



The use of high resolution digital elevation data to investigate controls on gully erosion in blanket peat

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Many of the upland mires of the U.K are extensively eroded. Severe gully erosion produces sediment yields of up to $500 \text{ t km}^{-2} \text{ a}^{-1}$. The erosion impacts on water quality, on the ecological status of the mires, and the loss of particulate carbon is the single largest component of the carbon flux from these systems. Significant progress in understanding the principal controls on peat erosion through detailed process work in small catchments but little is known about variability at the landscape scale. In this paper we use a high resolution LIDAR survey of the heavily eroded Bleaklow and Kinderscout plateaux of the southern Pennines to quantify spatial patterns of erosion. Investigation of potential topographic controls on these spatial patterns reveal that initial incision of gullies appears to be strongly controlled by fluvial processes but suggest that gully widening may be a weathering controlled process.