December 2024 Monthly Weather Report

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

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UK overview

December was marked by a series of unsettled weather patterns across the UK. The month began with a mix of rain and wintry showers, particularly affecting northern and western regions. Storm Darragh, the fourth named storm of the season, brought significant disruption from the 6th to the 8th, with heavy rain and severe gales, especially in coastal areas of Wales and southwest England. This multi-hazard event brought a prolonged spell of damaging winds, as well as significant rain, and saw the first red warning issued since Storm Isha in January 2024. Following the storm, high pressure briefly settled over the UK, bringing calmer and colder conditions, particularly in Scotland where frost and freezing fog occurred. However, changeable weather returned with frontal systems bringing showers across various parts of the UK as well as fog and wind and some wintry showers on high ground in the north, which persisted through to the 22nd. Temperatures turned milder as a tropical maritime airmass from the southwest dominated, with fog and drizzle across the UK and some rain in Scotland. The final few days of December saw wet and unsettled weather set in, with heavy rain in northern England, Wales and Scotland.

December was milder than average, with the UK experiencing a provisional mean temperature of 6.2°C, 2.0°C above the long-term average. This was provisionally the fifth warmest December on record for the UK. All four countries saw temperatures above average overall, although Wales and Northern Ireland were slightly cooler than England and Scotland. Rainfall has been above average for the UK, provisionally recording 139.4mm of rainfall, 110% of the long-term average. Scotland in particular was exceptionally wet, seeing 133% of the long-term average rainfall. Meanwhile Northern Ireland saw below average rainfall levels, provisionally recording only 69% of the long-term average rainfall for December. The month was dull overall, with sunshine hours around half the average for the UK, which provisionally recorded only 24.3 hours of sunshine, 57% of the long-term average. Scotland and Northern Ireland were slightly sunnier, seeing 62% and 60% of the long-term average sunshine hours, respectively.

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

Weather impacts

- **Storm Darragh brought strong winds and heavy rain to much of the UK, in particular Wales and southwest England**
- **Heavy rain on the 30th and 31st saw flooding in NW England and Scotland**

December was a mild, largely westerly month with unsettled weather. The month opened with typical Atlantic-based weather but by the 4th there were signs of a major development that would potentially bring stormy conditions to many parts of the UK on the 7th. The system responsible was named Storm Darragh on the 5th, by which time a medium impacts amber wind warning was in force for Northern Ireland and the western edges of southern Scotland, England and Wales. On the 6th this was escalated to high impacts with a red wind warning issued for west Wales and the Bristol Channel area of south Wales and southwest England, the first red warning since storm Isha in January. The red warning also led to the issuance of an Emergency Alert to those within the warning area. Also on the 6th an additional medium impacts amber warning for rain was issued for south Wales, an area still recovering after the effects of Storm Bert only a fortnight before.

Storm Darragh's winds peaked on Saturday 7th, which led to a considerable number of pre-Christmas weekend markets and events being cancelled, especially those within the amber and red wind warning areas. Such pre-emptive moves doubtless reduced the extent of impacts but even so, the National Grid reported that in excess of three quarters of a million domestic and business premises lost power for a time as a result of the winds. Gusts reached 70 to 80mph widely across south and west Wales, southwest England, northeast England and Northumberland, with a gust of 96mph recorded at Berry Head, Devon.

Two fatalities were reported on the day of the storm, one in Longton, Lancashire and another in Birmingham, both the result of falling trees impacting vehicles. In Northern Ireland, a cooling chimney at Ballylumford Power Station was reportedly damaged by strong wind gusts with the site unable to resume power generation for over a week. Across the amber and red warning areas of Wales and southwest England in particular, transport disruption was widespread with numerous road closures and rail restrictions reported as a result of fallen trees, debris, etc. Both Severn bridges were reportedly closed for several hours whilst Natural Resources Wales reported heavy treefall across its estates, with Cardiff Council reporting more trees downed as a result of Storm Darragh than in the previous 20 years. The Porth Wen solar farm in Anglesey, the UK's largest, reported many of its solar panels damaged by the sheer strength of the wind. The largest economic impact, however, was the extended closure of the nearby Holyhead Port to Irish Sea ferry traffic as a result of wind damage. On the 17th, ten days after Storm Darragh, it was announced that the ferry terminal would remain closed until at least 15th January with serious knock-on effects for the

diversion ports of Cairnryan (southwest Scotland) and Fishguard (southwest Wales). Meanwhile, within the broader yellow wind warning area for Storm Darragh there was plenty of disruption and many cancelled outdoor pre-Christmas events. Builth Wells in Powys saw serious flooding as the River Wye rose to near record levels with several vehicle rescues reported in addition to a number of houses being pumped clear of flood water.

The weather quietened down considerably in the wake of Storm Darragh as high pressure built for a few days. The 14th to 16th saw a prolonged rainfall event affect the northwest Highlands, though only low impact rain warnings were required. A few flood warnings were triggered with several roads reported closed.

The period between the 17th and 22nd was often windy and unsettled with various low and medium impact yellow wind warnings issued up and down the country. One or two minor wind impacts were reported on the 18th across Wales with some small-scale surface water flooding reported from both Cardiff and Swansea later on the 18th. The weekend of the 21st and 22nd was windy across the UK, especially across northern and western Scotland, where some localised power outages were reported. A proportion of flights out of Heathrow Airport were reported as being pro-actively cancelled ahead of the strong winds on one of the busiest travelling weekends of the year. With gusts of around 70mph being observed on the trans-Pennine A66, the decision was taken to close the high-level sections until the winds moderated.

The 23rd to 29th saw mild, benign conditions predominate, but the 30th and 31st saw a slide back to more unsettled weather with western Scotland very wet and a slow-moving band of heavy rain becoming anchored across northern Wales and northwestern England later on New Years Eve. Two amber rain warnings were issued for Scotland and northwest England on the 30th and 31st, that for Scotland being accompanied by three severe flood warnings. On the 30th, rail services across western Scotland were badly disrupted by flooding whilst strong winds resulted in the cancellation of Edinburgh's Hogmanay celebrations on the 31st. The persistent rain across northwest England late on the 31st resulted in numerous flood warnings being issued and was linked to multiple traffic incidents across Lancashire with road flooding and stranded vehicles reported. Across Greater Manchester there was increasing concern that the amount of rainfall could eventually trigger some significant flooding impacts by New Year's Day, as would prove to be the case.

