January 2024 Monthly Weather Report

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

Table of Contents

UK overview

January started on a mild, wet and unsettled note, continuing the theme of much of the autumn and December – i.e. a relentless succession of Atlantic low pressure systems. The eighth named storm of the 2023-24 winter, Henk, on the 2nd brought heavy rain and strong winds – including a gust of 70Kt (81mph) at Exeter Airport. With rivers full and the ground already saturated from the persistent rain throughout December, the extra rainfall from Henk resulted in significant flooding problems, particularly from the River Trent. By the 5th, most of central and south-east England had already received two-thirds or more of the whole-month average rainfall. However, fortunately after this the weather regime changed dramatically with high pressure becoming established across the UK and bringing dry, sunny conditions and a marked drop in temperature. Just before mid-month, a northerly flow of Arctic Maritime air brought snow showers mainly across northern areas (although not especially unusual for the time of year). Northern Scotland, in particular Shetland, experienced several days of snow between the 16th and 20th. The cold but dry conditions persisted through the middle of the month until they were brought to an abrupt end with the arrival of the ninth and tenth named storms on the 21st to 24th. Storms Isha and Jocelyn brought strong winds and rain to much of the UK, but also milder temperatures which continued to the end of the month. Storm Isha was especially impactful, prompting extensive amber warnings for wind across the UK and resulted in a gust of 86Kt (99mph) in Northumberland.

Mostly colder than average conditions during the first half of the month were compensated for by much milder conditions later in the month, resulting in close to average temperatures for the UK for the month as a whole (anomaly -0.1°C). The UK experienced a new daily maximum temperature record for January on the 28th, with 19.9°C recorded at Achfary, Sutherland. Rainfall was close to average levels across the UK (97% of the long-term average), with the wet start and end of the month compensated for by the dry spell mid-month. Wales and northern England bore the brunt of the rainfall, while Northern Ireland was much drier (75% of the long-term average). Much of the UK experienced above-average sunshine hours (128% of the long-term average).

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

Weather impacts

- **Strong winds and heavy rain from storms Henk, Isha and Jocelyn cause fallen trees, flooding, travel disruption and power cuts across the UK**
- **Heavy snow affecting Scotland and northern England**

Storm Henk brought heavy rain and wind to the UK on the 2nd, with southern England particularly affected. Wind and rain damaged overhead rail wires between Ipswich and Norwich, as well as causing fallen trees and flooded roads. Rail services in parts of south-west England and south Wales were affected by track flooding, and in Gloucestershire, Tewkesbury was particularly badly affected by flooding from the merging of the rivers Avon and Severn. There were also reports of a tree blocking the line between Exeter and Tiverton. In York, the Ouse overtopped with a number of properties flooded as a result. Pembrokeshire also reported road closures due to rain and wind, and a severe flood warning was issued for the River Ritec in Tenby.

From the 13th, a southwards plunge of Arctic air into the UK brought snow showers to the northern half of mainland Scotland, the Northern/Western Isles and the north of Northern Ireland. By the 16th, the widespread snow spread to affect northern England and southern Scotland. The majority of schools closed in Shetland closed on the 16th, and all schools shut the following day. The largest accumulations of snow were on Shetland and northern Scotland where Highland Council were reporting drifts of over a metre in depth on some roads on the morning of the 18th. Snow and ice conditions caused road closures in northern Scotland and Pembrokeshire.

On the 21st and 22nd, storm Isha brought widespread impacts across the UK, in particular due to strong winds. Extensive amber warnings were issued for much of the UK, and a red wind warning was issued for parts of NE Scotland. Disruption to power supplies was widespread, with over 50,000 properties across parts of northern England and Northern Ireland experiencing loss of power. Sections of the rail network in Scotland and northern England were completely closed down, and several HGVs were reportedly overturned on the M6 in Cumbria late on the 21st. Heavy rainfall caused some river flooding and surface flooding closed sections of rail lines and main roads in Scotland and Cumbria.

Storm Jocelyn arrived on the 23rd and 24th. Winds were slightly less strong than during Isha, but such was the impact of Isha that Network Rail Scotland decided to close their entire rail network for the duration of Jocelyn. Elsewhere across Scotland and northern England both road and rail transport were impacted by fallen trees. Power outages were reported but on a smaller scale than during Isha.

