November 2024 Monthly Weather Report

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

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UK overview

November was a month of two very contrasting halves. The first half of the month was dominated by high pressure, leading to dull, dry and mild conditions with very low sunshine levels. This ‘anticyclonic gloom’ persisted until mid-month, at which point there was a shift to lower pressure brought by an Arctic maritime airmass. This airmass resulted in colder temperatures and wintry precipitation, especially in northern areas but extending into southern England. The second half of November saw continued cold conditions with frequent wintry showers, particularly in northern and western regions. The second named storm of the season, Storm Bert, arrived on the 23rd and brought exceptionally wet and windy weather to the UK, particularly south Wales and south-west England. A few days later, the third named storm of the season, Storm Conall, brushed along the southern coast of England, bringing heavy rainfall.

Although November started with mild temperatures, cold spells in the latter half of the month brought the overall mean temperature to near average. The provisional UK average mean temperature for November was 6.6°C, 0.1°C above the long-term average. Northern Ireland was slightly warmer than other countries, recording a provisional mean temperature of 7.5°C, 0.8°C above average. The first half of the month was dry, with only 6% of the long-term average rain falling by the 16th. However, the second half of the month saw increased rainfall, although not quite reaching the average November rainfall. Overall rainfall was below average, with the UK provisionally recording only 68% of the average month’s rainfall. Storm Bert brought exceptionally wet weather to the southwest, particularly south Wales, with more than 150mm of rain falling in the wettest upland areas. Around three-quarters of the whole-monthly rainfall fell in a swathe from Gwent to Wiltshire to Northamptonshire. With anticyclonic gloom dominating the first half of the month, the month’s sunshine hours were below average, with the UK provisionally experiencing 51.8 hours, just 89% of the average. Scotland, however, recorded near-average sunshine hours, with 47.3 hours, 99% of the average November sunshine.

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

Weather impacts

- **Widespread snow led to school closures and travel disruption from the 18th to the 21st**
- **The second named storm of the season, Storm Bert, was a multi-hazard event that brought heavy rain, wintry precipitation and strong winds across the country, but especially to South Wales**

November was a month of two very contrasting halves. The high pressure across the UK that marked the closing days of October proved remarkably resilient, lasting through the first half of November and giving over a fortnight of relatively static, mild and impact-free conditions.

The anticyclonic block was finally broken mid-month as the high centre retrogressed to the central N Atlantic. This allowed the first southwards incursion of Arctic air into the UK, leading to snow and ice across initially northern parts but spreading to Wales and central England by the 18th/19th. As much as 15cm of snow was reported in parts of the East Midlands on the morning of the 19th, and the snow brought widespread disruption to roads in the Pennines, Midlands and north Wales. Wintry conditions led to the closure of around 50 schools in the west Midlands on the 19th.

The cold spell persisted until the 23rd with some sharp overnight frosts recorded, especially in northern Scotland. Further snow showers affected northern Scotland and western parts of the UK, with more organised snow affecting parts of southern and south-western England on the 21st. Numerous school closures were reported during these days across Scotland and southern England. Reports of more than 10cm of snow were reported at modest altitudes inland, and significant damage to trees from the weight of snow was reported in parts of Devon. A few localised power outages were also logged in the worst affected areas.

By the 20th there were clear signals that the cold spell would be brought to a decisive end during the 23rd with a major Atlantic low forecast to develop and spread much milder air north-eastwards across all parts of the UK. Storm Bert was named by Met Eireann on the 21st and brought heavy snow to Scotland and northern England, widespread heavy rain across Wales, southern parts of northern England, the Midlands and southern England, and a rapid rise in temperature that resulted in a thaw of the earlier snow. Around 6000 properties in Northern Ireland reportedly lost power with widespread road flooding and a number of trees reported fallen. Scotland saw road disruption during the heavy snow with reports of various weather-related accidents. The main surge of impacts from Storm Bert centred around its rainfall with over 150mm recorded across upland south Wales and Dartmoor on the 23rd and 24th. The river response across southern Wales, the Midlands

and southern England was strong with well over 100 flood warnings posted. In south Wales, Pontypridd was affected by severe flooding after the River Taff overtopped, whilst a landslide at Cwmtillery, Blaenau Gwent brought mud and sludge down onto the main street. Some 400 properties were reportedly flooded across south Wales with the water treatment works at Tynywaun impacted, resulting in various communities in the Rhondda being without drinking water for over a week. Tenbury Wells in Worcester suffered significant flooding when a wall gave way under pressure from a rapidly rising brook. Both Chippenham town centre and Bradford-on-Avon (Wiltshire) were reportedly flooded after the River Avon overtopped. Northampton railway station was reportedly flooded with the nearby Billing Aquadome Caravan Park inundated by the River Nene, forcing evacuations and invoking a severe flood warning and a major incident declaration. The National Grid reported over 350,000 homes without power for a time during Storm Bert, whilst at least five deaths were directly linked to the adverse weather conditions associated with the storm. The last main weather event of the month occurred early on the 27th when Storm Conall, named by the Dutch meteorological service, brushed across the far south of England, bringing widespread rainfall and some road/rail disruption to central southern and southeastern England.

