

August 2024 Monthly Weather Report

This document provides a summary of the UK's weather and climate statistics for August 2024.

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UK overview

August began on a warm note, with temperatures above average across the country, but cooled in the second half of the month. The weather was changeable, with scattered showers as well as dry, fine spells. The winds were often from the west or southwest, bringing moist, sometimes warm air from the Atlantic. August began with widespread thunderstorms across central and southern parts of England, which brought heavy downpours and some flooding. Temperatures were above or around average for the first week, and then a warm spell moved in from the 10th. The 12th saw the highest temperature of the year so far, 34.8°C, recorded in Cambridge, while thunderstorms spread across Scotland, Northern Ireland and northern England. Following this the temperatures returned to around average for many and below average for northern areas. Scotland in particular saw cooler than average temperatures in the second half of the month. On the 22nd, the 12th named storm of the season arrived: Storm Lilian brought strong winds and heavy rain to northern England and Wales and parts of Scotland. The 2023/24 storm season saw the most named storms since the naming system was launched in 2015.

Overall, temperatures across the UK were slightly above average, with a provisional mean temperature of 15.4°C, 0.3°C above average. However, there was regional variation, with Scotland and Northern Ireland slightly below average (-0.1°C) and England more above average (+0.6°C). Rainfall showed similar regional variation, with northwestern Scotland provisionally experiencing 162% of the average August rainfall while southern England only recorded 50% of the average. Some areas of Scotland including Glasgow, Renfrewshire, and Ayrshire and Arran provisionally recorded over 200% of the average August rainfall. Western Scotland provisionally experienced its third wettest August on record in a series from 1836. For the UK overall, rainfall was nearly average with 103.5mm of rain, 110% of the long-term average. Sunshine was just slightly below average for the UK (provisionally 159.6 hours, 99% of the long-term average).

Reference climatology used for calculating anomalies is the period 1991-2020 unless otherwise stated.

Weather impacts

- **Thunderstorm activity led to flooding from heavy downpours across the UK**
- **Strong winds and heavy rain from storm Lilian caused power cuts and disruption to road and rail transport**

August saw unsettled weather with a predominance of Atlantic weather systems and only brief settled interludes when temperatures in southeastern England reached 30°C on several occasions. There was a strong rainfall contrast between the very wet west of Scotland/Cumbria and the dry/very dry central and southern England.

The month opened with thunderstorm activity across central and southern England. In the Birmingham area, heavy rain on the 1st led to road flooding, while in Hampshire there was extensive surface water flooding following torrential downpours. Rail services in the area were badly disrupted by flooded sections of lines around Basingstoke and Winchester. Fallen trees affected road travel in Hampshire, and there were reports of stranded cars in Surrey after surface water flooding.

A short hot spell in southern and southeastern England on the 11th and 12th led to the hottest day of the year so far (34.8°C reported in Cambridgeshire), but the transition back to cooler conditions on the 12th brought some lively thunderstorms across the more northern and western parts of the UK, especially Northern Ireland and Scotland. Lightning from the storms across Scotland on the morning of the 12th was reportedly responsible for a house fire in Aviemore from which residents were able to escape without serious injury. Around Aberdeenshire there was surface flooding from torrential downpours that affected road travel. Thunderstorm activity further south was much more muted but one that crossed the Sheldon area of Birmingham on the morning of the 12th was reportedly responsible for another house fire with several non-fatal injuries reported from the scene. In Northern Ireland, lightning was again the culprit with around 400 properties losing power for a time as a likely result of lightning damaging transmission infrastructure. Some 10,000 premises were reportedly off supply across the Republic of Ireland.

Atlantic weather fronts brought widespread rain to Scotland, Northern Ireland and northern England on the 15th and may have been partly responsible for a fatal road traffic accident in Cumbria due to the difficult driving conditions at the time.

Strong winds and high tides on the 21st led to road flooding in the centre of Stornoway, and strong winds were responsible for a couple reported line closures in western Scotland and western Wales where fallen trees were blocking the lines. Southwest Scotland saw some local road disruption due to both excess surface water and fallen trees in Dumfries and

Galloway on the 22nd. The strong winds and rain led to the naming of the 12th storm of the 2023/24 season, Storm Lilian, which brought powerful winds on the 22nd and 23rd. Reports from Northern Powergrid suggested as many as 60,000 customers had been affected by power cuts, primarily across Yorkshire. Significant disruption to road and rail transport was reported across northern England with much of the Greater Manchester tram network brought to a halt after trees impacted several lines. The opening day of the Bolton food and drink festival was cancelled after stalls were badly damaged by the winds, necessitating a major clean-up operation. Wind damage was reported at a farm adventure park near Caerphilly, south Wales.

Monthly extremes










The table below lists UK monthly weather extremes recorded at individual weather stations during August 2024 from data available on 02/09/2024. The map shows the location of these stations.

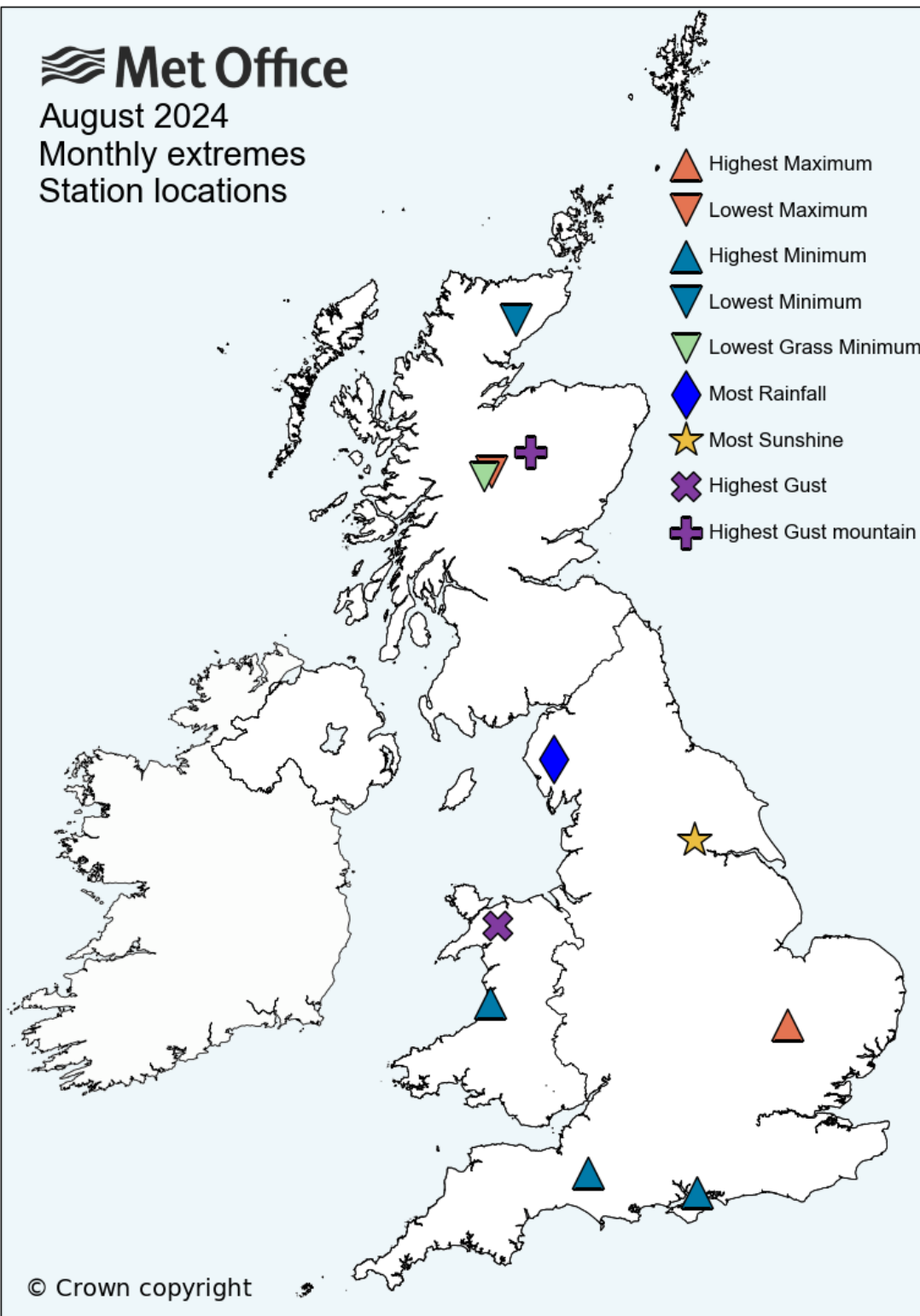
Highest Maximum	34.8°C on 12th at Cambridge, Niab (Cambridgeshire, 26mAMSL)
Lowest Maximum	12.0°C on 25th at Dalwhinnie No 2 (Inverness-shire, 351mAMSL)
Highest Minimum	20.9°C on 12th at Gogerddan (Dyfed, 31mAMSL) and Yeovilton (Somerset, 20mAMSL) and Gosport, Fleetlands (Hampshire, 1mAMSL)
Lowest Minimum	-1.2°C on 31st at Kinbrace, Hatchery (Sutherland, 103mAMSL)
Lowest Grass Minimum	-2.5°C on 31st at Dalwhinnie No 2 (Inverness-shire, 351mAMSL)
Most Rainfall	154.4mm on 21st at Honister Pass (Cumbria, 358mAMSL)
Most Sunshine	14.2hr on 10th at Cawood (North Yorkshire, 6mAMSL)
Highest Gust	64Kt 74mph on 22nd at Capel Curig No 3 (Gwynedd, 216mAMSL)
Highest Gust (mountain*)	86Kt 99mph on 10th at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	No non-zero values.

