Review of: "Listening to the Bats of Carajás: Applied Bioacoustics for Species Inventory and Environmental Use in a Mosaic of Forests, Savannas, and Industrial Mining in the Brazilian Amazonia"

Daniela Dias[1]

1 Laboratório de Biologia e Parasitologia de Mamíferos Silvestres Reservatórios, Fundação Oswaldo Cruz, Rio de Janeiro, Brazil

Potential competing interests: No potential competing interests to declare.

First of all, I would like to thank the Qeios editorial board for inviting me to review this manuscript, which is a nice contribution with new results on a relevant topic. Although Bioacoustics is not my area of expertise, it is an excellent opportunity to learn a little about this area of knowledge and about the methodology. It is increasingly recognized as an important tool for a more comprehensive inventory of Chiroptera, especially in areas of high species richness and at the same time vulnerable due to activities such as mining.

The Introduction is well written and structured, presenting an overview of the importance of bats to the environment, their important ecosystem services, how they can be considered good indicators of environmental quality, and the use of echolocation by these mammals. It also addresses how, despite the high species richness observed in Brazil, and in the Amazon in particular, there are many sampling gaps, there is much to be done to document this biodiversity adequately, and how bioacoustics can be used for this purpose. The study's research questions and objectives are clearly presented to the reader. The bibliography is comprehensive and relevant to the subject area.

The Material and Methods section is detailed, and the procedures for capturing sounds and the statistical analyses are well described. However, the part about identifying species from the calls obtained and the libraries used as references could be highlighted more at the beginning of the section. I also suggest improving the quality of the maps in Figure 1. Maps A, B, and C are small, and the points appear mixed with letters and numbers, which, in fact, does not make it very clear to the reader what they mean.

Regarding the Results and Discussion sections (and also in the Abstract), I suggest including more comments on species composition in different environments and in general. Furthermore, the record of several insectivorous species usually difficult to capture with the traditional mist net method (e.g., emballonurids, vespertilionids, molossids), as well as the record of 11 additional species for the Carajás region, should be more emphasized. These results again confirm the importance of including bioacoustic methods in bat surveys for improving inventory efficiency and obtaining a more accurate measure of bat richness, especially in areas threatened by invasive human activities such as Carajás.

I consider the manuscript suitable for publication and recommend that it be accepted after the authors address these minor corrections.