Met Office

Heavy rainfall

- Although rainfall observations show large variability in annual, seasonal and decadal rainfall, it has generally become wetter, particularly during winter.
- Climate projections indicate that on average, winters will continue to become wetter and summers drier, though natural variability will mean we will continue to see individual years that don't follow this trend.
- As our atmosphere warms it can hold more moisture, roughly 7% more per 1°C of warming. This can lead to more intense and frequent downpours.
- In autumn, the UK will likely see more days with rainfall totals over 50mm, particularly for western areas of the UK. For summer, despite an overall drying trend, there will likely be future increases in the intensity of heavy summer rainfall events (see 'Intense rainfall from thunderstorms' section).
- It is important to note that there are other factors that contribute to flooding, such as land use, local hydrology and preceding conditions.

Extreme cold and snow

- Despite the warming climate, extreme cold events still occur in the UK due to natural variability.
- The decrease in the frequency, duration, and intensity of these events over recent decades is clearly linked to the observed warming of the planet and can be attributed to human activity.
- For example, attribution studies have found that the unusually cold European winter of 2009/2010, UK cold snap in March 2018 and the cold UK spring of 2013 would be much more likely without human influence on the climate.
- Future UK winter climate will still be variable year to year, so severely cold winters are still likely to occur – just less often – so it is important to remain resilient to severe winters when they do occur.
- Snow in the UK is very conditional on the setup of the weather, it is not just low temperatures that lead to snow. Overall, projections show that the frequency of snow events will decrease in the UK in future. There is less certainty about the intensity of future snow events due to more complex atmospheric interactions.

Windstorms

- In the recent climate, there is no evidence of positive or negative trends in windstorm number or intensity. Trends in windstorm numbers are difficult to detect, due to how these naturally vary year-to-year and decade-to-decade.
- Windstorms can cause impacts from storm surges and high waves in coastal areas. These are expected to worsen as sea level rises.
- In future, most climate projections indicate that winter windstorms will increase slightly in number and intensity over the UK i.e. more winter storms, including disproportionately more severe storms, are projected to cross the UK. However, this has medium confidence because a few climate models indicate differently.