



## Weather Front.

### February 2024/1924

#### February 2024

#### Observers Notes.

**Louth:** The warmest and wettest February since records began in 1981.

**Derby:** The single day of “snow falling” was a wintry mix of wet snow and sleet which interrupted the rain. The overall mean temperature was the highest for February on record, beating the 1998 value of 7.6 C.

**Mickleover:** This was the second wettest February since 1977. It was also the mildest locally since 1952, and equalled that of February 1998 (7.7 C). The mean minimum temperature was the highest for February on record.

**Bablake:** This was the mildest February on record, and since before 1892. It was also the wettest February since 1977.

**Middleton:** February 2024 was the mildest February since 1977; 0.1 C warmer than 1998.

**Mountsorrel:** The mildest February in 23 years of records; only two air frosts in the entire month. The second wettest February, and a dull month. Once again flooding in the Soar valley was an extensive problem throughout the month.

**Ely:** The mean temperature was the highest in 53 years of recording, but both the mean maximum, and the mean minimum, temperatures were only the second highest. February 2024 had the highest rainfall in 53 years by a large margin. The 12 month rolling total for rainfall, march 2023 to February 2024, was 898.6 mm; the average being 580 mm. The warmest night, 10.2 C on the 15<sup>th</sup>, is normally the coldest night of the year!

**Saltfleetby:** Winds gusted to 39 mph [34 kt] on the 5<sup>th</sup>, and 41 mph [36 kt] on the 6<sup>th</sup>.

**Lowdham:** The mean maximum temperature was the highest since 1998, while the mean minimum temperature was the highest on the station record, and locally in the Nottingham area since 1868. The mean minimum temperature was the highest on the station record since 1991, and the highest in the Nottingham area, again, since 1868. The grass minimum

temperature was also the highest on the station record. It was the second wettest February on the station record and the 5<sup>th</sup> wettest in the Nottingham area since 1840. The 12 month running total of rainfall, 1118.8 mm, is the highest for the Nottingham area since 1840. There have been three consecutive months with 12 month running totals above 1000 mm. There were 65.0 hours of sunshine (106%) recorded at Radcliffe-on-Trent (courtesy of T Scholey).

**Coton-in-the-Elms:** An exceptionally mild, and very wet, February. It was the warmest February on the station record (1991) in the village, though milder ones had occurred before that date. Flooding occurred regularly, local farmers being affected frequently due to saturated ground from previous wet months. No snow and infrequent frosts.

### **UK overview**

February was a mild but wet month with generally unsettled weather. A cold spell pushed into the north of the UK from the 6th onwards, with temperatures reaching 4.0 to 6.0°C below average in some areas of Scotland and northern England on the 7th and 8th. The south of England, however, experienced consistently mild temperatures throughout this cold spell, leading to a large temperature gradient across the UK. Mild temperatures in southern England persisted throughout the month up until the 24th, when temperatures dipped to just below average for a few days. The overall mild temperatures in February were also accompanied by extensive precipitation. By mid-month, some areas in the south of England had already seen the whole-month average rainfall, with several stations experiencing new record daily rainfalls. Widespread snow hit northern England, Scotland and Northern Ireland on the 7th and 8th, leading to school closures and travel disruption. On the 22nd, a band of heavy rain moved east across south and central UK, leading to extensive flooding. Overall, temperatures for the month were warmer than average, especially across England. The UK overall was provisionally 2.2°C warmer than average, making this the second warmest February in the series from 1884 behind 1998. It was the warmest February on record for England and Wales. February was a very wet month across the southern half of the UK which received more than twice the average rainfall widely, for some locations more than three times. Southern England recorded 239% of average and here it was the wettest February on record. East Anglia recorded both its warmest and its wettest February on record. It was a fairly dull month for most of the UK (79% of the average sunshine hours). Reference climatology used for calculating anomalies is the period 1991-2020 unless otherwise stated.

### **Weather impacts**

- Heavy rain across the country throughout the month, particularly in southern England, caused widespread transport disruption due to flooding and landslips.
- Snow in the Pennines and Northern Ireland caused road closures and power cuts to homes.

