

Reviewer 1

[no new changes]

Reviewer 2

I appreciate the changes made by the authors to address my specific comments. However, I still reiterate my initial stance that the discussion section does not represent an insightful and meaningful contribution to the paper. I maintain that the manuscript would be greatly improved by a reorientation of the discussion section to process-based complexity in the relevant modelling platforms.

(For context, below is what was suggested in the first round)

“...The discussion section is rife with speculative statements, which as far as I can tell are unsupported assertions by the authors on the “likelihood” of future model developments and work that will be conducted. I personally do not feel that the discussion adds substance to the article, and should be reorganized and rewritten...”

...My suggestion for the discussion section would be to categorize models by level of process complexity, and not restrict the discussion to (largely) *ecosys*, *CoupModel*, and *DigiBog* ... By organizing the discussion section along the spectrum of process complexity I think this review will be more valuable and integrate a larger number of studies and approaches, each with their own strengths and weaknesses.”

[Response: I concede that while we increased our effort to demonstrate the relevance of themes corresponding to different modelling ends, organising the discussion around the means of modelling by focussing on process-complexity will provide added benefit to readers.]

[Changes made: the discussion was reworked extensively, where much of the thematic analysis is retained in a “synthesis” portion at the end. Tables and supplements related to “top three” models were removed, and new figures outlining examples of model schematics are included instead of some model outputs to provide additional context.]

Specific Comments:

- L237-245 duplicated lines

- L312-316 duplicated lines

[Response: On my end, I do not see duplicated lines. Perhaps it was a downloading glitch. If this issue persists, please let me know.]

Thanks again for these criticisms and I hope the overall result is a satisfactory improvement to the review. --M.P.S.