Response to referees

Manuscript ID: JEcol-2023-0296.R1, "Starch storage strategy in the stem wood influences carbon dynamics and storage-growth trade-offs in tropical trees"

Dear Editors

We deeply appreciate the assessment that our paper have improved during the last round of reviews and for the consideration that it is still interesting for publishing in Journal of Ecology. We acknowledge the valuable feedback provided by both the associate editor and the reviewers, which has been essential in identifying areas of improvement for our paper. As the associated editor and the reviewer one points out, we recognized a lack of attention to details in the last reviews that have resulted in important shortcomings that affected the clarity and comprehensibility of our work. We extend our sincire gratitude to the reviewers and associate editor for the diligent efforts and commitment over the course of these two rounds of reviews. Their extensive suggestions and observation played a pivotal role in elevating the quality of our manuscript.

We went very carefully through all the new suggestion from both reviewers, and have taken dedicated measures to address them. Our focus has been on enhancing the manuscript’s readability, reliability and reproducibility. We want to affirm that our data collection has been conducted under high quality standards, ensuring the reliability of the data collected. Similarly, our data analysis was undertaken transparently and with the utmost commitment to reliability. We are highly committed with transparency and reproducibility of science, therefore we have taken the step of sharing our data an code in an open GitHub repository, accessible through the lin “xx”, before a final decision over the publication of our manuscript.

In the following sections, we offer detailed responses to each comment raised by the reviewers. For eas of reference, we have denoted the reviewers’ comments in cursive font, with our responses presented in non-cursive font, indented to the right.

We hope that our responses and incorporated edits meet your expectations for clarity and accuracy. As in our previous submission, we provide here two main texts. The first text, denominated “Main\_text\_reviews\_highlited” is a clean version of our new revised manuscript with all changes highlighted in red as suggested in the journal’s instructions for reviews. The second text, denominated “clean\_main\_text” present the clean version of the manuscript without highlighted changes. This last text is uploaded as information for the editor, as the submission platform do not allow us to upload two main manuscripts, or upload separately a track change version and a clean version. If at any point you require a track changes version of the manuscript or do not retrieve the clean version without changes highlighted, please do not hesitate to request it.

Sincerely,

David Herrera-Ramriez, on behalf of all coauthors

16-Aug-2023

Starch storage strategy in the stem wood influences carbon dynamics and storage-growth trade-offs in tropical trees

JEcol-2023-0296.R1

Dear Mr David Herrera-Ramirez,

Thank you for submitting the revised version of your manuscript. We have assessed your revision and I am writing to let you know that, although it is much improved, some further revisions are required. As you will see below, the reviewers have made many suggestions for improving your manuscript, and while one was generally positive, the other was more negative, and even questioned the suitability of your revision for publication in Journal of Ecology. We ask that you carefully address all of the points raised by the reviewers and provide a detailed account of how this has been done. We ask that you take case to address all points carefully and check your paper for errors before resubmitting.

The reviewer and Associate Editor comments are included below my signature.

Please note that this letter does not guarantee eventual acceptance of your manuscript. Your revised manuscript will be reassessed by the Associate Editor and may be sent for further review.

Please find information on how to submit your revised manuscript, below. The deadline to submit your revision is: 15-Sep-2023.

We are also offering language editing with Writefull, free of charge, which may be of interest to you. Writefull screens your text for correctness of grammar, spelling, vocabulary, punctuation, style, word order, phrasing, and more. You can use this service by following this link: [https://revise-c7962b5ef21ca52c4163c44e983d5b45e2.writefull.ai](https://revise-c7962b5ef21ca52c4163c44e983d5b45e2.writefull.ai/)

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If you have any problems submitting your revision, or any other queries, please contact Sam in our editorial office at [admin@journalofecology.org](mailto:admin@journalofecology.org).

We look forward to receiving your revision.

