



Hydrological and hydrochemical responses of the Allt a' Mharcaidh: inferences from experimental plots

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Recent interest in water quality in high altitude areas has highlighted the importance of hydrological flow paths in determining nutrient transfer along a hillslope. A sequence of 6 plots, spanning a gradient of 550m and a range of soil/vegetation types, are considered as a basis for the definition of larger-scale responses in the Allt a' Mharcaidh catchment in the western Cairngorm Mountains, Scotland. The methodology utilises terrain analysis and soils data to examine hydrological flow paths in both the vertical and lateral dimensions to ascertain a) the transport of nutrients from 6 sites along a hillslope continuum b) determine the importance of flow paths at a seasonal time step c) determine how and to what extent vegetation, soil and other catchment properties influence surface water quality in a montane ecosystem. Given that montane ecosystems are the first to respond to environmental pressures; this study provides important base line information to assess how a changing climate may influence hydrological pathways and chemical responses.