

# 2015 WATER SUCCESS STORY

## Bureau of Water Quality



### Rapid Response Framework Used for Managing Invasive Starry Stonewort, Water Lettuce and Water Hyacinth

By Tim Plude, Susan Graham, Tim Campbell and Julia Riley

The 2015 summer and fall recreational season saw DNR Water Quality staff coordinating numerous rapid response projects to identify, control and remove aquatic invasive species (AIS). Stakeholder groups, volunteers, contractors, county agencies, federal agencies and DNR staff joined forces to remove invasive species starry stonewort, water lettuce and water hyacinth from several locations across the state.

#### Starry Stonewort Makes Its First Appearance in Wisconsin

Starry stonewort was featured in ten news articles by June 2015, with its first detection in Wisconsin at Little Muskego Lake, Waukesha County. The AIS was identified during an aquatic plant survey in 2014. Fragments of starry stonewort can be spread between lakes by boats, trailers, and anchors holding sediment. Michigan, Indiana, Minnesota, Vermont, Pennsylvania and New York have also identified the aquatic presence of this large algae species that is native to



*Star-shaped bulbils (above) produced in lake sediments give starry stonewort its name. The plants can form dense mats on the bottom of lakes as shown in photo on the right. Photos by Paul Skawinski.*

Europe and western Asia. It was probably introduced to the Great Lakes via ballast water carried in trans-oceanic ships.

DNR Lake Biologist, Heidi Bunk, worked with Little Muskego Lake stakeholders during the fall of 2014 to secure an [AIS Early Detection and Response Grant](#) for surveying and mapping the location of starry stonewort and developing a management/removal plan. In April 2015, Bunk and Tim Plude, Southern Lake Michigan Basin Rapid Response and AIS Specialist, met with the Little Muskego Lake Association, the Little Muskego Lake District, the City of Muskego and South Eastern Wisconsin Regional Planning Commission to develop a management plan that included the use of volunteers to assist in the removal of the AIS.



Plude explained the community support for managing this AIS, “Starry stonewort may form dense mats of vegetation that can reduce recreational activities and decrease successful spawning habitat. People understand the value of their lakes and the enjoyment and beauty waterbodies create in their lives. The lake com-

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munity really came together to help prevent Little Muskego from becoming clogged with these weeds. There is still a lot of work ahead in managing this AIS, because no effective biological controls are known at this time and past management has proven to be challenging.”

Grant dollars were also used to hire a contractor to remove starry stonewort using diver-assisted suction harvest removal and containment methods. Educational efforts such as training watercraft inspectors, installing signage about the AIS, and developing newsletters and social media were initiated to help prevent spreading this AIS.



*Suction harvest removal. DNR photo.*

As part of Wisconsin’s AIS Rapid Response Framework, DNR staff, county AIS staff and other partners developed a monitoring strategy to detect other possible pioneer populations of starry stonewort. Access points in approximately 50 lakes from Portage County to Kenosha County were assessed. Starry stonewort populations were detected in five additional lakes: Long Lake in Racine County; Silver and Pike lakes in Washington County; and Big Muskego and Bass Bay lakes in Waukesha County.

DNR staff\* were also deployed in developing website content, starry stonewort informational watch cards and a question and answer factsheet. Staff hosted aquatic plant identification trainings for [Clean Boats, Clean Waters](#) watercraft inspectors and citizen lake monitoring volunteers. DNR staff also hosted a series of public information meetings in Waukesha, West Bend and Waterford. Lake groups and stakeholders learned about plant identification, response efforts, control and containment methods and grant funding.

Control efforts will continue in 2016 in all six lakes with further physical removal, trial herbicide applications, and prevention and education activities. Collaboration with partners to continue monitoring the location of the starry stonewort populations and the effectiveness of removal and treatment options will be needed to determine the best management practices for this new species in Wisconsin waters.

## Water Lettuce Removed in Lake Mendota

An off-duty DNR employee discovered water lettuce growing in Lake Mendota in July 2015 and alerted Susan Graham, the local DNR Lakes Biologist and AIS rapid response coordinator. Graham credits quick action from the DNR, the Clean Lakes Alliance, the University of Wisconsin’s Center for Limnology and the Hooper Outing Club in removing the aquatic invasive.



*Water lettuce resembles a floating bead of lettuce. DNR Photo.*

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Water lettuce is not a native species in Wisconsin, but homeowners sometimes use it as a landscaping element in artificial backyard ponds. It is illegal to sell or possess water lettuce in Wisconsin due its potentially large economic and environmental impact. If this plant material makes its way to a waterbody, the rapidly-reproducing floating plants can form mats that clog waterways and inhibit recreation. The plants also block sunlight and prevent the growth of native submerged and emerged plant communities.

