

Dear editor, dear authors,

the paper deals a rather interesting subject, and overall seems uquite ok, but actually this is hard to judge because of a number of points I am outlining below. Somehow you have to make sure that the revised version makes a real jump in terms of clarity, conciseness and then probably also highlighting the significane of the results in a wider ecological framework. I hope my comments help.

general:

1) the writing is grammatically correct but the style is very technical and complicated which makes it sometimes really difficult to understand what you mean. I strongly suggest to go through the manuscript and make the writing siomple and clear, otherwise the paper is really hard to read...

Bad/complicated style can be found in P14107L10, P14111L4-6, P14114L27-28, P14116L5-7, P14116L21-22, P14118L14-17, P14118L19-29; P14120L10, P14120L21, P14121L12.

2) In the introduction, from P14107-14109, you provide a lot of theory but there is no clear line of reasoning. I strongly suggest to either add a section on the underlying ecological theory or to introduce some subheadings. I have made some more suggestions below where things are particularly unclear...

3) When introducing your statistical tests: I think you should clearly state what do you test (which hypothesis) with which method and why with that method. It is very messy at the moment.

4) The conclusion are weak, unomtvated and lack a vision. What are the implications of your findings?

specific:

P14106L1-2: delete two times the "to"

P14106L10-11: Aren't the climatic variables and the geographica variables strongly correlated? Did you test this?

P14107L1: "life history traits such as...." give examples and provide a reference for this statement

P14107L20: This paragraph seems without any logical connection to the previous one

P14107L23-34: Here you jump from paleoecological evidence to observations from the 1950... totally different things, I believe...

P14108L23: "A continously..."

P14110L12: I am really not convinced that you need so many climatic variables. they will be highly correlsted anyway, right?

P14110L13: You should really explain what ClimateWNA does.

P14110L20: Since you are using only one GCM, which is always risky and actually not very robust in terms of uncertainty, you should at least explain where in the range of CMIP5 GCMs CCSM4 is located.

P14113L9: "tratexitwas" Is this a word? maybe "trait was"?

P14114L1: Another very unclear sentence. how can climatic variables not be correlated with environemntal factors related to temperature? and what actually are environmental factors related to temperature if not climatic variables?

P14114L3-5: How do you expolain the difference between PLS and PCA?

P14114L210:providing these cryptical variable abbreviations that are plained in the online material only here and elsewhere in thet text doesn't help much to understand your paper...

P14115L16: Why "presumably" if you put in climate data from a climate model and don't change anything else in your model, it must be a climate effect, right?

P14117L12: "reproduction"

P14117L18: its camille parmesan, hence "she"

P14119L20ff: Are these numbers of climate effects across different RCPs? then better to provide the range over the RCPs rather than the mean...

P141120Ö1-4: Here another one sentence paragraph that seems totally disconnected from the one before.

P14120L12: "evolutionary"

Table 1: column headings seem to be shifted

Table 3: explain the climatic variables

Figure 3: explain DI

Figure 4a: should these not be better boxplots for control and chilling? how can you connect the dots? what do the lines mean?

Figure 5: lower left panel, should the "good year" part not be black? please explain in the caption what good and bad year mean