

Climate crisis: 11,000 scientists warn of ‘untold suffering’

Statement sets out ‘vital signs’ as indicators of magnitude of the climate emergency

Most countries’ climate plans ‘totally inadequate’ – experts

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A man uses a garden hose to try to save his home from wildfire in Granada Hills, California, on 11 October 2019. Photograph: Michael Owen Baker/AP

The world’s people face “untold suffering due to the climate crisis” unless there are major transformations to global society, according to a stark warning from more than 11,000 scientists.

“We declare clearly and unequivocally that planet Earth is facing a climate emergency,” it states. “To secure a sustainable future, we must change how we live. [This] entails major transformations in the ways our global society functions and interacts with natural ecosystems.”

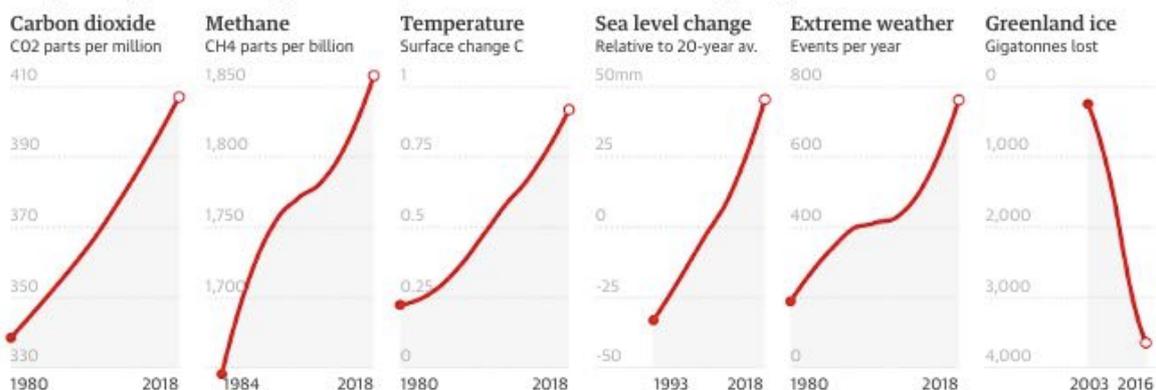
There is no time to lose, the scientists say: “The climate crisis has arrived and is accelerating faster than most scientists expected. It is more severe than

anticipated, threatening natural ecosystems and the fate of humanity.”

The statement is published in the journal *BioScience* on the 40th anniversary of the first world climate conference, which was held in Geneva in 1979. The statement was a collaboration of dozens of scientists and endorsed by further 11,000 from 153 nations. The scientists say the urgent changes needed include ending population growth, leaving fossil fuels in the ground, halting forest destruction and slashing meat eating.

Prof William Ripple, of Oregon State University and the lead author of the statement, said he was driven to initiate it by the increase in extreme weather he was seeing. A key aim of the warning is to set out a full range of “vital sign” indicators of the causes and effects of climate breakdown, rather than only carbon emissions and surface temperature rise.

‘Especially disturbing’ - the impacts of the climate emergency



Guardian graphic. Source: Ripple et al, *BioScience*, 2019

“A broader set of indicators should be monitored, including human population growth, meat consumption, tree-cover loss, energy consumption, fossil-fuel subsidies and annual economic losses to extreme weather events,” said co-author Thomas Newsome, of the University of Sydney.

Other “profoundly troubling signs from human activities” selected by the scientists include booming air passenger numbers and world GDP growth. “The climate crisis is closely linked to excessive consumption of the wealthy lifestyle,” they said.

As a result of these human activities, there are “especially disturbing” trends of increasing land and ocean temperatures, rising sea levels and extreme weather events, the scientists said: “Despite 40 years of global climate negotiations, with few exceptions, we have have largely failed to address this predicament.

Especially worrisome are potential irreversible climate tipping points. These **climate chain reactions** could cause significant disruptions to ecosystems, society, and economies, potentially making large areas of Earth uninhabitable.”

“We urge widespread use of the vital signs [to] allow policymakers and the public to understand the magnitude of the crisis, realign priorities and track progress,” the scientists said.

“You don’t need to be a rocket scientist to look at the graphs and know things are going wrong,” said Newsome. “But it is not too late.” The scientists identify some encouraging signs, including decreasing global birth rates, increasing solar and wind power and fossil fuel divestment. Rates of forest destruction in the Amazon had also been falling until a recent increase under new president Jair Bolsonaro.

They set out a series of urgently needed actions:

- Use energy far more efficiently and apply strong carbon taxes to cut fossil fuel use

- Stabilise global population – currently growing by 200,000 people a day – using ethical approaches such as longer education for girls

- End the **destruction of nature** and **restore forests and mangroves** to absorb CO₂

- Eat mostly plants and **less meat**, and reduce food waste

- Shift economic goals away from GDP growth

“The good news is that such transformative change, with social and economic justice for all, promises far greater human well-being than does business as usual,” the scientists said. The recent surge of concern was encouraging, they added, from the **global school strikes** to **lawsuits against polluters** and some nations and businesses starting to respond.

A **warning of the dangers of pollution and a looming mass extinction of wildlife on Earth**, also led by Ripple, was published in 2017. It was supported by more than 15,000 scientists and read out in parliaments from Canada to Israel. It came 25 years after the original “**World Scientists’ Warning to Humanity**” in 1992, which said: “A great change in our stewardship of the Earth and the life on it is required, if vast human misery is to be avoided.”

