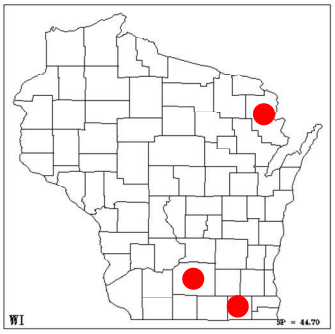
Similar Species

- *Brasenia* spp.
- *Nuphar* spp.
- *Nymphaea* spp.

Ecosystem Impacts

- Mat-like patches impede recreational activities
- Negatively affects water quality and flow
- Can impede drainage areas
- Diminishes aesthetic value

Recently Found



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