

Radcliffe Meteorological Station

School of Geography and the Environment, University of Oxford

Annual Report 2025



Section 1: Overview

The yearly summary table for 2025 can be found below in Table 1. Overall, the year was 0.7 °C warmer than the 1991-2020 average (hereafter also referenced as the ‘long-term average’) making it the third warmest year on record after 2022 and 2023 with mean air temperatures of 12.14 °C and 11.85 °C respectively (Figure 1). The second highest daily minimum temperature in the RMS’s records to date was also recorded in 2025 on the 1st of July (21.0 °C) as the UK and Oxford sweltered in one of the summer’s four heatwaves. It was also the sunniest year on record with 1897.3 hours of bright sunshine followed by 2022 (1891.4 hours). 2025 also included the 2nd sunniest spring on record which contributed 679.0 hours to the overall annual total. The 11th of July 2025 particularly stood out as it is tied with the 28th of June 1921 as the sunniest day on record (15.9 hours). There were also notably fewer days with fog at 0900UTC compared to the long-term average but a relatively similar number of air and ground frosts despite the warmer average temperatures.

This report will summarise the annual observations from the Radcliffe Meteorological Station (RMS) in Oxford for 2025. It begins with **Section 2** – The Year Through the Seasons which details the seasonal and monthly summaries for the year. This is followed by **Section 3** - News from the Radcliffe Meteorological Station and **Section 4** – Acknowledgements.

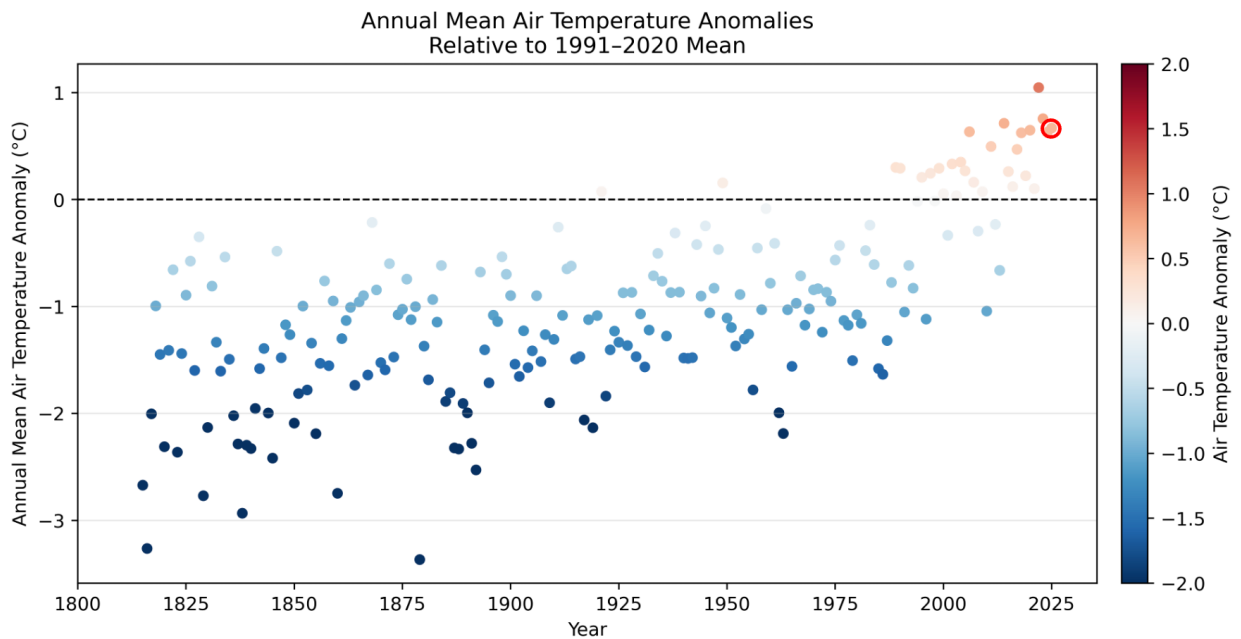


Figure 1 – Annual air temperature anomalies across the RMS’s record relative to a 1991-2020 long-term average. 2025 is highlighted with the red circle.