Graham summarized the detection and removal process, “It took 10 hours of planning the logistics for about a dozen people to be on the water for 50 hours performing the surveillance investigation and removal work. Most of the water lettuce plants were located in University Bay on the south shore of the Lake Mendota near the University of Wisconsin-Madison campus, although we searched for it from Picnic Point to the Tenney Park breakwater. We also searched all nearby ponds and Willow Creek.



*Ali Mikuhyuk, Natural Resources Research Scientist, collects another bag of harvested water lettuce from Lake Mendota. DNR Photo.*

“Volunteers hand-pulled the water lettuce plants over three days removing roughly 400 wet pounds. We have asked the Hoofers Outing Club to keep an eye on University Bay during 2016 and report any new growth of water lettuce plants.”

## **Water Lettuce and Water Hyacinth Removed from the Mississippi River**

Although water lettuce isn't thought to be able to survive Wisconsin's cold winter temperatures, discoveries of water lettuce in the Mississippi River in consecutive years suggest that seeds can overwinter. An infestation of both water lettuce and water hyacinth in [Lake Onalaska](#) of the Mississippi River was reported on October 6, 2015, to Jodie Lepsch, DNR AIS Rapid Response Coordinator.



*Water hyacinth. DNR photo.*

Partners in the rapid response included the River Alliance of Wisconsin and the United States Fish and Wildlife Service who conducted an airboat survey of Lake Onalaska to map the water lettuce and water hyacinth locations. The plants were concentrated along the Brice Prairie shoreline. High winds which could disperse the floating plants were predicted for the following week.

Fritz Funk and the Lake Onalaska Protection and Rehabilitation District were instrumental in mobilizing concerned citizens to collect and contain the invasive plants. An email was sent out to Brice Prairie residents and conservation clubs requesting volunteers to help remove

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the AIS. Over 40 volunteers and 25 vessels assembled to harvest the invasive plants on Sunday, October 11. All visible plants in the at-risk-for-distribution area were harvested, bagged and deposited in a licensed landfill. Law enforcement investigated possible routes plants may have travelled from residential ponds. It was determined that the plants had escaped from a residential garden pond adjacent to Lake Onalaska.



*Stray plants from residential garden ponds can grow rapidly to establish dense mats of water lettuce. DNR photo.*

Spot checking and removal efforts continued all along Brice Prairie shore and Bell Island, including removal of a large patch of plants hidden under a dock. On October 20, over 40 more water lettuce plants were found in the upper Brice Prairie channel and removed. Small numbers of plants were found and removed in various locations throughout the rest of October and into November. Funk provided email updates to an extensive list of concerned citizens and developed a website to promote public awareness related to the infestation of the invasive plants within Lake Onalaska – see <http://www.lakeonalaska.org/invasive-species.html>.

Groundwater "springs" in the area are being monitored during the winter of 2016 to remove any plants found surviving in the warmer waters.

A plan is being developed for removing any plants germinating in the spring of 2016 from seed banks in the river sediment.

Shawn Giblin, DNR Mississippi Water Quality Specialist, helped coordinate the removal efforts and praised the efforts of the volunteers, "To date, it is estimated that over 1000 volunteer hours have been logged in control of the invasive plants. Efforts by volunteers and resource agencies have resulted in well over 99 percent of the water lettuce and water hyacinth present in Lake Onalaska to be collected prior to the onset of ice, making this one of the most successful citizen-led exotic species control efforts in the history of the state."

To learn more about invasive species, go to: <http://dnr.wi.gov/topic/invasives/>. The Water Quality Lakes and Wetlands Section is the Department's home for the AIS Partnership. The Partnership receives approximately \$4.5 million annually in segregated funds. Almost 90% of this is distributed to our Partners in grants and contracts for AIS work. See the success story on Surface Water grants at: <http://dnr.wi.gov/About/documents/Water/WQGrants2015.pdf>

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\*Footnote: Other DNR staff involved in the Starry Stonewort Rapid Response included: *Communication and Outreach* - Bob Wakeman (starry stonewort media spokesperson, host informational meetings and ID training); Scott Van Egeren (technical advisor, host informational meeting); Tim Campbell (worked with media, helped with watch card); Jennifer Sereno (worked with the media); Kyle Drake (recreational safety advisor); Kathleen Wolski (public access); Dougal Walker (website update); Rachel Sabre (hosted citizen monitoring training). *Monitoring crew* - Tim Plude, Libby Hess, Michelle Nault, Scott Van Egeren, Amy Kretlow, Josh Turkeny. *Internal Starry Stonewort Technical Team* - Tim Plude, Scott Van Egeren, Heidi Bunk, Scott Provost, Maureen Ferry, Amanda Perdsock, and Michelle Nault.

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