

Preventing the Spread of Aquatic Invasive Species to Natural Waterways



Above & Inset: Parrot Feather Watermilfoil. Photo credits: Matt Ankney Michigan Department of Natural Resources.

Managing a client's water feature can sometimes mean helping him or her make tough decisions about excess or unwanted aquatic plants, which can propagate and outgrow the feature. The client may be tempted to release excess plants into a ditch, drain, pond or into a

natural waterway. Because many popular water feature plants are not native to U.S. waters and even appear on state and federal prohibited species lists, it is important to guide clients in the responsible disposal of these organisms. Releasing any aquatic organism into the environment

is NOT an accepted practice and may even be punishable by law.

Many water garden plants have the potential to become invasive – outcompeting and destroying the rich diversity of native



A water garden being prepped for winter. Photo credit: Jane Herbert, Michigan State University Extension.

aquatic species. Because they have evolved together, native plants and animals have a symbiotic relationship; they rely on each other for nutrients, sunlight and water and keep each other in balance so that one species does not dominate the environment.

When non-native plants are introduced into waterways they can become invasive due to an absence of natural controls (predators, disease, climate, etc.) that would normally keep them in check. Exotic, non-native plants have proven over and over again their ability to adapt to colder environments and water temperatures. These invaders of our waterways are called Aquatic Invasive Species (AIS). They not only negatively impact the aquatic environment; they create negative recreational and economic impacts for individuals, businesses and communities.

A case in point is last summer's discovery of European Frog-bit (*Hydrocharis morsus-ranae*) in the City of Alpena, Michigan's Wildlife Sanctuary – a beautiful 500 acre coastal wetland adjacent to Lake Huron in Michigan's northeastern lower peninsula. Understandably popular with water gardeners, E. Frog-bit is a small but attractive floating plant that looks like a miniature water lily with tiny white flowers. In fact, E. Frog-bit is an aggressive invader that grows in dense floating mats that

crowd out native wetland plants. These mats of tough intertwining roots and waxy leaves also shade out submergent aquatic plants. As it spreads, E. Frog-bit creates a monoculture that reduces the diversity and complexity of habitat that native wetland plant communities normally provide to birds, fish, reptiles, amphibians and mam-

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mals that utilize wetlands for some or all of their life cycle. E. Frog-bit reproduces vegetatively through the movement of plant parts, limited seed dispersal through fruit development, but most significantly by overwintering buds called turions that break loose from the plant and float to new locations.

As there is no aquatic herbicide proven safe and yet effective in the treatment of E. Frog-bit, the Michigan Department of Natural Resources (MDNR) AIS Early Detection, Rapid Response (EDRR) Unit worked with the city over a two week period to remove by hand over 1,000 pounds of E. Frog-bit from the sanctuary. But according to EDRR Coordinator Matt Ankey, "We barely scratched the surface of the current infestation." Upon further investigation, the MDNR found E. Frog-bit upstream in the Thunder Bay River watershed. Large scale removal efforts are being planned for next spring and summer.

Another Michigan case in point is last fall's discovery of Parrot Feather Watermilfoil (*Myriophyllum aquaticum*) in a storm water detention pond located in Wayne County's Brownstone Township in southeast Michigan. This plant is related to Eurasian Water Milfoil (*Myriophyllum spicatum*) -- an aggressive aquatic invasive that has spread across the U.S. and Canada. Parrot Feather is another popular water gardening and aquarium plant with deeply cut, bright blue-green, feathery leaflets. It is one of the few submerged aquatic plants whose stems and leaves extend above the surface of the water. Heavy infestations resemble a forest of tiny fir trees across the surface that shade and crowd out native aquatic plants. Trailing stems, up to 5 feet long, form dense, strangling mats below the surface.

Again, the MDNR EDRR Unit worked with local government to conduct verification and assessment. This process included a survey of local waters near the detention pond. To date, it appears the Parrot Feather is isolated to the detention pond; however, more intensive survey efforts are being planned for the surrounding area in the spring of 2014.

Following the verification and assessment, MDNR staff developed an initial response plan for eradicating this species from the site. Working cooperatively with the local homeowners' association, the DNR obtained permissions and permits

for a late-season herbicide application. Treatment of the Parrot Feather was conducted in early November 2013, funded through a federal grant project. The site will be monitored for treatment efficacy, with any necessary follow-up treatments will begin in spring 2014.

Parrot feather has only been found in the Great Lakes basin in a few previous locations (in Michigan's Oakland County and Indiana's Steuben County). The source of this new infestation is unknown, but it is highly possible that this plant was released into the pond.

What can water gardeners and managers do to help prevent the spread of AIS? For starters, never assume a plant is native to your area. Never assume a plant is harmless or benign. Understand that retail names and descriptions of plants can be misleading. The national Habitattitude Campaign (www.habitattitude.net) recommends the following options for safe disposal:

- Contact retailer for proper handling advice or for possible returns
- Give/trade with only well informed water gardeners
- Donate to a local aquarium society, school, or aquatic business
- Seal aquatic plants in plastic bags and dispose in trash to be landfilled

DO NOT RELEASE water garden plants into the outdoor environment – even if they appear to be dead. **DO NOT COMPOST** water garden plants – even if they appear to be dead.

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Before purchasing non-native plants know which species are prohibited and restricted in your state. Water garden retailers, managers and enthusiasts should know that it is illegal to be in possession of, sell, offer to sell or introduce into the environ-



European Frog-bit. Photo Credit: Jane Herbert, Michigan State University Extension.

ment prohibited plants and animals and hefty fines may be incurred. State prohibited aquatic plant lists may include such popular water garden and aquaria plants as European Frog-bit, Fanwort, Parrot's feather, Water Hyacinth, Water Lettuce, Yellow floating heart and others along with many fish and snails.

Habitattitude encourages enjoyment of water features AND protection of our lakes, streams and wetlands by offering responsible solutions to the disposal of dead, dying or unwanted aquatic organisms. The campaign also offers tips for thoughtful planning of your water feature to avoid heartache and the possible spread of AIS. Habitattitude is a national education campaign encouraging proper disposal of exotic plants and animals to protect waterways from AIS. For more information, visit www.habitattitude.net. **L&W**

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