

Editor's comments.

The review of Silva makes a number of interesting points but I feel that a few key changes need to be made to avoid overly critiquing other work and questioning the utility of key figures at the expense of a more concise summary of the extensive literature review that was undertaken.

The comment on line 70: 'Yet, despite decades of research, models of this kind are deficient in addressing the entirety of restoring peatlands (i.e., the degradation, mid-restoration, and long-term impact stages) in an efficient, ecohydrological manner.' is to me a bit subjective and overly-critical of the models which may not be explicitly designed for restoration.

- **The term “deficient” is indeed a bit subjective. I was hoping to explain concisely that the *completeness* with which bog restoration is modelled is lacking, because individual modelling projects provide disjointed simulations of either past ecology, current hydrology, future global impacts, or other phenomena—but this information when synthesised cannot easily represent the whole restoration process where *ecohydrology* is the goal, especially when longitudinal studies are also less common.**
- **I have reworded the statement to reflect this while sounding less critical:**
 - o **‘Yet, despite decades of research, models of this kind *rarely* address the entirety of restoring peatlands (i.e., the degradation, mid-restoration, and long-term impact stages) in a *complete*, ecohydrological manner.’**

Section 1.1 and elsewhere: when possible, try not to make the authors the subject of a sentence or else the narrative begins to sound disjointed with the topics being many different people instead of how these people have created new knowledge. This admittedly can be a bit hard to do in a review paper, but a bit of work toward this end would improve the flow.

- **This is understandable. While Section 1.1 reads a bit more like a narrative than other sections, I will attempt to avoid this format for sentences across the board.**
- **This comes up a bit later in the discussion as well when describing peatland-related work carried out by different models. Most lines in this section were also adjusted.**

105: 'neglects' is a bit too critical if restoration wasn't the focus.

- **This is valid – here I was again going for conciseness and choosing one slightly more critical word compared to a number of smaller words.**
- **I have changed to wording to “does not include”.**

Table 4 wasn't referred to in the text and could go a long way to help synthesize results, which struck me as a bit short and missed an opportunity to provide a more synthetic analysis. I understand that the conventional categories of 'Results' and 'Discussion' can be difficult to fit in to the flow of a review manuscript, but given the literature review I feel that they could be.

- **This was a mistake from the previous revision; I accidentally took a chunk out referencing Table 4 that should have been retained.**
- **I have inserted this section and provided some additional remarks.**

Are Figures 2-7 from other papers and if they have already been published is there permission to re-publish? I don't feel that any of these are necessary to describe results although an exception could perhaps be made for Figure 4 and perhaps Figure 7 but the latter seems like it may be a re-print. Looking at Figure 10 in Jaenicke et al. it is, but the work is available under a CC noncommercial license so it can be used. I guess I'm just confused as to why many of the figures are necessary and some like Fig. 5 aren't rendering on the page in sufficient quality although this may be due to the word processing program rather than the native resolution of the figure.

- **I was considering this myself – but I wasn't sure if it may be visually helpful for readers to break up the discussion of myriad model details with diagrams showing how some of them may operate.**
- **In terms of permissions, as far as I could tell for all of these diagrams it appeared that citing the authors when describing the images would be sufficient, and for the LPJ diagrams I recall the model's website stipulated that no copyright or citation was necessary to use the images.**
- **After re-reading the final discussion, I believe Figures 4 and 7 could be retained to provide illustration of restoration-specific modelling, which is what I've done for this resubmission.**
- **However, if it is too much of a hassle to chase down permissions, or if it may appear confusing to readers, I am happy to remove all figures after Figure 2.**

Thanks very much for your suggestions and criticisms to bring this paper to a stronger and more informative level.

--MPS