

# BELFAST CLIMATE CHANGE

## The Science

### What affects Belfast's weather?



**Tides** – High tides can occasionally affect Belfast, even the city centre during storm surges in autumn and winter.



**Temperature** – The compact city centre area is likely to experience warmer temperatures in summer, but only when air blows from the land to the west. Air from the east or southeast in summer keeps Belfast slightly cooler due to the maritime influence.



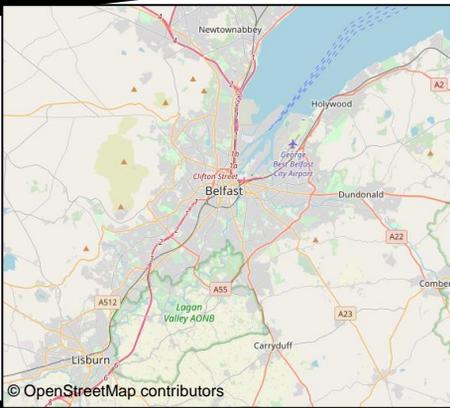
**Showers** – In spring and summer heavy showers developing further southwest along the Lagan Valley can give Belfast frequent heavy downpours or thunderstorms.



Belfast sits at the eastern end of the Lagan Valley surrounded by high ground to the north and south. Winter time inversions cause mist and fog to develop.

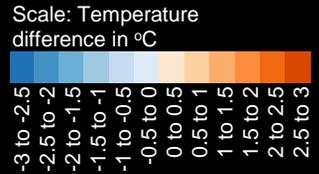
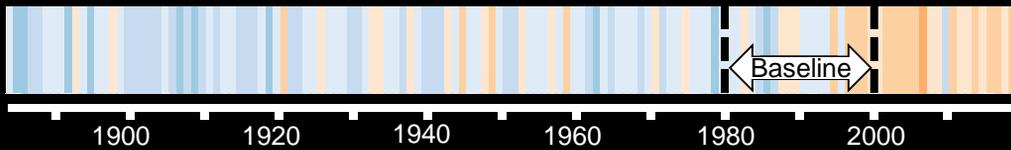


**Wind direction** – The funnelling effect of the Lagan Valley can create strong and very gusty winds across the greater Belfast urban area.



### How has Belfast's climate changed?

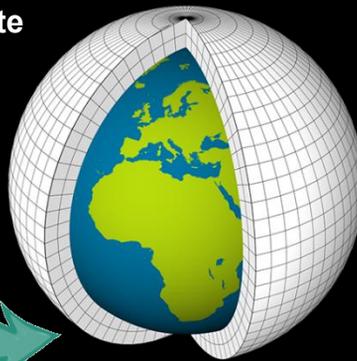
The Belfast\* climate stripes show how annual average temperature has changed since 1884, compared with a baseline average between 1981 and 2000.



\*Based on HadUK-Grid data for County Antrim

### Calculating Belfast'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.

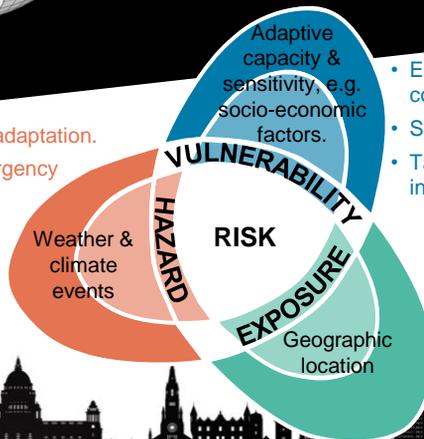


However, the climate is complex and small changes in global temperature can cause large changes to the weather patterns that we experience at a local level. To provide the best available information, multiple variations of the Met Office's latest global climate model are used to simulate the plausible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