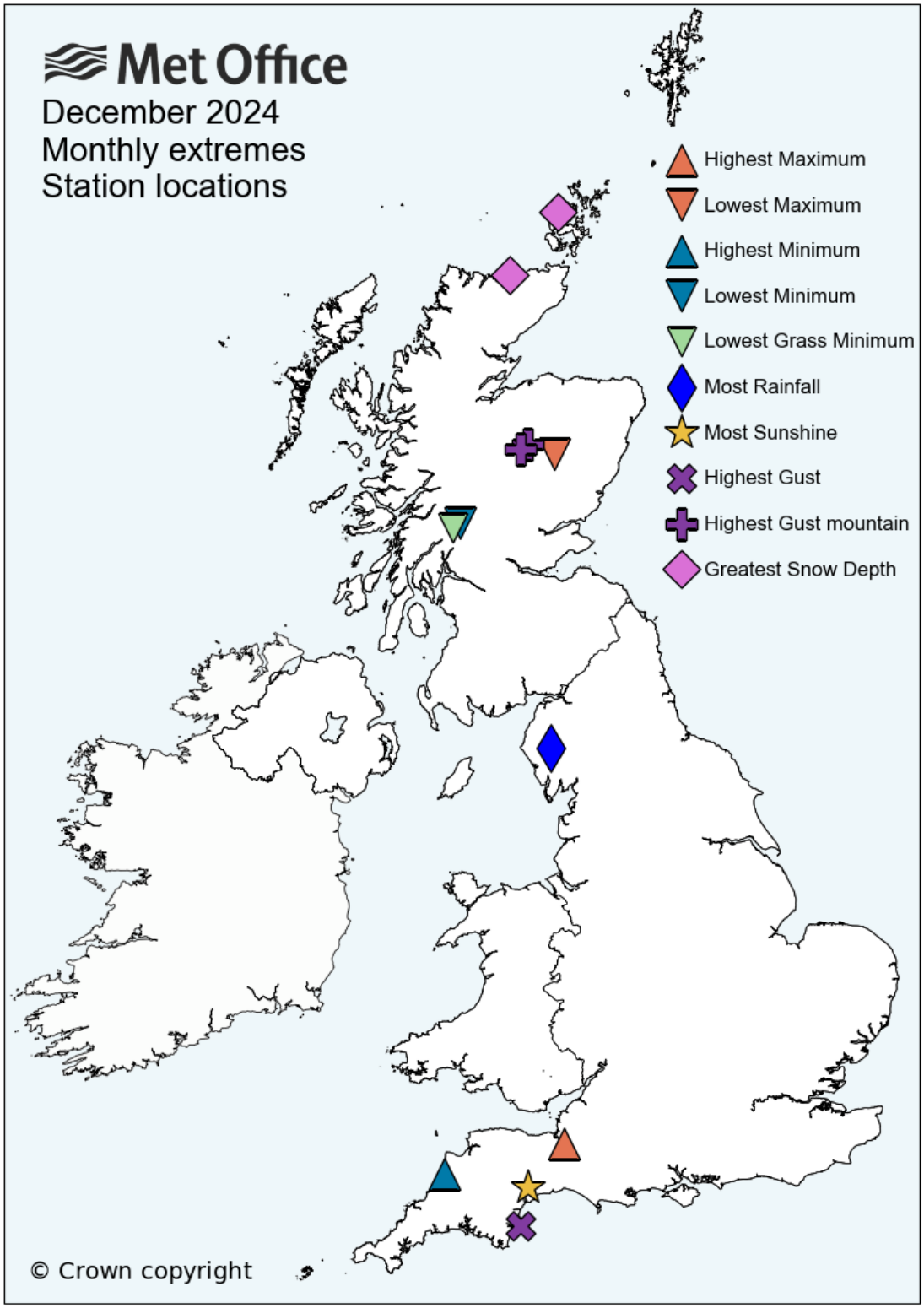
Monthly extremes

The table below lists UK monthly weather extremes recorded at individual weather stations during December 2024 from data available on 03/01/2025. The map shows the location of these stations.

Highest Maximum	**15.9°C** on **1st** at Westonzoyland (Somerset, 3mAMSL)
Lowest Maximum	**-4.3°C** on **10th** at Balmoral (Aberdeenshire, 283mAMSL)
Highest Minimum	**13.2°C** on **1st** at Bude (Cornwall, 15mAMSL)
Lowest Minimum	**-11.2°C** on **11th** at Tyndrum No 3 (Perthshire (in Central Region), 168mAMSL)
Lowest Grass Minimum	**-14.3°C** on **11th** at Tyndrum No 3 (Perthshire (in Central Region), 168mAMSL)
Most Rainfall	**144.2mm** on **31st** at Honister Pass (Cumbria, 358mAMSL)
Most Sunshine	**6.9hr** on **8th** at Exeter Airport No 2 (Devon, 27mAMSL)
Highest Gust	**83Kt 96mph** on **7th** at Berry Head (Devon, 58mAMSL)
Highest Gust (mountain*)	**95Kt 109mph** on **15th** at Cairngorm Summit (Inverness-shire, 1237mAMSL) also on **21st** at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	**5cm** on **31st** at Strathy East (Sutherland, 68mAMSL) and Orkney: Loch Of Hundland (Orkney, 28mAMSL)

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

*Mountain stations are above 500mAMSL.


