

SOIL Discuss., referee comment RC1
<https://doi.org/10.5194/soil-2021-29-RC1>, 2021
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Comment on soil-2021-29

Anonymous Referee #1

Referee comment on "The role of ecosystem engineers in shaping the diversity and function of arid soil bacterial communities" by Capucine Baubin et al., SOIL Discuss., <https://doi.org/10.5194/soil-2021-29-RC1>, 2021

The MS represents a well prepared experiment with clear questions and creative approach to soil microbiology. Everything is nicely described and presented but the discussion, which is not explaining the details of results well. I think that the authors should try to explain firstly why the patches have similar outcome while the effect of the two EEs are clearly different, secondly why the two individual EEs did not produce the effect to soil properties although they changes the microbial community structure. Also, although there were not significant differences in the functional patterns between the two patches and the combination, it seems from the graphs that the variability was much lower for the combined patches. So, I would try to use a turnover for explaining why there is no effect on the soil properties in the individual patches and possibly resilience or resistance based on increased complexity, leading to stabilization of soil, or possibly reduced turnover for explaining the effect of combined EEs. Well, maybe you can find some other ways how to explain these patterns in more detail but I think that the MS would benefit from more depth in those two issues. It can be just two, three sentences.

More specific comments:

L59 Better introduce the sentence starting "The community's..."

L145 Use other, more specific citation than the textbook.

L230 Change to for metabolism-related and survival-related

L266-271 This part is not very useful, remove

L271 The sentence starting "Here.." is a good beginning for the explanations. At this part you should continue to a greater detail of arguments.

L281 I would suggest not to include the third EE for explaining the discrepancies. There are no discrepancies, just results to be explained. This paragraph leads the MS to a rather weak conclusion but why to do that if the results are strong. Similarly, the conclusions should be more elaborated to connect this study to a broader picture of microbial functional distribution in dry habitats.