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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Water-use dynamics of an alien invaded riparian forest within the summer rainfall zone of South Africa" *by* Bruce C. Scott-Shaw and Colin S. Everson

Bruce C. Scott-Shaw and Colin S. Everson

brucecharlesss@gmail.com

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RC2 & RC3: 'Water-Use Dynamics of an Alien Invaded Riparian Forest Within the Summer Rainfall Zone of South Africa', Anonymous Referee #2 / T. Dube, 3 October 2018

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Anonymous referee #2 (AR2) is thanked for their thorough review. The detailed comments and suggestions provided were appreciated by the authors.

1. AR3 stated that the title requires rephrasing. I failed to understand why the au-

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thors emphasize on the “SUMMER RAINFALL ZONE OF SOUTH AFRICA”. Does this have anything to do with the spread of invasive or water use by these plants? âĂć The authors used the term “summer rainfall zone” so that direct comparisons could be made to the companion paper (hess-2016-650) that measured the water-use in a winter rainfall zone. This term provides a broad climatic location, which is important when comparing the water-use to the climate of the study area. The inclusion of this statement prevents readers from taking the findings out of the climatic context. The authors have not changed the title as it would prevent the linkage to the companion paper.

2. Abstract-general well written but I would recommend that authors include the objective of the study. As it is one has to speculate the direction of the study. âĂć This comment was noted and the following sentence was added to the abstract: The objective of this study was to investigate the water-use (transpiration rates) of a selection of introduced and indigenous tree species and quantify the hydrological benefit that could be achieved through a suitable rehabilitation programme.

3. Introduction- This section is very weak and to general besides reading like a technical report. I would recommend that authors strengthen the motivation and support their argument with relevant literature. Authors should intensively interrogate literature and highlight scientiïňĄc research strides that have been made as well as the gaps in knowledge that still need to be addressed. So far, this is totally missing. It is therefore very difïňĄcult for one to understand whether this is a technical report or a scientiïňĄc study. âĂć A motivation was added to the introduction, discussing the problem, a potential solution and the reasoning behind the research approach. The authors have reviewed the literature citations in the paper and feel that it significantly covers the background of the study methods, the reason for undertaking the research and a comparison of the findings to documented findings. This should be considered in light of the fact that there is limited research on the riparian vegetation water-use, which the research findings should be compared to.

4. Methods – are poorly packaged and this makes it difiňĄcult for one to follow. I would, therefore, recommend that authors improve on this. âĂć A new chapter was included detailing water-use up-scaling. Further comments on the methods from two other referees were addressed. Internationally accepted methods were not discussed in detail as it would be a repetition of documented literature.

5. The study area may is poorly drawn beside been illegible. A great improvement is required. âĂć The authors feel that the study area is clearly legible. The location of the site within the catchment has been included. âĂČ 6. Results and discussion - although these sections read well they are very shallow and lack objectivity. The discussion is weak like the introduction; there is a lack of rigorous engagement of literature. Surprisingly there are too many references in the bibliography but the manuscript content does not demonstrate a thorough interrogation of literature. âĂć The authors appreciate the comment but feel that the context of the study has been provided (through an extensive literature review), the key findings are clearly discussed and future research provides a way forward for subsequent studies.

Please also note the supplement to this comment:
https://www.hydrol-earth-syst-sci-discuss.net/hess-2018-227/hess-2018-227-AC4-supplement.pdf

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