

# Prime Meridian

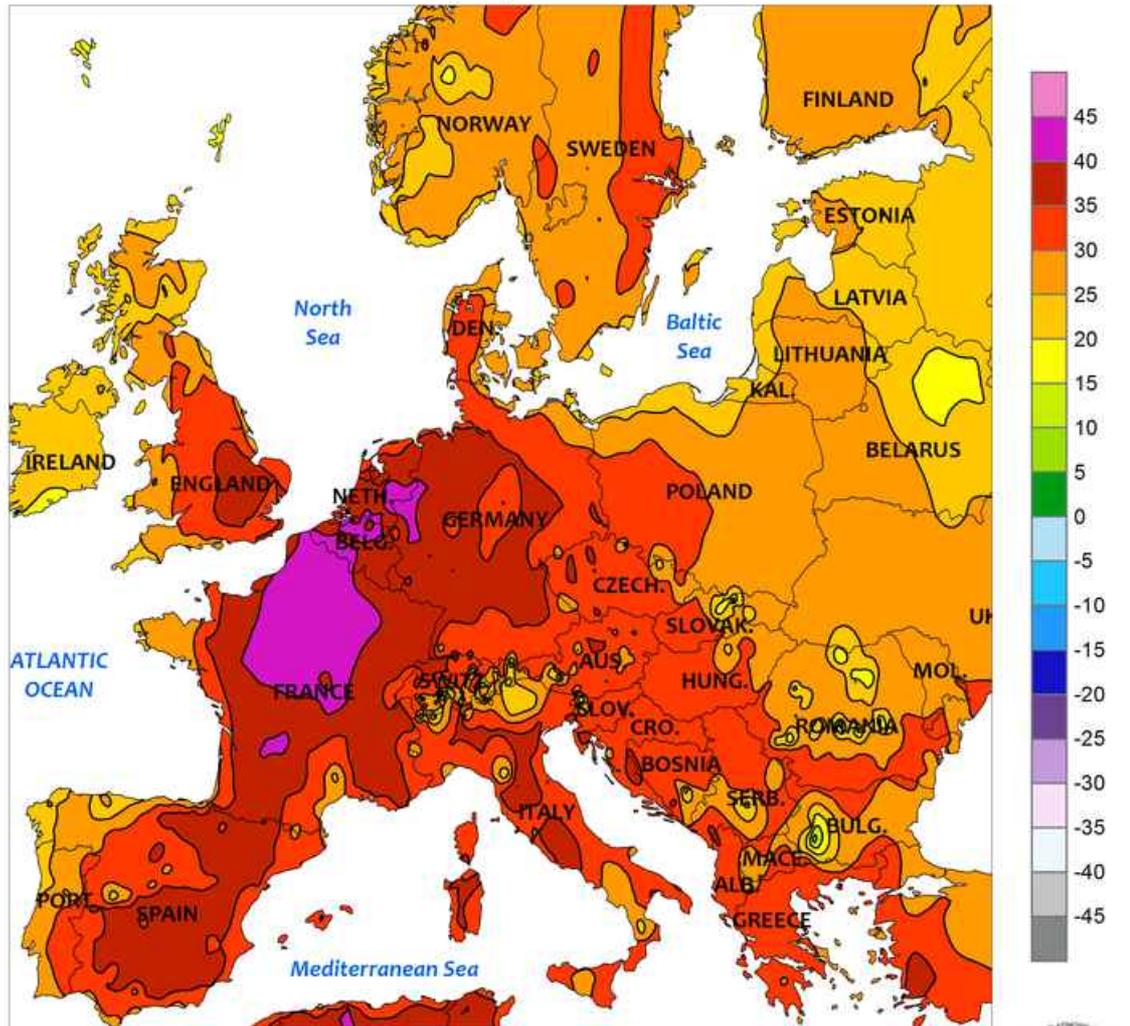
(111) September 21, 2019

**A warm summer continued, with July 2019 being the warmest July in a global record that began in 1880.**

Above, we see the Sun sinking on the afternoon of July 25, 2019. This view is looked from Darenth, Kent towards London in the distance. The tall buildings at centre are at Canary Wharf. The Shard lies to the left. This was the day that the UK experienced a July record of 38.7°C at the Cambridge Botanic Garden.

Meanwhile, in the Arctic Ocean, scientists saw the sea ice shrinking alarmingly. During most of July 2019, the extent of the Arctic sea ice was the smallest seen in the four decade old satellite record. This was even lower than in 2012. This continued well into August, but the trend reversed later in that month. Around the Autumn Equinox, sea ice reaches its maximum extent and it begins to expand again over the winter as the temperature cools. As one year follows another, we see thinner and more vulnerable sea ice. There is, however, a sliver of hope. Presently, the extent of the sea ice looks as if it will be larger than in 2012. If so, we should be grateful for a precious opportunity to take effective action on global climate, while we can.