In the first five days of February flooding from heavy rain in western and northern Scotland disrupted transport. Network Rail Scotland reported the closure of the Perth to Inverness line at Kingussie and the Inverness to Wick/Kyle of Lochalsh line. The A82 north of Drumnadrochit was closed with mud and debris covering the road due to the prolonged heavy rain. Even the diversion route was flooded and impassable for a time. Elsewhere across the northern half of Scotland reports of flooded A-routes and landslips were received during the 5th. On the 8th two amber snow warnings were issued for north Wales and the Pennines. TransPennine, Derbyshire and South/West Yorkshire roads were closed by snow, including the A57 Snake Pass and the A537 Cat and Fiddle Pass. The Derbyshire Resilience Forum reported 2500 properties without power. The snow caused travel disruption for Northern Ireland with some high-level routes reported impassable. Three consecutive wet days in southern England from the 6th to the 8th brought flooding impacts. On the 9th floods closed many rail lines including Bristol Parkway to Swindon, Plymouth to Newton Abbot and Gobowen to Shrewsbury and services operating between England and Wales were badly disrupted. On the 9th roads across Essex, Cambridgeshire and Peterborough were closed due to floodwater. On the 10th the River Nene in Northamptonshire overtopped forcing evacuation from the Billing Aquadrome Leisure Park in Northampton. In E/NE Scotland high tides caused damage to coastal sea defences at Golspie, north of Inverness and at Stonehaven in Aberdeenshire. There was widespread rainfall across the southern half of the UK on the 17th causing road closures from flooding on the 18th. Several rain-related road accidents were reported, Devon Police described four cars aquaplaning on the A38 prior to crashing. The village of Crosscombe between Wells and Shepton Mallet saw extensive road flooding and an unconfirmed number of properties experiencing flooding. Unsettled conditions continued in the final week of February with further rainfall and local flooding impacts, particularly across southern England, various low and medium impact rain warnings were issued. The 22nd saw renewed transport disruption with rail lines between Plymouth and Newton Abbot, Machynlleth and Aberystwyth and Shrewsbury to Wrexham closed due to flooding. Services along the line between Birmingham New Street and Cheltenham Spa were also disrupted. On the 25th a deep low centre tracked across the southwest approaches into France, bringing more rain to southern England and strong winds to southwest England. Fallen trees were reported, one of which near Exeter early on the 26th resulted in severe injuries to a motorcyclist. With the ground saturated after the previous rainfall further localised disruption to road and rail transport resulted.

### **From the Press.**

Storm Irgun approached the Norwegian coast, on the 31<sup>st</sup> January, with winds at hurricane force, and was the strongest storm, at that time, to affect any part of Europe. The deep depression intensified as it moved east towards Scandinavia, and showed the probability of “sting jet” activity as it approached the Norwegian coast. The storm centre deepened to a central pressure of 940 hPa late on the same day, being close to the record pressure of 938.5 hPa set in 1907. Gusts of 80-100 mph [70-90 kt] were widespread along the west coast, the

strongest being 115 mph [100 kt] to the north of Trondheim. Flights and ferries were cancelled and parts of central Norway lost power. A hotel in Bodo had windows blown out, and a bus carrying 14 passengers was blown off the road in Bergen.<sup>i</sup>

During the week ending the 3<sup>rd</sup>, Western Australia experienced a brief heatwave. Perth reached a temperature of 41.9 C on the 31<sup>st</sup> of January, 42.7 C on the 1<sup>st</sup> of February, and 40.9 C on the 2<sup>nd</sup>. Even for the Australian summer three consecutive days above 40 C is a marked departure from the seasonal average of 31.5 C. While temperatures returned to near normal, with maxima in the mid to high 20's, temperatures were expected to return to 40 C plus by the 10<sup>th</sup>.

It was anticipated that heavy snowfall would affect South Korea and Japan during the week as an area of low pressure tracked north-east across the Korean peninsula and the Sea of Japan, accompanied by a band of heavy rain, sleet, and snow.<sup>ii</sup>

Global cocoa prices hit a new high of £4,655 a tonne, on the 8<sup>th</sup> in New York, as dry weather continued to affect crops in west Africa. Poor harvests have driven prices up in the region which produces the majority of global supply.

