# THE ASIAN CARP BATTLE

*Water Center researchers look for ways to manage the species while preserving the state's important lake tourism and sport fisheries industries*

Photo by Ben Corda, TTU Photo Services

The invasion of Asian Carps throughout the Mississippi River basin is an ongoing ecological disaster. Silver, Bighead, and Black carps were brought to the U.S. during the 1970s for the purpose of improving water quality in commercial catfish ponds where it was thought that their feeding habits might improve water quality. Unfortunately, all three species escaped into the Mississippi River, and Bighead and Silver Carp have proliferated. They now dominate the fish community in some areas, and their escape behavior is a threat to humans. When startled, Silver carp leap out of the water and can strike humans, especially boaters. That risk can be seen in dozens of YouTube™ videos that show hundreds of fish in flight.

Asian Carp have not overtaken Tennessee waterways, but they are abundant in the lower Tennessee and Cumberland rivers and are moving upstream. While dams impede their progress, they slip upstream through navigation locks. This is a major issue because our reservoir fisheries are renowned, and our rivers support high biodiversity. To maintain our fisheries resources, managers need answers to five important questions: 1) What is their distribution in Tennessee? 2) How are they using locks as migration routes, and what can be done to prevent passage? 3) Are the fish we see in Tennessee a result of immigration or spawning within Tennessee waters? 4) If Asian Carp do proliferate, what would be their ecological role and potential impacts in our reservoirs and upper rivers? and 5) Could management strategies such as commercial harvest limit their abundance?

A unique partnership at Tennessee Tech is addressing those questions and disseminating results: The Tennessee Cooperative Fishery Research Unit. Established in 1973, the Tennessee unit is a partnership between the United States Geological Survey, the State of Tennessee, and Tennessee Tech. USGS provides salaries for a Unit Leader (Dr. Mark Rogers) and an assistant unit leader (Dr. Amanda Rosenberger) who serve as TTU faculty; the State of Tennessee provides an annual operating budget; and Tennessee Tech's Water Center provides administrative support. The Unit's mission is to train new scientists by working on applied fisheries and conservation problems of interest to State resource managers.

Unit personnel and Tech students are using traditional net surveys to estimate abundance and range, acoustic telemetry to track movements, and a variety of other techniques to understand the Asian Carp's ecological role and interactions with native species. While Asian Carp cannot be exterminated, it may be possible for commercial fishers to target them for economic gain, and our important native game fishes may be resilient enough to persist or even thrive in the presence of Asian Carp, provided that the invaders are kept to low or moderate densities. The Fishery Research Unit is engaged in ecological modeling to test that hypothesis and suggest potential harvest rates that might be needed for this to work. This is important research most of all to anglers because, although we cannot presently exterminate Asian carp, we may be able to control abundance such that we can live with their presence and still have the sport fisheries and lake tourism for which Tennessee is famous.