World's hottest month shows challenges global warming will bring

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July was hotter than any month globally since records began – but some areas, such as the Middle East, suffer more than others.

In Siberia, melting permafrost released anthrax that had been frozen in a reindeer carcass for decades, starting a deadly outbreak. In Baghdad, soaring temperatures forced the government to shut down for days at a time. In Kuwait, thermometers hit a record 54C (129F).

July was the hottest month the world has endured since records began in 1880, scientists have said, and brought a painful taste of the troubles people around the world may have to grapple with as global warming intensifies. Results compiled by Nasa showed the month was 0.84C hotter than the 1951-1980 average for July, and 0.11C hotter than the previous record set in July 2015.
The temperature increase last month was not all due to climate change. Part of the increase came from the tail end of the El Niño phenomenon, which spreads warm water across the Pacific, giving a boost to global temperatures.

But scientists said the July record, which came after a string of new month-high temperatures, was particularly striking because it came as the impact of El Niño faded, and added weight to fears that 2016 will go down in history as the hottest year since records began.

“Even if we have it augmented by El Niño, it’s quite concerning as a citizen to see that we are flirting with very high numbers, and a record is a record,” said Jean-Noël Thepaut, head of Europe’s Copernicus climate change service.

He had not expected such a warm July, and said that although his organisation did not forecast temperatures, the high temperatures continued through the start of August and made a record for the year extremely likely.

“What we can say over the last seven months is that every month has been a record; we are on good track to have another record year,” he said. Beyond immediate trends, longer-term weather patterns made clear the rise could not be dismissed as the impact of a severe El Niño, he said.

“One fact beyond what we are seeing today, among the last warmest years, 15 years have been obtained in the 21st century and we have not been in El Niño for 10 years. So there is a general longer-term trend,” Thepaut said.

The challenge for climate scientists, and politicians seeking to drive climate policy, has often been linking changes in global averages to shifting weather patterns at home that may or may not appear to reflect the worldwide data.

“This is a global average, so it can be difficult for people everywhere to perceive it themselves,” said Bob Ward, policy and communications director at the LSE’s Grantham research institute on climate change and the environment.

As extremes become more common, however, that is also starting to change, even in places such as the UK where changes have so far been relatively more manageable.
“We can see that locally there is evidence of changes in many places – for instance, in the UK, our eight warmest years have all occurred since 2000, as have six of our seven wettest years, so the UK is becoming warmer and wetter.”

The provisional average temperature in the UK for July was 15.3C, which is 0.2C above the 1981-2010 long-term average, according to the Met Office.

However, it is well below the record set in 2006, the hottest UK month on record, when the average temperature was 17.8C.

Nasa’s Operation IceBridge has been measuring sea ice changes in the Antarctic and Arctic, where the peak of the summer melt season now covers an area 40% smaller than it was in the late 1970s and early 1980s. Photograph: Operation IceBridge/Goddard/NASA

The temperature increases in July were not spread evenly, with brutal heat across the Middle East potentially warning of troubles to come for a region that is particularly vulnerable to rising temperatures.

Climate scientists say individual areas of extreme weather cannot be directly linked to global warming even as overall temperatures rise, but they give an indication of the challenges to come in a hotter world.
“If the global mean [average] increases a certain amount, the temperatures in this region in summer will increase even more,” said Jos Lelieveld, an atmospheric researcher at the Max Planck institute for chemistry, who earlier this year published a report on how climate change would affect the Middle East and North Africa.

He warned then that large areas could become so hot that they would be virtually uninhabitable for human beings, and could trigger an exodus of hundreds of millions of refugees. The July temperatures just underlined the urgency of the crisis, he said.

“This worries me a lot because we have a lot of problems there already; there is a documented drought that has been going on for fifteen years,” he said. “This is already one of the driest regions in the world.”

Some experts think those problems have already contributed to the violence in the region, with some researchers claiming drought fuelled Syria’s civil war.

But perhaps because of the huge security and humanitarian crises crippling many countries there, most governments have spared little thought to dealing with a problem that seems less urgent, even if its fallout could be just as devastating.

“Climate change and challenges associated with it or provoked by it didn’t yet reach the attention of heads of states,” said Adel Abdellatif, a senior regional advisor with the UN development programme focused on climate change in the region.

“Attention is mainly paid to threats emanating from armed groups, and climate change threats are not seen within the framework of national security,” he said.

Adding to the problem is the fact that those likely to be most vulnerable to the flooding, droughts and rising temperatures are those least able to push for change, both within countries and across the region.

“Those affected by threats of climate change are the people living at the edge of vulnerability and in the frontline of the perfect storm,” said Abdellatif.
When Kuwait recorded temperatures of 54C this summer, the highest ever recorded in the eastern hemisphere, its relatively wealthy citizens were mostly able to combat the raging heat by turning on the air conditioning.

In neighbouring Iraq, where electricity supplies are sporadic, not everyone can afford coolers and millions of refugees were stranded under little more than tents in the desert, heat is much more dangerous.

The July temperatures have given added urgency to calls for governments to deliver on commitments made in Paris last year to limit temperature rises to 1.5C beyond pre-industrial levels – a limit not far off the record set in July.

“People should be in no doubt that global warming continues apace and that should focus governments on the task of delivering what was agreed in Paris last year,” said the LSE’s Ward.

Nasa’s records indicate July was about 1.3C warmer than the pre-industrial average, said David Karoly, a climate scientist from the University of Melbourne, who pointed out that Nasa’s baseline temperatures already included about 0.5C of warming in global temperatures.

Karoly said about 0.2C of that anomaly was likely to be owing to El Niño, leaving about 1.1C mostly caused by human-induced climate change.