During the first week of February two storms hit California with intense precipitation due to the "pineapple express". This is an atmospheric river that forms near the Hawaiian Islands and flows north-east to the Pacific coast of North America. An initial storm occurred during the 31<sup>st</sup> of January, followed by a second between the 4<sup>th</sup> and 6<sup>th</sup> February, both brought heavy rain across much of California. The area between Santa Barbara and San Diego was particularly affected with several places setting new rainfall records. Downtown Los Angeles had received 26.8 cm of rain by the 7<sup>th</sup>, which is 74% of the yearly average. A state of emergency was declared in several counties. In the hills of Los Angeles and San Francisco mudslides swept away buildings, coastal cliffs collapsed in Santa Barbara county, and part of the main road was washed away in the Mojave desert.<sup>iii</sup>

An area of low pressure developed over Texas on the 10<sup>th</sup>, bringing severe weather to the south-eastern states on the 11<sup>th</sup> and 12<sup>th</sup>. The depression was expected to develop into a nor'easter, and was expected to dominate the weather across the eastern US and south-eastern Canada. After its initial development the system moved eastwards across the US Gulf coast states during the 12<sup>th</sup>. There was a significant risk of thunderstorms, hail, damaging winds, and tornadoes across eastern Texas to South Carolina. In the rear of the low pressure widespread heavy snowfall prompted the issue of winter storm warnings for parts of western Oklahoma and west Texas, with snowfall totals expected to be between 10 cm and 20 cm.<sup>iv</sup>

Unusually high rainfall affected the Oman and United Arab Emirates on the 12<sup>th</sup>, with thunderstorms from the north-east. Annual average rainfall is less than 100 mm but, on the 12<sup>th</sup>, between 50 and 100 mm fell across the eastern UAE and northern Oman, with 140 mm recorded at Dibba, in northern Oman. A storm in Abu Dhabi covered the streets in large

hailstones, flash floods hit the mountainous area of Oman killing 4 people, and more than 100 had to be rescued, many from stranded vehicles.

In Western Australia the record for the most consecutive February days above 40 C was broken, at Perth. Temperatures reached 41.7 C on the 15<sup>th</sup>, taking the total number of days above 40 C to five, the previous record being 4 in 1985 and 2016.

In the USA a snowstorm affected many north-eastern states on the 13<sup>th</sup>. More than 30 cm was recorded in many areas, New York recording over 8 cm in Central Park, making it the city's snowiest day in two years.<sup>v</sup>

The Australian Bureau of Meteorology issued warnings across northern Australia during the 17<sup>th</sup>/18<sup>th</sup> owing to tropical cyclone Lincoln. It made landfall on the afternoon of the 16<sup>th</sup> as a category one, maintained its strength into the evening, and was then downgraded to an ex-tropical cyclone. The system then tracked west across the Northern Territory bringing heavy rain and damaging winds to many places. Flash flood warnings were issued; Tennant Creek, in the west of the Barkly district, recorded 138.4 mm in 24 hours on the morning of the 18<sup>th</sup>. The system was expected to pass into Western Australia on the 19<sup>th</sup>, passing across the Kimberley region, before heading into the Indian Ocean, regenerating, and returning to tropical cyclone status.<sup>vi</sup>

Xinjiang province, in the west of China, experienced a temperature of -52.3 C on the 18<sup>th</sup>, which was the lowest recorded in the region for 64 years, and is just below the national record of -53 C, set in the Heilongjiang region in January 2023. Blizzards and ice left many road and railway travellers stranded. On the same day however, the temperature recorded at Badu, in the south of the country, was 38 C, a difference of 90.3 C across China, and is the largest range ever recorded for a single country.

