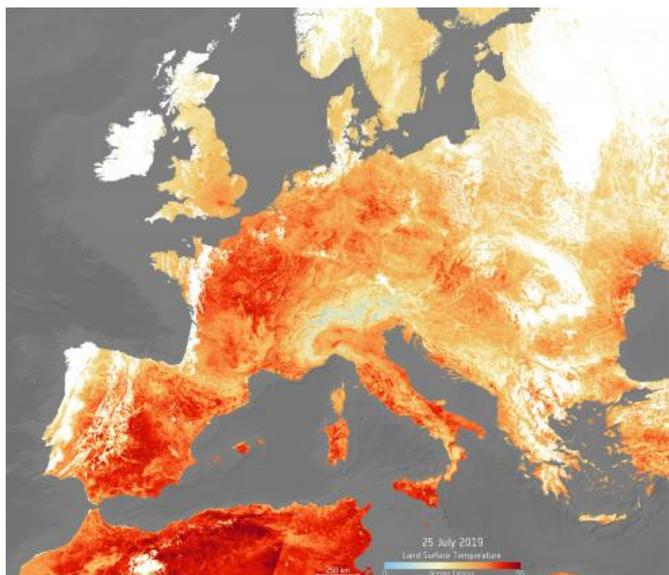




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July matched, and maybe broke, the record for the hottest month since analysis began

Tags: Climate change Environment Public health

1 Published 1 August 2019

According to new data from the World Meteorological Organization and the Copernicus Climate Change Programme, July matched, and maybe broke, the record for the hottest month since analysis began.

The [data](#) from the Copernicus Climate Change Programme, run by the European Centre for Medium-Range Weather Forecasts, is fed into the UN system by WMO. The figures show that July 2019 was on par with, and possibly marginally warmer than the previous warmest July, in 2016, which was also the warmest month ever.

The latest figures are particularly significant because July 2016 was during one of the strongest occurrence of the El Niño phenomenon, which contributes to heightened global temperatures. Unlike 2016, 2019 has not been marked by a strong El Niño.

“We have always lived through hot summers. But this is not the summer of our youth. This is not your grandfather’s summer,” said UN Secretary-General António Guterres, announcing the data in

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July 2019 was around 1.2°C warmer than the pre-industrial era, according to the data.

“All of this means that we are on track for the period from 2015 to 2019 to be the five hottest years on record. This year alone, we have seen temperature records shattered from New Delhi to Anchorage, from Paris to Santiago, from Adelaide and to the Arctic Circle. If we do not take action on climate change now, these extreme weather events are just the tip of the iceberg. And, indeed, the iceberg is also rapidly melting,” Mr Guterres said.

“Preventing irreversible climate disruption is the race of our lives, and for our lives. It is a race that we can and must win,” he underlined.

Heatwaves

Exceptional heat has been observed across the globe in recent week, with a string of European countries logging record high temperatures that have caused disruption to transport and infrastructure and stress on people's health and the environment. As the heat dome spread northwards through Scandinavia and towards Greenland, it accelerated the already above average rate of ice melt.

“July has re-written climate history, with dozens of new temperature records at local, national and global level,” said WMO Secretary-General Petteri Taalas.

“The extraordinary heat was accompanied by dramatic ice melt in Greenland, in the Arctic and on European glaciers. Unprecedented wildfires raged in the Arctic for the second consecutive month, devastating once pristine forests which used to absorb carbon dioxide and instead turning them into fiery sources of greenhouse gases. This is not science fiction. It is the reality of climate change. It is happening now and it will worsen in the future without urgent climate action,” Mr Taalas said.

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“WMO expects that 2019 will be in the five top warmest years on record, and that 2015-2019 will be the warmest of any equivalent five-year period on record. Time is running out to reign in dangerous temperature increases with multiple impacts on our planet,” he said.

Such heatwaves are consistent with what we expect from climate change and rising global temperatures.

