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Discussions
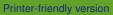
**HESSD**

Interactive
comment

# *Interactive comment on* "The distribution pattern of desert riparian forests and its relationship with soil moisture and soil properties in the low reaches of Heihe River Basin, China" *by* J. Ding et al.

**Anonymous Referee #2**

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General Comment: Desert riparian forests are highly fragile ecosystem to climate and environmental changes. On the other hand, they serve as a haven for deteriorating desert ecosystems until their being threatened by impacts of changes. And, it is timely and relevant to have many studies on desert riparian vegetation ecology and function, as this one. The paper is well-structured and written, as well.

However, the introduction lacks a clear definition of a problem. The introduction is full of background information; like, what has been done and what is already there. . . Such statements cannot justify a problem of a scientific work. There has to be a strong

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Discussion paper

explanation of gaps, drawbacks… those pertinent to the subject of the work. Moreover, simple richness and classification analysis could imply "the same old story". It feels to me that more can be done with existing data beyond analysis of richness and diversity of riparian vegetation. An example is combining with current affairs like climate and environmental change, resilience, elasticity…

What is "low reaches"? This is not a professional wording; better to use simply "oasis" or "downstream", or give explanation for what "low reaches" is. It has to keep consistency, as well, in some places printed as "lower"?

The method needs more explanation how all the sampling and data collection was accomplished in one month (July 2015). Quadrants were set for collection of data on herbaceous vegetation just after the rain; what about desert-herbs those can be found before the rain?

Detail comments: Title: delete the second "soil" in the second line Page 2 Line 3: delete "of" Page 6 line 8: "this area", which area? Page 6 line 17-18: please provide professional soil-type names; "grey desert soil" is not in nomenclature of soils Page 7 line 4-6: seems part of introduction, not methods Page 7 line 9: please define what "desert riparian forests" are in your research area? Page 8 line 1-8: preferable to put in table Page 10 line 1-14: Why Monte Carlo run needed? Can't Principal Component Analysis handle that size of data? Page 10 line 17-22: please give details of TWINSPAN analysis in methods Page 10 line 27-28: what does disturbed community mean? Page 13: Figure 3 and 4 can be combined Page 14 line 2: We know for what SWC stands for, what are those attached numbers stands for? Ok, it is given in the caption, but, is also needed in the main text. Page 17: the need for Table 3 is clear; why is Table 2 (marginal and conditional effects are not main target of the study) Page 18 line 17-18: the peculiar result from the vegetation analysis is the bi-modal distribution; do the soil properties show the same pattern; so that to say "variation in soil properties…." Page 19 line 22-24: YES! this can be an inference to the bi-modal distribution (in reference to the above comment) Page 21 line 11-12: Here it says "vicinity to the main roads"?

In the methods, it is indicated sampling was done far from roads; explain why? Page 21 line 12-15: To give management options for livestock control; there is a need to have socio-economic background information, specifically to livestock, somewhere in the introduction or in methods. Page 22 line 4: what are "artificial channels"? or take the whole sentence to Introduction; also line 6, if human disturbance is a problem give a brief background in the Introduction Page 22 line 21-26: many more services can be told

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