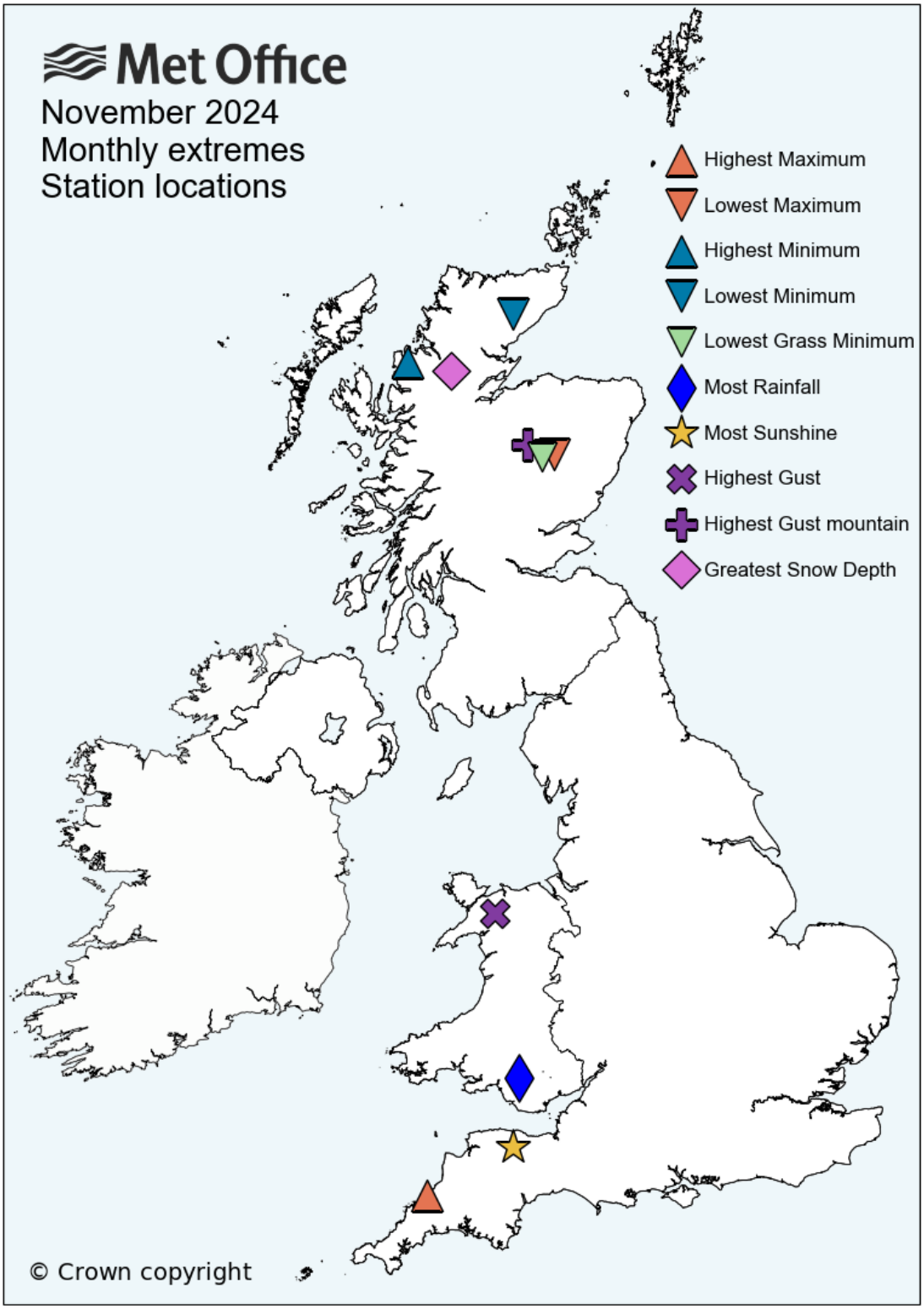
Monthly extremes

The table below lists UK monthly weather extremes recorded at individual weather stations during November 2024 from data available on 02/12/2024. The map shows the location of these stations.

Highest Maximum	**18.8°C** on **10th** at Treknow (Cornwall, 100mAMSL)
Lowest Maximum	**-1.5°C** on **27th** at Balmoral (Aberdeenshire, 283mAMSL)
Highest Minimum	**14.5°C** on **7th** at Poolewe (Ross & Cromarty, 6mAMSL)
Lowest Minimum	**-12.4°C** on **23rd** at Kinbrace, Hatchery (Sutherland, 103mAMSL)
Lowest Grass Minimum	**-14.0°C** on **19th** at Braemar No 2 (Aberdeenshire, 327mAMSL)
Most Rainfall	**126.0mm** on **23rd** at Treherbert, Tyn-y-waun (Mid Glamorgan, 259mAMSL)
Most Sunshine	**7.9hr** on **15th** at Liscombe (Somerset, 348mAMSL)
Highest Gust	**71Kt 82mph** on **23rd** at Capel Curig No 3 (Gwynedd, 216mAMSL)
Highest Gust (mountain*)	**98Kt 113mph** on **25th** at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	**28cm** on **22nd** at Loch Glascarnoch (Ross & Cromarty, 269mAMSL)

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

*Mountain stations are above 500mAMSL.


Met Office
November 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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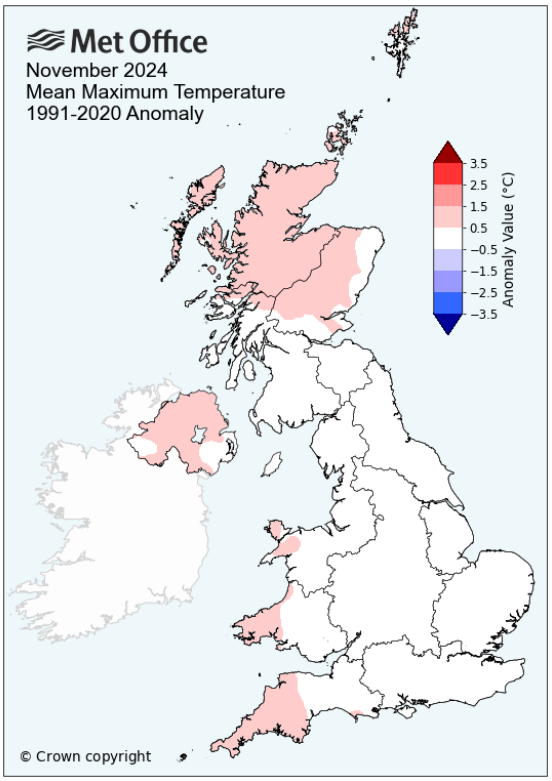
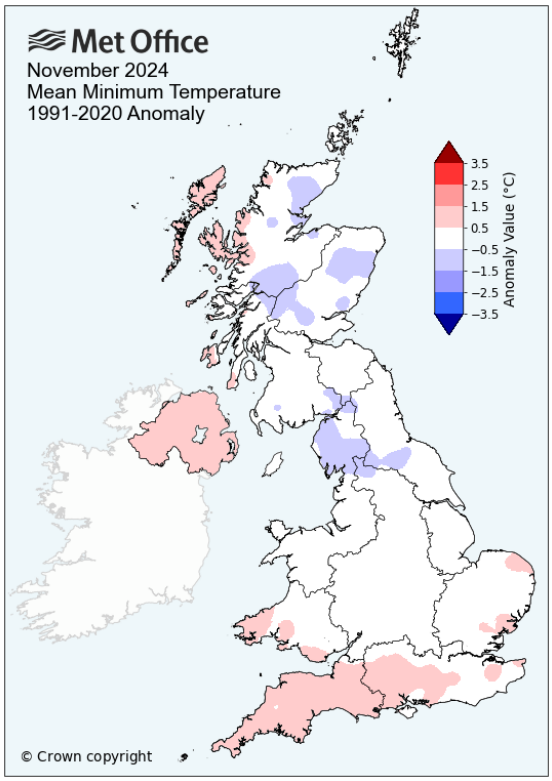
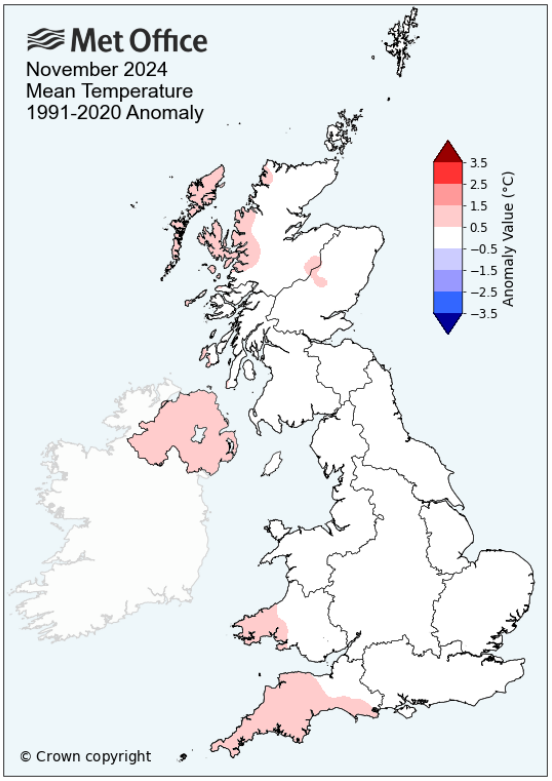
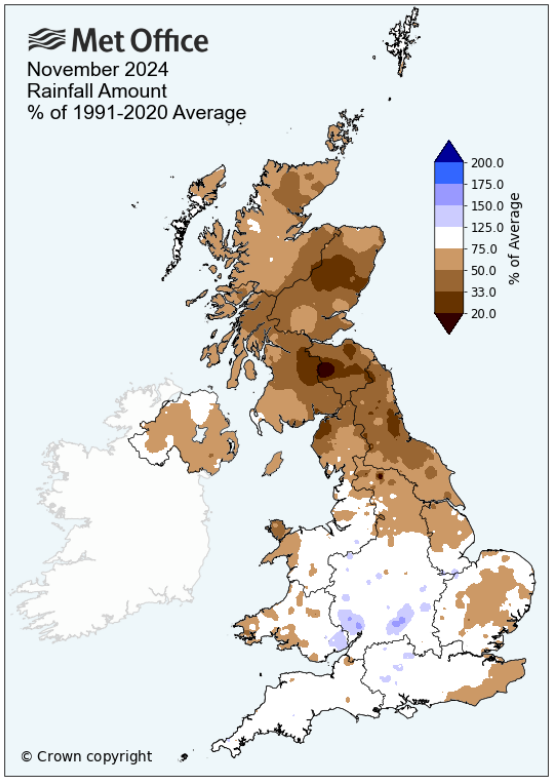
Monthly maps

