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Weevils might fix Caddo Lake salvinia problem

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By Glenn Evans gevans@news-journal.com |

The four-year war on giant salvinia at Caddo Lake is about to get medieval.

Working with Texas A&M University and the Texas Parks and Wildlife Department, government and nonprofit entities at the state's biggest natural lake plan to introduce a natural predator.

"We are about to build a giant salvinia-eating, weevil breeding facility at Caddo Lake Institute," Caddo Lake Clearinghouse leader Jack Canson said.

The clearinghouse is a loose-knit coalition of governments, businesses, civic groups and nonprofit organizations including the Caddo Lake Institute, which oversees the new wildlife refuge there.

The weevil the groups hope to start breeding in a few months is *cyrtobagous salviniae*, commonly known as the salvinia weevil.

"The weevil is completely dependent on giant salvinia, and will not live on anything else," said Howard Elder, an aquatic habitat biologist for the Texas Parks and Wildlife Department.

Not only do the weevil larvae destroy the lake-choking invasive plant, Elder said, the bug dies out when the giant salvinia is gone.

It also cannot survive most winters in this climate, Canson said. Texas A&M is taking bids for construction of greenhouses that will envelope two shallow tanks where the weevils will be bred. That process pushes the weevil breeding to sometime in the fall, he said.

Giant salvinia arrived on Caddo Lake via the Louisiana side in May 2006, Canson said. Able to reproduce from a single, free-floating sprig, the plant soon formed acres of floating mats and filled natural cedar breaks.

"It takes all the oxygen out of the water and prevents sunlight from reaching the bottom," Canson said. "Nothing can live under (the mat). You're not going to have any fish breeding under giant salvinia."

Elder said the floating mats of salvinia can double in size every two weeks. Like the plant, the salvinia weevil hails from Brazil. It has successfully been used to fight the plant in Australia, according to the U.S. Geological Survey website.

Elder has been breeding the bugs near Toledo Bend Reservoir, one of 16 other infested lakes besides Caddo.

"I'm trying to produce as many bugs as fast as I can," he said, describing how the weevil attacks the plant. "They lay eggs up under the (salvinia) mats. And as they hatch they turn into larvae, and they eat the growing tips at the very end of the plant. And that's how the plants mature and grow. (The weevils) bore into the stem. And then they make a cocoon, and it matures into fully grown adults" by eating the salvinia tips.

Two 18-inch-deep tanks, 100 feet long and 15 feet across, will be built near the visitor center at the Caddo Lake Natural Wildlife Refuge once bidding is completed for the greenhouses. Canson said the plan is to grow giant salvinia in the tanks in order to grow the weevils year-round.

He said consecutive icy days last winter, coupled with rains that flushed out the lake, did more to eradicate the plant at Caddo than four years of fencing, booms, spraying and labor-intensive harvesting.

"I was at the spillway (in Louisiana)," Canson said. "It was an unending stream of vegetation — water hyacinth and giant salvinia."

The hyacinth also is a harmful invasive plant, but not to the degree of salvinia, Canson said.

The helpful winter and heavy rains created an ideal window for introduction of the weevil, he added.

"We've kind of got a chance to do some smart stuff and never let it get as bad as it was," Canson said. "We have a window that I never in my life thought we would have had — the opportunity to control it that we now have. And that's one reason I'm trying to push the weevil breeding."

Other lakes affected by the invasive plant, according to the parks and wildlife department, are all in East Texas. They include Sam Rayburn, Sheldon Lake, Lake Texana and Lake Conroe.

More about Salvinia

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