

March 2024 Monthly Weather Report

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

Table of Contents

1. UK overview
2. Weather impacts
3. Monthly extremes
4. Monthly maps
5. Monthly climate statistics
6. Monthly time-series
7. Daily time-series
8. Daily maximum temperature maps - calendar view
9. Daily minimum temperature maps - calendar view
10. Daily rainfall maps - calendar view
11. Monthly atmospheric circulation
12. Weather diary
13. Notes

UK overview

March overall was unsettled, wet and dull. The month began colder than normal across the UK, with temperatures across the UK cooler than average and southern areas recording notably low daily minimum temperatures (for instance, Benson in Oxfordshire recorded -4.6°C on the 3rd). Snow fell on the 2nd across parts of south west England, causing some travel disruption. However, the cool weather was replaced with milder weather for much of the rest of the month, with temperatures widely into the mid to high teens at times (for instance, a maximum of 18.8°C was recorded at Charlwood, Surrey on the 20th). Temperatures dipped again towards the end of the month, and on the 27th/28th, some areas around Plymouth and Dartmoor experienced snowy conditions overnight. Overall the weather was unsettled, with a succession of frontal systems bringing rain and wind. By mid-month, several counties including London and Kent had already provisionally experienced their whole-month average rainfall, and continued to be soaked throughout the rest of the month. The month ended on an unsettled note, with widespread showers and strong winds across the UK.

Overall, the provisional mean temperature for the UK was 6.7°C, 1.0°C above average. Southern England was much milder than areas further north, with a provisional mean temperature of 8.2°C (anomaly of 1.4°C) for southern England and 5.0°C (anomaly of 0.6°C) for Scotland. England provisionally recorded the seventh-warmest March on record in a series from 1884. The UK overall recorded provisionally 127% of the long term average rainfall for March, with much of this concentrated in the south. England and Wales both recorded more than 150% of their long term average monthly rainfall, while Scotland recorded just 90% of the average March rainfall. County Down in Northern Ireland provisionally experienced its third wettest March on record (145.9mm) in a series from 1836. As well as wet, the month was also dull, with the UK provisionally recording just 95.2 hours of sunshine (87% of the long term average).

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

Weather impacts

- **Snow across Ireland, southwest Midlands and the Bristol area caused traffic disruption and road closures**
- **Persistent rain across the country throughout the month, particularly in southern England, caused groundwater and surface water flooding**

March started with heavy snow across southern and western parts of Northern Ireland, with the Enniskillen area reporting numerous traffic incidents and several fallen trees as a result of the snow. Parts of the Peak District and south Pennines also experienced snow, with several roads reported closed for a period. Further south, a heavy hail storm in Sussex on the 1st may have contributed to a major road traffic collision on the M23.

Further snow on the 2nd hit the south-western Midlands and Bristol area, with reports of several snow-related traffic incidents and the use of snow ploughs to clear a section of the M4. The rest of the month saw unsettled weather with regular bouts of rain. Ongoing groundwater flooding in Suffolk that began in February continued well into March, bringing significant traffic disruption. However, there was otherwise relatively little in the way of impactful rain up until the final week of the month.

The last week of March brought rain, snow, and strong winds. Heavy rain in Cornwall on the 25th/26th as a result of a stalling weather front led to flooding; the Cornwall Fire and Rescue service reported rescuing six people from flooding incidents on the roads which included rescues from flooded cars. On the 27th, the rain turned to snow across southwest England, leading to travel disruption including reports of abandoned vehicles around Dartmoor and further road disruption in mid-Wales as the area of precipitation moved north. Strong winds and locally intense rainfall on the 28th affected southern areas of Wales and England, resulting in several incidents of surface water flooding that led to the closure of several roads in Wiltshire and Oxfordshire to allow the floodwater to drain. The month closed with scattered heavy showers on the 29th, before the weather settled a little over the Easter weekend.

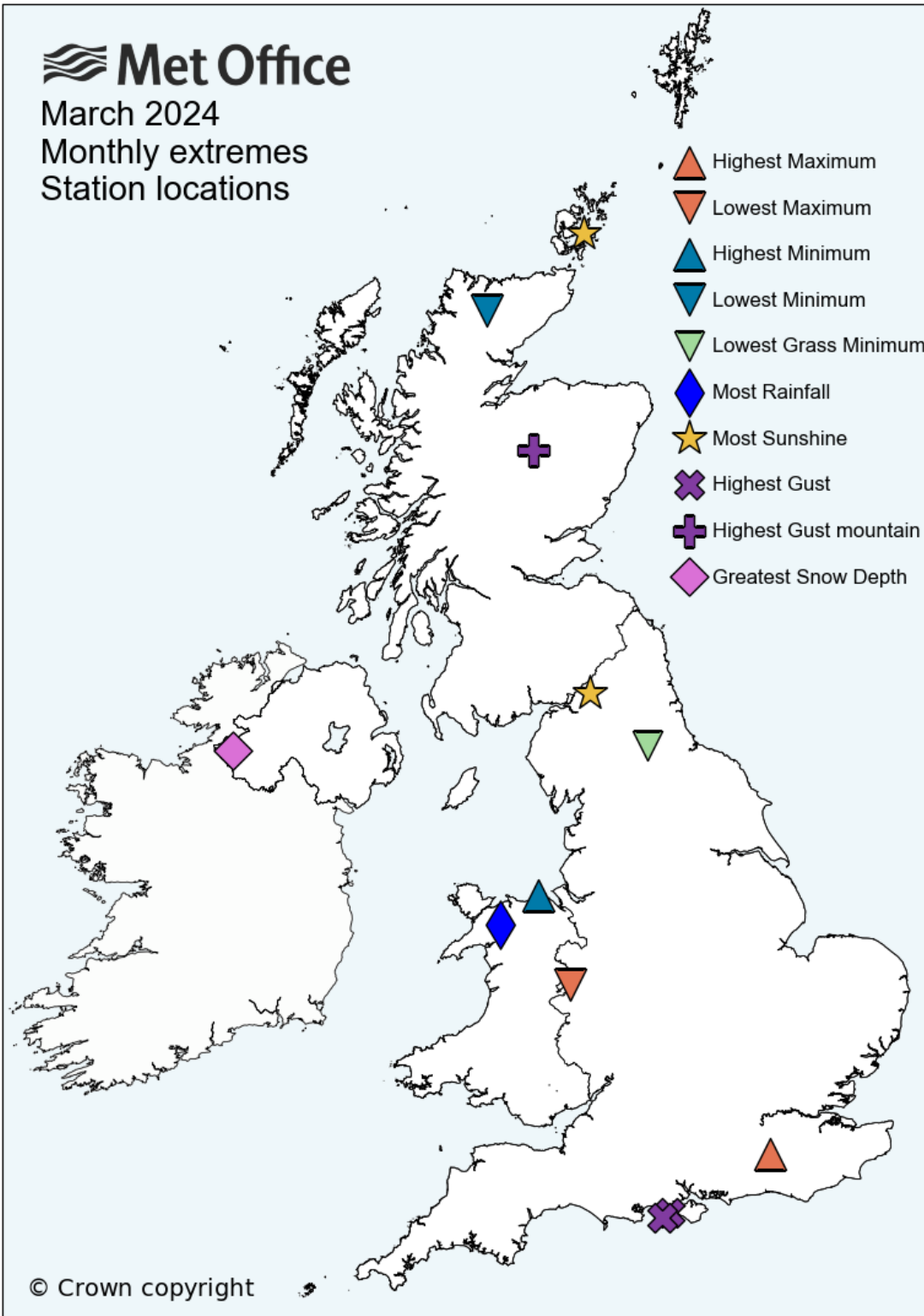
Monthly extremes

The table below lists UK monthly weather extremes recorded at individual weather stations during March 2024 from data available on 02/04/2024. The map shows the location of these stations.

