

Northern Ireland temperature record, July 2021

Western parts of the UK experienced a week of hot weather from 17 to 23 July, with temperatures at times reaching the low 30s Celsius. Across England and Wales the hot weather was notable but not exceptional for the time of year. However, the hot weather extended to Northern Ireland, where 31.3°C was recorded at Castleterg, County Tyrone on 21st, setting a new all-time temperature record for Northern Ireland for any month.

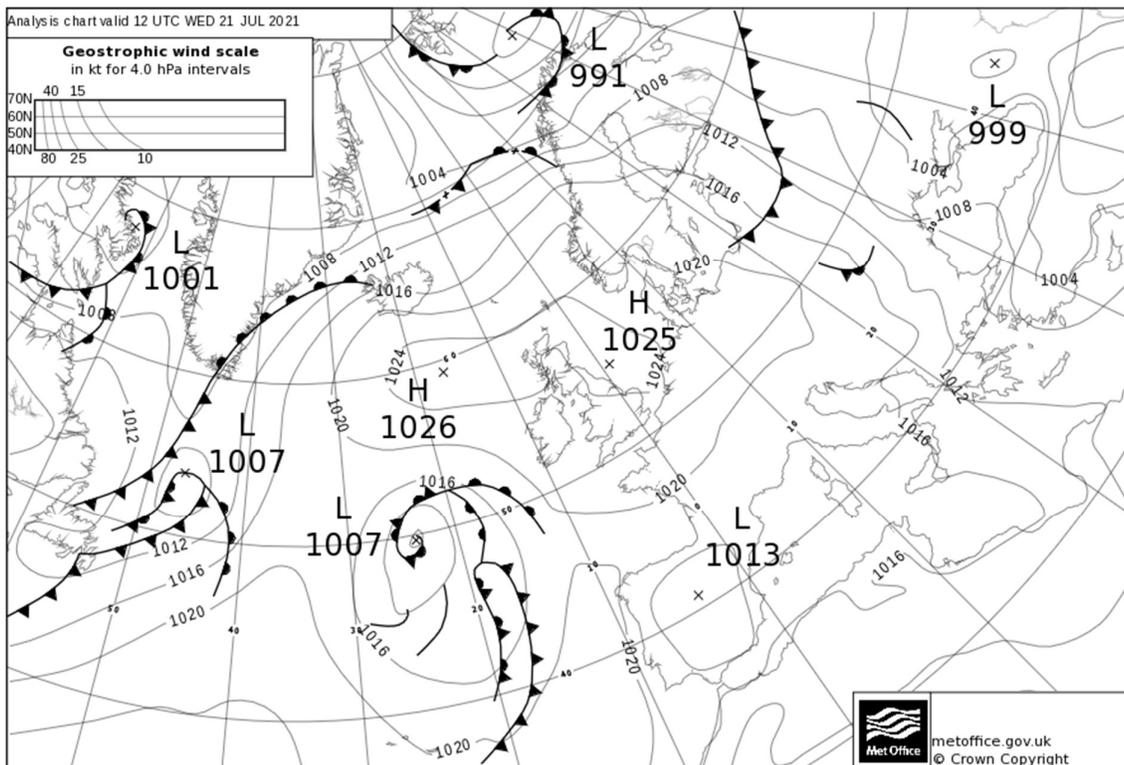
Impacts

The Met Office issued the first extreme heat warning for the UK. Many holidaymakers enjoyed some fine summer weather and sunshine in the week before most schools broke up for the summer holidays. However, tragically, there were a number of fatalities across the UK associated with open water swimming, and pressure on police services at some coastal locations.

