*São Paulo, October 13, 2021*

Dr. William Michener

Subject-matter Editor

Ecology Journal

Manuscript: ECY21-0763

Title: NeoBat Interactions: a data set of bat-plant interactions in the Neotropics

Authors: Guillermo L. Florez-Montero, Renata L. Muylaert, Marcelo R. Nogueira, Cullen Geiselman, Sharlene E. Santana, Richard D. Stevens, Marco Tschapka, Francisco A. Rodrigues and Marco A. R. Mello

Dear Dr. Michener,

Thank you very much for the excellent editorial work and for the opportunity to submit a revised version of our data paper “*NeoBat Interactions: a data set of bat-plant interactions in the Neotropics*” (ECY21-0763) for publication in Ecology. The suggestions made by you and the reviewers greatly improved our study.

Please find attached the revised version of our manuscript. In the following pages we also provide a point-by-point response to all comments made. We will be glad to provide any further information if needed.

Yours sincerely,

Guillermo Florez-Montero, M.Sc.

Federal University of ABC, Brazil

On behalf of all authors

# RESPONSE TO THE EDITOR

COMMENT

Thank you very much for submitting your manuscript "NeoBat Interactions: a data set of bat-plant interactions in the Neotropics" # ECY21-0763 to Ecology. The reviewers and I appreciate the work you have accomplished. We are willing to consider a revised version for publication in the journal, assuming that you are able to modify the manuscript according to the recommendations.

Response: We are very glad for the opportunity to submit a revised version of our manuscript and thank the editor and reviewers for their thoughtful suggestions.

# Response to REVIEWER 1

COMMENT

As the NeoBat interactions cover the same spatial extension of previous data papers on Neotropical Series, I have two suggestion: 1) indicate the github depository of previous papers on your metadata: https://github.com/LEEClab/Neotropical\_Series; 2) Incorporate the NeoBAT Interactions data paper on the Neotropical Biodiversity Collection of Ecology Journal.

Response: We thank the reviewer for their suggestion. Indeed, the scope of our study fits the Neotropical Series. Both the Atlantic and Neotropical series represent a huge achievement for biodiversity science in Brazil and Latin America. We have participated in some data papers included In those series, so this initiative greatly inspired our own work. We cite papers of both series many times in the metadata. Unfortunately, before writing this manuscript we have sent a message to the curators of those series, but never got a response. Therefore, we decided to proceed with an independent submission. In this revised version, we have also added to the metadata links to their respective GitHub repos.

COMMENT

The manuscript presented on metadata file is very well written, and bring all needed information for the readers and potential users of the data. The figures and tables were well prepared and contribute with the reading.

Response: We thank the reviewer for their very positive comments.

COMMENT

I liked your discussion on the different shortfalls. Although the dataset present a delayed survey (14 years), I see that your initiative will stimulate other researchers make open call for unpublished or even gray literature that were not included on the current dataset version.

Response: Yes, that was precisely the point, and other scientists have already contacted us to show their willingness to contribute data.

COMMENT

Maybe you can extend the discussion on the limitations ,calling the attention that other researchers start the NeoBat Interations V2. It was very interesting to see that you included the history of data usage on the manuscript.

Response: That is indeed a good point, so we included additional considerations in the section about data limitations. Furthermore, we are working on a new “roadmap paper”, as explained in the response to Reviewer 2.

# Response to REVIEWER 2

COMMENT

The data paper presented by Florez-Montero and colleagues is a well written and tidy data paper that has the potential to make substantial impacts in the field of plant-animal interactions. The authors present three tables (interaction data, study site information and reference information) that are linked through common attributes and should be easily usable in the community of researchers for future questions in ecological and evolutionary synthesis. I strongly recommend the paper to be accepted pending minor revisions.

Response: We thank the reviewer for their very positive comments.

COMMENT

I have one set of general concerns that I hope the authors can address in a minor revision, as I think this has the potential to assist further research in the field of interactions. Afterwards, I have provided other minor line-by-line suggestions below, and the authors can decide whether or not to incorporate them.

Response: Those are indeed excellent suggestions, which helped us improve our manuscript.

COMMENT

My general concerns are the following: I suspect that many publications containing useful data on interactions have been published between 2007 and the present day, and we can be certain that future researchers shall also publish studies that will be useful and end up warranting inclusion into future versions of this database. While this was partially addressed by the authors in lines 440-443 (live versions on GitHub sounds great!), I wonder if the authors can summarize not only the problems they faced in building the decision rules used to include papers into their database, but also outline best practices for the future. While I appreciated some of the authors future perspective in lines 525-529, I wonder if the authors might not want to also consider illustrating a “roadmap” or concise summary of best practices for the numerous researchers whose work was not included into this version of the interactions database. For example, how specifically can the “gray literature” alluded to in 506-507 be made more useful and tractable to the international scientific community? While the concept of eponymous shortfalls is useful to some degree, I think the impact of the paper on the diverse readership of Ecology might be increased even more if the authors can summarize their opinions in a prospective set of guidelines that can guide future researchers as well as students who might be currently writing theses that might end up in the gray literature.

