

Salvinia munchers on the way: Tiny weevils are being bred at refuge to fight a giant problem with an invasive plant

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Extension Associate Patrick Ireland, project coordinator at the Caddo Lake National Wildlife Refuge, drills holes for support beams for a greenhouse that will house beds for breeding a giant salvinia-eating weevil Thursday as members of Texas Water Resources Institute prepare to combat the invasive plant. COURTNEY CASE, Marshall News Messenger

Special greenhouses for a series of giant salvinia growth tanks were under construction Thursday, and scientists have infested the tanks with the plant's only biological enemy - the salvinia weevil - as experiments continue.

"They are pretty tiny, just 1.5 millimeters to two millimeters - like a good sized flea, and they look like cotton boll weevils if anyone remembers those," said Lucas Gregory of College Station, project manager for Texas Water Resources Institute.

The greenhouses and growing beds, built for the propagation of the weevil, are new features to the Caddo Lake National Wildlife Refuge and are near the park's visitor center.

Gregory worked with team members Aaron Hoff, also with TWRI out of College Station, and Patrick Ireland, who is the project coordinator stationed locally at the refuge to oversee the giant salvinia weevil operations.

Under two greenhouses are four large tanks, 100 feet long and 15 feet wide, filled almost to their 18-inch depth with giant salvinia, water and weevils.

"Salvinia is an invasive species from southern Brazil. It certainly displaces the native plants and fish by covering the water's surface and preventing sunlight from penetrating," said Ireland.

"We're using these beds to maximize the growth of salvinia and to grow these weevils. Once we

get it all figured out, we hope to get these weevils out on the lake to start chomping away on the salvinia."

Ireland included in his report that the weevils exclusively eat the salvinia and that during tests they did not eat any other plant materials or cause issues with other wildlife.

"I grew up coming out here, so I do have a personal connection to Caddo Lake," said Ireland. "These tanks all have 500 pounds of salvinia in them, and there are about 55 weevils for about every two pounds of plants. All four tanks are infested now."

Salvinia weevils are tropical bugs that eat the giant salvinia as its only food source. They prefer warm temperatures, and their ability to withstand Northeast Texas winters is still being evaluated by Texas A&M AgriLife Research and Extension Service along with the water resource institute.

A trial of the weevils were added to Caddo Lake last year as an experiment in combating the foreign weeds, and expansion of the trial is continuing with the construction of these new, raised weevil beds. Similar weevil propagation projects include one in Jasper by Texas Parks and Wildlife, Ireland said.

"Some of the weevils did make it over the winter on the lake, so it may be they are becoming more cold-hardy," said Gregory, who said pond heaters will likely be used inside the greenhouses. "Hopefully we'll have a warm environment created for the weevils to live in over the winter."

A majority of activity in combating the invasive giant salvinia on the lake has come from the Cypress Valley Navigation District's herbicidal boat out spraying, as well as TPW's contract sprayers. But best use of the salvinia weevils on Caddo Lake will be in areas where sprayers cannot go.

"There is plenty of salvinia hiding where you can't get a boat to it. We will put weevils in those areas where you can't spray," Gregory said. "I think its spread slowed down a lot this year. The cold weather killed some, and flooding washed a lot out of the lake. Texas Parks and Wildlife estimated a 90 percent reduction in giant salvinia from last year's growing season because of the freeze."

In the meantime they will continue to develop tools for working with the weevils and measuring their success rates when using them to fight giant salvinia on Caddo Lake. For more information visit them on the Web at twri.tamu.edu.