EUROPE  
Extreme Maximum Temperature (C)  
July 25, 2019



CLIMATE PREDICTION CENTER, NOAA  
Computer generated contours  
Based on preliminary data



Europe's July 2019 heat wave.

NOAA (the USA's National Oceanic and Atmospheric Administration) published information for this remarkable July heat wave, which had followed the June heat wave within less than four weeks. NOAA noted:

“Europe as a whole had its 13th warmest July on record at 1.35°C . . . above average. . . Paris' maximum temperature soared to 42.6°C . . . on 25 July, surpassing the previous July record . . . The July 2019 average temperature for France was 23.0°C . . . the fourth highest July temperature . . . According to the World Meteorological Organization (WMO), Belgium, Germany, Luxembourg, and the Netherlands set new national temperature records. Germany's temperature of 42.6°C . . . on 25 July became the new national temperature record for July . . . new national all-time maximum temperature of 40.7°C . . . set on 25 July in Gilze-Rijen Netherlands surpassed a 75-year-old record . . . This marked the first time ever that temperatures exceeded 40.0°C . . . in the Netherlands. . . Norway recorded a maximum temperature of 35.6°C . . . at Laksfors, tying the national maximum temperature record set on 20 June 1970 . . . Saltdal recorded a maximum temperature of 34.6°C . . . the highest temperature ever recorded north of the Arctic Circle in Norway, . . . Sweden had a maximum temperature of 34.8°C . . . in the Markusvinsa on 26 July . . . highest temperature on record north of the Arctic Circle. . . Spain was also affected by the heat wave from 21-24 July . . . San Sebastián-Igueldo had a maximum temperature of 39.0°C . . . on 23 July—the highest temperature observed in this location since records began in 1928.”

## Seasons in South East England July 2019

**This was a record breaking July for the world and also for the UK.**

The Met Office stated that for England: “July started off rather cool with north-westerly winds, but with high pressure close to the south-west. The first half was mostly dry and settled but with unremarkable temperatures, and high pressure remained close to the south and west. The second half was much wetter, due largely to numerous thundery outbreaks, but with an exceptionally hot spell from the 22nd to 25th which saw record-breaking temperatures and plenty of sunshine.”

**Left: Looking over a sunny day at Ash, Kent on July 1; the puddle remained from the rains in June. Below: Barley is ripening in a field at Green Street Green, Kent. August 3.**





The coldest temperature in the UK (-0.4°C) was measured far beyond our own region, at Altnaharra in Sutherland in the Highlands of Scotland (July 8).

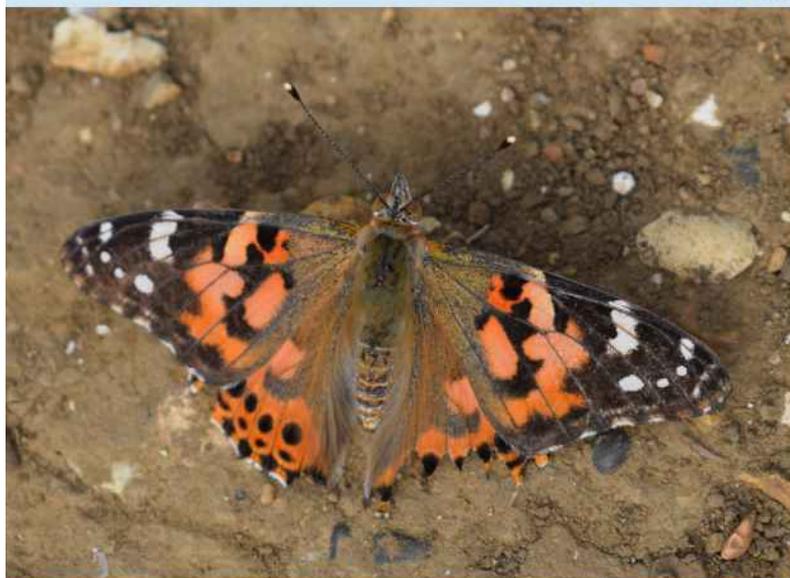
Above: Bales of straw above Green Street Green, Kent on the late afternoon of July 3. Left: July 4. Sunny day on the hill at Hartley, Kent. Below: Tufted Vetch (*Vicia cracca*,) at North Field, New Ash Green, Kent. July 11.