Effective with the 2021 volume, the Journal of Ecology will be published in an online-only format. No printed edition will be published. Should your article be accepted it will therefore appear online-only. All normal author benefits and services remain in place. Furthermore, there will be no cost to authors for the publication of colour images in the online-only edition. Please see the journal’s Author Guidelines for full details.

Best wishes,

Richard Bardgett

Executive Editor, Journal of Ecology

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Associate Editor's comments:

Associate Editor

Handling Editor Comments for Authors:

Dear Authors,

I have right now received comments from the two reviewers. While the second reviewer found the manuscript improved and suggest acceptance after minor revisions the first reviewer found the MS not suitable for Journal of Ecology. Honestly, I find the topic interesting, despite the manuscript still needs to be improved (e.g. see major concerns from reviewer #1) and I am persuaded, despite reviewer #1, to give to the MS a last chance.  I used "last" because as also the the reviewer #1 found, in this version me and reviewer #1 see the lack of attention to details in both the original manuscript, the revisions, and the response letter (for example, you should also upload during resubmission a "cleaned" copy of the manuscript, this would help much the reviewers in judging the overall MS readability and not only the changes done) while hoping that more care has been extended to the measurements and analysis, but it's hard to tell, as reviewer #1 argues, as certain analyses remain unclear. In any case, both reviewers describe and suggest abundantly how to improve the manuscript in their replies and I hope that the Authors will take care of it for the, hopefully, final revision.

Regards,

Alessio Collalti

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Reviewers’ comments:

Reviewer: 1

COMMENTS FOR THE AUTHOR

Major comments:

1. Figures. Please label sub-panels with letters and refer to them.

We appreciate the reviewer’s effort in improving the clarity of and readability of this manuscript. The utilization of alphabetical labels for the sub panels in figure 7 and figure S5, along with the corresponding text references, indeed contributed significantly to the readability of both the Results and the Discussion sections of our manuscript. With this information we think readers can now identify easily in the figures the results that are being presented. Regarding the rest of the figures, which only contain three panels, each related to each species, we decided to leave the panel identification with the name of the species and the specific trait combination which we mention in the text every time we refer to the figures.

1. L328-335. No statistical support for text in this section. This is a problem, because the authors refer to changes in concentrations at the deepest depths. Yet, this is where concentrations are the lowest, and at or near values that are essentially indistinguishable from zero due to analytical uncertainty. This is if concentration measurements were used, yet, the histological measurements capture 80% of variation in concentrations and thus uncertainty is higher.

We have revised and enhance the clarity of the entire results section. We have reworked this section to provide an easier way to identify result and follow our findings. We now describe better the information we provide about the radial gradient of starch concentration in the stem wood and the seasonal differences in these concentrations. We mentioned that the seasonal amplitude is more pronounced in the initial centimeters of wood and gradually diminish with increasing depth. We now support this clame with Figure S6 in the supplementary section that visually represents the mean seasonal amplitude of starch concentration at each wood depth for each species, along with its associated variability. It is worth mentioning that we performed statistical validation using the Wilcoxon test; however, we have chosen no to report the corresponding p-values as we believe they are not central to the story.

Regarding the variations in starch concentration at the deepest layers of sapwood, we wish to emphasize that while starch changes are indeed very small in these regions due to lower starch concentrations, our method enable us to discern visually between starch measurements different from zero, signifying the presence of distinct starch grains in the stem wood, and complete absence of starch grains. To exemplify this, we have included some images of the deepest layers of sap wood, that had starch at one time point in our year of measurements but got empty during the dry season, in the supplementary section as Figure S7. Thanks to the feedback we have rephrased these explanations in the text to ensure clarity to the readers.

