

# High risk of unprecedented rainfall

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## 1 in 3 chance of a new monthly rainfall record in at least one region each winter.

In the last few years several rainfall events have caused widespread flooding in the UK. In winter 2013/14 a succession of storms hit the UK leading to record rainfall and flooding in many regions including the south east. December 2015 was similar, and Storm Desmond hit the north-west causing widespread flooding and storm damage.

By their very nature extreme events are rare and a novel research method was needed to quantify the risk of extreme rainfall within the current climate.

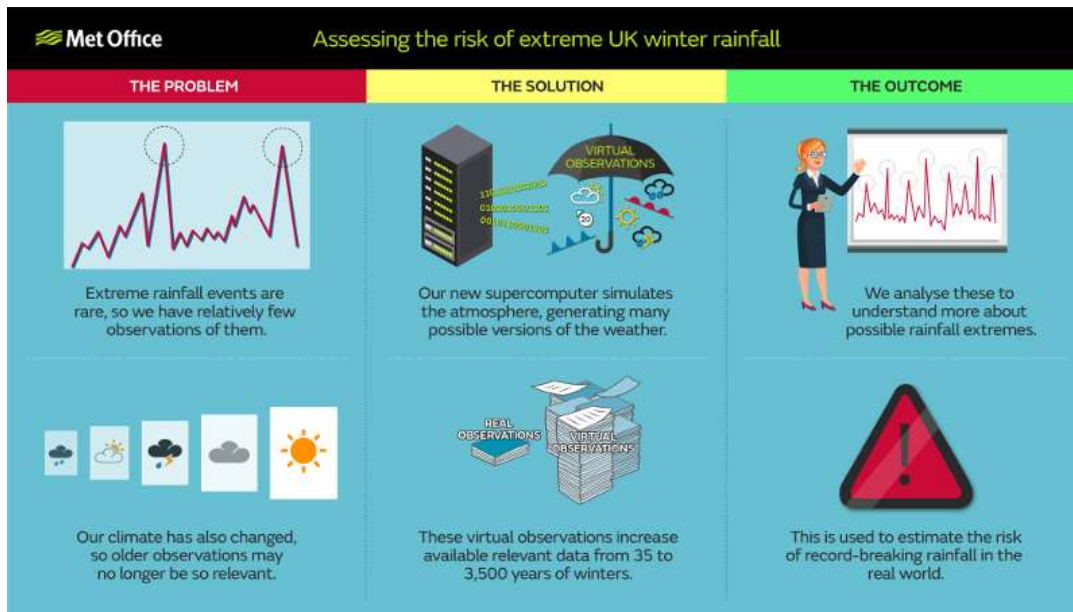
[Professor Adam Scaife](#), who leads this area of research at the Met Office said “The new Met Office supercomputer was used to simulate thousands of possible winters, some of them much more extreme than we’ve yet witnessed. This gave many more extreme events than have happened in the real world, helping us work out how severe things could get.”

Analysing these simulated events showed there is a 7% risk of record monthly rainfall in south east England in any given winter. When other regions of England and Wales are also considered this increases to a 34% chance.

### Assessing the risk of unprecedented rainfall



Dr Vikki Thompson, lead author of the [report](#), said “Our computer simulations provided one hundred times more data than is available from observed records. Our analysis showed that these events could happen at any time and it’s likely we will see record monthly rainfall in one of our UK regions in the next few years.”



The authors have named this novel research method the UNSEEN\* method to emphasize that this analysis anticipates possible events that have just not yet been seen. It was also used as part of the recent UK Government National Flood Resilience Review (NFRR)\* when the Met Office was asked to estimate the potential likelihood and severity of record-breaking rainfall over the UK for the next 10 years.

The research has demonstrated that, even with the current climate, it is likely that there will be one or more monthly regional rainfall record events, in the coming decade. This new use for Met Office computer simulations could also be applied to assess other risks such as heatwaves, droughts, and cold spells and could help policy makers, contingency planners and insurers plan for future events.

\* - UNprecedented Simulated Extremes using ENsembles

+ - <https://www.gov.uk/government/publications/national-flood-resilience-review>

The research [High risk of unprecedented UK rainfall in the current climate](#) was published in the journal nature communications