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## World's smallest fish discovered on Indonesian island

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# World's smallest fish discovered on Indonesian island

## Editor's note |

This article is part of a continuing science series written by Arkansas State University faculty members and graduate students and published weekly by *The Sun*. For more information contact the ASU Department of Biological Sciences at [biology@astate.edu](mailto:biology@astate.edu).

BY ALDEMARO ROMERO  
AND ALAN D. CHRISTIAN  
SPECIAL TO THE SUN

Fishes come in all sizes and shapes. The largest are the whale shark (about 40 feet long) and the Mekong giant catfish from China (almost 9 feet long). Until recently the record for the smallest was the dwarf goby from the Western Pacific (0.314 inches).

Now scientists have discov-

ered a fish that it is even smaller — a 0.31-inch fish that has no common name because until now it was unknown. Scientists have named it *Paedocypris progenetica*, and this new species is considered to be related to the carp.

The discovery has been published in the latest issue of the *Proceedings of the Royal Society*. The authors, scientists from Singapore, England, Switzerland and Germany,

found this new species living in highly acidic peat swamps on the Indonesian island of Sumatra and in the Malaysian part of Borneo. These two areas are endangered by forest development and agriculture, which automatically places this species as a threatened one.

The fish is transparent and very thin. The skull is so rudimentary that one can see the brain underneath it. It is found

in waters called "blackwaters" that are almost as acidic as a cola drink. It is believed that this tiny species of fish is the product of a phenomenon called neoteny or pedomorphism. Animals showing this condition exhibit the retention of juvenile features as adult organisms. They are like youngsters that can reproduce.

Arkansas has about 200 species of fishes living within

its borders. The largest Arkansas fish is the alligator gar at 8 feet, 3 inches in length, while the smallest fish is arguably a tie between the least darter measuring 1.5 inches in length and the banded pygmy sunfish, also measuring in at 1.5 inches in length.

The least darter is difficult to find in Arkansas, not so much because of its size but

PLEASE SEE FISH, A9

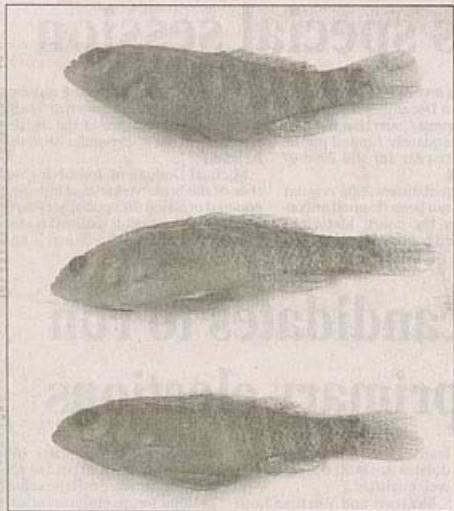


Photo by Alan D. Christian

The pygmy sunfish, Arkansas smallest fish.

## FISH: Arkansas' smallest fish

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because it is very rare. It can be found only in a handful of springs in Benton and Washington counties. The fact that it inhabits springs and small pools does not help either.

Unlike its transparent counterpart in South East Asia, the least darter is fully pigmented. Its major sources of food are small invertebrates. This Arkansas species has a very short lifespan, living only between 18 to 20 months.

The banded pygmy sunfish is found in the lowlands of the Mississippi Delta and the Gulf Coastal Plains of eastern and southern Arkansas. They prefer to live in swamps, bayous, creeks and oxbow lakes in quiet, clear, vegetated waters that have muddy bottoms. Their common name comes from the fact that they are a miniature version of their larger counterparts, the sunfish, such as bluegills.

The banded pygmy sunfish feed mostly on small crustaceans but will also eat insect larvae and mollusks. The body of this species is a dark olive-green to brown with many small dark specks across the entire body, and they also have many vertical bands that run from the top to the bottom of the fish. They

become sexually mature within 1 year of age and live just over two years total.

It is also interesting to note that Arkansas has acid bog ecosystems similar to those found in Asia. These ecosystems are home to a variety of plant and animals including worms, mollusks, crustaceans, and insects and are likely to be food for larger animals.

The Arkansas acid bogs are typically small forested, acidic bogs. They are characterized by being peat-covered or filled, wetted soils, and a surface mat of mosses. The acidity of these ecosystems is believed to be caused by the breakdown of plant material in the wetted soil. Like their Asian counterparts, these ecosystems are threatened by destruction of habitat including deforestation, but also by mining sand or gravel or by altering the flow of water into these ecosystems.

These are some of the ecosystems studied by ASU scientists aimed a better understanding their fauna and flora.

Romero is chairman and professor and Christian is assistant professor at the Department of Biological Sciences at Arkansas State University.