Met Office
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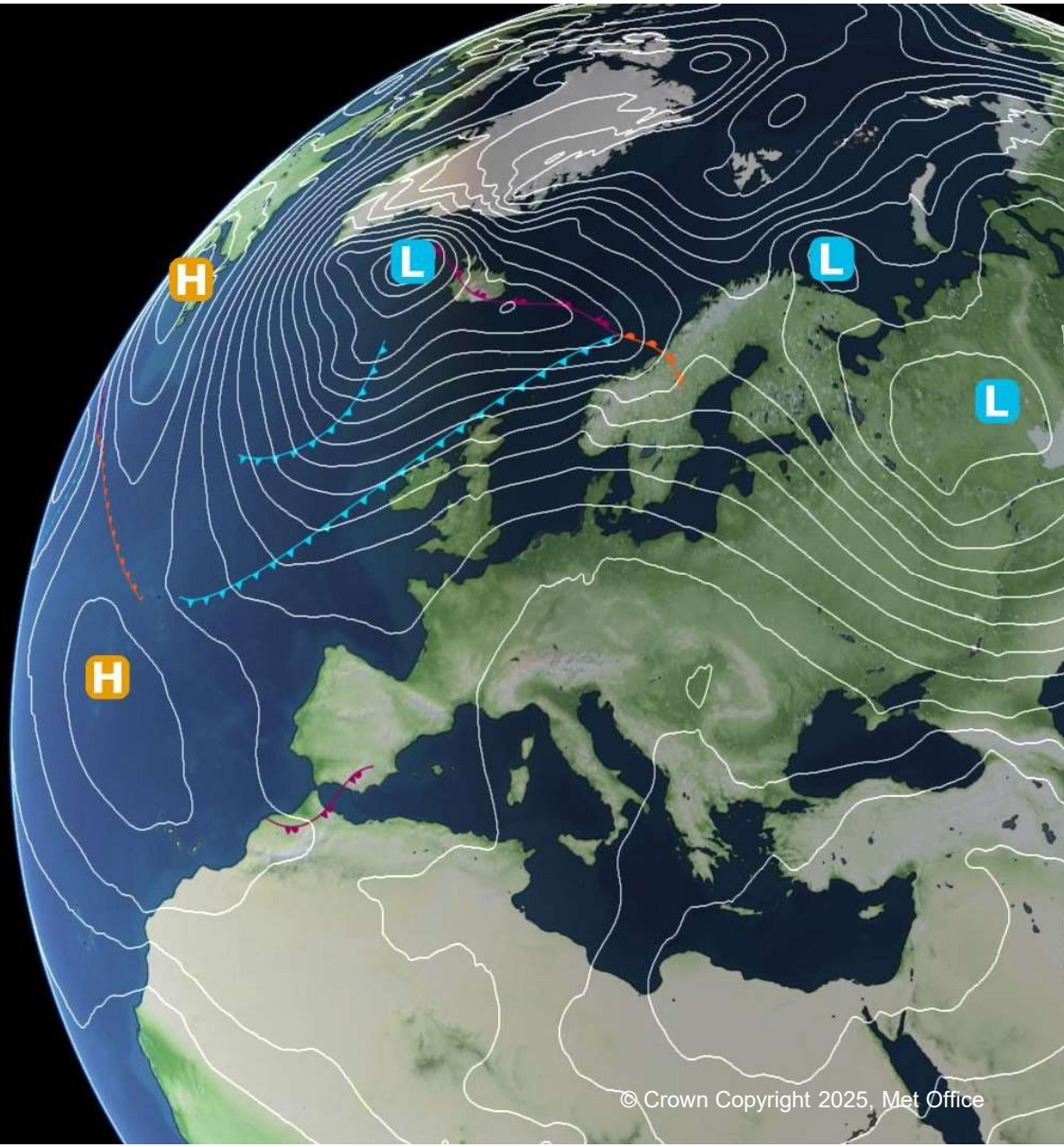
How do we provide access to UK climate products?