	Units	2025 value	1991-2020 average	1991-2020 standard deviation	Difference
Temperature					
Mean air temperature	°C	11.8	11.1	0.5	0.7
Mean daily maximum temperature	°C	16.1	15.0	0.7	1.1
Mean daily minimum temperature	°C	7.5	7.1	0.5	0.4
Highest maximum temperature	°C	32.7	31.0	2.4	1.7
Lowest maximum temperature	°C	-0.5	0.3		-0.8
Highest minimum temperature	°C	21.0	18.4		2.6
Lowest minimum temperature	°C	-5.3	-5.7	1.9	0.4
Air frosts (screen minimum < 0 °C)	days	33.0	33.8		-0.8
Mean minimum grass temperature	°C	4.9	4.0	0.8	0.9
Lowest grass minimum temperature	°C	-8.0	-9.8	1.9	1.8
Ground frosts (grass minimum < 0 °C)	days	88.0	90.7		-2.7
Mean concrete minimum temperature	°C	5.8	5.9	0.8	-0.1
Lowest concrete minimum temperature	°C	-6.5	-7.1	1.7	0.6
Mean soil temperature at 30 cm at 0900 UTC	°C	12.5	11.6	0.4	0.9
Mean soil temperature at 100 cm at 0900 UTC	°C	12.6			
Precipitation					
Total precipitation	mm	594.8	683.9	121.0	-89.1
Wettest day	mm	35.9	33.6		2.3
No. of rain days (0.2 mm or more rainfall)	days	131.0	166.9		-35.9
No. of wet days (1.0 mm or more rainfall)	days	89.0	117.9		-28.9
Sunshine duration					
Total bright sunshine	hours	1897.3	1614.2	113.5	283.1
Mean daily bright sunshine	hours	5.2	4.4		0.8
Sunniest day	hours	15.9			
Mean wind speed at 0900 UTC (at 10 m)	knots	8.1			
No. of days with fog at 0900 UTC	days	2.0	15.4		-13.4
No. of days with snow lying at 0900 UTC	days	2.0	5.1		-3.1

Table 1 - Annual statistics from the RMS. Anomalies are calculated with respect to the 1991-2020 standard period mean. Yellow highlighting indicates anomalies more than 1 standard deviation from the mean, orange anomalies more than 2 standard deviations from the mean and red anomalies more than 3 standard deviations from the mean.

Section 2: The Year Through the Seasons

Figure 2 shows the monthly averaged daily mean temperature calculated for each year in the RMS’s temperature record highlighting the warm year at the RMS.