Highest Maximum	18.8°C on 20th at Charlwood (Surrey, 67mAMSL)
Lowest Maximum	1.2°C on 2nd at Pennerley (Shropshire, 357mAMSL)
Highest Minimum	11.6°C on 14th at Prestatyn (Clwyd, 4mAMSL)
Lowest Minimum	-6.9°C on 26th at Altnaharra No 2 (Sutherland, 81mAMSL)
Lowest Grass Minimum	-11.1°C on 4th at Copley (Durham, 253mAMSL)
Most Rainfall	94.4mm on 13th at Capel Curig No 3 (Gwynedd, 216mAMSL)
Most Sunshine	11.5hr on 30th at Kirkwall (Orkney, 26mAMSL) also on 31st at Bewcastle (Cumbria, 133mAMSL)
Highest Gust	70Kt 81mph on 1st at Wight: Needles Old Battery (Isle Of Wight, 80mAMSL) also on 28th at Wight: Needles Old Battery (Isle Of Wight, 80mAMSL)
Highest Gust (mountain*)	95Kt 109mph on 21st at Cairngorm Summit (Inverness-shire, 1237mAMSL)
Greatest Snow Depth at 0900 UTC	12cm on 1st at Lough Navar Forest (Fermanagh, 126mAMSL)

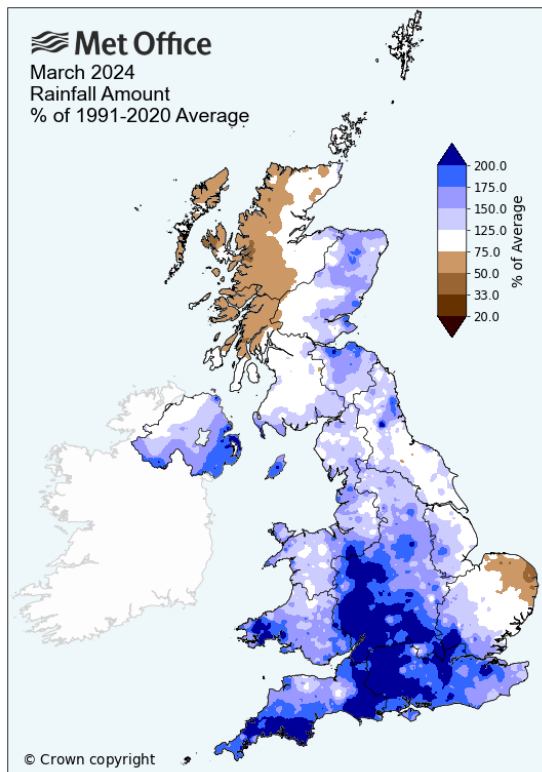
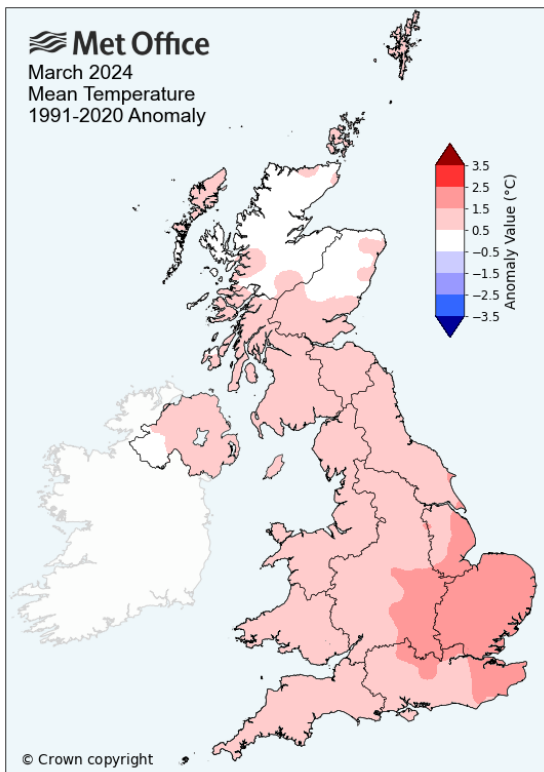
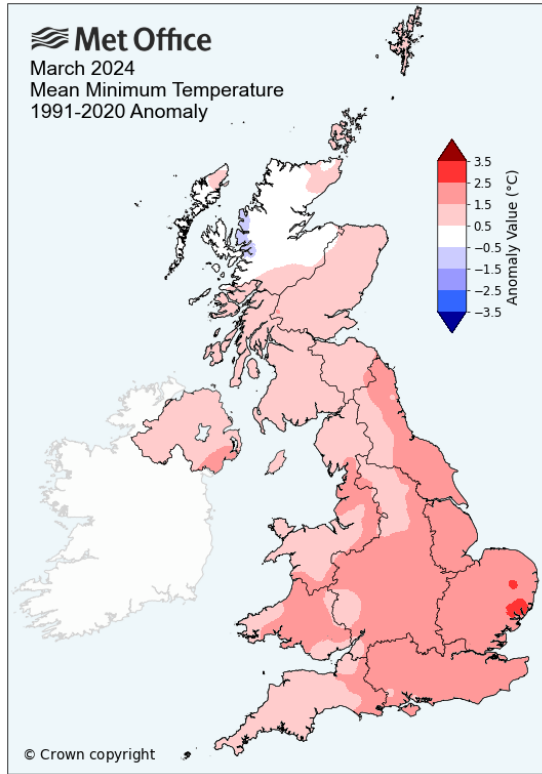
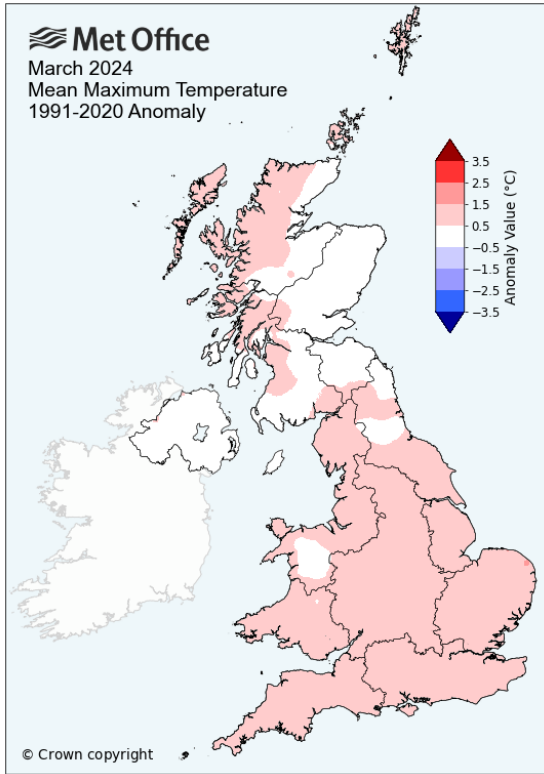
mAMSL refers to station elevation in metres above mean sea level.

*Mountain stations are above 500mAMSL.

