Hydrology and Earth System Sciences Discussions

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2022-87

Anonymous Referee #2

Referee comment on "Poor correlation between large-scale environmental flow violations and freshwater biodiversity: implications for water resource management and the freshwater planetary boundary" by Chinchu Mohan et al., Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2022-87-RC2, 2022

This manuscript presents a large-scale analysis of correlation between environmental flow violations and freshwater biodiversity. The authors have assembled an impressive data set and the results are discussed with management implications. Overall, I think the manuscript is well written. Below I provide some comments to the author, which I hope can help improve the manuscript.

This manuscript is mostly about correlation analysis. However, it is not clear to me from the manuscript what correlation analysis method was used by the authors and justification was not provided.

A second comment is on the use of correlation only. Why look at this on a one vs. one variable basis? Why not develop appropriate statistical approaches to look into the effects of the explanatory variables at the same time. which can also provide statistical significance?

I am not sure if Box 1 is needed or if it follows the HESS journal guidelines. Why not just provide these paragraphs in the manuscript text?

Data: While Table 1 provides a nice summary of the various data in this study, a flowchart diagram is strongly recommended to help readers to understand the different underlying layers, e.g., the different variables, the different EF calculation methods, the different GCM models, etc.

Data: For S and F, the authors says that these variables are normalized. Please be more

clear on the normalization.

Line 294: Is it redundant to list Middle East, Iran, and Iraq?

Line 327: I don’t think “negative trend” is the right word choice.