Met Office
December 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
Greatest Snow Depth
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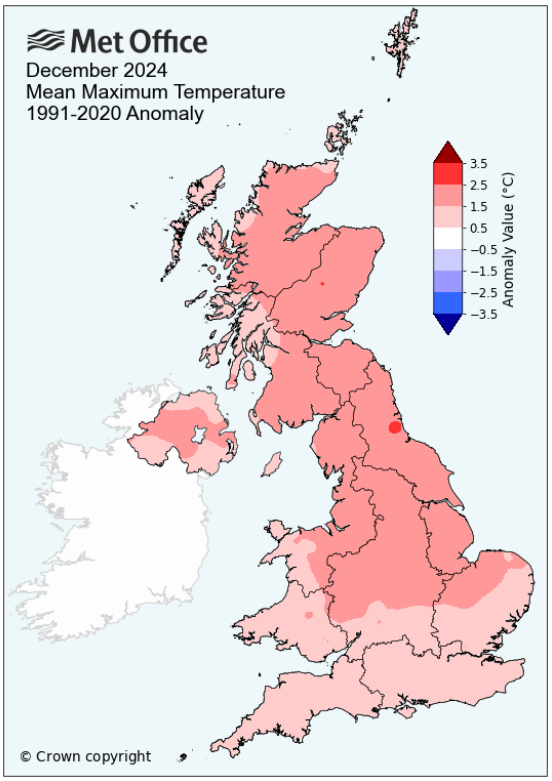
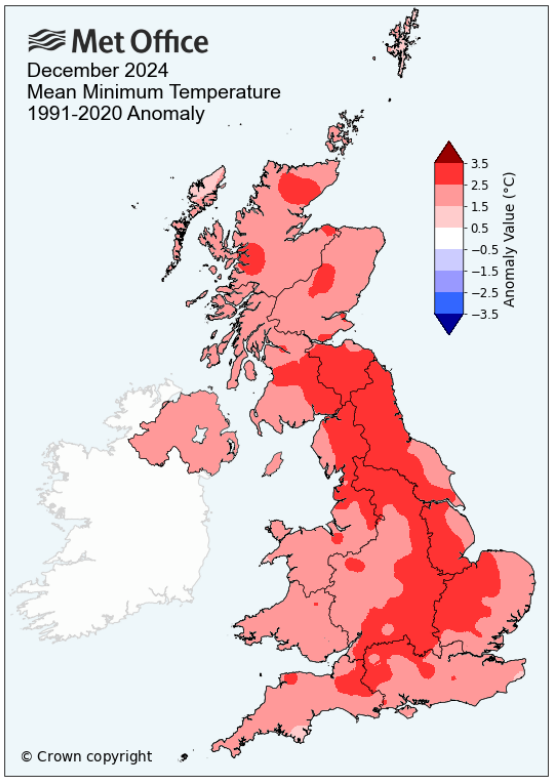
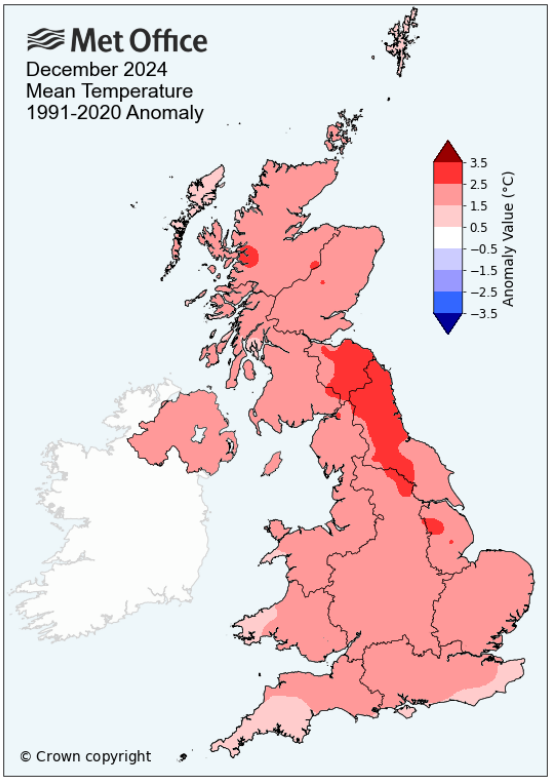
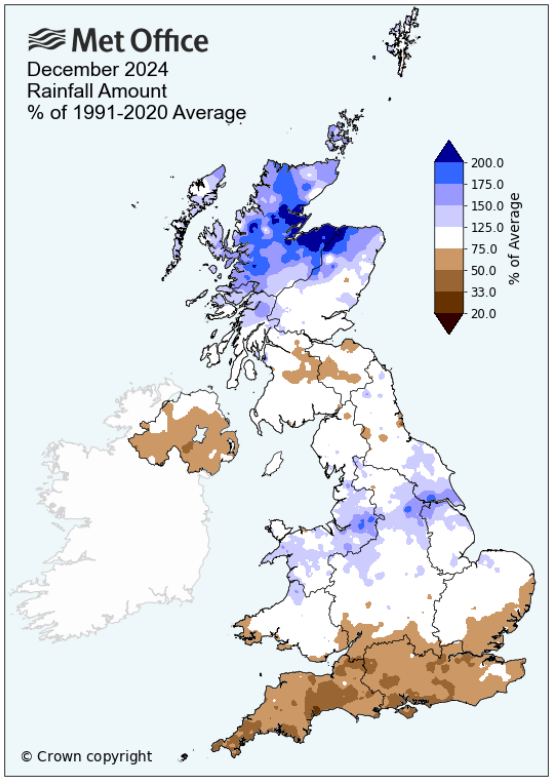
Monthly maps

