

Plastic islands serve as algae experiment

By Jeanne Schram for the Aitkin County Aquatic Invasive Species Committee

What can you do with recycled plastic eight inches thick?

If you were a graduate student at the University of Minnesota, you might create a floating island for an experiment.

That's what happened in 2016 when a student approached Steve Hughes, district manager of the Aitkin County Soil and Water Conservation District. He and this imaginative student wrote an "eco-footprint" grant to Enbridge for \$101,500, which was awarded and helped to produce 17 such floating islands that were placed in on the northeast side of Fleming Lake away from boating traffic.

Bogs with jobs

Fifteen of these islands were about 5 ft.x 8 ft. and two were 8 ft. x 16 ft. The islands were set in place by 60 lb. concrete anchored in buckets with stainless steel cables.

"Every square foot or so, we cut out places to plant," said Hughes, who eventually worked with several graduate students during the last four years. It was a cooperative project with the University of Minnesota, Midwest Floating Islands and the Fleming Lake residents led by Rod Bengtson, who served as "gatekeeper."

A variety of native aquatic plants were placed in the cutouts and expected to grow through the plastic. What was to be determined was how much phosphorus was being taken from the lake and used by the plants. It was expected to halt some of the algae growth in the lake. Also, two of the floating islands were modified to provide a loon nesting platform. Each island had a number and everything planted was recorded to determine what worked best in an open water situation.

Bengtson, a Fleming Lake resident since his retirement in 2015, helped reposition the islands when necessary and provided monitoring and documentation for the U of M. He said Fleming Lake typically experiences an algae bloom in the first part of July lasting until early September.

"The U of M returned to replant and establish goose control," Bengtson said. "Lake monitoring and testing were performed extensively over the summer and a grad student wrote a thesis on the topic of 'floating islands for water quality.'"

Bengtson has repositioned islands after spring ice-out and replanted some with native swamp grass after geese devoured the plants. He came up with goose protection by using recycled farm fence netting.

"One island was used by loons this year," Hughes noted. "For about four summers, they did what they were supposed to do. U of M students came several times in the summers to take samples to see how much phosphorus was being used by the plants. We didn't expect to see changes in the lake on a big scale."

A few times storms or wave action moved the small islands and they had to be repositioned. This last winter they were severely battered by ice, Hughes said.

Time to go

“About half of them (among them the two largest ones) were in danger of sinking so low they were ineffective and hard to see by boaters,” Hughes said.

Seven of these floating islands were removed this summer. It wasn't easy.

“The answer came down to a bunch of U of M students, an old chainsaw, trailer for transport and even a tractor to assist in the unloading process,” said Bengtson. “What we thought would be a long process was greatly reduced by some creative thinking and a little luck.”

Some of the lessons were: the islands need to be placed in a more sheltered area; the smaller ones held up better than the larger ones and were easier to remove; wildlife likes them; and they are effective at taking phosphorus out of the lake.

“We don't know if it's economically feasible to put more floating islands on the lake to make a measurable difference in a lake's phosphorus,” Hughes noted. “Preventing phosphorus from getting into the lake in the first place is best.”

Bengtson is experimenting with a new idea to refloat a saturated island by creating a PVC cradle that may extend the life of the islands

Some Fleming lake residents participated in “Adopt-An-Island” started in 2017. Bengtson jumped on board with that, got the word out and caretakers were found for five or six of the islands.

It's not over yet

“We felt a little defeated, but we learned a lot from the experiment,” said Hughes. The removed islands are being stored pending a future use. There is already talk of them being used for erosion control.

That sounds like a new project idea and grant writing assignment.

As always, stopping the spread of invasive species to lakes and rivers, protects habitat for native species. Overall lake and river health is better without invasive species. Healthy lakes and rivers benefit fish, wildlife and people. Remember, “Clean, Drain, Dry and Dispose.”

CUTLINES:

Jeanne schram photo

Close up of one of the plugs removed from a plastic island in order to plant native species. It was intended for the plants to draw phosphorus from the lake and reduce growth of algae.

SWCD photo