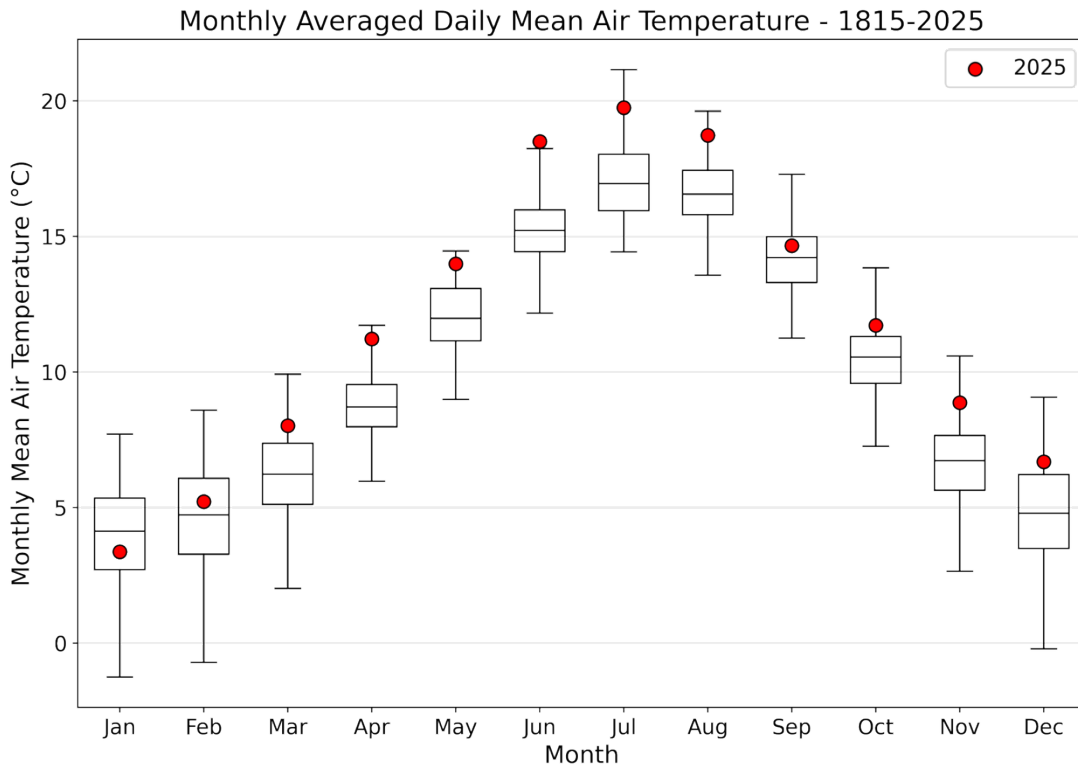


Figure 2 – Monthly averaged daily mean air temperature calculated for each year in the RMS’s record (box plots) and 2025 values (red dots).

The winter season (December 2024 – February 2025) was not particularly remarkable although it does feature in the top 15 winters with the lowest total bright sunshine hours in the RMS’s record to date. The year began with a relatively cool and gloomy **January** with an average of only 1.7 hours of bright sunshine each day and a mean air temperature that was 1.9 °C below the 1991-2020 average. Snow was recorded on two days which constituted the total number of days with snow lying at 0900UTC for the year. January also included 26.1% of the ground frost days for the year and 39.4% of the air frost days making it a chilly start to 2025. **February** was relatively typical with 102% of expected precipitation falling through the month. However, total sunshine hours were 17% below expected despite a few bright days including the 27th of February which saw 84.5% of the total possible sunlight hours on that day. Regardless, February concluded a dull start to the year.



Figure 3 - Fog over Port Meadow with the Tower of the Winds visible to the left of the image (Photo Credit: Alice Jardine).



Figure 4 – A frosty morning at Green Templeton College (Photo Credit: Kate Maddern)

While the winter season was fairly typical, spring in 2025 was anomalously sunny, warm and dry. It was the 2nd sunniest spring on record after 2020, the 4th warmest and the 6th driest. These rankings are also clear through the season's months. **March** was the 2nd driest March on record and only 4% of the expected total precipitation fell across the whole month. This precipitation occurred on only 5 days in the month that had measurable precipitation. Furthermore, March was also the 6th sunniest March on record in Oxford with 155% of the expected number of hours of bright sunshine. This led to an average of 2.1 hours more sunshine each day compared to the 1991-2020 average. **April** continued in a similar vein as the 4th sunniest April on record (238.7 hours) and the 6th warmest April since records began at the RMS with a mean air temperature of 11.2 °C. April was also dry with only 39% of the total expected precipitation. This made it the second driest month of the year (after March) with only 18.9mm of precipitation across the whole month. The total monthly precipitation was not evenly distributed through the month with 86.2% of the precipitation falling on the 21st/22nd of April 2025. Finally, **May** was also sunny and dry with 51% of the expected rainfall and 128% of the long-term average bright sunshine. This warm anomaly was present in most of the variables in May including a highest maximum temperature of 27.5 °C putting this in the top 25 warmest May days on record. Spring in Oxford was also embedded in a wider record-breaking season across the UK and the UK Met Office reported that it was the warmest spring across the UK since 1884¹.

1 - <https://www.metoffice.gov.uk/blog/2025/the-met-office-year-in-weather-2025>



Figure 5 – Green Templeton college in April 2025 during the 42.9% of the month when the sun was not shining... (Photo Credit: Alice Jardine).