“While July is usually the warmest month of the year for the globe, according to our data, it also was the warmest month recorded globally by a very small margin,” said Jean-Noël Thépaut, head of the Copernicus Climate Change Service. “With continued greenhouse gas emissions and the resulting impact on global temperatures, records will continue to be broken in the future.”

Belgium, Germany, Luxembourg, the Netherlands and the United Kingdom saw new national temperature records on 25 July, as weather maps were redrawn to include – for the first time – temperatures of above 40°C. In France, Paris recorded its hottest day on record, with a temperature of 42.6 °C at 16:32, an unprecedented value since the beginning of measurements.

The heatwave was caused by warm air coming up from North Africa and Spain and this was then transported from Central Europe to Scandinavia, Norway saw new station records on 27 July, and 28 locations had “tropical nights” above 20°C. The Finnish capital Helsinki set a new station record of 33.2°C on 28 July and in the south of Finland, Porvoo saw a temperature of 33.7°C.

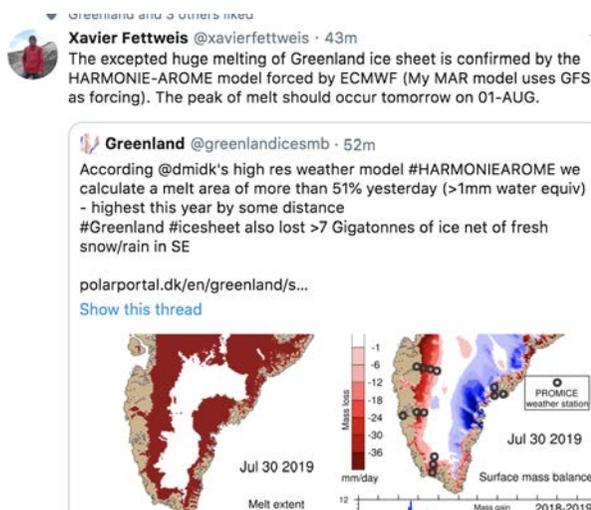
The anomalously high temperatures are expected to enhance melting of the Greenland ice sheet, which already saw an extensive melt episode between 11 and 20 June. The persistent high melt and

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The chance of an above-normal Atlantic hurricane season has risen to 45% from 30% says @NOAA.

It's due to the end of the latest El Nino in the Pacific, which curbs Atlantic hurricane activity.

The Atlantic peak season is August-October. Follow @NWS & @NHC_Atlantic for updates.
<https://twitter.com/NOAA/status/1159487255586775041>

1h



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.@IPCC_CH's report on land and #climatechange is the

runoff in the last few weeks means the season total is running near to the 2012 record high loss, according to [Polar climate scientists](#) monitoring the Greenland ice sheet.

The station Nord, situated 900 kilometres from the North Pole, [measured a temperature of 16°C](#) and in western Greenland, the station of Qaarsut (near 71°N) recorded a temperature of 20.6°C on 30 July. At Summit Camp station, at the peak of the ice sheet and at an altitude of 3200m, a temperature of 0.0°C was measured.

“It is important to remember that that any given day or year, [Greenland ice sheet surface mass budget](#) is a result largely of weather, though with the background climate trend affecting this,” [tweeted Ruth Mottram](#), a climate scientist with the Danish Meteorological Institute.

Over the weekend of 3-4 August, the ice melt continued, though the peak is over, the Danish Meteorological Institute [tweeted](#), with 8.5 Gigatonnes lost on Saturday and 7.6 Gigatonnes on Sunday. An average day would see a loss of around 4 Gigatonnes, it said, noting that the levels do vary from day to day and year to year.