“The quantification of starch concentrations every 5mm of wood along the radial axis  from bark to pith allowed us to estimate with high precision the radial profile of starch concentration across the sampled wood cores (Fig. 3). Starch concentrations decreased radially across the sapwood from bark to pith for all species infor all sampling dates (Fig. 3). The maximum difference in starch concentrations between sampling dates were larger in the first 20mm of wood for *D. microcarpa* and *O. leucoxylon* and in the first 60mm of wood for *S. guianencis* (Fig.3, Fig. S6), then the seasonal change in starch concentrations decreases with depth as starch concentration also decreases.Nevertheless, despite the small changes in starch concentrations at the deepest layers of wood, we observed total remobilization of starch grains during the dry season for all species (Fig. S7), indicating a high metabolic activity of deep sapwood and the capacity of these species to remobilize the stored starch from the deepest living layers of wood”

1. Lots of the text refers to the “wet” or “dry” season but the figures refer to monthly time periods. Consider adding labels to plots.

We carefully revised every figure to ensure that we indicate when the dry and the wet season occurs. For this we used two vertical shaded areas: one yellow shaded area to indicate the dry season and another blue shaded area to indicate the wet season. We now made sure that we refer to this appropriately in the figures caption.

1. The results remain difficult for me to follow. Much of the results also refers to supplemental figures.

We have carefully revised all the Results section and improved the clarity and readability. We have modified several parts of the text to ensure that each instance is now more precise and easier to follow. Our focus has been on providing explicit details about the specific results under considerations, as well as clearly referencing the corresponding figures and relevant results within those figures. Thanks to the reviewer’s suggestion in point one, we now think that the it is easier now to relate specific results in figure 7 to the text in the Results section.

In addition to refining the text, we have also carefully revised the figures and enhance them for consistency. We are optimistic that these refinements contribute to the readability and comprehension of the manuscript.

L1. Suggest replace “Starch storage strategy in the stem wood” with “Distribution of sapwood starch”. I also suggest to make this change throughout the manuscript, as the “strategy” is never defined and simply describes the anatomical distribution of starch within stem wood. At the very least I would suggest “Starch storage traits…”, but this does not well describe radial patterns in starch amount such as my first suggestion does.

As correctly pointed out by the reviewer starch storage strategy, as we defined it, is a storage trait related to the cell types tress use to store starch in the stemwood. We have now clearly stated this in the text. “Here we use the trait that refers to the cell types to store starch (e.g. Living fibers or parenchyma), to define two storage strategies of starch in the stem wood: 1) trees that only use parenchyma to store starch and 2) trees that uses living fibers and parenchyma to store starch (Herrera-Ramirez et al., 2021). ”

These storage strategies are a central part in our analysis and differ from the distribution of starch in the sapwood. These traits seem to be life history traits specific to each species, which divides species in two distinct groups, one group that form living fibers and use them to store starch and another group that do not have living fibers and only use parenchyma tissue to store starch. This affects the distribution of starch storage in the stem wood, but do not define it. For instance, the radial distribution of starch is not related to the cell type where starch is stored. Our data suggest that these storge strategies, as we defined them, do not only affect the spatial distribution of starch but they also have important metabolic implications for trees, as we discuss in our paper. Also, the different tissues use to store starch in the stem wood may not only affect the potential amount of starch stored per unit of wood volume (as we mention in the text), but also they may constrain the way how starch is mobilized and used within the wood as we have discussed in our previous paper (Herrera-Ramriez et al 2021).

L25. Storing starch in the stemwood is not a strategy; all trees to my knowledge contain some starch in stemwood. Suggest to revise.

We agree with the reviewer’s opinion, storing starch in the stem-wood is not a strategy. It is important to clarify that storing starch in the stem wood in not the designated strategy. We defined the starch storage strategy as the strategy to store starch in different wood tissues. As presented in the point before we have modified parts of the text to be clearer and more specific about the definition of the storage strategies.

L34. Starch mass or starch amount? Mass was not measured…

Starch mass was not measured, it was estimated from starch. We changed here the term for starch content as it seems to be more appropriate in this instance as the reviewer suffests.

L40. No mention of sugars in these results.

We now mention the soluble sugars in the abstract.

L46. Remove mentions of mortality.

