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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Using hydrologic landscape classification and climatic time series to assess hydrologic vulnerability of the Western U.S. to climate" *by* Chas E. Jones et al.

Shervan Gharari (Referee)

shervangharari@yahoo.com

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The manuscript, using existing indices and geospatial datasets, proposes a framework/rule-based decision making on the vulnerability of the Western U.S to future climate change. The manuscript is interesting and encompasses significant data management and GIS work. My general comments:

1- Reading the manuscript, I have a feeling that HESS is not really the right journal for this work. Although interesting work, the manuscript seems to be a report/technical memorandum that is turned into a scientific manuscript. I would suggest this work may be better presented in other engineering or water management journals. This is just

my recommendation on better presenting the work in its context to the right audience. Following that, it is rather difficult to provide a scientific feedback to this work. My feedback remains mostly on the clarification of presentation.

2- The use of English language is very good. The flow of the manuscript is smooth.

3- I am not sure if I really understand the linkage between the hydrological landscape classification and the current manuscript. As the authors mentioned in the introduction, the landscape classification is usually at finer resolution than catchment scale. What the author are doing, is more of clustering or zoning of possible system response to climate change (similar to hydrological modeling approach but with less hydrology as only indices are used). The AU are just a unit where the data is compiled at and this is not really linked to the sub-catchment variability intended landscape classification at catchment level.

4- It seems the authors have a decision tree in mind that they use for classification using the input data. I would suggest the author to provide a schematic of their decision or algorithm that provide readers with better understanding of the method. Similarly, there is no visualization of the shapefile/regions used to create the vulnerability map.

5- I would say the context of vulnerability is missing here. What is it used for? What is the intended motivation behind this vulnerability assessment?

6- The result section is presented very quickly in (few) paragraph(s).

7- The discussion is kind of back to front. It is rather wordy. I would say it can be significantly shorter and focused on the interpretation of the results given the aim of this study.

8- Conclusion session is very vague. I would suggest the authors to come up with few bullet points Conclusions which readers can have as take home message. Also, the discussion, my pervious comment, can evolve along the line of the conclusion (I mean bullet point conclusions can help discussion significantly).

My overall suggestion is to change the manuscript into technical note. I would strongly suggest shortening of the manuscript and remove wordy sections (for example, in discussion). Explain the decision tree visually and elaborate that in methology section. Present the forcing and geospatial data in the decision tree and also visually. I believe major revision is inevitable.

With kind regards,

Shervan Gharari

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