

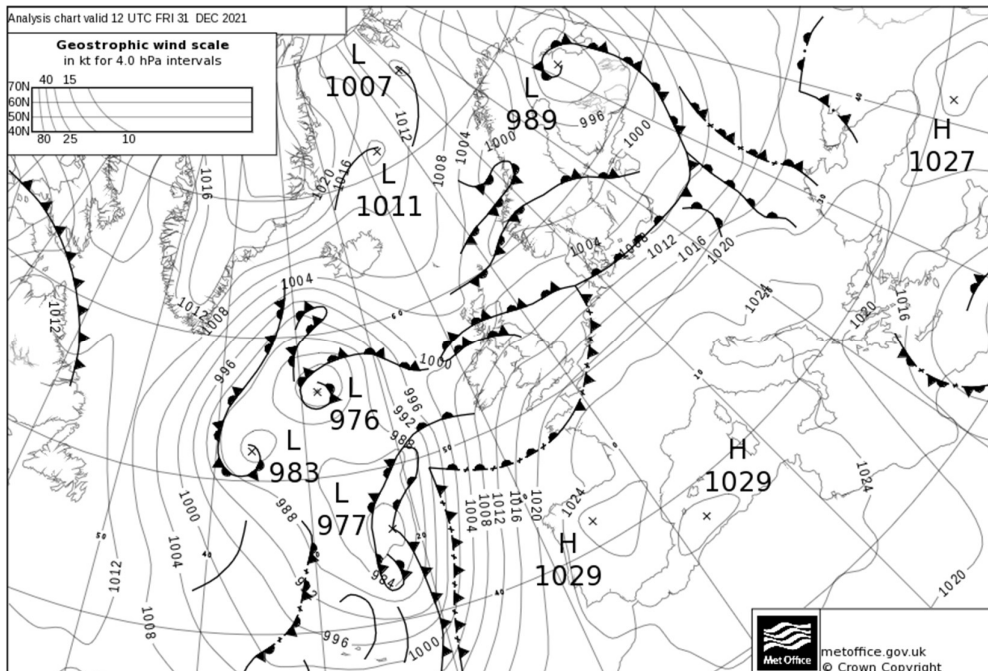
Exceptionally mild New Year, 2021/2022

Over the New Year period from 30 December 2021 to 2 January 2022 the UK experienced a spell of exceptionally mild weather for the time of year. Daily maximum temperatures reached 15 to 16 °C quite widely, and the UK recorded both its warmest New Year's Eve and its warmest New Year's Day on record with 16.8 °C at Colwyn Bay, Conwy on 31 December 2021 and 16.3°C at St James's Park, Central London on 1 January 2022.

