GLASGOW CLIMATE CHANGE UKCP Results

There is an increased chance of warmer, wetter winters and hotter, drier summers.

Hot summers are expected to become more common. By 2050 there is a 50% chance of summers as hot as it was in 2018 (one of the warmest UK summers to date).

Although the trend is for drier summers in the future, the latest UKCP data suggests possible increases in the intensity of heavy summer rainfall events.

Sea levels will continue to rise under all emission pathways.

Under a high emissions pathway, the frequency of hot spells* rises from an average of once every 4 years to about 4 times per year by 2070.

*Hot spells = a maximum daytime temperature exceeding 30 °C for two or more consecutive days.

The UKCP headlines for the UK, are consistent with these results for Glasgow.

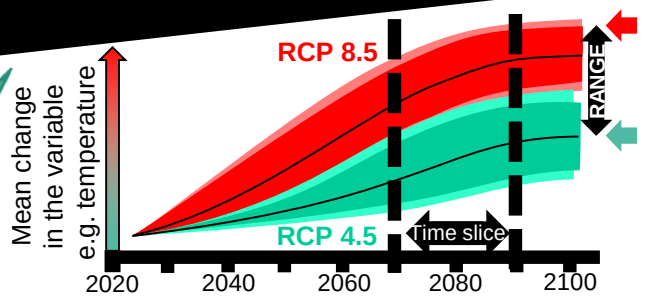
UKCP Headline Results for Glasgow, UK			
Compared to a 1981-2000 baseline, the average change in:	**2030** (2020-2039)	**2050** (2040-2059)	**2080** (2070-2089)
Summer Air Temperature (°C)	+0.9 to +1.8	+1.4 to +3.2	+2.5 to +4.3
Summer Maximum Air Temperature (°C)	+1.1 to +2.2	+1.6 to +3.8	+2.6 to +6.9
Winter Air Temperature (°C)	+0.8 to +1.9	+1.2 to +2.8	+1.8 to +4.8
Winter Minimum Air Temperature (°C)	+0.8 to +1.9	+1.1 to +2.9	+1.8 to +5.0
Annual Mean Air Temperature (°C)	+0.9 to +1.6	+1.2 to +2.0	+2.0 to +4.8
Summer Precipitation Rate**(%)	-5 to -21	-12 to -27	-14 to -40
Winter Precipitation Rate** (%)	+5 to +15	+6 to +20	+10 to +23
Sea Level Change (m)	+0.07 to +0.12	+0.13 to +0.25	+0.25 to +0.55

Baseline = 1981-2000. Summer = Jun, Jul, Aug. Winter = Dec, Jan, Feb. **Relative change (%) in mm per day

Please note that as higher-resolution information becomes available following the release of the UKCP Local (2.2km) projections, the values quoted may change. In particular, upper end increases in winter mean precipitation may be revised upwards. However, in general the 2.2km projections reinforce the UKCP results in terms of seasonal-mean changes.

How is the range calculated?

The 1st number in the range, is the average result from RCP 4.5. To capture more extreme projections, the 2nd number is for RCP8.5, where 90% of UKCP results lie below this. Average summer rainfall rate is one exception. As this is expected to decrease over time rather than increase, here the 2nd number is for RCP8.5, where 10% of the results are below this value.



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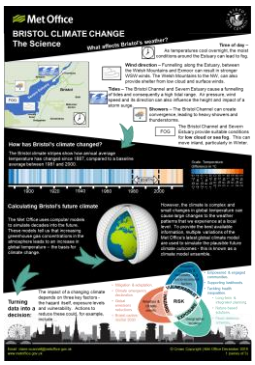
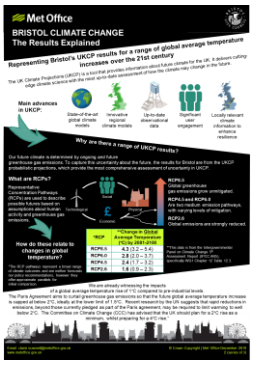
This factsheet is part of a set of prototype products, aimed at building a foundation of shared understanding and promoting robust use of the available UKCP climate change information.

The Climate Change series includes: (sample city shown)

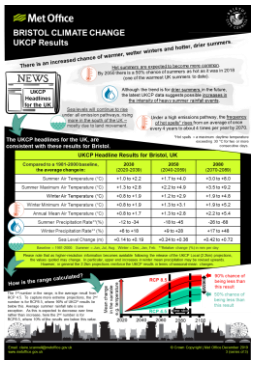
1 **The Science**



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

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