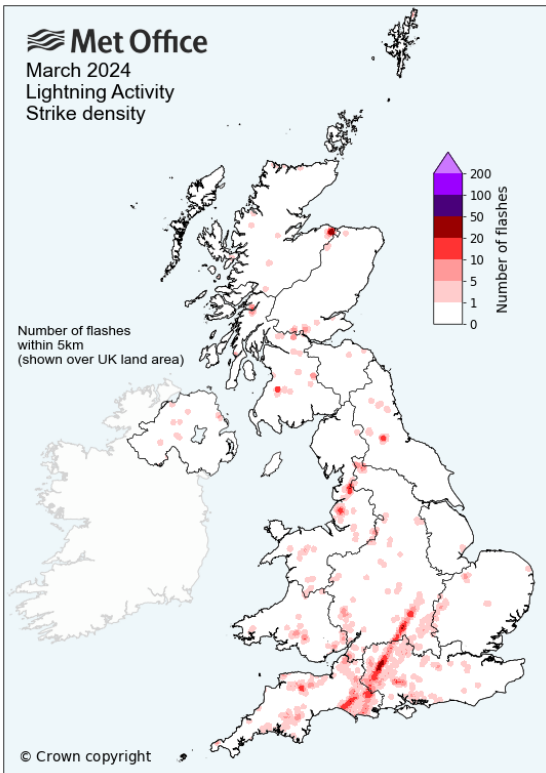
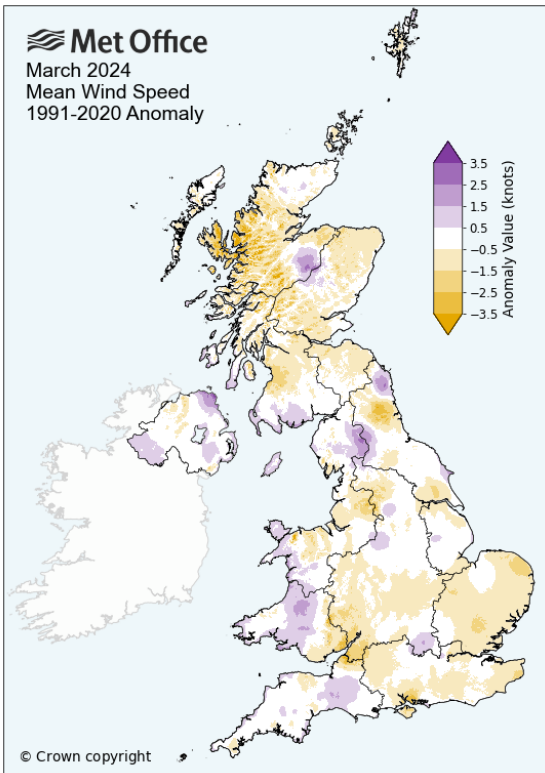
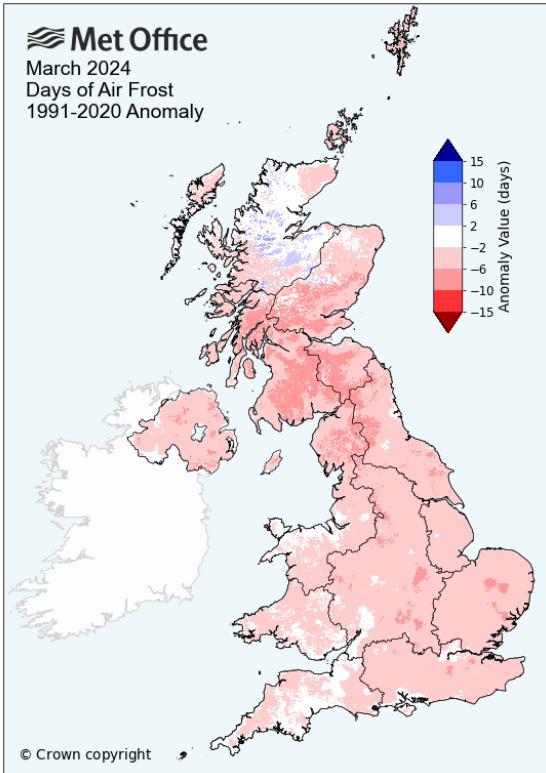
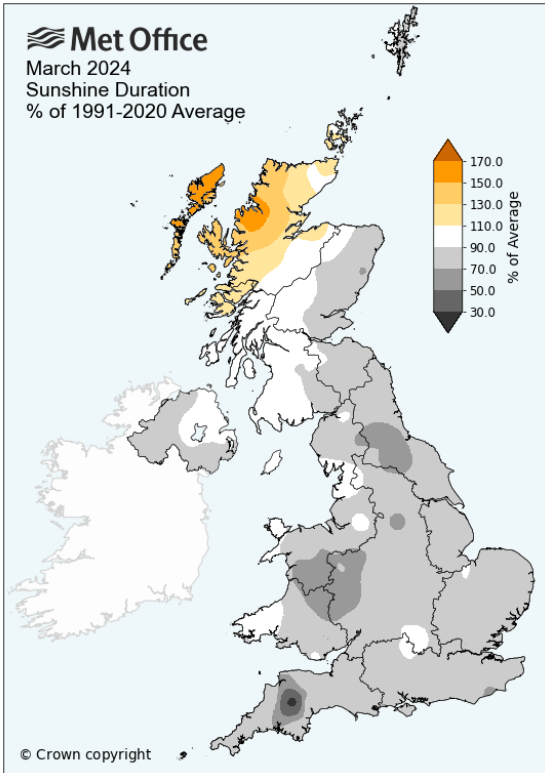


Monthly maps

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



These maps show monthly sunshine, monthly air frost and monthly windspeed for March 2024 as anomalies relative to the March 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 March 2024 for max, min and mean temperature, rainfall, sunshine and windspeed as actual values and anomalies relative to the March 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	10.0	0.7	22	120	141
England	11.1	1.0	19	123	141
Wales	10.0	0.7	24	118	141
Scotland	8.1	0.4	34	108	141
Northern Ireland	9.7	0.2	36	106	141
Central England	11.5	1.0	17	131	147

Mean minimum temperature

Region	Mintemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	3.5	1.3	6	136	141
England	4.4	1.7	4	138	141
Wales	4.0	1.5	6	136	141
Scotland	1.9	0.7	19	123	141
Northern Ireland	3.5	1.1	14	128	141
Central England	4.8	1.8	4	144	147

Mean temperature

Region	Meantemp (°C)	1991-2020 Anomaly (°C)	Rank - warmest	Rank - coldest	Series length (yrs)
UK	6.7	1.0	11	131	141
England	7.8	1.4	7	135	141
Wales	7.0	1.1	12	130	141
Scotland	5.0	0.6	24	118	141
Northern Ireland	6.6	0.6	22	120	141
Central England	8.1	1.4	10	357	366

Rainfall

Region	Rainfall (mm)	% of 1991-2020 Average	Rank - wettest	Rank - driest	Series length (yrs)
UK	107.8	127	31	159	189
England	94.3	162	19	171	189
Wales	158.2	153	23	167	189
Scotland	112.7	90	78	112	189
Northern Ireland	129.2	149	13	177	189
EWP (England and Wales)	111.5	170	13	247	259

Sunshine

Region	Sunshine (hours)	% of 1991-2020 Average	Rank - sunniest	Rank - dullest	Series length (yrs)
UK	95.2	87	80	36	115
England	93.4	80	82	34	115
Wales	86.8	79	87	29	115
Scotland	101.4	104	41	75	115
Northern Ireland	88.9	88	79	37	115

