



Understanding high magnitude flood risk: evidence from the past

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The average length of gauged river flow records in the UK is $\bar{25}$ years, which presents a problem in determining flood risk for high-magnitude flood events. Severe floods have been recorded in many UK catchments during the past 10 years, increasing the uncertainty in conventional flood risk estimates based on river flow records. Current uncertainty in flood risk has implications for society (insurance costs), individuals (personal vulnerability) and water resource managers (flood/drought risk). An alternative approach is required which can improve current understanding of the flood frequency/magnitude relationship.

Historical documentary accounts are now recognised as a valuable resource when considering the flood frequency/magnitude relationship, but little consideration has been given to the temporal and spatial distribution of these records. Building on previous research based on British rivers (urban centre): Ouse (York), Trent (Nottingham), Tay (Perth), Severn (Shrewsbury), Dee (Chester), Great Ouse (Cambridge), Sussex Ouse (Lewes), Thames (Oxford), Tweed (Kelso) and Tyne (Hexham), this work considers the spatial and temporal distribution of historical flooding. The selected sites provide a network covering many of the largest river catchments in Britain, based on urban centres with long detailed documentary flood histories. The chronologies offer an opportunity to assess long-term patterns of flooding, indirectly determining periods of climatic variability and potentially increased geomorphic activity.

This research represents the first coherent large scale analysis undertaken of historical multi-catchment flood chronologies, providing an unparalleled network of sites, permitting analysis of the spatial and temporal distribution of historical flood patterns on a national scale.