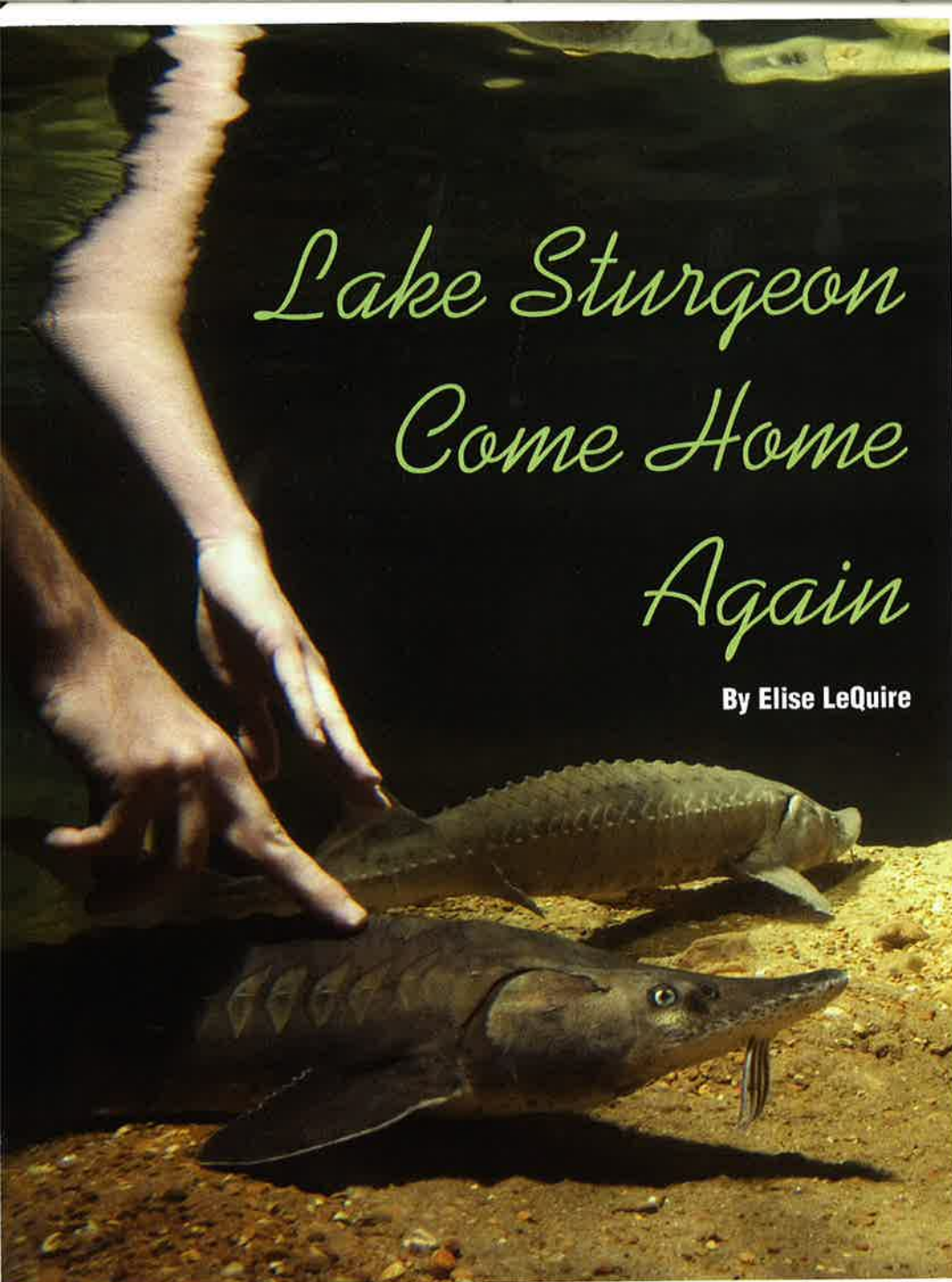


Lake Sturgeon Come Home Again

By Elise LeQuire



Todd Staley, Tennessee Aquarium

An archaic fish with a long life and a fearless nature, the Lake Sturgeon was extirpated in the Tennessee River watershed, but is now on track to make a comeback.

The Lake Sturgeon is a primitive freshwater fish that can grow to nearly eight feet long, weigh over 300 pounds, and live more than 150 years.

It once ranged from the Mississippi Valley to the Great Lakes to the Hudson Bay region, north from Canada and south to northern Alabama and Georgia. Though its ancestors survived the great extinctions of geologic history, the Lake Sturgeon proved no match for the pressures imposed by humans in the 19th and 20th centuries.

