Stacks

Peer Review: Exploring retropharyngeal lymph node metabarcoding as a tool for characterizing microbial signatures in white-tailed deer from urban and non-urban areas

George Zaragoza[1], Samuel Greaves[1], Melanie Almanza[1], Breityn Barnhart[1], Caitlin Blackburn[1], Aidan Breen[1], Jessica Dorrien[1], Michael David Garan[1], Jenay Lemasney[1], Lee Nguyen[1], Katlene Patron[1], Bruno Vinicius Pinheiro[1], Bianca Pinilla[1], Ellie Rowland[1], Bambi Clemons[2], & Meguine Duvert-Ortega[2]

Collaborators: Tyler Brasington, Grace Kahler + 2 other reviewers

Accepted by 4 of 4 reviewers

Conflicts of Interest
The authors declare no conflicts of interest.

Publishing History
Submitted March 5 2026
Accepted September 9 2026
Published October 29 2026

Corresponding Author
George Zaragoza
george.zaragoza@ucf.edu

[1] Department of Biology, University of Central Florida, Orlando, Florida, USA
[2] Fish and Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission, Gainesville, Florida, USA

Open Access
Peer-Reviewed
Creative Commons

Transparent Peer Review

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

Recommended Citation

Zaragoza, G., S. Greaves, M. Almanza, B. Barnhart, C. Blackburn, A. Breen, J. Dorrien, M. D. Garan, J. Lemasney, L. Nguyen, K. Patron, B. Vinicius Pinheiro, B. Pinilla, E. Rowland, B. Clemons, and M. Duvet-Ortega. 2026. Exploring retropharyngeal lymph node metabarcoding as a tool for characterizing microbial signatures in white-tailed deer from urban and non-urban areas. Stacks Journal: 26013. https://doi.org/10.60102/stacks-26013.

Reviewer Summaries

Tyler Brasington

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?

- This is a well constructed manuscript discussing how a routine collected sample (i.e., lymph nodes) may be used as a tool for other associated research questions and endeavors.
- The authors call out specific short comings and benefits of their research. For bacterial communities, the authors importantly identify that descriptive overview of associated taxa, should be approached with caution when questions arise to the interpretation, function or impact of these communities.
- The methods are sound, and cited with other relevant studies. This mansucript should be accepted with minor revisions.

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

The authors provide suggestions for improving the methodology of future studies for those researchers and managers that may be interested in leveraging lymph nodes sample collections for research in microbial community assessment or surveillance.

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

- In the materials and methods: the authors should define natural causes of death (e.g., roadkill, disease, unknown, etc.). This is important to define as it might influence what is detected in deer. It would also be beneficial to improve how these numbers are reported (e.g., a breakdown of cause of death and by related season).
- The authors describe a study on mule deer in the introduction related to human land use modification. This could be further strengthened, by including studies specific to white-tailed deer (e.g., on fragmentation, land use change etc.).
- Improvement in the presentation of the figures; my specific comments are in the manuscript edits.

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

In the results, the authors open with their paired-end read pairs, samples after adapter trimming. It may help the reader with interpretability if the authors create a table or describe how many deer for different age/sex classes; how many deer were urban vs. non-urban vs. wildland-urban interface; how many tested positive for CWD, different causes of death (as previously mentioned, I would encourage the authors to elaborate on causes of mortality.

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

Minor revisions as suggested in the edited copy of the manuscript. Otherwise recommended for acceptance.

Do you have any concerns about the ethics of this research?
None.
Based on your review, what should happen next?
This paper requires minor revisions but does not need further peer review
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

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?
I feel the authors did a good job addressing the specific comments and feedback that I initially provided.
Based on your review, what should happen next?
This paper is ready for publication
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

Grace Kahler

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?
They were great at pointing out where citations were missing and providing suggestions on the organization of the results.
How do you think this research will contribute to the field?
I think this provides a good baseline for bacteria composition within deer communities, however there needs to be more clarity on what the significance of the results provide.
Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?
Overall, the study design and methods were solid. Other than providing a bit more context for readers.
Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?
My biggest siggestion would be describing the breakdown of the samples. Such as sex, location, cause of death, etc. It is unclear whether that plays a role in the bacterial asemblage and handling.
Is there anything else you think the authors need to fix in their article to be fit for publication?
There are a few citations in the intriduction that I felt were not accurately cited. They either need to find other citations or explain further where that came from.
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?
This paper needs major revisions and another round of peer review

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?
4/5
What - if any - feedback do you feel the authors did not adequately respond to?
I was unable to see responses to comments. However, I was able to go back through my notes. I believe they adequately addressed my concerns. Though I am unsure of their exact responses.
Based on your review, what should happen next?
This paper is ready for publication
Would you like to be listed as a Collaborator on the final publication?
Yes, please list me as a Collaborator

Jennifer Mullinax

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 present a very interesting, novel concept
How do you think this research will contribute to the field?
I think this work could spur many future directions for this research, refining how we utilize these types of collections and better characterizing microbial communities
Regarding the study design and methods, what do the authors need to fix or improve upon to be fit for publication?
I have no critiques in terms of analysis or study design, beyond the general suggestion that perhaps there are other underlying drivers - outside of the "urbanization" framework - that may better characterize existing microbial/bacterial differences.
Regarding the analysis and interpretation of their findings, what do the authors need to fix or improve upon to be fit for publication?
I think there is room for expansion in the discussion; the figure could be more intuitive.
Is there anything else you think the authors need to fix in their article to be fit for publication?
I suggest a careful read-through for grammar, verb tense, spelling, etc. I tried to correct anything I saw, but I may have missed things.
Do you have any concerns about the ethics of this research?
No
Based on your review, what should happen next?
This paper requires minor revisions but does not need further peer review
Would you like to be listed as a Collaborator on the final publication?

No, I do not want to be listed as a Collaborator

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?

4/5

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

None

Based on your review, what should happen next?

This paper requires minor revisions but does not need further peer review

Would you like to be listed as a Collaborator on the final publication?

No, I do not want to be listed as a Collaborator

Maureen Murray

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 focus on a novel topic that can help us better understand how urbanization affects wildlife health. The paper is well-written, clear, and concise.

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

This research will increase our understanding of how urbanization influences wildlife health and bacterial communities in particular. It will also facilitate future wildlife sampling for bacterial communities in lymph nodes.

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

There are three main improvements I would suggest. Firstly, deer demographics should be taken into account when comparing bacterial communities. Secondly, cause of death and CWD status should also be taken into account because they likely are associated with bacterial changes. Thirdly, the comparison with urbanization could be more robust by using a more continuous metric such as proportion of urban land in the surrounding buffer or percent impervious surface within a surrounding buffer.

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

See comments about methodology. Also, the map figure with deer locations could be clearer, either by making it larger or by using a land cover basemap instead of imagery.

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

The introduction could more clearly explain how and why the lymph node bacterial community composition is important for health - is higher diversity protective? Are they looking for pathogen specifically?

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?

This paper needs major revisions and another round of peer review

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?

Not answered

Based on your review, what should happen next?

This paper is ready for publication

Would you like to be listed as a Collaborator on the final publication?

No, I do not want to be listed as a Collaborator