15th EUMETNET Data Management Workshop
Oslo November 2025

Mike Kendon
National Climate Information Centre

Thanks to Amy Doherty, Dan Hollis, Stephen Packman, Emily Carlisle (Met Office)

Met Office
Hadley Centre

Met Office Strategy 2025-2030

"Our customers will be at the heart of what we do, we'll place even more purposeful data and intelligence right in the hands of users"

Where can I get climate information specific to my use case?

- National Climate Information Centre
- Operational Meteorologist (severe weather context)
- Flood Forecasting Centre (floods / droughts)
- Business / industry application (energy)
- Media / Press Office (latest statistics)
- Government (climate change)
- Public health researcher (historical heatwaves)
- Civil Contingency Advisor (information for my area)
- Customer services (public enquiry)

etc. etc. etc.

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National Climate Information Centre (NCIC)

Amy Doherty – Scientific Manager

Pressure for information!

Dan Hollis – Senior scientist

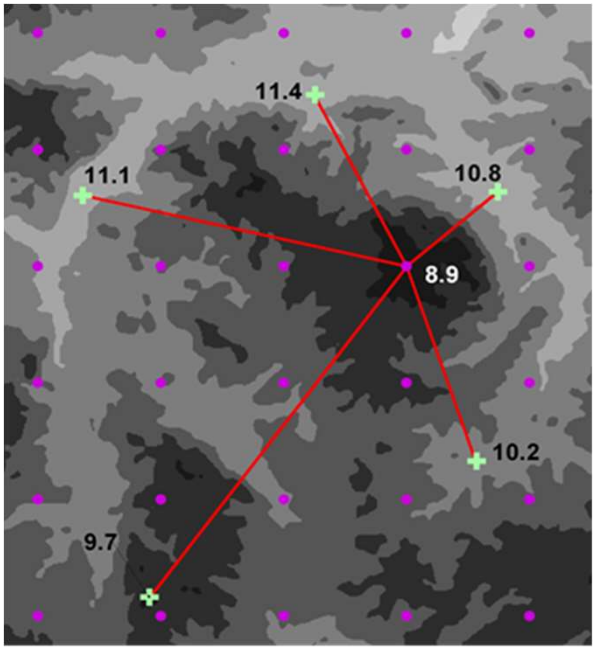
Mike Kendon – Senior scientist

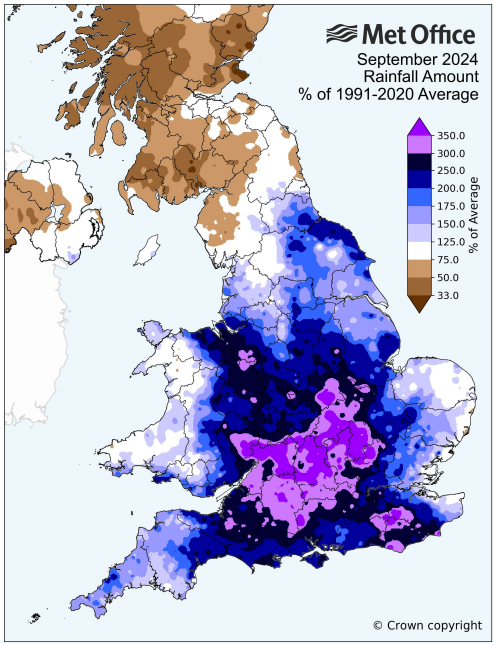
Emily Carlisle - Scientist

- **How does a small team deliver all this without overwhelming our key tasks?**

Stephen Packman – Scientific Software Engineer

NCIC (key tasks)



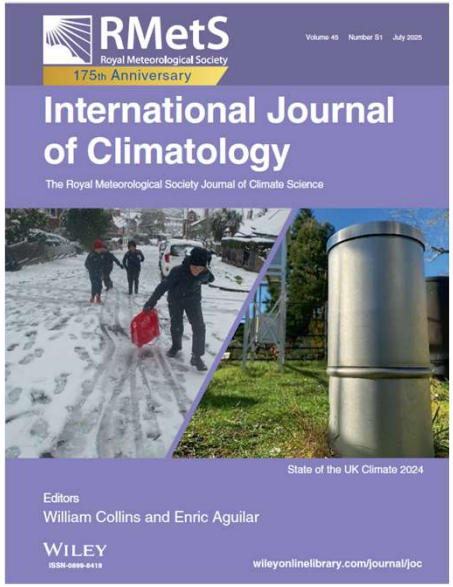


- ClimateGrid software
- Uses latest digitized data
- Priority is to ensure climate products are **traceable** and **reproduceable**
- 2024 report uses **v1.3.1.0**, data on CEDA