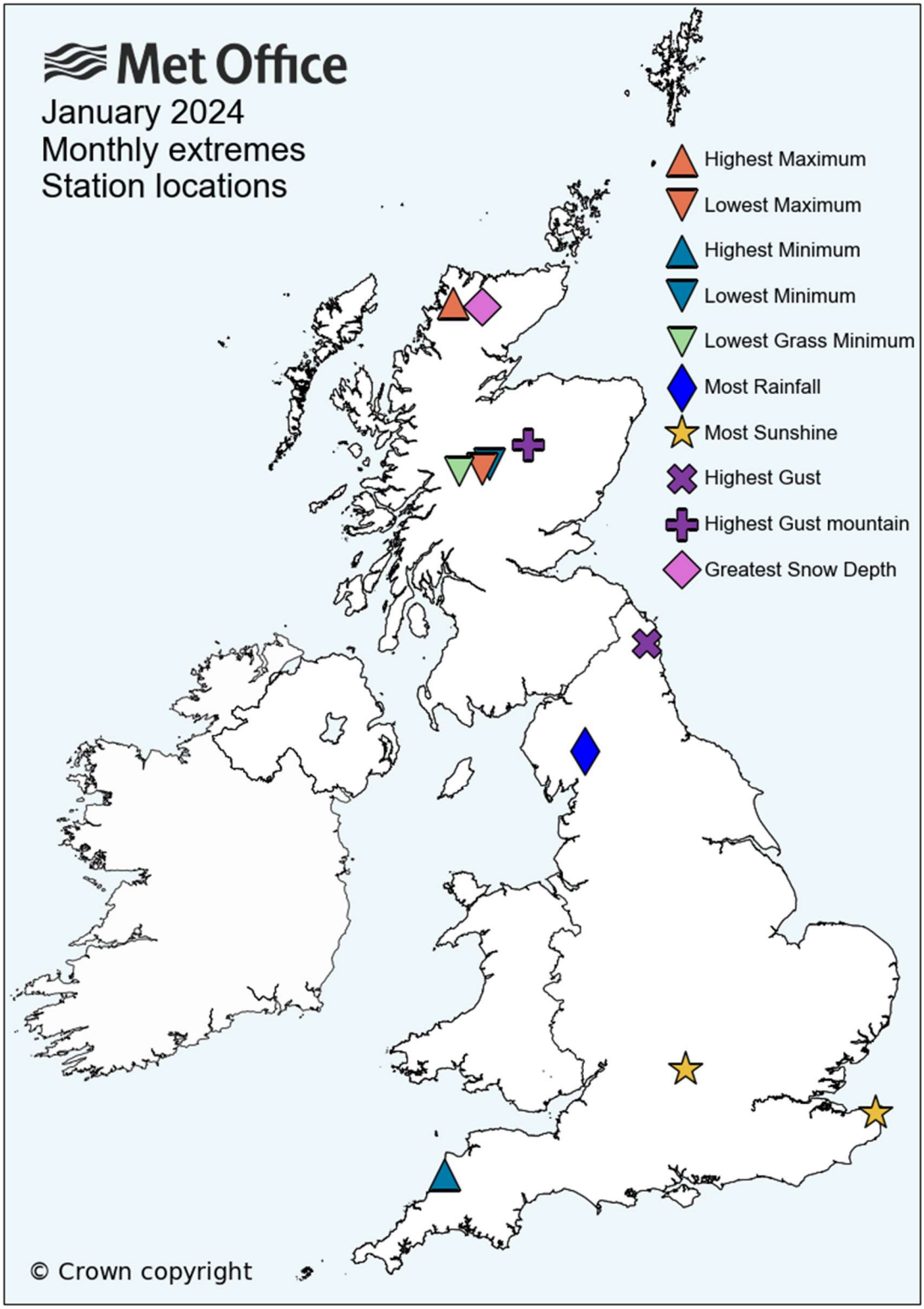
Monthly extremes

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

Highest Maximum	**19.9°C** on **28th** at Achfary (Sutherland, 46mAMSL)
Lowest Maximum	**-4.2°C** on **17th** at Dalwhinnie No 2 (Inverness-shire, 351mAMSL)
Highest Minimum	**10.9°C** on **29th** at Bude (Cornwall, 15mAMSL)
Lowest Minimum	**-14.0°C** on **17th** at Dalwhinnie No 2 (Inverness-shire, 351mAMSL)
Lowest Grass Minimum	**-18.2°C** on **15th** at Tulloch Bridge (Inverness-shire, 249mAMSL)
Most Rainfall	**127.6mm** on **21st** at Wet Sledale Resr (Cumbria, 270mAMSL)
Most Sunshine	**8.1hr** on **18th** at Oxford (Oxfordshire, 63mAMSL) also on **19th** at Manston (Kent, 49mAMSL)
Highest Gust	**86Kt 99mph** on **21st** at Brizlee Wood (Northumberland, 250mAMSL)
Highest Gust (mountain*)	**122Kt 140mph** on **24th** at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	**37cm** on **18th** at Altnaharra No 2 (Sutherland, 81mAMSL)

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

*Mountain stations are above 500mAMSL.


Met Office
January 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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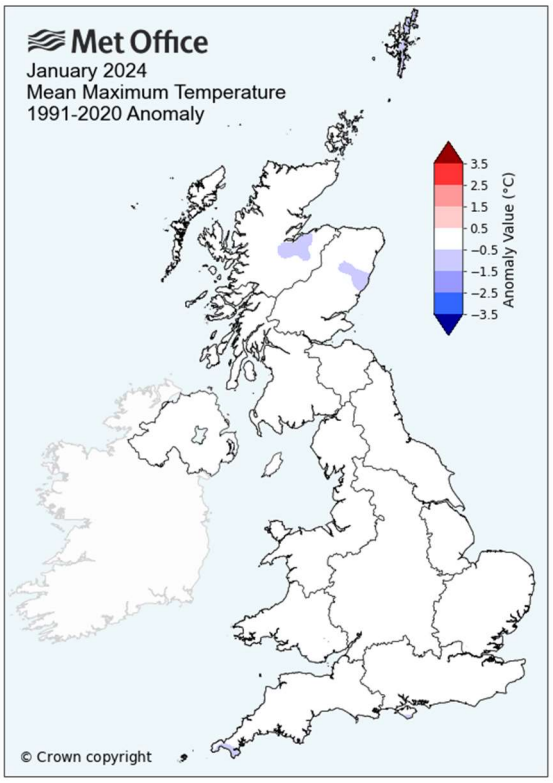
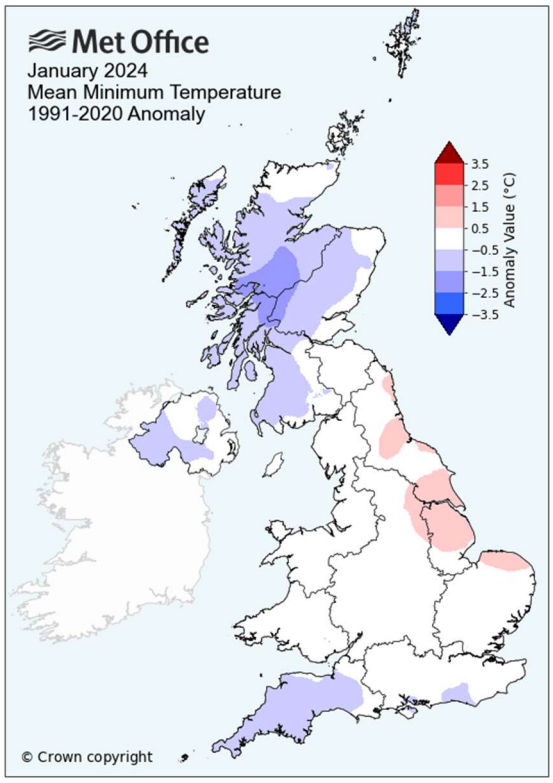
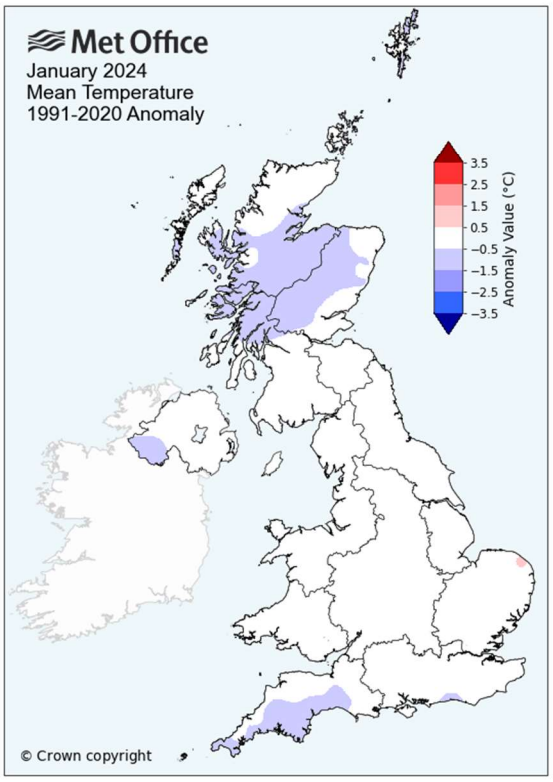
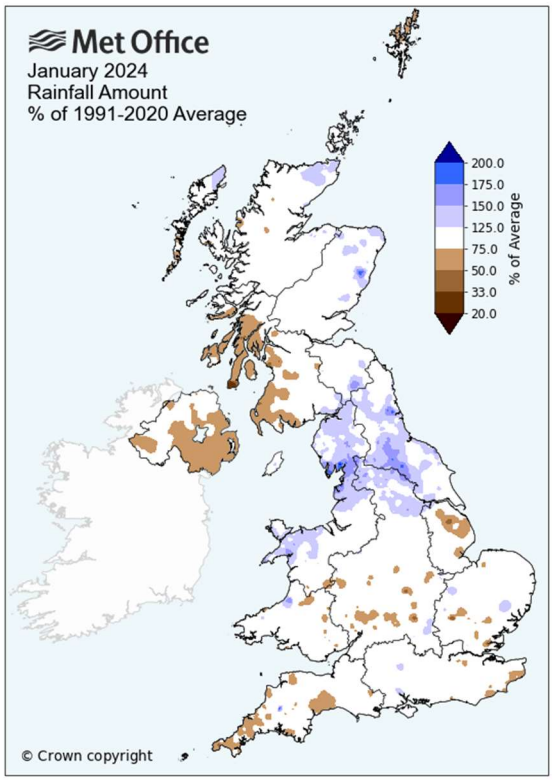
Monthly maps

