Interactive comment on "Spatially variable hydrologic impact and biomass production tradeoffs associated with Eucalyptus cultivation for biofuel production in Entre Rios, Argentina" *by* Azad Heidari et al.

Anonymous Referee #1

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General comments: In this study, the SWAT was calibrated/validated and applied to evaluate the impacts of spatially varying patterns of eucalyptus plantation, biomass productivity, and water use for biomass production in a watershed in Argentina. The research findings from this study provided guidance for woody biomass tree planting and water resource management. This paper is well organized. Method description, scientific results, and conclusions are presented clearly and concisely. The number and quality of references are appropriate.

Specific comments: In my opinion, calibration and application of the SWAT model it-

self in this study do not carry sufficient scientific meaning. The creativity and importance of this study are not enough for publication in this journal. Without an in-depth discussion on physical processes represented by the calibrated SWAT and how to apply the research results, this research will be difficult to be implemented by potential stakeholders/policymakers. Moreover, simple discussion on water consumption by eucalyptus plantation in section "3.5 Green water footprint" does not represent the water footprint well. The impacts of bioenergy crop growth on sediment and nutrient losses in the watershed are important but not covered in this research. Additionally, tradeoffs between the costs of eucalyptus plantation and potential environmental impacts were not considered in this research, either. More in-depth discussion should be included to support the interpretations and conclusions. What is the novel idea this manuscript provided to scientific knowledge? Please describe it and use your results and discussion to support it. Does this manuscript develop a new methodology, tool, or theory? What can readers learn from this research, and how can they adopt it in other regions?

Technical corrections: page 1: line 13: "promotes" or "promote"? line 15: add "the" before "broad expansion" line 13: add "the" before "highest" and "least" line 25: add "," before "March"

page 2: line 3: add "," before "and woody biomass" line 8: add "a" before "use" line 15: change "are" to "is" or add "trees" after "eucalyptus" line 25: change "i.e." to "i.e.," line 32: add "," before "or"

page 3: line 5: add "the" before "impacts of" line 30: add "," before "and productivity" line 32: add "," before "and water use"

page 4: line 2: add "," before "and Validation" line 13: add "," before "including" line 17: add "," before "and rangelands" line 27: add "," before "and wind speed data" line 31: add "," before "and April" page 5: line 2: "stream flow" or "streamflow"? Please be consistent through the manuscript.

page 6: line 27: add "the" before "good performance". What is the definition of "good

performance"? What are differences between good and satisfactory goodness-of-fit statistics? line 28: improve the format of "R2"

page 7: line 27: change "An annual precipitation" to "Annual precipitation" line 32: add "the" before "existing"

page 8: line 23: delete "a" before "productivity" line 25: improve the format of "km2"

page 9: line 4: add "the" before "conversion"

page 10: line 24: add "," after "Similarly"

page 11: line 11: change "limitation in the growth model" to "limitation of the growth model" line 15: change "were defined" to "was defined"

page 19: Figure 3: change "observed" to "Observed"

page 20: The font size of Figure 5 looks like larger than that of Figure 4. Please be consistent through the manuscript.

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