

# LEEDS CLIMATE CHANGE

## The Science

### What affects Leeds's weather?



**Temperature** – The high altitude of The Pennines to the west creates an environment that is frequently cool, dull and wet. The city centre is likely to experience warmer temperatures than the surrounding areas due to the urban heat island.



**Rainfall** can be quite evenly distributed throughout the year as Atlantic storms bring rainfall to the area in autumn/winter and showery rainfall in summer from convection.



**Sunshine** - Compared to more coastal locations in Yorkshire, Leeds tends to have less sunshine hours due to its altitude and the development of convective cloud over inland areas in summer.



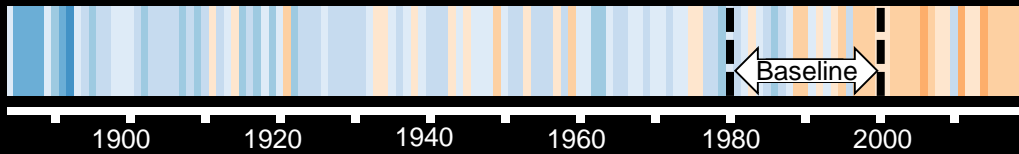
**Wind** - The strongest winds are associated with the passage of low pressure systems close to or across the UK. The Pennines to the west provide shelter from the prevailing westerly wind.



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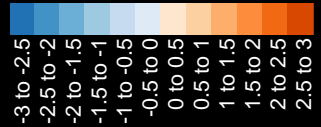
### How has Leeds's climate changed?

The Leeds\* climate stripes show how annual average temperature has changed since 1884, compared with a baseline average between 1981 and 2000.



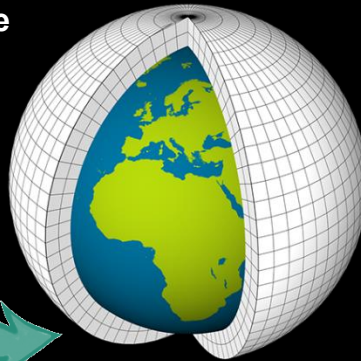
\*Based on HadUK-Grid data for West Yorkshire

Scale: Temperature difference in °C



### Calculating Leeds's future climate

The Met Office uses computer models to simulate decades into the future. These models tell us that increasing greenhouse gas concentrations in the atmosphere leads to an increase in global temperature – the basis for climate change.

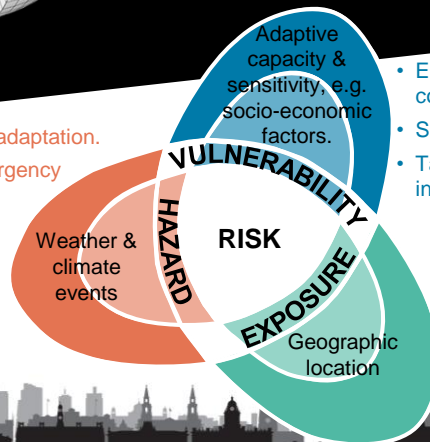


However, the climate is complex and small changes in global temperature can cause large changes to the weather patterns that we experience at a local level. To provide the best available information, multiple variations of the Met Office's latest global climate model are used to simulate the plausible future climate outcomes - this is known as a climate model ensemble.

### Turning data into a decision:

The impact of a changing climate depends on three key factors - the hazard itself, exposure levels and vulnerability. Actions to reduce these could, for example, include...

- Mitigation & adaptation.
- Climate emergency declaration.
- Global emissions reductions.
- UK carbon neutral 2050.



- Empowered & engaged communities.
- Supporting livelihoods.
- Tackling health inequalities.

- Long-term & integrated planning.
- Nature-based solutions.
- Flood defence schemes.

This factsheet is part of a set of prototype products, aimed at building a foundation of shared understanding and promoting robust use of the available UKCP climate change information.

The Climate Change series includes: (sample city shown)

**1 The Science**

**2 The Results Explained**

**3 UKCP Results**

**Find out more about ...**

**UK Climate Projections (UKCP)**

- <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp>

**Factsheets headline findings for the wider UK**

- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-land.pdf>
- <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/factsheets>

**How to download and use the UKCP data using the Climate Projections User Interface (UI)**

- <https://ukclimateprojections-ui.metoffice.gov.uk/ui/home>
- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---how-to-use-the-land-projections.pdf>

**The historical data used to produce the climate stripes**

- <https://www.metoffice.gov.uk/research/climate/maps-and-data/data/haduk-grid/haduk-grid>

**Representative Concentration Pathways (RCPs)**

- <https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-guidance---representative-concentration-pathways.pdf>
- [https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5\\_Chapter12\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter12_FINAL.pdf)

**OpenStreetMap**

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This work was supported by the UK Research & Innovation (UKRI) Strategic Priorities Fund UK Climate Resilience programme. The programme is co-delivered by Met Office and NERC on behalf UKRI partners AHRC, EPSRC, ESRC.

