Floods to become commonplace by 2080

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Flooding like that which devastated the North of England last year is set to become a common event across the UK in the next 75 years, new research has shown.

A study by Dr Hayley Fowler, of Newcastle University, predicts that severe storms - the likes of which currently occur every five to 25 years across the UK - will become more common and more severe in a matter of decades.

Looking at 'extreme rainfall events' - where rain falls steadily and heavily for between one and five days - the study predicts how the intensity of these storms may change in the future.

Dr Fowler found that across the UK, the amount of rain falling during one of these extreme events was likely to increase by up to 30 per cent by 2080. This increase is most likely to occur in autumn, winter and spring when the ground is already saturated, posing the biggest threat of flooding.

Dr Fowler, Reader in Climate Change Impacts at Newcastle, explained: "Predicting how extreme rainfall might change many years in the future is very difficult because events can be quite localised, especially in the summer.

"You only have to think about how difficult it is for the Met office to predict the weather two or three days in advance - the overall picture for the country tends to stay the same but local weather patterns can change

quite dramatically.

"By taking a much more detailed look at the results from different regional climate models, we have created a more accurate picture of how wet Britain will be by 2070.

"What the data quite clearly shows is that we're going to see far more of these extreme downpours in years to come, putting more and more homes at risk from flooding, particularly in autumn and winter months when the ground is already saturated."

The research, published online today in the *International Journal of Climatology*, looks at changes to seasonal extreme rainfall across the UK by 2070-2100.

Dr Fowler, who worked on the study with Dr Marie Ekstrom from Exeter University, examined seasonal rainfall data from 13 Regional Climate Models for nine regions across the UK and used this to study the projected changes.

Consistent with global warming, the team found that as the air becomes warmer and is able to hold more moisture, Britain will get wetter.

In general, the study suggests larger changes to the intensity of short duration extreme rainfall events - those lasting one or two days. Northern and western regions of the UK are predicted to be worst hit.

Dr Fowler added: "Unfortunately, we still have least confidence in the model's predictions for the summer months and it is still highly uncertain how summer flash flooding such as the Hull and Hereford and Worcester floods in 2007 will change.

"What our data does show is that floods are no longer going to be freak

events. All 13 models we looked at predict increases in extreme rainfall in winter, autumn and spring by the 2080s although the percent increase varies.

"This has major implications for flood risk management. We need to be looking now at where we build new homes, drainage systems and water storage in order to protect our homes and businesses from flooding in the future."

Episodes of short-term extreme rainfall - such as was seen in Morpeth in 2008 - are predicted to increase in intensity by between 15 and 30 per cent.

In winter, one day downpours are predicted to increase in intensity in all regions with Scotland and northern England seeing changes of more than 20 per cent. Smaller increases are projected for southern regions, particularly south-east England.

In autumn, some regional climate models project potentially very large increases in extreme rainfall, with a rise of up to 60 per cent in some regions such as north-west England.

Source: Newcastle University