This was the warmest July in the global record that began in 1880. It was significantly warm in the UK, where the record goes back to 1910. The UK's mean temperature was 16.4°C (1.2°C higher than the 1981-2010 long-term average). This was the joint 8<sup>th</sup> warmest July on record. There was, however, record warmth and this was experienced in our region.

The provisional UK mean temperature was 16.4°C, which is 1.2°C above the 1981-2010 long-term average, making it the equal 8<sup>th</sup> warmest July in a series since 1910, though not as warm as July 2018. The mean temperature for England was 17.5°C (1.2°C). The warmest region was East Anglia 18.5°C (1.3°C), with our region of England SE & Central S was the second warmest at 18.2°C (1.1°C) warmest region.

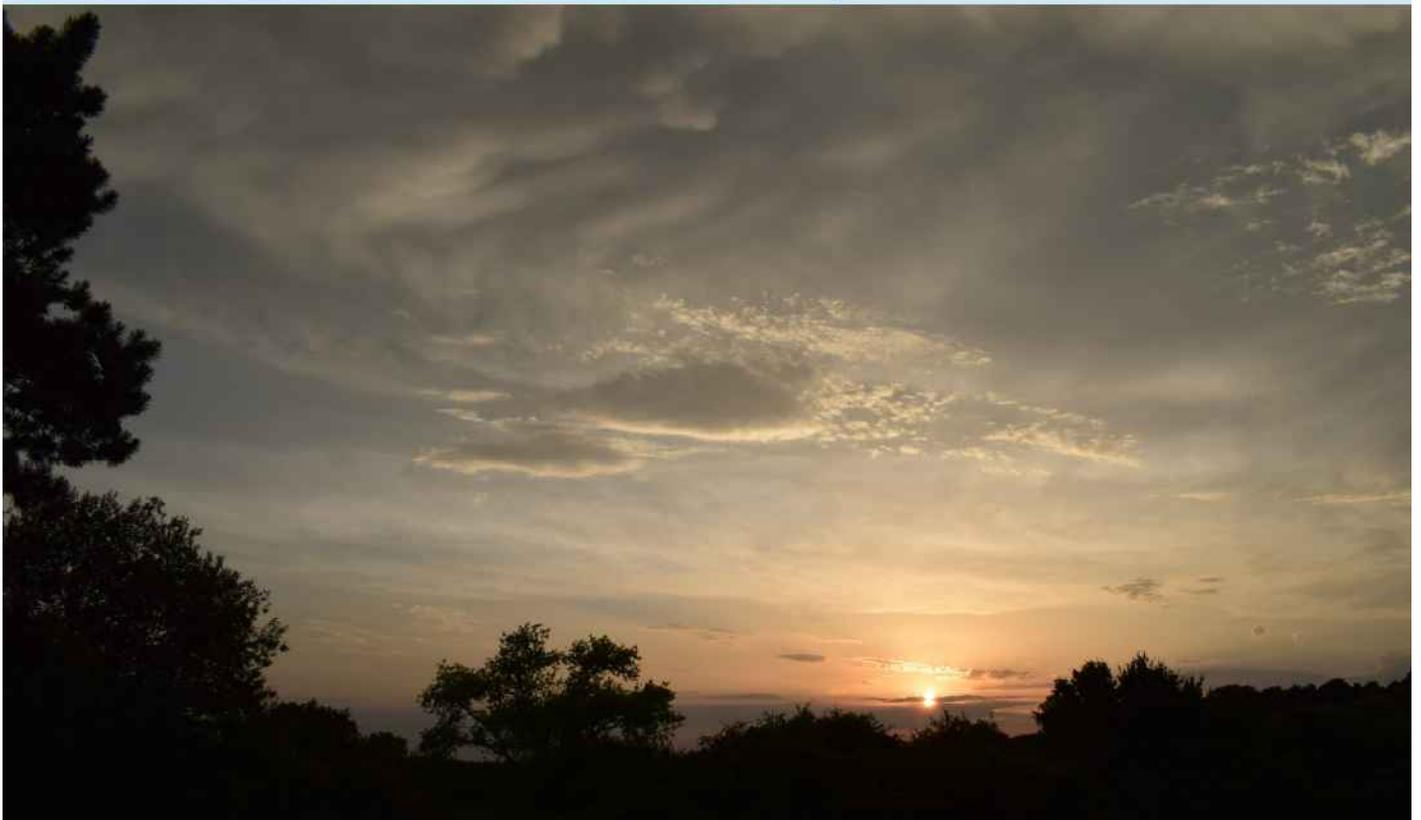
Right: Wheat growing on a field above Hartley, Kent on July 13. Lower left: Painted lady (*Vanessa cardui*) on a path above Hartley July 14; right: Gatekeeper (*Pyronia tithonus*) in hedgerow at Ash, Kent. July 29. Cutting of the grasses at North Field, New Ash Green. July 22.