mAMSL refers to station elevation in metres above mean sea level.

*Mountain stations are above 500mAMSL.

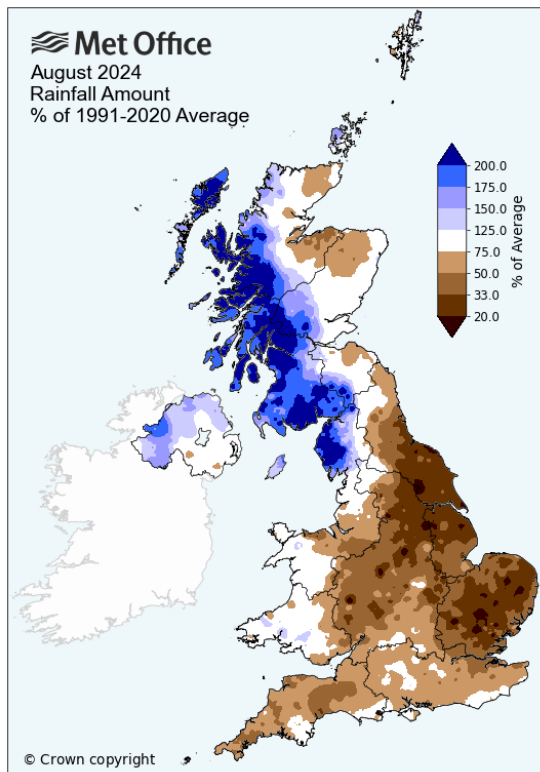
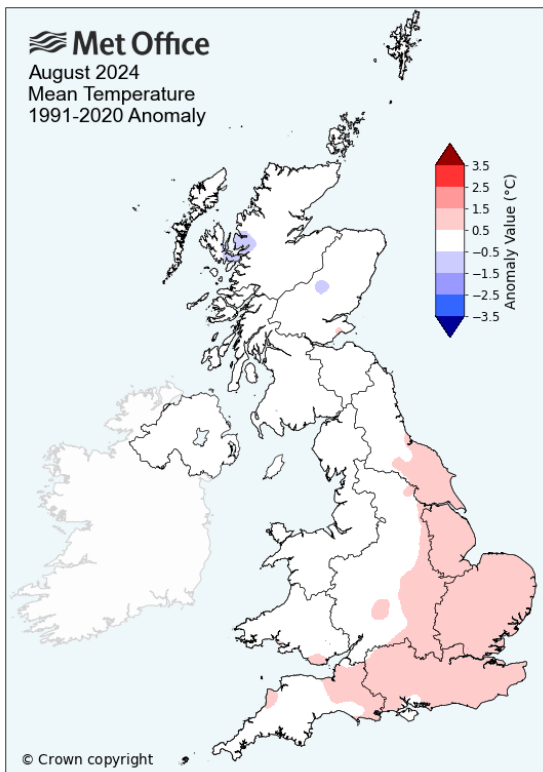
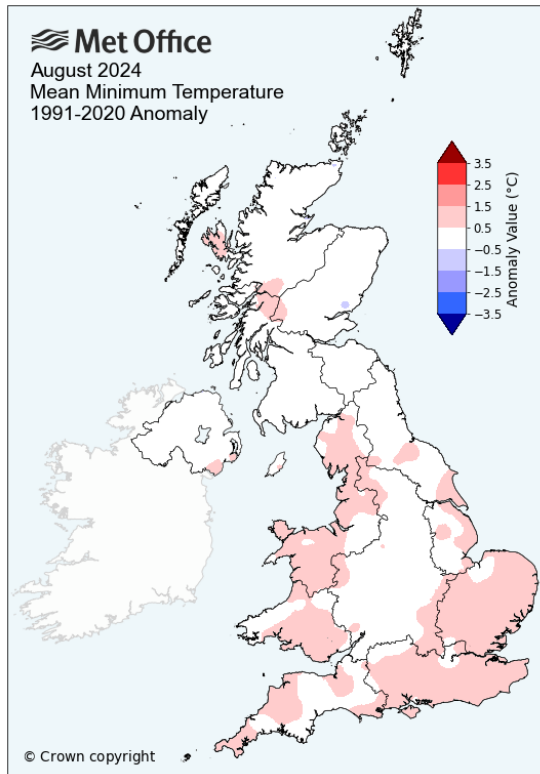
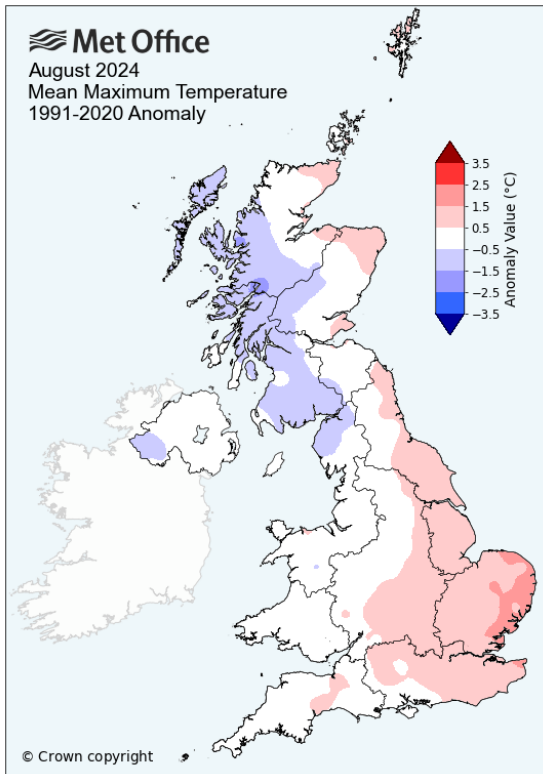
August 2024
Monthly extremes
Station locations

-  Highest Maximum
-  Lowest Maximum
-  Highest Minimum
-  Lowest Minimum
-  Lowest Grass Minimum
-  Most Rainfall
-  Most Sunshine
-  Highest Gust
-  Highest Gust mountain