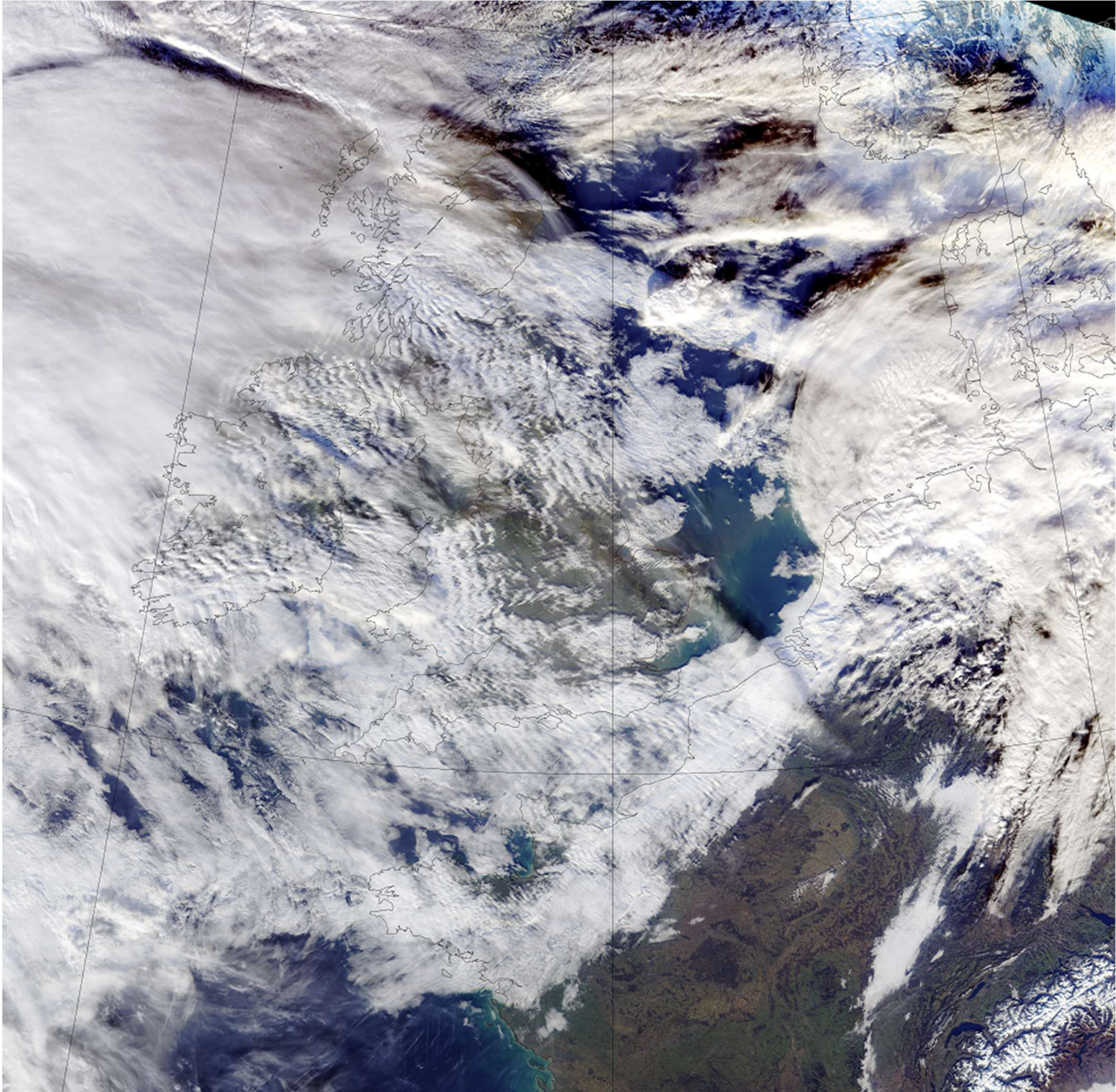
Overcast conditions at night also resulted in exceptionally high daily minimum temperatures, remaining widely above 10 °C. Several stations with 100+ year records recorded both their mildest December and mildest January nights on record. On 1 January 2022, daily minimum temperatures of 13.2 °C at Chivenor, Devon, and 12.8 °C at Trawsgoed, Ceredigion set new highest January daily minimum temperature records for the UK, England and Wales.

Weather data

The analysis chart at 1200 UTC 31 December 2021 (New Year's Eve) shows the UK in a flow of exceptionally mild Tropical Maritime air from the Azores.