During the 17<sup>th</sup>/18<sup>th</sup> a depression off south-east Brazil deepened to form the Tropical Storm Akara. The storm had formed during the night of the 17<sup>th</sup> with wind speeds of 40 mph [35 kt] and a central pressure of 1000 hPa. It is rare for a tropical cyclone to form in the south Atlantic. Akara is the first tropical storm to develop in the south Atlantic since Iba in 2019, and only the third since Anita in 2004. Hurricane Katrina, in 2004, is the sole south Atlantic hurricane recorded in history. It should be mentioned that Akara did not prove a threat to the mainland, and by the 20<sup>th</sup> had been downgraded to a tropical depression.<sup>vii</sup>

The central and northern states of the USA experienced one of the most notable February heatwaves ever recorded. Half a dozen states recorded their highest February temperatures. The 27<sup>th</sup> was the warmest day of the heatwave, with many states in the upper midwest breaking the February, and in several cases, the winter, temperature record. The maximum at Springfield, Illinois, was 27 C; 25 C at Cedar Rapids, Iowa; 23 C at Flint, Michigan; and 34 C at Abilene, Texas. These temperatures were as much as 20 C above the average for the time of year. The heat crossed the border into Canada with Quebec also recording its highest

February temperature. These record temperatures were replaced by a cold blast, as a cold front produced a rapid drop in temperature. Kansas City went from 23 C at 1400 on the 27<sup>th</sup> to -1 C by 2000. In Fargo, North Dakota, the temperature dropped from 16 C on the 26<sup>th</sup> to -14 C on the 27<sup>th</sup>, with a winchill of -29 C, and heavy snow.<sup>viii</sup>

## **February 1924**

### **Dull and Very Dry. Cool in Scotland.**

#### **Observers Notes.**

**Copdock (Suffolk):** A thoroughly gloomy month, sunshine little more or less than average, rainfall considerably below the normal; an unusual prevalence of northerly winds.

**Morwenstow (Cornwall):** A very fine month with a good deal of frost. Intensely cold on many days.

**Skegness:** An average February.

**Southport:** A dry month, noteworthy for an unusual scarcity of winds from all southerly points.

**Torquay:** The month will long be remembered for the persistent cold northerly winds, low temperatures, deficiency of rainfall, and exceptional number of frosts. Sunshine above average.

**Totland Bay:** A cold month with somewhat deficient sunshine, wind mainly from west and north. The chief feature was the small amount of rainfall.

**Aberfour (Banff):** An exceptionally dull month. A severe blizzard started on the 28<sup>th</sup> and continued all day on 29<sup>th</sup>.

**Eriska (Argyll):** On the average more like the month of March, with cold winds.

**Branxholme (Roxburgh):** Dry, open month, with cold winds.

**Dublin:** The month brought an after-winter of some severity. Rainfall and rain-days much below average.

**Louth (Westgate):** Total rainfall for the month was 1.04 ins [26.4 mm] or 54% of average.<sup>ix</sup>

**Derby/Burton-on-Trent:** A rather cold and wintry month. The rainfall totals were very low at all gauge sites; the range was only 10-16 mm, suggesting anticyclonic persistence. There were 14 air frosts at Burton. Temperatures were a little below normal, with a mean of 3.1 C, compared with the CET of 3.3 C. The extremes comprised a maximum of around 9 C on the

24<sup>th</sup>, and a minimum of -6 C to -8 C on a number of occasions, including the 15<sup>th</sup>, 17<sup>th</sup>, and 27<sup>th</sup>.

**Brocklesby:**

10 Day Mean Temperatures			
Date	Max	Min	Mean
1-10	47	37	42
11-20	39	30	34
1-20	43	33	38
21-29	40	32	36

Kington notes that February 1924 was “cold, dry; 29 February: northwesterly situation, heavy snowfall in north Scotland, severe blizzard, trains snow bound, many roads blocked”.<sup>x</sup> Stratton also notes, “February unusually dry with low temperatures and cold east winds”.<sup>xi</sup>

### **UK Overview February 1924.**<sup>xii</sup>

Westerly winds and mild weather dominated the country during the first week. To the south-west lay an anticyclone, while depressions to the north passed from Iceland into Scandinavia. The first three days were fair, but gradually became dull. On the 8<sup>th</sup> a deep depression moved in from the Atlantic bringing high southerly winds and gales along western coasts, and heavy rain locally in Ireland. From the 10<sup>th</sup> to the 14<sup>th</sup> pressure remained high over northern Europe, but low pressure moved slowly across Biscay and France. As a result, cold, easterly winds brought a significant fall in temperature generally, and gales were recorded locally from the 12<sup>th</sup> to the 14<sup>th</sup>. High pressure was later maintained to the west of Ireland, and cold winds varied in direction between west and north. Occasionally depressions moved south over Scandinavia and the North Sea bringing snow and sleet over much of the country but, at first, there was a slight, temporary, rise in temperature. A deep depression on the 29<sup>th</sup> brought high winds and gales to all parts of the country. From the 11<sup>th</sup> onwards the weekly average temperature and sunshine were generally below average, and rainfall was, generally, markedly below average.

