

Interactive comment on “Water table fluctuation and its effects on vegetation in a semiarid environment” by L. Duan et al.

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In literature, data and research for desert areas, such as the Horqin Sandy Land in northern China, are very scarce. This is mainly due to that studying these areas is not only costly but also technically challenging. However, scientific information is needed to understand as well as protect their fragile hydrology and ecology. This study presents our research results based on data collected in the Horqin Sandy Land. Given that such data collection efforts are not common, our results will add new information and data regarding desert environment into literature, and thus will be very valuable for advancing our scientific understanding of desert ecohydrology.

We fully agree with your opinion that “geostatistical analysis for additional time series C2980

and comprehensive modeling” would “strengthen the manuscript.” However, your suggested approach would require tons of additional data that are impossibly available and unfeasibly collected for the aforementioned reasons. On the other hand, we disagree with your comment that our current study is qualitative. We used all the available data and adopted analysis methods (e.g., multiple regression and spatial statistics) that are most appropriate for the data and our study objectives. Thus, we think that your opinion is too ideal for desert environment, where data are rarely available, let alone “long-term data set”.

We use Figure 1 to show location and landscape features of the study area. We are confused by your comment of “The information content of the different panels in Figure 1 is rather low since the spatial patterns do not change much in the different seasons.” What “spatial patterns” do you expect from a location map? For Figures 4 to 6, if depth were used, the results for different land covers (i.e., Sandy, Transitional, and Meadow) would NOT have been able to be drawn on a same plot. Thus, we think that it is still appropriate to plot water table, with average ground elevation noted. Audiences can easily figure out water depth for a time and land cover of interest. Further, we will thoroughly reread the manuscript to improve language and to eliminate any grammar/editorial errors.

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