



## **Controls upon DOC flux from UK rivers - flux at source and losses in stream.**

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This study set out to examine the controls upon fluvial DOC flux from UK catchments. The study calculated the DOC flux from 180 catchments from throughout the UK for periods between 2001 and 2007. These catchments came from across the UK and included a range of soils and land uses, equally, the study considered catchments varying in scale from 40 to 10000 km<sup>2</sup>. For each of these catchments the soil, land use and hydrology were characterised and then multivariate statistics were used to assess controls upon the DOC flux. The study has found:

- i) Significant roles for: urban land, grazed land, organic soils, organo-mineral soil and mineral soils.
- ii) The approach is able to define an export equation that gave export coefficients for each land use and soil type found to be significant.
- iii) The modelling approach suggests that the flux of DOC from the UK is 0.9 Mtonnes C/yr.
- iv) The approach was able to estimate the loss of DOC flux with increased catchment area and suggests that in-stream losses of DOC across the UK were linear with increasing scale and amounted to 0.63 Mtonnes C/yr.
- v) The derived equations means that DOC export can be mapped across the country at the 1km<sup>2</sup> scale.

The study considered a separate set of peat-covered catchments at scales less than 40 km<sup>2</sup> in order to assess linearity of losses across all scales.