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

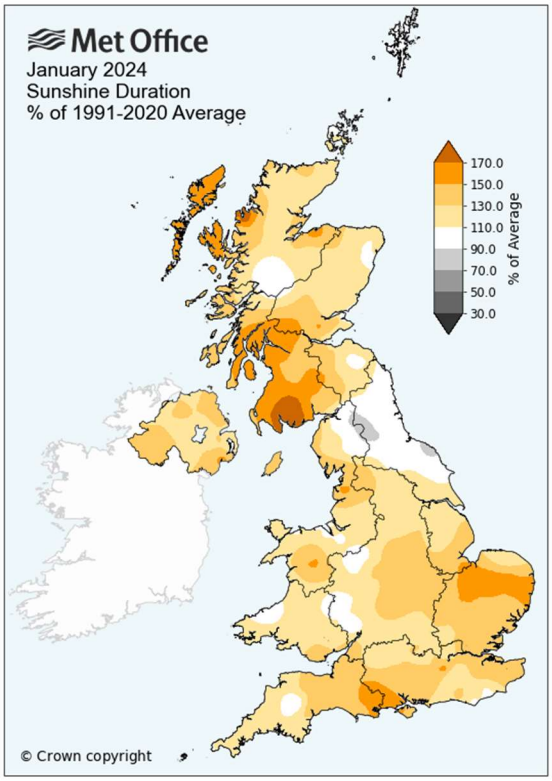


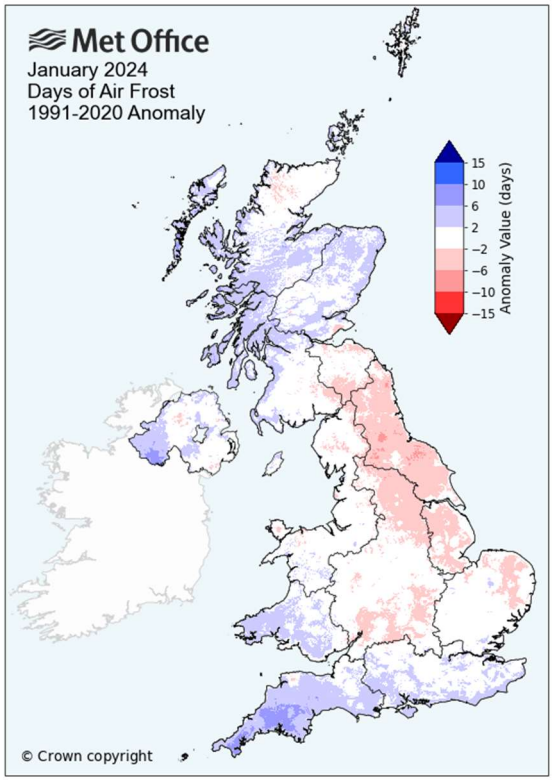


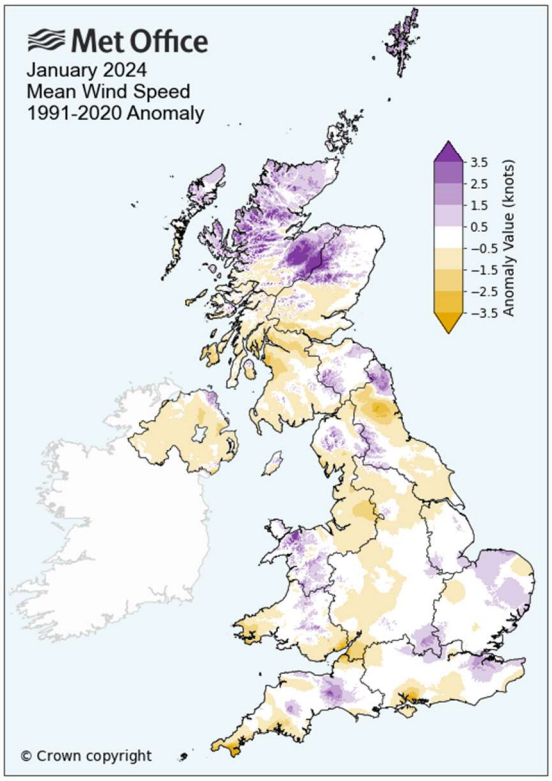


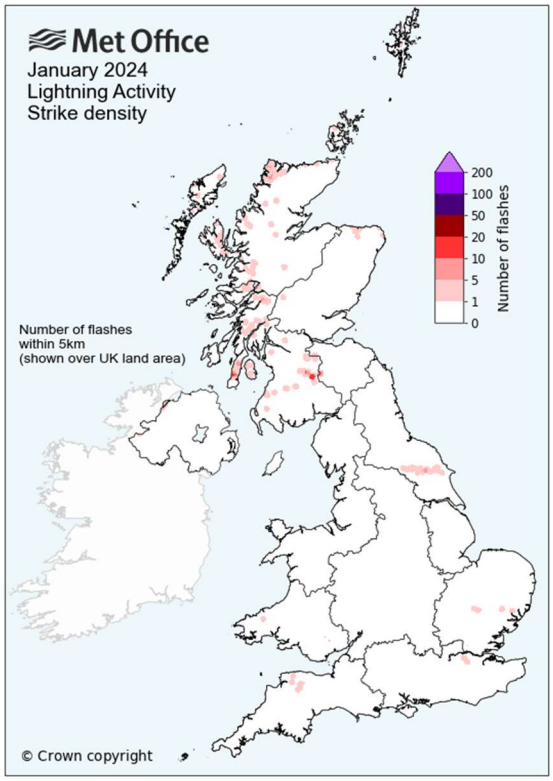


These maps show monthly sunshine, monthly air frost and monthly windspeed for January 2024 as anomalies relative to the January 1991-2020 long term average, plus a map showing lightning activity as the number of strikes within a 5km radius of any land location.









Monthly climate statistics - actuals and anomalies

These tables show the UK and national climate statistics for January 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the January 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	6.6	-0.0	46	96	141
England	7.3	0.0	47	95	141
Wales	7.0	-0.1	52	90	141
Scotland	5.4	-0.2	54	88	141
Northern Ireland	7.3	0.1	50	92	141
Central England	7.6	0.1	45	103	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	0.9	-0.3	62	80	141
England	1.6	0.0	44	98	141
Wales	1.7	-0.1	57	85	141
Scotland	-0.4	-0.8	83	59	141
Northern Ireland	1.2	-0.6	78	64	141
Central England	1.9	-0.0	64	84	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	3.8	-0.1	56	86	141
England	4.4	0.0	45	97	141
Wales	4.4	-0.0	52	90	141
Scotland	2.5	-0.5	73	69	141
Northern Ireland	4.2	-0.3	64	78	141
Central England	4.7	0.1	87	280	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	117.5	97	73	117	189
England	85.1	102	75	115	189
Wales	161.9	104	65	125	189
Scotland	165.1	93	68	122	189
Northern Ireland	86.0	75	131	59	189
EWP (England and Wales)	97.0	103	93	167	259

