

Biogeosciences Discuss., referee comment RC1
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Comment on bg-2021-65

Anonymous Referee #1

Referee comment on "Effects of Peatland Management on Aquatic Carbon Concentrations and Fluxes" by Amy Elizabeth Pickard et al., Biogeosciences Discuss.,
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The manuscript represents a case study related to peatland management's influence on aquatic carbon concentrations and fluxes in the UK. Peatland restoration actions are of interest in scientific communities globally and especially in the northern hemisphere where peatlands have been traditionally been used for active land use purposes. In overall study is well written. All information about the influence of peatland management actions on carbon dynamics is important to document and share with the scientific community and land-use managers. Few further suggestions for authors to improve their manuscript and analysis

The authors state already in the abstract that long-term monitoring is needed. I fully agree with them and was wondering that since measurement for this study has been done already ~10 years ago (2008-2010) may authors have some new data to be added to the time series? This would strengthen results a lot and give also long-term perspective.

Authors should use "specific discharge, l/s/km²" instead of discharge eg in fig 4. This would enable better comparison between the catchment as their catchment size varies. Also, non-drained and restoration sites dry out (no discharge) during several periods. Authors need more to discuss that how this is influencing their concentration and fluxes.

One of the author's main conclusions is that future studies should use a before-after-control experiment. I fully agree with the statement but would like to note that this procedure has been already implemented to monitoring programs over 10 years ago for example in Fenno-Scandinavian countries. Also, there are several studies done using the before-after-control-impact approach related to peatland restoration and authors should update their references.