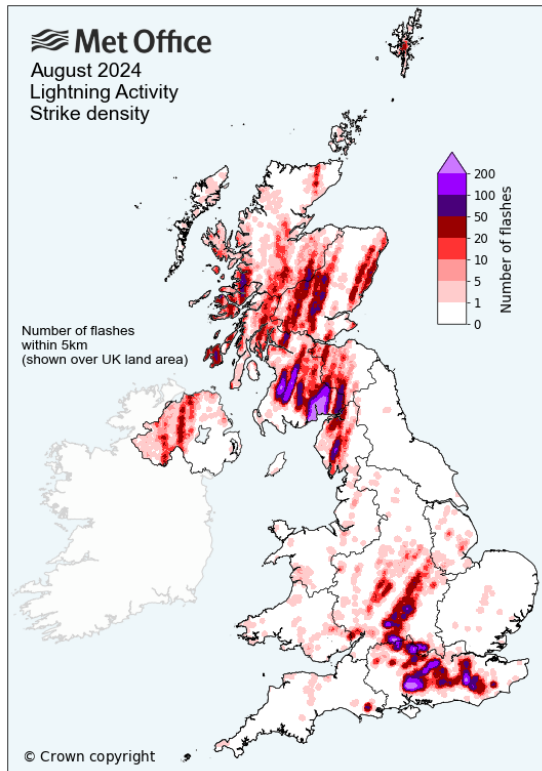
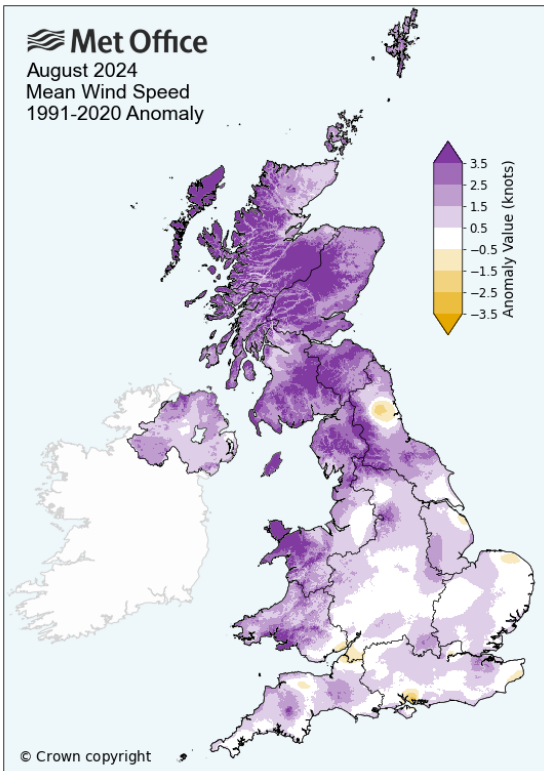
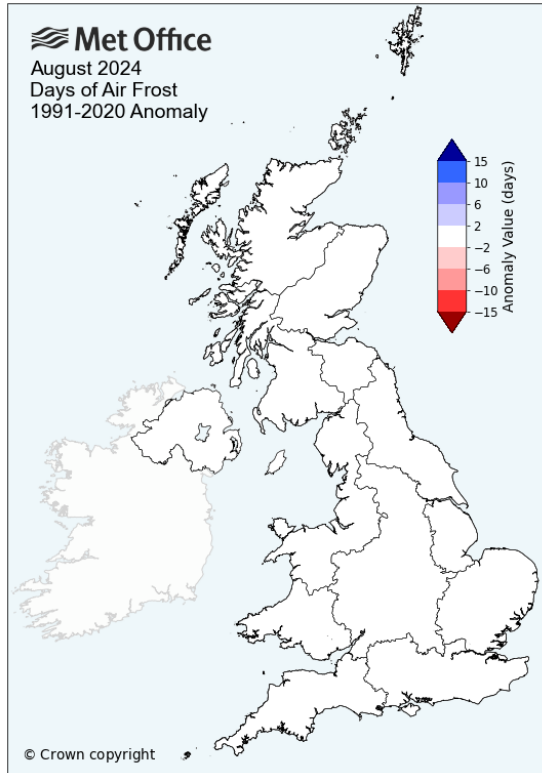
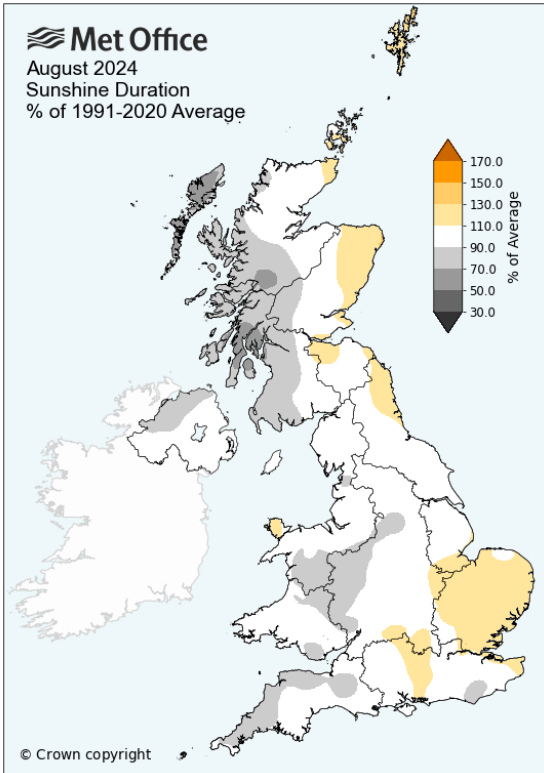


Monthly maps

These maps show monthly average daily maximum, monthly average daily minimum and monthly mean temperature and monthly rainfall for August 2024 as anomalies relative to the August 1991-2020 long term average.



These maps show monthly sunshine, monthly air frost and monthly windspeed for August 2024 as anomalies relative to the August 1991-2020 long term average, plus a map showing lightning activity as the number of strikes within a 5km radius of any land location.



Monthly climate statistics - actuals and anomalies

These tables show the UK and national climate statistics for August 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the August 1991-2020 long term average. The position of the value within the full series (in both ascending and descending order) is shown in the two 'Rank' columns. Central England Temperature (CET) and England & Wales Precipitation (EWP) are also included.

Mean maximum temperature

Region	Maxtemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	19.5	0.2	32	110	141
England	21.5	0.6	28	114	141
Wales	18.9	-0.1	44	98	141
Scotland	16.6	-0.3	60	82	141
Northern Ireland	18.1	-0.2	49	93	141
Central England	21.4	0.4	29	119	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	11.3	0.3	19	123	141
England	12.3	0.5	13	129	141
Wales	11.8	0.6	17	125	141
Scotland	9.7	0.1	37	105	141
Northern Ireland	10.7	0.0	34	108	141
Central England	12.6	0.3	24	124	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	15.4	0.3	25	117	141
England	16.9	0.6	18	124	141
Wales	15.3	0.2	28	114	141
Scotland	13.1	-0.1	45	97	141
Northern Ireland	14.4	-0.1	40	102	141
Central England	17.0	0.4	46	321	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	103.5	110	74	116	189
England	46.2	62	163	27	189
Wales	103.5	93	115	75	189
Scotland	194.6	162	8	182	189
Northern Ireland	127.8	129	41	149	189
EWP (England and Wales)	48.8	59	221	39	259

Sunshine

Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	159.6	99	42	74	115
England	184.6	102	38	78	115
Wales	150.6	94	64	52	115
Scotland	126.1	94	59	57	115
Northern Ireland	126.4	93	61	55	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	9.8	1.9	2	55	56
England	8.2	1.0	8	49	56
Wales	10.6	2.2	2	55	56
Scotland	12.3	3.3	1	56	56
Northern Ireland	8.8	1.6	3	54	56

