19-May-2025  
  
Dear Dr Crowder:  
  
Many thanks for your manuscript ECE-2025-02-00298 entitled "Structure of Bee Communities in Marginal Lands of the Puget Sound, USA" which you submitted to Ecology and Evolution.  
  
As you will see below, comments from our Associate Editor and referees suggest a major revision before your paper can be published. Their comments should provide a clear road-map for you to revise, hopefully improving the clarity and rigour of the presentation of your work.  
  
Once again, thank you for submitting your manuscript to Ecology and Evolution and we look forward to receiving your revisions.  
  
Sincerely,  
Dr Gareth Jenkins  
Senior Editor, Ecology and Evolution  
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Reply to:  
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ecoevo@wiley.com  
  
  
-- Instructions --  
  
You will have 60 days to submit your revised manuscript. If you need more time to do so, please contact the editorial office. Before submitting your revisions:  
  
1.  Prepare a response to the reviewer comments appended below in point-by-point fashion. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response, using line numbers to indicate where changes were made.  If your manuscript does not currently include line numbers, please add them during revision.  
  
2. Prepare a revised manuscript, using the function of your chosen word processing software that highlights changes, e.g. "Track Changes," to identify the specific edits you’ve made. Save this new document on your computer as you will be asked to upload it during the revision submission process. NOTE: Please be sure to keep in mind reviewer comments and incorporate your responses within the manuscript. Here at Ecology and Evolution, we are looking for you not only to respond to the comments, but to integrate them into the MS.  This will reduce the concerns that others in your field may have, as reflected in the referee comments. There may well be areas where you disagree; for example, you may want to write, "A reviewer suggests that... However, I disagree because...". In any case, please try to address all of the concerns that are raised within the manuscript.  
  
3. In addition to your revised manuscript with specific line-by-line edits highlighted, please also save a “clean” copy where the changes are not marked.  
  
4. If you have not yet uploaded an organism photograph, please consider doing so (although this is optional) and, if appropriate, designate this photograph as Figure 1. This may require you to include one or two explanatory sentences at the beginning of your manuscript. TIFF format files with a resolution of at least 300 dpi are preferred. If the photograph was not taken by the authors, please credit the photographer in the figure legend; please also ensure the image is not under copyright which would prevent it being published in Ecology and Evolution.  Please direct any questions about this to ecoevo@wiley.com.  
  
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2. Follow the on-screen instructions. First you will be asked to provide your “Response to Decision Letter”—this is the response to reviewer comments that you prepared earlier.  
  
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5. Review and submit: please be sure to double-check everything carefully so that your manuscript can be processed as quickly as possible.  
  
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Because we are trying to facilitate timely publication of manuscripts submitted to Ecology and Evolution,your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in 2 months, we may have to consider your paper as a new submission. If you feel that you will be unable to submit your revision within the time allowed please contact me to discuss the possibility of extending the revision time.  
  
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Associate Editor Comments to Author:  
  
Associate Editor  
Comments to the Author:  
Thank you for your patience in the review process. I and an anonymous reviewer have evaluated your submission and are excited about the data set presented here - bee inventories such as this require a tremendous amount of work and publishing this data set will help support future bee research in the area. However, before this work can be published, it requires major revisions.  
First, please make sure that all of your data and R code files are available to readers. As presented, the data provided in the supplement are helpful, but not enough to allow someone to recreate your analyses. It could be helpful to deposit full data sets and R code to a repository such as Dryad. Likewise, following comments from both reviewers, having voucher specimens deposited in a museum or similar, publicly-accessible collection of all species documented in this study should be pursued. Taxonomy can change over time, and allowing future researchers the opportunity to access the physical specimens referenced here is best.  
Second, the methods require revision for improved clarity. The random forest models need to be unpacked in more detail in both the methods and results so that this model is understandable to all readers. Similarly, the first half of the methods could be streamlined and standardized for improved clarity on site selection and descriptions.  
Third, it would be helpful for the authors to develop hypotheses or questions associated with your specific research objectives, and then to discuss whether or not these were achieved.  
For more detailed feedback, see the line comments from the reviewers.  
  
