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"

Victor L. Barradas[1]

1 Universidad Nacional Autónoma de México, Mexico

Potential competing interests: No potential competing interests to declare.

This is an interesting study that highlights bat inventories and the use of different environments, highlighting seven sites with different land uses. The study is based on the interpretation of the sounds produced (echolocation) by bats to assign them to different species and thus be able to measure the species richness of these animals.

The work is more or less well developed, although there are spaces or paragraphs where it is not very clear what the authors mean. In my opinion, the paper should have a conclusion summarizing everything found. The large number of hours of audio for species identification is striking, but it is unclear how the authors carried out the identifications, and they do not clarify whether they had an audio library for each species of bat. It would be very illustrative if the authors went into a little more depth on the methodology in this regard.

Something that draws attention is the issue of finding more species than those already inventoried in the study region, and a good question arises: How did the authors validate their findings through audio? Hopefully, this can be clarified better, and the scope, pros, and cons of this methodology can be included in the discussion section, as well as how accurately this analysis approaches reality.

Authors should include in the results section an analysis of the differentiation of species richness in the different environments. This cannot be determined from Table 2.

Authors are encouraged to improve the quality of their figures and tables.

Minor concerns:

Section 2.1, second line: 411,948.87 ha; the equivalent in the international system of units (SI) of 1 ha is 1 hm^2.

Figure 1: It is not possible to see the geographical coordinates. Give better resolution to the figure. It would be better to have geographical coordinates.

Section 2.4, first paragraph, line 5… Although the authors mention that they excluded the urban environment, they do present the urban environment in their analysis and results.

Section 3.1, first line: One hundred and thirty-two instead of the number because you are starting a paragraph.

Table 2: Align columns. Eliminate (min.) since it is already defined in the table header. Are richness estimators different in different environments? This is very important for your work; I consider that it must be a very nice table. Also, you can add the statistical analyses here.

Figure 2: Is the ordinate axis the cumulative number of species? If so, name it that way. Aren't these extrapolations very risky? Why are the curves of forest and forest in areas planned for mining so different? Nothing about this in the discussion section!!!

Figure 4: I can't see the acronyms in the figure. You probably forgot to insert them on the x-axis!!! Instead, you used colours. Please check.

Discussion section, first paragraph, line 7: I can't see those differences!!! This research requires a statistical analysis to determine if there are differences in species richness in the different sites.

Discussion section, second paragraph, lines 3-5: Is this real? Is there any study that mentions the number of species in these sites? Is there any background?

Section 4.2, first paragraph, lines 1-3: I don't see any statistical evidence to support this.

Some conclusions?