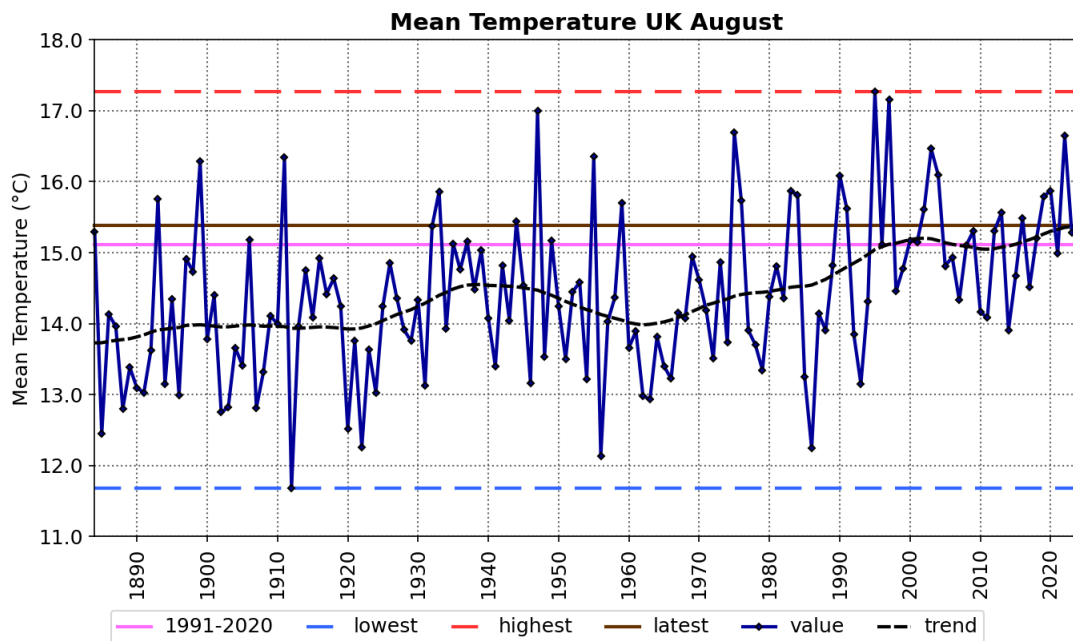
Monthly time-series

These charts show time-series for the UK for August for monthly mean temperature (from 1884), monthly rainfall (from 1836) and monthly sunshine (from 1919). The brown line shows the latest (2024) value. The hatched black line is a smoothing filter which shows the long-term trend. The tables below show statistics for the latest year, latest 10 years 2015-2024, the most recent 30-year climate reference period 1991-2020 and the 30-year baseline climate reference period 1961-1990.

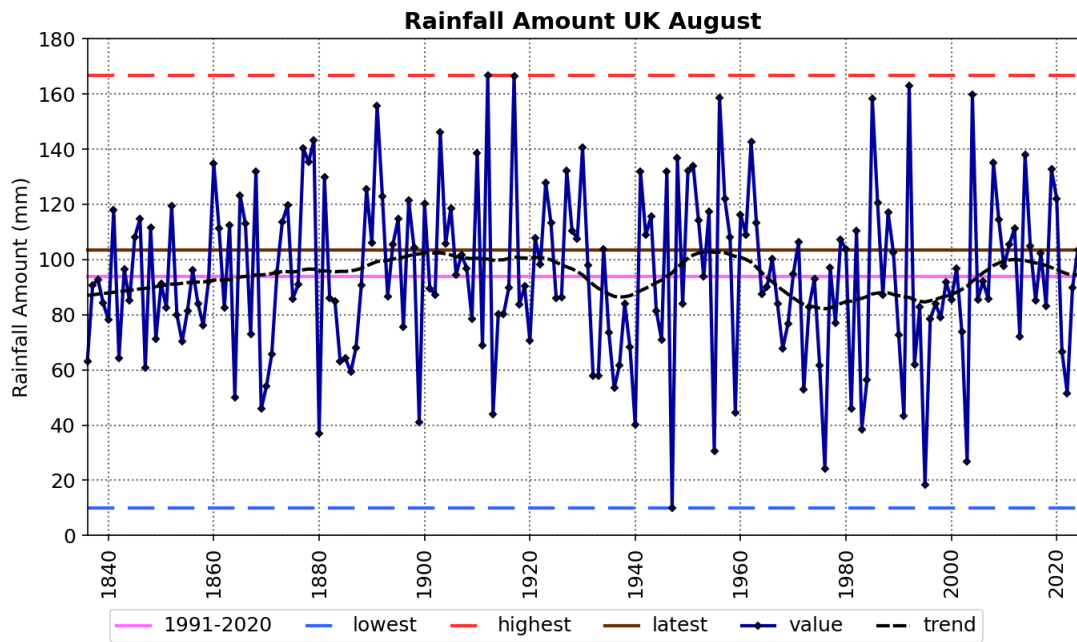


Source: HadUK-Grid 01/09/2024 11:40

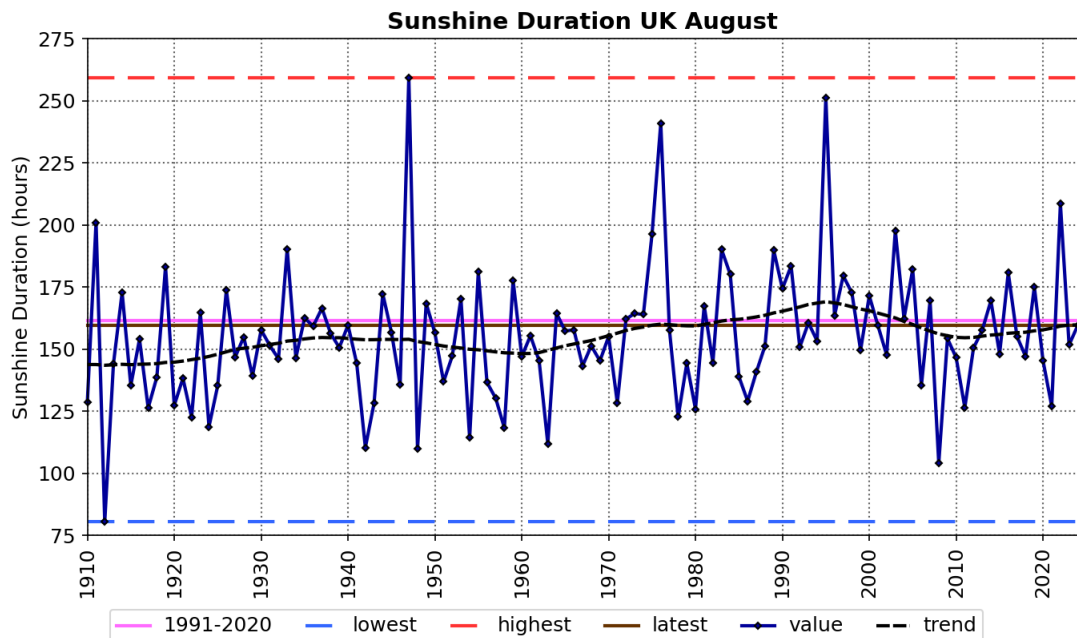
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Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	14.2	15.1	15.4	15.4



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	89.4	93.8	94.2	103.5



Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	156.7	161.7	159.9	159.6

Daily time-series

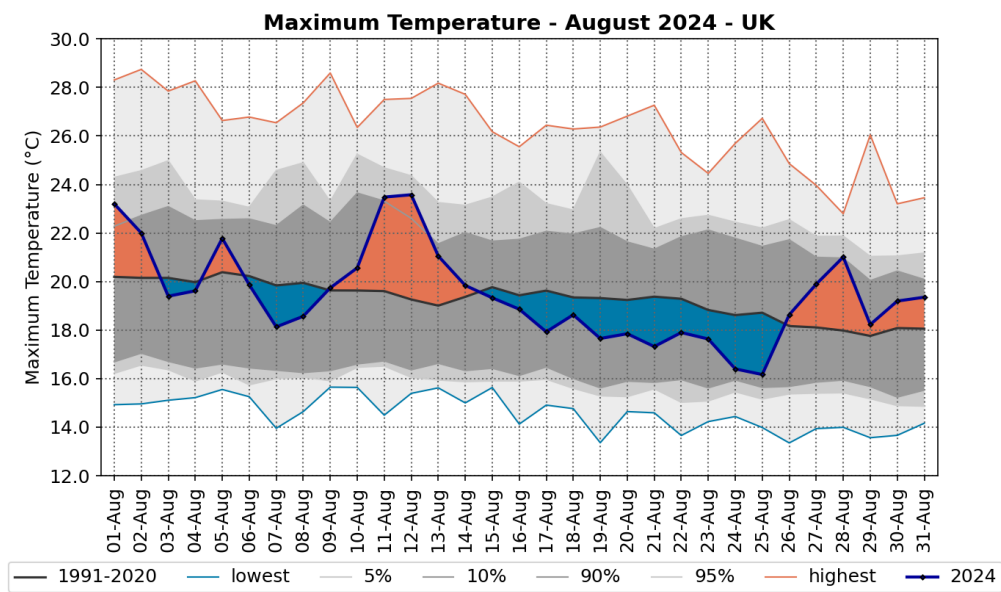
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of August 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles and the 1991-2020 long term averages for each day. The rainfall accumulation chart shows the daily rainfall series as an accumulation through the month.