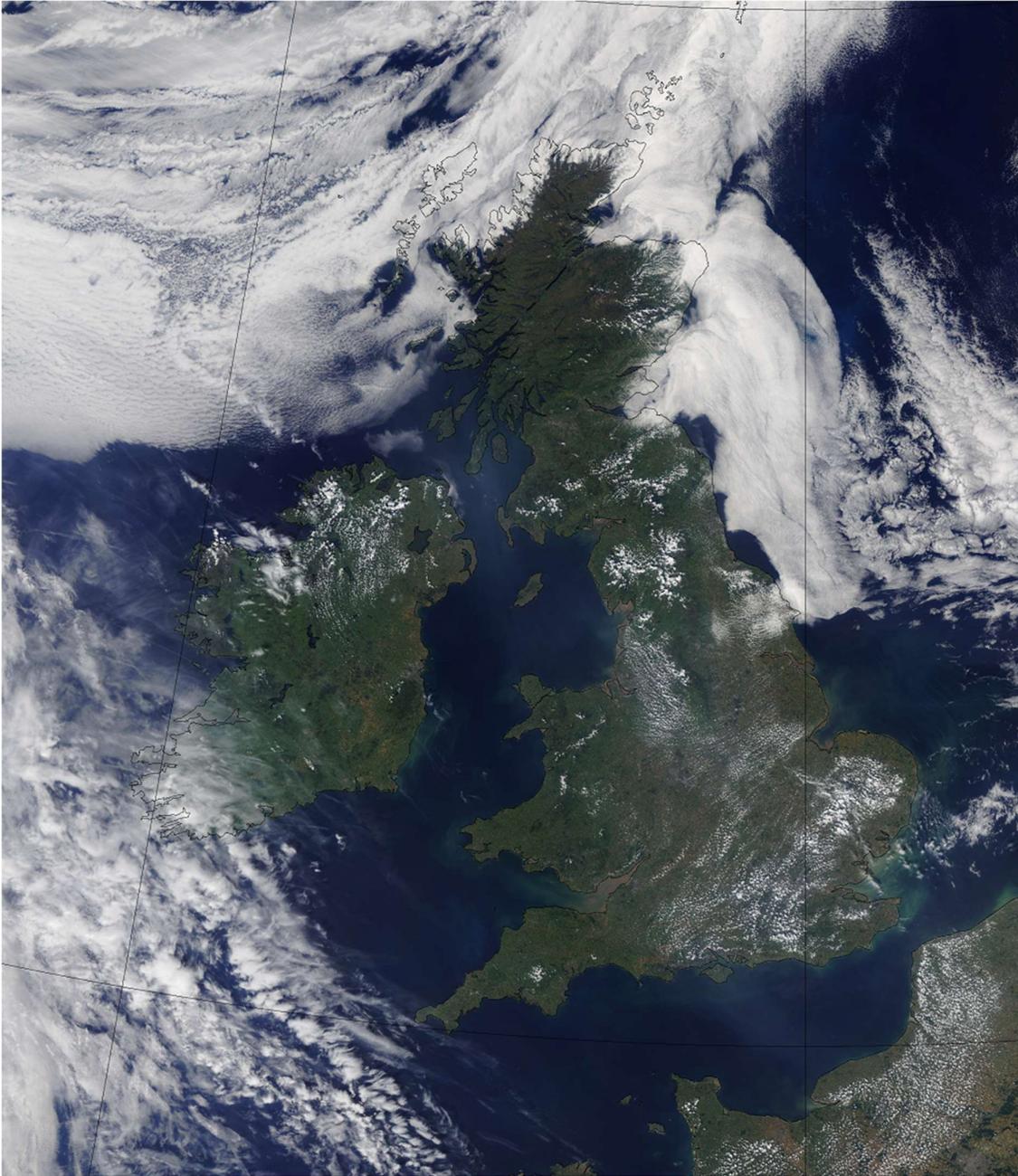
The hot spell ended in a thundery breakdown with flash-flooding across parts of south-east England. On 25 July, sections of the M11 were closed and there was disruption on roads in London. Some motorists were stranded, residents were trapped in flooded basements and there was flooding in ticket halls of some tube stations. A London hospital was forced to evacuate 100 patients due to a power outage from flooding, and lightning strikes also caused some power outages.

