

Nature's method could bring hope to Trinity River

By MATTHEW TRESAUGUE, HOUSTON CHRONICLE

Updated 08:27 p.m., Tuesday, November 15, 2011

SAND RIDGE - Down where the Trinity River plods through old East Texas hardwoods sits the Seven J Stock Farm, an archetypal agribusiness in this part of the country.

The Houston County ranch, all 11,000 acres of it, is flat and wide, populated only by cattle and pump jacks. Most of the fields are covered with cotton or hay, and there are groves of pecan trees, some 300 years old.

In one corner, the Parten family, which purchased the ranch in the 1940s, has prepared a large tract for a new crop: water.

The family has seeded overgrazed pasture with hickories, oaks, pecans and other native tree species to rebuild habitat critical to a healthy Trinity. The new bottomland forest will hold floodwaters and work as a natural filter before runoff reaches Lake Livingston, a key source of the city of Houston's water supply.

The 517-acre restoration project is at the forefront of statewide efforts to "grow" water amid forecasts that show

the existing supply is not enough to meet the demands of Texas' growing population over the next 50 years. The state's long-range water plan proposes \$53 billion for additional reservoirs, pipelines and other projects to quench the great Texas thirst in dry times, but it is not funded.

So with every drop of water in demand - and money in limited supply - there is a new focus on the relationship between land and water. Farmers have the greatest potential to conserve because irrigated agriculture accounts for 60 percent of freshwater use in the state, experts say.

"For a long time, people thought we had land issues and water issues, but they are completely integrated," said Laura Huffman, Texas state director for the Nature Conservancy. "The key is to protect water where it falls first."

Restoring habitat

The middle basin of the Trinity River begins just below the Dallas sprawl, crosses cropland and ranchettes and ends at Lake Livingston in Polk County, about 80 miles north of Houston. Roughly half of the state's population relies on water from the river.

Over the decades, most of the middle basin's forests and native grasslands have been cleared for farms, oil fields, timber and far-flung subdivisions. The state's ever swelling population has led to more roads and roofs and other impervious surfaces that prevent storm water from soaking into the ground and produce even more polluted runoff.

Texas A&M University's Institute of Renewable Natural Resources recently concluded that less than 1 percent of native grassland remains in this part of the basin, an area that covers 12 counties.

Still, the institute has identified 3 million acres of grasslands and 740,000 acres previously covered by native hardwoods in the middle basin that could be restored to what the land was a century ago.

Habitat restoration may not prevent the looming water shortage, but it's a key and often overlooked land management tool, said Jim Cathey, a Texas A&M wildlife biologist.

"It's conservation on private lands that will make the greatest contribution to water quality and quantity in the Trinity," said Cathey, who is advising landowners on ways to manage their property for the benefit of livestock and wildlife and still provide water for those elsewhere in the basin.

The best examples, Cathey said, are two large man-made wetlands, just south of Dallas, that filter water without machinery before sending it back for use by millions of North Texans.

The projects, developed separately by the Tarrant Regional Water District and North Texas Municipal Water District, capture a permitted amount of the Trinity River and filter the water through native trees and grasses for seven to 10 days before pumping it north into reservoirs.

The water managers see the wetlands as a reliable, less expensive solution to more dams, aqueducts and pipelines that deliver water over long distances. *The man-made wetlands allow them to reuse water which they already paid at least once to store and purify.*

About 15 percent of the water supply for the North Texas district, which serves 1.6 million people, passes through the John Bunker Sands Wetland Center in Kaufman County, an 1,840-acre wetland on a working cattle ranch. It is then pumped 40 miles north to Lake Lavon, the district's primary water source.

Wildlife flourishing

The wetlands remove nitrogen and phosphorous - fertilizer, essentially - from water better than a conventional wastewater treatment plant, said John DeFillipo, director of the center. What's more, the ranch has become home to bobcats, coyotes and at least 242 species of birds, including falcons and a bald eagle.

"We have landowners come all the time and ask how they can do this," DeFillipo said while sitting on a porch that overlooks the wetlands. "This is the future."

The restored wetlands have inspired others in the Trinity basin, including a collaborative effort by 15 landowners along Mill Creek, which feeds into the river's Richland-Chambers reservoir, a major water source for northeast Texas.

The project, guided by the Texas-based Trinity Waters conservation group and the Wisconsin-based Sand County Foundation, involves the restoration of about 3,000 acres along the creek. The landowners will alter grazing patterns to give plants time to recover and use controlled burns to eliminate water-sucking invasive, non-native plants, among other changes.

The new practices will encourage water retention by holding soil in place with the roots of native plants, trees and grasses.

"We can't go back to pre-settlement conditions because the landscape has changed so much," Cathey said. "But we can make it more wildlife and water friendly."

Growing water

A trip to the Seven J reveals the cruelty of the worst one-year dry spell in Texas history. Older pecan trees are bare after dropping their leaves and nuts early because of drought stress.

Of the many retention ponds on the property, the 60-acre Dry Lake is, well, dry, and Rattlesnake Lake is without water for the first time under the Parten family's ownership.

The Trinity, meanwhile, is low and lazy as it moves along the property. Austin Parten, whose grandfather, J.R., purchased the land more than 60 years ago, said the river is typically six feet higher at this time of the year.

The decision to restore bottomland hardwood on the ranch came before the drought. The family liked the idea for ecological and financial reasons.

By reconstructing and maintaining the wetlands, the Parten family can sell "credits" to corporations or government agencies to compensate for acres they have developed elsewhere. The practice is known as mitigation banking, and Austin Parten said he is hopeful that it will provide a return on the family's \$800,000 investment in the bottomland forest.

"We consider ourselves conservationists, but there are ways to turn that into money," he said.

Voters saw differently

Voters, however, turned a skeptical eye toward such efforts last week when they rejected Proposition 8 - an attempt to encourage water conservation on agricultural land through property tax relief.

Farmers and ranchers, conservationists, business and taxpayer groups and politicians from both parties backed the measure, saying the tax relief would provide property owners flexibility in managing their land while protecting water supplies without cost

to the state. The proposed tax break, for example, would have allowed some to run fewer cattle and still keep their land.

The benefit for Houston and other large cities is better water quality and quantity, said Huffman of the Nature Conservancy, which helped write the proposition and will try to put it before voters again.

"Houston is essentially at the end of a pipeline," Huffman said, referring to the Trinity. "To the extent that we can improve water quality along the way, that's extremely important."

matthew.tresaugue [@chron.com](https://twitter.com/mtresaugue)twitter.com/mtresaugue

FAIR USE NOTICE This document contains copyrighted material whose use has not been specifically authorized by the copyright owner. The Texas Living Waters Project, which is a nonprofit undertaking, is making this article available in our efforts to promote comprehensive water planning in Texas. We believe that this constitutes a "fair use" of the copyrighted material as provided for in section 107 of the US Copyright Law. If you wish to use this copyrighted material for purposes of your own that go beyond "fair use", you must obtain permission from the copyright owner.