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Study Finds 74 Percent of Freshwater Snails in the US and Canada Imperiled

According to a decade-long study conducted by the American Fisheries Society (AFS), 74 percent of all freshwater snails in the United States and Canada are currently imperiled. The AFS conservation status review created a database of the all freshwater snails in the United States and Canada, the first database of its kind. The findings have been published in the June 2013 issue of *Fisheries*, a monthly journal of the AFS. Three Fisheries Section biologists with the Alabama Department of Conservation and Natural Resources (ADCNR) led the conservation status review.

“Although this is the highest imperilment rate recorded for any freshwater species evaluated by AFS, the rate is certainly not that far ahead of other freshwater animals including mussels at 72 percent, crayfishes at 48 percent, or even fish at 39 percent,” said Dr. Paul Johnson, AFS Committee Chair for the study, and Program Supervisor of the ADCNR Alabama Aquatic Biodiversity Center (AABC). “Snails are just the worst example for many riverine species.”

Alabama’s freshwater diversity ranks first nationally for snails, crayfishes, mussels and fishes. This broad diversity has also caused the state to take a disproportionate hit in terms of freshwater extinctions (40 snails, 26 mussels and two 2 fish).

According to Stan Cook, Fisheries Section Chief for the Alabama Division of Wildlife and Freshwater Fisheries (WFF), Alabama has the most animals listed as endangered or threatened by the US Fish and Wildlife Service. The majority of those are freshwater mussels and snails.

“That’s why we have focused our conservation efforts on these species, while also partnering with other agencies to improve the riverine habitats on which they depend,” said Cook.

The United States and Canada are home to more than 700 species of freshwater snails. In North America, 67 species of snails have gone extinct, and another 278 are likely endangered. The loss of freshwater species in North American rivers ranks second globally in the rate of species loss, second only to tropical rainforests.

There are multiple reasons for the current plight of freshwater snails and other aquatic animals. For example, some species are naturally rare and have a very small range such as the Manitou Cave Snail near Fort Payne, Ala., which make it automatically more prone to extinction. Dams and other physical disruptions such as dredging and channelization play a role in habitat conditions, and industrial water quality discharge is also a factor.

The ability of Alabama’s waterways to sustain life reflects on a broader human quality of life issue. The same rivers and streams that support freshwater snails also supply drinking water to many Alabamians.

“Not only does this highlight that the second fastest extinction event on the planet is happening right here in North America, it reflects the challenges of improving and restoring river habitats on which these species as well as ourselves depend,” said Johnson.

For more information about the benefits of promoting healthy watersheds, visit [http://www.fws.gov/daphne//shu/2012economic_benefits_factsheet2\[1\].pdf](http://www.fws.gov/daphne//shu/2012economic_benefits_factsheet2[1].pdf).

The AFS review committee was comprised of 14 biologists representing 11 different federal, state, academic, and private natural resource agencies across the United States and Canada. The article is available online at (<http://fisheries.org/fisheries-magazine>). With more than 9,000 members; AFS is the largest science-based fisheries organization in the world.

ADCNR fisheries biologists Jeffrey Garner and Thomas Tarpley were heavily involved in the project reviewing the database, evaluating species names, distributions and conservation rankings. Tarpley designed graphics for the project and photographed many of the species. For some of the species, it was the first time they had ever been photographed. Tarpley and Johnson work at the AABC near Marion, Ala., and Garner is a mussel management specialist based in Florence.

The AABC is the largest state-run non-game recovery program of its kind in the United States. Its mission is to promote the conservation and restoration of rare freshwater species in Alabama waters and restore cleaner water in Alabama's waterways. To learn more, visit <http://outdooralabama.com/research-mgmt/aquatic/>.

The Alabama Department of Conservation and Natural Resources promotes wise stewardship, management and enjoyment of Alabama's natural resources through five divisions: Marine Police, Marine Resources, State Lands, State Parks, and Wildlife and Freshwater Fisheries. To learn more about ADCNR, visit www.outdooralabama.com.

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