We think the influence of our trait combination in tree mortality and survival is an important implication of our results and it deserves to be mentioned in the synthesis of the abstract. We now provide extra evidence in the last part of the discussion, that show the possible relationship of starch storage strategy with mortality. Here we show that not only the background mortality is larger in the parenchyma storing species than in the fiber storing species, but we also the increase in mortality after high frequency fires (Figure S8).

L130. It would be helpful to justify why these specific traits are focused on. Some would argue belowground traits are actually much more important.

We appreciate the recommendation as it is very important to have clarity why these storage traits are important. We justify the selection of the specific trait in the introductions, in the lines xx “A large amount of living cells used for NSC storage (e.g., Fiber storing speciesspecies with living fibers and parenchyma) may indicate a high prioritization of storage formation, which may compete with other carbon sinks like growth and respiration and may be related with higher plasticity of carbon metabolism (Plavcová et al., 2016; Herrera-Ramírez et al., 2021). Thus, it is possible that trees with larger plasticity in carbon storage and sink fluxes may be better adapted to stressful conditions that severely reduce photosynthesis or increase carbon demand, because they may be more tolerant to a wider range of environmental conditions.”

We agree that belowground traits are very important and they deserve to be studied as well, but this is not the focus of this work.

L138-139. Unclear.

We rephrased it for clarity “We used the coverage percentage of mature leaves in the tree crown, from the phenological data, as proxies for carbon acquisition.”

L159. Where is zero on the figure? It seems to be in different places for different quantities (NSC vs. others). NSC is negative? Add tick labels.

We now indicate the 0 in each panel of the figure. We also explain more detailed in the figure caption how the carbon sinks are represented in the figure.

L195-106. Reference? Or, additional methodological description?

LEO AND DIVIDNO!

L216. Please justify the use of this starch method in the main text (not just in the response letter). In particular, the authors state this method gives more detailed information about starch storage. Regarding the localization within specific cell types this is certainly true. But concentration methods can also be used to estimate radial profiles. Numerous examples in the lit.

In our previous paper (Herrera-Ramirez et al., 2021) we show that the histological method closely reproduces quantification of starch done with the standard chemical method using a High-Performance Anion Exchange Chromatography with Pulsed Amperometric Detection (HPAE-PAD), then we are certain that it works to measure starch concentrations in the stem wood. Therefore, with all due respect we see this justification unnecessary. We totally agree with the reviewer that standard chemical methods can be used to estimate radial profiles, we never intended to say otherwise. The histological method was more practical for us, allowed us to understand better the dynamics of starch in the stem wood and identify the two main strategies for storing starch in the stem wood that are the subjects of analysis in our manuscript.

L235. Suggest “percentage covered by starch approximate”

We believe that “closely” is important as it highlights the reliability of the histological method to quantify starch. The histological quantification of starch get close to the quantification of starch done by the chemical method explaining the 80% of the variance and having a regression slope close to 1 (slope=0.88). We now report the slope in the text. This is not only caused by uncertainties related to the histological method, but also to uncertainties related to the chemical method.

L236. Report the slope in the main text (0.88?)

Thank you for the suggestion, we included the slope now in the text.

L276. At what depth? Is this total starch? Or??

We really appreciate the contribution of the reviewer to improve these details in order to make our manuscript more understandable. We have carefully reviewed all the Methods section in order to clarify when we are referring to starch concentration at certain wood depths or when we are referring to total starch mas in the entire wood core.

“We also estimated the relative change of the total starch mass in the entire wood core between the seasons previously described, for that we divided the starch change by the starch mass in the final month (equation 1). “

L281. how is a non-parametric confidence interval calculated? Citation or more explanation required

We have rephrased this section, in order to be clearer and more specific about the confidence interval that we estimated and we added the respective references.

“We evaluated if the changes in starch mass between seasons were different  than zero by building 95% non-parametric confidence intervals for the mean using the adjusted bootstrap percentile (BCa) interval (Davison and Hinkley 1997).  For this purpose we used the boot package available in R (Canty and Ripley 2022).”

