Interactive comment on "The importance of parameterization when simulating the hydrologic response of vegetative land-use change" *by* Jeremy White et al.

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In this manuscript, the effect of removing brush from grassland on amount of evaporation is investigated with a model. SWAT was chosen as the model. The model was validated with streamflow data. The article is so poorly written that I could not figure out with a reasonable amount of time available whether evaporation was used to validate the model as well. From the reviews, I understand that this was not the case. This should have been done according to one of the reviewers. Including spatial information is one of the ways to reduce the uncertainty in prediction Hoang et al (2017).

Streamflow is simulated using the Green and Ampt approach that is likely marginally sensitive to differences in amount of water evaporated by the plants either with trees

or without trees. The variation in conductivity due to crust formation is likely a much more sensitive parameter The other words overland flow cannot be used for estimating evaporation. Baseflow could be used, but it is not clear from the article if any baseflow separation was done. Moreover, overland flow once generated during the most intense part of the storm might infiltrate down the hill (Stomph et al 2012) that is not simulated by SWAT while it may greatly affect the amount of surface runoff. Finally, the rainfall could be highly variable over the watershed affecting the runoff greatly with the Green and Ampt approach. The authors took the average precipitation of four stations. At a minimum it should have been investigated if using the four precipitation measurements could have better described the streamflow that the brush management.

The authors write "Note that many of the most inïñĆuential parameters, speciïñĄcally precipitation multipliers, plant growth parameters, and HRU scale parameters, are not in the reduced parameterization and are not included in typical hydrologic modeling analyses (Arnold et al., 2012b)" Because other not experienced users do it wrong that is not a good reason not too include the parameters describing the system. Of course, under these circumstances the model fails with this reduced parameter set. Using this set of parameters does not advance science as is expected from a published manuscript

The authors never question a priori the suitability of the SWAT model whether there is a chance that the model could simulate differences in evaporation based on the streamflow record before going through all the calculations and essentially proving that the SWAT model was not suitable for this problem. Would the authors have chosen an appropriate model that can simulate plant and root development together with evaporation, the results could be completely different and likely much more accurate. The article is all about parameters uncertainty while model uncertainty should have been investigated as well at a minimum.

Hoang L, Schneiderman EM, Steenhuis TS, Moore KEB, Owens EM. 2017. Realistically predicting saturation-excess runoff with SWAT-HS Hydrological Processes. In

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