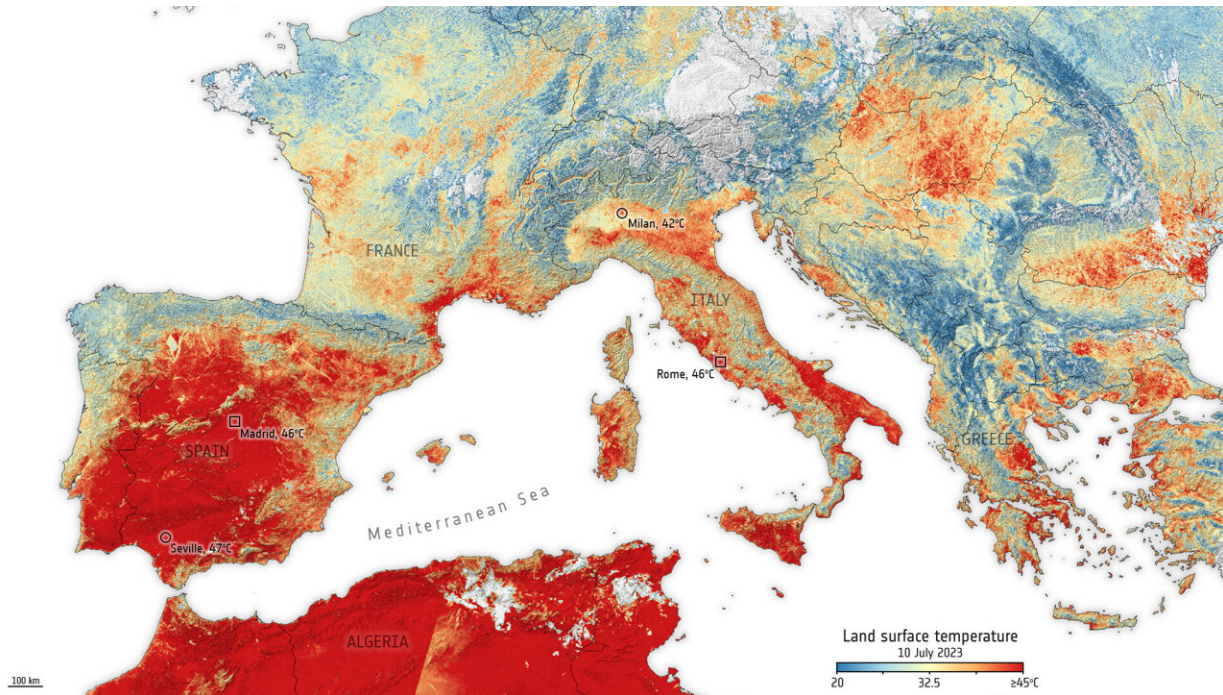


# Europe braces for sweltering July

July 13 2023



This image uses data from the Copernicus Sentinel-3 mission's radiometer instrument and shows the land surface temperature across Europe and parts of northern Africa in the morning of 10 July 2023. Land surface temperatures hit 46°C in Rome, Italy, while Madrid and Seville reached 46 and 47°C, respectively. Owing to the time difference between the acquisitions of the three swaths that capture the entire area, temperatures between countries are not directly comparable. While weather forecasts use predicted air temperatures, this satellite instrument measures the real amount of energy radiating from Earth – and depicts the real temperature of the land surface. Therefore, the map shows the actual temperature of the land's surface which is significantly hotter than air temperatures. Credit: contains modified Copernicus Sentinel data (2023), processed by ESA, [CC BY-SA 3.0 IGO](https://creativecommons.org/licenses/by-sa/3.0/)

Temperatures are sizzling across Europe this July amid an intense and prolonged period of heat. And it's only just begun. Italy, Spain, France, Germany and Poland are all facing a major heatwave with temperatures expected to climb to 48°C on the islands of Sicily and Sardinia—potentially the hottest temperatures ever recorded in Europe.

An anticyclone—a high-pressure area—named Cerberus (named after the monster from Dante's *Inferno*) coming from the south will cause temperatures to rise above 40°C across much of Italy. This comes after a spring and [early summer](#) full of storms and floods.

The highest temperature in European history was broken on 11 August 2021, when a temperature of 48.8°C was recorded in Floridia, an Italian town in the Sicilian province of Syracuse. That record may be broken again in the coming days.

The animation below uses data from the Copernicus Sentinel-3 mission's radiometer instrument and shows the land surface temperature across Italy between 9 and 10 July. As the image clearly shows, in some cities the surface of the land exceeded 45°C, including Rome, Naples, Taranto and Foggia. Along the east slopes of Mount Etna in Sicily, many temperatures were recorded as over 50°C.

Considering Copernicus Sentinel-3 acquired these data in the late-morning (11:30 CEST), the temperature would have continued to increase through the afternoon.

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significantly hotter than air temperatures.

Scientists monitor [land surface temperature](#) to better understand and forecast weather and climate patterns as well as monitor fires. These measurements are also particularly important for farmers optimizing the irrigation of their crops and for [urban planners](#) looking to improve heat mitigating strategies.

The heatwave is also hitting other cities across Europe with air temperatures expected to reach 44°C in parts of Spain later this week. A wider view of Europe can be seen in the image below. Land surface temperatures hit 46°C in Rome, Italy, while Madrid and Seville in Spain reached 46 and 47°C, respectively.

"Climate warming amplified this year by El Niño severely affects food production, water availability as well as our health. To properly adapt to these changes we need timely information at actionable resolution which the Copernicus program is providing with Sentinel-3 and soon with the [Copernicus Land Surface Temperature Monitoring mission](#) at 50 m resolution," commented Benjamin Koetz, Mission Scientist of the Land Surface Temperature Monitoring mission.

The [extreme temperatures](#) in Europe follow record-shattering [global temperatures](#). On 10 July, the [World Meteorological Organization](#) stated that the planet saw the hottest few days on record in first few days of July.

This follows the [hottest June](#) on record, with unprecedented sea surface temperatures and record low Antarctic sea ice extent. According to a [report](#) from the Copernicus Climate Change Service, June 2023 was just over the 0.5°C above the 1991–2020 average.

This heat coincides with the [onset of El Niño](#), the natural phenomenon

warming the Pacific Ocean. It is expected that the global temperature will rise further and more weather records will be broken.

According to a [study](#) recently published in *Nature Medicine*, more than 60,000 people died because of last year's summer heatwaves across Europe. The mortality rate was highest in Italy, Greece, Spain and Portugal. This summer is likely to be worse. The Red Cross has urged locals and tourists to exercise extreme caution and pay attention to those most vulnerable to the high temperatures.

Provided by European Space Agency

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