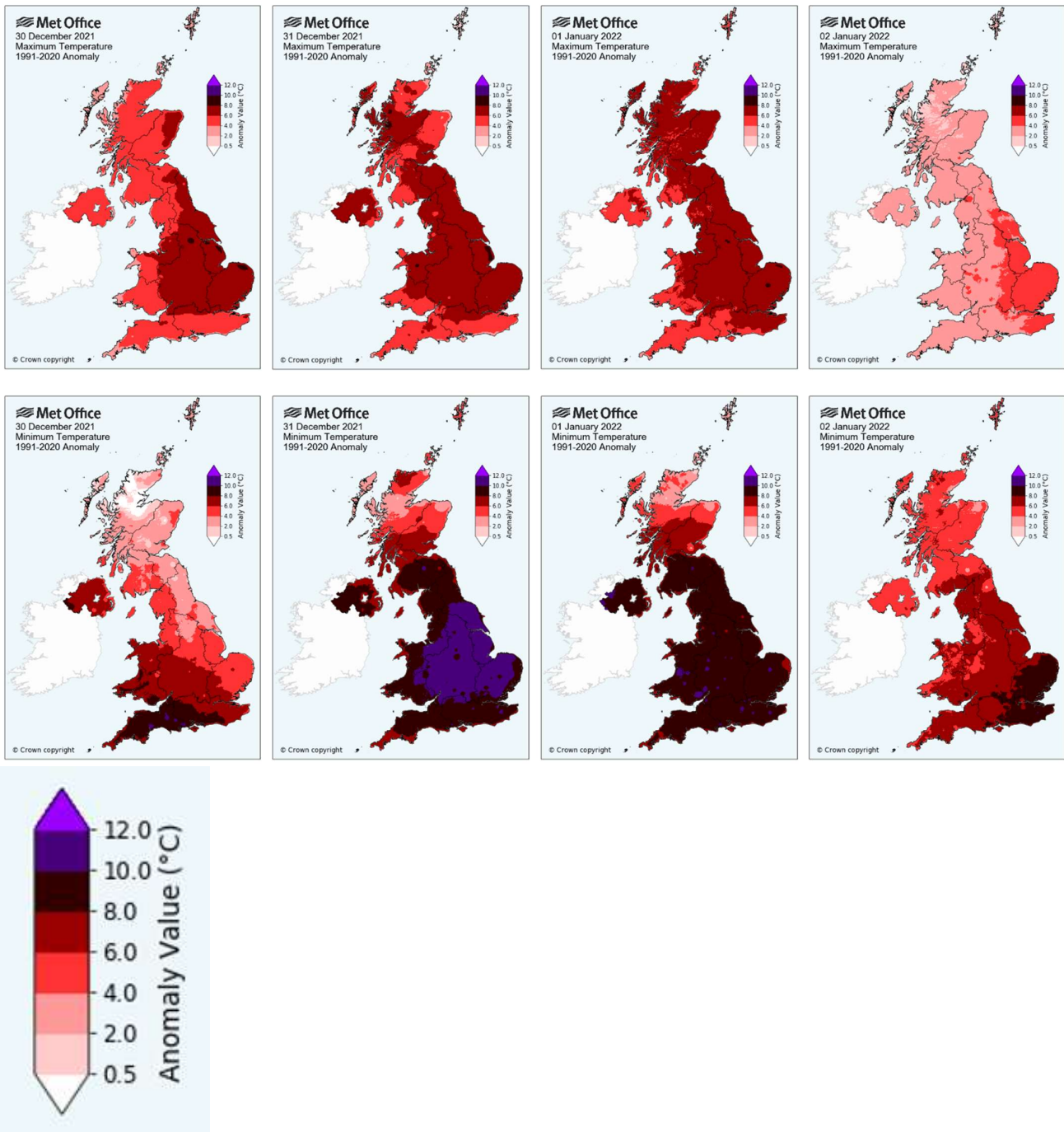


The satellite image at 1305UTC on 31 December 2021 shows the UK in a south-westerly airflow bringing overcast conditions with low cloud, although with some breaks and welcome sunshine across parts of central England. The near-continent was under the influence of high pressure with clear skies across central France. Image copyright Met Office / NOAA / NASA.