Sunshine

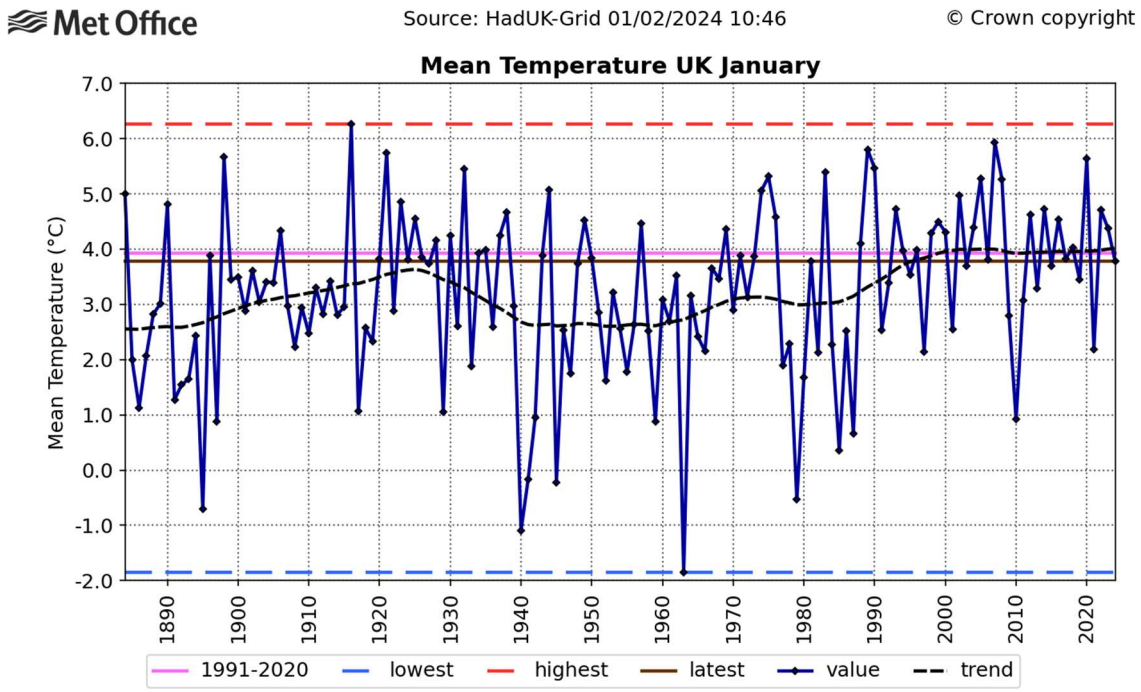
Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	61.0	128	6	110	115
England	70.6	128	7	109	115
Wales	56.6	120	19	97	115
Scotland	46.8	133	7	109	115
Northern Ireland	55.6	130	21	95	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	10.7	-0.1	31	26	56
England	9.3	-0.3	32	25	56
Wales	11.4	-0.0	32	25	56
Scotland	12.9	0.3	25	32	56
Northern Ireland	9.3	-0.8	38	19	56

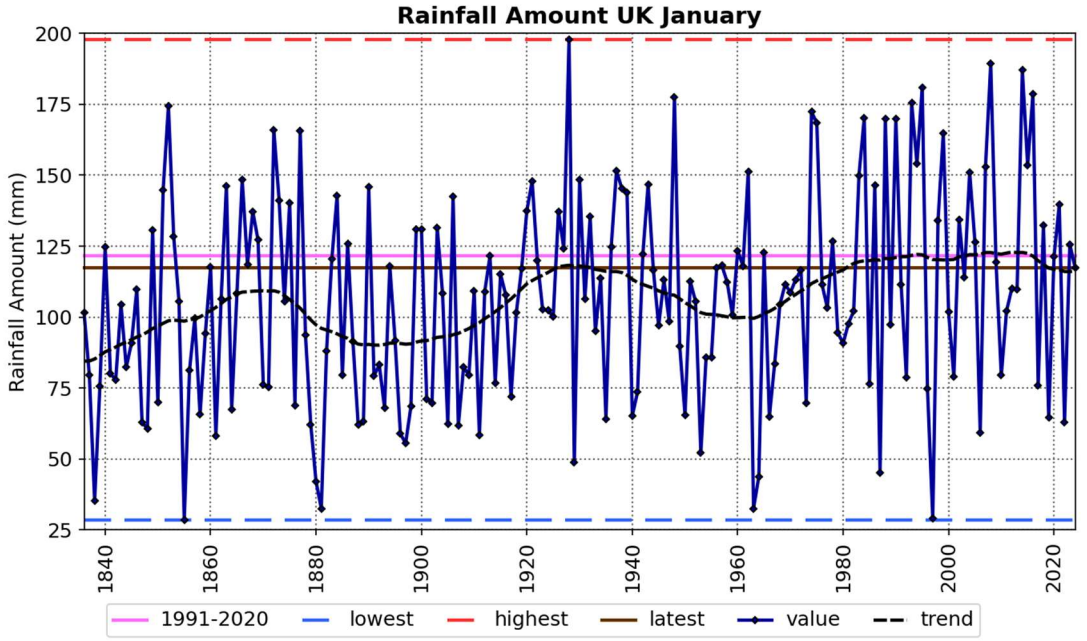
Monthly time-series

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



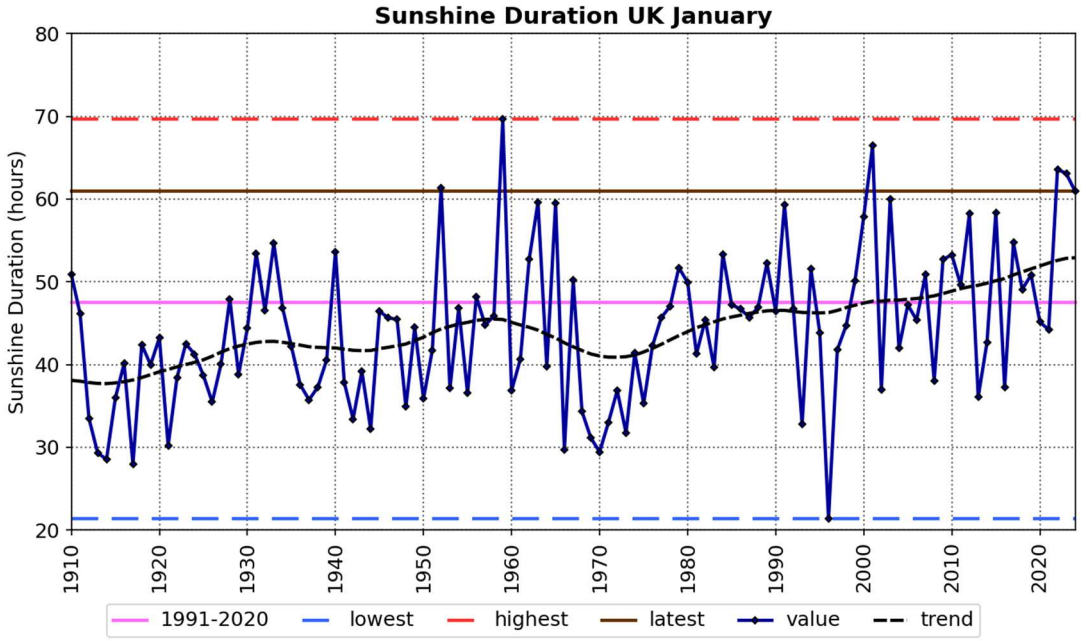
Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	3.0	3.9	4.0	3.8