With the exception of Scotland and Northern Ireland, the mean temperature was below average. The largest excess was +1.2 F [+0.6 C] in northern Scotland (mean 39 F [4 C]), and the largest deficiency was -2.4 F [-1.2 C] in south-east England (mean 38 F [3 C]). The first week was the warmest and temperatures were above average everywhere, while the middle of the month was the coldest. On the 13<sup>th</sup> the maximum at Balmoral was only 30 F [-1 C], and on several days there were places at which the temperature did not rise above freezing. On the 28<sup>th</sup> and 29<sup>th</sup> the weather was bitterly cold in Scotland, however, the extreme west of Ireland and the Isles of Scilly had the highest mean temperatures of the month, while Rhayader recorded temperatures of 8 F [-13 C] on the 9<sup>th</sup> and 9 F [-12 C] on the 17<sup>th</sup> and 27<sup>th</sup>.

There was widespread deficiency in rainfall throughout the country, in some places it was very marked. There were only three small areas in which rainfall exceeded the average, one in the extreme north of Scotland, one in the north-east of Scotland, and a small area on the East Anglian coast. Over much of the country, from the Firth to the Thames estuary, and over much of Ireland, rainfall was at, or slightly above, 50% of average. Elsewhere it was less than 50%, with some stations in Scotland reporting from 10% to 20% of average.

A fall of 57 mm was noted at Valencia on the 8<sup>th</sup>. Remarkably low totals were reported at Llanthony Lock (Gloucester), 0.5 mm, and at Bishop's Canning (Wiltshire), 2 mm. The rainfall total at Ross-on-Wye, of 7.1 mm, was the lowest for February since 1896, with the exception of 1921. At Totland Bay (Isle of Wight) a partial drought of 36 days, from January 25<sup>th</sup> to February 29<sup>th</sup>, gave a total of 7.6 mm, the average being 68.6 mm.

Snow fell in many places, mainly between the 10<sup>th</sup> and 16<sup>th</sup>, and from the 24<sup>th</sup> to the end of the month. Several days of "snow lying" were reported at a number of stations, the highest number being 13 at Braemar. There was very little snow reported in the south of the country. On the 29<sup>th</sup> a severe blizzard was reported in northern Scotland; at Gordon Castle, in Elgin, it was said to be the worst in 20 years. Serious drifting was reported in the north and north-east of Scotland, many trains were snow-bound, and roads were impassable. The observer at Malham, Yorkshire, said that the gale on that day "took the form of a real blizzard".

Hail was confined to north-east England and Scotland, Lerwick reporting 9 days of hail. One day of thunder was reported from some stations, mainly in the west. Fog was not prevalent at most stations, but in some towns a considerable number of days were noted; Southampton 24, Coventry 18, and Lincoln 13.<sup>xiii</sup>

### **Europe and the Rest of the World.**

In Europe, February 1924 was a month of severe gales, and avalanches. A violent hurricane caused considerable damage, and many injuries, in Vienna on the 3<sup>rd</sup>. On the 5<sup>th</sup> a storm affected Gibraltar during the early morning. Hail covered the summit of the Rock, giving an appearance of snow, a sight not known in the previous half century. Snow was reported in parts of Umbria to a depth of 3 ft [about 1 metre], and deaths from cold were reported in Florence. Towards the middle of the month there were many reports of disasters, from avalanches, in Austria. Towards the end of the month heavy snowstorms were reported in Berlin, and snow delayed rail traffic between Madrid and the north of Spain. In northern Europe, on the 2<sup>nd</sup>, international ferry traffic between Denmark and Sweden was delayed by icefloes, and after the middle of the month traffic between Finland, Sweden, and Denmark was interrupted in all parts of the Baltic owing to the increase in ice. Some ports were closed to navigation, while at others shipping movements could only be undertaken with the help of icebreakers.