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

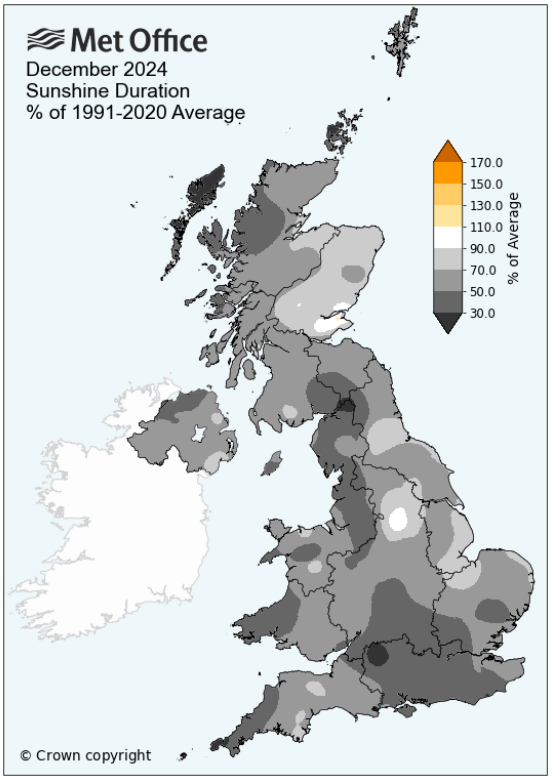


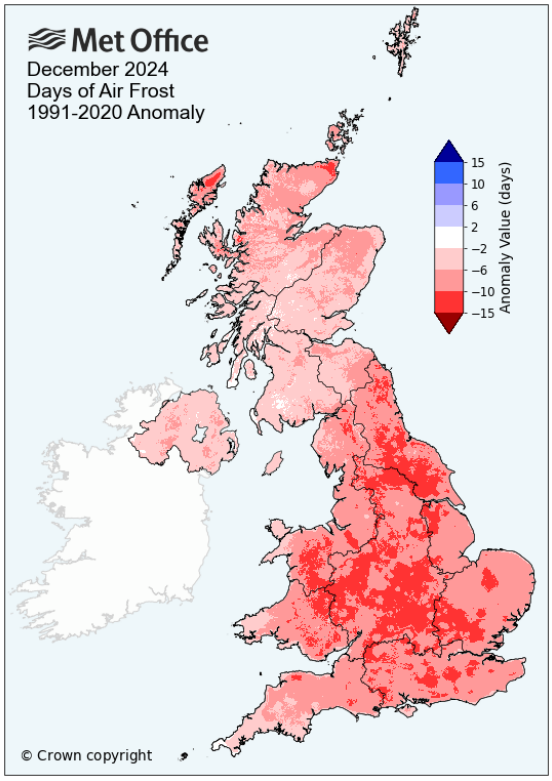


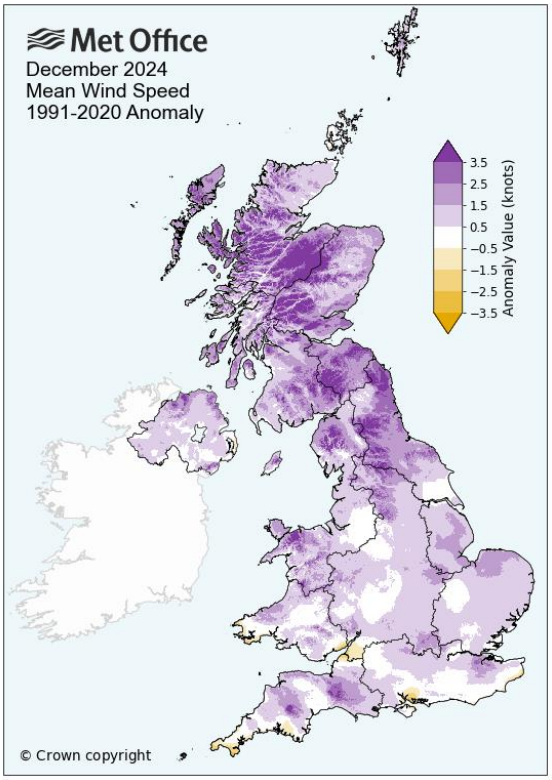


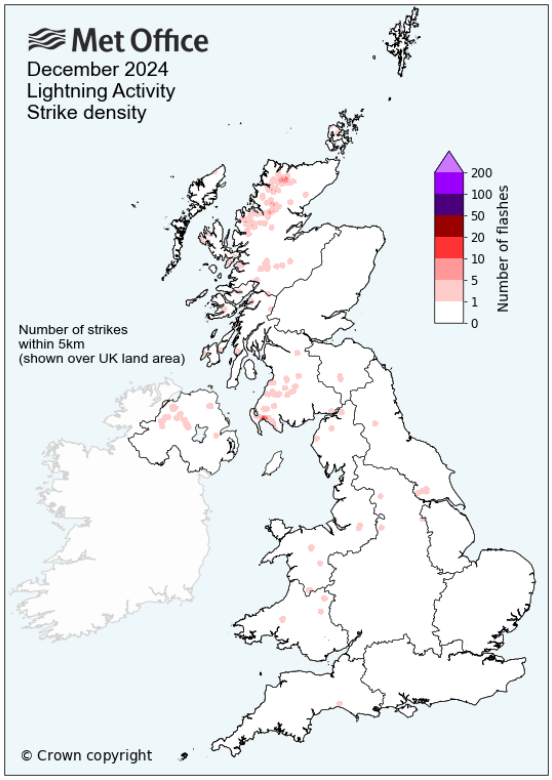


These maps show monthly sunshine, monthly air frost and monthly windspeed for December 2024 as anomalies relative to the December 1991-2020 long term average, plus a map showing lightning activity as the number of strikes within a 5km radius of any land location.









Monthly climate statistics - actuals and anomalies

These tables show the UK and national climate statistics for December 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the December 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	8.6	1.6	9	133	141
England	9.2	1.6	10	132	141
Wales	8.9	1.3	16	126	141
Scotland	7.6	1.8	7	135	141
Northern Ireland	9.0	1.5	11	131	141
Central England	9.1	1.5	16	132	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	3.8	2.4	5	137	141
England	4.3	2.5	5	137	141
Wales	4.3	2.1	12	130	141
Scotland	2.7	2.3	6	136	141
Northern Ireland	4.0	2.1	13	129	141
Central England	4.6	2.5	10	138	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	6.2	2.0	5	137	141
England	6.8	2.0	6	136	141
Wales	6.6	1.8	12	130	141
Scotland	5.1	2.1	7	135	141
Northern Ireland	6.5	1.8	9	133	141
Central England	6.8	2.0	21	346	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	139.4	110	44	146	189
England	82.2	89	94	96	189
Wales	187.4	107	54	136	189
Scotland	232.1	133	18	172	189
Northern Ireland	84.1	69	143	47	189
EWP (England and Wales)	89.3	86	133	127	259

Sunshine

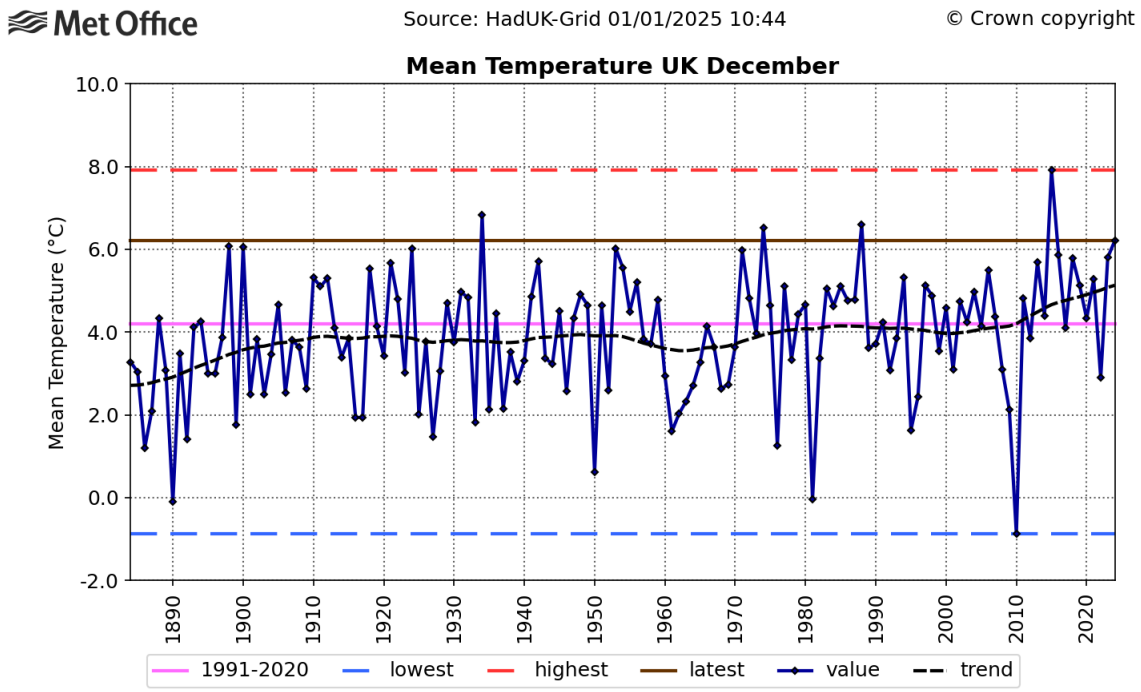
Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	24.3	57	112	4	115
England	28.3	55	110	6	115
Wales	22.0	53	113	3	115
Scotland	18.5	62	111	5	115
Northern Ireland	22.8	60	111	5	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	11.4	1.4	15	42	56
England	10.1	1.1	16	41	56
Wales	12.3	1.0	18	39	56
Scotland	13.6	2.2	14	43	56
Northern Ireland	10.2	0.9	16	41	56