Daily maximum and daily minimum temperature



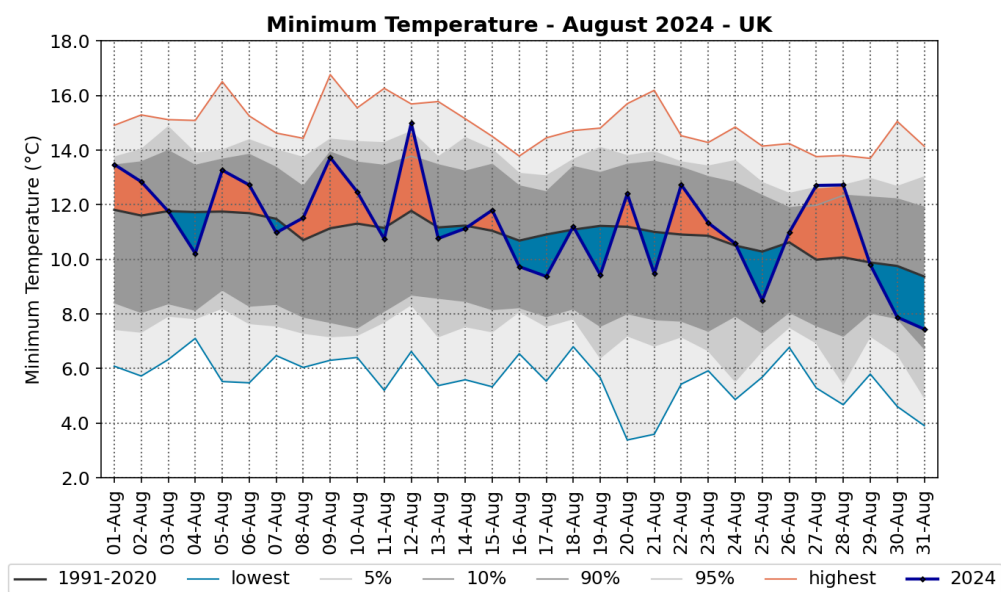
Source: HadUK-Grid 01/09/2024 11:47

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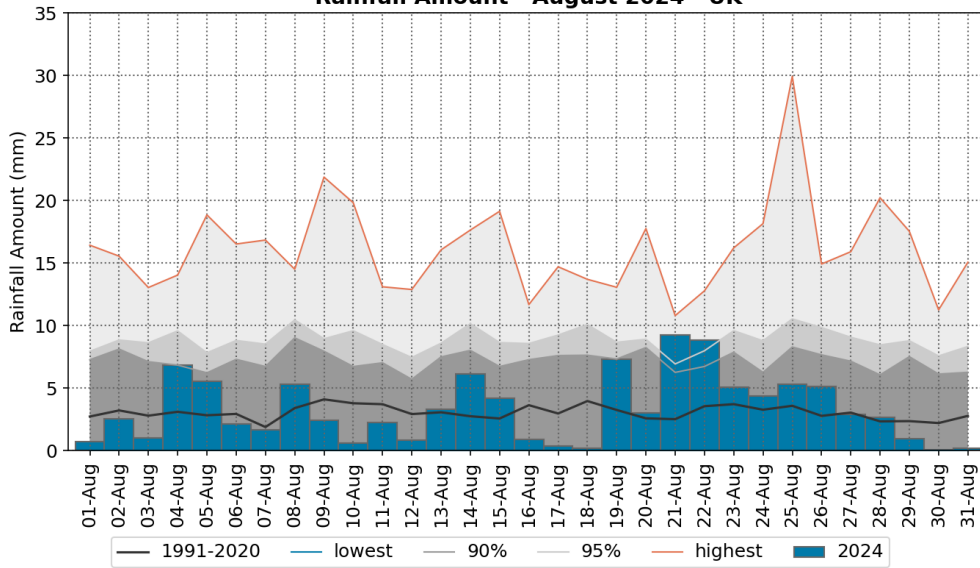
Daily rainfall and rainfall accumulation

Met Office

Source: HadUK-Grid 01/09/2024 11:48

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Rainfall Amount - August 2024 - UK

