

SCIENTIFIC FACTS ABOUT THE HEATWAVE

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A Heatwave is a period of extreme heat that is often accompanied by high humidity. Heat Index Values are used to determine excessive heat. The heat index, commonly known as the apparent temperature, is the temperature that the human body perceives when relative humidity and air temperature are combined.

In comparison to the expected conditions, a heatwave is defined as an extended stretch of hot weather. A heatwave is declared when a location's maximum air temperature is recorded for three consecutive days. The heatwave threshold differs by location.

A heatwave does not have a recognized definition. To compare and declare a Heatwave, a location's average air temperature is required. When there is high pressure in the atmosphere, warm air is pushed towards the ground, resulting in hot spells. It gets warmer as it compresses, and the heat builds up, causing severe heat. A heatwave is a period of intense heat that is frequently accompanied by high humidity.

CLIMATE CHANGE AND THE HEAT WAVE

The world's hot days are becoming much hotter as air temperatures rise, and the world's cool days are becoming fewer. Over the last decade, daily record high temperatures have become more common.

If greenhouse gas emissions are not reduced, daily high and low temperatures in most locations will climb by at least 5°C (9°F) by mid-century, and even more by the end of the century. It has the potential to blow transformers, overwhelm electricity grids, and cause havoc.

Quick Facts

- Over 75 per cent of British workers say a heat wave hampers their ability to work effectively and more than half admitted to taking "sun-bathing days".
Studies have also shown that more boys than girls are likely to be conceived during a heat wave.
- A 1988 New York heat wave saw the murder rate increase by 75 per cent.
- Philadelphia, Pennsylvania, is one of many US cities that operate a "buddy system" during a heat wave. A designated person in each street checks on elderly and vulnerable people.
- Following the British drought of 1976, the birth rate dropped to a record low, proving that the advice of the most popular car sticker of the year was not being followed: "Save Water, Take a Bath with a Friend".
- A 1986 US study also showed reports of Domestic Violence peaked at the same time each year as maximum temperatures in five locations around the nation.
- In 1842 a Belgian mathematician concluded "Crimes against property reach a maximum in winter months, and crimes against the person and against morals, in the summer months."

Heat exhaustion can build over time, and if not treated, heatstroke can occur.

Heatstroke is most common in the elderly, children under the age of four, those living in homes without air conditioning, and persons with chronic diseases, which can harm the brain, heart, kidneys, and other muscles.

According to NOAA, more people die from heat than any other meteorological danger on average over 30 years from 1987 to 2016. There were an average of 131 deaths per year over the 30 years, with the majority of them occurring during heat waves.

