

Dear authors,

the reviewers found your revision had addressed their comments. I think your paper deserves to be recommended. I nevertheless would ask a last very minor revision. Please incorporate the last few revisions required by the reviewers. I will very likely be able to assess your revised preprint without sending it out for further review this time, which should be fast. Looking forward to receiving your revision (I guess rapidly since there is not that much to do) and writing the recommendation (conditional to your revision of the preprint).

Regards, Benoit Pujol

REF1 : I really appreciate this manuscript; I found it interesting and inspirational. The authors answered perfectly well to all my concerns. I only have one last comment, please make sure that all the figures and tables in the appendix are referenced in the main text (e.g. Fig S2, Table S2).

**Thank you for pointing this out. We have updated the manuscript to ensure that all figures are referenced in the main text.**

REF 2 : This is an updated/corrected version of a manuscript I previously reviewed. I think the authors have made a huge effort to keep the narrative of the study (more) focused, and made the statistical and biological interpretations easier to follow for the readers. The experiment the authors set up is super elegant to test a multivariate response (plasticity and evolutionary) to environmental gradients, as opposed to setting the classic anova approach. I have gone through the rebuttal letter and it appears that the authors have addressed my comments/concerns.

If anything, I would ask them to add some insights into how life-history traits and/or the ecological/environmental context in which the species evolved might influence the plastic or genetic (evolvability) response when species/genotypes encounter a "new" environment (or dimension) of their environment. Other than that, I think this is a great piece of work, the kind I would use in any evolutionary ecology/ecological genetics module.

**Thank you for the great feedback and suggestions. We have added several statements and additional citations to the manuscript to further discuss how life history and past evolution might shape evolvability in novel environments. In particular, we draw from the larger body of literature on cryptic genetic variation to discuss prediction that more novel environments will expose greater genetic variation.**

**We have also gone through the comments in the pdf file and updated the manuscript accordingly with corrections where grammatical errors were found (eg. it's vs its). Thank you for kindly pointing these out!**