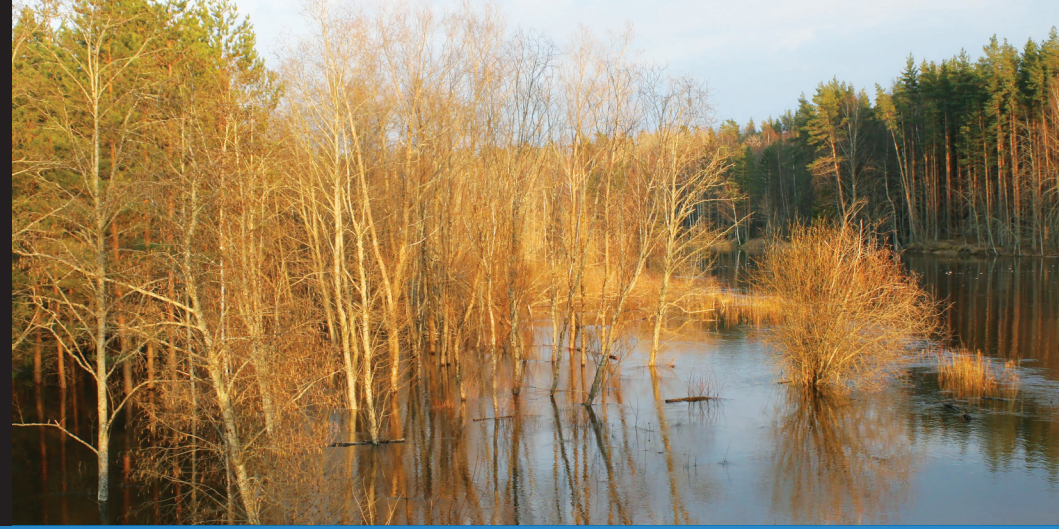


WHAT WE CAN LEARN FROM 2015 /2016'S EXTREME FLOODING?



November 2015 to early February 2016 was an incredibly challenging time for home and business owners in the UK. Throughout much of the country, particularly the North of England and West of Scotland, flooding caused millions of pounds of damage - and caused around 16,000 properties to be flooded in England in December alone.

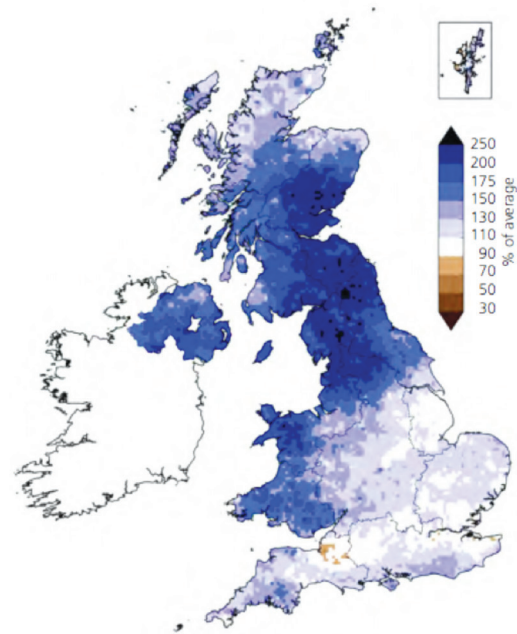
Though increased coverage in news outlets resulted in a higher awareness of flooding, and in some cases better chances of preemptive action, a new report by the Centre for Ecology & Hydrology (CEH) in affiliation with the British Hydrological Society shines new light on the totality of this damage, and offers interesting insights into the strengths and weaknesses of last year's strategy.

High pressure from the outset

One of the main issues with the 2015-16 winter flooding was that the pain points were divided across a number of different areas.

According to the report, "the 21st century thus far has seen a number of very widespread flood episodes but none with the combination of severity, spatial extent and repetitive nature which marked the 2015/2016 flooding."

From early November to December, the UK was hit by a number of heavy storms and heavy rainfall. This high rainfall intensity and prolonged duration was noted by the study as "the major contributory factors to flood risk in the UK."



