



Hydrological pathways of dissolved organic carbon: a case study from an upland peat catchment, northern Scotland.

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The effects of land use and management on organic carbon exports in the Dyke catchment of the River Halladale (northern Scotland) have been investigated, and results provide insight into the impact of disturbance caused by afforestation and tree felling for restoration (i.e. RSPB EU Life projects). Three study sites were chosen to represent forested, felled-to-waste, and intact peatlands within the Dyke catchment. The water table for the 2005-2006 felled-to-waste site has been raised by extensive drain blocking during the RSPB restoration project. Our results from DOC and POC measurements, factor analysis, end-member mixing, absorbance (E4/E6), and hysteresis analyses on stream water chemistry from the individual sub-catchments identified the major hydrological pathways during storm events, and conceptual models have been developed to explain DOC evolution during storm events. At all the sites, near-surface soil water is identified as the major controlling end-member for stream DOC concentrations.