Stacks

Peer Review: Using temperature loggers to monitor den box use by American martens, fishers, and tree squirrels

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Collaborators: Larry Davis, Matt Delheimer, Laken Ganoe, Sean Matthews + 1 other reviewer

Accepted by 5 of 5 reviewers

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Conflicts of Interest

The authors declare no conflicts of interest.

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Transparent Peer Review

- View reviewer summaries
- View resubmission with reviewer comments
- View initial submission with reviewer comments and author responses

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Reviewer Summaries

Larry Davis

Initial Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?

No

What did the authors do a good job with?

Overall, the paper is well written and comprehensive. The graphs illustrate the findings very well and the discussion identifies important aspects of the use of temperature loggers in assessing den box use by the target species.

How do you think this research will contribute to the field?

This paper has shown that temperature loggers can provide a relatively inexpensive method of identifying use of den boxes and can help identify to species level where the potential species using the box have a relatively distinct difference in heat output. I think that this technology would be very useful at the structure design level when comparing different den box designs for use by the target species, to support the collection of data on reproductive parameters, and assessing the cost/benefits of larger scale conservation efforts using den boxes to augment breeding habitat.

At this stage in our understanding of the benefits of den box deployment for species at risk, we are primarily interested in understanding if they will be used for reproduction, the habitat supply context of successful reproductive use, and whether there is a population benefit for the investment in this technology. To meet these information needs, I see temperature loggers needing to be coupled with cameras as noted in the discussion.

Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?

The methods section needs information on where the ambient temperature that is displayed on the graphs came from since it does not appear that there was a temperature logger outside each structure. The identification of breeding season timing and data collection during the breeding season would support the discussion. There are also different recording intervals for temperature identified in the methods but no information on how/if these were used/compared. Captions for Figures 3 and 4 require edits that I have identified in the document.

Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?

A discussion on the different temperature recording intervals used by the loggers and implications for use by other future researchers would be useful. Data and discussion on findings comparing the winter versus reproductive season findings are needed if available or a discussion of why that could not be done (e.g., insufficient data). Also, I believe there are some bluetooth temperature data loggers that would allow remotely downloading the information without touching the structure and potentially influencing use by target species. If this has been looked at, it would benefit the final paragraph on identifying it as a direction for future research.

Is there anything else you think the authors need to fix in their article to be fit for publication?

Minor edits identified in the document.

Do you have any concerns about the ethics of this research?

No.

Do you believe the article, in its current form, is fit for publication?

Revise and resubmit

Revised Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?

No

How well did the authors respond to your comments?

5/5

What - if any - feedback do you feel the authors did not adequately respond to?

None

Based on your review, what should happen next?

This article should be sent back to the authors for *more revisions*

Why is this article not ready to be published?

The authors added new concerns in their edits that need to be addressed

What do the authors need to change for you to accept this article for publication?

There are some minor spelling and grammar to edit. Some other points need additional information or adjustment.

Matt Delheimer

Initial Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?

no

What did the authors do a good job with?

The manuscript is well-written; logical flow, little redundant information, length appropriate to the content. Methods were generally easy to follow, results straightforward and nicely supported by figures, discussion offered interesting points and did not stray beyond the scope of the data.

How do you think this research will contribute to the field?

The authors make a solid case for the effectiveness and novelty of their approach to detecting box use, at least by their target species. Given that den/nest boxes are a fairly widely-used conservation tool, similar studies could benefit by adopting and/or adapting the methods presented here.

Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?

General clarification on some decision points, inconsistencies, etc. would be useful. Needed fixes are fairly minor and are addressed by my or other reviewer comments.

Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?

Same as above, some general clarification would be useful but points are generally minor and are addressed by reviewer comments.

