

Interactive comment on “Evolution of Vegetation System in Heihe River Basin in the last 2000 years” by Shoubo Li et al.

Shoubo Li et al.

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Received and published: 15 May 2017

Your paper focuses mostly on vegetation change. You have submitted this paper to a journal dealing with water resources in general, and hydrological issues in particular. You will need to demonstrate the relevance of your paper to the improved understanding of hydrological systems or water resources.

Response: Thanks for this valuable comment for us to sharpen key points of our manuscript. We think that our manuscript has made important contribution to the improvement of understanding of hydrological systems/water resources. Firstly, water-vegetation relationships are the most important hydrological issue in the desert hydrological systems where oasis is a unique landscape. The history of cultivated oasis development is the process in which humans placed stress on the natural hydrologi-

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cal system. Secondly, as Reviewer 2 commented that “the topic of the manuscript is very creative as there aren’t many researches on historical vegetation change, especially on natural vegetation”. Our manuscript has provided an understanding of how the vegetation system co-evolved with the changes of hydrological system for a time frame of 2000 years, which is of great implication for future water resources management. Finally, our findings have clarified a common sense that natural vegetation and crops compete on water resources in arid regions. Our results showed that increasing streamflow caused by the elevated temperature and increased snow melting in the upstream may lead to the overall growth of both natural and crop vegetation during the same period. However, we do agree with the Editor that we should reshape our manuscript to highlight our contribution to the understanding of hydrological system in our revised manuscript.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2016-480, 2017.

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