

# Snail believed extinct found in Cahaba River by student

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Shown is a live Oblong Rocksnail from the Cahaba River in Bibb County, Ala. The freshwater snail, declared extinct in 2000, was recently rediscovered by a University of Alabama graduate student. Credit: Thomas Tarpley, ADCNR

A freshwater snail declared extinct in 2000 was recently rediscovered in the Cahaba River by a University of Alabama graduate student.

Details of the discovery by Nathan Whelan, a doctoral student in UA's department of biological sciences, will publish in the Aug. 8 issue of the

scientific journal *PLOS ONE*.

"To be able to find a [species](#) that was thought to be extinct is always encouraging," Whelan said, "especially considering biodiversity and conservation stories are not typically positive these days."

Whelan rediscovered the species, whose common name is Oblong Rocksnail, on May 22, 2011, in a short stretch of the Cahaba near where it crosses the Bibb and Shelby county lines.

The snail, about the size of a nickel with a yellow body and a black band on its head, had not been collected in more than 75 years, he said.

Although encouraged by the [rediscovery](#), Whelan said the animal's range has been dramatically shortened, making it "very susceptible" to a single event wiping it out forever.

A large pollution incident or a natural climactic threat could, the researchers said, pose great risk.

Once found along an approximate 50-mile-stretch from Buck Creek in Helena, down the Cahaba River to Centerville, the snail's range now appears to be limited to approximately one-half mile. The snail's presence has never been documented outside the Cahaba River basin.

Through the efforts of other researchers, including those at the Alabama Aquatic Biodiversity Center, or the AABC, near Marion, the hope is a second population of the snails can be established at a different location within its original range.

"Rare [aquatic species](#) reintroductions are the primary mission of the AABC, as Alabama has more federally listed animals than any other state," said Dr. Paul Johnson, program supervisor of the center, which

focuses on imperiled species recovery.

"Most listed animals are snails or mussels, and many remain in one or two locations.

Successful reintroduction to formerly occupied habitats reduces the risk of future extinction events."

The AABC is operated by the Alabama Department of Conservation and Natural Resources.

Johnson is one of the academic journal article's co-authors, along with Dr. Phillip Harris, an associate professor of biological sciences at UA, who serves as Whelan's primary academic adviser.

"We don't know how many individuals are left," Whelan said. "Locally, they seem somewhat abundant. Anecdotally, the sole remaining population seems to be doing fine."

Whelan collected samples from along the river and took some of them to the Alabama Aquatic Biodiversity Center. There, the researchers were able to observe and document how the snails lay their eggs.

Historically, poor water quality and habitat degradation in the Cahaba during the mid-20th Century was believed to have driven the snail to extinction, the researchers said.

Today, the Cahaba River basin supports much biodiversity, including 121 species of fish, 38 species of mussels and 32 species of [snails](#).

Included among these are 12 federally threatened and endangered species, the most listed species of any single drainage basin in Alabama, the researchers said.

The Nature Conservancy named the Cahaba as one of eight "hotspots of aquatic biodiversity" in the U.S. that must be saved.

"Recovery actions by numerous federal, state and local government agencies and private conservation groups have significantly improved water quality and riverine habitat in the Cahaba River since 1985," said Johnson.

In addition to its distinguishing physical characteristics, which include an indentation on the left wall of the shell's opening, and both the shell and the snail's coloring, the snail's microscopic teeth, used to scrape algae off of rocks, are unique to the species, Whelan said.

Using an Oblong Rocksnail specimen collected in 1881 and stored in the Smithsonian's National Museum of Natural History as a standard, Whelan compared, using a scanning electron microscope, the 17th-Century snail's rows of teeth, called radulas, with those from a recently recovered snail.

"The structures were virtually identical," Whelan said.

On the day of the discovery, Whelan coaxed three of his friends to go kayaking with him on the Cahaba specifically to search for the snail.

"Considering it was the only snail species from the Cahaba that went extinct, it was always interesting to me ... what would have caused this one species to go extinct and not these others?"

Whelan, a native of Eureka, Mo. on track to complete his doctorate at UA in May 2013, said his interest in the small creatures ties back to his overall desire for conservation.

"That's one of the reasons I got into this research – to help keep our

rivers healthy and improve the freshwater resources in Alabama."

**More information:** Paper online:  
[dx.plos.org/10.1371/journal.pone.0042499](https://doi.org/10.1371/journal.pone.0042499)

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