Geophysical Research Abstracts
Vol. 14, EGU2012-1112, 2012
EGU General Assembly 2012

Can carbon offsetting pay for upland ecological restoration?

F Worrall
University of Durham, Earth Sciences, Durham, United Kingdom (Fred.Worrall@durham.ac.uk)

Upland peat soils represent a large terrestrial carbon store and as such have the potential to be either an ongoing net sink of carbon or a significant net source of carbon. In the UK many upland peats are managed for a range of purposes but these purposes have rarely included carbon stewardship. However, there is now an opportunity to consider whether management practices could be altered to enhance storage of carbon in upland peats. Further, there are now voluntary and regulated carbon trading schemes operational throughout Europe that mean stored carbon, if verified, could have an economic and tradeable value. This means that new income streams could become available for upland management. The 'Sustainable Uplands' RELU project has developed a model for calculating carbon fluxes from peat soils that covers all carbon uptake and release pathways (e.g. fluvial and gaseous pathways). The model has been developed so that the impact of common management options within UK upland peats can be considered. The model was run for a decade from 1997-2006 and applied to an area of 550 km2 of upland peat soils in the Peak District. The study estimates that the region is presently a net sink of –62 Ktonnes CO_2 equivalent at an average export of –136 tonnes CO_2 equivalent/km2/yr.. If management interventions were targeted across the area the total sink could increase to –160 Ktonnes CO_2/yr at an average export of –219 tonnes CO_2 equivalent/km2/yr. However, not all interventions resulted in a benefit; some resulted in increased losses of CO_2 equivalents. Given present costs of peatland restoration and value of carbon offsets, the study suggests that 51% of those areas, where a carbon benefit was estimated by modelling for targeted action of management interventions, would show a profit from carbon offsetting within 30 years. However, this percentage is very dependent upon the price of carbon used.