

Exotic invaders a threat to native Texas species

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AUSTIN, Texas — There was a time when horned frogs weren't confined to TCU.

The real-life version of TCU's ugly-but-lovable mascot, actually a kind of lizard, ranged across Texas by the thousands until imported red fire ants marauded through the state, displacing the ants that served as animal's food source.

Today, TCU researchers blame the fire ant invasion, along with pesticides, for devastating the horned toad population.

The fate of the iconic lizard is part of a much larger story about invasive species a rogues' gallery of weeds, grasses, insects, fish and land animals that are reshaping and in many cases destroying the natural order in Texas and much of America.

At Caddo Lake, a fisherman's paradise that straddles far East Texas and western Louisiana, an aquatic fern native to South America, the giant salvinia, forms huge masses on the water that block sunlight, foul boat propellers and threaten habitat. The hydrilla, a South American plant brought to the U.S. to decorate aquariums, has caused similar problems at Joe Pool Lake and other area waterways.

Feral hogs, wild descendants of domestic farm animals, are roaming though East Texas, destroying farmland and wresting food from other animals. Out in the desert reaches of West Texas, a menacing evergreen known as the saltcedar, so called because it oozes salt from its leaves, is altering soil salinity and drying up small streams and rivers.

And in Arlington this year, botanists discovered a parasitic weed called branched broomrape, which attaches itself to other plants and sucks them dry of water and nutrients. Native to Europe, it's believed to have migrated to North America by ship.

Dealing with the collective threat from invasive, or "exotic," species in Texas has become a leading priority among state wildlife officials and ecological groups because of the potential damage to agriculture, water sources, recreation, the environment and the landscape. Nationwide, the economic toll of invasive species has been estimated at about \$137 billion a year.

"It's a huge economic problem," said Damon Waitt, a biologist at the Lady Bird Johnson Wildflower Center in Austin who is also president of the Texas Invasive Plant and Pest Council.

The council was formed in June to "pull together" federal agencies, conservation organizations, academia and other groups into a unified fight against invasive species. "We felt like we hadn't organized sufficiently to address this issue," Waitt said. "Texas was behind the curve."

The staff of the Sunset Advisory Commission, a legislative panel that monitors state agencies, cited invasive aquatic plants as a major challenge facing the Texas Parks and Wildlife Department. "Many non-native plants can reproduce so rapidly as to out-compete native species, reduce oxygen levels in water, and render waterways impassible to boat traffic," the commission staff said in a November report.

Some spread with alarming speed. The Chinese tallow, a tree that notoriously drives out other species, has increased from 5 to 30,000 acres in Galveston County and is endangering parts of Texas' Big Thicket. In 2006, about 30 acres of giant salvinia was spotted on Caddo Lake; today, the Brazilian plant is spread across up to 8,000 acres, says Jack Canson with the Caddo Lake Institute.

"It's a lake-killer if you don't get it under control," he said.

In many cases, the invasion is decades old, often involving plants or animals that may have been brought into the United States for commercial use years ago and then ran wild, overwhelming indigenous habitats. The bilge water in cargo ships is a frequent source of aquatic plants. Hydrilla and giant salvinia often make their way from lake to lake in Texas, stuck on boat propellers or trailers.

Nutria, beaverlike rodents, were brought into the United States for the fur trade; but they have become one of the "worst of the worst" on the Union of Concerned Scientists list of unwanted species because of destructive burrowing that disrupts farming and contributes to flooding. In Texas, nutria have posed a danger to mosquito fish in Big Bend National Park.

Dean Williams, an assistant biology professor at TCU, has taken a close look at one of the most threatening invaders, the fire ant, through his research on horned toads.

Over the past several months, Williams and Amanda Hale, another biology faculty member, have been studying the genetics of horned toads to investigate their decline and possible replenishment.

The research is funded by the Parks and Wildlife Department with money raised from the sale of specialty license plates emblazoned with an image of the horned toad. Williams said their studies indicate that the fire ant invasion is one of "the big reasons" for the decline because it decimated the harvester ant, the lizards' chief diet, and effectively forced horned toads into exile.

The lizards now live in diminished numbers deep in the West Texas desert.

One of the biggest problems in North Texas in recent years is hydrilla.

Tom Hungerford, a Parks and Wildlife Department biologist in Fort Worth, said that while the problem doesn't seem as severe this year, hydrilla has been a persistent nuisance in Joe Pool Lake and other area waterways, forming huge mats of vegetation that often stretch 13 to 14 feet, from the lake bottom to the surface. "It's like a carpet almost," he said.

State agencies and environmental groups are fighting back and in many cases, making progress with an array of weapons, such as herbicides or exotic insects brought in to attack a particular plant. A public education campaign to marshal help from the public may also be making a difference, said Tom Harvey, an Austin spokesman for the Parks and Wildlife Department.

"You could say the exotics have been winning the war so far, but I see a backlash where people are going to get education and take action and do something about it," he said.

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From a Sunset Advisory Commission staff report

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