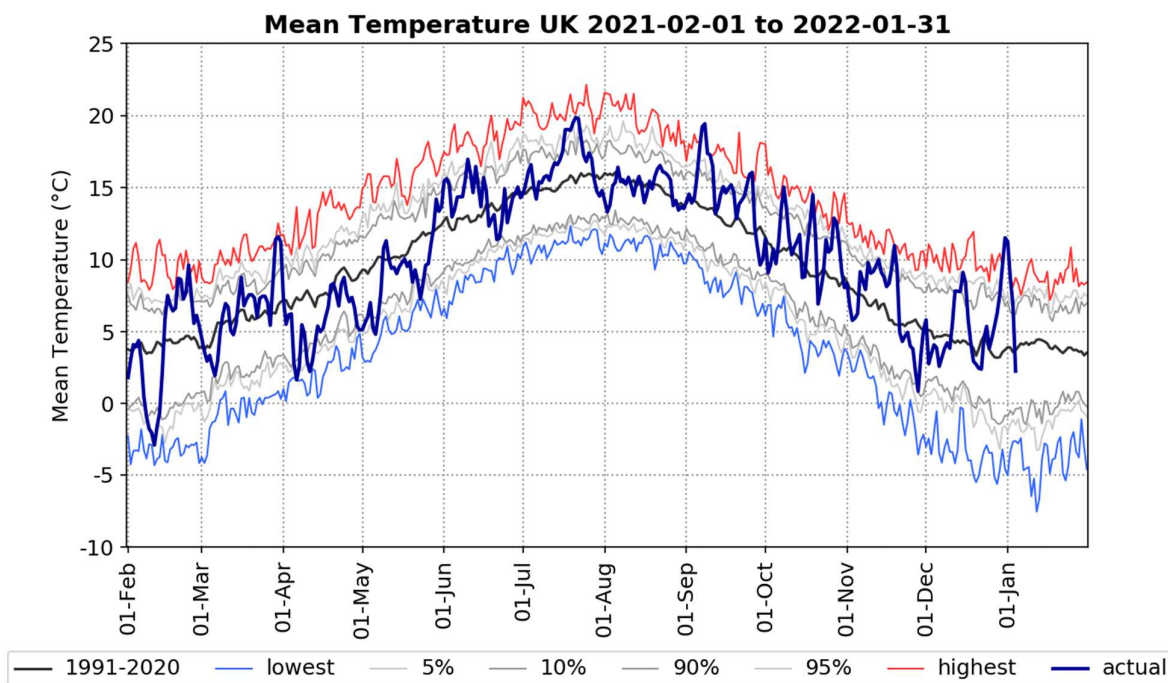
The panel of maps below show daily maximum temperatures (top) and daily minimum temperatures (bottom) from 30 December 2021 to 2 January 2022. On 31 December 2021, daily minimum temperatures were more than 10 °C above the December 1991-2020 long-term average quite widely, with minima of around 12 °C across much of central and eastern England compared to a 1991-2020 average of around 2 °C in these locations. For example, at Sheffield a daily minimum temperature of 13.0°C was recorded, compared to the December 1991-2020 long-term average of 2.6 °C.

On New Year's Eve, daily maximum temperatures reached 15 °C across all four nations, with 16.8 °C at Colwyn Bay, Conwy, 16.1 °C at Kinlochewe, Highland, 16.0 °C at Edge, Shropshire and 15.0 °C at Magilligan, County Londonderry. Daily maximum temperatures on New Year's Day included 16.3 °C at St James's Park, Central London, 15.6 °C at Hawarden Airport, Flintshire, 15.9 °C at Achnagart, Highland and 14.0 °C at Killowen, County Down.



The graph below shows UK daily mean temperature from February 2021 to January 2022. The black line shows the 1991-2020 long-term average for each day, grey lines the 5th, 10th, 90th and 95th percentiles* and blue and red lines the lowest and highest values for each day based on the full series from 1960. On 31 December 2021 the UK's daily mean temperature reached 11.5 °C, a value which would more typically be expected in late May or late September rather than mid-winter.

*Approximately 5% of days are expected to fall below the 5th percentile, and 5% above the 95th percentile.

