

Dramatic climate action needed to curtail ‘crazy’ extreme weather

Heatwaves, wildfires and floods are just the ‘tip of the iceberg’, leading climate scientists say

‘Crazy off-the-charts records’: has humanity finally broken the climate?

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Mon 28 Aug 2023 17.00 BST



- Even worse effects than the current wave of wildfires and floods are expected, the experts said. Photograph: Anadolu Agency/Getty Images

The “crazy” extreme weather rampaging around the globe in 2023 will become the norm within a decade without dramatic climate action, the world’s leading climate scientists have said.

The heatwaves, wildfires and floods experienced today were just the “tip of the iceberg” compared with even worse effects to come, they said, with limitations in climate models leaving the world “flying partially blind” into the future.

With fears that humanity's relentless carbon emissions have finally pushed the climate crisis into a new and accelerating phase of destruction, the Guardian sought the expert assessments of more than 40 scientists from around the world.

They said that the rise in global temperature was entirely in line with decades of warnings and was being boosted this year by the return of the El Niño climate pattern. But they said that people and places were more vulnerable to extreme weather than expected and were suffering effects never previously experienced as climate records were shattered.



'Off-the-charts records': has humanity finally broken the climate?

“July was the hottest month in human history and people around the world are suffering the consequences,” said Prof Piers Forster at the University of Leeds, UK. “But this is what we expected at [this level] of warming. This will become the average summer in 10 years’ time unless the world cooperates and puts climate action top of the agenda.”

“The impacts are frighteningly more impactful than I – and many climate scientists I know – expected,” said Prof Krishna AchutaRao at the Indian Institute of Technology.

Dr Christophe Cassou, a CNRS researcher at the Université Paul Sabatier Toulouse III, in France, said: “Changes in [climate] hazards have not been underestimated at global scale. But the impacts have been underestimated because we are much more vulnerable than we thought – our vulnerability is smacking us in the face.”

Heat and wildfire records have been broken around the world in 2023, from North America, to Europe, to Asia. “Our perception is also biased by the fact that we are living more often in uncharted territory, which gives a sense of acceleration,” said Cassou. “We now feel climate change that is emerging above usual weather.”

Climate models have accurately predicted the rise in global temperature as humanity’s greenhouse gas emissions have surged. But numerous scientists highlighted the particular difficulty they have in projecting extreme weather events, which are by definition rare.

“We may be seriously underestimating the dangers ahead,” said Dr Raúl Cordero, until recently at the University of Santiago, Chile. “We are flying partially blind on what to expect for climate extremes.”

The scientists were clear the world had not yet passed a tipping point into runaway climate change. But Dr Rein Haarsma at the Royal Netherlands Meteorological Institute said **tipping points were getting closer**: “The extremes we see now happening could induce tipping points such as the collapse of the **Atlantic meridional overturning circulation** and melting of the Antarctic ice sheets, that would have devastating impacts.”

A “tiny window” of opportunity remained open to avoid the worst of the climate crisis, the scientists said. The researchers overwhelmingly pointed to one action as critical: slashing the burning of fossil fuels down to zero.

“We need to stop burning fossil fuels,” said Dr Friederike Otto at Imperial College London. “Now. Not some time when we’ve allowed companies to make all the money they possibly can.”

Prof Emily Shuckburgh at the University of Cambridge in the UK said: “Anyone in any way perpetuating the fossil fuel era is firmly on the wrong side of history.”

“Knowing that we will look back on today’s extreme events as mild relative to what lies in our future is truly mind-boggling,” said Prof Andrea Dutton at the University of Wisconsin-Madison, US. “The speed at which we make this transition will define the future that we get.”

The UN is convening a climate ambition summit on 20 September. “Almost all our indicators on climate are pointing in the wrong direction,” said Amina Mohammed, the UN’s deputy secretary general. “The World Meteorological Organization has warned that the next five years are likely to be the hottest on record, hitting vulnerable communities the hardest.

“We hope and expect that [political] leaders, the private sector, and civil society organisations, will come to the summit with credible and ambitious actions and commitments.”

The UN’s leading climate summit of 2023, Cop28, will begin in late November. It is being **hosted by the United Arab Emirates** and being presided over by Sultan Al Jaber, the chief executive of the UAE’s state oil company. Global carbon emissions have continued to rise in recent years, but must **fall by 43%** to have a good chance of keeping global heating **below 1.5C**.