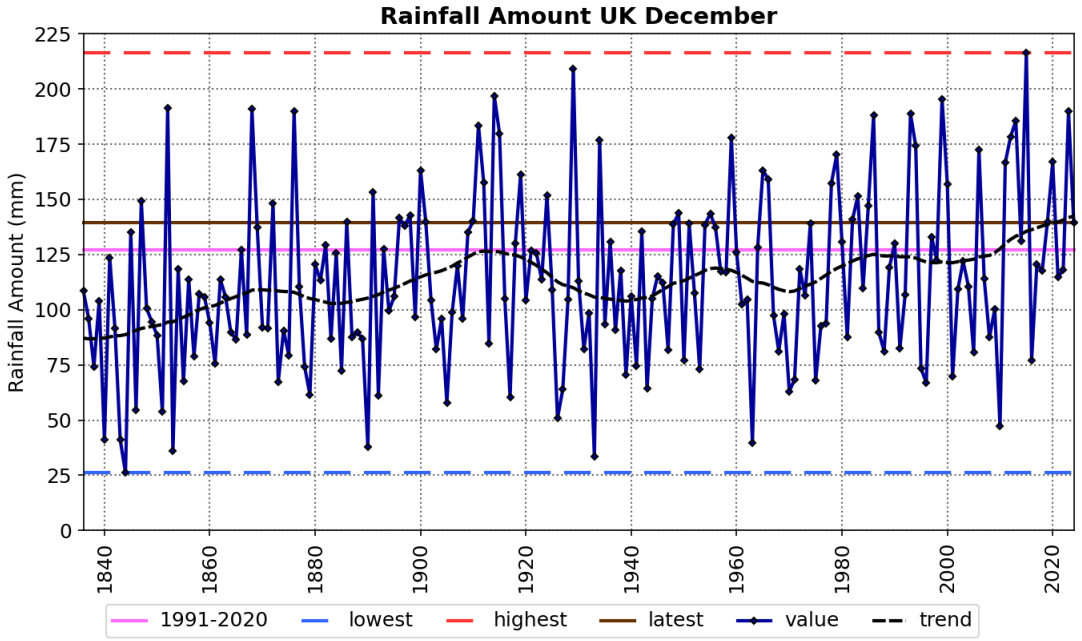
Monthly time-series

These charts show time-series for the UK for December 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.



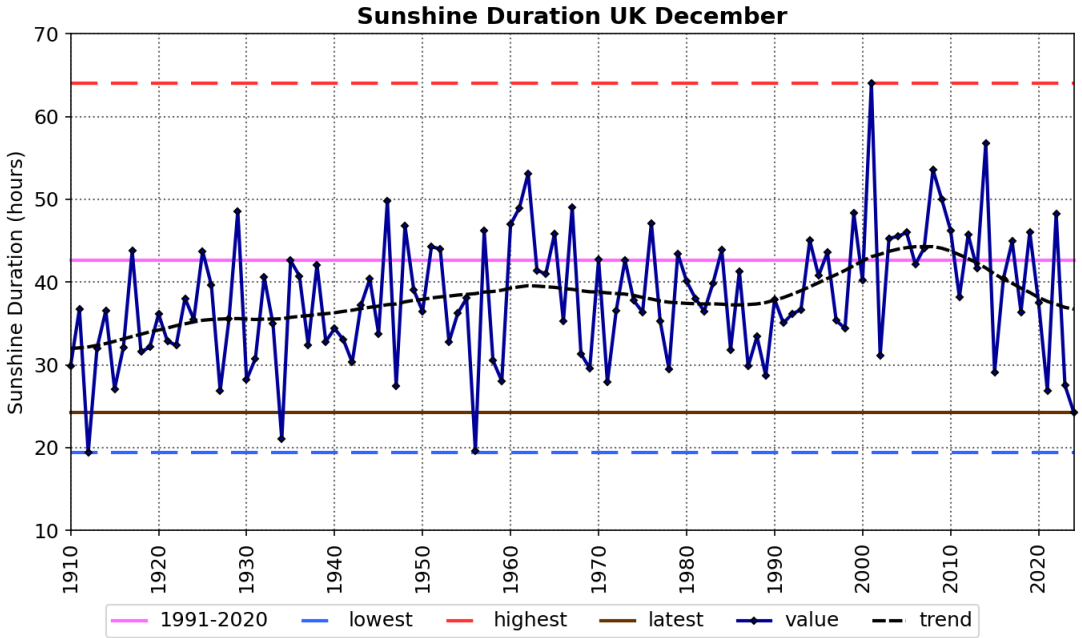
Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	3.8	4.2	5.3	6.2

