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Does grassland management influence storm hydrographs at the field scale?

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Understanding the influence of land management on the hydrological fluxes in surface fed catchments is an important step towards improving our knowledge of the hydrological responses associated with sediment and nutrient transfer from fields to rivers. Grasslands are subject to artificial drainage, periodic reseeding and the application of fertilizer. The impacts of these management actions on field scale hydrological responses are poorly understood. Grassland dominated catchments occur in areas with high levels of precipitation and poorly draining soils. Grassland catchment hydrographs are typically flashy, due in part to their low soil storage and infiltration capacities. As part of an interdisciplinary project combining prior knowledge, field observation and modelling of sediment and nutrient fluxes from field and headwater grassland experimental sites, the influence of grassland management on storm hydrographs from 14 1 ha field lysimeters is being studied. The Rowden experimental research platform is located in the South West of England and has been the subject of a wide range of hydrological investigations. Collection of high temporal resolution rainfall and discharge data has enabled a data based approach to studying hydrological responses due to management treatments. The influence of pasture age and level of nitrogen fertilizer application on the hydrological responses of 1 ha fields will be explored. Variability between similar treatments will be compared to the variability between management treatments to test the hypothesis that grassland management does influence the hydrological response of poorly draining soils. A data based ap-

proach will improve our understanding of the importance of grassland management on hydrological driven fluxes of sediments and nutrients from grassland catchments.