The overarching annual theme of warmth continued into the summer of 2025 with an average mean temperature of 19.01 °C making it the warmest summer on record in line with the same record across the UK². The summer also consisted of 4 heatwave periods, summarised in Table 2, and included one tropical night of 21.0 °C on the 30th of June/1st of July. This was the 2nd warmest daily minimum temperature on record after 21.2 °C in 2016. The summer records were also present in the individual months. **June** was the warmest June on record with a mean temperature of 18.51 °C which exceeded the previous record of 18.49 °C measured in 1846 and 1976. These positive temperature anomalies were present in June for all of the metrics measured at the station and the mean daily maximum temperature (23.7 °C) was 3 °C above the standard period average. Rainfall was also lower than expected across June at only 54% of the long-term average. A similar pattern followed in **July** with all temperature metrics above the 1991-2020

average and precipitation totals of 77% of the expected. Despite this low total, there were only 14 days in July when no precipitation was recorded. The highest daily maximum temperature of the year was measured on the 11th of July (32.7 °C). **August** was similarly dry, sunny and warm with only 43% of expected rainfall and a mean air temperature 0.9 °C above the 1991-2020 average for August.

Table 2 – Oxford heatwaves in 2025 using the Met Office’s definition of a heatwave for Oxfordshire of three or more consecutive days above the threshold temperature of 27° C.

Dates (inclusive)	Average Daily Maximum Temperature in Period, °C	Highest Maximum Temperature, °C	Hottest Day in Spell
18 th - 21 st June	29.6	30.4	19 th June
27 th June – 1 st July	29.7	31.9	30 th June
9 th - 13 th July	30.0	32.7	11 th July
10 th – 13 th August	29.1	32.6	12 th August



Figure 6 – A parched weather station (Photo Credit: Charlie Knight).

Autumn in Oxford was warmer than average and fell into the 20 warmest autumns in the RMS record. Beyond that, it was a variable season with its months including both anomalously high and anomalously low bright sunshine and precipitation. **September** was slightly cooler than average (0.3°C below the 1991-2020 long-term mean) but was interspersed with warm periods including on the 19th of September when the temperature reached 26.3°C which is remarkably still 7.1°C away from the highest daily maximum temperature in the RMS's records for September. The month also saw rainfall totals that were 141% of the 1991-2020 average but with bright sunshine notably high at 178.3 hours (124% of expected). In contrast, **October** was dry and notably dull with 71% of the expected precipitation and 55% of the expected bright sunshine hours. This made October the 4th dullest since the RMS's sunshine records began in 1880 and also the second dullest month of 2025 after January with only 2.0 hours of sunshine on average per day. **November** echoed the variable nature of September and was the wettest November since 2002 (and 13th wettest since 1767) but it was also in the top 15 sunniest Novembers in the long-term record. Furthermore, the particularly wet day of the 14th of November made it the 2nd wettest November 24-hour period on record after 1894 with 35.9mm of precipitation falling in the 24-hour period.

To conclude the year, **December** continued the theme of above average temperatures with a mean air temperature 1.3°C above the 1991-2020 average. Furthermore, there was 21% more bright sunshine hours of the month compared to the long-term average and bright sunshine was recorded on two-thirds of the days. This included Christmas Day which was the sunniest 25th of December in the RMS's record.



Figure 7 – A view over Oxford from the top of the engineering department (Photo Credit: Kate Maddern).

Section 3: News from the Radcliffe Meteorological Station

Observations were taken by a team of nine observers this year (Charlie Knight, Kitty Attwood, Kate Maddern, Zeyao Dong, Alice Jardine, Tristram Walsh, Elo Wilkinson-Rowe, Andrew Butcher and Paige Norton-Edwards) and a particular mention goes to Kate and Andrew for completing the Christmas Day and New Year's shifts. The RMS is sadly saying goodbye to Charlie who has been an observer since January 2023 and has been the lead observer making sure everything runs smoothly behind the scenes since October 2023. He is imminently finishing his PhD, and we wish him well in his future pursuits and thank him for his dedication to the weather station. As of February 2026, Alice Jardine will take over the role of lead observer. She has been an observer at the weather station since May 2023 and is a PhD student in the climate lab at the School of Geography and the Environment.