In the Mid-West of America many lives were lost, and considerable damage done, from a bizzard, during the 5<sup>th</sup> and 6<sup>th</sup>. Chicago and Davenport lost all communication with the north and east of the country. At the beginning of the month an ice bridge formed across the width of the St Lawrence river from Sillery Point, near Quebec, to Levis. The bridge was not strong enough for regular traffic, and broke after a couple of days. It was suggested that the bridge had not been formed for 25 years.

Further good rain was reported to have fallen in Victoria, general light rain in New South Wales, and in Queensland.

Reports from Brazil stated that plentiful rain had fallen in all parts of the country, totals being 39.5 mm, 76.7 mm, and 38.7 mm above average in the Northern, Central, and Southern Districts respectively. Floods were reported in many areas, particularly in the central area, which had significant effect in the state of Rio de Janeiro. Temperatures continued above average, being 1 C above in the north and centre, but at Rio de Janeiro the temperature was around one degree below average. Owing to the floods and poor weather the coffee and cane crops were not good, but the cotton crop in the north was in fair condition.<sup>xiv</sup>

**Central England Data.<sup>xv</sup> February 1924 (Averaging period is 1891 to 1920.)**

Mean Maximum Temperature: 5.8 C. Average: 6.9 C.

Mean Minimum Temperature: 0.8 C. Average: 1.2 C.

Mean Temperature: 3.3 C. Average: 4.1 C.

England and Wales Rainfall: 27.6 mm. Average: 64.3 mm. 43%.

**Midlands Data. (Averaging period is 1911 to 1920).**

Midlands Mean Maximum Temperature: 5.3 C. Average: 6.9 C.

Midlands Mean Minimum Temperature: -0.1 C. Average: 0.6 C.

Midlands Mean Temperature: 2.6 C. Average: 3.7 C.

Midlands Rainfall: 19.9 mm. Average: 59.6 mm. 33%.

**Central England Data February 2024 (Provisional) (Averaging period is 1991-2020).**

Mean Maximum Temperature: 10.7 C. Average: 7.9 C.

Mean Minimum Temperature: 4.8 C. Average: 1.8 C.

Mean Temperature: 7.8 C. Average: 4.9 C.

England and Wales Rainfall: 151.1 mm. Average: 72.4 mm. 209%.

### **Midlands Data.**

Mean Maximum Temperature: 10.5 C. Average: 7.7 C.

Mean Minimum Temperature: 4.3 C. Average: 1.4 C.

Mean Temperature: 7.4 C. Average: 4.5 C.

Midlands Rainfall: 119.7 mm. Average: 59.3 mm. 202%.

Sunshine: 52.8 hours. Average: 75.4 hours. 70%.

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<sup>i</sup> The Guardian, 3 February 2024.

<sup>ii</sup> The Guardian, 6 February 2024.

<sup>iii</sup> The Guardian, 10 February 2024.

<sup>iv</sup> The Guardian, 13 February 2024.

<sup>v</sup> The Guardian, 17 February 2024.

<sup>vi</sup> The Guardian, 20 February 2024.

<sup>vii</sup> The Guardian, 24 February 2024.

<sup>viii</sup> The Guardian, 2 March 2024.

<sup>ix</sup> Monthly Weather Report, February 1924, Meteorological Office, HMSO, March 1924, p. 15.

<sup>x</sup> Climate and Weather, Kington J, Harper Collins, 2010, p. 403.

<sup>xi</sup> Agricultural Records AD 220-1977, Stratton J M and Brown J H, ed. Whitlock R, John Baker, 1978, p. 141.

<sup>xii</sup> Monthly Weather Report, February 1924, Meteorological Office, HMSO, March 1924, p. 15.

<sup>xiii</sup> Monthly Weather Report, February 1924, Meteorological Office, HMSO, March 1924, p. 15.

<sup>xiv</sup> Meteorological Magazine, March 1924, Meteorological Office, HMSO, April 1924, p. 45.

<sup>xv</sup> Hadley Centre, Central England and Midlands, Meteorological Office.