

Interactive comment on “A positive correlation between plant diversity and productivity is indirectly caused by environmental factors driving spatial pattern of vegetation composition in semiarid sandy grassland” by X. A. Zuo et al.

Anonymous Referee #2

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General comments: This paper is to discuss the divers of the diversity-productivity relationship. According to my experience, “Environment factors control the distribution and composition of plant communities, which in turn control the pattern of species diversity and productivity” is true. I believe that to verify that the diversity-productivity relationship is environment-dependent is proper. However, I do not understand why “a positive correlation between plant diversity and productivity is along the environment gradient in sandy grassland “ is hypothesized. Is it consistent for all ecosystems? And is it important to hypothesize it in this paper?

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The paper is not concisely written. In addition, there are a lot of grammatical errors. Some long, complicated sentences are not easy to understand.

The paper can be accepted for publication after a revision is made.

Specific comments: 1. The title is too long, it should be more concise. I prefer a title like “The relationship between plant diversity and productivity is driven by environmental factors in the semiarid sandy grassland ” 2. The Abstract needs to be rewritten to make it more concise and understandable. For instance, the first two sentences can be incorporated into one sentence as “Several patterns have been observed in the relationship between plant diversity and ecosystem productivity in both natural and experimental ecosystems, responding to spatial variability of environmental factors and vegetation composition.” 3. The Introduction can be made more concise. I do not think the first hypothesis is so important for this paper. In addition in the Introduction section, why it is raised is not clear. 4. Page 11797, line 2. “.. ecosystems include..” should be “ecosystems, including..”. 5. Page 11797, lines 11-14, this sentence is completely unclear. 6. Page 11797, lines 19, “.. environment gradient is..” should be “..environment gradients are..”. 7. Page 11801, line 11, “..ter Braak and Smilauer 2002”.. should be “..ter Braak and Smilauer, 2002..” 8. Page 11807, line 19, “.. influence..” should be “.. influences..”. 9. Page 11807, lines 22-25, this sentence is unclear. 10. Page 11810, lines 1-3, this sentence is unclear. 11. Page 11810, lines 6-8, this sentence is unclear. 12. Page 11810, lines 8-11, this sentence is too long and unclear. 13. Page 11810, lines 14-18, this sentence is hard to understand.

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