Windspeed

Region	Windspeed (knots)	1991-2020 Anomaly (knots)	Rank - windiest	Rank - calmest	Series length (yrs)
UK	9.9	-0.4	37	20	56
England	8.9	-0.4	37	20	56
Wales	10.7	0.2	27	30	56
Scotland	11.4	-0.6	36	21	56
Northern Ireland	9.9	0.3	25	32	56

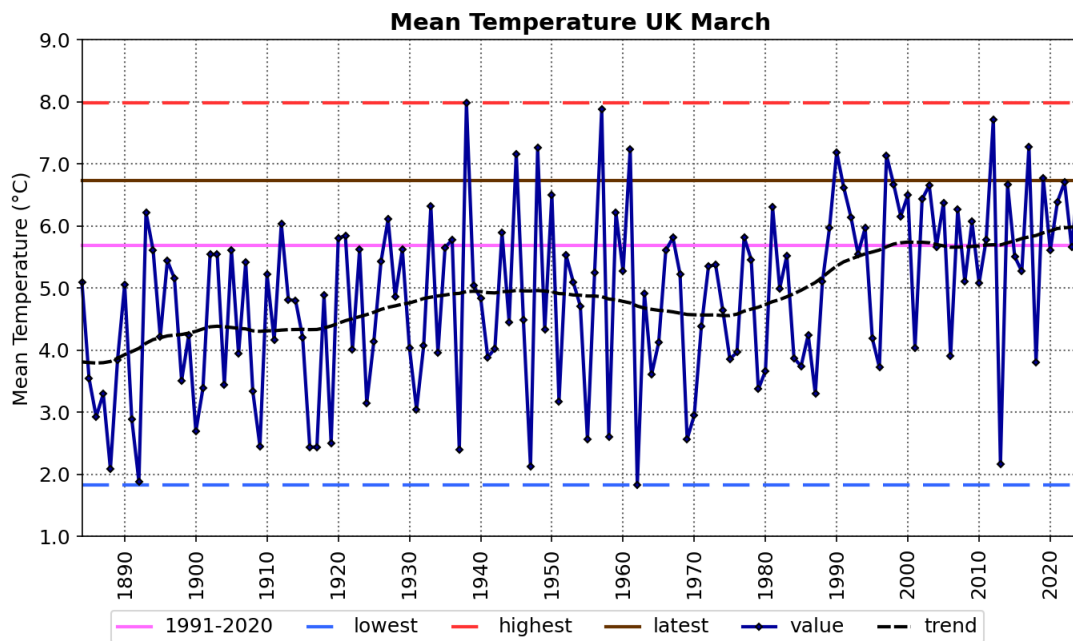
Monthly time-series

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

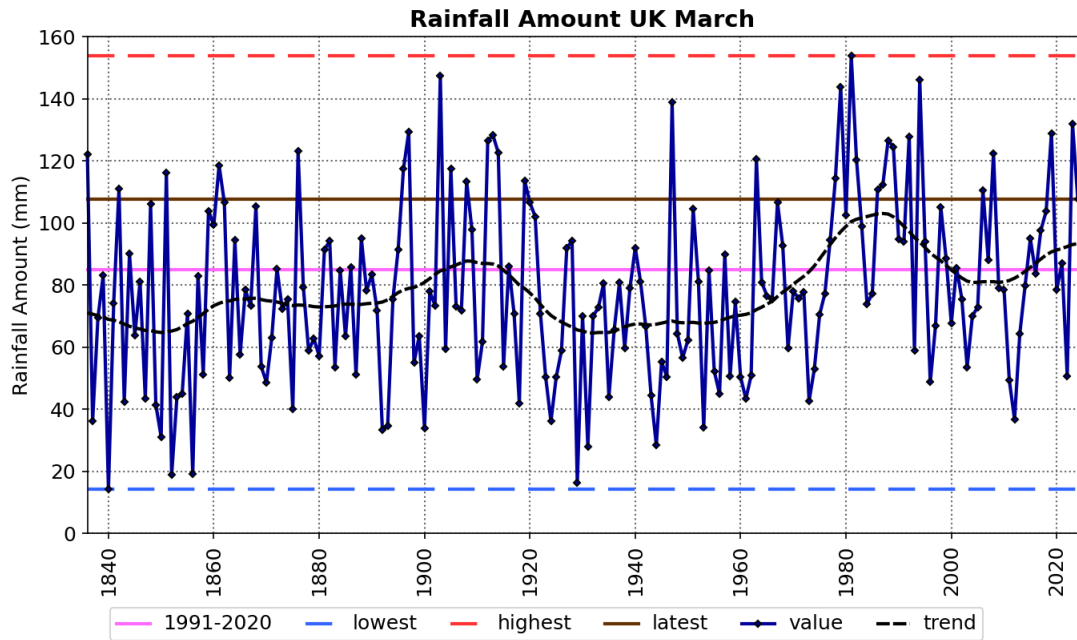


Source: HadUK-Grid 01/04/2024 11:46

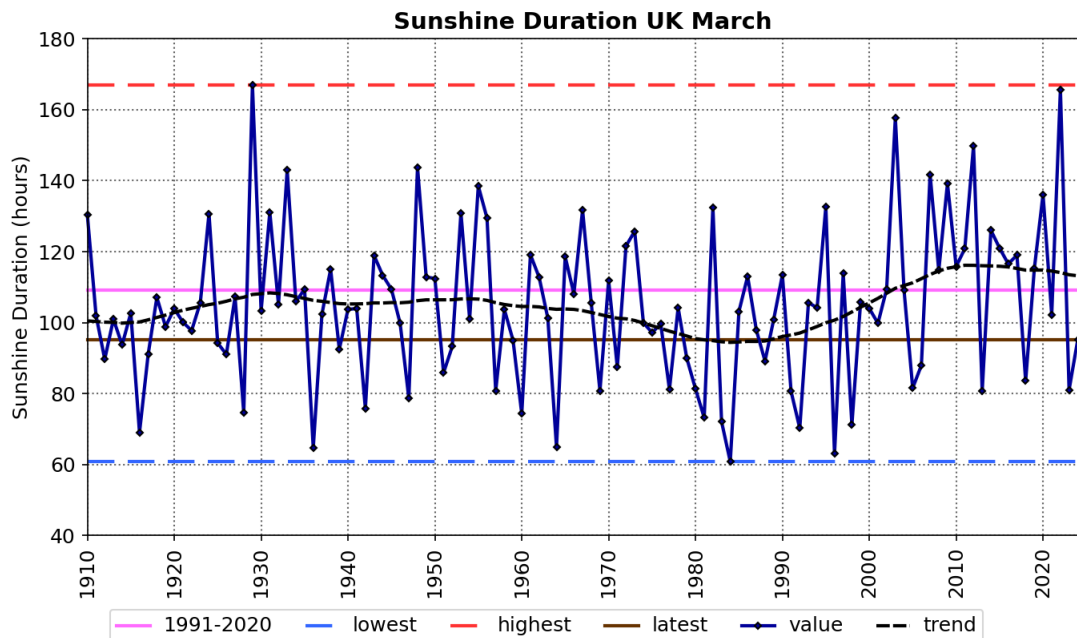
© Crown copyright



Period	1961-1990	1991-2020	2015-2024	2024
Meantemp (°C)	4.7	5.7	6.0	6.7



Period	1961-1990	1991-2020	2015-2024	2024
Rainfall (mm)	91.0	85.1	96.5	107.8



Period	1961-1990	1991-2020	2015-2024	2024
Sunshine (hours)	100.0	109.2	113.6	95.2

