

BAE et al: Dear Referees, Thank you kindly for reviewing the manuscript a second time and catching a few additional changes that could be made to better this manuscript. Our specific responses are below in bold text.

Anonymous Referee #3 suggestions for revision (August 24, 2023)

I would like the authors to reconsider my previous suggestion on the quantification of modeling uncertainty because (1) the one-value modeling result is vulnerable, and (2) it's not difficult to quantify uncertainty (e.g., generating error bars) for the modeled results in Fig. 2.

BAE et al: Error bars were added to Fig. 2 from propagating the standard error representing the interannual variability of modeled pools and fluxes in the last ten years of the experimental simulations.

Anonymous Referee #2 suggestions for revision (September 4, 2023)

GENERAL COMMENTS

The authors addressed the comments raised by myself and other reviewers sufficiently, in my opinion (e.g. on modified parameterizations vs model structure, (organic) soil layers in situ vs models, generalizability). I therefore recommend acceptance of this manuscript, pending a few technical corrections to be made.

SPECIFIC COMMENTS

Line 746 – Should be “increasing the turnover time (...)”, as I suggested in the previous round of review? : increasing/longer turnover time implies slower turnover, e.g. Table 1.

BAE et al: Thank you, change made.

Table A4 – Second line for vegetation is referred to as NPP here, but represents ANPP with an equal observed value in Table 2. Please check and correct.

BAE et al: The modeled values are NPP, and observed ANPP, in this table. This is noted in the footnote of the table (A4).

TECHNICAL CORRECTIONS

Line 268 – “increases in the turnover time” ?

BAE et al: Change made.

Line 270 – “a 25-57% reduction in ligninolytic enzyme activity”

BAE et al: Change made.

Line 790 – “modeled” (one “l”) in American English? Also edit elsewhere in the manuscript if applicable.

BAE et al: Change made.