Met Office Source: HadUK-Grid 01/02/2024 10:46 © Crown copyright



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	111.1	121.5	117.2	117.5

Met Office Source: HadUK-Grid 01/02/2024 10:46 © Crown copyright

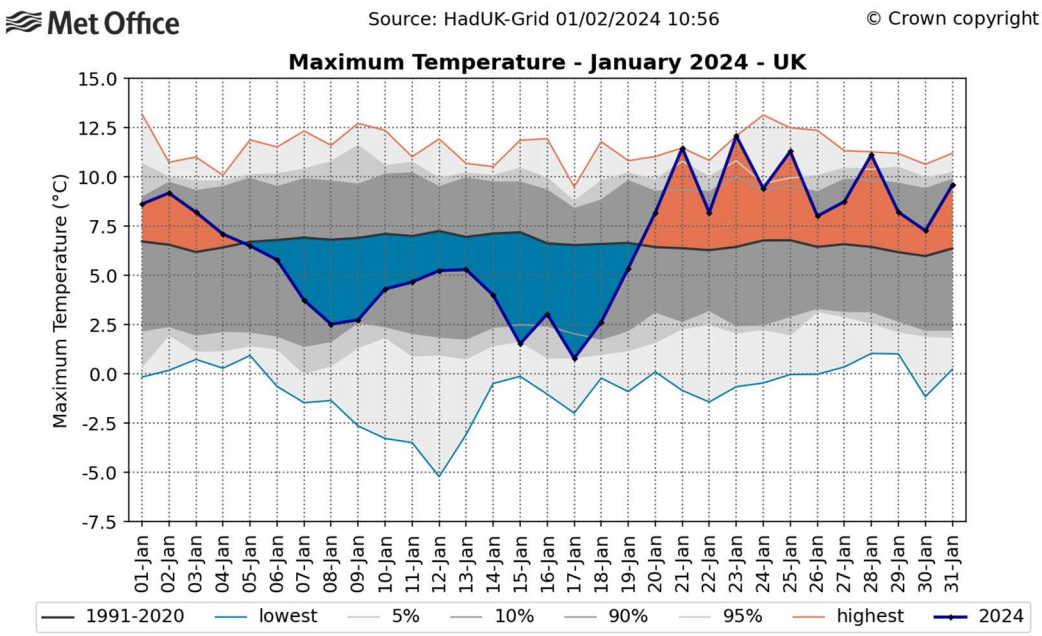


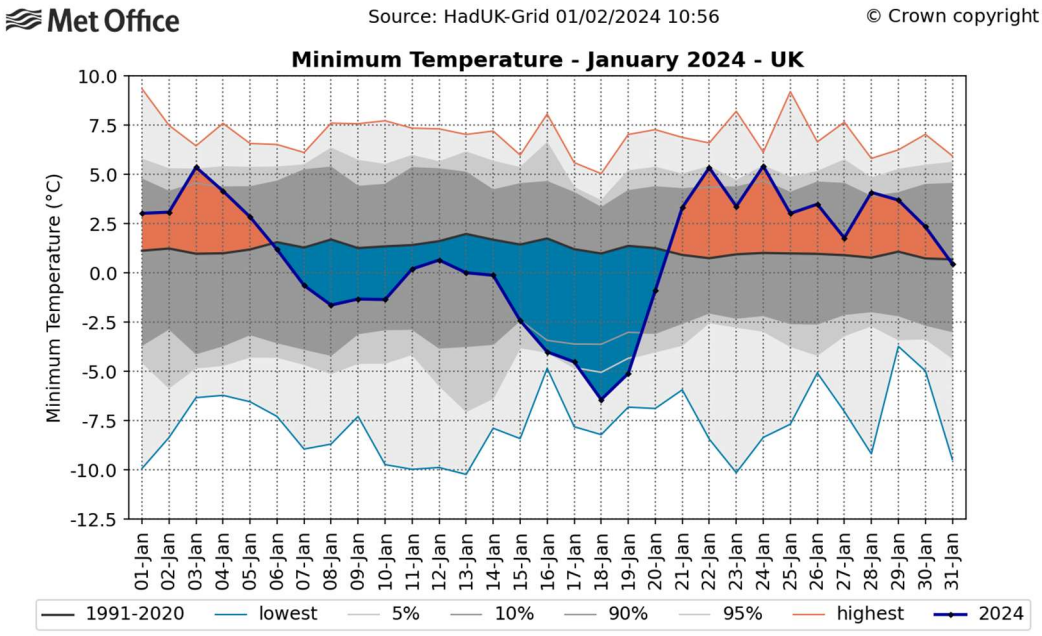
Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	43.6	47.5	52.7	61.0

Daily time-series

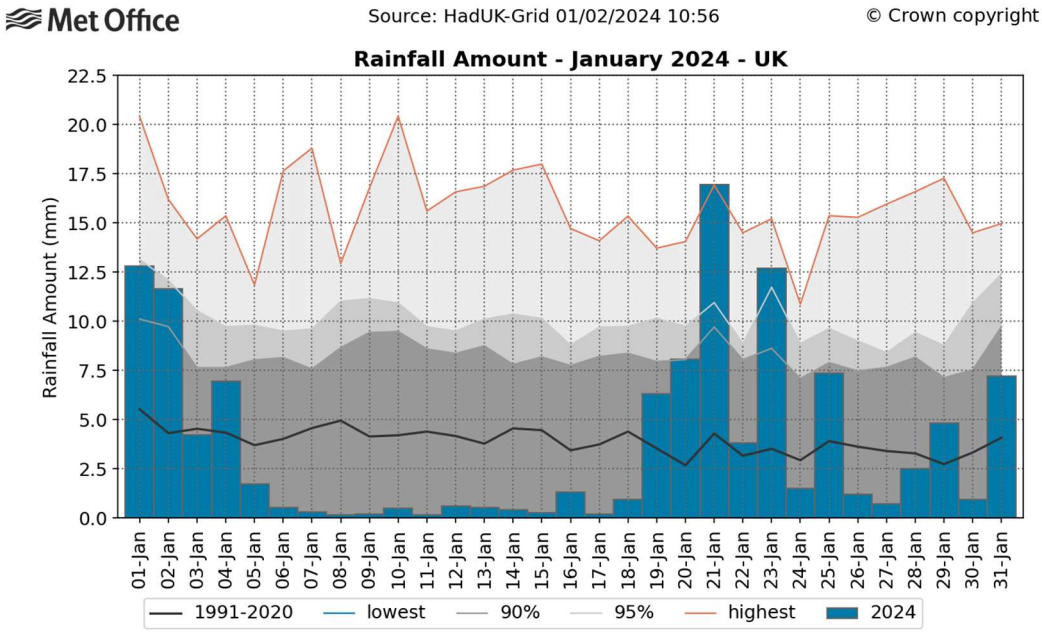
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of January 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles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

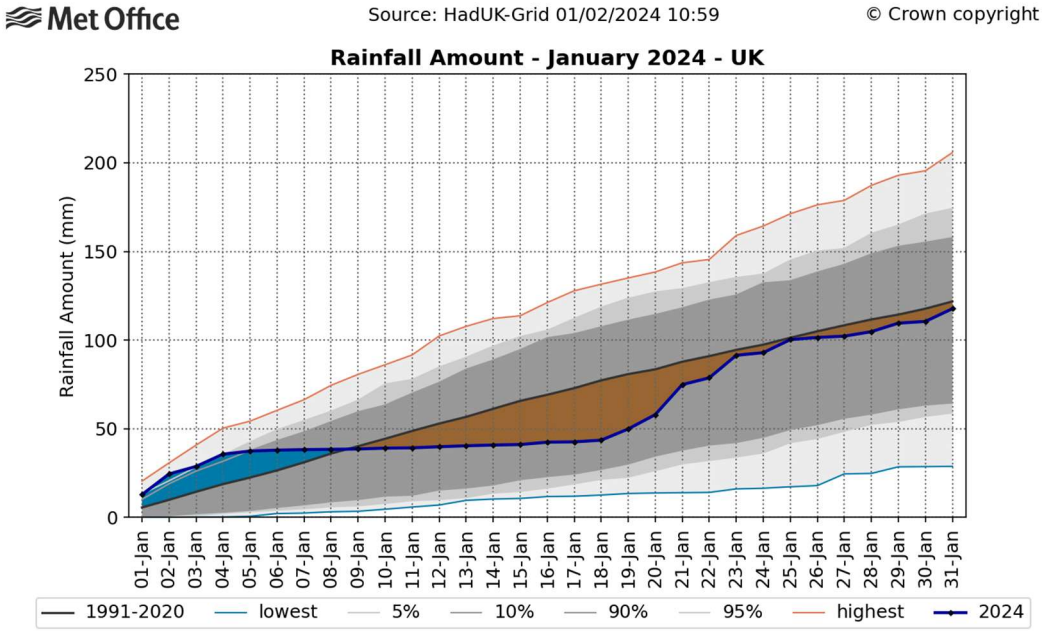
Daily maximum and daily minimum temperature





