

## **Restoring American Shad on the Roanoke River One Fish at a Time**

**RALEIGH, N.C. (Feb. 27, 2008)** – The American shad collected from the Roanoke River by N.C. Wildlife Resources Commission biologists in March 2007 looked like any other American shad. However, this fish was anything but ordinary.

The 20-inch female American shad, captured near Weldon, was the next chapter in an ongoing story about restoring a historic species in a river that at one time harbored a thriving commercial and recreational fishery.

The fish's otolith (ear bone), no bigger than the head of pencil eraser, told biologists a lot about this fish and its remarkable journey that lasted three to four years and spanned thousands of miles. More importantly, the otolith told biologists that the Roanoke River American Shad Restoration Program implemented more than 10 years ago to enhance the depleted fishery continues to demonstrate signs of progress.

The fish began its journey at the Watha State Fish Hatchery as a 1/2-inch long fry where it was marked twice with oxytetracycline (OTC), a common antibiotic, to stain its otolith and then released in the upper part of the Roanoke River above John H. Kerr Reservoir near Alta Vista, Va.

The journey ended in March 2007 when Commission biologists recaptured the fish and noted a double mark after examining the otolith under a microscope. This first documented return of an adult American shad stocked in the upper Roanoke River indicates that stocked fry can pass downstream through three reservoirs and dams (Kerr Reservoir, Lake Gaston and Roanoke Rapids Lake) and return upstream as adults to their native spawning grounds.

“Capturing an adult American shad that was initially stocked at our upper location is exciting news,” said Kevin Dockendorf, district 1 fisheries biologist. “With passage

through the dams and the reservoirs, this fish outmigrated through the Roanoke River and Albemarle Sound, spent three to four years in the ocean and came back up the Roanoke River, making it through the whole American shad life cycle.”

The life cycle of an American shad is an arduous one, beginning in the freshwater rivers of North Carolina, where adult shad spawn to produce millions of eggs, which eventually hatch as fry. The fry then attempt to make their way hundreds of miles downstream to the Atlantic Ocean, where they spend several years growing into adults before heading back up the rivers to spawn the next generation of American shad.

“Because the maturation period of American shad is rather long – returning three to four years after hatching to spawn – we would anticipate a lag from stocking of fry to recapture of adults of hatchery origin,” Dockendorf said.

### **The Roanoke River American Shad Restoration Program**

At one time, annual “shad runs” supported important commercial and recreational fisheries along the East Coast as millions of American shad came in from the sea and up rivers to spawn; however, overfishing, water quality degradation and dam construction contributed to depleted populations.

Due to the importance of adult American shad as a recreational and commercial fishery as well as juvenile American shad as a forage base, North Carolina is one of several states that has taken measures in the last two decades to restore the American shad population.

In 1998, Commission biologists, fearing that a population crash was inevitable, partnered with the U.S. Fish and Wildlife Service to begin the Roanoke River American Shad Restoration Program. In the 10 years since, the two agencies have stocked more than 18 million “OTC-marked” shad fry in the river in the hope of restoring the fishery.

Before stocking the fry, hatchery staff immerse the tiny fish in OTC once if they will be stocked at Weldon and twice if they will be stocked upstream above the reservoirs and dams.

Previously, biologists captured a total of three single-marked adult fish on the spawning grounds; one adult shad in 2005 and two adult shad in 2006. These adult American shad were the first documented hatchery-reared fish from the program that had survived to spawning age, indicating that the propagation program was working and that a few of the stocked fish were surviving three to four years in the ocean and then returning to the Roanoke River to spawn.

While the appearance of those fish was good news, the double-marked American shad captured in March 2007 is better news because shad fry stocked in the upper Roanoke River are able to utilize nursery habitat that has long been blocked to the spring migration of spawning American shad. Prior to dam construction in the upper Roanoke River, American shad were able to migrate and spawn in the extreme headwaters of the Roanoke River as far as Salem, Va.

To learn more about North Carolina's most popular freshwater sport fish species, including the American shad, visit the N.C. Wildlife Resources Commission's Web site, [www.newildlife.org/fishing](http://www.newildlife.org/fishing) and click on the [North Carolina Sport Fish Profiles](#) section.