Daily time-series

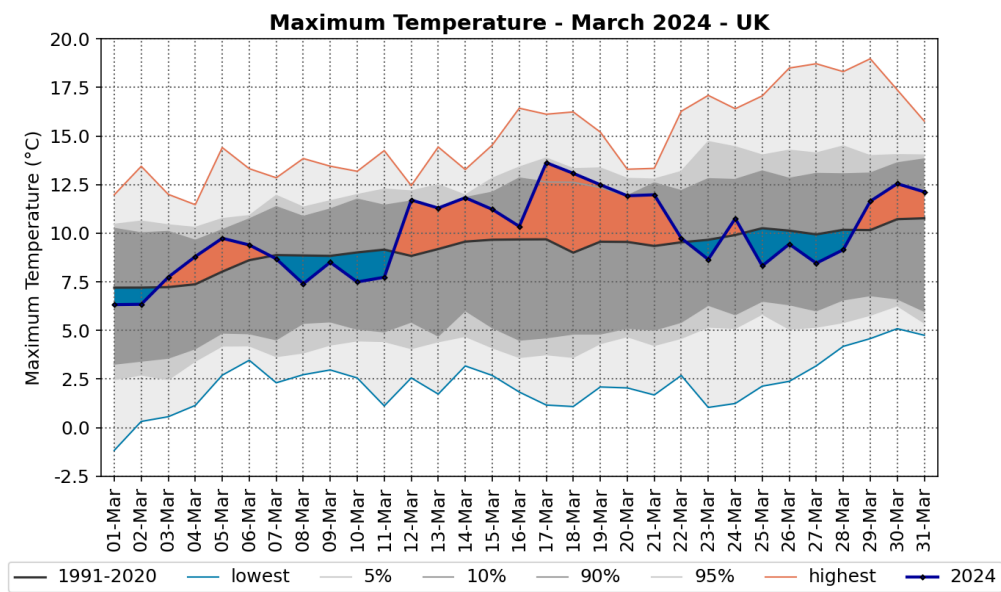
These charts show time-series of UK area-average daily maximum and daily minimum temperature and daily rainfall for each day of March 2024. The areas shaded in grey show the highest and lowest values in the daily temperature series (from 1960) and daily rainfall series (from 1891) together with percentiles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



