



Using a new conceptual framework to assess sediment connectivity

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During recent years many conceptual frameworks for hydrological and sediment connectivity have been developed. Most of these studies however, did not take the measuring or inferring of connectivity into account in the development of their frameworks, which is why studies on measuring connectivity have stayed behind. In this paper a new framework is proposed which promotes measurements of connectivity. The basis of the framework are three subcomponents of connectivity: Geomorphological, Biological and Soil. These can be combined into a single connectivity metric and combined with measurements of sediment transport distances and/or yield. The new framework is applied and tested in three catchments in N-Spain, where a simple model for catchment sediment yield was developed and tested. Results for sediment yield predictions were relatively poor with R^2 between 0.24-0.41, although for water discharge better results were obtained with R^2 varying between 0.53-0.77. The next step is to apply the framework at smaller scales to include spatial variability of e.g. landforms and vegetation and achieve better results, not only for predicting yields but also for an assessment of sources and pathways.