Response: We strongly agree with the reviewer. This is indeed a crucial point, which we have been discussing in our lab in the past years. Nevertheless, writing such a roadmap is a complex endeavor, so it would be best published as a standalone paper. We are actually working on that, inspired by the series “Ten Simple Rules” from PLOS Computational Biology (<https://doi.org/10.1371/journal.pcbi.1003858>). Later, we intend to link this new roadmap and our data paper on GitHub. Anyway, to provide immediate feedback to the readers of our data paper, in the section “Class II.C: Data limitations and potential enhancements” we suggest some ways in which empirical research papers about bat-plant interactions could report their data aiming at usability and reproducibility. Now we have also added detailed suggestions with concrete recommendations.

COMMENT

Expanding on the idea of broadening participation in the collection of bat-plant interaction data, I invite the authors to consider a recent paper by Miller et al. (2017) which illustrates how a massive citizen science data pipeline specifically for interactions was designed, constructed, cleaned, and analyzed. While bat-plant interactions are surely more technically challenging to collect than interspecific avian interactions at bird-feeders (as was the subject of the Miller et al. 2017 paper), I think the approach can be useful to think about and I (as well as many ecologists, parataxonomists, naturalists, etc. who contribute to global citizen scientist projects) believe that the wealth of information that exists on citizen scientist platforms such as iNaturalist can be eventually rendered quantitatively tractable for the study of interactions across global scales. Even if the authors disagree with the statement that citizen scientist platforms might yield useful data for the study of interactions, I would be interested in knowing their thoughts on what would need to be done in order to make them useful. This is an important moment for biodiversity and ecoinformatics, and if the massive data collection streams (e.g. eBird, iNaturalist, Ornitho.de, Project Feeder Watch, etc) each with thousands of daily users can be called on to consider incorporating interactions into their data collection streams, I invite the authors to consider what message they would want to send.

Response: We strongly agree with the statement that citizen scientist platforms might yield useful data for the study of interactions, and we thank the reviewer for pointing that out. Nevertheless, as also commented by the reviewer, bat-plant interactions are indeed very challenging to collect, because of specific technical problems, mainly related species identification and nocturnal observation. Therefore, it is quite challenging to create a citizen science approach to this topic. Other bat researchers and we are thinking about that, tough, especially through discussions promoted by the Brazilian Bat Research Society (<https://www.sbeq.net>).

COMMENT

While I think this data paper is wholly appropriate for Ecology, the important issue of completeness is wonderfully addressed in Figure 5. Given that interaction data are still far from comprehensive/exhaustive, it is essential to think about data collection not as a one-time (or periodically recurring) process but as an ongoing data pipeline. I think the paper can be made even stronger if the authors expand on incorporating untapped resources:

1) Temporal – how will the post-2007 data be incorporated?

Response: We will add new data ourselves and will also open our database to spontaneous contributions. Nevertheless, we want to prioritize quality over quantity, so each new interaction record added to our database will have to meet the same standards as the original data set.

2) Institutional – how could gray literature be amalgamated into the data set?

Response: in this original version, we have already included some grey literature, especially monographs and dissertations. The most important criterion for inclusion in our database, regardless of the source being grey or not, is the quality of data collection and presentation, as explained in the metadata.

3) Professional – how can citizen scientist, naturalist & parataxonomist data be incorporated into the data streams that flow into the NeoBat Interactions Data Set?

Response: Those extra-academic sources are also welcome in our database, if the interaction records have been properly published in accessible papers, books, or reports, and as long as data collection and presentation meet the standards as the original data set.

Paragraphs 1-5 in the introduction could be greatly condensed. Specifically, paragraphs 1-2 seem to be rather expansive and could be perhaps combined. Likewise, paragraphs 3-4 seem specific to mammals and might also be condensed. I personally think that paragraph 5 (lines 79-90) is the most fascinating one, highlights the main point of the data paper, and could be expanded and possibly cite other interaction data bases (e.g. Miller et al. 2017).

Response: We agree with the reviewer that paragraph 5 is more directly related to the topic studied in our data paper. Nevertheless, we would like to keep the first four paragraphs, as they set the stage for our study by framing it within the open science philosophy.

COMMENT

*305-408*

For the sake of brevity, can the authors consider condensing lines 358-408 into the final reference list?

Response: We thank the reviewer for their suggestion but would like to keep those lines this way. This format is standard among data papers and makes it easier to find the references used for each type of information.

COMMENT

334 Typo:

Bat-Plant Interaction Database. Not “Inter-Action”

Response: Corrected.

COMMENT

535-537

The terminal object placement in this sentence is confusing. Better:

“Bats are very opportunistic and flexible animals with high energy requirements and may use alternative food sources besides their co-evolved plant partners”.

Response: Corrected.

COMMENT

Page 29

Table 4, SamplingSeason (row) should have in the levels “Dry and Wet” as a third possible level.

Response: Corrected.