Daily rainfall and rainfall accumulation

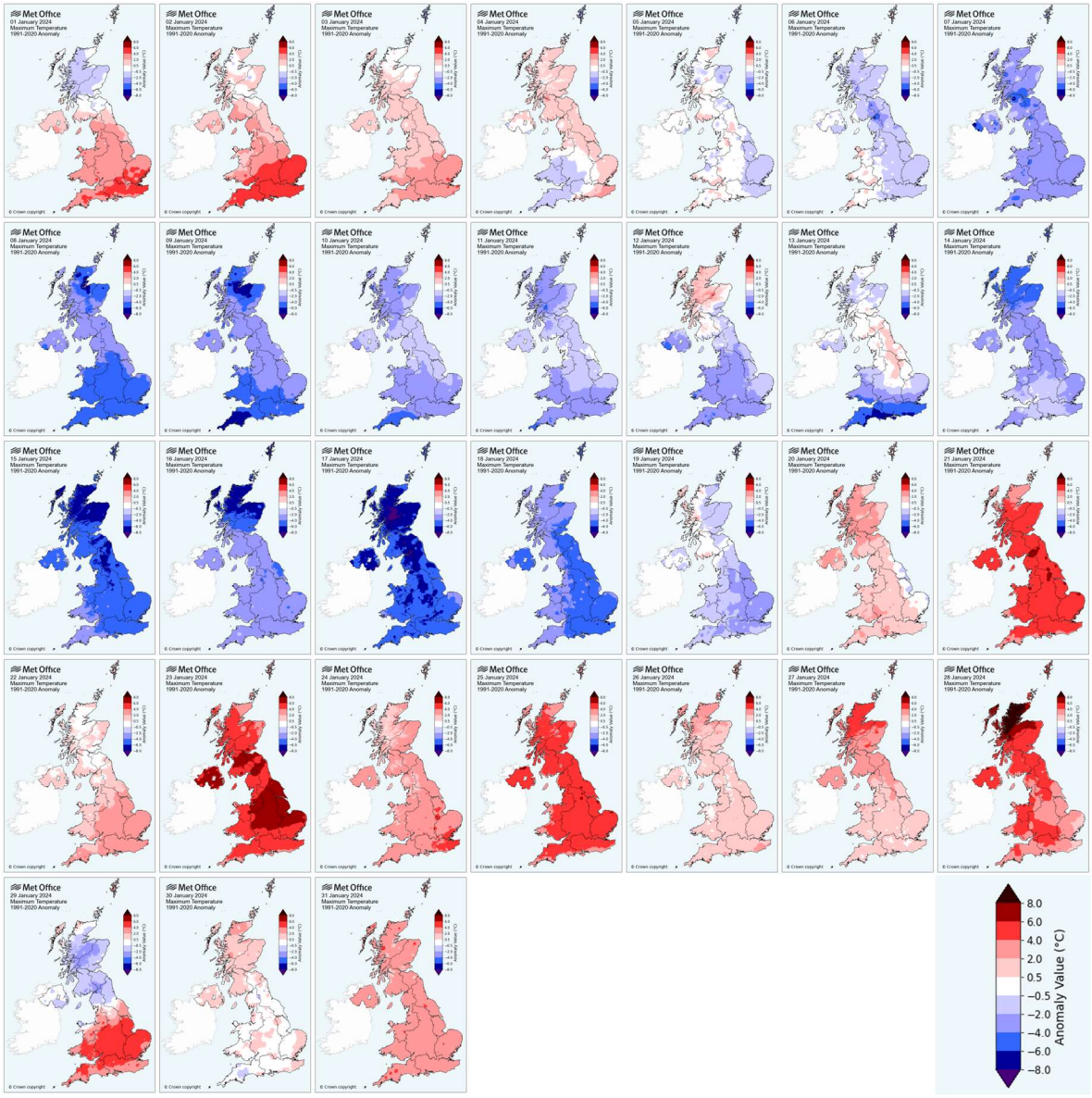




Daily maximum temperature maps - calendar view

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

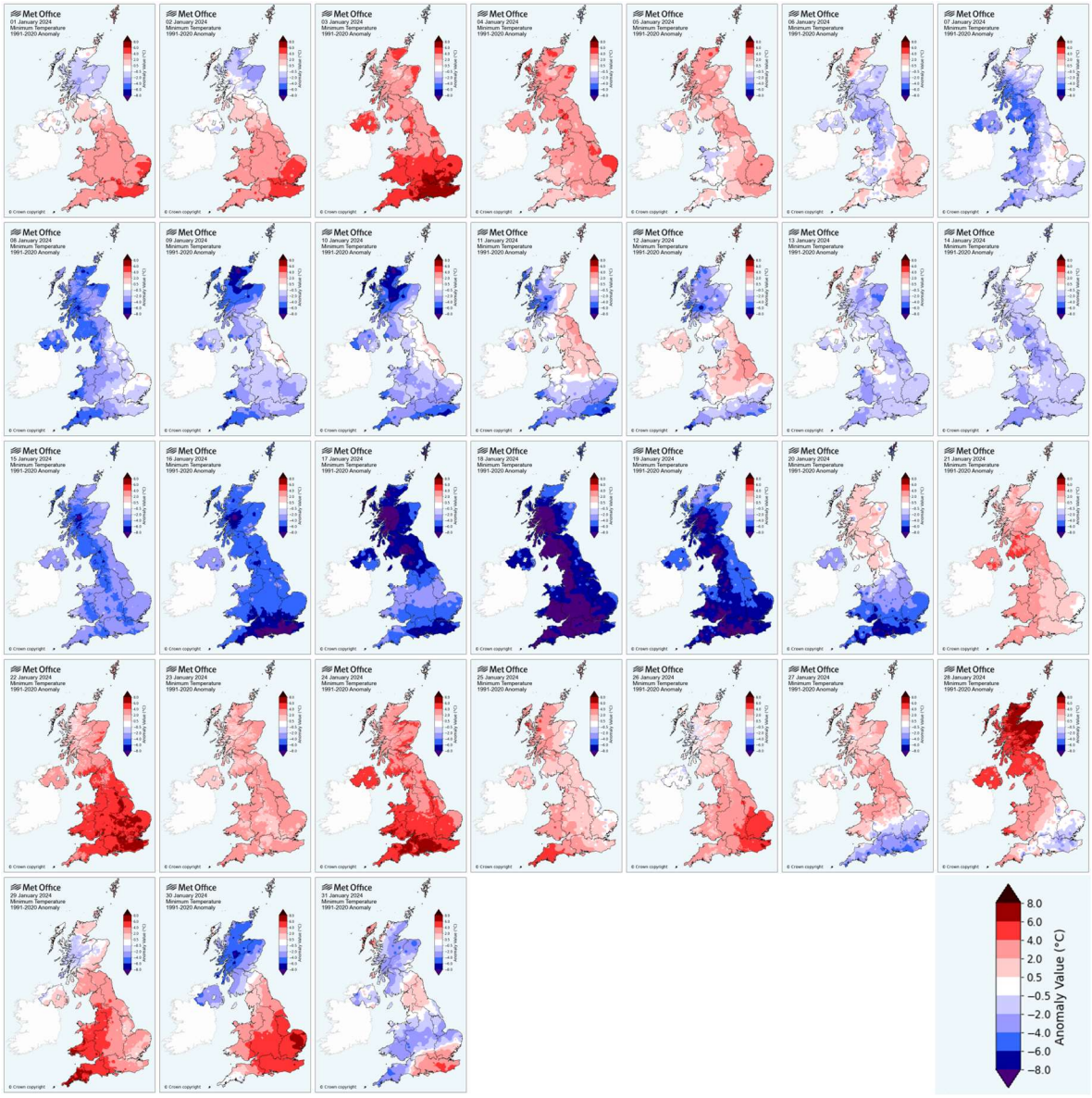
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily minimum temperature maps - calendar view