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

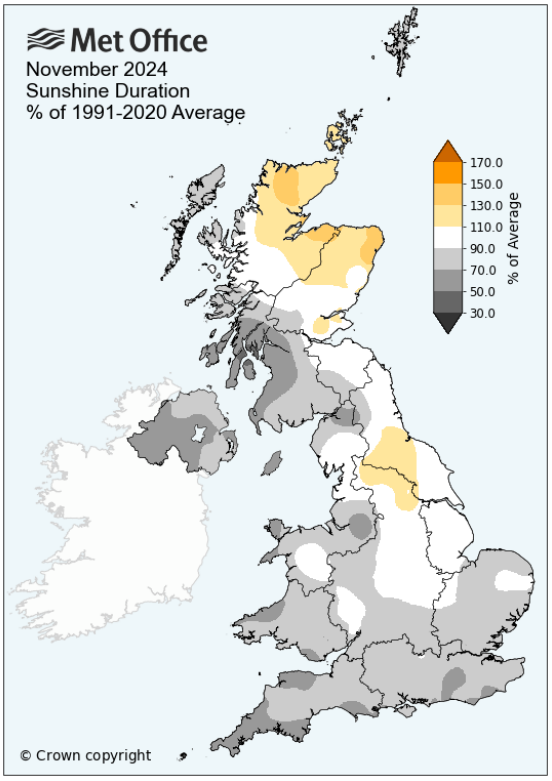


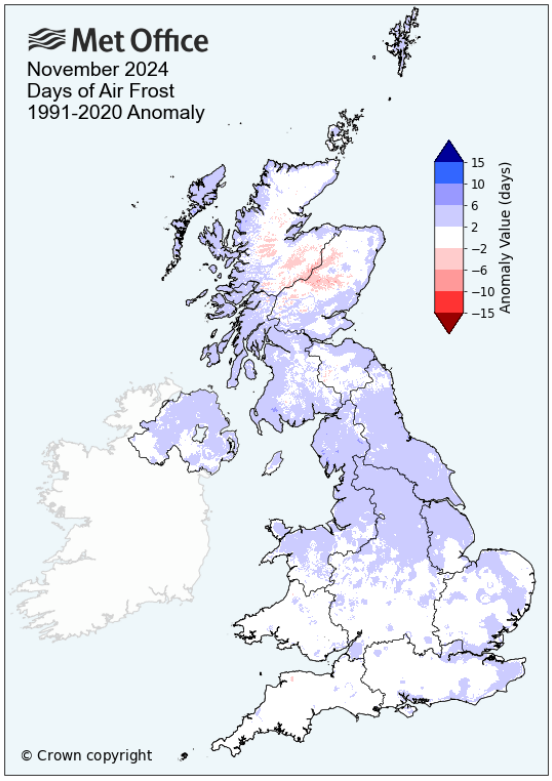


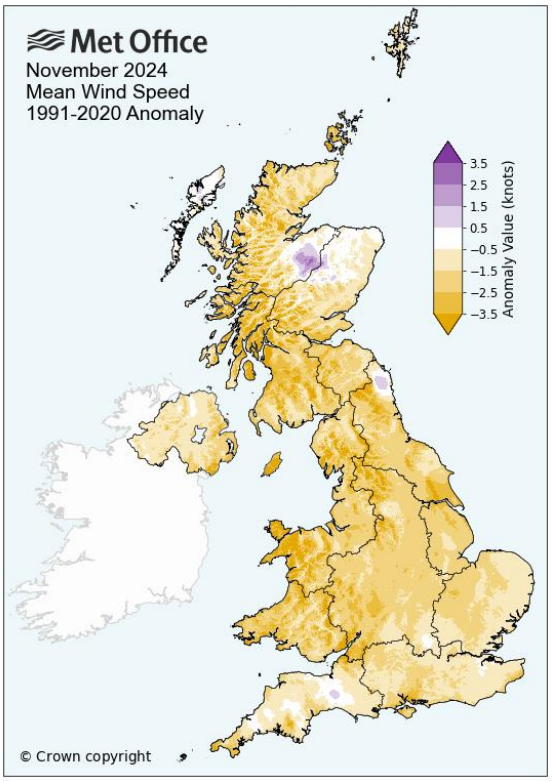


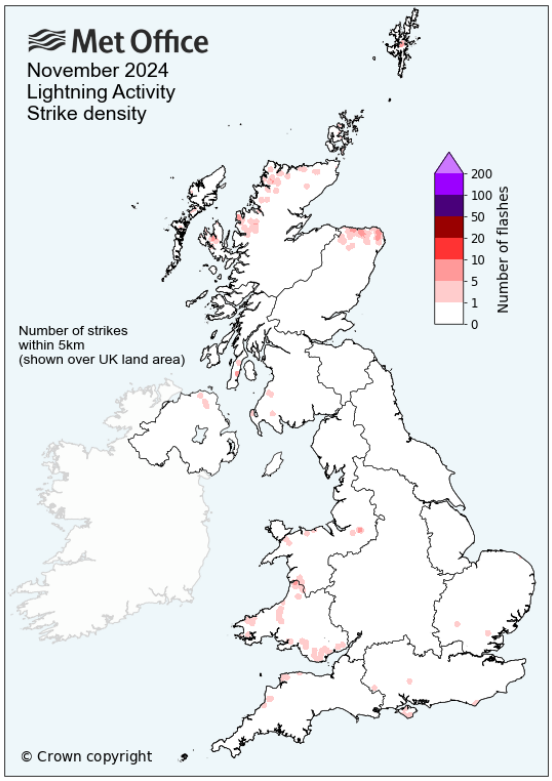


These maps show monthly sunshine, monthly air frost and monthly windspeed for November 2024 as anomalies relative to the November 1991-2020 long term average, plus a map showing lightning activity as the number of strikes within a 5km radius of any land location.









Monthly climate statistics - actuals and anomalies

These tables show the UK and national climate statistics for November 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the November 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	9.6	0.2	33	109	141
England	10.1	-0.1	41	101	141
Wales	10.2	0.3	27	115	141
Scotland	8.5	0.5	29	113	141
Northern Ireland	10.2	0.6	23	119	141
Central England	10.1	-0.2	49	99	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	3.7	0.1	40	102	141
England	4.3	0.2	33	109	141
Wales	4.4	0.3	33	109	141
Scotland	2.3	-0.1	53	89	141
Northern Ireland	4.7	1.0	22	120	141
Central England	4.3	-0.0	50	98	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	6.6	0.2	35	107	141
England	7.2	0.1	36	106	141
Wales	7.3	0.3	32	110	141
Scotland	5.4	0.2	43	99	141
Northern Ireland	7.5	0.8	22	120	141
Central England	7.2	-0.1	74	293	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	84.9	69	142	48	189
England	75.4	82	100	90	189
Wales	134.4	83	99	91	189
Scotland	87.5	53	167	23	189
Northern Ireland	86.3	71	131	59	189
EWP (England and Wales)	85.7	81	134	126	259