Weather data

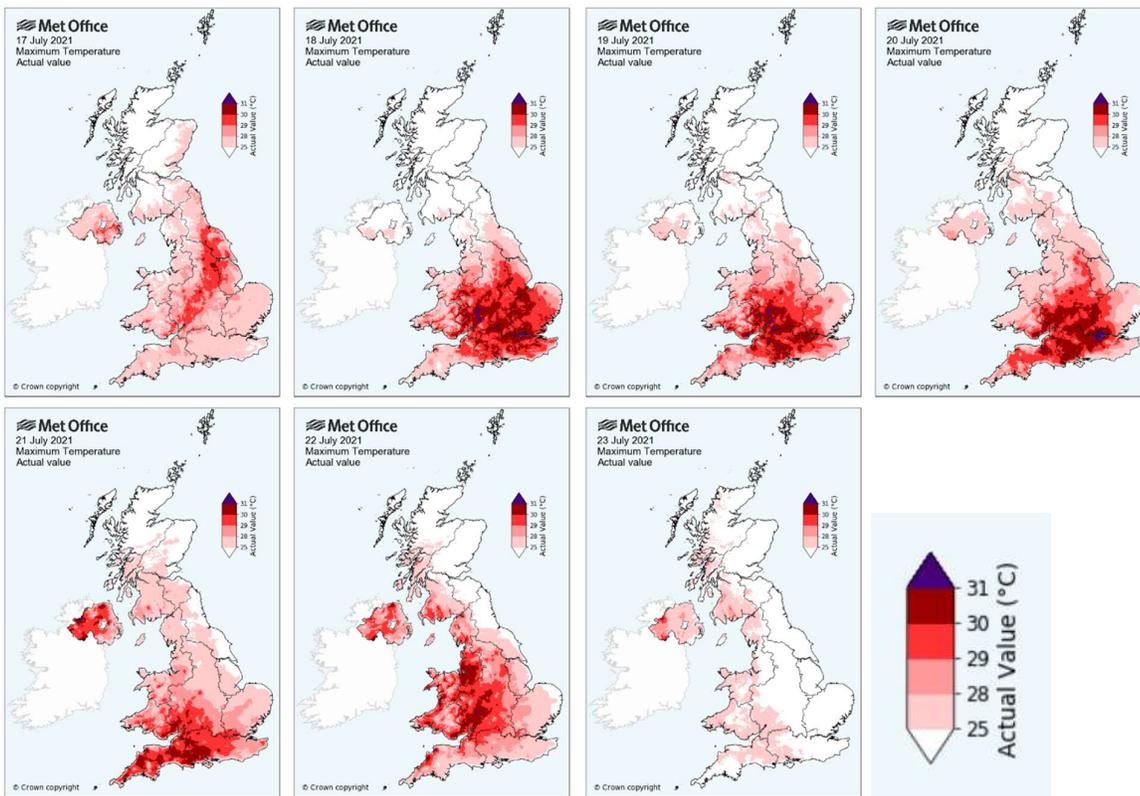
The analysis chart at 1200UTC 21 July 2021 shows high pressure dominating the UK's weather with clear skies and light winds, with frontal systems blocked to the south-west in the Atlantic.



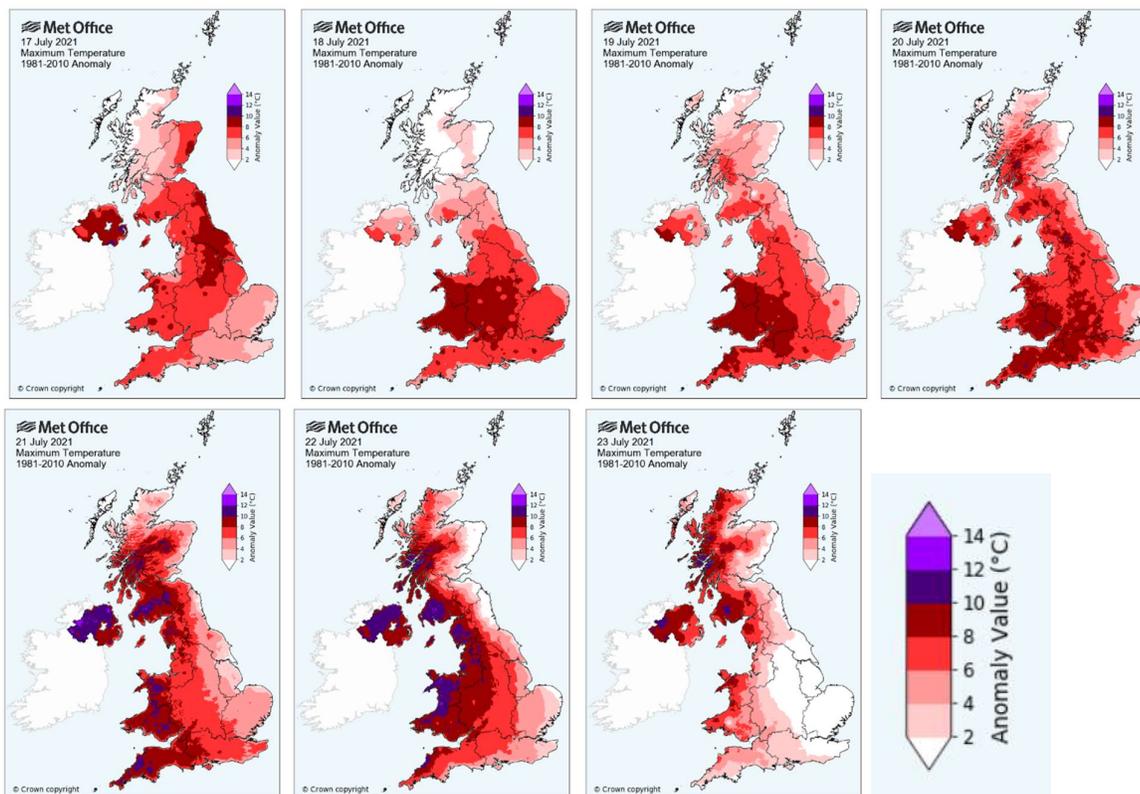
The satellite image on 21 July 2021 shows the UK largely cloud-free. A small amount of fair-weather cloud developed across inland areas, with low-level cloud and fog burning back from the coastline of north-east England, eastern and northern Scotland. There were much lower temperatures on the east coast compared to the west coast: at Boulmer, Northumberland, the daily maximum temperature was 19.8°C, compared to 29.9°C at Portpatrick, Dumfries and Galloway. Image copyright Met Office / NOAA / NASA.



