

Review of: "Human and Environmental Factors Shape Tree Species Assemblages in West African Tropical Forests"

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Potential competing interests: No potential competing interests to declare.

The manuscript addresses a key gap in understanding the impacts of low-intensity human activities on tropical forests, particularly in West Africa. With minor revisions to improve clarity, reduce repetition, and further discuss limitations, the manuscript would make a valuable contribution to forest ecology and conservation research.

Title and Abstract

The title reflects the study well. However, the abstract, which spans **pages 1-2**, could be more effective if it includes specific findings or key results. For instance, you mention the importance of human presence and geographical distance, but specific outcomes (such as their percentage influence on beta-diversity) should be added to make the abstract more informative.

Introduction

The introduction on **pages 3-6** provides a good background on the influence of human activities on forest ecosystems. However, the information regarding anthropogenic activities becomes repetitive by **lines 45-58 on page 3**. You can streamline this by removing unnecessary restatements of the impact of human activities.

Additionally, **lines 26-35 on page 4** discuss the differences between high-intensity and low-intensity human activities, but the transition could be smoother. Consider using clearer language when discussing low-intensity activities, such as foraging and selective conservation. Overall, the introduction is well-written but could benefit from tighter editing.

Methods:

The methods section on **pages 6-9** is very thorough and well-detailed. However, more clarity is needed in certain areas:

- On **lines 15-20 of page 6**, explain how presence-absence matrices influence beta-diversity results.
- **Line 40 of page 6** mentions "DNAE" and "DCHP." Consider briefly explaining these terms when first introduced, even though they are described in more detail later. For a wider audience, simplifying the definitions of technical terms is recommended.
- On **page 8, lines 22-30**, the justification for filtering plots by size is sound, but this section could benefit from a clearer explanation of how this filtering impacts data variability. It's important to mention the potential bias caused by

differences in plot size more explicitly here.

Results

The results section, covering **pages 9-12**, presents clear and logical findings, particularly with the use of Generalized Dissimilarity Models (GDMs). The text on **page 10, lines 14-28** explaining that turnover is the main contributor to beta-diversity is crucial. However, the high technical language in **lines 30-45** might be difficult for some readers to follow. Consider simplifying phrases like "turnover component of beta-diversity" to something like "species changes between sites."

On **page 11, lines 5-15**, while you describe the influence of geographical distance, providing a more direct interpretation would help. For example, you could mention how geographical barriers such as rivers or mountains might contribute to these findings.

The figures on **pages 10-11** are informative, but the descriptions in the text should help readers understand these visual aids better. Consider walking the reader through the key points of each figure, especially when referring to complex graphs like those in **Figure 2 on page 10**.

Discussion

The discussion, found on **pages 12-16**, appropriately addresses the implications of the findings. The differentiation between edible and inedible species and their respective drivers is interesting and valuable for understanding human impact. On **page 14, lines 3-10**, you could expand on the practical applications of these findings. For example, how could local communities use this information to manage their forests better?

On **page 15, lines 12-20**, the limitations related to historical data should be addressed more explicitly. While the discussion mentions this briefly, explaining how this affects the interpretation of human impacts on forest ecosystems would add depth to the conclusions. It would also be helpful to discuss more explicitly how the absence of climate variables like temperature and precipitation might affect the results (e.g., **page 16, lines 1-10**).

Limitations

The limitations section, discussed briefly on **page 15**, should be expanded. You touch on data limitations regarding the use of proxies for human activity on **lines 15-18** but do not fully explore the potential impacts on the conclusions. For example, it would be useful to explain how the absence of detailed climatic data could have influenced the results. Furthermore, consider explicitly mentioning that the uneven temporal and spatial distribution of the plot data (2002-2019) might affect the robustness of the conclusions.

Conclusion

The conclusion on **page 17** effectively summarizes the findings but could be more specific. For instance, **lines 6-10**

mention that human presence is a significant factor, but you could explain what types of conservation measures could mitigate this impact. Instead of only restating findings, consider including recommendations for forest management based on the findings.

Writing Quality and Manuscript Organization

The manuscript is well-organized but could be improved by simplifying some technical terms, especially in the results section. Consider rewriting complex sentences, such as on **page 10, lines 30-40**, to make them more accessible. Additionally, some sections, particularly the introduction, would benefit from removing redundant information (e.g., **page 4, lines 10-30**).

Figures and Tables

The figures are useful, particularly the GDM results on **page 10**, but they should be explained in simpler terms in the text. The figure captions are clear, but the main text could do more to guide the reader through the important findings presented by these visuals. For instance, when discussing **Figure 2 on page 10**, include a brief explanation of what the beta-diversity turnover means in simple language.