Sunshine

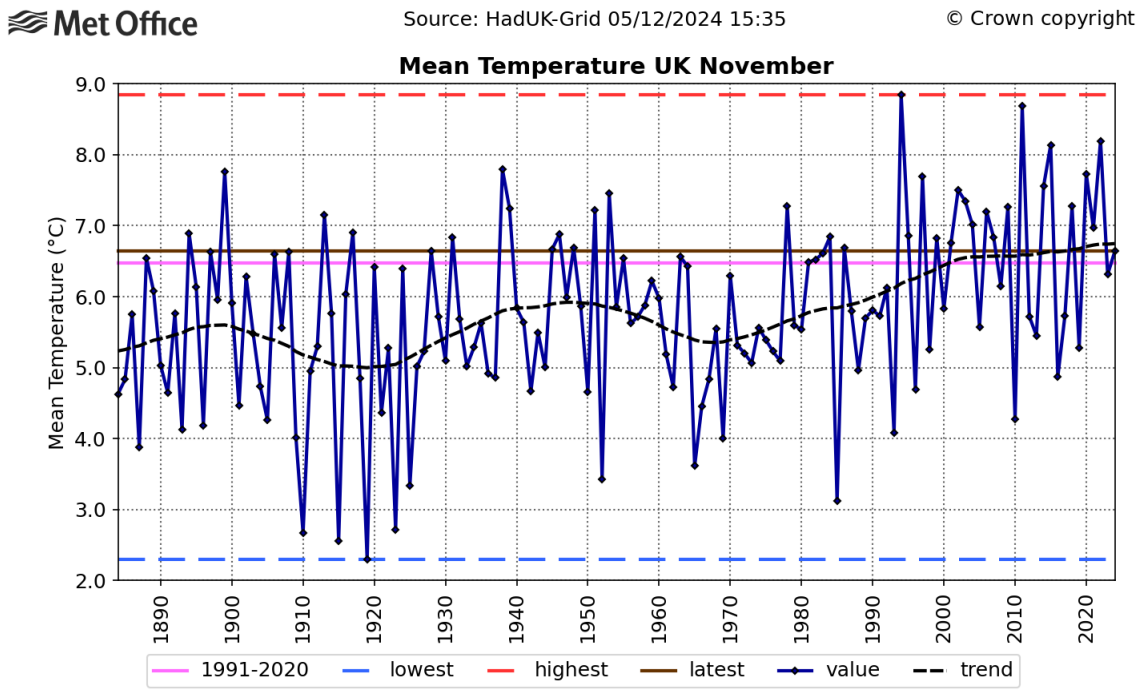
Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	51.3	89	74	42	115
England	56.9	88	70	46	115
Wales	43.9	79	98	18	115
Scotland	46.4	98	51	65	115
Northern Ireland	37.3	69	106	10	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	7.9	-1.8	53	4	56
England	6.8	-1.8	55	2	56
Wales	8.0	-2.7	55	2	56
Scotland	9.8	-1.7	49	8	56
Northern Ireland	7.7	-1.4	53	4	56

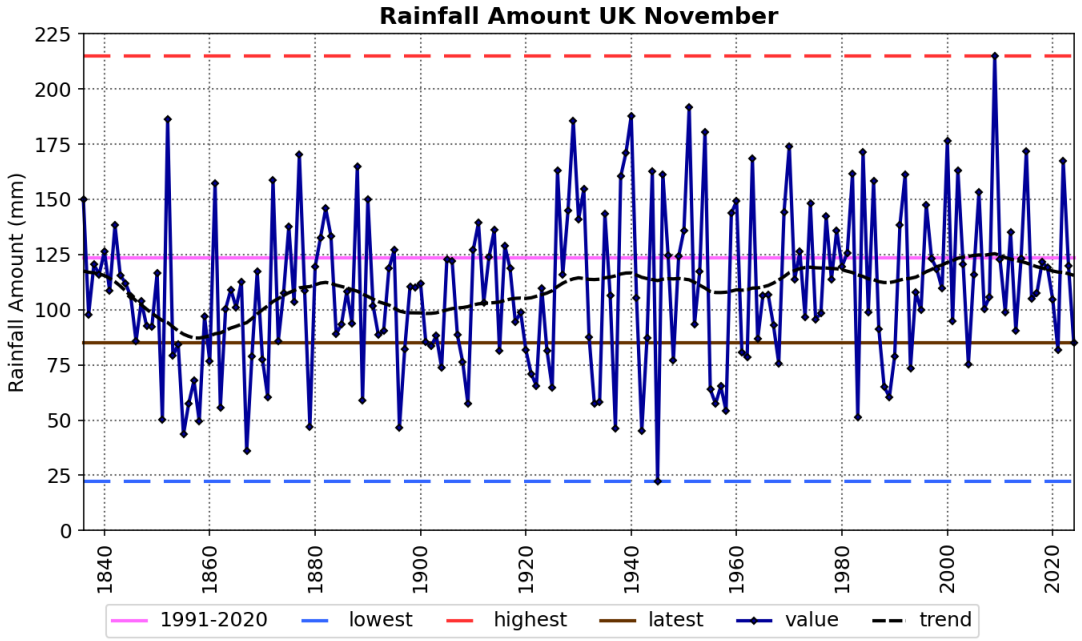
Monthly time-series

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



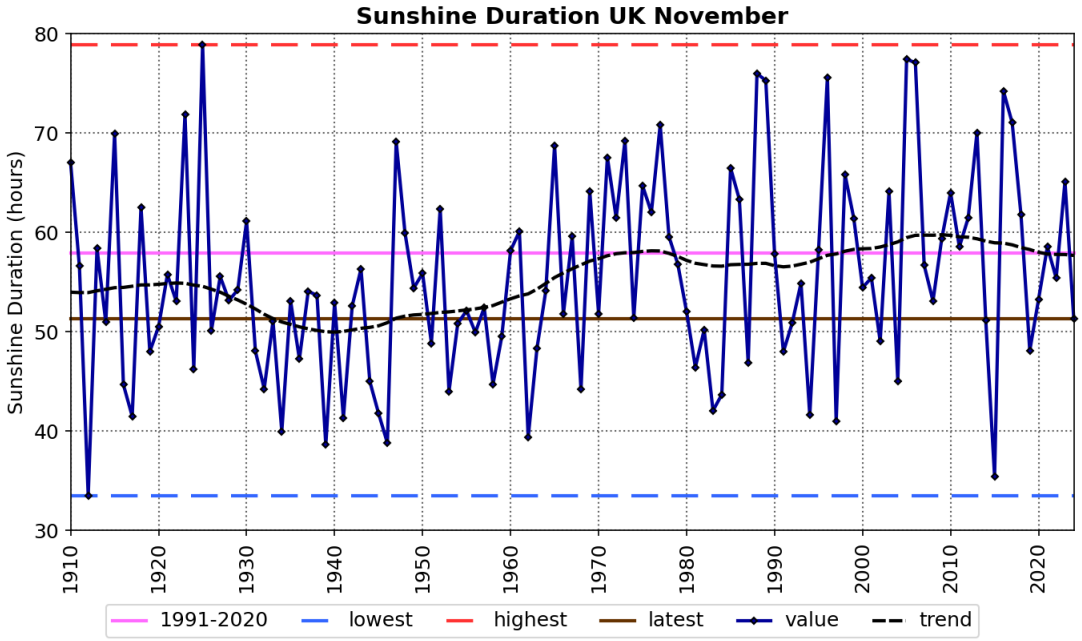
Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	5.5	6.5	6.7	6.6

