

Interactive comment on “Fluvial organic carbon flux from an eroding peatland catchment, southern Pennines, UK” by R. R. Pawson et al.

R. R. Pawson et al.

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There were a number of general comments for improvements in terms of descriptions made by both referee's. These are gratefully noted and changes made in the final manuscript where appropriate.

One of the main points raised by both reviewers of this paper was the temporally restricted nature of samples used for the DOC-pH calibration and the potential for greater errors associated with this calibration in the range below pH 4. We have therefore investigated the relationship further and subsequently agree with the referees that the calibration is not robust in the low pH range.

As such, we have changed the methodology used for the calculation of DOC flux. We now use Method 5 from Walling and Webb (1985) for DOC flux estimation. This

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approach is well established in the literature. This change in approach has altered the estimate of the annual DOC load, which is now 5.85 t C or 15.4 t C km²a⁻¹. The original estimate using the DOC-pH calibration approach was 7.55 t C. Further to this alteration, the POC flux estimate has also been adjusted. This, like DOC, is now estimated of the 2006 calendar year. This means that both fluxes are estimated for the same period of time, satisfying a further comment made by the referees. The final POC flux estimate for the catchment is 24.59 t C, or 64.71 t C km²a⁻¹. The previous calculation predicted POC flux 33.24 t C. Overall, POC now accounts for 76.2 % of OC flux from the system, whereas previous this figure was 82 %. There has therefore been little change (~ 6 %) to the relative significance of POC and DOC estimates for UNG, and as such the main points of the paper remain the same.

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