

Heating up

Each year weather records are being broken around the globe; this boreal summer has seen heat records fall across Europe, America and Central Asia. These discernible effects of climate change cannot be ignored, as combined with global issues they endanger society and well-being.

The news headlines in the weeks of July 2022 have been dominated by reports of heatwave events in the UK, across Europe and the USA. The UK experienced record temperatures, with some locations exceeding 40 °C for the first time, while equally high temperatures were seen across the continent. Fires broke out in the extreme heat — extensive wildfires threatening lives and property, as has been seen all too often in recent years around the globe. In the USA, from the south to the north, temperatures exceeded 100 °F (37.8 °C) spanning the nation.

In Spain, the recent heatwave was the first to be named, Zoe, as part of a trial in Seville¹. It is standard practice for tropical cyclones to be named, allowing easy identification of different systems and providing early warning to those at risk, and this pilot of naming severe heatwaves aims to imitate that strategy and increase public awareness of impending heat risk. The system includes three tiers, and only time will tell how many top-tier, and therefore named, heatwaves will be seen this summer, and in the coming years.

Outside the headlines seen here in the UK, there were extreme temperatures in Central Asia and China, and much of the globe saw heat anomalies pushing temperatures beyond the 'norm'. These are not isolated events, normal is no longer that, as climate change and warming continue. Acknowledging the effect of climate change on average temperatures, earlier this year the UK Met Office updated their heatwave threshold classification — shifting from using the 1981–2010 average daily maximum mid-summer temperature to now using 1991–2020 as the base period (<https://go.nature.com/3Q1Vhv2>). Heatwaves occur when the temperature equals or exceeds this average for three consecutive days.

Extended periods of hot weather put stress on societies and increases mortality risk. An attribution study showed that climate change increased heat-related mortality risk during the 2003 European heatwave — with the highest increase of approximately 70% occurring in central Paris². Alongside the risks associated with heatwaves themselves, a recent study showed



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that higher ambient temperatures in Latin America increased the risk of premature death by 5.7% per 1 °C increase³. Another study considering data covering 43 countries and the period 1991–2018 showed that 37% of heat-related deaths in the warm seasons could be attributed to climate change⁴. This is further explored in a Feature, in our July issue, debating whether climate-related data should be included on death certificates for better understanding of climate change impacts on human mortality⁵.

The immediate impact on human health from heat abates as weather systems pass, but these events as well as higher ambient temperatures have far-reaching consequences. Higher temperatures, in the short and long term, are raising concerns for water and food security, with food security currently of high concern as it is further exacerbated by the ongoing conflict in Ukraine. In Africa, there is ongoing wide-scale drought in the Horn of Africa, extending throughout East Africa, as well as drought in West Africa and the Sahel. Agriculture in these regions relies on rainfall

and with four failed seasons in East Africa, and a drought touted as the worst in 40 years, there is insufficient water for crops to produce. Estimates place hundreds of millions of people at risk from this food crisis, with the situation in West Africa being exacerbated by conflict in the region.

The risks of climate change continue to emerge, with those covered here just a small sample of those that have occurred, or are ongoing, in recent months. We have said it many times before but time is running out, there needs to be action and committed focus on addressing climate change as the new normal keeps shifting and we cannot adapt to keep pace. □

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