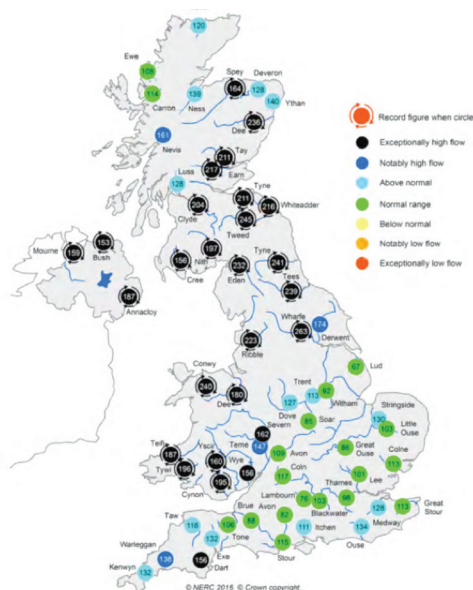
Source: CEH - Rainfall anomaly maps (% of 1971-2000 average) for the Nov 2015-Jan 2016 period

This prolonged deluge of water meant that come December, many catchments, rivers and other water bodies were at capacity and flooding was heavy throughout the country. By Boxing Day, more than 200 flood warnings and 300 flood alerts were in operation.

Early on, many catchments in the UK had reached new peak flows, which meant that floods were much more common as poor weather conditions increased. Carlisle was one of the more devastating examples, with over 1,930 properties experiencing flooding.

Impacts of flooding

The impact of flooding damage in last year's winter was extensive and costly. Overall the final estimated cost of damage to homes and businesses in winter 2015/16 is estimated to be around £1.3 billion. This does not bring into account the immeasurable cost on people's livelihoods.



Source: CEH - Mean river flows for November 2015 to January 2016 expressed as a percentage of long-term average flows. New period of record maxima are circled with arrows.

Dr Ed Henderson, co-author of the article, described the emotional damage which can be caused by flooding. "Thousands of Cumbrians, like people in other flood-affected parts of the country, have seen their lives upturned," he said. "Many have experienced life-changing financial losses and incredible stress. Speaking with flood victims, the words that come out are despair, fear and anxiety – fear of flooding again and the anxiety of an approaching winter."

Did flood prevention measures not work?

Though on the outset it may seem like flood prevention measures had little impact on the overall damage, the study notes that many flood defences worked effectively. The main issue was that the extended nature and severity of flooding meant that many flood defences were overtopped.

It is also estimated that flood defences protected over 20,000 properties in December alone. Though this is small relief to the many people who had their homes and businesses flooded, it does indicate that flood defences helped. As the report says: "Flood defences substantially reduced the scale of the inundations, and the overall number of properties flooded

may be considered relatively moderate in the context of the record rainfall and the runoff experienced through the winter of 2015/2016."

What does this mean for this year's winter?

Though the last few years have demonstrated that trying to accurately predict the weather and plan for winter flooding is incredibly difficult, it has however highlighted a number of key points which do provide insight.

The first is that the weather conditions are on average more volatile and extreme than many years previous. December last year, for example, was both the wettest and warmest on record for the UK.

Secondly, increased flood awareness and education is incredibly important in preparing and mitigating the effects of flooding and severe weather.

According to the report: "Flood resilience has also benefitted from the notable improvement in weather forecasts, particularly in the three to five day timeframes, together with the range of flood warning capabilities operating across the UK and the ability to map vulnerable localities with greater precision, has contributed to an enhanced level of preparedness."

This again highlights the influence that staying informed can have for everyone impacted by the effect of flooding. Prior warning of incoming flooding, catchments being over run and severe weather is vital in helping to minimise the impact and scope of flooding. With an early warning system homeowners are better able to remove their possessions and get to safety. This is more important than ever with the UK's sporadic, often extreme winter weather.

Citation

Marsh, T.J.1 , Kirby, C.2 , Muchan, K.1 , Barker, L.1 , Henderson, E.2 and Hannaford, J.1 2016. The winter floods of 2015/2016 in the UK - a review. Centre for Ecology & Hydrology, Wallingford, UK. 37 pages.

Affiliations: 1 Centre for Ecology & Hydrology; 2British Hydrological Society. ISBN: 978-1-906698-61-4

Website summary

November 2015 to early February 2016 was an incredibly challenging time for home and business owners in the UK. Throughout much of the country, particularly the North of England and West of Scotland, flooding caused millions of pounds of damage - and caused around 16,000 properties to be flooded in England in December alone. A new report by the Centre for Ecology & Hydrology (CEH) in affiliation with the British Hydrological Society shines new light on the totality of this damage, and offers insights into the strengths and weaknesses of last year's strategy.

Read our in-depth LinkedIn article to find out more.

Author Contact Details

Aquaread • Bridge House, Northdown Industrial Estate, Broadstairs, Kent, CT10 3JP, England • Tel: +44 (8)442 117 360 • Email: info@aquaread.com

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