

Discovering a new piranha species in the Amazon Basin

July 3 2024, by Flavio Gallo Cardozo



Serrasalmus magallanesi sp. nov., UMSS 11070, holotype 115.3 mm SL, Laguna 27 de Mayo, Beni River sub-basin, Beni Department, upper Madeira River, Amazon basin, Bolivia. Credit: Flavio Gallo Cardozo

Have you ever wondered what secrets the Amazon Basin holds beneath its murky waters? I'm Flavio Gallo Cardozo, a biologist from Bolivia,

and I'm excited to share with you the journey of discovering a new piranha species, *Serrasalmus magallanesi*, from the Upper Madeira River System.

In March 2024, our team [published](#) an article titled "A New Species of Piranha (*Serrasalmus*, Serrasalmidae) from de Upper Madeira River System, Amazon Basin, Bolivia" in the *Journal of Ichthyology*. This study details the unique morphological and genetic characteristics of this new [species](#).

Unlike the stereotypical image of piranhas, which often evoke fear, *Serrasalmus magallanesi* exhibits distinct traits that set it apart from its relatives, such as a dark crescent-shaped spot at the base of the tail and a deep red color with a dark border on the anal fin. This new species not only expands our understanding of the *Serrasalmus* genus but also highlights the ecological importance of the Upper Madeira River system.

The discovery process

The discovery process was both challenging and exhilarating. Ph.D. Fernando Carvajal-Vallejos spent months in the field, navigating the river's intricate network and collecting samples. The Upper Madeira River, with its diverse habitats, presented the perfect environment for uncovering new species. Each expedition required careful planning and coordination, from securing permits to ensuring the safety in the often-unpredictable conditions of the Amazon rainforest.



Adult individual of *Serrasalmus magallanesi* sp. nov., from Beni River. Credit: PhD Fernando M. Carvajal-Vallejos

Back in the lab, we conducted thorough morphological analyses and genetic sequencing, confirming that we had indeed found a species new to science. The meticulous process involved comparing the new specimen to 31 known species, examining its unique physical features, and conducting DNA analysis to verify its genetic distinction. Our results showed significant differences that warranted the classification of *Serrasalmus magallanesi* as a new species.

Ecological and conservation implications

The implications of our work extend beyond taxonomy. Understanding the diversity and distribution of piranhas is crucial for [conservation efforts](#), particularly in a region as ecologically sensitive as the Amazon Basin.

Our research underscores the need to protect these habitats from environmental threats such as deforestation, pollution, and climate change. The discovery of *Serrasalmus magallanesi* highlights the rich and still unknown biodiversity of the Amazon and the critical role it plays in maintaining ecological balance of the planet.



Laguna 27 de Mayo, Beni River, 27 de Mayo community, Territorio Indígena

Originario Campesino—Territorio Indígena Multiétnico II, at the North of Beni Department. Type locality of *Serrasalmus magallanesi* sp. nov. Credit: Flavio Gallo Cardozo

Recognition and impact

This discovery has not gone unnoticed in Bolivia. We have received recognition from the Faculty of Science and Technology, the University Mayor of San Simón, and the Ministry of Environment and Water. Such acknowledgments fuel our passion for research and conservation, motivating us to further explore the natural treasures of the Amazon.

The national recognition has also brought attention to the importance of supporting [scientific research](#) and conservation efforts in Bolivia, highlighting the potential for new discoveries and advancements in our understanding of biodiversity.

The Amazon Basin is a wellspring of biodiversity, and our discovery of *Serrasalmus magallanesi* is just one example of the many species waiting to be unveiled. As we continue our work, we hope to shed light on the intricate and wondrous world beneath the river's surface. This discovery is a testament to the importance of preserving natural habitats and supporting scientific exploration.

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More information: F. Gallo-Cardozo et al, A New Species of Piranha (*Serrasalmus*, Serrasalmidae) from the Upper Madeira River System, Amazon Basin, Bolivia, *Journal of Ichthyology* (2024). [DOI:](#)

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Flavio Gallo-Cardozo is a biologist with a degree from the University Mayor of San Simón and is the lead author of this study. Gallo-Cardozo specializes in ichthyology and aquatic biodiversity, focusing on the discovery and conservation of freshwater species in the Amazon Basin. Our recent work on *Serrasalmus magallanesi* has garnered national attention and has been recognized by several Bolivian institutions for its scientific impact.

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