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An assessment of flash flood risk in south-west England using the reconstruction of historical events

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An understanding of the frequency and magnitude of summertime flash floods is essential to urban development and emergency planning, to minimise the risk posed by such events. The risk of flash flooding in the UK is particularly high in South-West England due to a combination of physiographic and meteorological factors. This was evident in the flooding in the coastal village of Boscastle in August 2004, where the floods caused severe damage to property and received much media interest. Exactly 52 years earlier than the Boscastle event, a similar flash flood at Lynmouth caused much devastation and the deaths of 34 people. These events might be considered to be isolated or erratic, but this study demonstrates they are examples of ongoing and frequent summertime flash flooding in this region. A database of historical flash floods dating back to 1770 was compiled for this region and then five events were selected for a detailed reconstruction. Peak flows were estimated by hydraulic analysis using observed water levels and standard UK flood estimation techniques were employed to estimate return periods. The return periods in each case were in excess of 100 years and through a further statistical analysis an average recurrence interval of at least one event every 4.4 years was derived for the region as a whole.