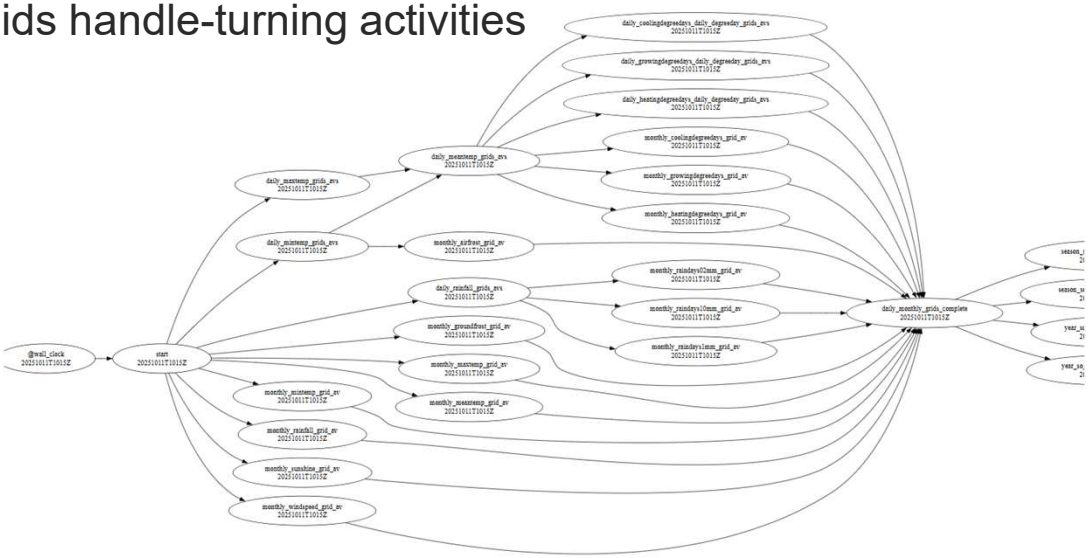
Hollis D, McCarthy MP, Kendon M, Legg T, Simpson I. HadUK-Grid—A new UK dataset of gridded climate observations. *Geosci Data J*. 2019; 6: 151–159. https://doi.org/10.1002/gdj3.78

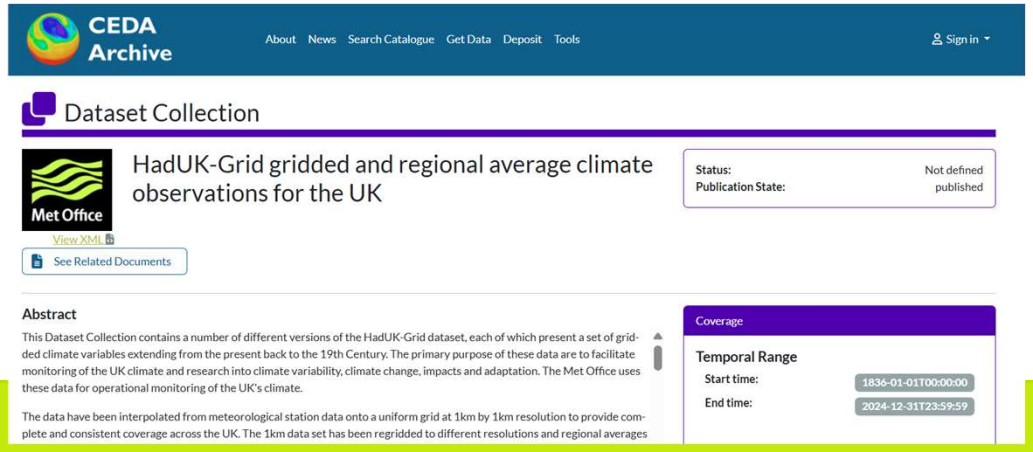
ORACLE python Iris cylc GitHub redhat

Solutions



- Automate our systems for near real-time monitoring: this frees up time and avoids handle-turning activities
- Publish a paper (or a series of papers)
- Publish a dataset (or a series of datasets)





Kendon, M., A. Doherty, D. Hollis, et al. 2025. " State of the UK Climate in 2024." International Journal of Climatology 45, no. S1: e70010. https://doi.org/10.1002/joc.70010.

