TITLE: Holocene flood occurrence in Wales under warm and cold climates

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ABSTRACT

Fluvial sediments deposited in floodplain and floodbasin environments in Welsh river catchments have yielded millennial-length records of high-magnitude floods during the Holocene (Jones et al., 2010; Jones et al., 2012). Flood chronologies have been constructed for catchments including the upper Severn, Dee and Teifi, using either sediment grain size or grain size proxies to identify major flood events. These records provide evidence for alternating flood-rich and flood-poor periods in basins draining the Cambrian Mountains during the Mid to Late Holocene and, in the case of the upper River Severn, of relative flood magnitudes during the past c. 3750 years. Initial comparisons of flood occurrence with available proxy climate records indicated a correspondence of high-magnitude flooding in Wales with regional wet periods and the negative phase of the North Atlantic Oscillation.

This study is focused on the patterns of flood frequency and relative flood magnitude in these Welsh river catchments during warm and cold climate periods during the Holocene. The climatic conditions associated with high flood frequencies and high relative flood magnitudes are identified and the effects of temperature changes on flood occurrence at centennial timescales are examined.

REFERENCES

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