

Paddling Upstream: Cooperative Effort Helping Bring Paddlefish Back in Texas

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Through a cooperative effort, paddlefish are again swimming Big Oak Bayou. If the research project is successful more of the fish could be coming in the future. Photo: Dawn Orsak/Caddo Lake Institute

Texas Parks and Wildlife Department has attempted on its own to repopulate paddlefish in the past, but all efforts have been unsuccessful.

By nature the fish aren't easy to re-establish. They prefer slow moving water of large reservoirs and rivers, and lots of it. Able to live 30 years and grow up to 7 feet in length, individual paddlefish have been tracked traveling as much as 2,000 miles up and down rivers.

That type of habitat was destroyed during the great lake building era of the 1950s

and 60s across East Texas, the historic home range for the fish in the state.

Wednesday a cooperative effort took a big step toward bringing the prehistoric species back to the state with biologists working with water authorities in an effort to provide the habitat necessary to keep the fish in a river system. TPWD and the U.S. Fish and Wildlife Service released paddlefish into Caddo Lake and Big Cypress Bayou in an experimental project to determine if a larger stocking is feasible in the future.

"They have put transmitters in 47 fish. Some were released at Caddo State Park and some at Jefferson," said Tim Bister, TPWD Fisheries district biologist from Marshall.

He said radio receiver towers set up at the Caddo Lake dam to determine if any fish go over into 12 Mile Bayou, one at Caddo State Park and another a few miles upstream from Jefferson. Using data collected at those stations and from biologists using handheld receivers in boats, they will be able to track the comings and goings of the fish over the next six months.

The key is going to be the water flow coming down Big Cypress below the Lake O' the Pines' dam during the spring spawn and other times. Biologists believe it was the construction of the dam in 1959 that led to the fishes' demise in the river.

"The dam changed the natural flow patterns, including the high flows or 'spring pulses' that provided paddlefish and other fish species a cue to move to spawning sites and foraging habitat the high water made accessible," said Pete Diaz, a USFWS fish biologist.

What is important is something called flow pulses, which are basically different flow rates during wet and dry conditions. “When the fish are mature they respond to different flows at certain times of the year for spawning,” Bister said.

To better understand what type of flows are needed and how to generate them artificially, partners in the project, including the Northeast Texas Municipal Water District, U.S. Army Corps of Engineers, The Nature Conservancy and Caddo Lake Institute, have been working on a flow rate study for the last 10 years. Lake O’the Pines is a Corps of Engineers project, but the water rights are owned by NETMWD.

“It is still an ongoing process determining how these flows impact downstream,” said NETMWD spokesman Robert Speight. “The Nature Conservancy came up with the base flows rated for dry, average and wet years. We have one for each month, and right now with the rain we have been getting the flow is considered for an average year.”

The Nature Conservancy used a predicted flow rate that would have occurred naturally in the river and that is what NETMWD is attempting to mimic.

Speight said the NETMWD has released water downstream daily for wildlife and fish since the dam was built, but it was typically a low flow. He said the agency supports the paddlefish project, although a balance still has to be met between water for fisheries and wildlife and for humans and industry.

In anticipation of the project the USFWS also built a gravel spawning bed near Jefferson that can be used by the fish. Just 18 months old now, the fish won’t sexually mature until about 6 years, and then individuals only spawn once every four to seven years.

Before the construction of the dam it would have been the role of the down-river water pulses to create and maintain spawning areas.

A species that is more than 300 million years old, paddlefish were historically found in the drainages of the Mississippi River. In Texas that included the Sulphur, Neches, Sabine, Angelina, Trinity, San Jacinto rivers and Big Cypress Bayou. Today paddlefish are considered a species of concern under the Endangered Species Act and rarely found in Texas.

TPWD last attempted to stock paddlefish in East Texas rivers in the 1990s. Besides the lack of necessary water flow, the efforts were also unsuccessful because the agency stocked fingerling fish. Under the best conditions the survival rate of stocked fingerlings may be 10 percent.



Photo: Dawn Orsak/Caddo Lake Institute

This attempt is using fish that are 2 feet long and longer.

“These fish are big enough to survive predations,” said Bister.

The biologist added that if the project proves successful the USFWS expects to follow up with an additional stocking of 10,000 paddlefish.

Texas only has to look across the border north into Oklahoma to see the results of a successful paddlefish program. In recent years Oklahoma fishermen catch between 6,500 and 8,000 of the fish that exist naturally in the Arkansas, Grand and Neosho rivers where fishermen are permitted a fish per day.

The state is also working with the USFWS on a restocking program at Lake Eufaula.

Oklahoma’s paddlefish program is actually self-sustaining. Each year fishermen bring their catch to a research station on Grand Lake where the fish are cleaned in trade for their eggs. The eggs are packaged and sold as caviar. In 2012 the Paddlefish Research Center sold 15,000 pounds of paddlefish caviar for \$1.5 million, money that was put back into a research program for the fish.

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