Met Office Source: HadUK-Grid 01/01/2025 10:44 © Crown copyright



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	114.2	127.2	140.1	139.4

Met Office Source: HadUK-Grid 01/01/2025 10:44 © Crown copyright

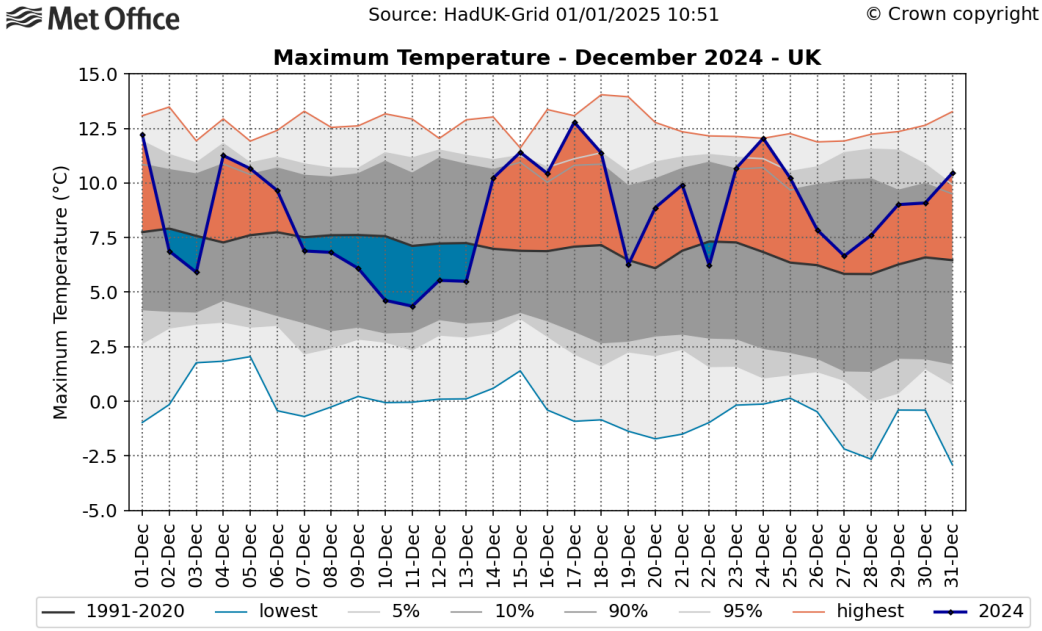


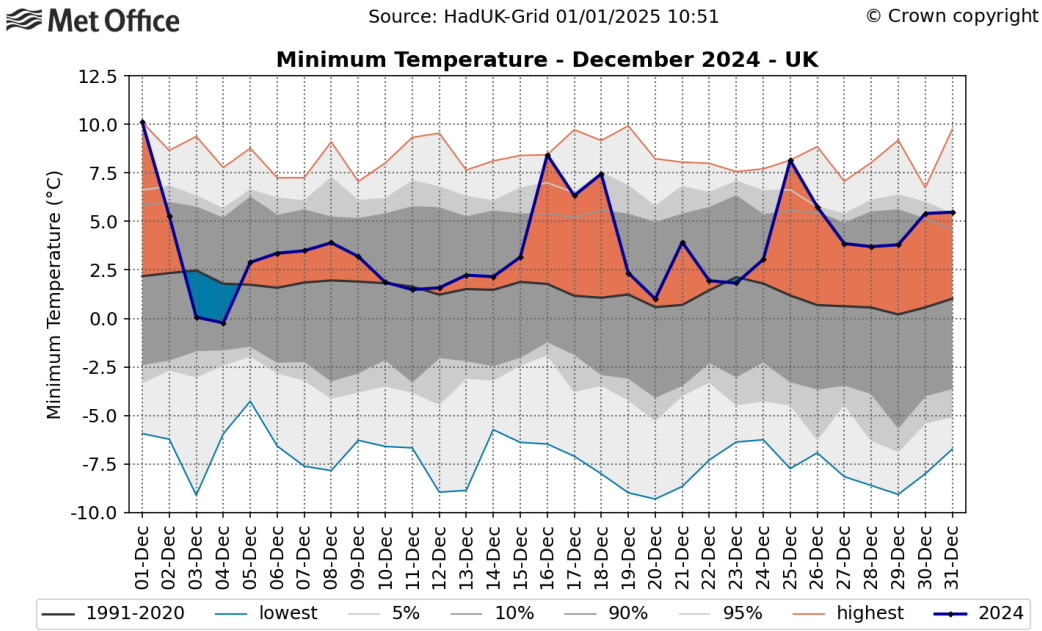
Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	38.5	42.7	36.1	24.3

Daily time-series

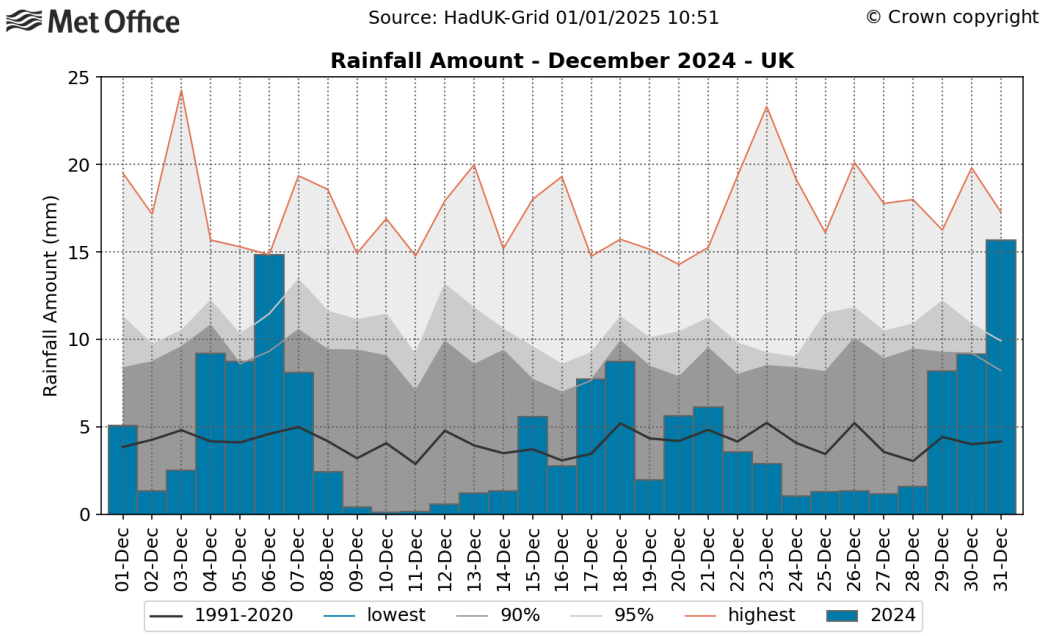
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of December 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles 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.

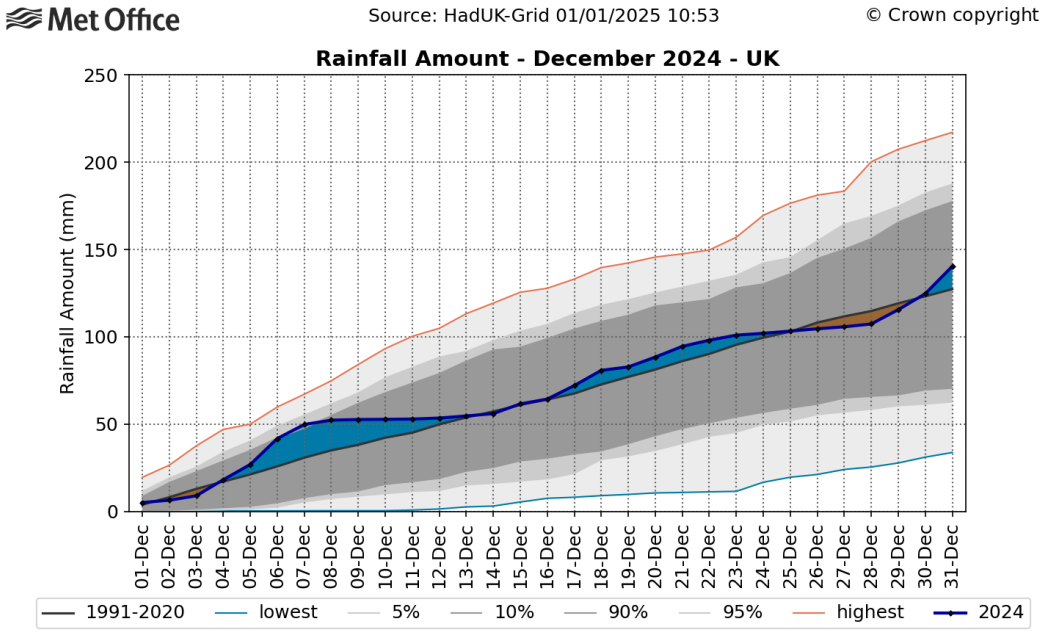
Daily maximum and daily minimum temperature





