



Apportioning sediment pressures on watercourses in grassland dominated agricultural catchments: a new framework for policy support

A. Collins (1), K. Black (2), D.E. Walling (3), and P. Wilson (2)

(1) Environment Group, ADAS, Woodthorne, Wergs Road, Wolverhampton WV6 8TQ UK
(adrian@collins2223.freeserve.co.uk), (2) Partrac Ltd, 141 St James Road, Glasgow, UK, (3) School of Geography,
Archaeology and Earth Resources, University of Exeter, Amory Building, Rennes Drive, Exeter EX4 4RJ, UK

Much of the effort directed towards monitoring and understanding soil erosion in the UK has focused upon arable farming systems, but the evidence base has suggested for some time that soil loss from grassland dominated landscapes can be enhanced by agricultural practises. Studies using composite source fingerprinting procedures have, for example, repeatedly highlighted the relative significance of managed pasture as a sediment source at catchment scale. Although traditional sediment sourcing approaches provide useful generic information for characterising sediment pressures, Catchment Officers working as part of the England Catchment Sensitive Farming Delivery Initiative (ECSFDI) also require higher resolution evidence to assist better the targeting of mitigation options. Accordingly, a new framework combining conventional sediment source fingerprinting and a dual signature tracking method has recently been tested in a grassland catchment in Cumbria, north-west England. The former provides information on the relative significance of generic sediment sources such as grassland or arable surface soils, damaged road verges and channel banks/subsurface sources, whereas the latter elucidates sediment loss from poached gateways or cattle tracks and wider areas of general hoofing damage in grass fields. Uncertainty and prior information are explicitly recognised by the novel framework.