Met Office Source: HadUK-Grid 05/12/2024 15:35 © Crown copyright



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	112.2	123.3	118.4	84.9

Met Office Source: HadUK-Grid 05/12/2024 15:35 © Crown copyright

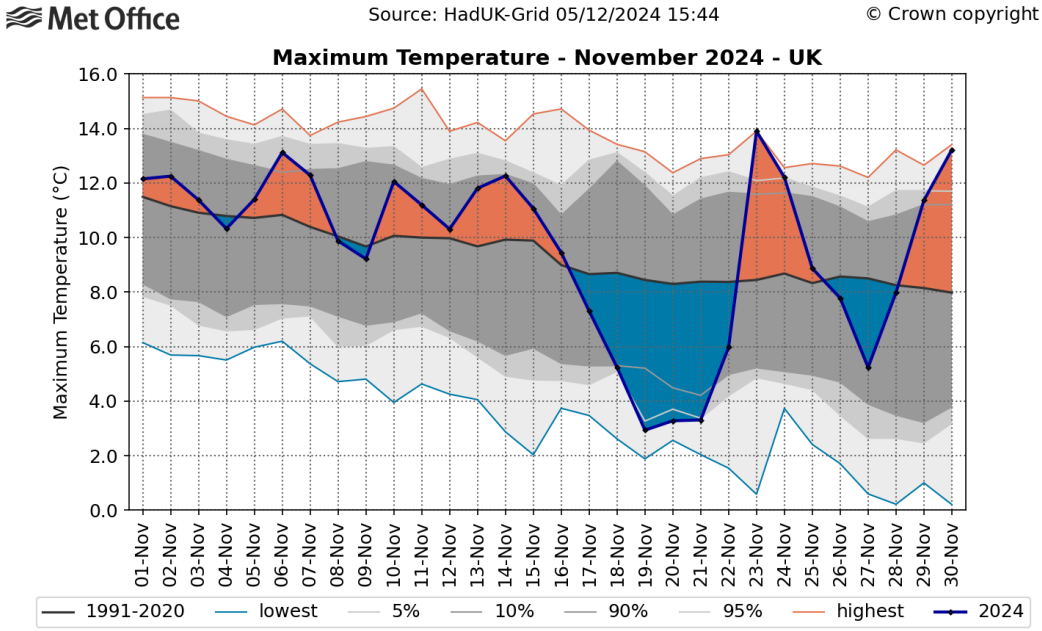


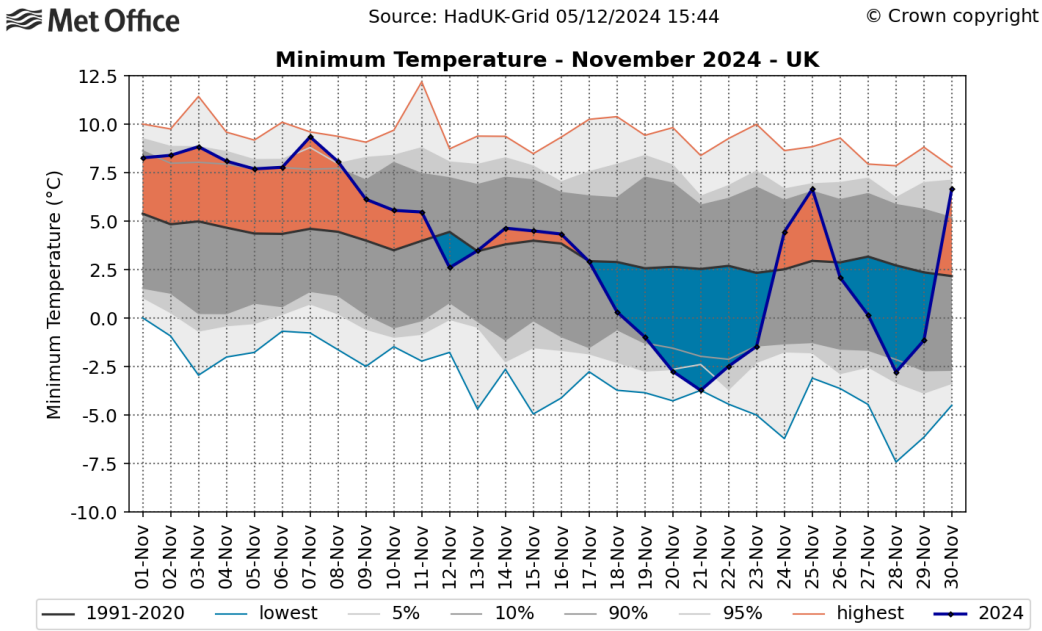
Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	57.5	58.0	57.4	51.3

Daily time-series

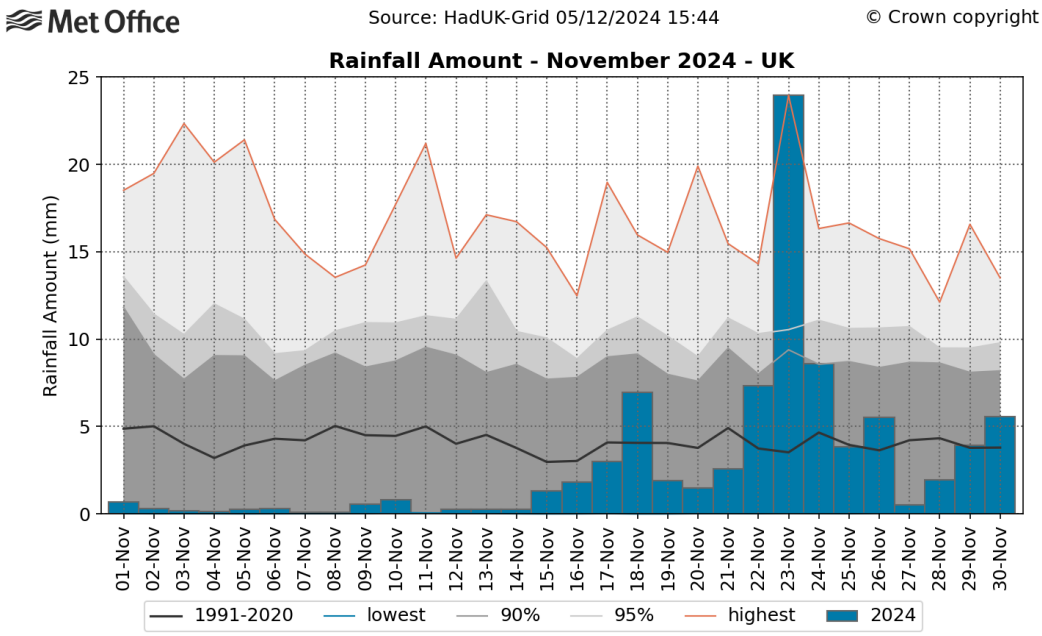
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of November 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles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

