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Press

Frustration Rises With Water

Heavy rainfalls make battle to control giant salvinia harder

By Steve Bandy, News Messenger

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Rising water from recent rainfalls doesn't necessarily contribute to the spread of giant salvinia and other invasive aquatic plants at Caddo Lake, but it certainly doesn't help efforts to control it either.

"Giant salvinia really hasn't been much more of a problem because of the high water," said Ken Shaw, chairman of the Cypress Valley Navigation District, adding that Caddo Lake "is up about a foot and a half" because of the heavy rainfall in the area recently.

"One thing we know high water does is that it moves giant salvinia deeper into shallow cypress brakes," said Jack Canson, a director for the Greater Caddo Lake Association, and the lake's self-proclaimed "weed warden."

"Flow variation — periods of high water and periods of low water — are important to wetlands and high water certainly helps recharge those areas," he said. "But when the waters recede and the lake's level lowers, it leaves giant salvinia behind in these swampy areas where reaching it with herbicides or other control measures is virtually impossible."

Therefore, when waters rise at Caddo, any giant salvinia infestations not contained are going to contribute plants that the higher water will carry deeper into inaccessible, swampy areas, he explained. And as long as those areas remain damp when the waters recede, giant salvinia will thrive and expand.

"Theoretically, we could remove or kill all the giant salvinia on the lake that is accessible and every time we had a high water event, infestations in the inaccessible areas would contribute giant salvinia back into the rest of the lake," Canson explained. "When the waters recede, some of the plants will recede out of those areas with the lowering water."

Noxious weed

Giant salvinia, or Salvinia molesta, one of the world's most noxious aquatic weeds, is notorious for dominating slow moving or quiet freshwaters. Its rapid growth, vegetative reproduction and tolerance to environmental stress make it an aggressive, competitive species known to impact aquatic environments, water use and local economies.

Originating from Brazil, it first appeared in Texas in 1998. Established in several reservoirs, mostly in East Texas, giant salvinia was first observed in Caddo Lake on May 29, 2006 — on the Louisiana side. It most likely arrived on the boat/trailer of an unsuspecting boater.

Under optimal conditions (light, temperature and nutrient) in the laboratory, plant populations have been found to double in size every two to four days. Under favorable natural conditions, biomass doubled in about one week to 10 days. A single plant has been described to cover 40 square miles in three months.Giant salvinia has the potential to alter aquatic ecosystems in several ways. Rapidly expanding populations can overgrow and replace native plants. Resulting dense surface cover prevents light and atmospheric oxygen from entering the water. Meanwhile, decomposing material drops to the bottom, greatly consuming dissolved oxygen needed by fish and other aquatic life.

Fenced in

To slow the spread of the noxious weed, a fence was stretched for more than two miles across the middle of Caddo Lake, symbolically not far from the Louisiana state line. The porous fence, which sits just above and below the water, acts as a giant strainer catching loose pieces of giant salvinia drifting across the lake from the large patches on the Louisiana side.

"Since the plant was first reported at Caddo Lake in 2006, we've had plenty of opportunities to observe giant salvinia as water levels go up or down," Canson said. "The initial expansion of giant salvinia into the main body of the lake occurred as a result of heavy rainfall and flooding in January 2007.

"At first many people were hopeful that the flooding would push giant salvinia out of the swampy areas and over the spillway. What happened, however, is that giant salvinia was pushed out of Jeems Bayou and established very large infestations in Big Green Brake and Tar Island," he said. "A very large part of Caddo Lake seems to be relatively unaffected by current in the riverbed. Wind direction seems to play a much more important role in moving giant salvinia around than current."

Shaw agreed.

"We don't really have a current problem," he said. "We have much more of a problem with the winds and that's more of a problem with water hyacinth than it has been with giant salvinia."

Shaw said the strong south and southwest winds of late have moved blocks of water hyacinth down the lake and up against the netting.

"The netting is designed to let the water hyacinth through, but with the big blocks being pushed by the wind, it's pushing over some of our poles," he said.

The hyacinth eventually works its way through the netting and "hopefully is blown (across the lake) and over the spillway," Shaw added.

No break

The fight to control the spread of giant salvinia in Caddo Lake is a year-round one, according to Shaw.

"Normally they say (giant salvinia) becomes dormant in the winter. But what we've found was that it doesn't make any difference what month it is," he said. "If we get a pretty day like (Friday), it grows. So whenever we get a pretty day, we're out there spot spraying it."

Canson said managers trying to develop a long term giant salvinia control plan have a lot to consider. "Fortunately, the Caddo Lake Institute and Northeast Texas Municipal Water District have done considerable research into environmental flows in the Big Cypress basin and there is a lot of useful knowledge about how the system works," he said. "It is likely, in my opinion, that environmental flows management will play an important role in the long term efforts to bring giant salvinia and other invasive aquatic plants under control."

The Federal Noxious Weed Act makes it a violation of federal and state law to not only transport salvinia, but to knowingly allow it to spread. Possession or transportation of giant salvinia or other prohibited aquatic vegetation in Texas is a Class C misdemeanor punishable by a fine of $25 to $500 per plant.