

Climate change is a reality

③ What will climate change look like?

Climate change projections suggest that Britain will experience increasingly warmer and drier summers, accompanied by milder but wetter winters. There will also be more extreme weather events.

But it doesn't feel warmer!

It is often difficult to reconcile the recent cold, wet summers with the fact that the ten warmest years on record have all occurred since 1994. However, what sticks in our minds is short term weather rather than long term trends in climate. We will probably see cold periods lasting for a number of years and apparent increases in summer rainfall,

but these will be blips within a more general warming trend and a tendency towards drier summers.

Climate change now and in the next 30-40 years is inevitable due to past greenhouse gas emissions. Beyond this timeframe, the amount of climate change will be determined by the emissions that we are producing now.

Weather and climate: what's the difference?

Weather describes atmospheric conditions over a short time period, and climate is how the atmosphere 'behaves' over relatively long time periods. Climate change means changes in the long-term averages of daily weather.

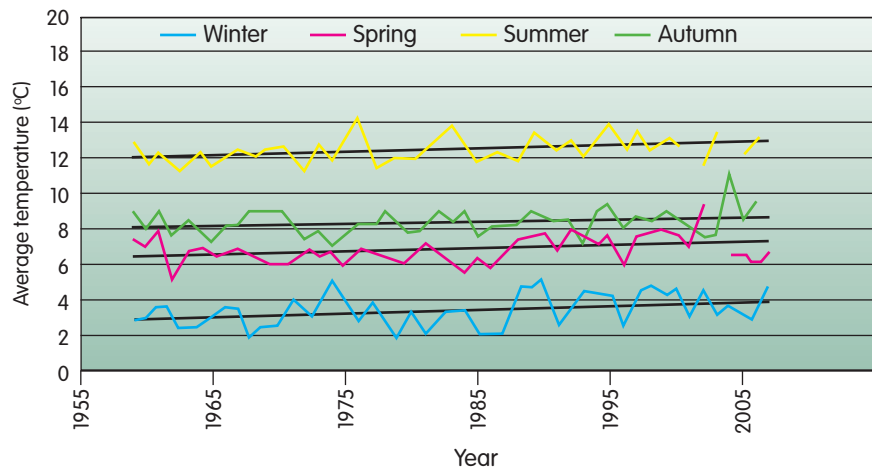
Climate change in the UK - key facts

- Climate change is happening, and a further increase in temperature of at least 2°C globally by 2100 is now inevitable due to past emissions.
- Mean temperatures are expected to rise in summer by 2.5°C in the Scottish Islands to 4.2°C in southern England by 2080 under a medium emissions scenario (UKCP09). Temperatures will rise by a smaller amount in winter.
- The growing season has lengthened and trees are coming into leaf up to three weeks earlier than in the 1950s (the study of phenology).
- Winters in the UK are likely to become wetter (by up to 23% by 2080 under a medium emissions scenario). Summers will become drier (by up to 24% under a medium emissions scenario). Many areas, especially southern England, are likely to become subject to more frequent and severe drought (UKCP09).
- Sea level rise of 31-44 cm will occur around the UK coast by 2095, based on a medium emissions scenario. This will lead to a decrease in land area (UKCP09).
- Heavy rain days (>25 mm) over most of lowland UK will increase by a factor of 2-3.5 in winter and 1-2 in summer by the 2080s under the medium emissions scenario (UKCP09).

Arctic regions are especially sensitive to warming and will see even larger increases in temperature. This could lead to the release of the huge quantities of methane currently stored beneath the Arctic. Methane is a greenhouse gas 25 times more powerful than carbon dioxide, and in a positive feedback loop could lead to further dramatic temperature rises.

Climate change projections for the UK are published by the UK Climate Impacts Programme (UKCIP). New (2009) UK Climate Projections give detailed predictions of climate under low, medium and high emissions scenarios for 2020, 2050 and 2080. They give information showing a range of probabilities for aspects of climate (temperature, rainfall, etc) in each case.

See <http://ukcp09.defra.gov.uk> or <http://ukclimateprojections.defra.gov.uk>



Temperature data has been recorded at Bedgebury Pinetum since 1960. Results so far show a slow, steady rise in all seasons since recording began.



One of the key predicted impacts of climate change is more extreme weather events. The headline-hitting flooding events of the last couple of years are certainly consistent with this aspect of climate change, but we cannot say that they are the result of climate change.

Summary

- Climate change is happening and an increase in temperature of at least 2°C globally is now inevitable due to past emissions
- Summers in the UK will be warmer and drier, and winters warmer and wetter
- Extreme weather events will become more common