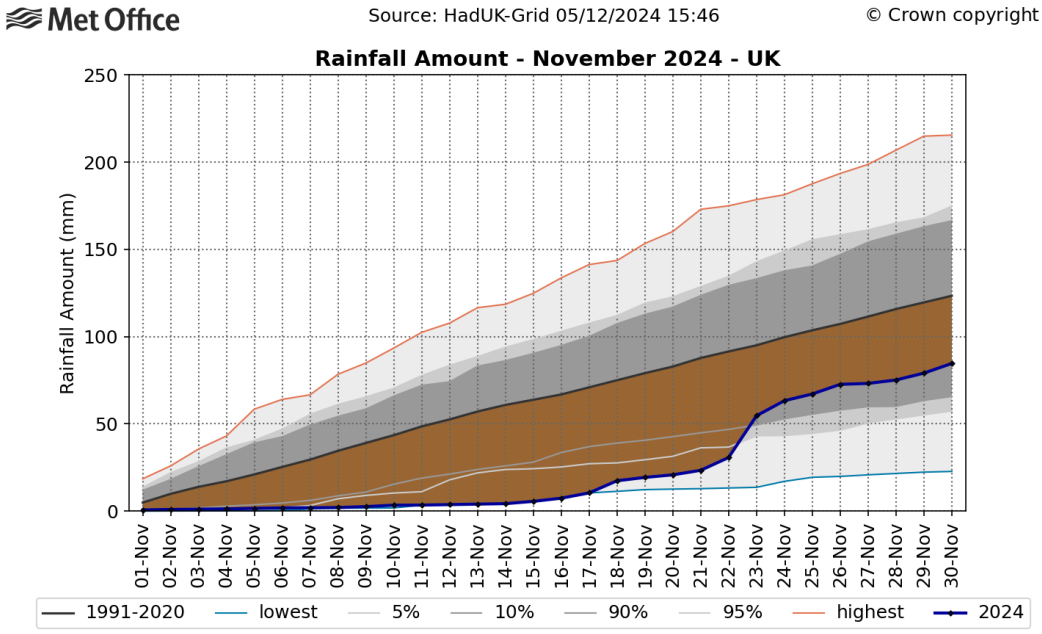
Daily maximum and daily minimum temperature





Daily rainfall and rainfall accumulation

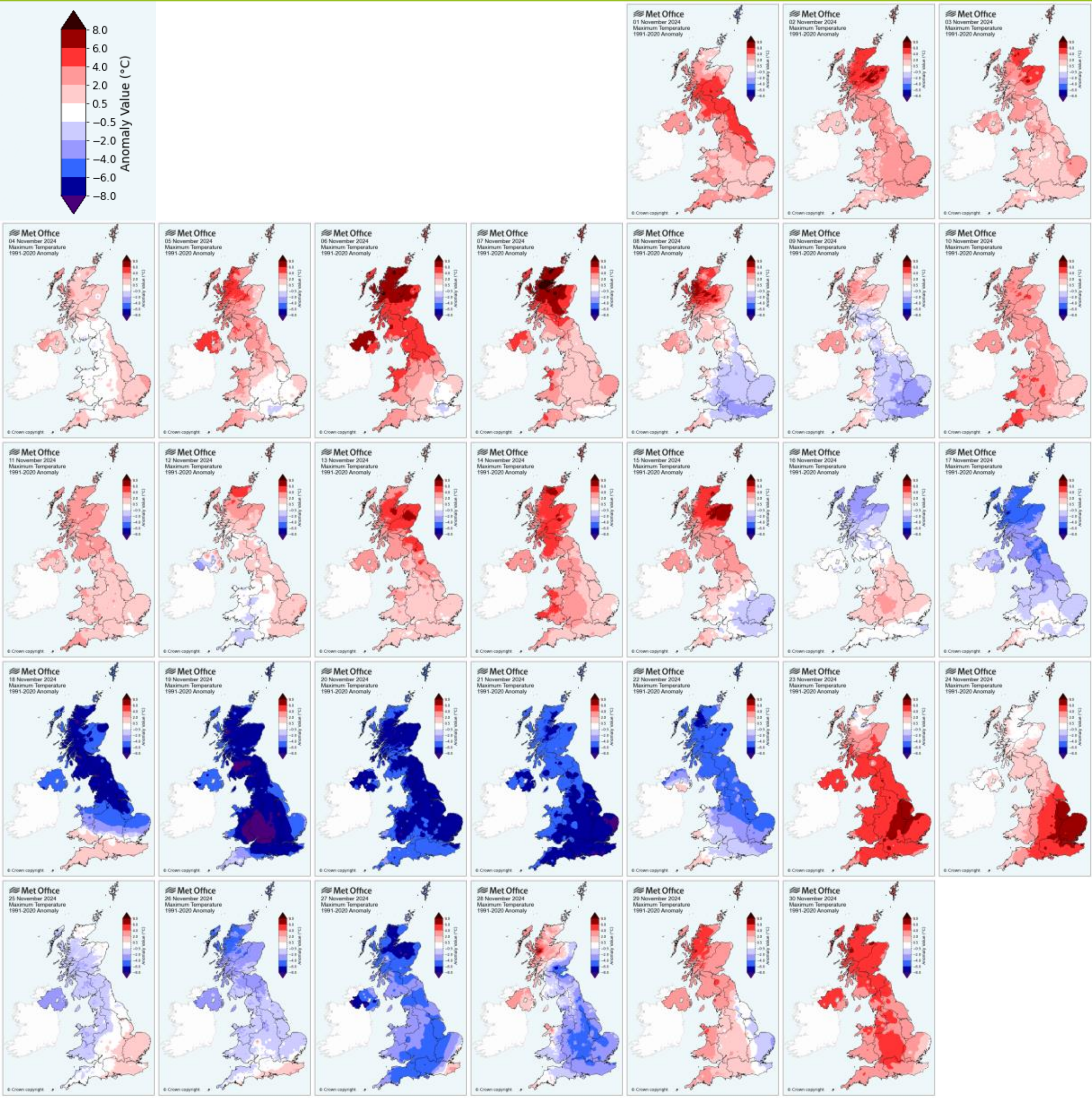




Daily maximum temperature maps - calendar view

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

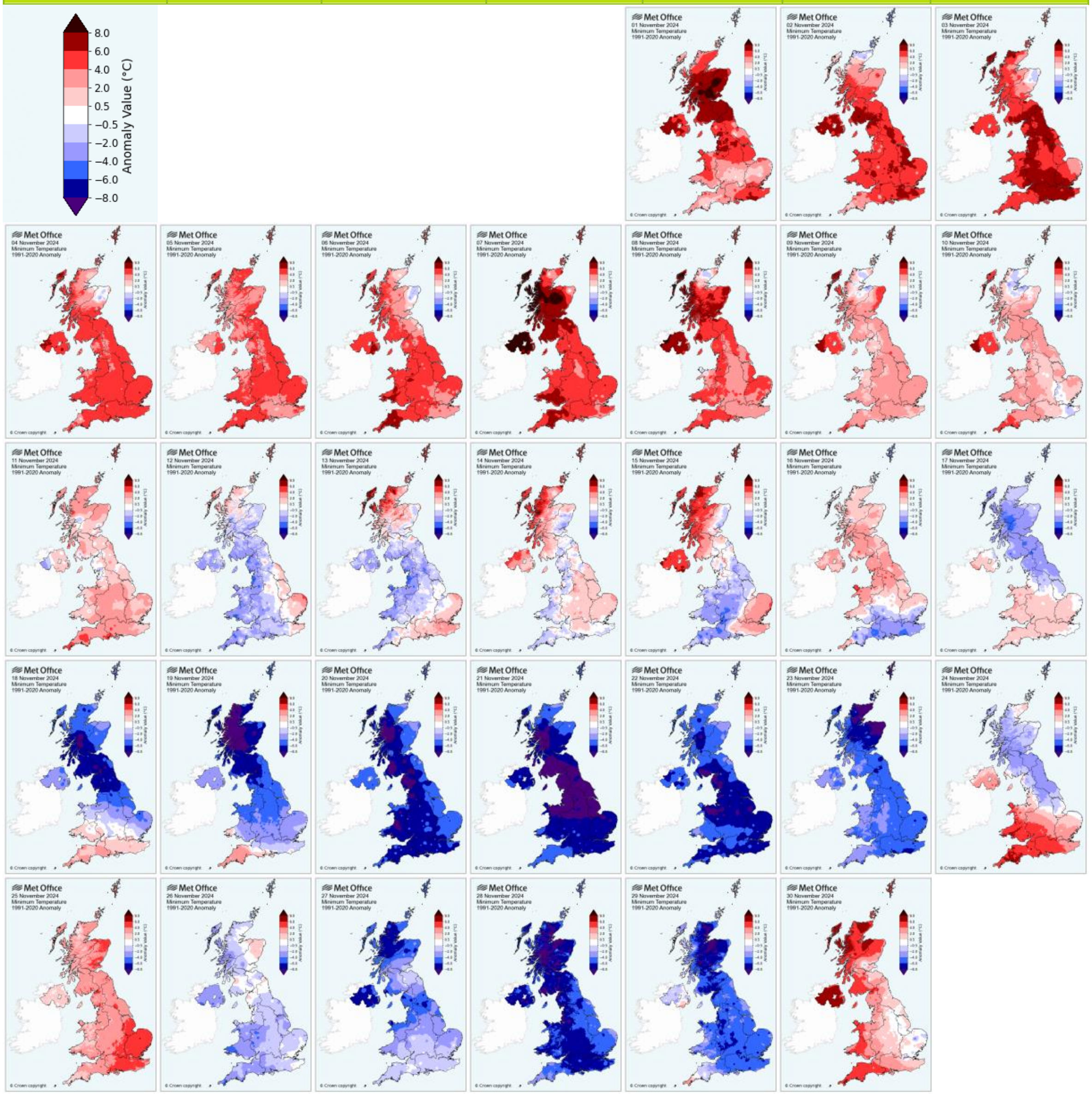
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily minimum temperature maps - calendar view