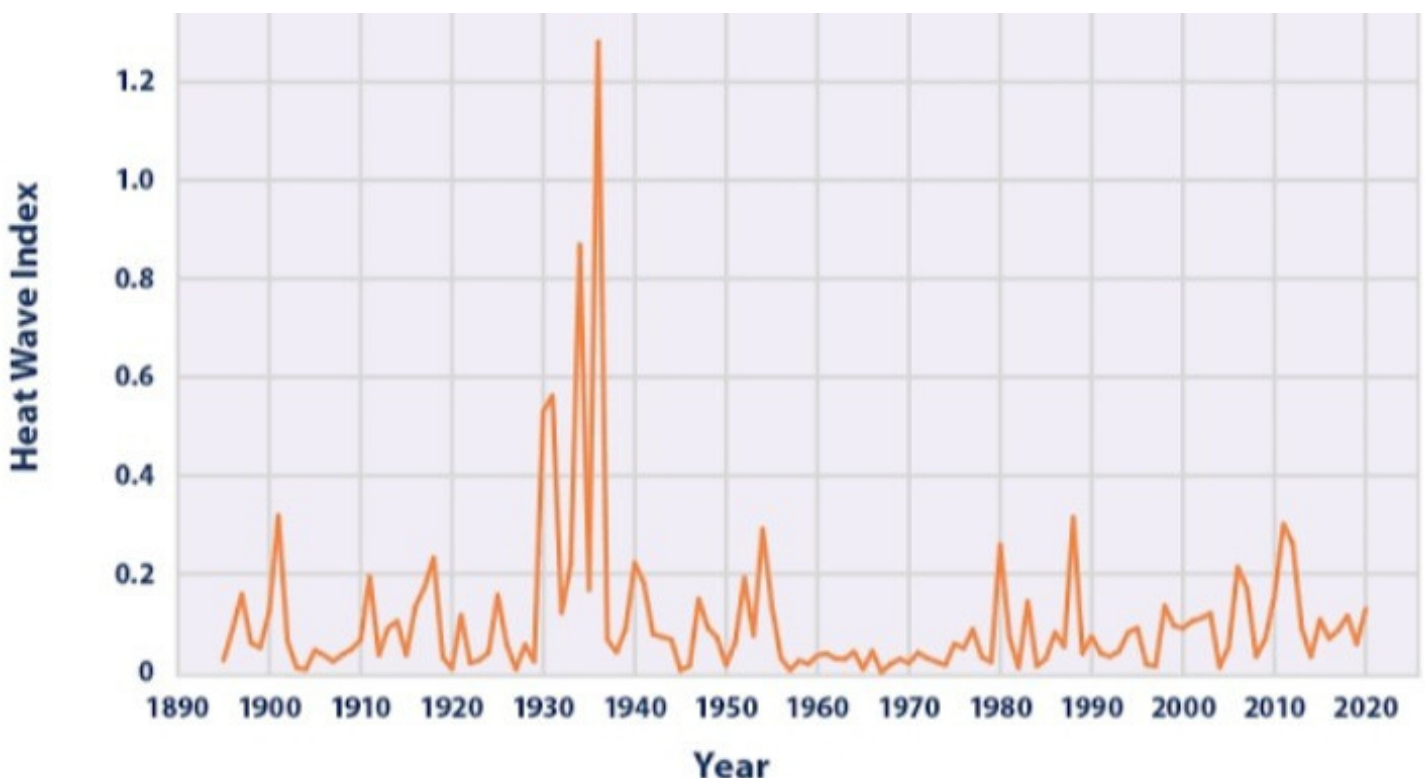
Overnight temperatures may not decrease as quickly as they normally would if blazing heat LINGERS for several days. Warm nighttime temperatures, especially those of 80 degrees or above, prevent people from recovering from the heat of the day. The effects can be worsened when warm low temperatures are paired with excessive humidity. June 2019 was the hottest month on record worldwide, the effects of this were especially prominent in Europe. The effects of climate change have been projected to make heat waves in places such as Europe up to five times more likely to occur. Among other effects, increased wildfires in places such as Spain can also be attributed to heat waves.

Dew points and relative humidity indicate how much moisture is present in the air. The dew point temperature indicates how much cooler the air temperature must be to get saturated.

This indicates that once the dew point climbs over 60 degrees, the air becomes humid. It becomes uncomfortable when the dew point reaches 70 degrees, and most people consider anything above 75 degrees oppressive.

They are more prevalent in cities. The urban heat island effect, which refers to a metropolitan area that is warmer than the surrounding areas, can exacerbate the effects of heat waves in cities.

According to the EPA, temperatures in cities with a population of one million or more people can be 1.8 to 5.4 degrees warmer than nearby locations. Because rural areas cool down faster after sunset, the temperature difference can be as high as 22 degrees. A study that investigated 13,115 cities found that extreme heat exposure of a wet bulb globe temperature above 30 °C tripled between 1983 and 2016. It increased by ~50% when the population growth in these cities is not taken into account. Urban areas and living spaces are often significantly warmer than surrounding rural areas, partly due to the urban heat wave effects.



SOURCE- US Environmental Protection Agency