The panel of maps below shows daily maximum temperatures across the UK from 17 to 23 July 2021 – showing the spatial extent of the heat shifting from central and south west England to include Northern Ireland.

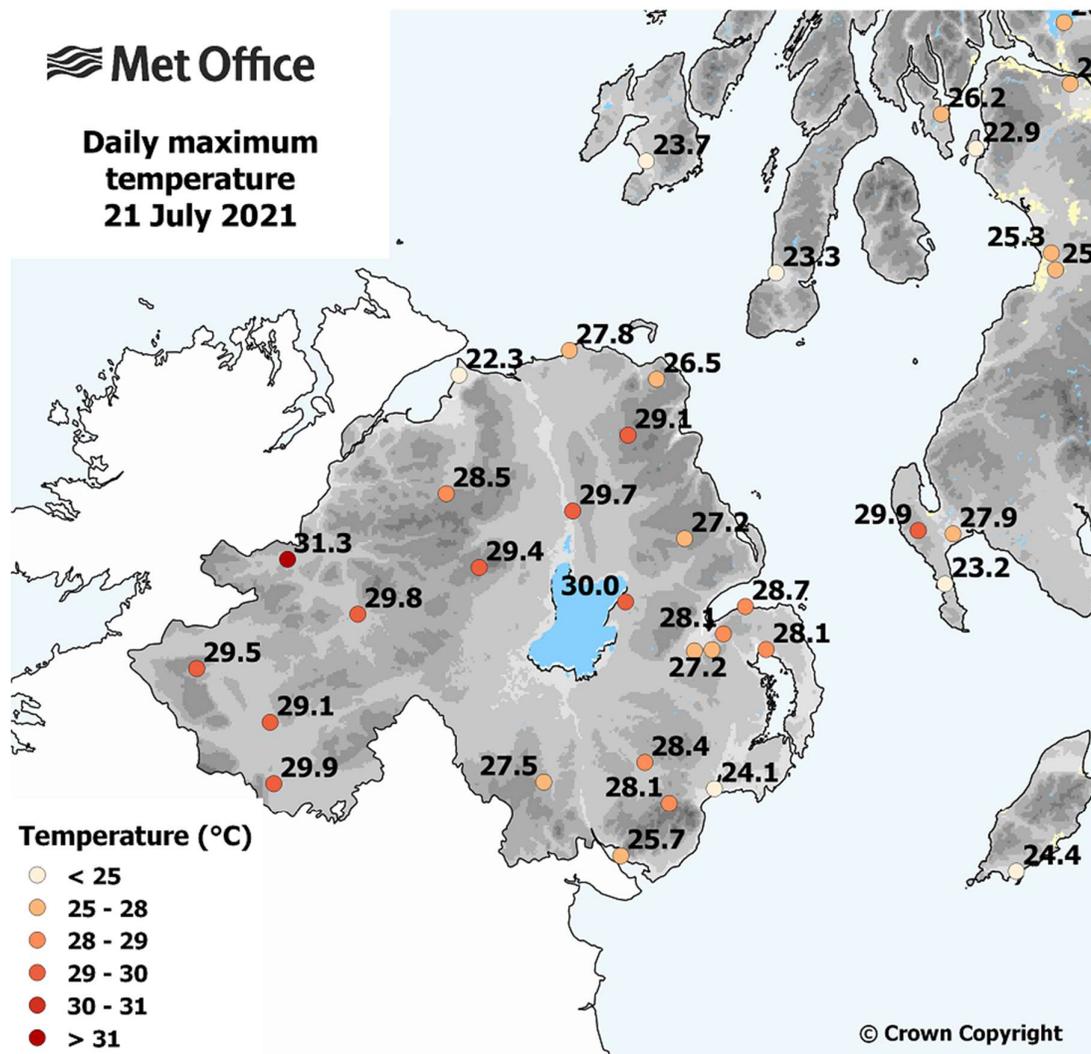


The panel of maps below shows daily maximum temperature anomalies relative to the July 1981-2010 long-term average. Temperature anomalies were generally highest in western areas – in places exceeding 12°C on 21 and 22 July across Northern Ireland – with daily maximum temperatures of around 29 to 30°C compared to a July average of around 18 to 19°C.