Daily rainfall and rainfall accumulation

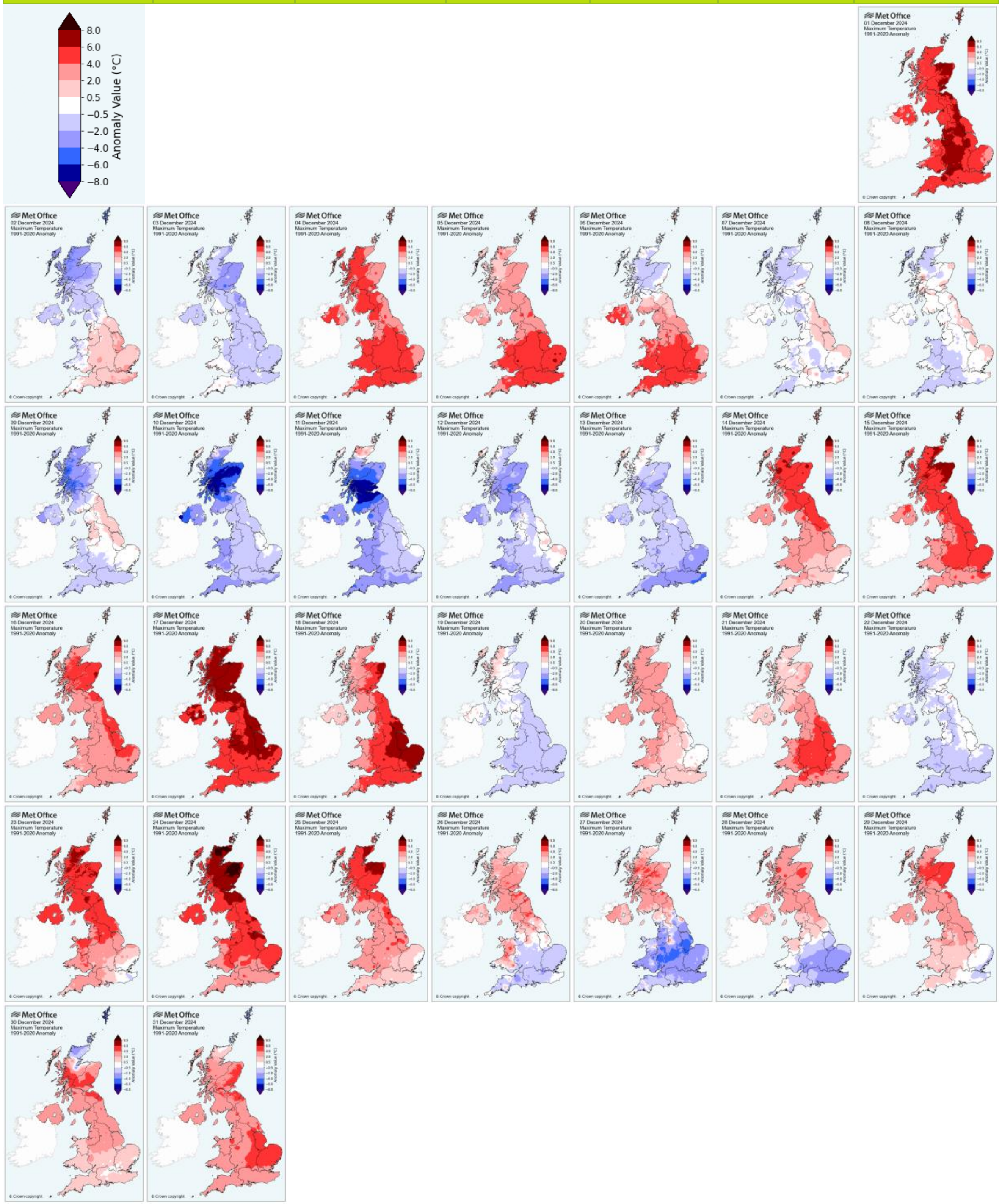




Daily maximum temperature maps - calendar view

These maps show daily maximum temperatures for each day of December 2024 as anomalies relative to the December 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.

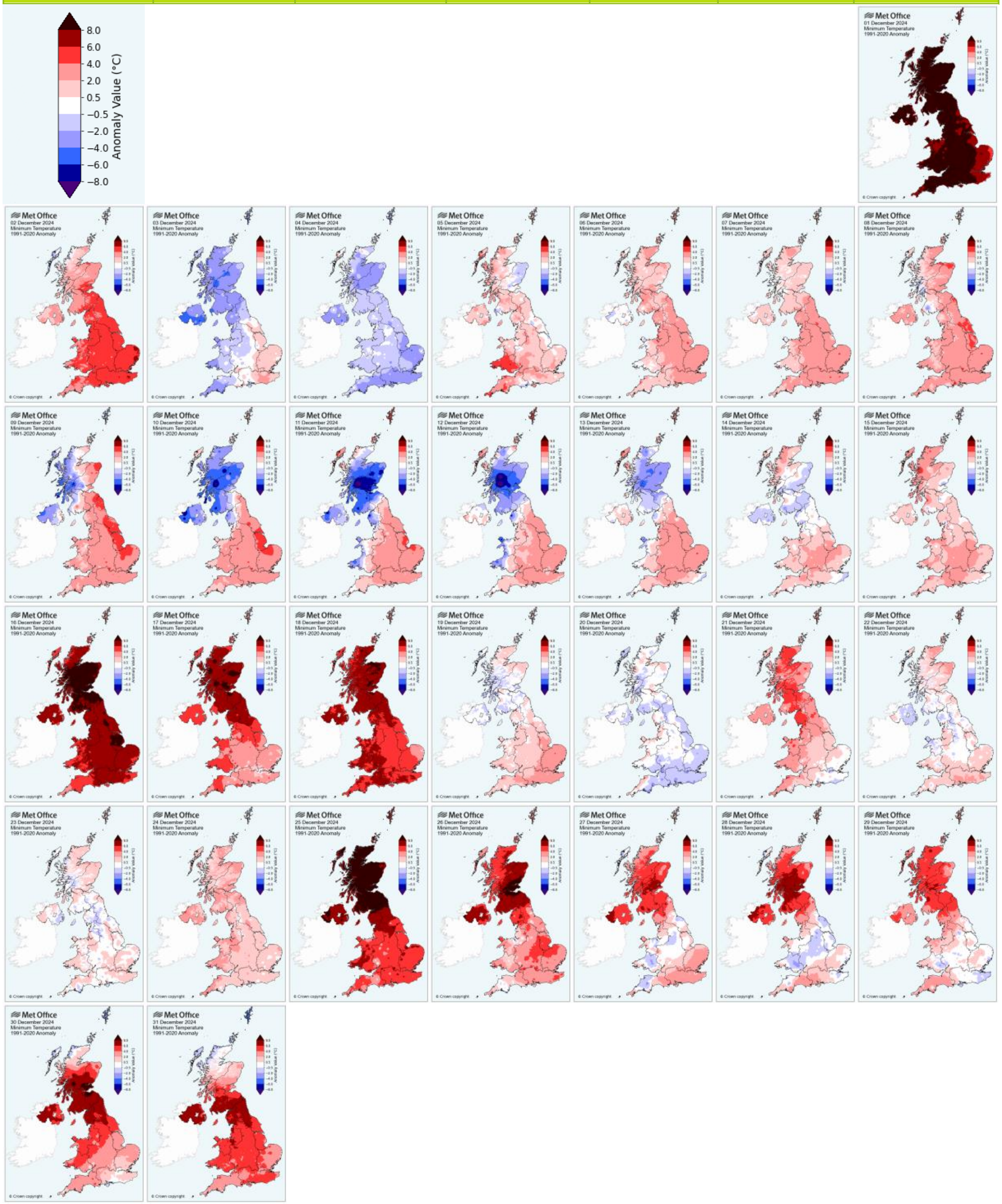
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily minimum temperature maps - calendar view

These maps show daily minimum temperatures for each day of December 2024 as anomalies relative to the December 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.