L296. How? Also, software??

We now describe how we assessed heteroscedasticity and normality in the text and add a respective reference

“The heteroscedasticity of the residuals was checked plotting the fitted values of the model against the residuals, while the normality assumption was checked using a Q-Q plot (Fox 2015).”

Additionally, we added a section in the methods (2.6. Data analysis software) where we acknowledge the softwares used to get the calculations, statistics and figures that we present in the manuscript.

L301. What does “in parallel” mean here

It means that all the incubations were running at the same time and same conditions. We now deleted this word as it seems to add some confusion to the readers and it is not really critical for the method.

L303-304. Reference

We added the reference as suggested: Muhr, J., Trumbore, S., Higuchi, N. and Kunert, N. (2018), Living on borrowed time – Amazonian trees use decade-old storage carbon to survive for months after complete stem girdling. *New Phytologist*, 220: 111-120. <https://doi.org/10.1111/nph.15302>

L307. Why not mass-specific respiration rate?

Because we did not measure the mass of each individual wood core, we only measured the volume. We now refer in the text that we estimated the volume-specific respiration rate.

L311. Any references for this approach?

LEO AND DIVINO!

L337. Again is this total starch mass?

Yes, we modified this section to add clarity to this respect, we hope that now our results are easier to follow.

L353. “evergree”. Also, label heartwood boundary? Report sample size (number of trees per type and date) in caption.

Thanks, the typo has been corrected. it has been added the information about the number of trees per species and per time point in the caption. Heartwood was only possible to identify in two species but the starch reached zero values before reaching the heartwood/sapwood limit, then heartwood limit is out of the bounds of this plot.

L360. How is individual measurement uncertainty at a given depth in the profile propagated to these total starch masses?

We estimated the mean total starch mass in the entire wood core per individual as the linear combination of the mean starch mass measured at each wood depth. The standard deviation linked to these values was determined by considering the variance derived from the repeated measurements (50) conducted at each wood depth. This methodological approximation allowed us to propagate the uncertainty associated to measurements at each wood depth to the estimation of the total starch mass in the entire wood core.

Our analyses use mean values of the mean total starch mass per tree, a robust metric to characterize starch mass Whitin trees, to compare the variability in starch masses and starch changes between seasons within the species evaluates. Each species is characterized by 12 trees per species and the variability of these measurements per species is visualized through boxplots and confidence intervals through our manuscript. This approach characterizes in a transparent well l the uncertainties associated to our measurements.

L340. Why is this in the supp?

We apologize again for any shortcomings the presentation of our results. In response to your feedback, we have revised thoroughly our Results section and edit large parts of it to make it more consistent and easier to follow. We recognize that it was an oversight to relegate this particular figure to the supplementary material. We now have relocated this figure in the main text, where its significance is more appropriately and highlighted. In order to increase its readability, we have incorporated additional details such as a clear labeling of the dry and wet season and a labeling for the statistical comparison through distinct alphabetical letters.

L344/Fig. 5. I do not understand the significant difference being described and it is not descrbed at all in the fig caption. Nor does L291-292 provide sufficient information to understand what is being compared. Each month uniquely? If so, multiple comparisons adjustments are required. But, I can’t figure out from the text how many comparisons were made.

In order to improve to improve the clarity of our methods, we have rewritten these lines. They now ready as:

“To assess the significance of variations in monthly growth rates within each species, we used Wilcoxon signed-rank tests with 95% confidence level. This test compared the growth rates between individual months. To ensure the robustness of the results, p-values were adjusted following the Holm method (Holm 1979).”

We have also modified extensively the caption of the figure to give al the sensitive information necessary to understand and make a good interpretation of these results.

L395. P is supposed to be less than 0.05 I think.

In this case, p is in the limit, it is exactly 0.0505 as it is reported in Fig. 7.

L573. But guianensis had the most starch during the wet season.

