

Review of ***Sediment and nutrient budgets are inherently dynamic: evidence from a long-term study of two subtropical reservoirs*** by Katherine R. O'Brien, Tony R. Weber, Catherine Leigh and Michele A. Burford

### General comments

The revised paper by O'Brien et al. has been substantially improved. Especially more focus has been directed towards elaborating and underlining the importance of the study, beyond the importance of major flood events in estimating sediment budgets. I also find the changed title more descriptive. Therefore I find that the paper has increased its relevance for the general readership of HESS.

Generally I find that the authors argue well in their reply, and only leave a few points not clarified. Therefore I have three remaining comments that the authors could consider:

*Regarding the supplementary material:* I acknowledge that there is a substantial dataset as well as modelling work behind this paper which has also, as you state, led to the substantial supplementary material that you have included. Therefore I fully accept that for this particular paper you do not intend to condense the supplementary material. However, I maintain my critic that the amount of supplementary material is really on the edge of what is acceptable. At least I did not manage to read the paper without consulting the supplementary material. For instance I would much rather have had figure s3 or table s4 in the paper instead of table 1. In the guideline for manuscript writing to HESS it is stated (Point 2 under guidelines for supplement): "The supplement **shall contain only complementary information** but no scientific interpretations or findings/messages that would go beyond the contents of the manuscript." I think this goes for most journals and therefore I think that you should critically consider your use of supplementary material in future papers. If it gets too extensive and evolves to tell its own "story" it might be a better idea to split the study into two shorter and more concise papers. It is much easier for the reader which is ultimately the one you want understands your findings

*Table 1:* There is no reply from the authors to the comment made about this table. For future papers I give the advice that the authors explain their reasons for either following or not following the reviewer's recommendations rather than referring to the editor. This will save time, both for the editor and the reviewer. Since you have not argued why you prefer to keep the table as it is, I would like to repeat the comment: I find that table 1 is rather confusing. There is a lot of information and it is written in entire sentences which makes it hard to read. I think you give a quite comprehensive description of data in the text which makes the table redundant. I advise the authors to restructure the table using headings and cues rather the sentences or simply leave out the table, since the information is repeated in the text. Or explain why they think that this table extends the reader's understanding.

*Manuscript conclusions:* About the last two sentences in the Conclusion section the authors reply: "As outlined earlier, we differ from the reviewer's opinion on this matter, and await the Editor's decision". As far as I can see there is not an earlier statement about disagreement and

you also changed the conclusion section to be more true the common understanding of a conclusion: that is should conclude on the findings and main implications of the study and not elaborate on the findings. Therefore I am not sure what you mean with your reply, so just a few general words about conclusions that you might find useful for future work: Many journals, including HESS, do not require a conclusion, and you can either simply stop with the discussion or write a small summary if you do not like the repetition required in a conclusion. However, if you do choose to include a conclusion you should conclude in it and not use it as a perspectives section.

Generally I think that the conclusion is so widely used in scientific papers because it is actually a really good help for the reader to get an overview and recapture the main findings of often very complex studies. I agree that conclusions can be rather tedious for the authors to write but remember that they are very useful for the readers.

### **Technical corrections:**

Page 4, line 26: Please use “does not” instead of “doesn’t”.

Page 7 line 18: Please delete “be” after “was not”.

Page 15 line 12: I believe that “alternatives” should be singular?

Page 15 line 16: Please delete the last “.” in the sentence.