

Submission date. 19/11/2025

Associate editor's decision after peer review (13/01/2026).

Dear Ms. Magalhães:

Manuscript ID NI-2025-0191 entitled "Integrative taxonomy data are reconciled around *Arapaima gigas* for the Brazilian Amazon" which you submitted to the Neotropical Ichthyology, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript.

To revise your manuscript, log into <https://mc04.manuscriptcentral.com/ni-scielo> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

You may also click the below link to start the revision process (or continue the process if you have already started your revision) for your manuscript. If you use the below link you will not be required to login to ScholarOne Manuscripts.

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc04.manuscriptcentral.com/ni-scielo?URL_MASK=567fe4f83fac473ba33043a65d1de686

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to the Neotropical Ichthyology, your revised manuscript should be submitted before 13-Feb-2026. If it is not possible for you to submit your revision by this date, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to the Neotropical Ichthyology and I look forward to receiving your revision.

Sincerely,

Prof. Claudio Oliveira

Associate Editor, Neotropical Ichthyology

claudio.oliveira@unesp.br

Anonymous reviewer #1

Recommendation. Minor Revision

Comments. I think the article is very interesting, as it brings attention to the taxonomic issues surrounding the pirarucu and demonstrates, albeit partially, that only a single species of *Arapaima* occurs throughout the Solimões–Amazonas system.

The manuscript contains some English errors and a few sentences that need

improvement for better textual flow; however, these are minor changes and have been suggested in the annotated PDF file.

In the Discussion section, the information on the success of this species' adaptation in other hydrographic basins in Brazil, as well as on how this may contribute to defining the species' conservation status, should be expanded.

The supplementary material also needs to be better identified, as some items are labeled as supplementary material while others are referred to as appendices.

Anonymous reviewer #2

Recommendation. Minor Revision

Comments. I suggest that authors use DNA barcoding (COI gene) with an explicit methodology for species delimitation, such as: Barcode index number (BIN), ASAP or GMYC, bPTP...

Author's Rebuttal Letter (31/01/2026).

Dear reviewers,

Thank you for all the comments and suggestions that helped improve this work. We also appreciate the favorable opinion and the recommendation for publication.

In general, we accepted most of the suggestions made by the reviewers, especially those related to improving the text, as well as the inconsistencies in the English translation. All modifications have been marked in red throughout the text and can be verified. The list of supplementary material has been updated, and along with it, we have made available a file with the GenBank deposit information.

Additionally, we have also reformulated some sections of the introduction and discussion to clarify some statements that were not clear.

Below we will answer some of the reviewers' main questions:

The term "taxonomic stability" used in the Abstract section: We use this term to reflect the current taxonomic scenario of the genus *Arapaima*. Since the publication of Stewart's work (2013), the genus has had four species for the Brazilian Amazon. However, as in the almost 150 years since the synonymization of congeners in *A. gigas*, there have been no records of specimens that could lead to a redescription or revalidation of these names. The same occurs for *A. leptosoma*, for which no other specimens have been collected since its description. Therefore, all specimens used in this work were analyzed and identified as *A. gigas*, and the other species may likely be the result of the morphological complex discussed in this work.

Response to Reviewer 1:

We accept the suggestion to broaden the discussion on the species' successful adaptation to other river basins in Brazil and worldwide. However, we believe that further studies are needed to better assess the impact of the colonization of other basins outside the Amazon by the Pirarucu.

Response to Reviewer 2:

We thank the reviewer for the suggestion to conduct a species delimitation analysis. However, we believe that such an analysis would not be biologically or methodologically appropriate for our COI dataset.

Genetic divergence among *Arapaima gigas* individuals is extremely low (0.1–0.7%), which falls within the range typically interpreted as intraspecific variation for mitochondrial markers like COI (Hebert et al. 2003; Meier et al. 2006; Collins & Cruickshank 2013). We observe no barcode gap separating putative lineages. Additionally, only four haplotypes were recovered from a 614 bp fragment, indicating very limited mitochondrial variation.

Importantly, populations do not exhibit reciprocal monophyly, and phylogenetic relationships suggest shallow population-level structuring rather than independently evolving lineages. Under these circumstances, coalescent-based or distance-based

species delimitation methods are known to have low power and may yield arbitrary or misleading results, as their assumptions require detectable divergence between inter- and intraspecific processes (Pons et al. 2006; Fujisawa & Barraclough 2013; Sukumaran & Knowles 2017).

