

New genus of electric fish discovered in 'lost world' of South America

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This is an *Akawaio penak* small. Credit: Hernán López-Fernández

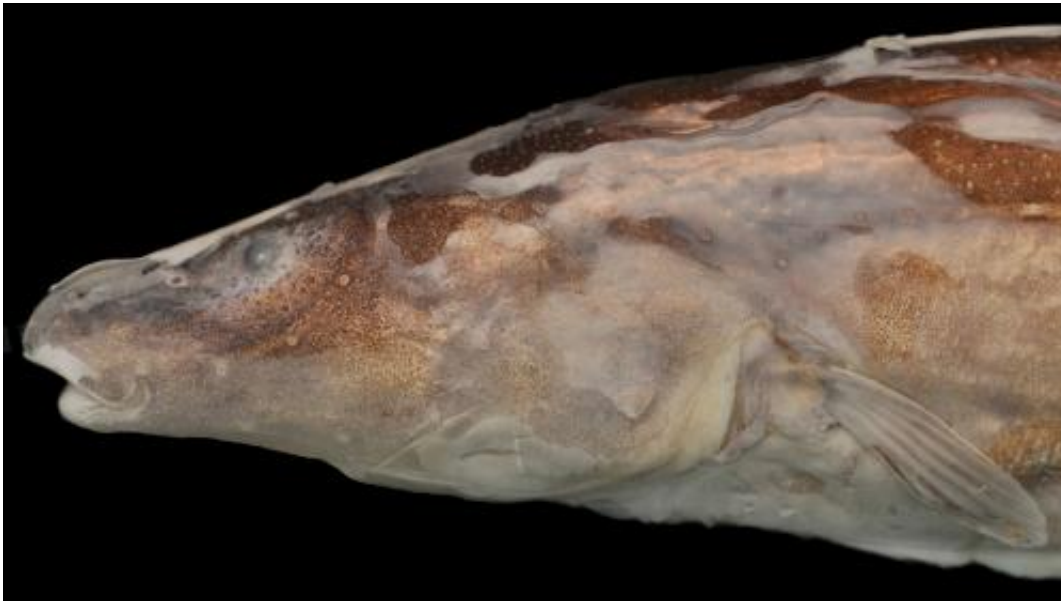
A previously unknown genus of electric fish has been identified in a remote region of South America by a team of international researchers including University of Toronto Scarborough professor Nathan Lovejoy.

The *Akawaio penak*, a thin, eel-like [electric fish](#), was discovered in the shallow, murky waters of the upper Mazaruni River in northern Guyana. Lovejoy's team at UTSC analyzed [tissue samples](#) collected during a recent expedition by researchers led by Hernán López-Fernández at the Royal Ontario Museum. By sequencing its DNA and reconstructing an [evolutionary tree](#), Lovejoy's team discovered the fish is so distinct it represents a new genus, the taxonomic classification level above species.

The upper Mazaruni River is a hotspot for [biological diversity](#), yet remains largely unexplored because of its remote location. The area

contains countless rivers on top of a series of uplands that have remained isolated from the rest of South America for more than 30 million years.

"The fact this area is so remote and has been isolated for such a long time means you are quite likely to find new species," says Lovejoy. Like other electric [knifefish](#), *Akawaio penak* has a long organ running along the base of the body that produces an electric field. The electric field is too weak to stun prey but is instead used to navigate, detect objects and to communicate with other electric fish. This trait is advantageous given the murky habitats of the fish.



This is the *Akawaio penak*. Credit: Nathan Lujan

The species is named in honour of the Akawaio Amerindians that populate the upper Mazaruni. The region is increasingly suffering from freshwater [habitat degradation](#) as a consequence of gold-mining in the area.

"The Mazaruni contains many unique species that aren't found anywhere else in the world. It's an extremely important area in South America in terms of biodiversity," says Lovejoy.



This is the *Akawaio penak*. Credit: Hernán López-Fernández

The results of the discovery are published in the recent edition of the journal *Zoologica Scripta*.

Provided by University of Toronto

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