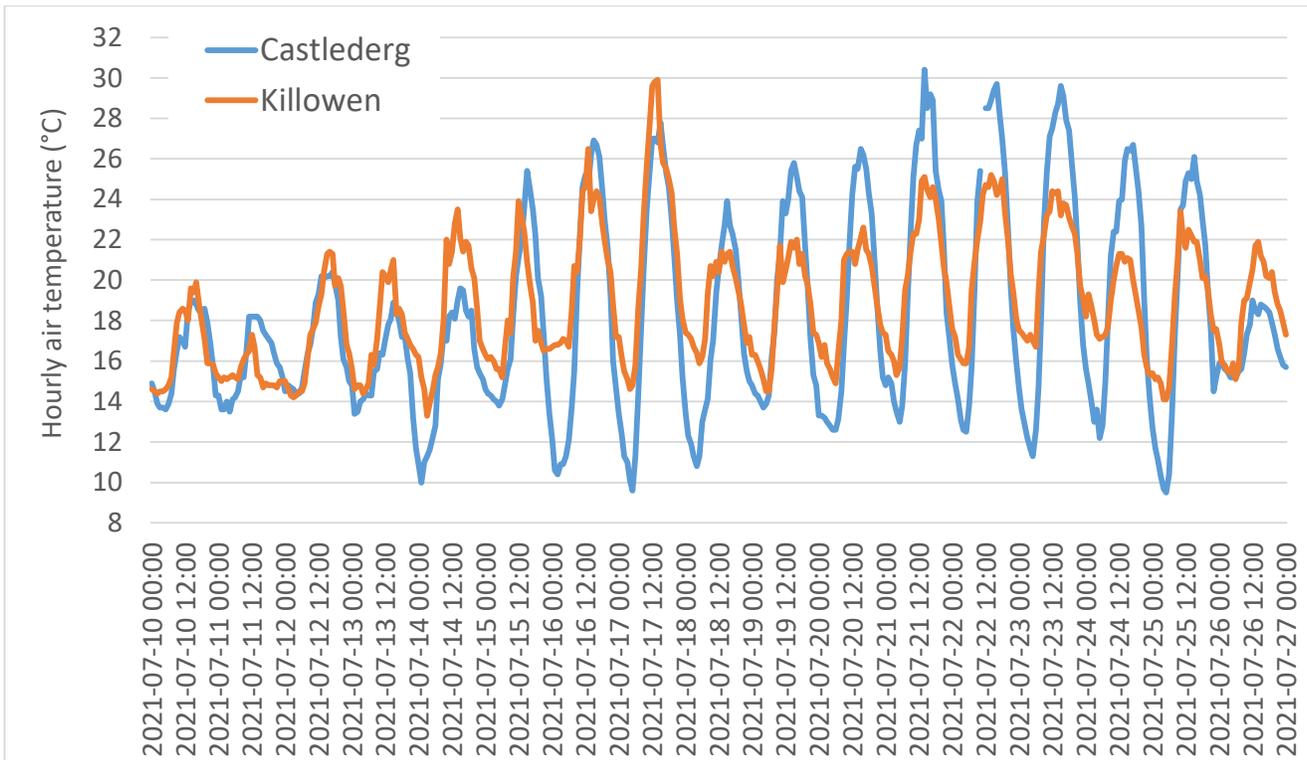


The map below shows daily maximum temperatures on 21 July 2021. On 17 July, 31.2°C was recorded at Ballywatticock, County Down, breaking the existing Northern Ireland record of 30.8°C at Shaw's Bridge, Belfast on 12 July 1983, and at Knockarevan, County Fermanagh on 30 June 1976. However, the previous record was exceeded again with 31.3°C at Castlederg on 21 July as a new all-time record for Northern Ireland for any month. Temperatures also reached the high 20s across much of the Republic of Ireland.

