



# Joint project looks at Texas watershed

## Corps, partners embark on study of environmental flows at Caddo Lake.

By Clay Church  
Fort Worth District

**D**estruction, wrath, fury and beauty are words not normally used except when discussing Mother Nature and her weather. The early years of the 21st century have demonstrated nature’s awesome power through the destruction caused by earthquakes, hurricanes, tsunamis and tornados. These natural events also bring drought, floods and other events that impact our daily lives.

A large portion of the central United States is still under drought conditions, which has forced many to protect and preserve the current sources of water and to seek future sources. The U.S. Army Corps of Engineers Fort Worth District has agreed to work with numerous resource organizations to study how reservoir operations have affected ecological conditions in the Big Cypress Bayou and Caddo Lake in the piney woods of east Texas.

Recent rains in the Lake O’ the Pines watershed have allowed a small amount of water to be stored in the flood pool of the lake. Controlled release of these flood waters is the first step in a partnership that began in 2004 with a series of science-based workshops organized by The Nature Conservancy and the Caddo Lake Institute, with assistance from the Corps, Northeast Texas Municipal Water District, several universities and federal, state and local government agencies. The workshops focused on developing an ecological understanding of the changes to downstream flow regimes resulting from sustained reservoir operations.

“The Fort Worth District is proud to work with The Nature Conservancy, United States Geological Survey, Caddo Lake Institute and other interested partners in being able to make calculated water releases from Lake O’ the Pines in order to conduct field observations,” said Paul Rodman, chief of Fort Worth District’s Reservoir Control. “Our hope is that by making these water releases at specific times and amounts, the specialists in the field will be able to accurately measure the flows to promote ecologically sustainable water management practices.”

The Corps’ participation in environmental flows studies at Caddo Lake stems from a partnership with The Nature Conservancy called the Sustainable Rivers Project, a pilot project to protect river ecosystems downstream of multiple dams in 13 states.

Caddo Lake Institute President Richard Lowerre explained the term “environmental flows” as releases of water into Caddo Lake through its tributaries using a formula patterned after the natural conditions to which fish and other animals, plants and humans have become adapted.

“We are not seeking just one flow level, but seasonal variation, because some flood levels, some drought conditions and the timing of different flows are important for fish spawning, cypress tree regeneration, flushing of sediments and nutrients, and management of invasive aquatic plants,” Lowerre said.

Carter Smith, The Nature Conservancy’s Texas state director, sent a letter in August 2005 to Fort Worth District asking the district to consider operational changes in the way water is released from the reservoir.

“This is an amazing success story — one of broad partnerships involving the entire spectrum of stakeholders,” Smith said. “The coordination between engineers and ecologists being demonstrated in this release of water from Lake O’ the Pines represents a fundamental shift in how water is being managed, and a great deal of the credit goes to the Army Corps of Engineers for intrepidly moving this concept forward.”

The flows began in late January and were able to be sustained into February.

“We were able to give them more than what they originally asked. We had the water to give them extra time to see how the flows are at the reach,” Rodman said.

*Some material from The Nature Conservancy news release at <http://www.nature.org/wherewework/northamerica/states/texas/press/press2810.html> were used in this article.*



Fort Worth District works with several partners to make the appropriate water releases from Lake O’ the Pines Dam to support the study at Caddo Lake. (Courtesy Photo)