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comment

Interactive comment on "Interplay of changing irrigation technologies and water reuse: Example from the Upper Snake River Basin, Idaho, USA" *by* Shan Zuidema et al.

Anonymous Referee #3

Received and published: 24 May 2020

This paper describes a simulation study using a distributed hydrological model with adjustments to irrigation efficiency parameters and calculation of managed aquifer recharge required to sustain groundwater levels. I must first disagree with the other two reviewers; I found the methodology very difficult to read and understand. More importantly, I struggled to grasp the point of the analysis and its contribution to water management. The hypothesis is presented (in the abstract) as follows: "as efficiency improves, less MAR is required to maintain a stable aquifer than returns flows are reduced due to increased efficiency". Inefficient irrigation has the unintended benefit of providing water to downstream users. So efficiency improvements result in a loss of that water provision, which can be offset by MAR. Since the net effect of efficient ir-

rigation and MAR would be to reduce evaporative losses, I cannot see why there is any surprise in the result attained in this study. The conclusion seems to follow directly from an assumption of the modeling (although I can see from the other reviews provided that I may lack some important understanding here). My main recommendation is that the authors work on the introduction to explain clearly why this very detailed modeling effort is needed to reach what is seemingly a very obvious fact that could be deduced with some basic logic.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2020-135, 2020.