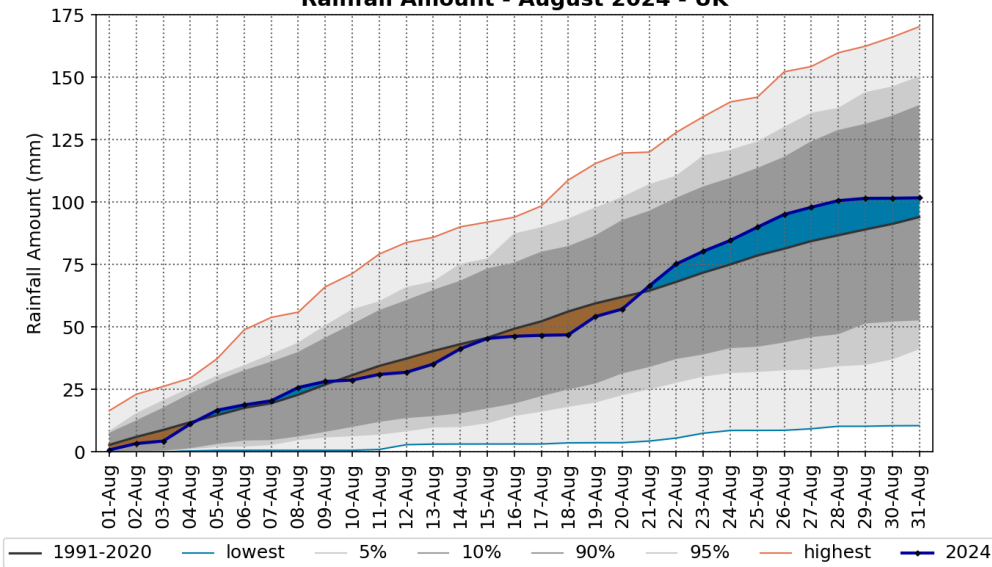


Met Office

Source: HadUK-Grid 01/09/2024 11:50

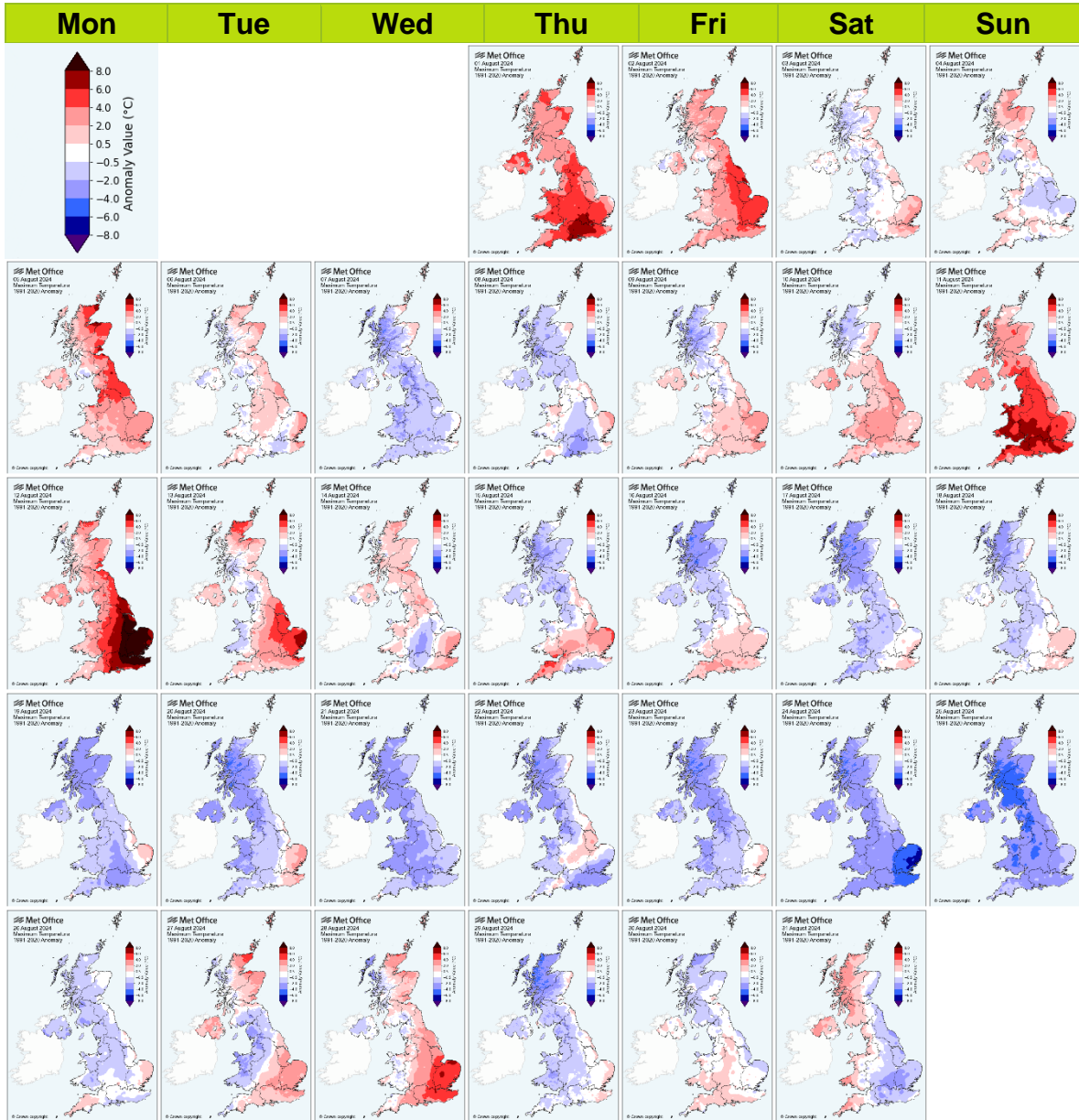
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Rainfall Amount - August 2024 - UK



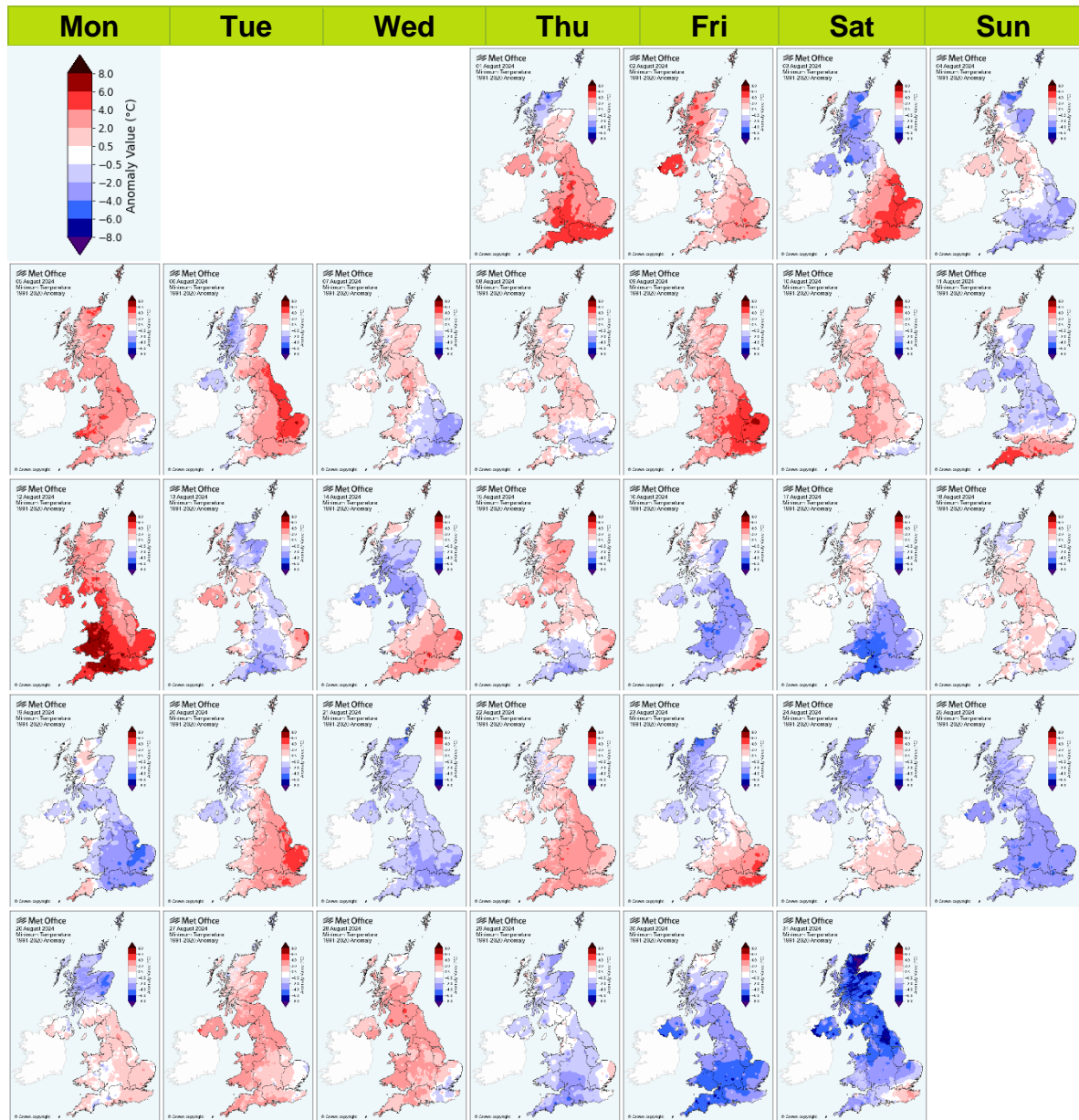
Daily maximum temperature maps - calendar view

These maps show daily maximum temperatures for each day of August 2024 as anomalies relative to the August 1991-2020 long term average. The daily maximum temperature is the maximum from 0900UTC on the day in question to 0900UTC the following day. Normally, the maximum occurs in the early afternoon.