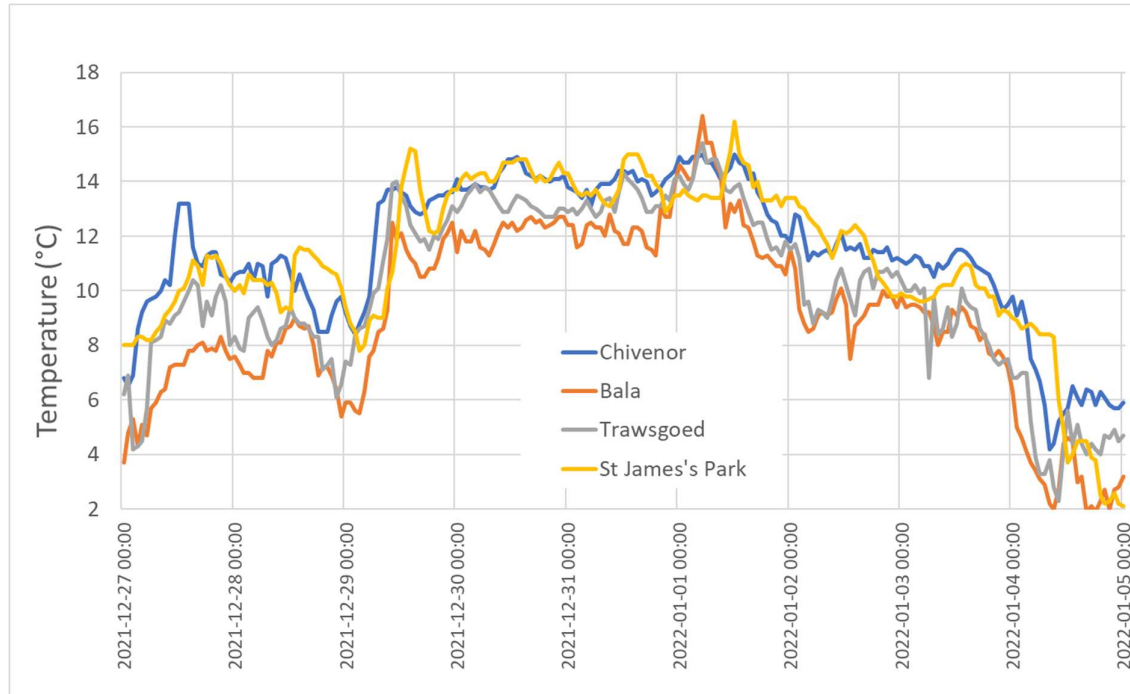


The table below lists station records for high daily maximum and minimum temperatures for December and January recorded during this spell at selected long-running stations.

Station	New record (°C)	Date	Previous record (°C)	Previous date	Record length (years)
December - highest max					
Cromer, Norfolk	15.4	30/12/2021	15.3	19/12/2015	103
January - highest max					
Eskdalemuir, Dumfriesshire	12.2	01/01/2022	11.9	09/01/2015	108
Morpeth, Cockle Park, Northumberland	14.5	01/01/2022	14.0	24/01/2016	108
South Farnborough, Hampshire	15.1	01/01/2022	14.8	09/01/2015	93
Writtle, Essex	15.7	01/01/2022	15.4	24/01/2016	89
Stonyhurst, Lancashire	14.1	01/01/2022	13.5	25/01/2016	83
Aberporth, Ceredigion	13.5	01/01/2022	13.4	26/01/2003	80
December - highest min					
Sheffield, South Yorkshire	13.0	31/12/2021	12.9	12/12/1994	136
Bradford, West Yorkshire	12.4	31/12/2021	11.6	17/12/2015	113
Buxton, Derbyshire	11.6	31/12/2021	11.5	12/12/1994	100
Cromer, Norfolk	12.8	31/12/2021	12.7	01/12/2001	85
Ross-on-Wye, Herefordshire	12.6	31/12/2021	12.5	12/12/1994	81
Waddington, Lincolnshire	12.7	31/12/2021	12.5	05/12/1986	72
January - highest min					
Sheffield, South Yorkshire	11.5	01/01/2022	10.6	16/01/1990	137
Bradford, West Yorkshire	10.7	01/01/2022	10.6	03/01/1932	113
Buxton, Derbyshire	10.3	01/01/2022	8.9	22/01/1969	100
Valley, Anglesey	11.1	01/01/2022	10.7	11/01/1998	91
Plymouth, Mountbatten, Devon	11.8	01/01/2022	11.6	06/01/1999	88
Hastings, East Sussex	11.3	02/01/2022	10.6	19/01/2007	88
Ross-on-Wye, Herefordshire	12.5	01/01/2022	11.8	20/01/2008	81

The chart below shows hourly air temperature at Chivenor, Bala, Trawsgoed and St James's Park during the spell, with temperatures around 12 to 14 °C throughout 30th and 31st December and 1st January, peaking at over 16 °C at Bala and St James's Park during the early hours of the New Year.*