The Lake Sturgeon feeds on river-bottoms, using its sensitive, beard-like barbels to detect its prey, and its protruding lips to vacuum up small crayfish, mollusks, larval stages of aquatic insects, and other species that thrive in clean, free-flowing waters. It also feeds on worms and insect larva in silted reservoir overbanks.

Throughout its range, dams blocked the fishes from moving upstream to spawn, and industrial and residential pollutants degraded water quality. In its northern range, commercial fishing took a heavy toll on this archaic fish valued for its flesh, caviar, and fish oil. In its southern range, the Lake Sturgeon was considered extirpated by the 1980s.

In 1998, a multi-agency effort was launched to reintroduce the Lake Sturgeon to the upper Tennessee River watershed. The program is slated to continue for at least 20 years, says Sabrina Novak, research coordinator



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This fish survey crew of biologists from the Tennessee Department of Environment and Conservation, AmeriCorps, University of Tennessee, and TVA collected a Lake Sturgeon in the lower French Broad River in May of 2003. Previous page, top: The Lake Sturgeon touch tank at the Tennessee Aquarium in Chattanooga. As people get to touch these fish, aquarium docents explain the biology of the fish and talk about the reintroduction program. Previous page, bottom: Chris Coco helps his son, Andrew, release a Lake Sturgeon in May of 2003.

with the Tennessee Aquarium. "Males reach sexual maturity at eight to 12 years or even up to 22 years, and females can take up to 20 to 26 years to reach maturity," Novak says. For the project to be deemed a complete success, the fish will have to reproduce in the wild and also withstand the pressure of a future limited sport fishery.

Swimming Progress

The stage was set for the reintroduction program by improvements in water quality in the tailwaters of Douglas Dam on the French Broad River and Cherokee Dam on the Holston River, says Edwin M. Scott, aquatic biologist with the Tennessee Valley Authority. Early efforts in the 1980s established minimum flows of water below the dams. Since 1991, through its Reservoir Releases Improvement program, TVA has worked to improve habitat for fish and the benthic community of small aquatic organisms many of them depend on. Low dissolved oxygen below these dams, and river beds that dried up in drought conditions, were inhospitable habitat for these sensitive species before the program began.

TVA has also installed new turbines that vent atmospheric air into the water, installed surface water pumps that push aerated surface water down-

ward to turbine intakes, and installed 20,000-gallon tanks that introduce pure oxygen through diffuser lines just above the dams. "TVA has made measurable improvements in these tailwaters and has released state-endangered Lake Sturgeon, as well as spiny river snails and 13 non-imperiled mussel species into Douglas and Cherokee tailwaters," Scott says. "If these efforts are successful, the program will be expanded to include additional state and federally listed aquatic species."

The first trial reintroduction of Lake Sturgeon occurred in 1992 in the Clinch River upstream from Norris Dam. The focus soon shifted to the French Broad. "Conditions improved dramatically in the French Broad below Douglas dam. It was the difference between night and day. The benthic and fish communities were rebounding," Scott says. The idea was that the sturgeon would do better in a bigger river with access to Fort Loudoun Reservoir and the Tennessee River.

This effort drew the attention of a number of other agencies. The Tennessee Aquarium in Chattanooga was able to provide seed money to raise the fish in a hatchery. Other agencies have also assisted in this long-term project, from research, monitoring, and consultation to manpower, funding, and public outreach. These include the World Wildlife Fund, the Tennessee

Aquarium Research Institute, and the U.S. Fish and Wildlife Service.

By the end of 2003, nearly 22,000 sturgeon had been stocked at nine sites along the Holston and French Broad Rivers from Forks of the River in Sevier County, where the two meet to form the Tennessee River, upstream to the tailwaters of the dams.

So far, routine monitoring has turned up just a handful of fish, five in 2001, two in 2002 and three in 2003, though fishermen have reported catching and releasing dozens of fish ranging up to two feet long. Sturgeon have also been found in Fort Loudoun, Watts Bar, Melton Hill, and Chickamauga reservoirs, as far as 200 miles from release sites.

The number of officially confirmed sturgeon is not a good indication of the population levels, however. "The one to five year olds are notoriously difficult to find," Scott says. Monitoring methods have included electroshock, gill netting with different mesh sizes, and trot lines.

"In 2004, we're going to find some fish," Scott says. After consulting with the Wisconsin Department of Natural Resources, the monitoring team decided that this year's efforts will include more boat shocking, otter trawling, gill netting, trot lining, haul seining, and scuba.

People angling for game fish may occasionally catch an introduced, young Lake Sturgeon, but they need to know that this archaic species is listed by the state of Tennessee as endangered, so it's



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Eagle Bend Hatchery Manager Mike Smith, of the Tennessee Wildlife Resources Agency, passes a net full of sturgeon to volunteers at a fish release at Seven Islands Wildlife Refuge in 2003. (Ed Scott/TVA)