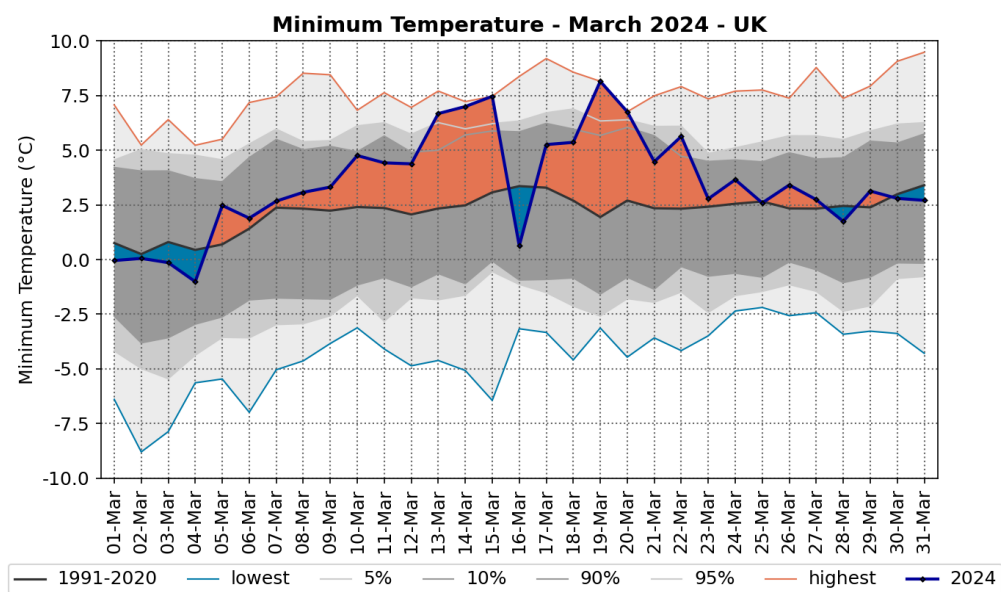
Source: HadUK-Grid 01/04/2024 11:56

© Crown copyright



Source: HadUK-Grid 01/04/2024 11:56

© Crown copyright

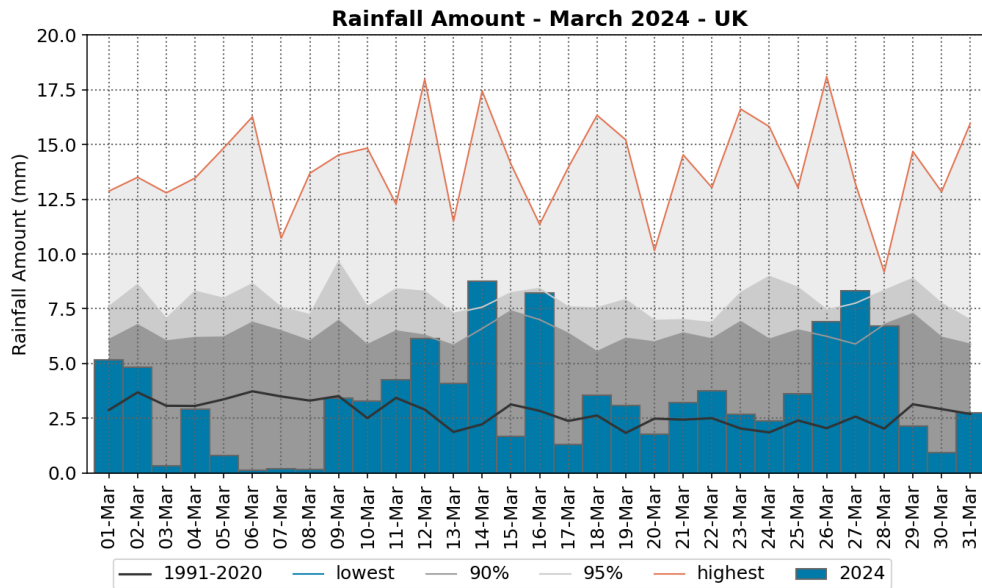


Daily rainfall and rainfall accumulation

Met Office

Source: HadUK-Grid 01/04/2024 11:56

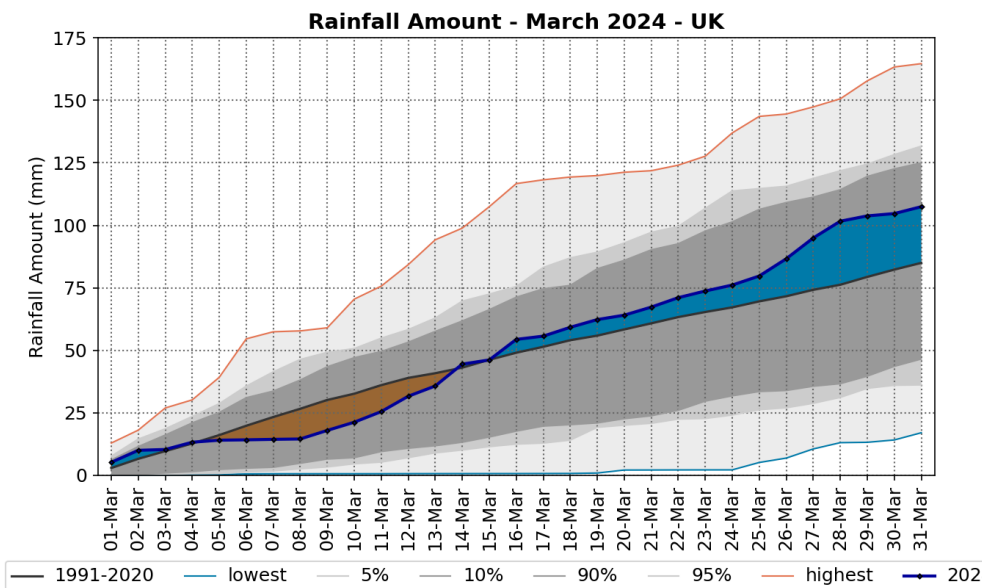
© Crown copyright



Met Office

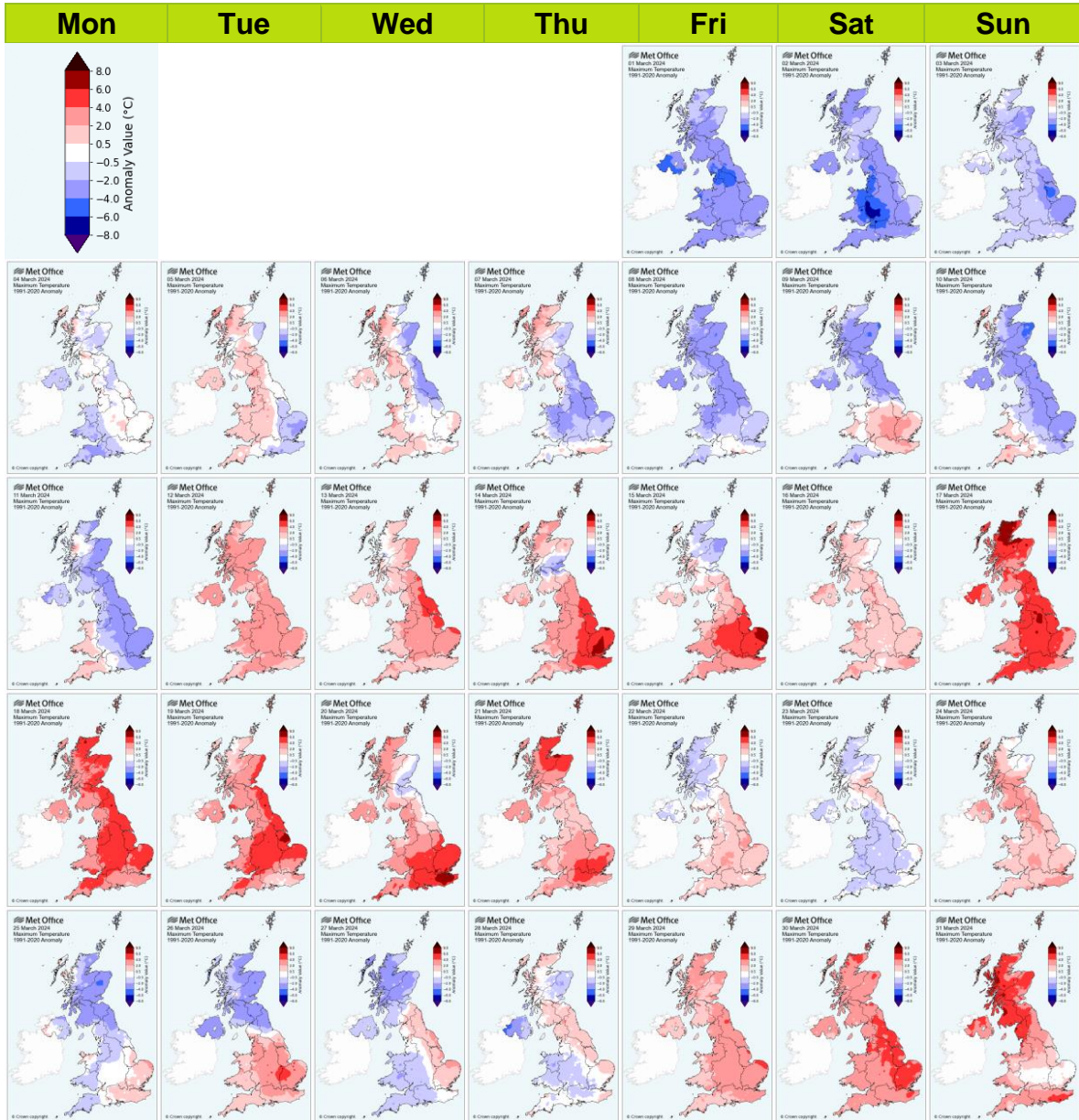
Source: HadUK-Grid 01/04/2024 11:59

© Crown copyright



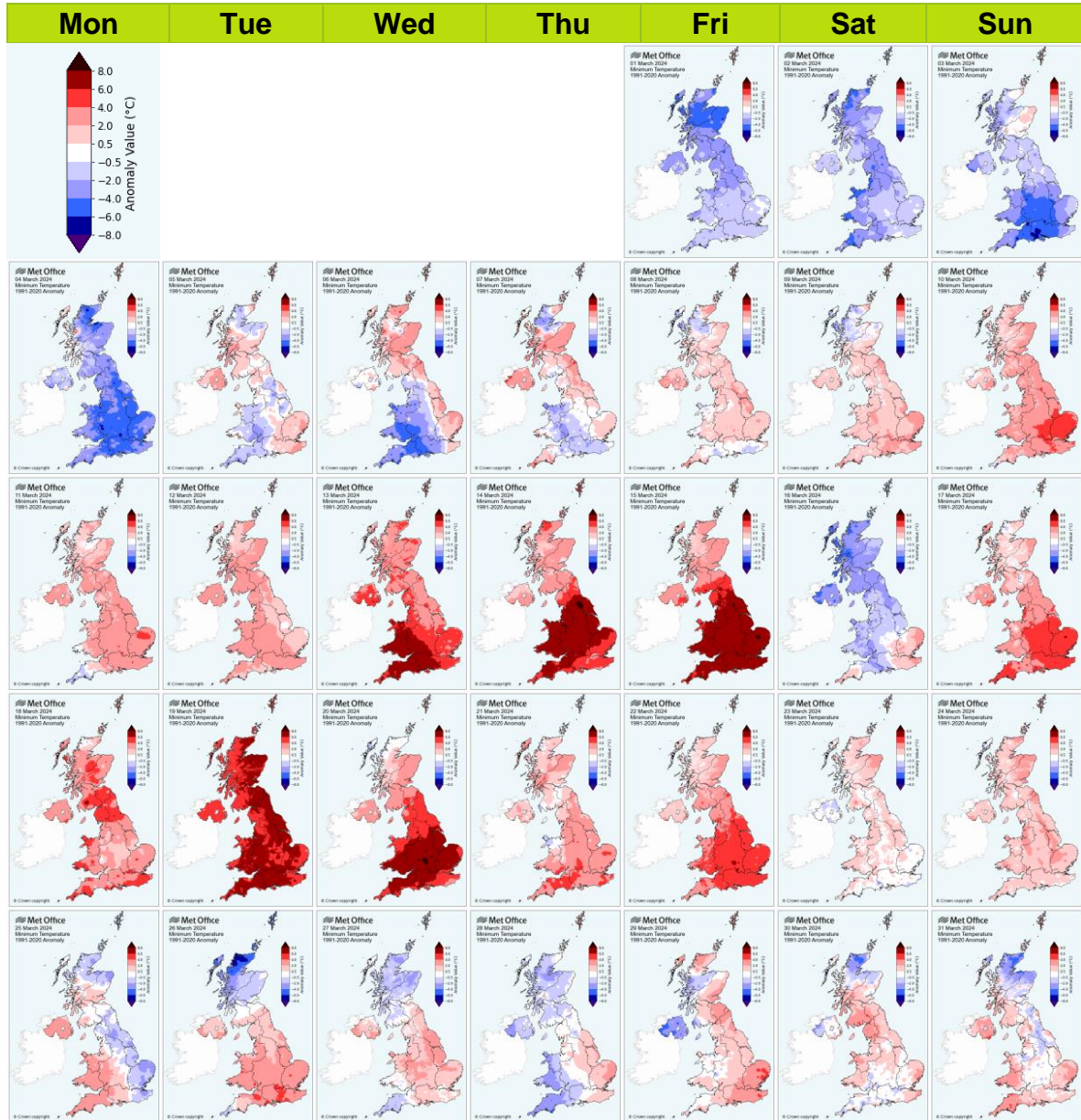
Daily maximum temperature maps - calendar view

