

## **Author responses to comments made by the recommender of manuscript**

### **“Negative impact of mild arid conditions on a rodent revealed using a physiological approach in natura”**

We thank again the previous reviewers, as well as the recommender for making the effort of assessing the revised manuscript in a timely fashion. We are pleased by the assessment made by the recommender that this revised version addresses most of the reviewers' comments, and hope that this new version improves upon it further following the recommender's observation and suggestions. As previously, the detail of the changes is contained within the “tracked changes” PDF file.

#### **Recommender comments**

Regarding the vegetation data, you have chosen to maintain your approach based on principal component analysis (PCA), contrary to the advice of both reviewers. Unfortunately, the justification for this choice remains unclear and unconvincing. You argue that this method allows for the transformation of data distribution for subsequent statistical analyses. However, in the results section (Lines 386-394), you present descriptive statistics on these data directly (not on the principal components) suggesting that these data can be handled without transformation. Moreover, there seems to be a contradiction in your objectives: in the manuscript, you state that your goal is to reduce the number of variables (Lines 282-283), while in your response to the reviewers, you assert that reducing variables is not your primary aim. I encourage you to clarify this inconsistency, either by modifying your approach or by providing a stronger justification for its purpose and relevance.

We agree that this discrepancy hindered the understanding of the ultimate goal of our approach. Here, the primary goal was indeed not variable reduction, even though it was mentioned in passing as a possibly welcomed consequence of variable transformation through PCA. We have clarified this in the new version, and provide a new presentation of the results scores on relevant PCs instead of raw variables.

Line 118: Please revise this sentence, as the genus *Rhabdomys* has not yet been introduced in the manuscript at this point.

Lines 125-131: The reordering of this section is unclear. It may be more effective to restore this part to its original position.

Lines 215-217: I recommend removing the parentheses and restructuring the sentence, notably start a new sentence after “testis”.

We have applied the relevant changes to the structure of these paragraphs and thank the recommender for these suggestions.

Figure 1: It is still difficult to distinguish between the translucent and fully colored

dots. Consider using two different shapes (e.g., circular and triangular) for better differentiation.

We have updated the map accordingly, and hope that this new version allows better differentiation.

Figures 5 and 6: It is regrettable that only significant results are highlighted in these figures. Additionally, it seems feasible to combine Figures 5 and 6 into a single figure, perhaps as reaction norms for each species across the 12 physiological markers. This would also address the reviewers' concerns about the large number of figures.

We thank the recommender for this suggestion. We have combined Figures 5 and 6 in a way that highlight significant differences between sampling sessions, and species after Bonferroni correction while still presenting all 12 reaction norms across the 12 physiological markers. We hope that goals of clarity and conciseness of information are met in this new version, in addition to addressing the reviewers' concerns over the large number of figures.