

JoVE submission: JoVE63156 revision

29/09/2021

Dear Dr Krishnan,

Thank you for considering our manuscript for publication, and the opportunity to submit revisions. We have revised the manuscript in line with your own comments and those of the two reviewers'. Our revisions are detailed below in red.

We trust that you will find our manuscript improved and now suitable for publication.

Yours sincerely

**Dr Kylie Robert**

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Editorial comments:

Editorial Changes

Changes to be made by the Author(s):

1. Please take this opportunity to thoroughly proofread the manuscript to ensure that there are no spelling or grammar issues. **Done**
2. Please provide an institutional email address for each author. **Done, however author 3 is not affiliated with any institution**
3. Please revise the text to avoid the use of any personal pronouns (e.g., "we", "you", "our" etc.). **This has been changed throughout, although we note that many existing papers in JOVE do not do the same.**
4. Please adjust the numbering of the Protocol to follow the JoVE Instructions for Authors. For example, 1 should be followed by 1.1 and then 1.1.1 and 1.1.2 if necessary. **Done**
5. Please ensure that all text in the protocol section is written in the imperative tense as if telling someone how to do the technique (e.g., "Do this," "Ensure that," etc.). The actions should be described in the imperative tense in complete sentences wherever possible. Any text that cannot be written in the imperative tense may be added as a "Note." However, notes should be concise and used sparingly. **Done**
6. Please highlight up to 3 pages of the Protocol (including headings and spacing) that identifies the essential steps of the protocol for the video, i.e., the steps that should be visualized to tell the most cohesive story of the Protocol. Remember that non-highlighted Protocol steps will remain in the manuscript, and therefore will still be available to the reader. **Done**
7. Lines 246-252: Please remove the Table of Materials legend from the Figure and Table Legends. It is not required. **Done**
8. As we are a methods journal, please ensure that the Discussion explicitly covers the following in detail in 3-6 paragraphs with citations: **We believe this has been covered but not necessarily in this order hence we have made an attempt to reorganise the discussion to better reflect this**
 - a) Critical steps within the protocol
 - b) Any modifications and troubleshooting of the technique

- c) Any limitations of the technique
 - d) The significance with respect to existing methods
 - e) Any future applications of the technique
9. For in-text formatting, corresponding reference numbers should appear as numbered superscripts after the appropriate statement(s) before punctuation. **Corrected throughout**

Reviewers' comments:**Reviewer #1:****Manuscript Summary:**

This is a clever solution to the problem of sampling aerial arthropods which allows samples to be assigned to specified time periods. This has the potential to be useful to researchers who need to leave traps in situ for periods of more than a few hours, but need to be able to distinguish between samples collected at different times eg day versus night. The authors should be congratulated on developing this useful trap.

Major Concerns:

None

Minor Concerns:

Query 2nd author affiliation?? **This author is not affiliated with an institution**

Aerial arthropods - why not flying insects? **We have changed to flying insects throughout**

As far as I know, isopods and crustaceans don't fly, and neither do arachnids although these can balloon on the wind - but would not be attracted to light. Anyway, these were excluded from the analysis. Line 195 says "All non-flying taxa (Arachnida, 196 Isopoda, Myriapoda and Formicidae) were excluded." So think it would flow better if just said flying insects throughout.

Title is a bit wordy - why not "Low-cost automated flight intercept trap for sampling of flying insects attracted to artificial light at night" (already then says it is at night so don't need the other words) **We have retained "temporal sub-sampling" in the title given this is the novelty of the method**

Line 48. Add <https://doi.org/10.3389/fevo.2020.579193> to sampling techniques? **added**

Line 66. Best stick to citing reviews?

Suggest: <https://doi.org/10.1111/eea.12754>, <https://doi.org/10.1111/icad.12447>, <https://onlinelibrary.wiley.com/doi/full/10.1002/ece3.4557> **One of these suggested reviews is already cited here – Owens & Lewis 2018.**

Line 192 - mentions temperature range and rainfall - not wind, which will also be a factor **Included maximum wind gusts**

Line 256 - stick to reviews here. Wagner good. Drop Hallmann. **Done**

Add: <https://doi.org/10.1126/science.aax9931>

Reviewer #2:**Manuscript Summary:**

I congratulate the authors on a well-written manuscript and the design of the trap. The authors have developed an easy to construct, low-cost automated flight intercept trap for sampling aerial arthropod attracted to artificial light at night, where the researcher can define the time-period on each collection. This design will be very useful for insect collections specific to suit the researcher's objectives and to specifically target time periods (minutes or hours) during the night.

The authors correctly highlight limitations and uses of various light traps.

Major Concerns:

The manuscript is straight forward and in general has no faults.

Minor Concerns:

I would like a paragraph discussing potential large insect collections. I imagine that if used on a nightly basis (rather than hourly) or during periods of insect swarming the dispenser trays may overfill. Is it possible to address this somewhere in the discussion? *We have added a statement to address this "Each collection tray has a 330 ml capacity that will accommodate most applications, but it would be beneficial to test during swarming events to ensure collection trays do not overfill."*

L256. I would say this point is debatable. See Saunders, M. E., Janes, J. K., & O'Hanlon, J. C. (2019, July 16). Moving on from the insect apocalypse narrative: engaging with evidence-based insect conservation. <https://doi.org/10.1093/biosci/biz143>. In addition to other work by Saunders. *Agree and added this reference*

Tables 1 and 2 did not fit on the portrait page correctly and may need adjustment prior to proof. *The tables have been submitted as excel files as required by the journal.*

A video showing trap construction and operation would greatly enhance the reach of this paper. *A video will be produced*

Well done.