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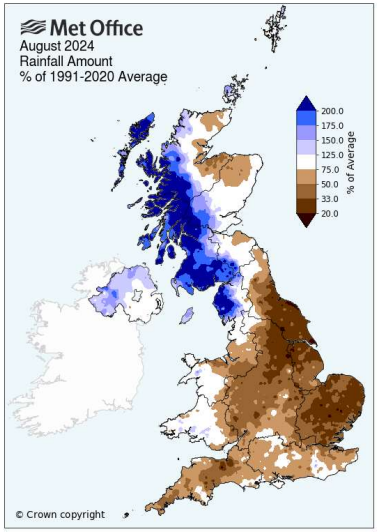
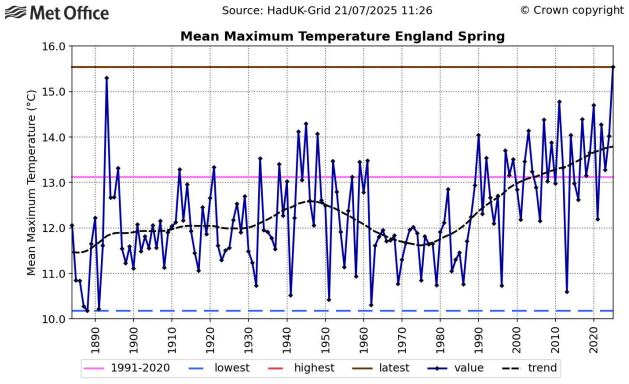
Solutions



- Provide an external website with UK Climate Information (e.g. for the public)
- **Provide an internal website with UK Climate Information – with more detail**
- Off-the-shelf-products which we pre-generate in advance and the user selects
- ‘Self-serve’ products where the user runs our code to generate a specific product they want (more flexible)
- Webtools where the user can run live queries on our station database



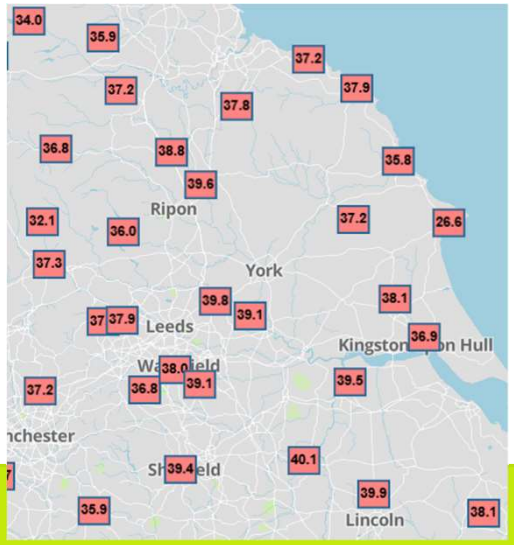
September 2025

Regions Districts Ceremonial counties Northern Ireland counties File created: 01/1