Is there anything else you think the authors need to fix in their article to be fit for publication?
The figures are somewhat inconsistent and some of the caption information is incorrect.
Do you have any concerns about the ethics of this research?
No
Do you believe the article, in its current form, is fit for publication?
Revise and resubmit

Revised Submission
Do you have any conflicts of interest that could bias your ability to provide an independent review?
No
How well did the authors respond to your comments?
5/5
What - if any - feedback do you feel the authors did not adequately respond to?
N/A
Based on your review, what should happen next?
This article should be *published*
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

Laken Ganoe

Initial Submission
Do you have any conflicts of interest that could bias your ability to provide an independent review?
No
What did the authors do a good job with?
The authors did a great job describing the need for this research, uses and limitations, and in conveying the information in a concise manner.
How do you think this research will contribute to the field?
This research will be highly important in fisher and marten conservation and also gives insight into potential methods for examining other species den box and natural cavity use.
Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?
There are only a few minor grammatical errors and a few pieces of information (e.g., seasons/months surveyed) missing from the methods section that would improve the article prior to publication.
Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?
The authors did a great job explaining their analytical approach and interpreting their results. Minor edits to a figure and some wording are needed for publication. In these sections, there are some aspects related to the misidentification of use and differences in species temperature patterns that could improve the article but are minor overall.
Is there anything else you think the authors need to fix in their article to be fit for publication?
No
Do you have any concerns about the ethics of this research?

No
Do you believe the article, in its current form, is fit for publication?
Revise and resubmit

Revised Submission
Do you have any conflicts of interest that could bias your ability to provide an independent review?
No
How well did the authors respond to your comments?
5/5
What - if any - feedback do you feel the authors did not adequately respond to?

Based on your review, what should happen next?
This article should be *published*
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

Sean Matthews

Initial Submission
Do you have any conflicts of interest that could bias your ability to provide an independent review?
no
What did the authors do a good job with?
The authors did a good job explaining the use and importance of den boxes for multiple species and the justification for monitoring boxes when deployed.
How do you think this research will contribute to the field?
Den boxes are seen as a possible conservation measure for cavity-dwelling species where natural cavities might be limiting. The ability to monitor the use of den boxes is a critical component in evaluating their effectiveness. This research offers support for another tool to measure the use of den boxes.
Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?
Some additional clarity on the deployment of remote cameras (e.g., seasons, boxes monitored for what duration) in validating and evaluating the use of the den boxes by fishers and martens would be helpful. The terms use and visit were a little confusing. Perhaps consider using something like "camera detection" and "logger detection" for clarity.
Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?
Additional details noted by reviewers in the figure legends would be helpful for readers. The figures are really great and convincing. Just a few more details will help readers with interpretation.
Is there anything else you think the authors need to fix in their article to be fit for publication?
Only minor editorial comments made by each reviewer.
Do you have any concerns about the ethics of this research?
no
Do you believe the article, in its current form, is fit for publication?

Revise and resubmit

Revised Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?
No
How well did the authors respond to your comments?
5/5
What - if any - feedback do you feel the authors did not adequately respond to?
none
Based on your review, what should happen next?
This article should be *published*
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

Scott Yaeger

Initial Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?
no
What did the authors do a good job with?
Great idea. Simplistic technique to advance our work. Love the figures. Writing generally clear and concise.
How do you think this research will contribute to the field?
Provides additional options/considerations of techniques to consider that can accommodate varying budgets and study objectives.
Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?
No changes suggested in study design or methods, but, as comments in MS indicate, some additional information of methods (e.g., seasonality) could/should be included. Some slight reorganization of presentation can also help with 'flow' in methods.
Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?
Perhaps it was just me (I didn't notice other reviewers commenting), but I struggled with results presentation. I had to re-read many times. I admittedly jumbled up use vs visits in my head, but I'd hope there could be an easier way to present. Maybe consider breaking apart by species (fisher and marten)? The report in consistent manner for each. My Twitter addled brain can't take this much info anymore I guess.
Is there anything else you think the authors need to fix in their article to be fit for publication?
Nothing additional for here not provided by comment in MS.
Do you have any concerns about the ethics of this research?
no
Do you believe the article, in its current form, is fit for publication?
Revise and resubmit

Revised Submission

Do you have any conflicts of interest that could bias your ability to provide an independent review?
No
How well did the authors respond to your comments?
5/5
What - if any - feedback do you feel the authors did not adequately respond to?
None, great job.
Based on your review, what should happen next?
This article should be *published*
Would you like to be listed as a Collaborator on the final publication?
No, I do not want to be listed as a Collaborator