The UK's warmest day was on July 25, when a record was set for this month, namely 38.7°C at the Cambridge Botanic Garden.

Rains occurred on July 25 at Kent near Dartford, Kent and in other localities. Rainbows appeared as the Sun was low in the sky.





### Stormy weather.

Above: A thunderstorm was underway in the early morning of July 26. Approaching 5 am at British Summer Time, the light of the pre-dawn was growing behind the clouds, but lightning flashes were much brighter. New Ash Green, Kent.

Below: Barley had been flattened in fields in the vicinity of Bean, Kent, apparently during the stormy weather. This view was taken on the afternoon of July 26.

Monthly means for SE and central S England. Max. temp.: 23.6°C (1.6°C); min. temp.: 12.8°C (0.6°C). Hours of sunshine: 232.1 (108 %). Rain: 42.7 mm (8.3%). Anomalies re. 1981-2010 norm in brackets. Date obtained from Met Office on-line monthly reports. <https://www.metoffice.gov.uk/climate/uk/summaries/2019/july/regional-values>



## Global climate: 2019 was the warmest July on record.

The USA's National Oceanic and Atmospheric Administration announced: "The July 2019 global land and ocean surface temperature departure from average was the highest for July since global records began in 1880 at 0.95°C . . . above the 20th century average. This value surpassed the previous record set in 2016 by 0.03°C . . . . Nine of the 10 warmest Julys have occurred since 2005, with the last five years (2015-2019) ranking among the five warmest Julys on record. July 1998 is the only July from the 20th century to be among the 10 warmest Julys on record. July 2019 marked the 43rd consecutive July and the 415th consecutive month with temperatures, at least nominally, above the 20th century average. Julys 2016, 2017, and 2019 are the only Julys that had a temperature departure from average at or above 0.90°C . . . . Climatologically, July is the globe's warmest month of the year. With July 2019 the warmest July on record, at least nominally, this resulted in the warmest month on record for the globe."

Source: NOAA National Climatic Data Center, *State of the Climate: Global Analysis for July 2019*. Published online. Data is provisional. All the anomalies quoted are positive.

Readers can obtain further information from NOAA: <https://www.ncdc.noaa.gov/sotc/global/201907>

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**Our regular pictures from the DSCOVR satellite are presently not possible. The space craft has been unable to return images from June 27, 2019.**

The Deep Space Climate Observatory (DSCOVR) satellite takes regular pictures of a (nearly) full Earth using EPIC, its Earth Polychromatic Imaging Camera.

The website of DSCOVR: EPIC website (<https://epic.gsfc.nasa.gov/>) tells us that: "DSCOVR is temporarily in safe mode. Further details can be found here: DSCOVR Spacecraft info"



**Atmospheric  
Science  
Data Center**

From the Processing, archiving and distributing Earth science data at the NASA Langley Research Center:

All DSCOVR space weather instrument data and other instrument data have been suspended as the spacecraft has entered into safe-hold. Anomaly investigations and associated recovery activities are underway. The primary customer, NOAA/NWS Space Weather Prediction Center (SWPC), will switch over to using Advanced Composition Explorer (ACE) satellite data as a primary source for space weather monitoring.

A meeting was organised to discuss the problem: "The 2019 DSCOVR Science Team Meeting will be held at the Goddard Visitor Center in Greenbelt, MD on Sep. 17-19, 2019. This meeting provides the opportunity for the DSCOVR/EPIC and DSCOVR/NISTAR user community to share science and technical findings."

**This classic satellite has created from a concept proposed by Al Gore, the then Vice President (and committed environmentalist) in 1998. We wait to learn of its future.**

**Right: The latest (we hope not the final) image of the Earth was sent back on June 27, 2019 at 13:14:03 GMT. The UK is in the picture.**



On July 15, 2019, protestors from Extinction Rebellion swarmed onto London's Waterloo Bridge to demand more action against human-driven climate change.



## Prime Meridian.

Prime Meridian is published by the Ecospheres Project, a research and media collaboration. It follows global environmental issues alongside the cycle of the seasons in South East England. It steps back to look at the Earth in its astronomical context and it pursues the search for other habitable worlds.

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**Right:** As night fell on July 15, the Moon rose, almost full. New Ash Green, Kent.