Copernicus EMS @CopernicusEMS · 28m
 A little geography
 Let's learn about surface areas...
 Belgium 30.7 thousand km2
 Slovenia 20.2k km2
 Cyprus 9.2k km2
 Burned areas by #Siberia #wildfires as of 29July:
 ⚠️ 33.2 thousand km2, according to 🇷🇺 Federal Forestry Agency
 No comment
 #savesiberiaforests #потушителюжаривсибири

КАКИЕ РЕГИОНЫ РОССИИ ОХВАЧЕНЫ ЛЕСНЫМИ ПОЖАРАМИ
 ИСТОЧНИК: РОССИЙСКОЕ ПО ДАННЫМ НА 29 ИЮЛЯ

ВСЕГО В РОССИИ ПЛОЩАДЬ ЛЕСНЫХ ПОЖАРОВ (МЛН ГА) 3,32

КРАСНОЯРСКИЙ КРАЙ 1000
 ИРКУТСКИЙ ОБЛАСТЬ 166
 ЧУКОТКА 14
 САХАЛИНСКАЯ ОБЛАСТЬ 27

This will also impact Arctic sea ice, which where the loss of ice extent through the first half of July matched loss rates observed in 2012, the year which had the lowest September sea ice extent in the satellite record, according to the US National Snow and Ice Data Center.

The high temperatures also fanned wildfire activity in the Arctic, including in Greenland, Alaska and Siberia.

The Russian Federal Forestry Agency estimated that, as of 29 July, wildfires in Siberia had burned 33,200 square kilometres, with 745 active fires, causing massive ecological devastation and impacting air quality for hundreds of kilometres. [The smoke was clearly visible from space.](#)

first comprehensive scientific assessment of this key area.

It marks a critical contribution to efforts to curb greenhouse gas emissions and protect food security.

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On Monday 5 August, the first radiosonde was launched at the recently rehabilitated Nairobi Upper Air Station, through the contribution of the HIGHWAY Project.

To learn more about the HIGHWAY Project and the partners who have made it possible, see here: bit.ly/2yMUDw4



5h



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Investing in early

The European Centre for Medium-Range Weather Forecasts/Copernicus Atmosphere Monitoring Service estimated that July 2019 wildfire CO2 emissions for the Arctic Circle totalled 75.5047 megatonnes, which is comparable to the 2017 annual fossil fuel emissions of Colombia. This was more than double July 2018 levels, and followed a record month in [June](#).

“By burning vegetation, the fires also reduce the capacity of the biosphere to absorb carbon dioxide. Action against climate change necessitates rather that we should expand this capacity,” said Oksana Tarasova, Chief of WMO’s Atmosphere and Environment Research Division.

June-July heat

The July heatwave follows an unusually early and exceptionally intense heatwave in June, which set new temperature records in Europe and ensured that the month of June was the hottest on record for the continent, with the average temperature of 2°C above normal.

[June was also the warmest June on record globally.](#)

In parts of Europe, the heat was accompanied by below-average precipitation. On 31 July, WMO’s regional climate monitoring centre for Europe, operated by the German Weather Service, or Deutscher Wetterdienst, updated its Climate Watch advisory on drought. This provides guidance to national meteorological and hydrological services in issuing climate advisories for their territory.

“A continuation of drought conditions and below-normal precipitation in large parts of Central and Northeastern Europe. In these areas mostly only 60-80 % of normal precipitation was recorded in June, in some parts even less. There was also only scarce rainfall in July and forecasts show continued below-normal precipitation in most of the area with weekly deficits of partly 10-30mm for this week with a probability of 80% and higher,” it said.

warning systems makes solid economic sense.

This study of Cyclone Evan in Samoa 🇸🇲 underscores the point, showing a sixfold return on investment.

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In the wake of the heatwave, some European countries have faced very heavy precipitation, but it is not enough to undo the impact of drought conditions.

“Next week, above-normal precipitation will be expected over Central Europe, but this might not be sufficient to compensate for the rain deficits during the weeks before and therefore soils will be still dry. Northeastern Europe (Baltic countries and southern Finland) will still receive not more than below-normal to normal precipitation next week and therefore drought conditions are likely to continue. Drought conditions can result in harvest losses, forest fires, lack of animal food water restrictions, restrictions of ship traffic due to low water levels,” said the Deutscher Wetterdienst.

