



Sediment transmission and storage: the implications for reconstructing landform development.

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The late Holocene (last 3000 years) development of the lower Ribble valley (North-west England) displays evidence for a complex response to a sediment recharge event forced by land use change induced increases in erosion and sediment delivery. The deposition of fluvial sediments during the late Holocene was restricted to a series of depocenters separated by zones with no sediment accumulation constrained by older glacial and fluvial terrain. Apparent reach-wide correlations of fluvial terraces break down under the scrutiny applied by comprehensive and extensive radiocarbon control. Bayesian testing of relative order models show that large-scale geomorphic changes, e.g. the progression from one terrace level to another, were time transgressive between different depocenters. The different histories of sediment delivery and storage are probably a function of local- and process-scale variations in these depocenters, and reflect (dis)connectivity relationships within a reach in propagating a basin-scale change (superslug) in the sediment regime. Disconnectivity in the depositional regime through a fluvial reach limits what we can reconstruct in terms of sediment budgets, but radiocarbon dating of multiple palaeochannels offers considerable potential for landform-based research to uncover rates of change within individual depocenters.