



Crossing the Etowah River on Gober Bridge in Cherokee County, someone tossed an empty bottle into the swirling water below. That bottle sank slowly into the river and settled on the bottom where it rested until Mary Freeman, Ph.D., found it. What she found inside delighted her, for it was a discovery that is becoming increasingly rare.

Freeman, an ecologist with the U.S. Geological Survey, and her husband, Bud Freeman, a fish biologist at the University of Georgia's Institute of Ecology, have been conducting research on the fish that live in the Etowah River and surrounding watershed. Donning snorkeling gear or waders, they often explore the river to study its creatures.

"Whenever we find a submerged bottle we have learned to pour the contents out before discarding the bottle properly," said Mary Freeman. "We sometimes find the bottle has become home to an rapidly dwindling fish, commonly called the Coosa frecklebelly madtom."

A small catfish unique to north Georgia, the frecklebelly madtom is one of many species of fish native to this area. Unfortunately, its diminishing numbers make it a likely candidate for listing on the federally protected species list.

"The Coosa frecklebelly madtom is now only common in the Etowah River," said Freeman. "That is truly its home with the kind of habitat it prefers - swift water where there's a lot of river weed, cobble gravels and such."

The madtoms were first identified in the Coosa River, which is formed where the Etowah River joins the Oostanaula River in downtown Rome, Ga.

"It probably used to be in the Etowah downstream of Lake Allatoona before the reservoir was formed," said Freeman. "But the colder than normal water temperature and altered flows below Allatoona dam probably make the water uninhabitable, so that is

most likely why we only find it above the lake now."

How did this 2-1/2 -inch fish come to be called by such a long name? David Starr Jordan, who made some of the very first records of north Georgia fishes, including the discovery of the blue shiner in 1877, is credited with coining the name "madtom" in 1889. The name is thought to reflect the species' erratic swimming behavior. A "cousin" of the frecklebelly madtom, the Coosa frecklebelly madtom has similar mottling.

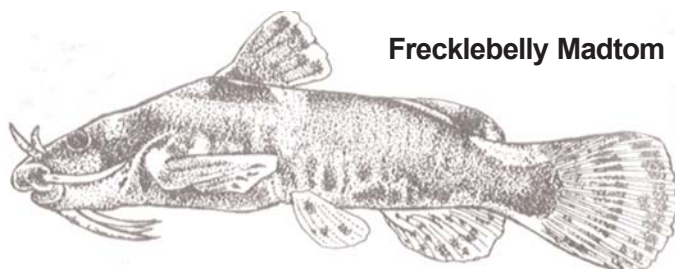
"Frecklebelly madtom extends from here all the way to the Peal I River in Mississippi. Our Coosa madtom is similar. There are a number of fish species that have unique forms in this part of northern Georgia," said Freeman. Although it has not been formally named yet, she believes the name Coosa frecklebelly madtom is appropriate to distinguish the north Georgia native.

Freeman has learned from experience that a Coosa frecklebelly madtom, appropriately nicknamed "stinging cat," has to be handled carefully.

"The pectoral spines have saw-like teeth on them and the spine has a neurotoxin gland, so a jab in the hand can be truly painful," said Freeman. "The proper way to handle it is flat in the palm of your hand - without squeezing them."

The madtom's coloring, swimming behavior, and spines are all defenses against predators, as is their inclination to make their homes in shelters or cavities, like that discarded bottle.

"They use cavities or shelters under rocks for spawning. The male guards a suitable nest and then the female comes in and deposits eggs. The male then protects the eggs from predators, keeps them clean until they hatch and the juveniles disperse from the nest,"



**Frecklebelly Madtom**

explained Freeman.

Despite the best efforts of this unique north Georgia fish species to protect itself from predation, the Coosa frecklebelly madtom appears to be on the decline.

"One of our primary goals is to protect their habitat while the watershed continues to experience population growth. We want to keep an eye on these fish and see that they thrive, so that it will never be necessary to list them as an endangered species," said Freeman. She explained that the madtoms are considered indicator species, much like the proverbial canary in the coal mine. A thriving population of madtoms are

a good indicator of a healthy ecosystem.

"These small fishes are very sensitive to habitat degradation," said Freeman. "As these animals start dropping out, it is a warning sign that our rivers are losing their health and some of the ways that they are becoming unhealthy will effect humans directly."

*For more information about The Nature Conservancy's work in the Etowah watershed, call 770/704-7280 or visit [www.nature.org/georgia](http://www.nature.org/georgia).*

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