The following day, 22 July, 31.4°C was recorded at Armagh, County Armagh, potentially breaking this record again. However, a review of this observation, taking into account the results of an inspection of this station, has resulted in this value being rejected and it has not been included in the official archive of climatological observations.



The chart below shows hourly air temperatures during this spell of hot weather at two stations, Castlederg – in the west of the province - and Killowen, County Down – on the east coast. Killowen recorded a maximum of 30.8°C on 17 July but daily maximum temperatures over the subsequent days were generally around 5°C cooler than Castlederg due to the coastal influence – while overnight temperatures generally held up several degrees higher. On 21 to 23 July, the hottest days of the spell at Castlederg, there was a much larger diurnal temperature range (due to the inland location and clear skies at night), so overnight minimum temperatures fell to a reasonably comfortable 12 to 13°C.

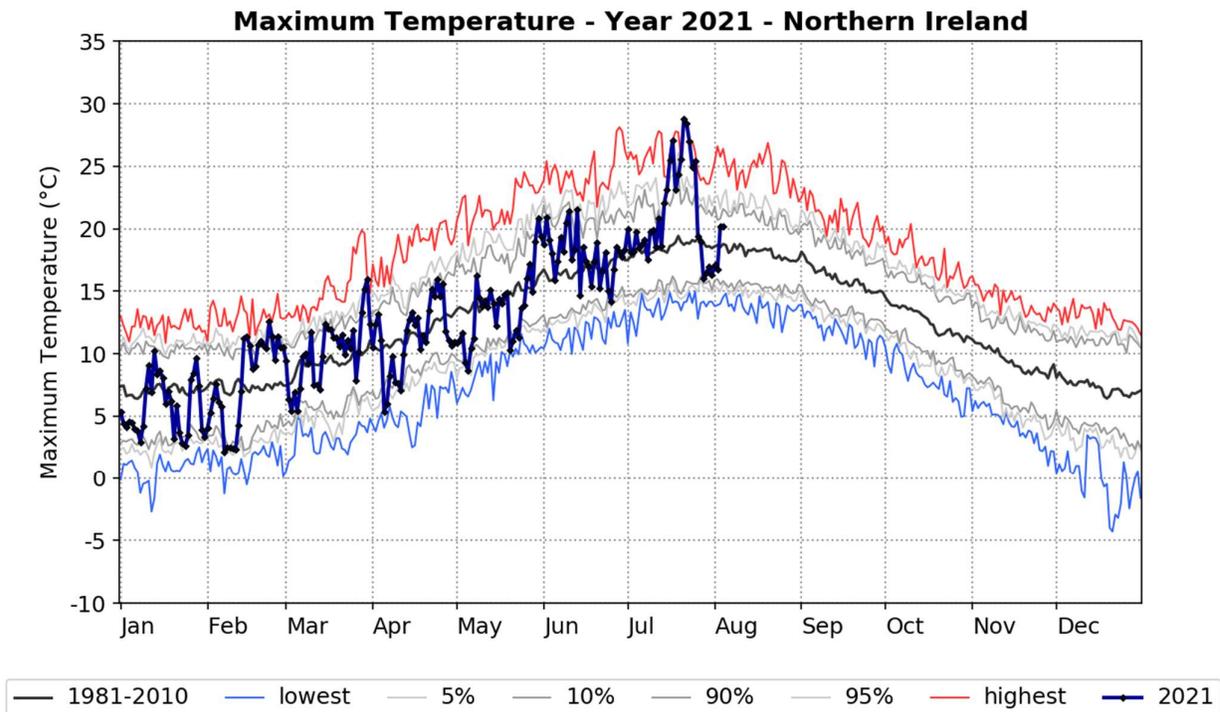


The chart below shows average daily maximum temperatures for year 2021 for Northern Ireland, for each day of the year, compared to the highest (red), lowest (blue) and 5th, 10th, 90th and 95th percentile values for each calendar day based on the period 1961-2021. The daily average for each calendar day based on the period 1981-2010 is also shown. 21 and 22 July 2021 were the two hottest days on record, based on average daily maximum temperature, for Northern Ireland in a daily series from 1960.