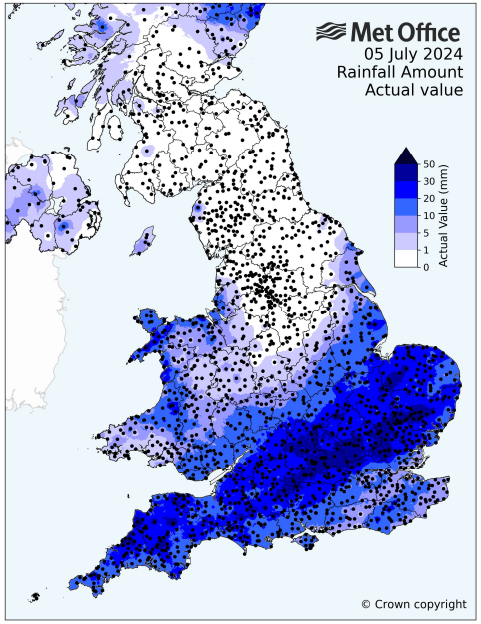
Regions

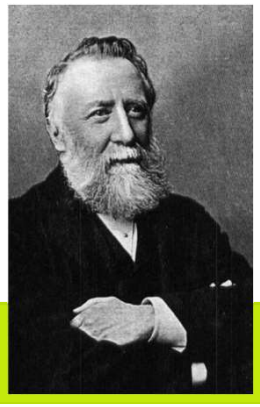
	Maxtemp °C		Mintemp °C		Meantemp °C		Rainfall mm / %		Sunshine hours / %		
	Act	9120 Anom	Act	9120 Anom	Act	9120 Anom	Act	9120 Anom	Act	9120 Anom	A
UK	16.9	0.1	8.7	-0.3	12.8	-0.1	120.1	132	140.3	110	0
England	18.2	0.1	9.4	-0.3	13.8	-0.1	102.0	149	158.9	112	0
Wales	16.5	-0.3	9.0	-0.3	12.7	-0.4	193.7	174	127.5	99	0
Scotland	15.0	0.2	7.6	-0.3	11.3	-0.0	125.8	102	117.7	110	0
Northern Ireland	15.9	-0.4	8.7	-0.2	12.2	-0.3	144.6	165	111.1	98	0
England											

sum	year
16.10	2025
15.76	2018
15.75	2006
15.74	2003
15.71	2022
15.70	1976
15.62	1995
15.38	1933
15.36	2023
15.29	1899
15.29	1947
15.28	2021
15.24	1983



Challenges





- Ensure users are **aware** of the tools they can use and how they can get the most out of them
- Ensure users use information in **an most appropriate way** and **understand the limitations** of the underlying data
- Issues with data quality and underlying databases
- Timeliness - pressure from the ‘media beast’ wanting something **now**
- Reframing questions so that we can ask answer them in the most sensible way “we can’t answer *this*, but we can answer *that*.”
- An irony for NCIC is that if we spend all our times on developing datasets, tools and systems, we may actually have less time to look at the data!

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Scrutiny!

Communicating to UK Gov: Hard Evidence

UK Government Climate and Nature statement in House of Commons

- Ed Miliband (Secretary of State for Energy and Climate Change) 14 July 2025

Hansard

UK Parliament › Hansard › Commons: 14 July 2025 › Commons Chamber › State of Climate and Nature

State of Climate and Nature

Volume 771: debated on Monday 14 July 2025

Download text

3.45pm

The Secretary of State for Energy Security and Net Zero ›
(Ed Miliband)

Share

With permission, Mr Speaker, I would like to make a statement about the climate and nature crisis.

On the day that the Met Office publishes its "State of the UK Climate" report for 2024, the Environment Secretary and I want to share with the British people what we know about the scale of the crisis and explain the actions that we are taking in response. We intend this to become an annual statement to Parliament.

Let me start by setting out what we know from the science. According to the World Meteorological Organisation, the past decade has seen the 10 warmest years on record globally. It says that long-term global warming, assessed by a range of methods, is estimated to be between 1.34°C and 1.41°C above pre-industrial levels, and last year was the first time we saw an individual year above 1.5°C.

Today's Met Office report shows that, in line with what is happening globally, the UK's climate is getting hotter and wetter, with more extreme events. The central England temperature series shows that recent warmth has far exceeded any temperatures observed in at least 300 years. Over the past 50 years, the number of days above 28°C has doubled, and the number of days above 30°C has trebled. This spring was the UK's warmest on record, beating the record broken last year. Meanwhile, warming oceans and melting ice sheets have contributed to sea levels around the UK rising by 13.4 cm over the past three decades, and this is accelerating. The science is unequivocal about why this is happening. As the Met Office said this morning:

"This…is not a natural variation in our climate…human emissions of greenhouse gasses are warming the atmosphere and changing the weather we experience".