We acknowledge along with the reviewer that there is no evidence of starch consumption during the dry season for S. guianensis. Nevertheless, there also no starch gains similar to the ones presented in the season before. Despite this we like to point out the potential impact of flowering and fruiting in the demand of carbon for metabolism that impairs accumulation of starch and even can lead these species to consume it during the wet season.

Reviewer: 2

COMMENTS FOR THE AUTHOR

The authors sufficiently addressed my comments and the manuscript is much improved and overall clearer to read. See below for some further comments on the revised manuscript that should be addressed.

We would like to sincerely express our thankfulness to the reviewer for the consistent commitment and attention to details during the past two reviews. This committed hard work, reflected in extensive general and specific observations, have helped us to dramatically improve our manuscript. We appreciate deeply the contribution and opinions of the reviewer which have resulted in a more comprehensible story in our manuscript. We have gone through all the line by line suggestion of the reviewer and add our response in the following text.

Line by line comments:

L 47: should be "semi-deciduous"

Correct, we have done the change.

L 62: I think you don't need to say "dry and hot conditions" and "droughts". Maybe choose one?

Right, we have left just droughts.

L 98-103. This added text may not be necessary, since it is phrased similarly in lines 130-133.

We have eliminated this phrase.

L144: Change "Then," to "Thus,"

Changed

L 152: Change "will" to "would" for consistency.

Changed

L 292-293: It is not clear what is being described in this sentence.

We aplologied for the remaining lack of clarity in our manuscript. We have now comprehensively reviewed the manuscript and edited all instances that were not clear. This phrase was reworked in order to be more clear and specific. It now reads as:

In order to evaluate the seasonal trade-offs between growth and storage, we also calculated seasonal accumulated three months growth rates, each corresponding to the seasons already described. We estimated Pearson’s correlations and linear regressions between the accumulated growth and starch changes in mass for each season in order to estimate seasonal trade-offs between storage and growth.

L 293: I'm not sure "estimated" is the correct word to use here.

We changed to calculated.

L 318-319: Remove "Then in relative terms we expect" and replace with something like "In general, we assume a higher flux..."

Changed, we really appreciate the suggestion.

L 333: Should be "sapwood"

Changed.

L 334: Remove "totally"

Removed.

Fig. 5: Is the shading around the solid line 95% confidence intervals? If so, add to figure caption.

Yes it is, we now mention it in the figures caption.

L 402-404: Did you try this for D. microcarpa too? If not, why not?

Yes we have tried this for *D. microcarpa* too but not significant correlation was identified. We think this is not relevant to the story as the trade-off were present in the simultaneous time period.

L 449 (Fig. 7 caption): Should be "non-significant"

Yes, we apologize, we have changed this.

L 453 (Fig. 7 caption): "scratch" should be "starch"

Again, it is our mistake not to have spotted this earlier, we have paid more attention now did our best to correct the typos.

L 459-460: Rephrase second part of sentence. Perhaps "...leaf habit, which we summarize in our conceptual framework"

Great suggestion, thank you, we have incorporated

L 468-470: This sentence is hard to follow; perhaps re-phrase for clarity? Could you say something like "Carbon availability was balanced by starch and..."

We really appreciate the suggestion; it helps the manuscript to be more comprehensible. We modified this phrase to make it clearer. We incorporated the suggested change and modified the phrase. It now reads as:

“This species showed the largest starch consumption during the dry season when carbon availability was low and almost no radial growth occurred, and a small consumption overall during the wet season when there was more carbon available but growth also increased.”

L 472: Could you instead just say "when carbon availability was higher due to greater leaf area and growth increased"? It is not very clear as it is currently written.

We have modified this phrase to increase clarity. It reads as presented in the las point.

L 474: Replace "with trees growing" with "when trees grew"

Replaced

L 476: Add "presented in our conceptual figure" to the end of the sentence.