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

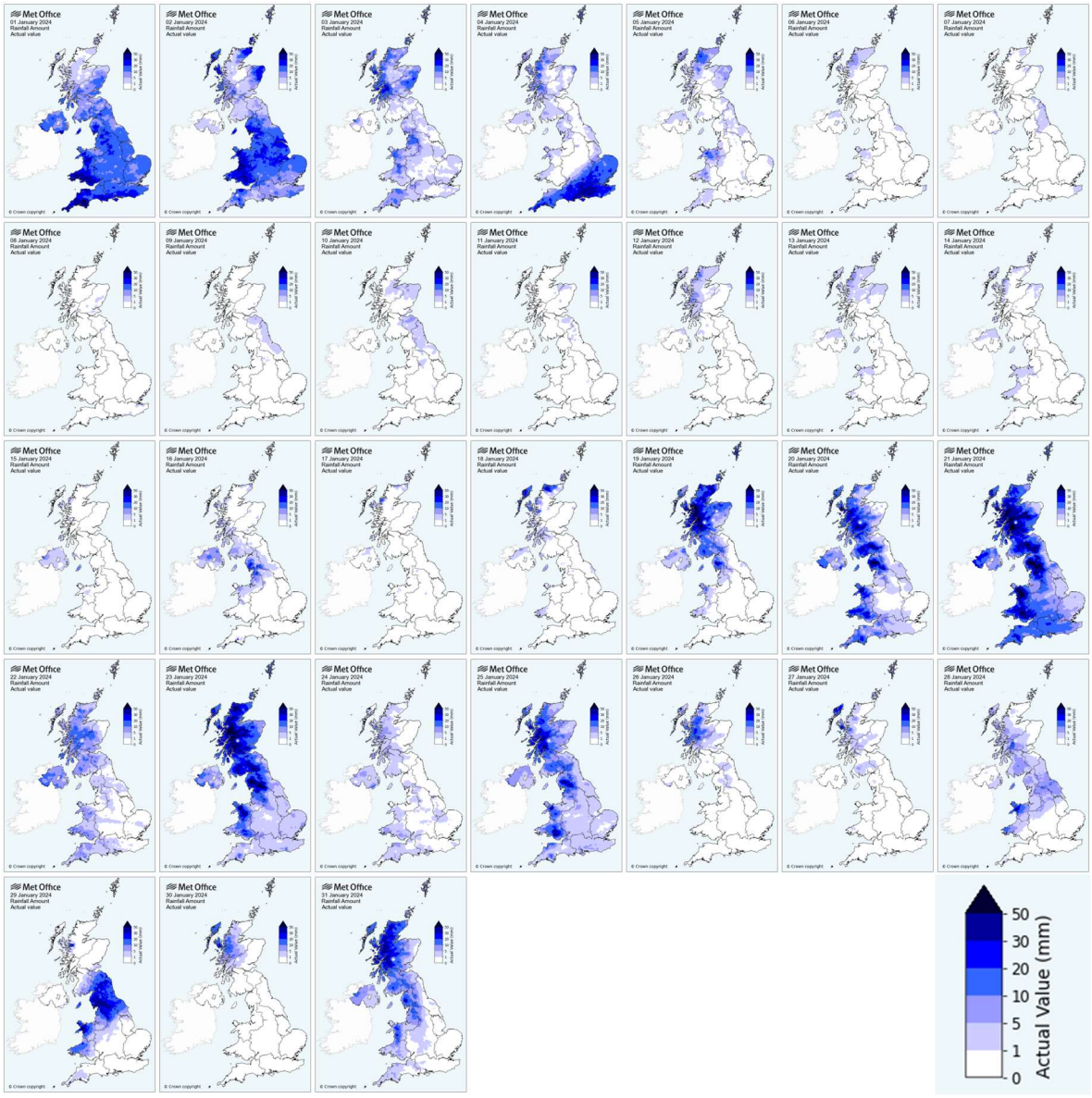
Mon	Tue	Wed	Thu	Fri	Sat	Sun



Daily rainfall maps - calendar view

These maps show daily rainfall for each day of January 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