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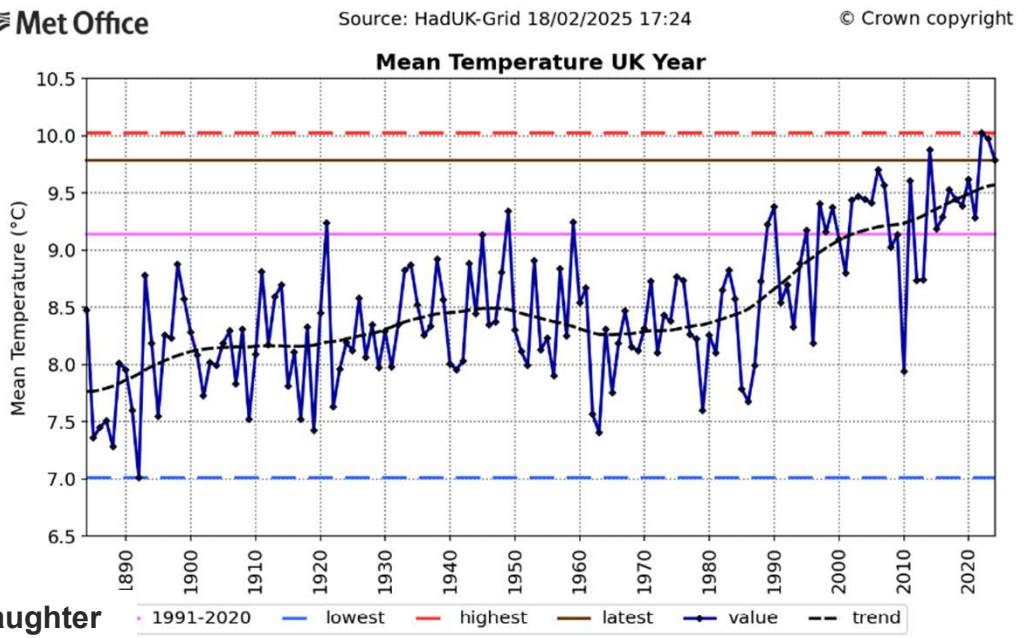
Motivation

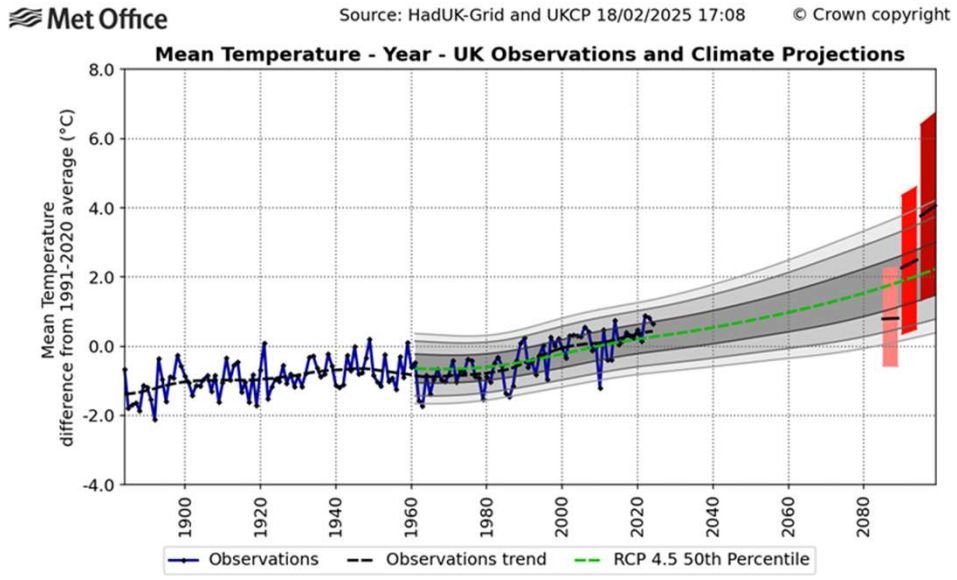
- Climate change is now
- We are heading outside the envelope of what we have known in the past

Me and my daughter Emma ten years ago

We are changing

So is our climate





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DEMONSTRATION