

Radcliffe Meteorological Station

Oxford University Centre for the Environment

The Weather at Oxford in 2014

2014 was a record-breaking year in Oxford (as it was in the UK as a whole), seeing the highest mean air temperature on record (after 2006, which saw a mean air temperature of 11.4°C). It is interesting to note that, although the year itself was the warmest since records began, the same is not true of any of the individual months, which were instead just consistently very mild (with a couple featuring in the top 10). The year also saw well above average rainfall (exceeding the long-term mean by just over one standard deviation), with the second highest number of 'rain days' (days with >0.1 mm rainfall recorded) on record, after 1960 (which saw rain on 209 days). Despite this, 2014 received well above average sunshine – indeed, more than has been seen in any year this millennium. Finally of note, the mean 30 cm soil temperature was the highest ever recorded (the record began in 1925).

January 2014 started the year off with unusually high temperatures (mean air of 6.2°C, +2.4), a record amount of rainfall (146.9mm, +94.1) and many more hours of bright sunshine than normal (80.1 hours, +25.2). **February** continued this extreme trend, with a well above average mean air temperature (6.7°C, +2.5), rainfall (90.1 mm, +48.7) and sunshine (97.3 hours, +26.8). Also of note, mean wind speed was the 5th highest ever recorded in Oxford (across all months; 14.4 knots, +4.5). **Winter** 2014 as a whole (taking December 2013 into account) was comfortably the wettest on record, with 334.7 mm (+184.4) more than double the winter average and smashing the previous highest of 310.7 mm recorded in 1990. Mean air temperature of 6.6°C makes it the 5th warmest on record (+2.4), and total bright sunshine hours of 239.5 are the 4th highest (+64.8).

Temperatures aside, **March** 2014 saw conditions that were much more in line with what is expected for the month. Temperatures remained above average, most notably mean maximum air temperature, which was the 10th highest on record (12.9°C, +2.7). Unfortunately the maximum temperature thermometer was damaged in **April**. A mean air temperature value of 10.3°C (+2.0) has therefore been provided by the Met Office: this is a little under 2 standard deviations above the long-term mean. While this is obviously just an estimate, it seems reasonable given that the anomaly matches that of the mean minimum air temperature (6.3°C, +2.0), which fortunately remained in good working order. All other recorded indices were unremarkable. The replacement maximum air temperature thermometer didn't arrive until the second half of **May** so, again, mean air temperature (12.8°C, +1.2) has been provided by the Met Office. As with April, this seems reasonable based on the mean minimum air temperature (8.9°C, +1.6). Unlike April, May was unusually wet, with total accumulated rainfall exceeding the long-term mean by over one standard deviation (90.3mm, +38.9). **Spring 2014** as a whole was within the 10 warmest on record, with mean air temperature of 10.3°C (+1.7) a fraction under 2 standard deviations above the long-term mean. Rainfall and sunshine were both average (resp. 179.7mm, +43.3; 470.4 hours, +14), but within one standard deviation of the long-term mean for Spring.

June 2014 saw a continuation of the warm conditions, with nearly all temperature indices falling within the top 20 on their respective records (mean air = 16.5°C, +1.6). It was slightly

drier than usual, and also somewhat sunnier, although both rainfall and sunshine indices fell within one standard deviation of their long-term means. The mean air temperature of **July** was also in the top 20 (18.9°C, +2.3), and it was also considerably sunnier than usual (265.9 hours, +72.3), with only a dozen or so previous July's reporting more hours of bright sunshine. Rainfall was slightly below average. **August** saw a breaking of the warm trend, with mean air temperature slightly below average (15.8°C, -0.3). It was also wetter and slightly sunnier than usual, but not in the extreme. Despite the cool August, mean air temperature for **Summer** 2014 was well above average (17.1°C, +1.2), comfortably exceeding the long-term summer mean by over one standard deviation. The same is true of bright sunshine hours (695.5 hours, +127.6). Rainfall on the other hand was very close to average (168.1mm, -3.8).

Above average temperatures returned in **September**, with its mean air temperature of 15.9°C (+2.2) the joint 7th highest on record. Even more extreme was rainfall (4.1mm, -55.5), with September 2014 the second driest on record (after September 1929, 2.5 mm). Less than 7% of the expected rainfall for the month was recorded, with measurable amounts falling on only 3 days. It was also a rather still month, recording the 7th lowest mean wind speed of any September (5.3 knots, -2.3). **October** recorded the joint 5th highest mean air temperature on record (13.1°C, +3.0). It was a slightly sunnier and slightly windier month than usual, though not extremely so. In what seems to be an incredibly rare occurrence, rainfall for the month was *exactly* equal to the long-term mean, to one decimal place. **November** 2014 saw a continuation of unusually warm conditions, although the mean air temperature (8.3°C, +1.8), while exceeding the long-term mean by more than one standard deviation, did not threaten the top 10. Total accumulated rainfall exceeded the long-term mean by just over one standard deviation (98.6mm, +36.5), and sunshine hours were very slightly below average. Taken as a whole, **Autumn** 2014 was the 3rd warmest on record (mean air temperature = 12.4°C, +2.3), after 2011 (12.6°C) and 2006 (13.1°C). Rainfall (168.3mm, -19) and sunshine (321.4 hours, +14) were much less noteworthy.

Like all months in 2014 but August, **December** was warmer than average (5.5°C, +0.9), but seemingly unusually for 2014 the departure from the long-term mean air temperature was less than one standard deviation. It was slightly drier than usual (44.0mm, -12.2) and saw close to double the expected amount of bright sunshine (96.7 hours, +47.3), making it the sunniest December on record, exceeding the previous highest (1952) by close to 20 hours.

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