

On the rise?

Are big floods becoming more common? Historical records could hold the answer, says Neil Macdonald.

Sensational headlines in newspapers suggest that severe flooding is on the increase and that this can be blamed on global warming. But we're surprisingly vague about how common big floods were in the past. Determining flood frequency is difficult in many parts of the country because river flow records are often poor—few exceed 50 years. Since exceptional floods are, by their nature, only occasional, it's hard to tell if they are becoming more frequent.

Historical records could be part of the answer. Most large towns and cities have historical flood records if you delve deep enough. They are often found in old documents, such as estate or trade records, engineering work reports, military records, newspapers or generic local histories. And there are other non-written sources of information, such as flood stones, or flood marks on bridges or buildings, and even trees. Flood stones are sometimes put down to mark the extent of a flood. They often only document the largest event, as later and larger floods wash away stones marking smaller floods. By contrast, flood marks (sometimes called epigraphic markings) record the height of the water. After the floods of 2000, several markings appeared at sites along the River Ouse, Yorkshire, and at some sites these markings document several events. Marks are sometimes made permanent, perhaps chiselled into a bridge or wall. Over time these can provide a detailed and valuable flood record that can be resurveyed to identify the exact level or extent of a historical flood.

But resurveying marks or collating historical records is time consuming, and so they have often been disregarded. Instead, UK flood sizes are usually estimated by a process that involves pooling river flow data from a number of similar catchments located anywhere within the UK. A few years ago, the British Hydrological Society produced a *Chronology of British Hydrological Events* that provides a centralised and freely accessible database, cutting down the collating task. I used these historical records and collected additional records to reassess the size and frequency of floods in the cities of York and Perth, and found they backed up conventional estimates. But that's not always the case. When I re-examined records for the River Trent at Nottingham, the historical analysis gave very different results. Whether the conventional and historical methods agree or not, using both should at least help us know how sure we can be about flood frequency in the past.

Do you have information about British floods before 1933? You can find out more about the British Hydrological Society's *Chronology*, and perhaps contribute a record, at www.dundee.ac.uk/geography/cbhe/. For more information about the society, see www.hydrology.org.uk/.

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Left: The 2000 flood mark on Skelton Wall, York.
Below: Flooded houses, York.