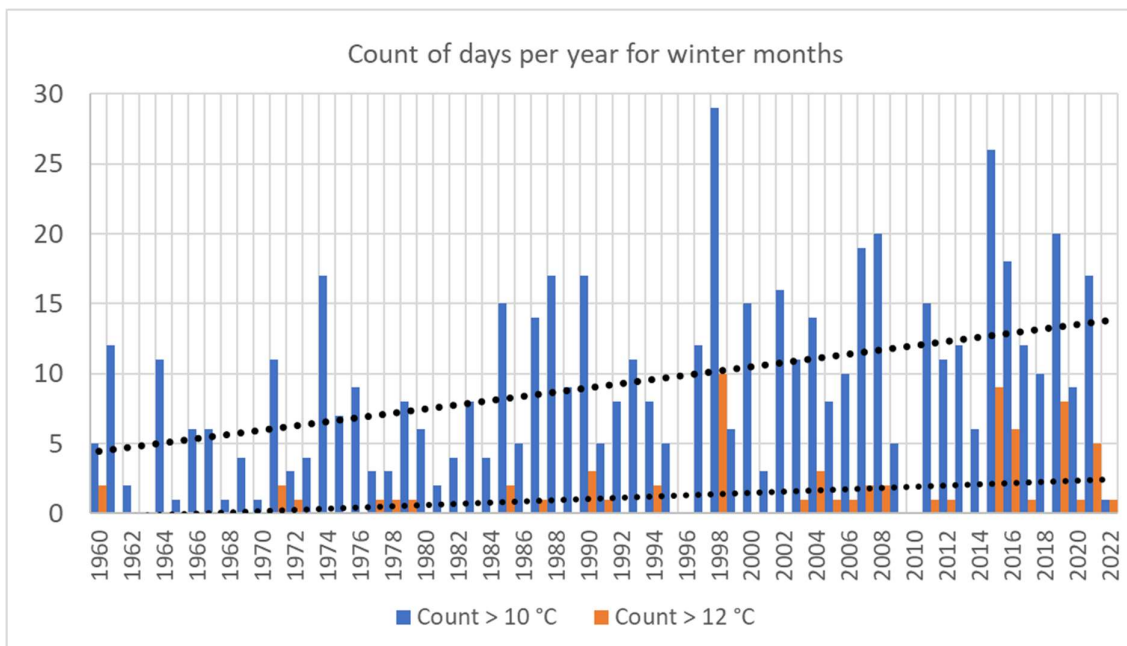
*The observing period for daily maximum temperature for day D is from 0900 UTC day D to 0900 UTC day D+1. This means that the highest temperatures occurring in the early morning of 1 January 2022 are attributed as the daily maximum temperature for 31 December 2021.



On 1 January 2022, Chivenor, Devon recorded a daily minimum temperature of 13.2 °C, setting a new UK January record, exceeding 13.1 °C at Magilligan, County Londonderry, on 25 January 2016. This also set a new England record, exceeding 13.0 °C at St James's Park, Central London, on 20 January 2008. A new Wales record of was set of 12.8 °C at Trawsgoed, Ceredigion, exceeding 12.5 °C at Gogerddan, Ceredigion on 25 January 2016.

The daily maximum temperature of 16.8 °C at Colwyn Bay made this the UK's warmest New Year's Eve on record, exceeding 14.8 °C at Colwyn Bay, Conwy on 31 December 2011. (Archival material not currently in the digital climate records also document a value of 60F 15.6 °C at Great Yarmouth, Norfolk on 31 December 1901). The daily maximum temperature of 16.3 °C at St James's Park, Central London on 1 January 2022 made this the UK's warmest New Year's Day on record, exceeding 15.6 °C at Bude, Cornwall on 1 January 1916. The UK's highest temperatures on record for both December and February were set in 2019.

The chart below counts the number of days each year, for the winter months December, January and February, where the UK area-average daily maximum temperature (based on the HadUK-Grid dataset at 1km resolution) has exceeded 10 °C and 12 °C for each year from 1960 to 2021 inclusive. Linear trend lines have been included. This is a very simplistic analysis but clearly demonstrates that as the UK's climate warms, the number of winter days exceeding a threshold may quite dramatically increase, particularly so for more extreme thresholds. The table below provides a count of days for the standard reference periods 1961-1990 and 1991-2020.



Period	1961-1990	1991-2020
Count of days > 10 °C	210	344
Count of days > 12 °C	12	50

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