



Modelling changes in European biomass and runoff

B.J. Irvine (1), M.J. Kirkby (1), and P.A. Carling (2)

(1) University of Leeds, School of Geography, Leeds, United Kingdom (b.j.irvine@leeds.ac.uk), (2) University of Southampton, Department of Geography, Southampton

Vegetation biomass evolves to reflect the prevailing climate and soil conditions. However, biomass can be influenced by grazing and agricultural pressure and the resulting equilibrium biomass varies from the potential. Biomass is influential in both runoff generation and subsequent overland flow.

The hydrological model at the core of the coarse scale PESERA model partitions rainfall and is applied to estimate monthly and daily AET, soil deficits and runoff at the European scale. The model is used to investigate current deviation from the potential biomass and estimate current deviations in runoff.

Through a series of field-flume studies and field observations detailed field work, carried out in a vegetated catchment, considers the hydraulics of overland flow. This work is reviewed to explore the up-scaling of the field data and consider the sensitivity of reduced flow resistance offered by reduced biomass.