

260308 Reminder 13.03.26 NfWW No.108 Why was our winter so wet?

To what extent did climate change play a part in this winter's very wet weather and widespread flooding in parts of Britain. And to what extent did it play a part in the succession of catastrophic storms that hit southern Europe? Answers to both questions are important not just for understanding the recent past, but for what they suggest about the future.

The Met Office is clear about the British winter, saying: 'This winter has felt, for many, like a season stuck on repeat. From December through to February, the UK has experienced a conveyor belt of low-pressure systems, prolonged rainfall, and little sunshine.'

Most scientists think this stuckness was not directly caused by climate change but by a stationary jet stream over the Atlantic, which steered wet weather across the UK and southern Europe. (However, there is ongoing scientific debate about whether climate change may influence the behaviour of the jet stream itself, potentially increasing the likelihood of such persistent patterns.)

While this was happening there was a blocking high pressure system over northern Europe which slowed the progress of the storms, causing them to stall.

The primary part that climate change played in this was to 'amplify' the effects of these storms. Bear in mind that this winter, while certainly not sunny, was very mild. Warmer air can hold more moisture, approximately 7% more for every degree Celsius of warming. This means that when it rains, downpours are likely to be much heavier – a characteristic that is observed worldwide.

What can we say about southern Europe? There they had it much worse than in Britain, particularly between mid-January and mid-February. Nine named storms struck in quick succession bringing torrents of rainfall and fierce winds, in particular to Portugal, Spain and Morocco, resulting in some 50 deaths, 12,500 evacuations and tens of thousands of damaged properties.

Observational analysis of the most extreme rainfall over the most affected regions by a World Weather Attribution (WWA) scientists confirmed the amplifying effect. However, their modelling did not show climate change having a significant effect on the *likelihood* of the storms – only on their *intensity*.

This means that this winter's wet and stormy weather in Britain and southern Europe was shaped by atmospheric circulation patterns and not directly caused by climate change. The primary role of climate change was to intensify its effects. As the atmosphere warms this intensifying effect will itself magnify. And this will mean that we shall have wetter winters, and heavier rainfall when storms occur, though it is as yet unclear whether storms will be more frequent.

This prediction would need revisiting if the Atlantic Meridional Overturning Circulation – the wider ocean system of which the Gulf Stream, which keeps our winters mild, is a part – were to weaken substantially. The evidence is that it is already slowing.

One thing is sure: the system is complex, but the overall trends are not.

Joe Human

sustainablekeswick@gmail.com