



## Impacts of peatland restoration on dissolved carbon loss from eroded upland peatlands in the UK

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Upland blanket peatlands in the UK are severely degraded by extensive gully erosion. Large areas have experienced complete vegetation loss. In the last decade landscape scale approaches to the restoration of eroded and bare peat have been developed in the Peak District National Park in northern England. Bare peat is re-vegetated with a nurse crop of grasses established by the aerial application of lime, seed, and fertiliser. The approach has successfully re-vegetated large areas of eroded bog and has been shown to dramatically reduce particulate carbon losses in runoff. The impacts of the treatment on water quality and dissolved carbon loss have not previously been fully assessed. This paper reports results from a small catchment study assessing the impacts of restoration practice in the Peak District. Data from five small catchments are presented one re-vegetated, one intact and three eroded/bare catchments. Bi-weekly water samples have been taken from the catchments between January 2011 and February 2012 and during July 2012 two of the bare sites were treated with lime, seed, and fertiliser. The data show that there are significant spikes in nutrient flux post treatment and marked effects on dissolved carbon which include initial spikes in DOC concentration but longer term reductions in DOC concentration. Monitoring is ongoing at these sites but the evidence to date points to at least a short term benefit in DOC flux reduction from this form of peatland restoration.