During the heatwave, national meteorological and hydrological services issued heat alerts - including the top-level red alert - and, in some areas, fire warnings to minimize the risk to life and the environment. Heat-health action plans mobilized civil protection efforts across the region. Heat events kill thousands of people every year and often trigger secondary events such as wildfires and failures to electrical grids. Urbanization compounds the problem. Heat stroke, dehydration, cardiovascular and other temperature related diseases are major health risks.

The new absolute record of 42.6°C for Paris was recorded on 25 July at the centennial weather station in Paris-Montsouris, and broke the previous record dating back to 28 July 1947 with 40.4 °C. This temperature is typical of the average July temperature in Bagdad, Iraq. The night of 24/25 July was also exceptionally hot, with minimal temperatures above 25°C and even 28.3°C in a downtown Paris weather station. What is striking is the margin with which the records were beaten. Lille recorded 41.4°C, that’s nearly 4°C above the previous record. France set a new national temperature record of 46°C during the last heatwave on 28 June. It was only the second time Météo-France has ever issued red level warnings for a heatwave in France. The first time was during June's heatwave when several departments in the south were put on red alert. But it is unprecedented for Paris and the north of the country to be on a red alert for a heatwave. Thousands of hectares were burned by

wildfires in northern France, where it is very unusual to see wildfires.

The Deutscher Wetterdienst described 25 July as “a day which will



make weather history.” Germany set a new national temperature record (provisional figure) of 42.6°C in Lingen, near the Dutch border, defeating the old record by 2.3 °C. There were 25 weather stations above 40 °C. The previous national temperature record was 40.3°C (5 July 2015).

The Netherlands broke a 75-year-old heat record (set in Aug 1944) with a temperature of 40.7°C at Gilye Rijen. Belgium also set a new national record of 41.8°C. Luxembourg set a new national record of 40.8°C.

On 25 July, temperatures in the United Kingdom reached 38.7°C at Cambridge Botanical Gardens, the highest ever officially recorded, breaking the previous record of 38.5°C recorded in Faversham, Kent, in August 2003, according to the Met Office.

Climate change and heatwaves

“Such intense and widespread heatwaves carry the signature of man-made climate change. This is consistent with the scientific finding showing evidence of more frequent, drawn out and intense heat events as greenhouse gas concentrations lead to a rise in global temperatures,” according to Johannes Cullmann, Director of WMO’s Climate and Water Department. WMO will submit a five year report on the state of the climate 2015-2019 to the UN Climate Action Summit in September.

Many scientific studies have been conducted on the links between climate change and heatwaves.

Human-influenced climate change is likely to have added 1.5-3 °C to the extreme temperatures recorded during Europe's July 2019, according to a [report](#) by World Weather Attribution, which underlined the manifold risks.

"Heatwaves the height of summer pose a substantial risk to human health and are potentially lethal. This risk is aggravated by climate change, but also by other factors such as an aging population, urbanisation, changing social structures, and levels of preparedness. The full impact is only known after a few weeks when the mortality figures have been analysed. Effective heat emergency plans, together with accurate weather forecasts such as those issued before this heatwave, reduce impacts and are becoming even more important in light of the rising risks," it said.

"It is noteworthy that every heatwave analysed so far in Europe in recent years (2003, 2010, 2015, 2017, 2018, June 2019, this study) was found to be made much more likely and more intense due to human-induced climate change. How much more depends very strongly on the event definition: location, season, intensity and duration. The July 2019 heatwave was so extreme over continental Western Europe that the observed magnitudes would have been extremely unlikely without climate change," it added.

In its [Fifth Assessment Report](#), released in 2014, the Intergovernmental Panel on Climate Change said that "it is very likely that human influence has contributed to the observed global scale changes in the frequency and intensity of daily temperature extremes since the mid-20th century. It is likely that human influence has more than doubled the probability of occurrence of heat waves in some locations."

