



Climate Change Impacts on Discharge and Nitrogen Loads in an UK Upland Catchment

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The potential impacts of climate change on the discharge and water quality in the channel of an UK upland catchment have been investigated using the CAS-HYDRO model. This study has considered the hydrological and nitrogen cycling response to the UKCIP 1998 medium-high emissions scenario for the 2080's period.

The CAS-HYDRO model is a fully distributed catchment hydrological model incorporating a spatially explicit representation of the nitrogen cycle. The model divides the landscape into terrestrial and aquatic domains with a detailed process representation in each domain.

The model has been applied to the Upper Rye catchment, North Yorkshire, UK. This catchment is characterised by a mix of heath land and grassland, with an area of 177 km². The model results show that there are likely to be significant changes in both the discharge and the water quality.