



Trajectories of ecosystem service change in restored peatlands

Martin Evans (1), Emma Shuttleworth (1), Mike Pilkington (2), Tim Allott (1), Jonathan Walker (2), and Tom Spencer (2)

(1) University of Manchester, School of Environment and Development, Geography, Manchester, United Kingdom (martin.evans@manchester.ac.uk), (2) Moors For the Future Partnership, Edale

Peatlands provide a wide range of ecosystem services but across the world degradation of these systems through a range of human impacts has had a negative effect on the provision of these services. A wide variety of peatland restoration approaches have been developed with the aim of mitigating these impacts. Understanding of trajectories of change in ecosystem structure and function is central to evaluating the efficacy of these restoration methods.

This paper considers data on post-restoration trajectories of water table change, vegetation recovery, runoff production and water quality based on extensive data from peatland restoration work in the southern Pennines of the U.K. Data have been compiled from multiple restoration initiatives undertaken across the region, spanning up to 12 years post restoration.

The data show variations in the time scale of ecosystem change which are indicative of the process basis of the ecosystem trajectories. Rapid changes in runoff are controlled by physical changes to the peatland surface. These are contrasted with longer term evolution of vegetation and water table behaviour which suggest ongoing recovery as the ecosystem adjusts to the restoration process.

In order to assess restoration of ecosystem function, and so of ecosystem services, it is important that the process links between ecosystem structure and function are well understood. Establishing typical restoration trajectories can be of practical use in determining restoration project milestones, and can also provide insight into the nature of these process links.