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

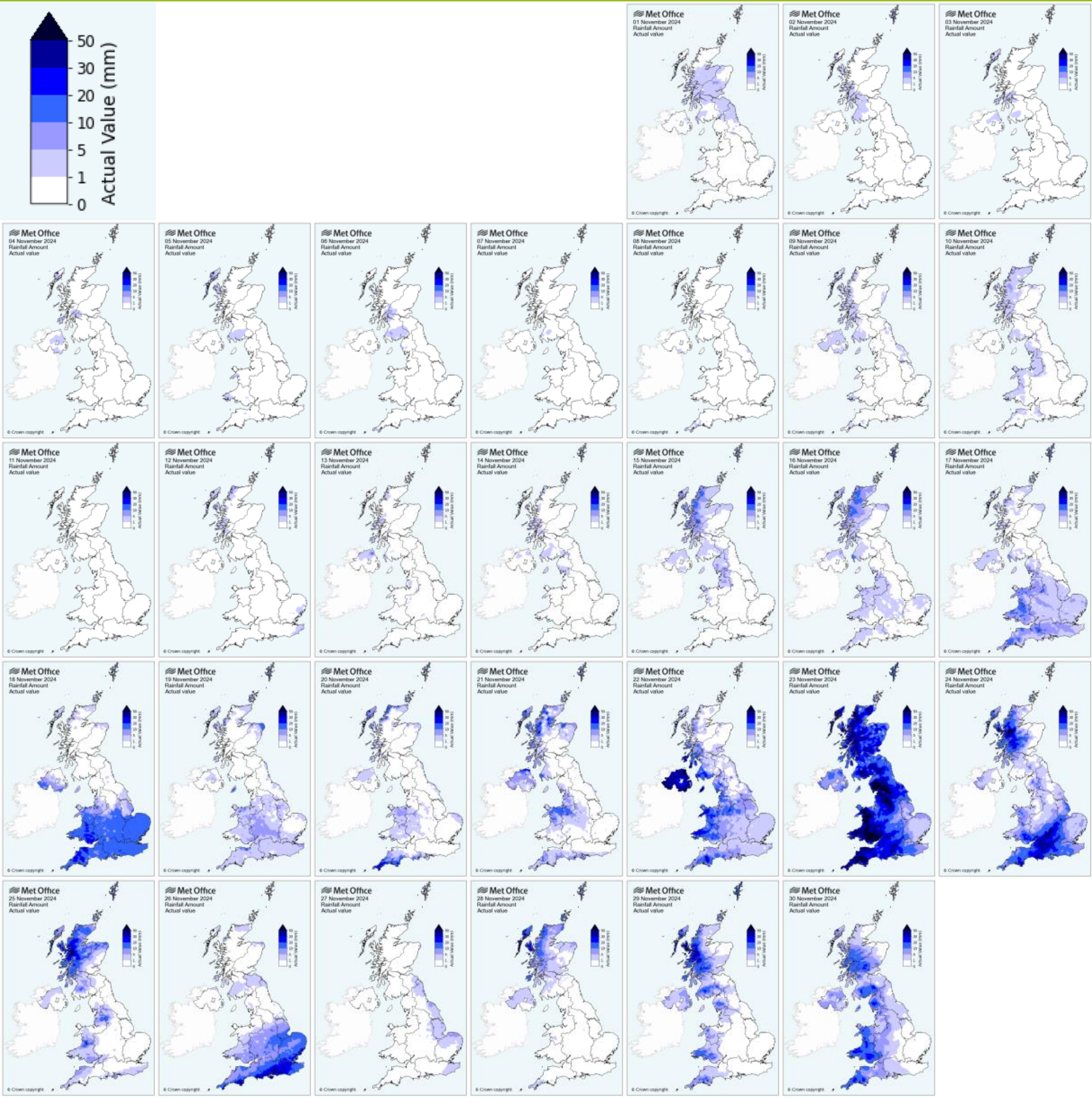
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily rainfall maps - calendar view

These maps show daily rainfall for each day of November 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