  
Reviewer(s)' Comments to Author:  
  
Reviewer: 1  
  
Comments to the Author  
Sugden et al conduct a longitudinal study of bee diversity and richness in marginal lands of the Puget Sound. Their research demonstrates how marginal lands such as the security perimeter around airports and ground associated with powerline are habitats for diverse bee species. In a 7-year study, they collected 25,441 specimens representing 118 identified taxa across 24 genera. Their results demonstrate that they never achieved saturation in their rarefaction curve, thereby suggesting that their sampling (using pan traps and blue vane traps primarily; some netting was done) was not sufficient at documenting all species. However, this is a common challenge in bee inventory projects. Regardless, the authors present exciting data demonstrating how these marginal habitats can support diverse bee communities. They demonstrate with Random Forest models that the Boeing field site was never misclassified based on species composition data – demonstrating the predictability of the field site compared to the other two field sites. The authors also report on the abundance and unique species composition of based on field sites and trapping methods in Figure 2. They also demonstrate through NMDS analysis how sites clusters in the NMDS space, and what specie emerges from the top 10th percentile of compositional differences. Furthermore, the authors provide some beautiful data visualizations of phenology and abundance of genera across time; include kleptoparasite/host phenology.  
The authors present a rich dataset in their study. However, I do have some concerns on some components required by the journal.  
1.      Data availability: What plan is there for the providing the raw data? While summaries of the data are provided in Table S1. The data does not include information like Day, Month, Year, Lat/Long in the data for each specimen. Currently the data provided cannot be analyzed/reproduced to achieve the goals of the paper by an independent scientist.  
2.      Code availability: R code used to generate the models and data summaries are required by E&E. There is no R code provided by the authors.  
3.      Specimen deposition: Please provide information on where the specimens are deposited. Consider the recommendations and rationale for this by reviewing the following articles (including reusability of the data and validating future taxonomic identifications):  
a.      Montero‐Castaño, A., Koch, J. B. U., Lindsay, T. T. T., Love, B., Mola, J. M., Newman, K., & Sharkey, J. K. (2022). Pursuing best practices for minimizing wild bee captures to support biological research. Conservation Science and Practice, 4(7), e12734.  
b.      Packer, L., Monckton, S. K., Onuferko, T. M., & Ferrari, R. R. (2018). Validating taxonomic identifications in entomological research. Insect Conservation and Diversity, 11(1), 1-12.  
4.      Random Forest analyses are relatively underreported in the study. The authors describe some of the results in (L212-L216). However, the authors only mention random forest 3 times in the manuscript, once in the methods, once in the results, and once in the Table 1 legend. Random Forest input parameters are diverse (e.g. mtry) for fine tuning the model. Also, there are outputs likes Accuracy Sensitivity, Accuracy Specificity that are typically reported. I think more rigor should be placed in explaining the RF model that you achieved. I think author’s approach is very exciting, given the predictor and response variables, as well as the questions. However, the authors don’t provide sufficient RF model output to support their interpretation. I also think, more effort should be placed in describing the RF model output in support of your goals described in L148-L152.  
5.      In general, I suggest the authors consider developing specific hypothesis/questions associated with the research objectives highlighted in L67-L73. I suggests the authors articulate their specific questions, and then demonstrate in the methods section how the different analyses will achieve adequate testing of their hypotheses.

The observational nature of this study precluded formal hypothesis testing. However, we observed qualitative differences in bee communities between the BPF site and the POS and SCL sites, motivating our NMDS approach. We believe our analytical approach allows us to describe the patterns of bee communities we observed, while refraining from HARKing (Hypothesizing after results are known).   
Some general suggestions.  
L13: Change “unused land” to “undeveloped land” or “marginal land” as you identify in L24. added  
L31: include nesting habitat and overwintering habitat. added  
L50: Change “federal government land” to “federal government managed land”. added  
L53: consider rephrasing “underused” to “undeveloped”. added  
L54: Can you give specifics of how much land is around airports? Perhaps a GIS exercise? But it would be nice to inform the reader about how much land is around airports. Perhaps the Lurie et al. 2022 paper has some estimates? Also, should a discussion be made about the hazards of encouraging insects in airports. For example: [https://urldefense.com/v3/\_\_https://www.smithsonianmag.com/smart-news/australia-wasps-pose-danger-airplanes-180976424/\_\_;!!JmPEgBY0HMszNaDT!plyMNYYzSFvw5g\_m3vVySIjmfAw-KNbohmJYJldLNM2rsl0eNOItyU8kzvomA85NRlkV6jHbaQsfW7ScP8TGHp9H5\_1g$](https://urldefense.com/v3/__https:/www.smithsonianmag.com/smart-news/australia-wasps-pose-danger-airplanes-180976424/__;!!JmPEgBY0HMszNaDT!plyMNYYzSFvw5g_m3vVySIjmfAw-KNbohmJYJldLNM2rsl0eNOItyU8kzvomA85NRlkV6jHbaQsfW7ScP8TGHp9H5_1g$) . We have added an estimate of the marginal lands surrounding airports described in Lurie et al..   
L150: Please provide more detail about the RF model output here, especially in the Context of Table 1. Describe what u accuracy and Gini u accuracy. I know you have some of in Tabe 1 legend. However provide more clarity here for the reader in the methods section. The RF model is offered only as a supplement to the NMDS/PERMANOVA model in that it allows us to quantify the species that best define each site by composition. It is essentially the inverse approach (y ~ x in PERMANOVA & x ~ y in RF). We can see that this was not clear so have elaborated on the RF model’s use and utility. We have also added details on the fitting and training process, and the interpretation of variable importance metrics.  
L196-198: I’m unsure about your result here. You say that traps captured higher proportion of Agapostemon, Bombus and Lasioglossum? Perphaps you meant “net” for one of your findings? Yes, thanks for catching that. Corrected.  
L200: Bombus should be italicized.  
L212-216: Cite Table 1. In fact, I think more time needs to be made to go over the results in Table 1 in your results section. We have added further description of the changes in relative abundance across sites and cited table 1 again.  
  