Added

L 483: Missing word? Perhaps "but we did observe a significant consumption"

Yes, we have corrected the phrase as suggested.

L 499: It would be helpful to cite Figure 4 here too.

Cited

L 507: Change to "dependent on..."

Changed

L 513-516: I think that just including this in the methods is enough, and it doesn't need to be justified in the discussion as well.

We agree with the reviewer and have eliminated this from the discussion.

L 516: Remove "So far,"

Removed

L 526: Might rephrase to "which could reduce their vulnerability to carbon starvation" to be clearer.

We have rephrased this sentence, Thank you for the suggestion.

L 538: By wood growth rates, do you mean radial growth rates? If so, say that.

We mean radial growth rates, we have incorporated this through the text.

L 539: It seems like there should be a citation for this sentence.

We have included a citation here that helps to support our hypothesis. The citation included is:

Rowland, L., Ramírez-Valiente, J. A., Hartley, I. P. and Mencuccini, M. (2023), How woody plants adjust above- and below-ground traits in response to sustained drought. *New Phytologist*, 239: 1173-1189. <https://doi.org/10.1111/nph.19000>

L 548: Replace "Then," with "Thus,"

Replaced

L 551: Add "Overall" to the start of the sentence so that the respiration discussed here is not confused with the respiration seasonality discussed in the previous paragraph.

Added

L 567: Photosynthetic limitation due to what? Due to greater water availability?

We have added these details in the text. It now reads as:

“We would assume that trees may recharge the carbon storage pools during the wet season because of favorable conditions for growth and less photosynthesis limitation due to more water availability and lower air temperatures (Dietze et al., 2014).”

Figure S5: Consider also using dashed lines to indicate non-significant correlations in this figure too.

We apologize again for the shortcomings in this revision. We have included many details in our figures and We have modified this figure as well as suggested by the reviewer.

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Revision Guidelines:

Please ensure you address these concerns and submit your revised manuscript by 15-Sep-2023. Please submit before this date if possible to ensure that there are no issues with time difference. Let us know, as soon as possible, if there are any problems with this deadline.

Please ensure you carefully address all of the reviewer and Editor’s comments in your revised manuscript and submit a response document providing details of how you have addressed each of the comments point by point. When you submit your revised manuscript, please also highlight the changes you have made in red text in your main document. If there are any comments you have chosen not to address, please provide details of the scientific reasons you have not done so in your response to reviewers.

Your revised manuscript will be assessed by the original Associate Editor, whenever possible, and they will decide whether further advice from one or more of the original reviewers is necessary.  If the original reviewers are not available and further reviewer advice is required, it may be necessary for us to invite new reviewers.

To submit your revision please log in to your author centre at <https://mc.manuscriptcentral.com/jecol-besjournals>  and click ‘create a revision’ under ‘manuscripts with decisions’ and follow the on screen instructions. Please do not click ‘start new submission’.

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Editorial Office:

Please read our author guidelines carefully before submitting your revision. In particular please note the following:

Data Availability Statement Statement:

A statement must be included in your manuscript indicating where the data are deposited (in an external archive, in supporting information, etc.), or an explanation must be provided explaining why there are no additional data (e.g., all data are included in the manuscript, the data are confidential, the data are under a long embargo, etc.) Archived data (such as data archived on DRYAD) should be included in the references as well as the Data Availability Statement Statement section.

Maximising your impact:

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Abstract and Keywords:

To ensure that your paper achieves impact with as wide readership as possible, please make sure that the final point of the summary is headed 'Synthesis' and that it emphasises the broader significance of your work and how your study has advanced ecological understanding. Up to ten keywords can be included. These should also include some generic items and the subject category you have selected when you submitted your paper.

Second language abstract:

We also encourage authors to provide a second abstract in their native language or the language relevant to the country in which the research was conducted. For more information: <http://besjournals.onlinelibrary.wiley.com/hub/journal/10.1111/(ISSN)1365-2745/author-guidelines.html#manuscriptspecifications>.

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