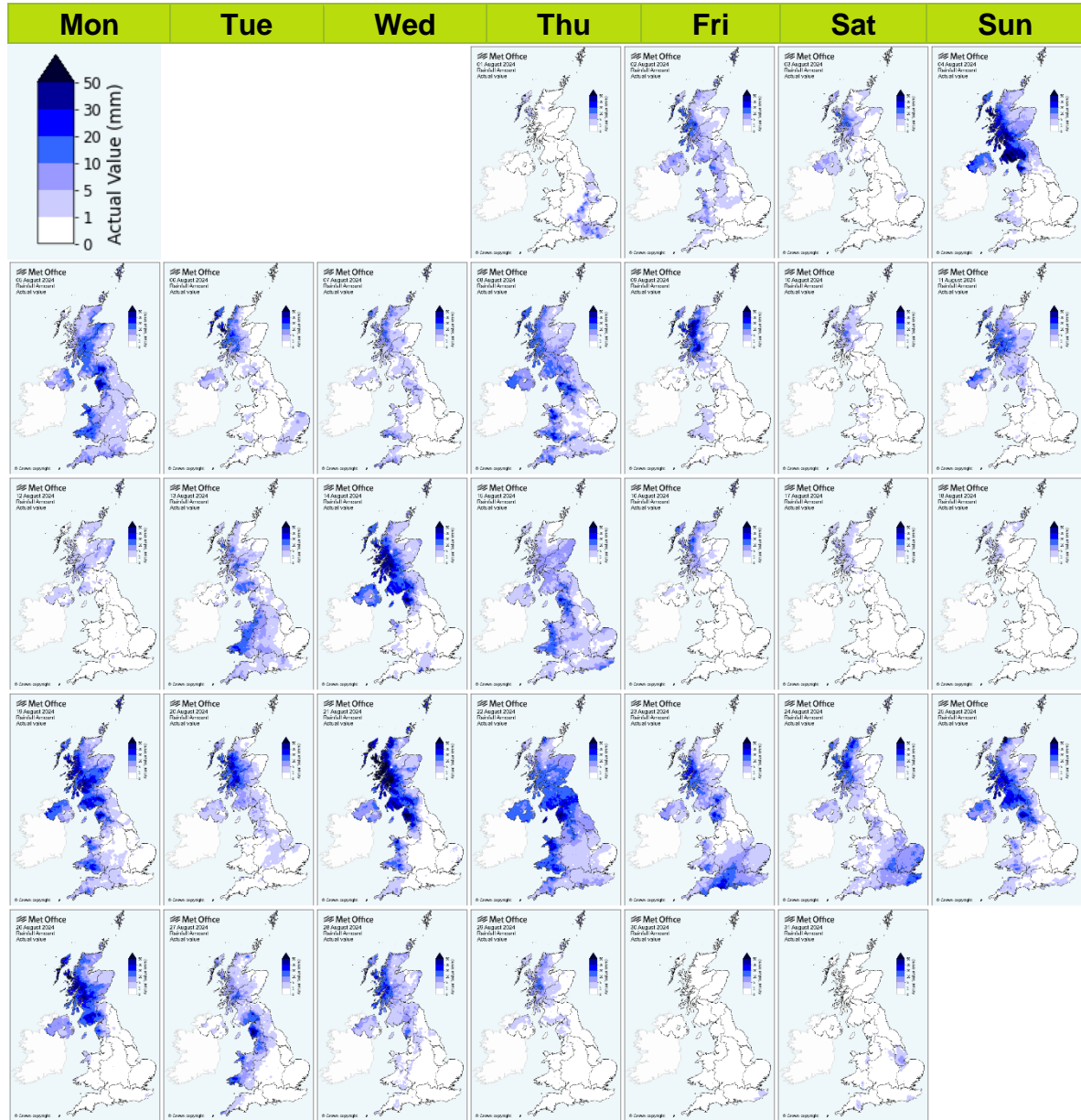
Daily minimum temperature maps - calendar view

These maps show daily minimum temperatures for each day of August 2024 as anomalies relative to the August 1991-2020 long term average. The daily minimum temperature is the minimum from 0900UTC the previous day to 0900UTC on the day in question. Normally, the minimum occurs in the early morning.



Daily rainfall maps - calendar view

These maps show daily rainfall for each day of August 2024 as daily totals. The daily rainfall is the total from 0900UTC on the day in question to 0900UTC the following day.

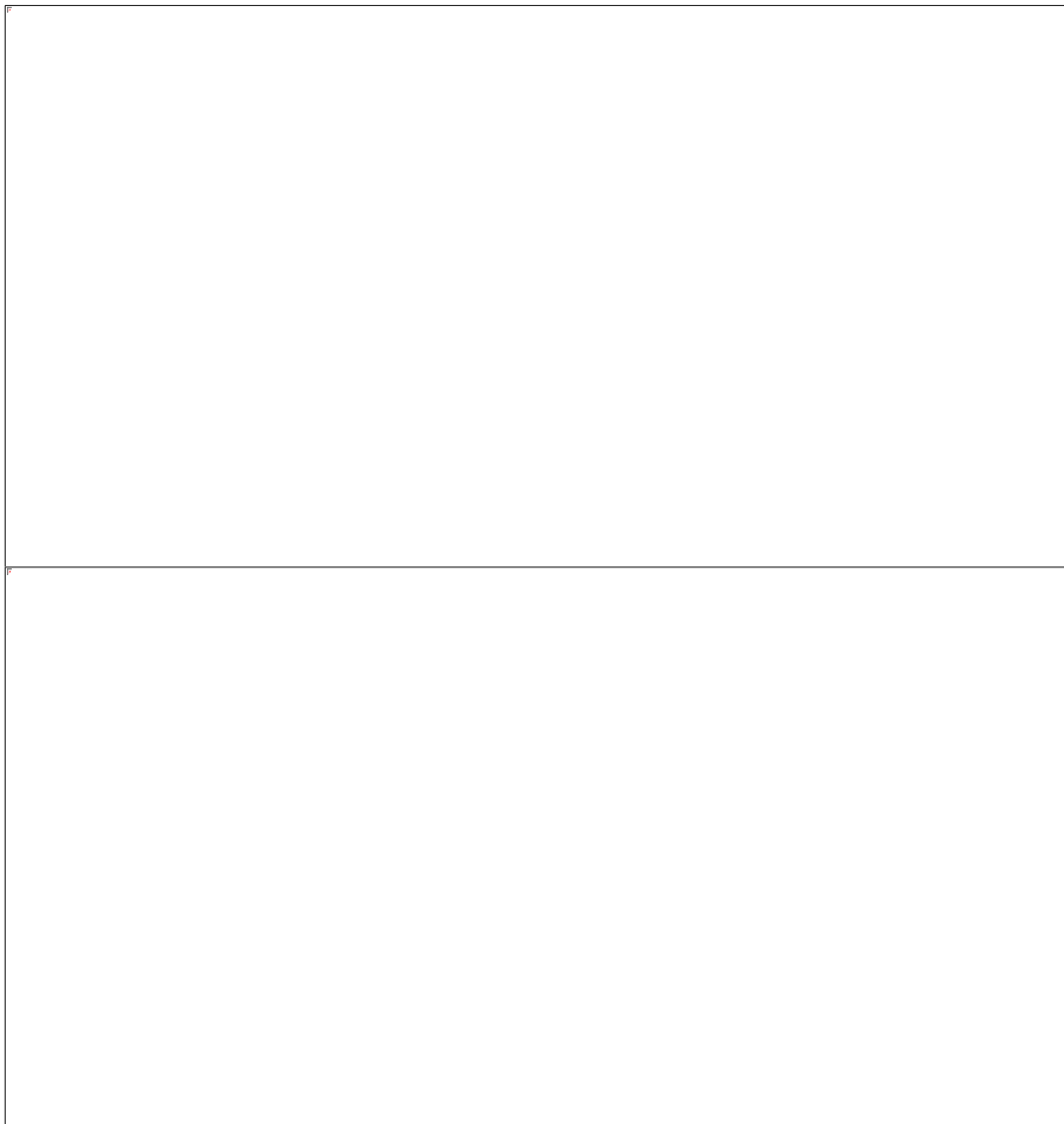


Monthly atmospheric circulation

Mean sea level pressure

These charts show the monthly mean sea level pressure for August 2024 for the UK and north Atlantic, based on the ERA5 reanalysis (Hersbach et al, 2019), both as actual values and as an anomaly relative to the August long term average. These charts provide an indication of the weather characteristics of the month overall i.e. whether the weather type has been generally settled (high pressure) or unsettled (low pressure) during the month.

