

Harvester gives 'immediate' benefit

By [Terri Richardson](#)

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When it comes to life or death, finding a solution to save a life means throwing everything you have at it, even if that life is a lake.

The Caddo Lake Institute and the city of Marshall banded together in May 2008 to see if mechanical harvesting equipment could be used for removing sections of invasive aquatic vegetation near Bird Island along the south shore of Caddo Lake.



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A patch of invasive plants floats near cypress trees on Caddo Lake Saturday. Local officials are fighting the harmful plants.

"We learned a lot of information that is useful," said Jack Canson, who prepared the report on the trial's findings. "We now know a lot more about how mechanical harvesters will work on Caddo Lake and how much it costs to use them."

Included in the project was extensive documentation from observations made during the trials. A report was issued by Caddo Lake Institute detailing the findings from the harvesting experiment.

"When you remove plants mechanically, as opposed to herbicide treatment, you get immediate benefits for the habitat and people's use," said Canson.

The experiment with the mechanical harvester was to discover whether the harvesters will work on Caddo Lake with its stumps and cypress knees and to find out what rate the invasive aquatic vegetation can be removed.

"They will work on Caddo Lake. Prior to our doing this trial, it was extremely common for people to say they wouldn't work on Caddo Lake because of all the stumps," added Canson.

A UMI harvester with a 4,000-pound storage capacity was used to remove vegetation on a six-foot wide steel conveyor framed with vertical and horizontal cutting heads. It was operated in water as shallow as 1.5 feet.

The report's findings show it was operated 100 hours without losing time to mechanical issues. And while it connected with many stumps, cypress knees, submerged posts and iron rebar, the harvester worked properly so that the operator could continue without significant delays.

"We did not lose one minute of our 100 hours of trial, and we did not suffer any breakdown due to the stumps," said Canson. "The operator did not have any trouble. Not once did we lose any time."

The mechanical removal was described as "effective" in that the harvester did work on Caddo Lake despite its many sub-aquatic obstacles. The harvester was also able to remove floating vegetation, rooted vegetation and some silt and sludge, according to the report.

"However, there is no guarantee that the wind is not going to blow that right back in there that night. You get the best use out of mechanical removal where there are natural or other barricades to keep it from being reinfested," said Canson.

Boat roads, once cleared by the harvester, were protected with booms to prevent the wind from blowing the plants right back in.

"These are floating plants, and large amounts of them can move quickly when the wind is blowing," said Canson.

The plants from the trial were removed to the shoreline at Tucker's Camp, near Long Point. During spring and summer 2009, invasive aquatic plants "virtually eliminated access" to fishing spots for people without boats and outboard motors. It also impacted Tucker's Camp and other marinas, according to the report.

Due to budgetary constraints, operators were unable to use transport barges to move the harvested vegetation. Instead, the harvester was fully loaded each time and they were off-loaded onto land.

The removed vegetation was taken to a field two miles south of the shoreline collection and spread with a backhoe as the owner wanted it for soil improvement, according to the report.

Removed invasive species was determined to be about 62 percent giant salvinia and 38 percent water hyacinth.

"The other most impressive thing to me is clearly mechanical removal is time-intensive. There would be limited applications, and you would have to be real smart about where you used mechanical harvesting," said Canson.

A cost analysis to create a mechanical removal unit and the calculation of projected daily operating expenses was also included in the report. The operator

of the harvester surmised it would take a fleet of them to clean the entire lake. With the way the wind blows the plants around, the operation would be cyclical — like mowing your lawn.

"A 32,000-acre lake, you won't see a fleet of them cleaning it out. You're not going to be able to affect a majority of the acres out there," said Canson.

Volunteers provided significant time, energy and funding to conduct the experiment. Among those volunteers were Marshall Mayor William "Buddy" Power and John Sanders, contractor and owner of the harvester. They conducted an investigation into the different size models and depth of water where they can operate.

"I made many trips to get the mechanical harvester," said Power. "John Sanders actually funded the project with some help from Marshall."

Power paid for his own travel expenses to Nebraska, Florida and California to learn about the harvesters. Sanders bought the harvester used and refurbished it before it was used in the Caddo Lake trial.

"Mechanical harvesting is another tool in our tool chest to help eradicate the pestilence at Caddo," said Power. "It gives us an alternative to look at.

Volunteers with the Texas Master Naturalists analyzed the plants removed from the lake, took photos and helped record time. Another element of the project was discovering "how much the public enjoyed it."

"All 10 days, we were never without visitors, people coming down there to see it. People were really interested and impressed. It's a crowd-pleaser," said Canson.

"With herbicides, it never quite seems to go away before more is there. It was neat to see everybody who observed over the time we were doing that had the same reaction I had. It gives you a positive upbeat feeling to see something done," he added.

Giant salvinia was first discovered in Caddo Lake in 2006 on the Louisiana side. It began to migrate to the Texas side, and in 2007 there was about 100 acres of coverage in small clumps. By 2008, those fragments had begun to grow exponentially.

"The thing about giant salvinia is when people have been locked up on the lake like they have been, it gives you a great deal of satisfaction to see that big machine go through the water and see it dump the plants out for removal," Canson said.

Tim Bister, resident biologist with Texas Parks and Wildlife, estimated there are 3,227 acres of giant salvinia on the lake.

For more information about the Caddo Lake Institute and its projects, visit <http://www.caddolakeinstitute.us>.