

Interactive comment on “Sustaining the Ogallala Aquifer: From the Wells to People, A Holistic CNH Model” by Joseph A. Aistrup et al.

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AR 2 notes that s/he would like for the conclusion to focus on what policies could be adopted to promote a more sustainable groundwater use pattern compared to the status quo. We concur and will redraft the conclusion to outline such a policy.

AR2, Technical comments

As noted above, we agree to add a diagram.

Page 6, lines 10 and 12: The crop choice model was fitted to data over a span of years, rather than a single base year (also see under AR1: SC11 and 12).

Page 6, line 30 As the reviewer notes, it is not uncommon for crop models to represent

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yield as being proportional to water use. Fortunately, this is not the case with EPIC. Except, of course, when water is limiting, the plant biomass accumulated in each time interval is related to the intercepted solar radiation, a procedure called the “radiation use efficiency” approach. Then yield is estimated as a fraction (the “harvest index”) of biomass. So water use is related to biomass, rather than the other way around.

Page 8, line 28 Replacing kriging with interpolation is fine.

Page 9, line 11 Yes, provided on page 10, lines 5 through 15. The definition is adapted from Peter Gleick and stated in the paper: “maintaining current saturated thicknesses and stemming the current pattern of continuous depletion, while maintaining to the extent possible the employment levels, wealth generation, and population impacts in the region.”

Page 11, line 12 A LEMA does not work this way. The LEMA is designed to develop consensus at the grassroots, such that most if not all contiguous water rights holders, Junior and Senior, would agree to the same water withdrawal policy.

Page 12, line 1 The first two policy options are not sustainable because the levels of water savings are not enough to reverse the current pattern of continuous depletion. (See definition of sustainability, above).

We concur with AR2’s editorial suggestions.

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