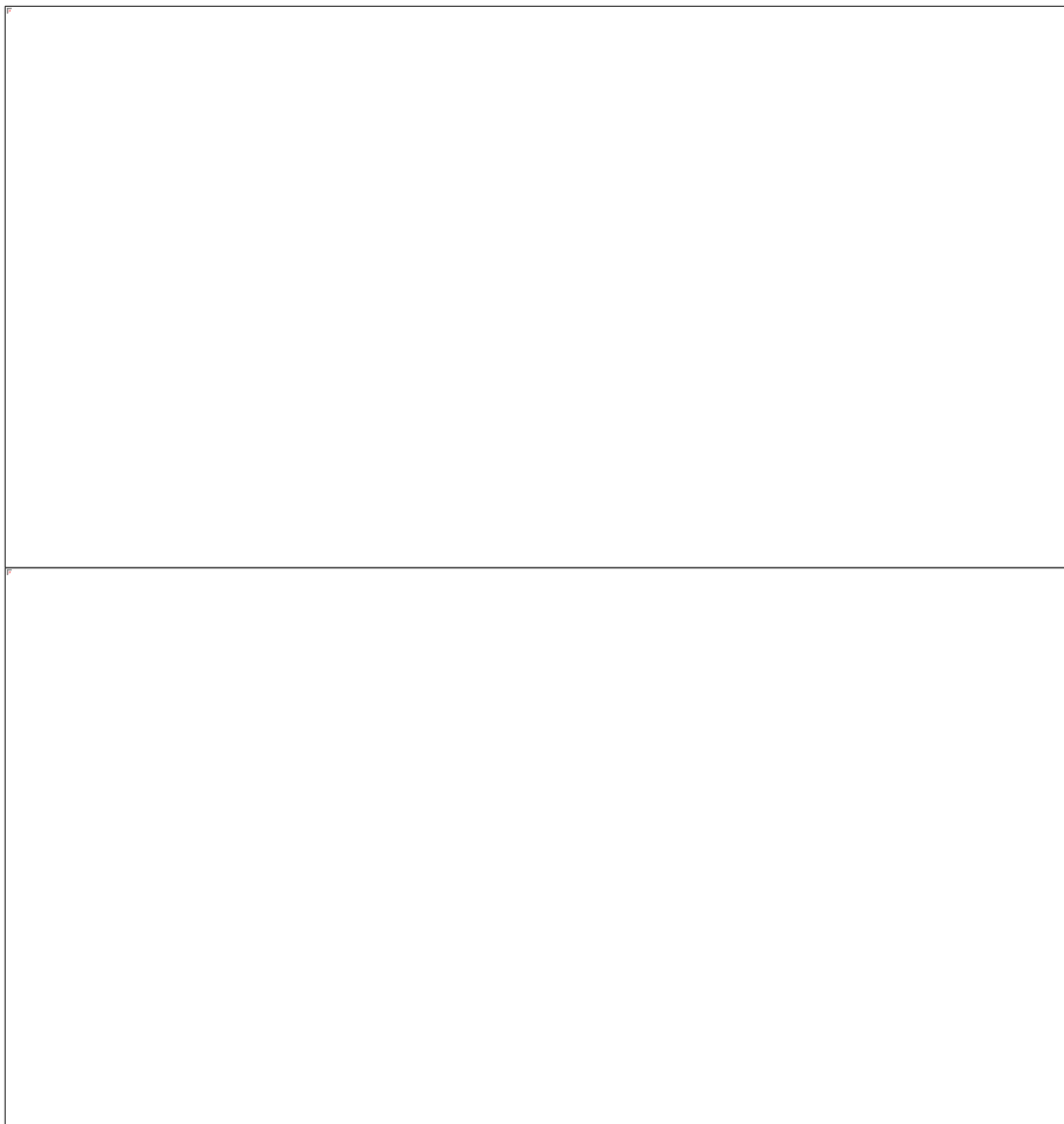
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250hPa wind speed and direction

These charts show the monthly 250hPa wind speed and direction for August 2024 for the UK and north Atlantic, based on the ERA5 reanalysis (Hersbach et al, 2019), both as actual values and as an anomaly relative to the August long term average. This provides an indication of the mean strength and position of the jet stream compared to normal. The wind anomaly map shows shaded (scalar) wind speed anomalies with arrows as (vector) wind anomalies.

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Weather diary

- **Generally dull, very wet in the north, very warm at times in the south**

For a month that is usually renowned for setting new temperature records, August 2024 will be better known for the lack of sunshine, and very wet and windy weather. The UK was plagued by one Atlantic low pressure after another, with any settled conditions being short lived.

The 1st to the 9th was characterized by these depressions crossing the country from west to east, bringing some significant rainfall to Northern Ireland and Scotland. Totals for some sites in these areas on the 4th ranged from over 40 to nearly 60mm. There was a brief respite on the 10th and 11th with high pressure becoming established over southern England and, here, temperatures rose to just shy of 30deg Celsius especially around the London area.

Normal service was resumed from the 12th, as one depression after another influenced the weather over the UK. On the 21st and 22nd, a system incorporating the remnants of Hurricane Ernesto brought strong winds and heavy rain to all regions, with the northwest and Scotland once again bearing the brunt. Totals here ranged from 40mm, with some places in western Scotland touching 75mm. We had one of our own homegrown storms pay a call on the 23rd. Storm Lilian brought strong winds to all parts, with gusts generally between 50 and 60mph, but touching 70mph in north Wales.

There was no let up for northwest England and Scotland from the 25th to the 27th as another feature brought more significant rainfall, totals again hitting 30mm plus. Eventually, however, an area of high pressure became established over central England from the 29th, giving some long-awaited dry, warm and sunny weather across the UK.

Notes

The Met Office National Meteorological Library and Archive holds a near-continuous record of monthly weather reports from 1884, and this report forms a continuation of that series. The purpose of each report is to provide an overview of the weather conditions across the UK for that month. The emphasis is mainly based on observations from the surface network of weather stations. Climate series based on data from these stations are used to provide long term context.

This summary was produced on 03/09/2024 08:12. The statistics are a provisional assessment of the observational data available at the time of production. Ongoing data receipt and quality assurance processes may result in subsequent updates to the statistics presented.

If you have any questions or feedback about this product, spot any data errors or omissions, or wish to obtain further data, please contact the Met Office.

For historical monthly weather reports please visit the Library and Archive.

- The land-surface observations presented in this report are from the Met Office official weather station network which includes both automatic weather stations and manual climate stations operated by volunteer observers. Rainfall data are from the official registered rain-gauge network which includes rain-gauges operated by a number of key partners including the Environment Agency, Scottish Environmental Protection Agency and Northern Ireland Water.
- The observations are carefully managed such that they conform to current best-practice observational standards as defined by the World Meteorological Organization (WMO). The observations also pass through a range of quality assurance procedures at the Met Office before application for climate monitoring.
- Daily and monthly maps, monthly statistics and monthly time-series are primarily based on the HadUK-Grid dataset of 1km resolution UK gridded climate data (Hollis et al, 2019). Monthly statistics from the monthly Central England temperature series 1659 (Manley, 1974) and England and Wales precipitation series from 1766 (Wigley et al, 1984) provide long term context.
- The monthly lightning activity map is based on data from the Met Office ATDnet (Arrival Time Difference Network) system. This is an automatic lightning location network comprising around ten lightning outstation sensors located across Europe.
- The monthly maps of mean sea level pressure and 250hPa wind speed and direction are based on the ERA5 reanalysis (Hersbach et al, 2019). ERA5 is the fifth generation ECMWF reanalysis for the global climate and weather for the past 4 to 7 decades. Reanalysis combines model data with observations from across the world into a globally complete and consistent dataset using the laws of physics.

Hersbach, H., Bell, B., Berrisford, P., Biavati, G., Horányi, A., Muñoz Sabater, J., Nicolas, J., Peubey, C., Radu, R., Rozum, I., Schepers, D., Simmons, A., Soci, C., Dee, D., Thépaut, J-N. (2019): ERA5 monthly averaged data on single levels from 1959 to present. Copernicus Climate Change Service (C3S) Climate Data Store (CDS).
<https://doi.org/10.24381/cds.f17050d7>

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>

Manley, G. (1974), Central England temperatures: Monthly means 1659 to 1973. *Q.J.R. Meteorol. Soc.*, 100: 389-405. <https://doi.org/10.1002/qj.49710042511>

Wigley, T.M.L., Lough, J.M. and Jones, P.D. (1984), Spatial patterns of precipitation in England and Wales and a revised, homogeneous England and Wales precipitation series. *J. Climatol.*, 4: 1-25. <https://doi.org/10.1002/joc.3370040102>

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