Furthermore, there is no morphological differentiation or independent lines of evidence (ecological, behavioral, or multilocus genomic data) to support the existence of multiple species within *A. gigas*. Current best practices recommend avoiding formal species delimitation when genetic variation is extremely low and unsupported by additional data, as this risks delimiting haplotypes or populations rather than species (Carstens et al. 2013; Collins & Cruickshank 2013).

For these reasons, we did not perform species delimitation analyses and instead interpret the observed genetic variation as intraspecific diversity within *Arapaima gigas*.

We hope we have clarified the doubts of both reviewers and we are available for further clarifications, should it be necessary.

Once again, we are immensely grateful for the suggestions and contributions to the improvement of this work.

Associate editor's decision after peer review (02/02/2026).

Dear Mr. Magalhães:

It is a pleasure to accept your manuscript entitled "Integrative taxonomy data are reconciled around *Arapaima gigas* for the Brazilian Amazon" in its current form for publication in the Neotropical Ichthyology.

Congratulations for the acceptance of your article, and be aware on the following topics:

1. Publication Fee

NI will charge a publication fee if none of the co-authors is an active SBI member.

This measure is essential to strengthen SBI and thus ensure the continuity of our journal, scientific society, and biannual meetings. SBI is not limited to Brazilians but is open to anyone interested in freshwater and marine Neotropical fishes. More details on SBI are available at <https://www.sbi.bio.br/>. Please email tesouraria.sbi@gmail.com to confirm whether any of your co-authors is a current SBI member and to activate your SBI membership if needed. Otherwise, if you will cover the publication fee of R\$1.000, please inform us at the same email. For authors outside Brazil, the fee will be converted to US dollars based on the official exchange rate on the date of payment. The only exceptions to this fee are invited articles.

2. Science Communication and Social Media

NI actively promotes published articles to both academic colleagues and the general public, including science journalists. To support this, we create social media posts and require images and/or videos of fish related to your work. If your article does not include such images, please send a photo of a representative fish species, preferably alive in its natural habitat. If you do not have your own photo, you may provide a link to an online image, along with the source, author, and, if applicable, authorization for its use. We also publish video summaries of articles in Portuguese on our Instagram (@neoichth). We ask you to designate one author to record a short video using a mobile phone, following the attached instructions. The video should include visual materials (photos, graphics) and a script for subtitles to enhance accessibility. Please email the completed material to neoichth@nupelia.uem.br within 30 days. For now, please provide the name and email address of the author responsible for recording the video.

Additionally, if your article is taxonomic in nature and has been submitted to Zoobank, it is your responsibility to update the manuscript's status on Zoobank once it has been published.

All of the above information and materials are mandatory for the publication of your article, including the scientific dissemination component, which is crucial in the current climate of science denial and misinformation. If you have any questions, please feel free to contact us at neoichth@nupelia.uem.br.

Please respond to this e-mail within five working days to let us know you are aware of all the important points mentioned above.

Thank you for your fine contribution. On behalf of the Editors of the Neotropical Ichthyology, we look forward to your continued contributions to the Journal.

Sincerely,

Prof. Claudio Oliveira

Associate Editor, Neotropical Ichthyology

claudio.oliveira@unesp.br

Neotropical Ichthyology

OPEN ACCESS



This is an open access Peer Review File under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited. In cases where reviewers are anonymous, credit should be given to 'Anonymous Referee' and the source.

Distributed under Creative Commons CC-BY 4.0

© 2026 The Authors.
Diversity and Distributions Published by SBI

HOW TO CITE THIS ARTICLE

- **Magalhães V, Handam NMC, Cavali M, Farias IP, Rapp Py-Daniel L.** Integrative taxonomy data are reconciled around *Arapaima gigas* (Osteoglossiformes: Arapaimidae) for the Brazilian Amazon. *Neotrop Ichthyol.* 2026; 24(2):e250191. <https://doi.org/10.1590/1982-0224-2025-0191>



Official Journal of the
Sociedade Brasileira de Ictiologia