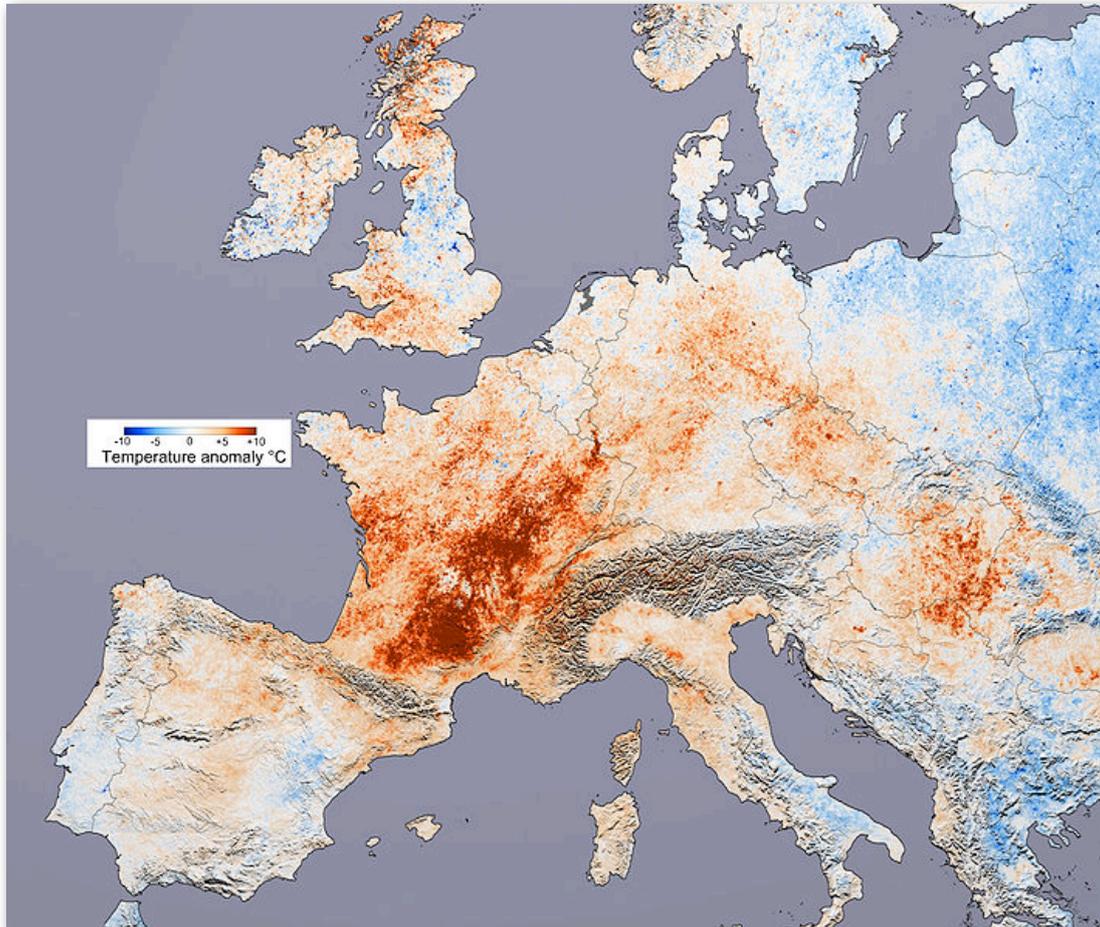


2003 European Heatwave

The 2003 European (June 2003 to August 2003) heatwave is one of the hottest summers on record in Europe, especially in France. The heatwave led to health crises in several countries and combined with drought to create a crop shortfall in Southern Europe. More than 40,000 Europeans died as a result of the heatwave.



[A colour version of this map can be viewed at <http://www.geographyalltheway.com/in/myp-weather/weather-heatwave.htm>]

Scientists have cited a variety of factors that all conspired to create disastrous results. Some mention unusual weather patterns similar to El Nino, others say that global warming is to blame. According to Kevin Trenberth, Director of the National Center for Atmospheric Research in Colorado, there are a few possible causes.

"A change in global sea temperatures and unusual conditions in the tropics and the tropical area of the Indian Ocean was a factor in creating and sustaining settled air conditions over Europe," he says.

A sustaining settled high pressure weather system formed over most of Western Europe. Air is moving around a high in a clockwise direction, bringing a hot, dry tropical continental air mass to the UK at this time. High pressure areas usually bring little cloud and warm conditions in summer. Rainfall over much of Europe was below what is normally expected during the months of June, July and August 2003. The long-lasting high pressure system tended to reduce the amount of rain that fell.

France

In France, there were 14,802 heat-related deaths (mostly among the elderly) during the heatwave, according to the French National Institute of Health. France does not commonly have very hot summers, particularly in the northern areas, but seven days with temperatures of more than 40°C were recorded in Auxerre, Yonne between July and August 2003.

Because of the usually relatively mild summers, most people did not know how to react to very high temperatures, and most homes and residential facilities built in the last 50 years were not equipped with air conditioning. Furthermore, while there were contingency plans for a variety of natural and man-made catastrophes, high temperatures had never been considered a major hazard. A refrigerated warehouse outside Paris was used by undertakers as they did not have enough space in their own facilities.

The high number of deaths can be explained by the conjunction of seemingly unrelated events. Most nights in France are cool, even in summer. As a consequence, houses do not warm too much during the daytime and radiate minimal heat at night, and air conditioning is usually unnecessary. During the heatwave, temperatures remained at record highs even at night, preventing the usual cooling cycle. Elderly persons living by themselves had never faced such extreme heat before and did not know how to react or were too mentally or physically impaired by the heat to make the necessary adaptations themselves.

That shortcomings of the French health system that could allow such a death toll is a matter of controversy in France. The French administration laid the blame on families who had left their elderly behind without caring for them, the 35-hour workweek, which affected the amount of time doctors could work and family doctors vacationing in August. Many companies traditionally closed in August, so people had no choice about when to vacation.

Portugal

There were extensive forest fires in Portugal. Five percent of the countryside and ten percent of the forests (215,000 hectares) were destroyed, an estimated 4,000 square kilometres. Eighteen people died in the fires and there were an estimated 1866 to 2039 heat related deaths over all. Temperatures reached as high as 48 °C in Amareleja. The first of August was the hottest day in centuries, with night temperatures well above 30°C.

Effects on crops

Crops which suffered most from drought were grown in Southern Europe. The following shortfalls in wheat harvest occurred as a result of the long drought.

- France - 20%
- Italy - 13%
- United Kingdom - 12%

Many other countries had shortfalls of 5–10%, and the EU total production was down by 10 million tonnes, or 10%.