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# *Interactive comment on* "Seasonal drought predictability and forecast skill in the semi-arid endorheic Heihe River basin in Northwestern China" *by* Feng Ma et al.

**Anonymous Referee #1**

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This study investigates seasonal drought predictability and forecast skill over a semiarid river basin. While the forecast skill evaluation is routine, the predictability is analyzed by both using a perfect model assumption and the reverse ESP framework. It is an interesting study, and the paper is easy to follow. I have a few minor comments below, basically for clarifications.

1. Given that the predictability has been quantified by both using AC with a perfect model assumption and RMSE within the reverse ESP framework, I would suggest distinguishing them in the abstract and conclusion sections. The former refers to the upper limit of forecast skill (potential skill/predictability), while the latter is usually used



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for quantifying the role of initial hydrological conditions (IHCs).

2. Figures 7-8 regarding human influence on hydrological predictability is interesting. Yuan et al. (2017) also found human interventions can outweigh the climate variability for the hydrological drought forecasting over the Yellow River basin. Given that Figs. 7-8 only show the unconditional results (including dry and wet conditions) while the main focus of the paper is drought condition, a brief discussion regarding the human influence on drought predictability is encouraged.

3. Figures 5-6, are the human influence included for the reference forecast (i.e., ESP)? If so, how about the results if the human activities module is switched off?

4. A careful proofreading is necessary. I list a few typos or errors, but they may not be the complete list. L19, there's -> there are; L57, is subjected to -> is subject to; L58, intensifying -> intensified; L120, 0.5-drgree -> 0.5-degree; L233, may linked -> may be linked;

Reference: Yuan, X., M. Zhang, L. Wang, and T. Zhou, 2017: Understanding and seasonal forecasting of hydrological drought in the Anthropocene. Hydrology and Earth System Sciences, 21, 5477-5492, doi:10.5194/hess-21-5477-2017

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