Reviewer: 2  
  
Comments to the Author  
Review of the Structure of bee communities in marginal lands of the Puget sound, USA General comments:  
-       Overall, this is a useful paper to have published as it provides additional baseline data on bees in Western WA, USA. This work will be publishable after revisions to improve manuscript clarity as detailed below.  
-       The methods would flow better if the “Study System” and “Study Site Descriptions” were revised into one section, perhaps entitled “Study System”. With the study site descriptions, it would be useful to provide some climatic parameters (i.e., rainfall, elevation, average summer temperature). It would also be helpful for all sites to be described using the same parameters (i.e., Port of Seattle site has details about area, but the other two do not.). For some of the details you describe here (i.e., placement of trap stations) it might be useful to provide a figure/schematic of this, it’s hard to gauge exactly how far apart the trap stations are within the landscape without a visual.  
-       Some content in results reads more like discussion content, so you may consider revising.  
Line comments:  
L 22 add in: (n = # of Lasioglossum species collected) added  
L33-34: can you provide some context on what sorts of restorations have been done and which bee(s) responded to them? I feel like a little more context on what’s previously been done is needed here. Ok, some of this is in the following paragraph. Perhaps consider revising the introduction to merge the two, or revise to two separate paragraphs. Either way, my first comment, needing more context on successful (or not) restoration practices is needed including details on which bees are benefitting (or not). Evan & Will, please address  
L 41: Eliminates ground-nesting feels a bit strong here, there are plenty of spots in yards, sidewalk cracks, public greenspaces where ground nesting can happen. Please rephrase. Changed “eliminates” to “alters”.  
L63-64: seems like it has been pretty well described – 6 (relatively) recent pubs. Perhaps rephrase to say things are known, but not in the habitat type that you’re investigating. Rephrased.  
L 88-90: are any or all of these native species? Please distinguish here and in the rest of the study site descriptions. added  
L123: Please include citations for the “published papers, semi-technical guides, etc.” used to identify your specimens, similarly, in L 124: detail what/who the “professional assistance” was as opposed to saying where you took the specimens. OK – I looked the supplementary materials, and it would be much clearer to only point the reader to the supplementary materials for identification details vs. half listing things out here. Related, did you lodge any specimens from this study as voucher specimens? If yes, please include accession numbers, if not, can you lodge these before publication? We have added the phrase “see Supporting Information for a comprehensive list of all identification materials” as the references for this are far beyond what could be described in the main text. EVAN & WILL;;; have you “lodged” any specimens? I’m not sure what this entails, though I feel like they are asking for the entire collection to be pinned in a museum or something, which sounds insane to me…  
L 129: replace “analytics” with “Data analysis” Changed.  
L131-132: Only species with confirmed identifications were included in species-level analyses. Replaced.  
L200 – Bombus needs to be italicized fixed  
L210 – when species names are provided the first time, they should also include the describer. This is also true for the list of species provided in Table S1, which should be updated accordingly. EVAN & WILL;;; can you tackle adding this?  
  
Fig 2-6 – scientific names (genus, species) should be italicized Fig S1 – Define BPF, SCL, and POS in figure caption as these are not acronyms used in the MS