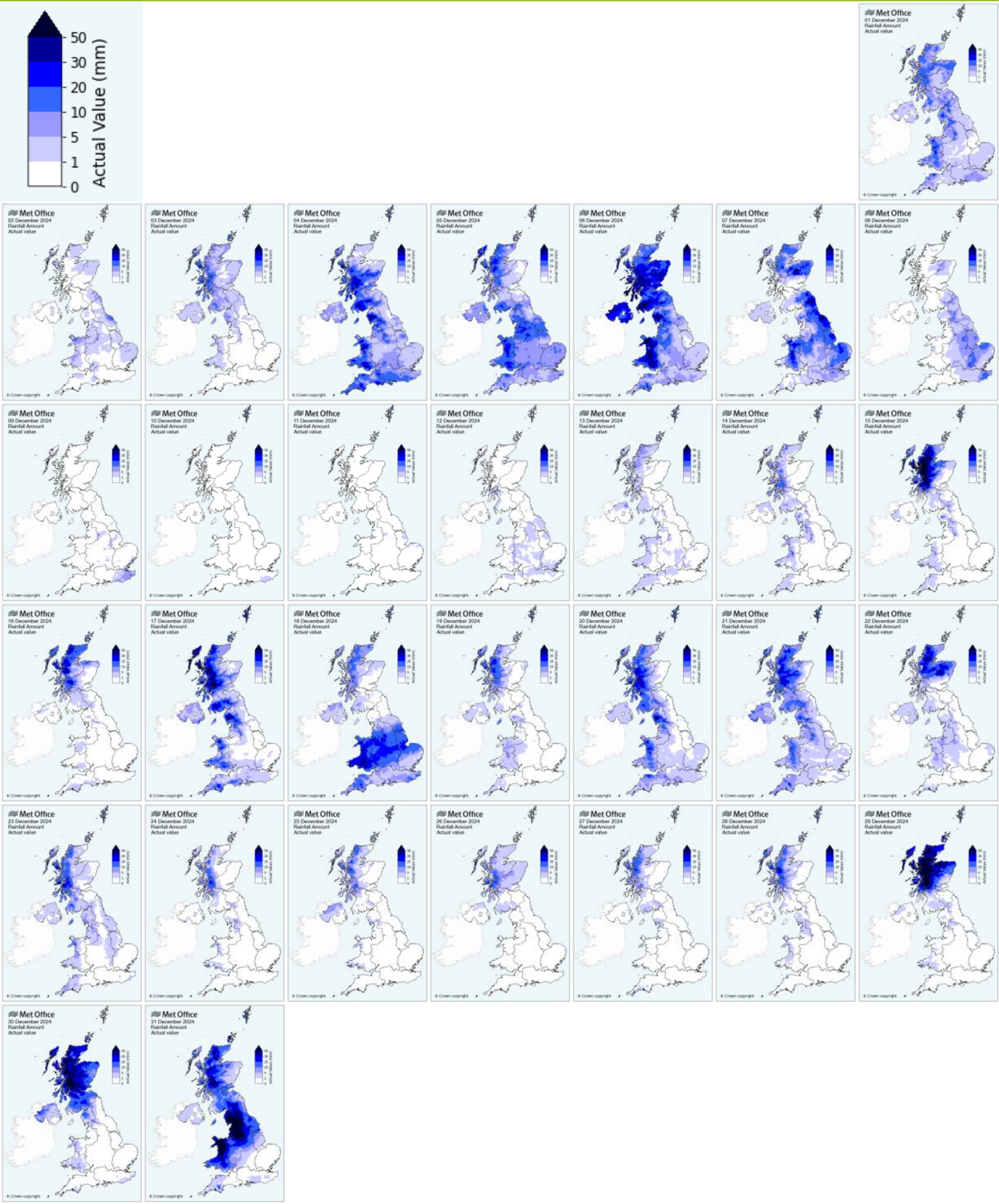
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily rainfall maps - calendar view

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

Mon	Tue	Wed	Thu	Fri	Sat	Sun



Monthly atmospheric circulation

Mean sea level pressure

These charts show the monthly mean sea level pressure for December 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 December 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.

Text not available.

250hPa wind speed and direction

These charts show the monthly 250hPa wind speed and direction for December 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 December 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.

Text not available.

Weather diary

- **A stormy month but mainly mild with brief colder interludes**

A wet and windy start to the month, before a ridge of high pressure on the 4th signalled the proverbial calm before the storm! Explosive cyclogenesis in the mid-Atlantic on the 5th resulted in the formation of Storm Darragh which brought high winds and significant rainfall to all parts of the UK late on the 6th, right through to the 8th.

As Darragh moved out into the near continent by the 9th, a cold spell followed thanks to a brisk northerly airstream. This became an easterly as a large area of high pressure tracked eastwards off the Atlantic to cover the whole of the UK until the 13th. The main characteristic of this anticyclone was typical winter anticyclonic gloom with large amounts of cloud cover and generally cold conditions with some very frosty nights especially over northern England and Scotland. Temperatures in parts of Stirlingshire fell to -11°C on the 11th.

All change again by the 14th with the classic setup of low pressure to the north, high pressure to the south, the winds and frontal systems now coming off the Atlantic, and the UK in a broad warm sector with maximum temperatures back into low double figures. A waving front over the north of Scotland on the 16th brought some prolonged rainfall, with totals approaching 100mm in parts of the northwest Highlands. As the area of high pressure on the near continent moved away east on the 17th, another deep depression brought more strong winds and rain off the Atlantic, followed hot on its heels on the 18th and 19th by another system bringing wind and rain to southern coastal counties.

The UK then entered a changeable period with a series of depressions and ridges crossing the country, then from the 24th through to the 29th, under slow moving warm sector conditions, fog became a major feature of the weather chiefly for England and Wales, the fog being particularly thick and persistent across many counties, and a stalled front brought rainfall exceeding 120mm in parts of the northwest highlands. It was all change from the 30th as a deep Atlantic depression brought strong winds and heavy and persistent rain to all parts, but in particular Wales, with northern counties receiving over 115mm, followed by significantly colder temperatures and snow showers right at the end of the month.

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 from data from these stations are used to provide long term context.

This summary was produced on 06/01/2025 08:10. 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 LEELA (Lightning Electromagnetic Emission Location by Arrival time difference) 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