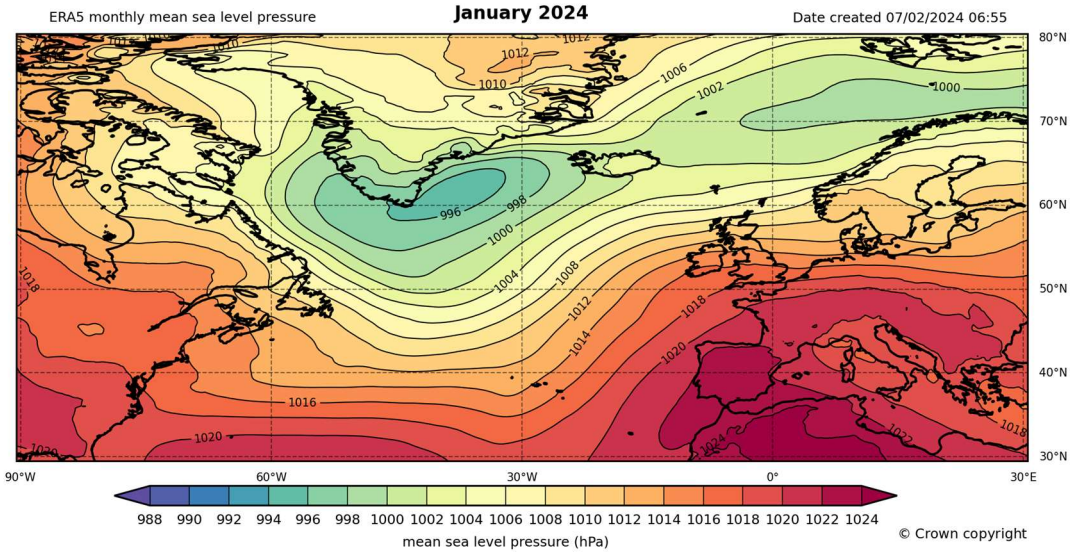


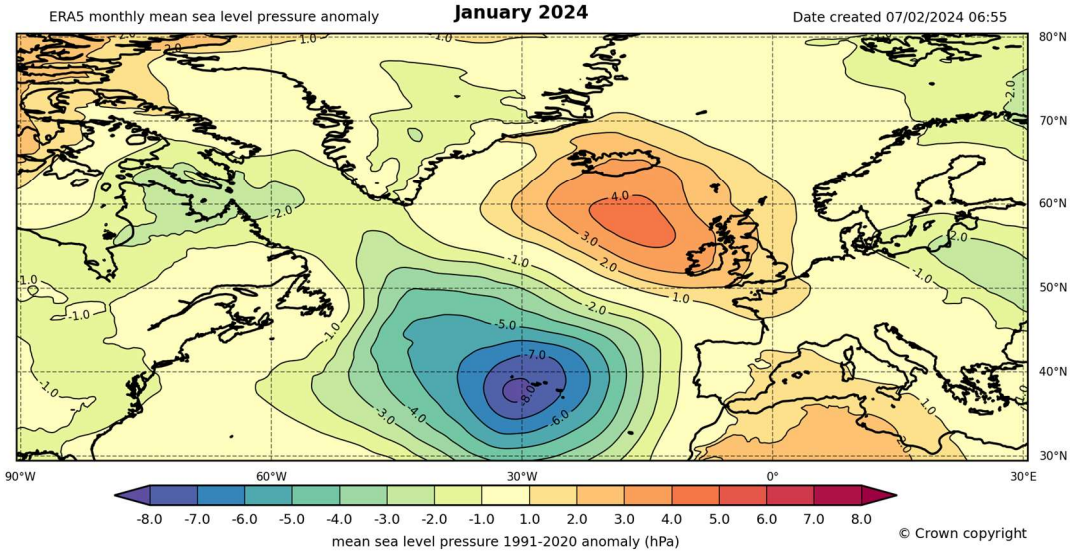
Monthly atmospheric circulation

Mean sea level pressure

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

Pressure was higher than normal across much of the UK, influenced by a lower than normal Azores high that suppressed westerlies. This led to cold, dry weather in the middle of the month.

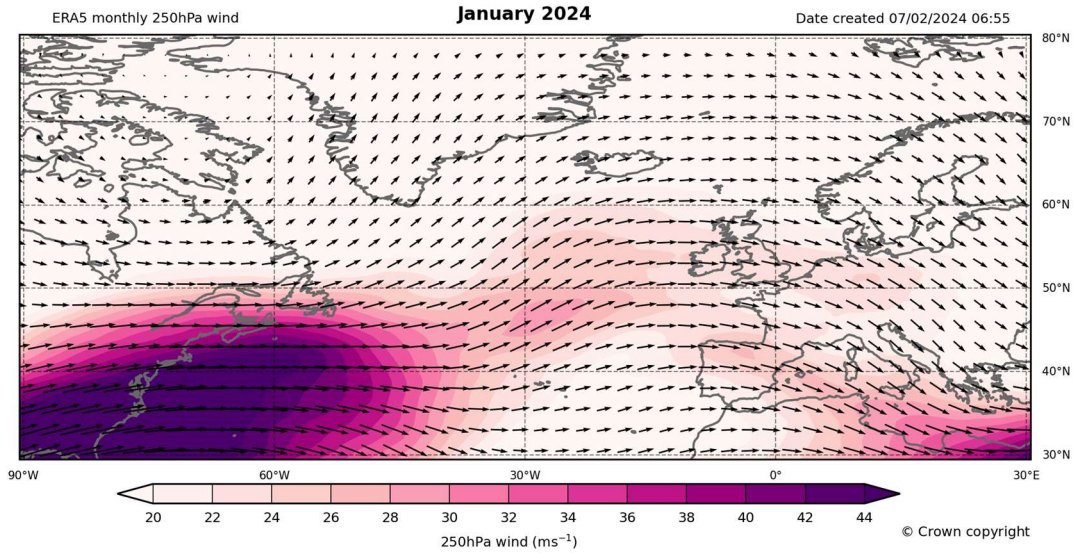


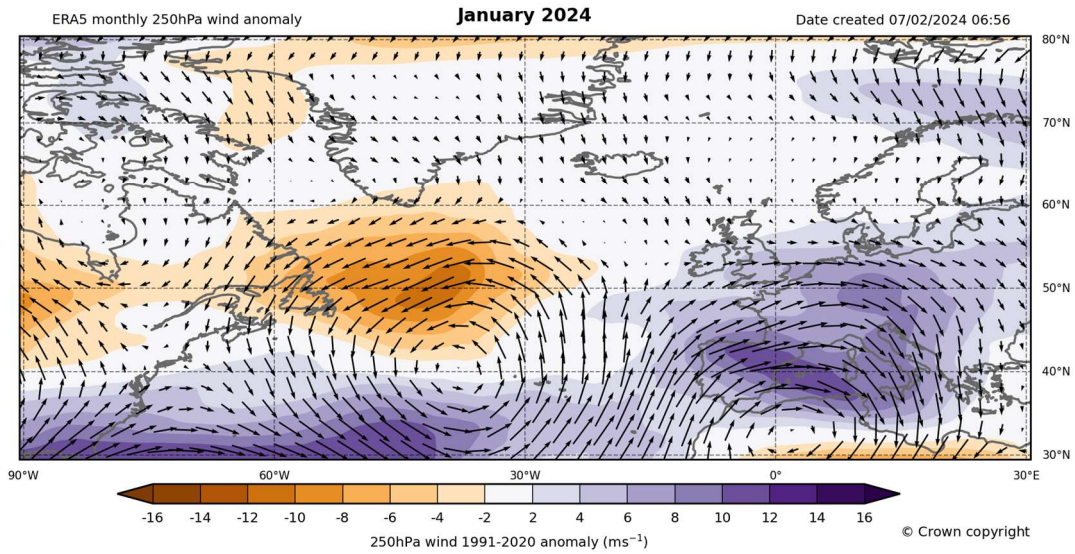


250hPa wind speed and direction

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

The normal westerly jetstream was located further south than usual. The associated run of Atlantic low pressure systems and rain-bearing fronts was largely blocked during the spell of low temperatures in the middle of the month.





Weather diary

- **Mild, wet and windy, cold mid-month, then wet and windy again**

  January carried on where December left off, with a series of complex lows covering the UK from the 1st to the 6th, bringing wet and windy conditions to all parts. An area of high pressure then developed off the coast of Portugal before drifting north and east to become centered in southern Norway on the 7th.

  Very cold but generally dry and settled weather covered the UK until the 12th, with maximums struggling into low single figures, and widespread frosts, severe in parts of northern Scotland. The high pressure retreated westwards on the 13th, allowing a northerly airstream to establish itself over the country, with frontal systems bringing wintry showers and some significant snow accumulations from the 15th, initially for northern parts of Scotland but eventually streching down to parts of Derbyshire. The 17th produced the coldest temperatures of this spell with maximums staying below freezing over northern England and parts of Scotland, and minima dropping to between -7°C and -14°C.

  Northerlies gave way to westerlies and southwesterlies from the 19th introducing milder but also very wet and windy weather across the whole of the UK. Storm Isha passed over the north of Scotland on the 21st but the pressure gradient between it and the high pressure centered over Spain resulted in wind gusts exceeding 80mph across all regions, with parts of Northumberland recording the gusts as high as 99mph. Western districts were also hit by significant rainfall. Some sites in Cumbria recorded over 100mm during the storm. The mildest temperatures of the month occurred on the 28th with maximums over the northwest highlands generally in the mid to high teens Celcius, and almost reaching 20°C at Kinlochewe and Achfary, before returning to more normal temperatures for the rest 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 05/03/2024 17:46. 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 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