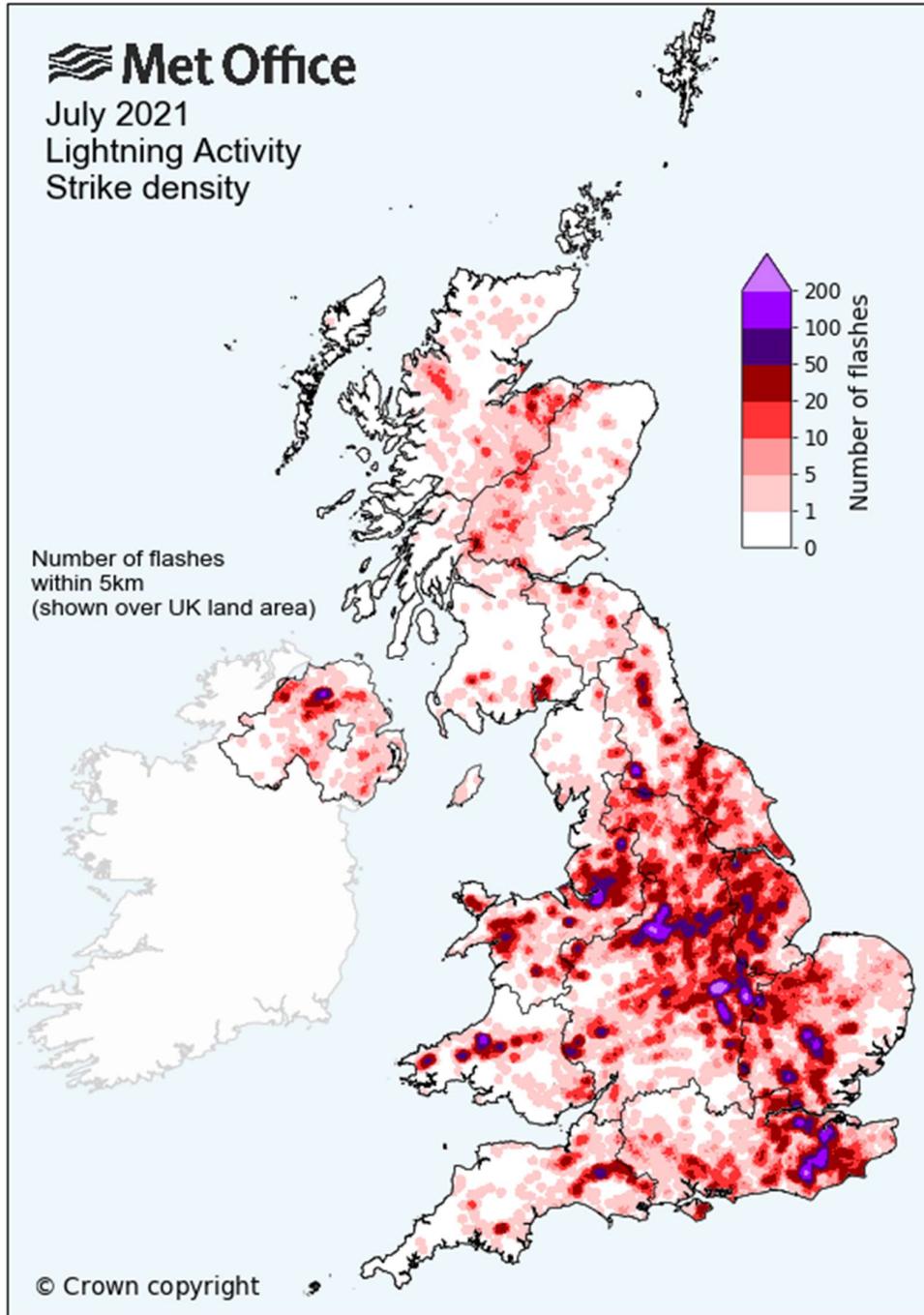


Source: HadUK-Grid 05/08/2021 11:07

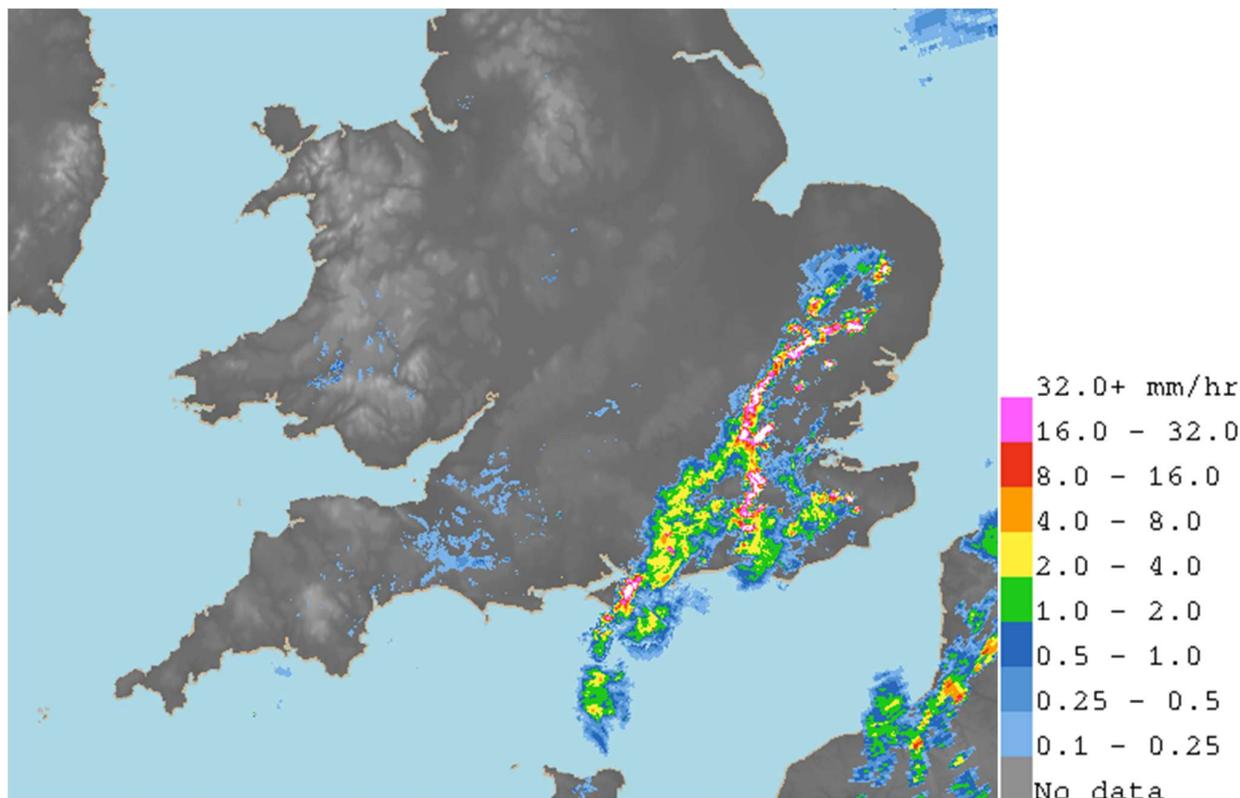
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There were some significant thunderstorms on 20th, 24th and 25th July across parts of England as the hot weather ended in a thundery breakdown. The map below shows lightning strike density during July 2021, providing an indication of the number of thunderstorms experienced across the UK during the month.



The rain-radar image at 1530UTC on 25 July 2021 shows a line of thunderstorms bringing intense rainfall across parts of south-east England, with rain rates locally exceeding 32mm/hr.



Many stations across Northern Ireland recorded their highest July temperature on record. Selected stations are listed in the table below. The majority of these also recorded their highest temperature for any month (denoted by an asterisk).

Station	Value (°C)	Date	Previous value (°C)	Previous date	Record length
Aldergrove, County Antrim	30.0	21 July 2021	29.4	10 July 1934	94*
Helen's Bay, County Down	28.7	21 July 2021	28.4	17 July 2006	59
Altnahinch Filters, County Antrim	29.1	21 July 2021	27.2	19 July 2013	54*
Ballypatrick Forest, County Antrim	26.9	22 July 2021	26.4	16 July 2003	53*
Banagher, Caugh Hill, County Londonderry	28.5	21 July 2021	27.8	9 July 1983	51
Ballywatticock, County Down	31.2	17 July 2021	28.7	19 July 2006	44*
Castlederg, County Tyrone	31.3	21 July 2021	30.1	19 July 2013	25*
Killowen, County Down	30.8	17 July 2021	27.1	19 July 2006	23*

30°C is a comparatively unusual occurrence in Northern Ireland, having been recorded (since 1961) in 2021, 2018, 2013, 2006, 1995, 1989, 1983 and 1976 – eight out of the last 60 years, of which half have occurred this century. July 2021 was the first time 31°C was reached in Northern Ireland.

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