

## ***Interactive comment on “Using the UKCP09 probabilistic scenarios to model the amplified impact of climate change on river basin sediment yield” by T. J. Coulthard et al.***

### **Anonymous Referee #1**

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Review of ‘Using the UKCP09 probabilistic scenarios to model the amplified impact of climate change on river basin sediment yield’ by Coulthard et al.

This is an interesting and timely paper. It examines the issue of rainfall change under different potential climate scenarios and its effect on sediment transport and ultimately water quality. Such research is essential as using modelling approaches such as this is the only way that future climate and its effect on rainfall can be examined in a quantitative and statistically testable framework.

This is a well-written and easy to read paper that should be published. There are some

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minor comments below that the authors would do well to address before publication.

1. Section 4, 2nd para. The 50m grid scale is big for a hillslope and channel scale assessment such as this. It is fully recognised that the catchment is HUGE for such a study, and the run times are long, but can a 50m DEM provide the information/detail of hillslope and channel? Comment needs to be made about this.

2. As a modeller I understand the great strengths of this study and the approaches used. However, it would really help to convince the field people and non-modellers if there were some field data to help back these findings. Can evidence be derived from high magnitude floods to help convince the sceptics? This is a suggestion only as this may be difficult to do.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 8799, 2012.

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