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



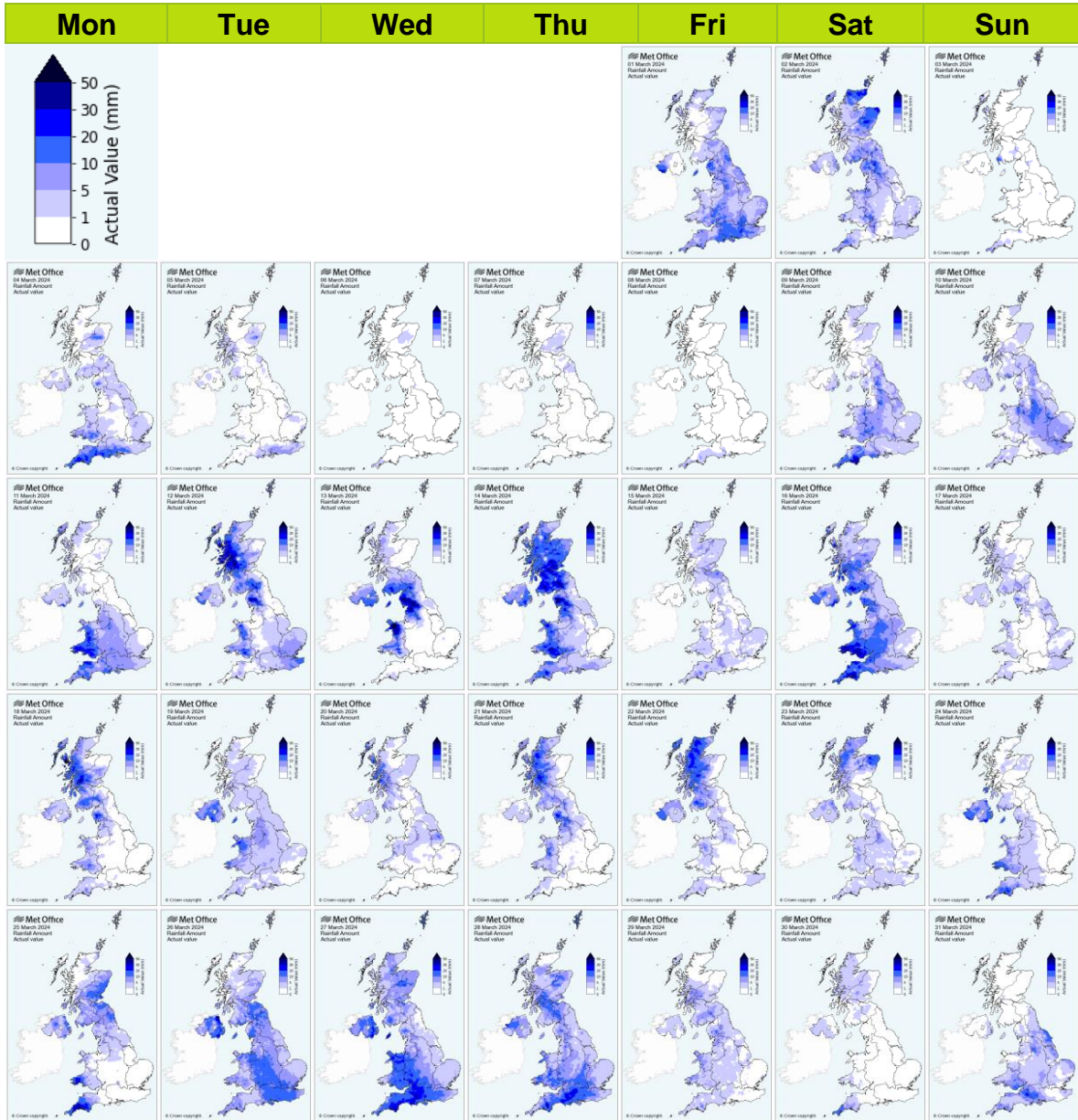
Daily minimum temperature maps - calendar view

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

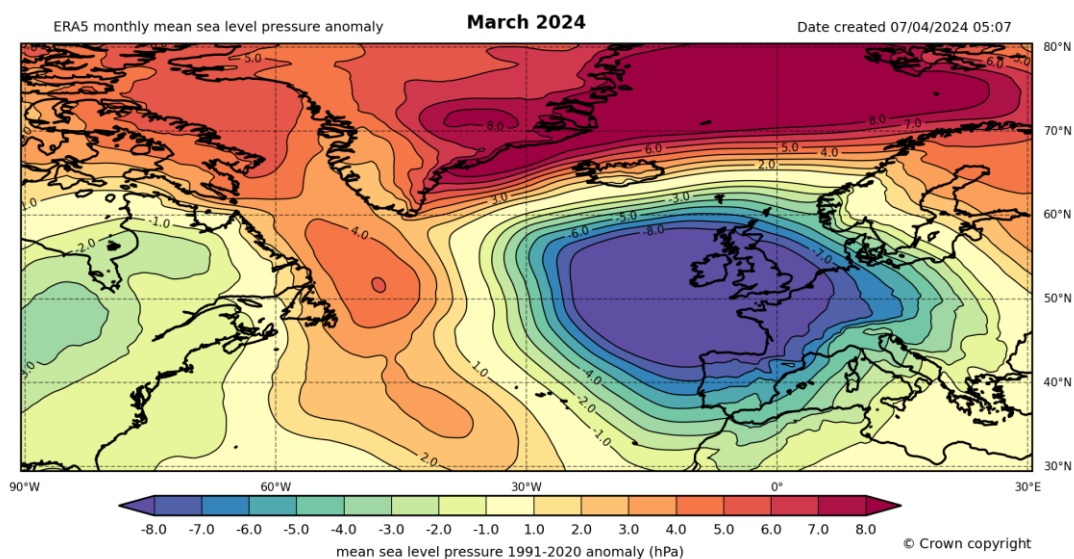
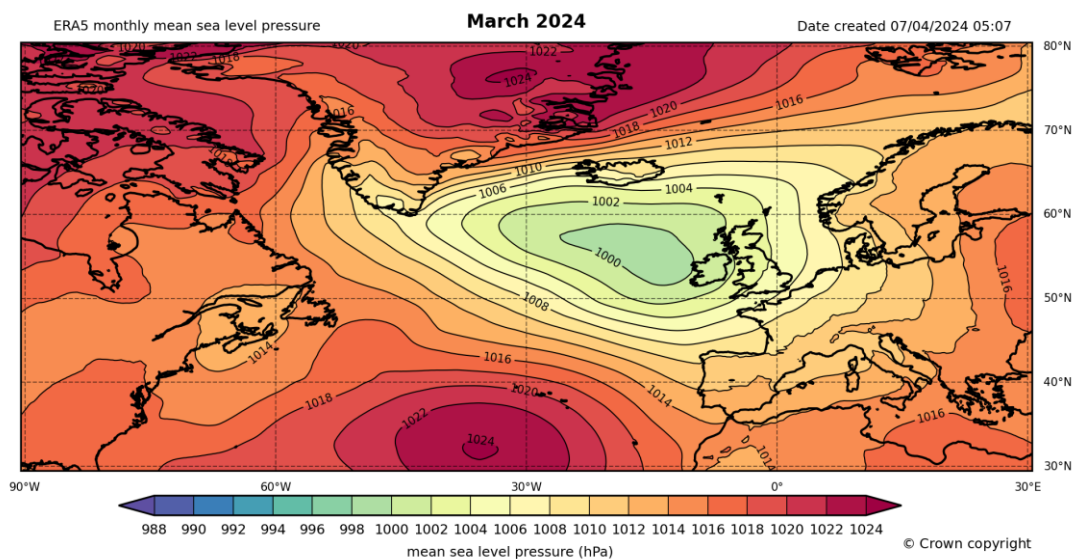