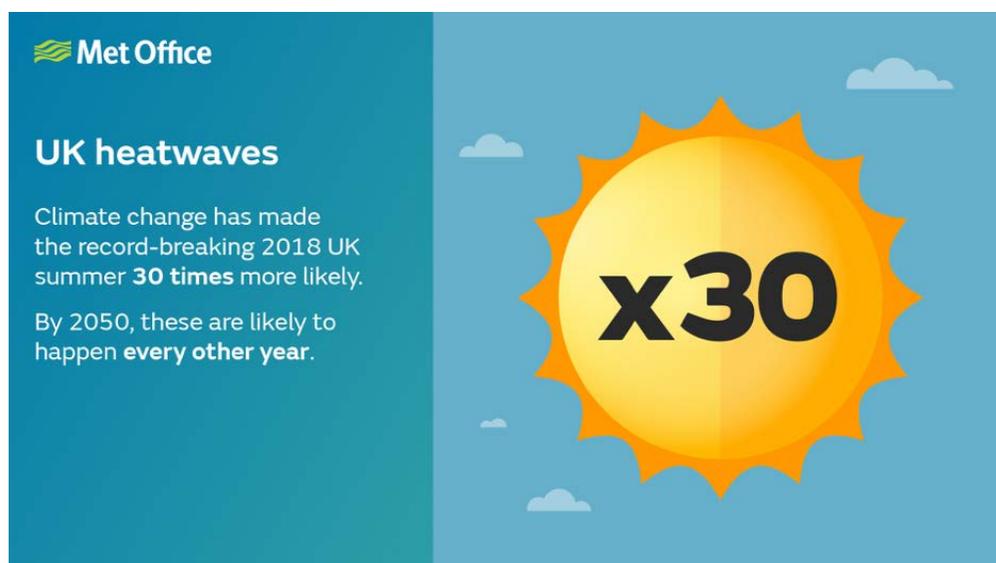
In its [2018 report on Global Warming of 1.5°C](#), the IPCC said that climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with global warming of 1.5 °C and increase further with 2 °C.

Limiting warming to 1.5°C rather than 2°C could result in 420 million fewer people being exposed to severe heatwaves, it said.

Between 2000 and 2016, the number of people exposed to heatwaves was estimated to have increased by around 125 million persons, as the average length of individual heatwaves was 0.37 days longer, compared to the period between 1986 and 2008, according to the World Health Organization.

Many countries have issued national climate assessments and scenarios which underline the close connection between climate change and heat.

For instance, the [UK State of the Climate](#) report showed an increase



in higher maximum temperatures and longer warm spells. The hottest day of the year for the most recent decade (2008-2017) has increased by 0.8°C above the 1961-1990 average. Warm spells have also more than doubled in length – increasing from 5.3 days in 1961-90 to over 13 days in the most recent decade (2008-2017).

The summer of 2018 was the joint warmest on record for the UK as a whole and the hottest ever for England. The Met Office research showed that human-induced climate change made the 2018 record-breaking UK summer temperatures about 30 times more likely than it would have been naturally. By 2050 these are expected to happen every other year.

France has also reported an increase in the frequency and intensity of heatwaves over the past 30 years, according to [Météo-France](#), in

an observation echoed elsewhere in Europe .

Swiss climate change scenarios warn that if greenhouse gas emissions continue to increase, by the middle of this century, average summer temperatures may be up to 4.5 °C higher than now.

“The increases in the highest temperatures are even more pronounced than for the average seasonal temperatures. By 2060, the hottest days in an average summer could be up to 5.5 °C higher than they are today. This is explained in part by the fact that less water will be evaporating and cooling the ground because there will be less moisture in the soil,” says the Swiss report.

“The regions of Europe that surround the Mediterranean Sea, including Switzerland, are affected by some of the most severe increases in temperature extremes worldwide. This trend has been apparent even over recent decades and is very likely to continue into the future,” it says.

Multimedia



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