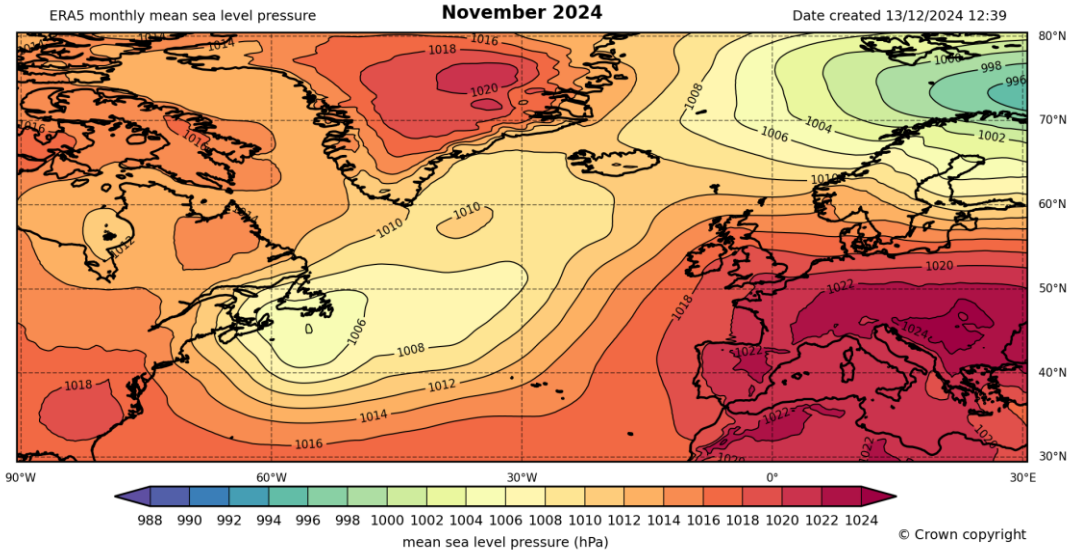


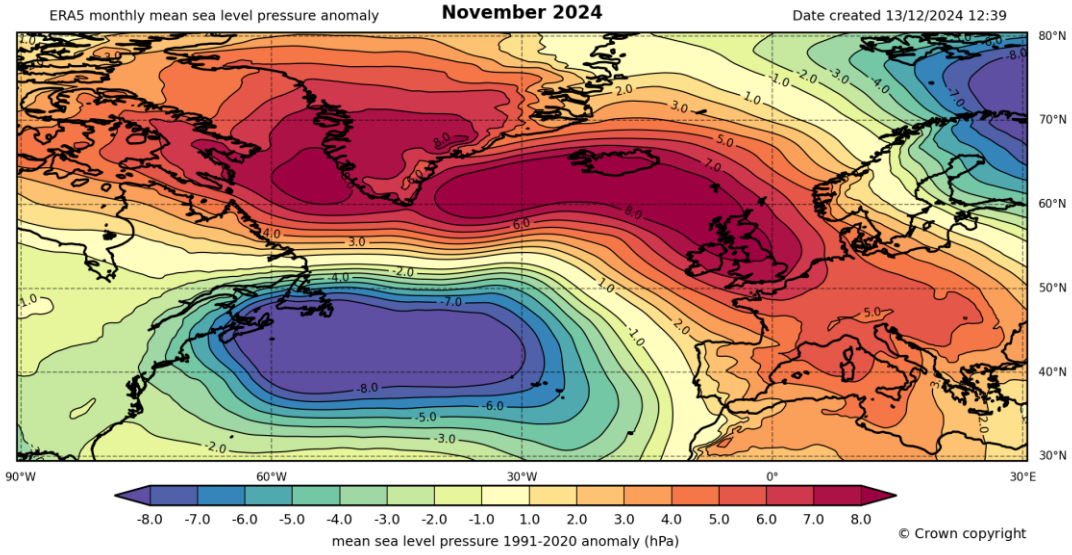
Monthly atmospheric circulation

Mean sea level pressure

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

November saw high pressure over the UK for much of the month. Overall, the mean monthly sea level pressure was higher than usual over the UK and Iceland, and lower than usual over the Atlantic west of the Azores.

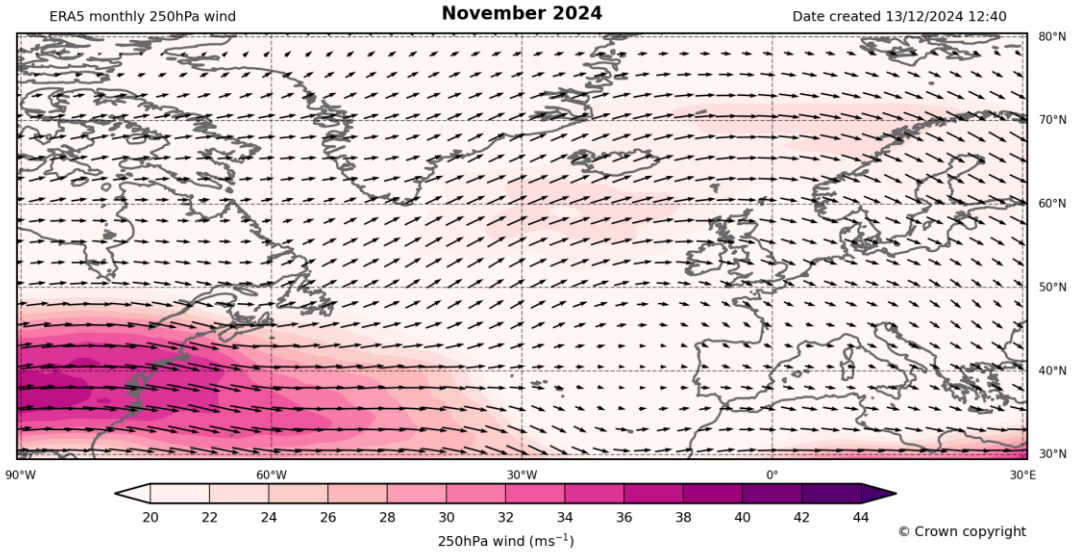


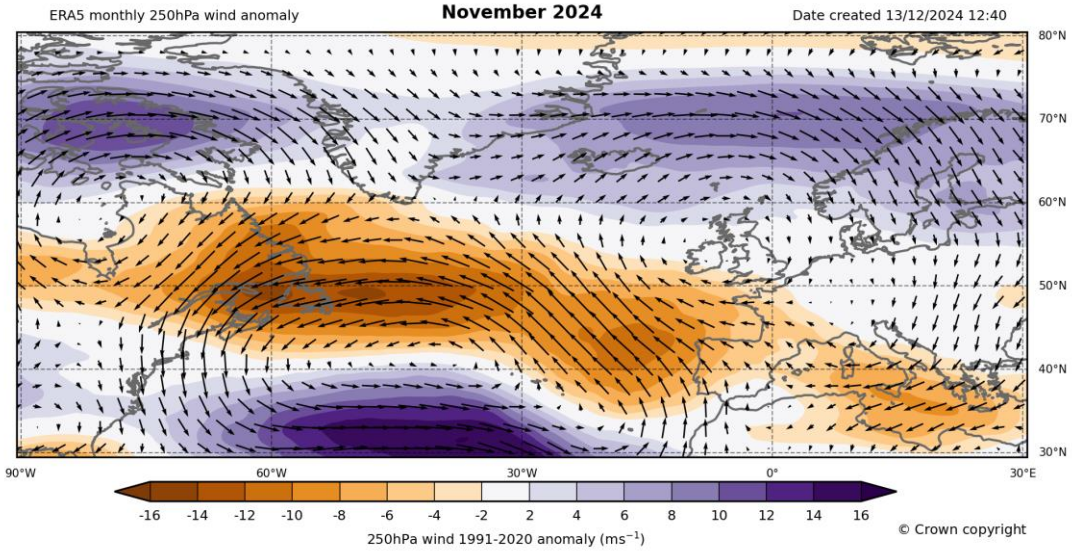


250hPa wind speed and direction

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

During November the jetstream was weaker than usual over the United Kingdom, and stronger than usual further south across the Atlantic.





Weather diary

- **High pressure dominant first half, significantly colder second half**

Thanks to an area of high pressure firmly established over continental Europe with its ridges extended over the UK, the first 10 days of the month were a classic case of anticyclonic gloom, with a lot of locations recording virtually no sunshine. Although temperatures held up in the mild category across all regions, mist, fog patches and drizzle were also prevalent during this period, the fog being dense and persistent in many areas. Sites across England, Scotland and Northern Ireland recorded record breaking maximum temperatures on the 6th.

Breaks in the persistent cloud cover started to appear from the 11th and a change to significantly colder conditions took place from the 16th with high pressure drifting west into the Atlantic, allowing depressions to move from down from the north, introducing a brisk northerly airstream to cover the UK. Maximums now ranged from low single figures Celcius over Scotland and Northern Ireland to low teens in the southwest of England, with snow falling across northern Scotland, the Pennines and Peak district areas, as far south as Oxfordshire from the 18th, with a weather system bringing some significant snow to the southwest on the 21st.

On the 23rd, the second named storm of the season, Bert, paid a visit to the UK, bringing with it some high rainfall totals and strong winds. Rainfall totals especially in western counties widely exceeded 40mm, up to 70mm in parts of Scotland, 80mm in Northern Ireland and in excess of 120mm in parts of England and Wales. The size of Bert meant that the strong winds affected the whole of the UK, with gusts reaching 80mph over northern Wales and the south coast of England.

The effects of Bert finally subsided on the 26th, but another named storm, Conall, brought more wind and rain to southern England on the 27th. The remainder of the month saw winds feed up from the south bringing cloudy but generally mild conditions for 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 from data from these stations are used to provide long term context.

This summary was produced on 13/12/2024 13:46. 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

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