

ENVIRONMENT

New strategy to combat exotic water plants

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Department of Natural Resources

Hand removal of frog-bit.

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LANSING – In the waters where it’s a native species — Europe, Asia, and Africa – the aquatic plant known as European frog-bit is no trouble at all.

Though its name summons images of slime and bumps, frog-bit is a decorative display of coin-size leaves that looks like lily pads in shallow water and serves as food source for insects, snails, rodents, waterfowl and fish.

In the 1930s, frog-bit was transported out of its home region to decorate ponds and aquarium tanks in the U.S. and Canada. It escaped, likely in the first half of the century, and like so many other nonnative exotic species of plants and animals started to spread in streams and rivers. It made its way to Michigan, the waters of the Great Lakes and to parts of [New York, Ohio, Pennsylvania, Vermont and Washington](https://www.michigan.gov/invasives/id-report/plants/aquatic/european-frog-bit) (<https://www.michigan.gov/invasives/id-report/plants/aquatic/european-frog-bit>) where it has no predators.

Almost a century later, frog-bit has become a formidable nuisance, especially along parts of Lake Huron and in Southeast Michigan.

First, the plants form mats in surface waters so thick that they block sunlight and diminish oxygen levels for native species and make it impossible to swim, boat or fish. Second, frog-bit defies effective control.

In June, the U.S. Army Corps of Engineers promoted what the agency said it hopes will be a new control strategy. It offered researchers a \$200,000 grant to develop a biological control for the frog-bit and its unwelcome relative – water soldier.

The urgency is evident.

One major cause of frog-bit's expanding presence, say state authorities is that boat owners are not following the "clean, drain, dry" rule to remove remnants from their hulls.

As a consequence in Michigan, frog-bit is creeping inland. Established populations are found in Monroe, Wayne, Macomb, St. Clair, and Wayne counties. It has been documented in 12 counties in total, including Arenac, Alpena, Kent and Chippewa.

"You should clean your boat before you leave. Ideally, dry it off and drain any water out of it. So that you're not moving water and mud that has seeds or turions in it," said Tom Alwin, a senior aquatic biologist at the Department of Environment, Great Lakes and Energy who works with aquatic invasive species.

Additionally, frog-bit can move without human help using water currents.

On top of its mobility, frog-bit is an evolutionary intelligent fighter and can hide among other plants such as cattails, said Noah Jansen, a restoration manager at the Tip of the Mitt Watershed Council based in Petoskey.

And if you miss one or two plants, frog-bit will rebound and appear in the same place again, Alwin said.

That's because frog-bit is resourceful. The plant uses two reproduction strategies to spread – seeds and turions, a bud that is able to grow into a complete plant.

Seeds and turions can't be eradicated by herbicides. They hide on the bottom in the mud and wait till the right time to grow.

Hand pulling can work for adult plants.

"It's a rewarding feeling to reach into the water and pull out a big handful of it and know that you're removing it from the ecosystem. But it's a lot of work if you're going to do it all day long," said Chris Engle, a communication associate at the nonprofit [Huron Pines](https://huronpines.org/) (<https://huronpines.org/>), based in Gaylord.

With its grant for biological control, the Army Corps is embarking on a program of research, safety testing and approval of a new eradication strategy.

Michigan has had some success with bio-control. In 1994, the state introduced the galerucella beetle, which feeds on invasive purple loosestrife, a shoreline plant that is displacing native plants across the state.

Engle said several hundred beetles were recently released in Mio to eradicate the loosestrife growing on the Au Sable River shoreline.

And Jansen said, "It's always a risky proposition to introduce a new species. But at the same time, I feel that can be a really effective way to also help control an invasive species like frog-bit."

Vladislava Sukhanovskaya was an environmental reporting intern under the MSU Knight Center for Environmental Journalism's diversity reporting partnership with the Mott News Collaborative. This story was produced for Circle of Blue.



Shelby Bauer/ Huron Pines

The European frog-bit looks like a little lily pad and lives in shallow waters.