Monthly atmospheric circulation

Mean sea level pressure

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

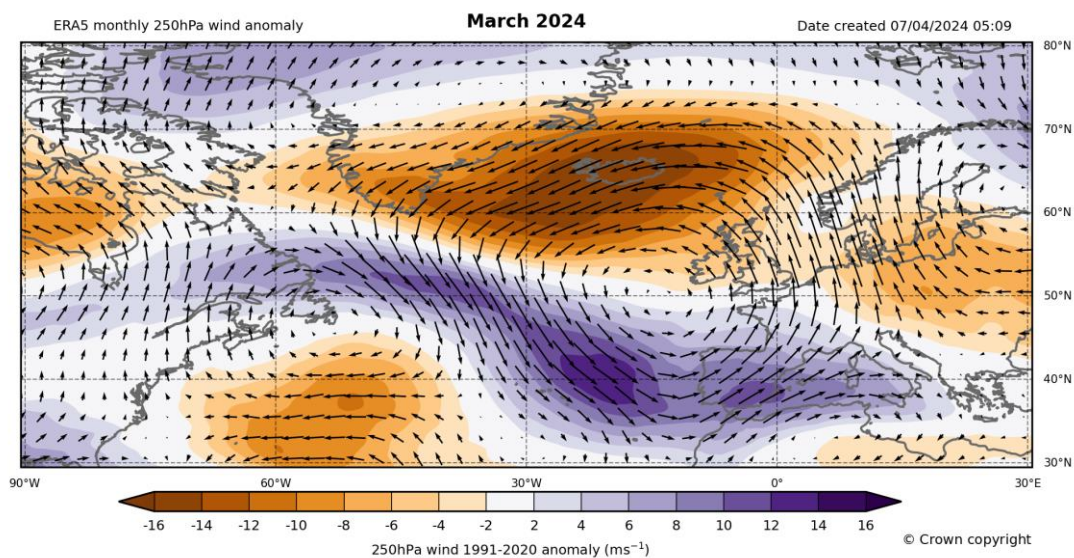
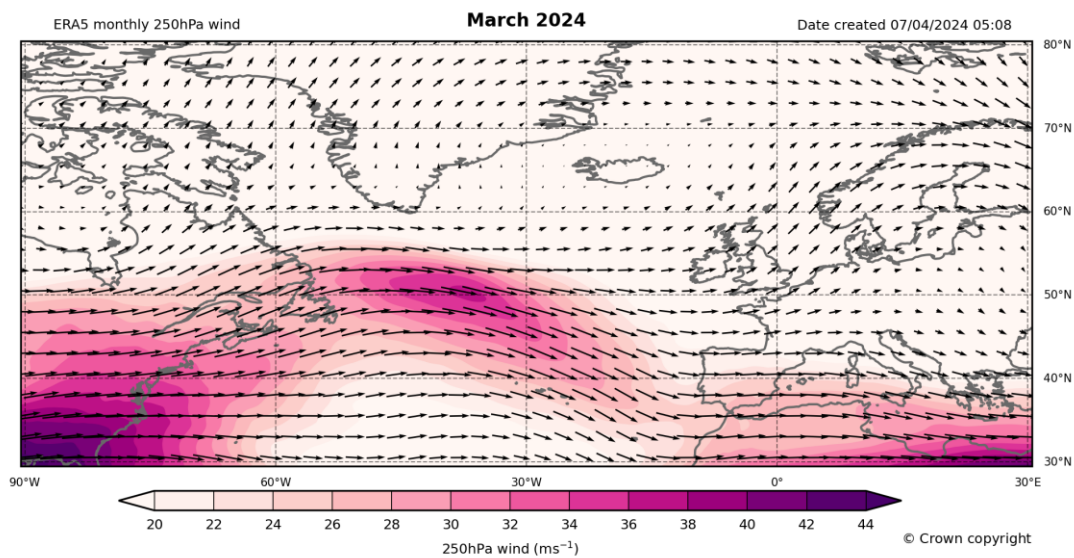
The mean monthly sea-level pressure pattern for March shows low pressure centred to the west of Ireland, and anomalously low pressure across the UK. This resulted in westerly Atlantic flows that brought mild and wet weather.



250hPa wind speed and direction

These charts show the monthly 250hPa wind speed and direction for March 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 March 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 jet stream was displaced further south than usual, with an anomalously northeasterly flow across Iceland. This resulted in a succession of low pressure systems across the UK, and a wet and mild month.



Weather diary

- **Low pressure dominating, wet and windy**

The weather pattern for March was characterized by a series of Atlantic low pressure systems crossing the country through the month with just a brief settled spell during the 2nd week and the occasional transient ridge of high pressure.

Wet and windy was the order of the day on the 1st with a deep low crossing central England, producing significant rainfall across all regions, and some very strong winds for the south coast, gusts to 80mph being reported in places. Low pressure continued to dominate through to the 6th.

By the 7th, high pressure had become established over Scandinavia and the UK fell under the influence of a continental easterly until the 11th. The consequence of that was northern parts of England and all of Scotland remained mostly dry but cold, and any weather systems were pushed south, bringing more wind and rain to southern and southwestern counties. However, by the 13th, the high pressure had all but vanished, allowing a mobile westerly airstream to resume over the UK with the latest system bringing heavy and persistent rain particularly to Northern Ireland, north Wales and northwest England. Parts of Snowdonia saw nearly 100mm of rain over a 24 hour period.

From the 13th to the 25th, the UK was hit by a series of depressions, with their attendant fronts bringing more wind and rain across all regions. After the 20th, the trajectory of the lows changed to approach the UK from a more southerly direction. The resulting southwesterly winds finally brought some milder conditions, with maximum temperatures widely into the mid-teens Celsius, slightly higher over southern England. After the 25th and to the end of the month, a north-south split was evident with Scotland subject to a cold and showery northeasterly airstream, with the rest of the UK milder but very wet at times.

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 08/04/2024 09:16. 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>

Met Office Crown Copyright.