The weather station has continued to be the star of both local and national news including featuring on the cover of the UK State of the Climate 2024 (Figure 8), in an interview for BBC News at 6 and 10pm on heatwaves and a news piece linked [here](#). Charlie Knight was also interviewed twice for BBC Radio Oxford to discuss the observations at the weather station over the spring season and also as part of a piece titled 'Bake Off Tent or Meteorological Event' which saw radio hosts battling it out to see if they could guess if a name was a contestant on The Great British Bake Off or in the Met Office's list of named storms for the year. Given it was a raging success, perhaps Charlie's post-PhD career lies in broadcasting...

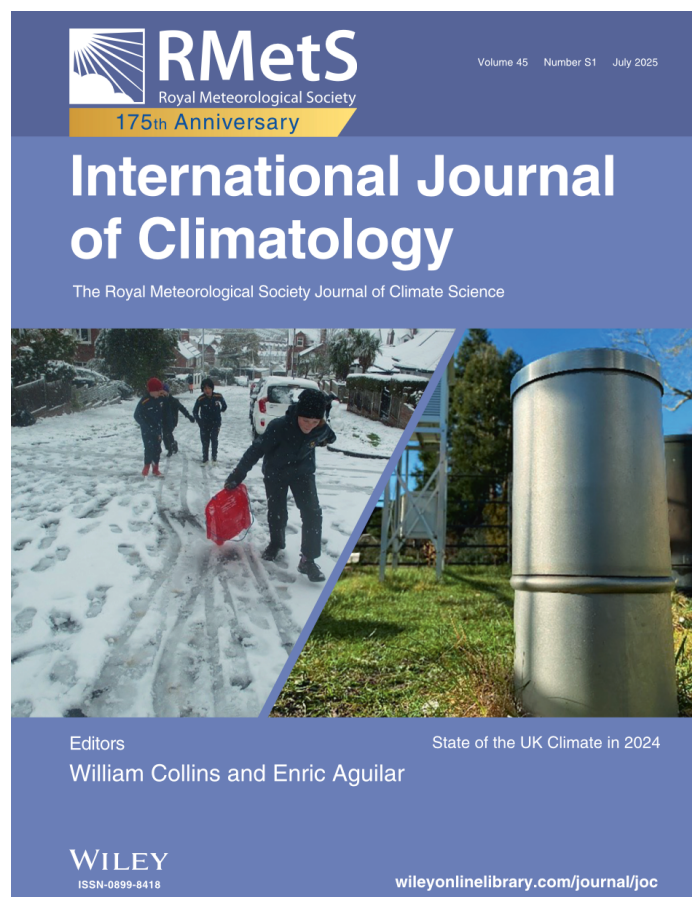


Figure 8 – The rain gauge at the RMS on the front of the State of the UK Climate in 2024 (<https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.70010>).

There were three periods of measurement outage across the year:

- 18th of January to 19th of January (inclusive): grass minimum temperature and concrete minimum temperature thermometers.
- 26th of June to 14th of July (inclusive): concrete minimum temperature thermometer.
- 18th of October to 7th of November (inclusive): 100cm temperature thermometer.

The grass and concrete minimum temperature thermometer outages were caused by disturbances in the weather station enclosure. The 100cm thermometer outage occurred when the thermometer detached from the chain used to raise it and remained at the bottom of the metre deep hole. This was kindly rescued by Michael Pirie, the Head Gardener at Green Templeton!

The same grass and concrete minimum temperature thermometers were reinstated on the 19th of January. The concrete minimum temperature thermometer was replaced on the 14th of July with a new minimum temperature thermometer. The same 100cm thermometer used prior to the outage was reinstated on the 7th of November.

Section 4: Acknowledgements

The running of the weather station in 2025 would not have been possible without a number of people. Firstly, our thanks goes to Stephen Burt and Roger Brugge at Reading and Angus Bruce at the Met Office for their continued support and advice. Secondly, to Green Templeton College for allowing us access to their beautiful grounds to continue the record of observations and also to film pieces for media and outreach. Thirdly, to the Department of Engineering for continuing to host our Campbell-Stokes sunshine recorder and anemometer. We would also like to thank the communications teams at School of Geography and the Environment for supporting us in publicising the work of the RMS. Finally, we would like to thank Richard Washington for overseeing the work at the weather station and providing a helping hand whenever required.

As always, for any data requests, please email: rms@ouce.ox.ac.uk

Alice Jardine

On behalf of the RMS Observers.

January 2026.