

# Identifying a piranha by its bark

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A piranha's bite is definitely worse than its bark, but the bark has uses too. A new study of the sounds made by piranhas in the Amazon finds that their underwater "barks" are an effective tool for identifying

different species in murky waters.

Scientists have previously documented several noises that piranhas make by contracting muscles near their gas bladders, but these studies primarily occurred in a laboratory.

Next month, Rodney Rountree, "The Fish Listener," will talk about his work with Francis Juanes of the University of Victoria, to document calls made by [fish](#) in the Pacaya-Samiria National Reserve in Peru in a presentation at the Acoustical Society of America's 176th Meeting, held in conjunction with the Canadian Acoustical Association's 2018 Acoustics Week in Canada, Nov. 5-9 in Victoria, British Columbia. These calls may be useful for tracking [piranha](#) populations through passive acoustic monitoring.

"In the Amazon, most of the habitats are very turbid so you usually can't put cameras down and watch the behavior. The only way to survey fish is to catch them," Rountree said. "Passive acoustics lets you potentially locate fish just by their sounds."

During routine surveys at the reserve in 2012, Rountree "auditioned" captured fish by holding them gently underwater next to a hydrophone to record any noises. In total, he auditioned more than 550 individuals from at least 70 fish [species](#), including four types of piranhas. Using statistical analysis, Rountree could differentiate between piranha species, even closely related ones, based on the pattern of their barks.

Rountree also recorded underwater soundscapes at 22 sites in the reserve. He heard similar piranha barks at locations where piranhas were known to be feeding, as well as startled calls from catfish and other prey. "When piranha are present and feeding, they're nipping and biting, so the other fish are making lots of sounds," he said.

How could this be extended to monitor piranhas in the wild? Scientists potentially could deploy hydrophones from small boats to track how piranhas affect the ecosystem. Such studies could also help us understand how fish navigate their natural soundscape and whether human activity creates disturbances.

Further studies will be needed, however, to determine the best ways to differentiate between piranha species and to verify the range of barks made by each type. Factors such as the ambient water temperature and the size of the fish can affect the sounds.

As a simple, noninvasive method, passive acoustic monitoring could complement or even replace traditional methods of surveying fish through capture. "A lot of times, the most difficult thing is finding where they are," said Rountree. "So any tool that helps you find the fish is very helpful."

**More information:** Presentation #1pAB9, "Sounds from the Amazon: Piranha and prey," by Rodney A. Rountree and Francis Juanes will take place Monday, Nov. 5, 3:30 p.m. in Crystal Ballroom (FE) of the Victoria Conference Center in Victoria, British Columbia, Canada. [acousticalsociety.org/asa-meetings/](https://acousticalsociety.org/asa-meetings/)

Provided by Acoustical Society of America

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