

Comment on bg-2021-65

Andreas Heinemeyer

Community comment on "Effects of peatland management on aquatic carbon concentrations and fluxes" by Amy E. Pickard et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-65-CC2>, 2021

Some more comments:

0) Table 1 could do with some information on slope within each sub-catchment (as this will influence runoff and erosion and residence time). Maybe some information on this can be added?

1) The Figure 1 could be improved by choosing a different colour for the catchment outline of Drained, Restoration, Non-drained. Currently it is easy to overlook this (font could also be bigger and bold for the conditions (e.g. Drained).

2) To my knowledge the Ball (1964) LOI conversion has never been tested for POC from peatlands. Our comparison did not provide good results and C/N analysis provides a better alternative. Could this have impacted the results?

3) Table 4 correct NS to ns in last column.

4) Fig. 4 This is a nice graph but more informative would be to have the discharge expressed per unit of sub-catchment area (to allow a weighted comparison).

It is good to see the BACI approach discussed - we need more of it - and also the various C export aspects (although I have been wondering about how CO₂ evasion from streams might actually be from aquatic organisms unrelated to the actual peat body and its C balance - they fix and respire C as well !).

5) Finally, I wonder about a mention in the discussion around the fate of the exported C. We really do not know yet how much of the DOC & POC will be 'lost' via stream and river transport. The results vary a lot and the measurements were often artificial (cuvettes), possibly not accurately mimicking temperature and light conditions (in stream/river conditions). Further research is needed ...