Ripple said scientists have a moral obligation to issue warnings of catastrophic threats: “It is more important than ever that we speak out, based on evidence. It is time to go beyond just research and publishing, and to go directly to the citizens and policymakers.”

Climate change: ‘Clear and unequivocal’ emergency, say scientists

By Matt McGrath

Environment correspondent

4 hours ago

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AFP

A global group of around 11,000 scientists have endorsed research that says the world is facing a climate emergency.

The **study**, based on 40 years of data on a range of measures, says governments are failing to address the crisis.

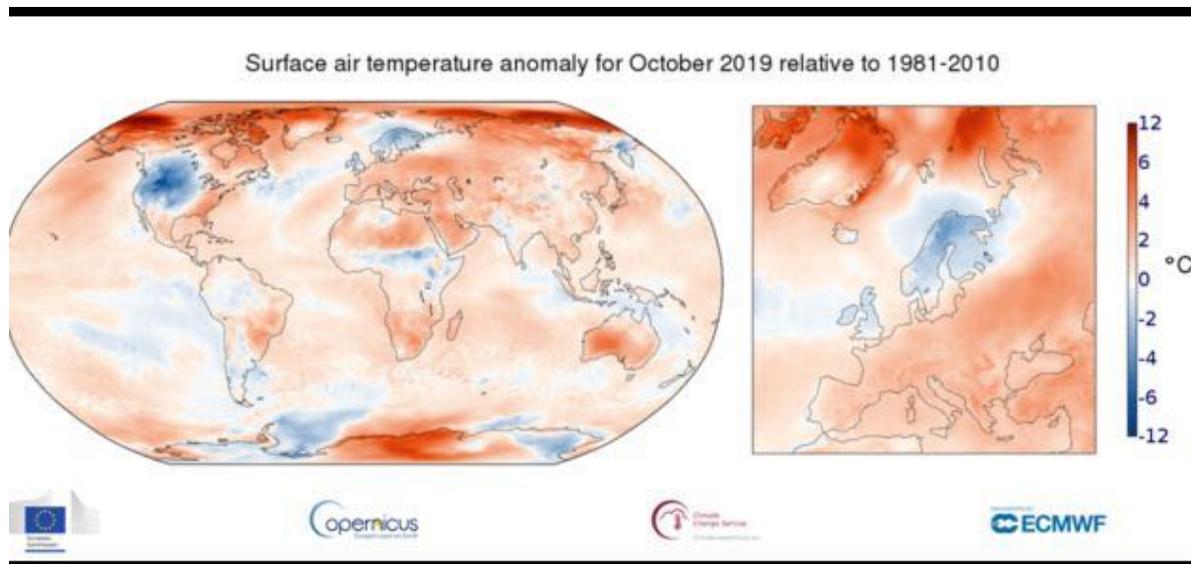
Without deep and lasting changes, the world is facing "untold human suffering" the study says.

The researchers say they have a moral obligation to warn of the scale of the threat.

Released on the day that satellite data shows that last month was the warmest October on record, the new study says that simply measuring global surface temperatures is an inadequate way of capturing the real dangers of an overheating world.

So the authors include a range of data which they believe represents a "suite of graphical vital signs of climate change over the past 40 years".

These indicators include the growth of human and animal populations, per capita meat production, global tree cover loss, as well as fossil fuel consumption.



COPERNICUS

October was the warmest such month on record according to new data

Some progress has been seen in some areas. For example, renewable energy has grown significantly, with consumption of wind and solar increasing 373% per decade - but it was still 28 times smaller than fossil fuel use in 2018.

Taken together, the researchers say most of their vital signs indicators are going in the wrong direction and add up to a climate emergency.

"An emergency means that if we do not act or respond to the impacts of climate change by reducing our carbon emissions, reducing our livestock production, reducing our land clearing and fossil fuel consumption, the impacts will likely be more severe than we've experienced to date," said lead author Dr Thomas Newsome, from the University of Sydney.

"That could mean there are areas on Earth that are not inhabitable by people."

How does this differ from other reports on climate change?

The study echoes many of the warnings that have been reported by scientists including the IPCC. The authors set out to present a clear and simple graphical picture of a broader range of indicators that can drive home to the public and to governments that the threat is serious while the response has been poor.



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Tree loss needs to stop if countries are serious about climate change

Where it differs is in showing that while things might be bad, they are not hopeless. The researchers show six areas in which immediate steps should be taken that could make a major difference.

These are:

Energy: Politicians should impose carbon fees high enough to discourage the use of fossil fuels, they should end subsidies to fossil fuel companies and implement massive conservation practices while also replacing oil and gas with renewables.

Short-lived pollutants: These include methane, hydrofluorocarbons and soot - the researchers say that limiting these has the potential to cut the short-term warming trend by 50% over the next few decades.

Nature: Stop land clearing, restore forests, grasslands and mangroves which would all help to sequester CO₂.

Food: A big dietary shift is needed say researchers so that people eat mostly plants and consume fewer animal products. Reducing food waste is also seen as critical.

Economy: Convert the economy's reliance on carbon fuels - and change away from growing the world's gross domestic product and pursuing affluence.

Population: The world needs to stabilise the global population which is growing by around 200,000 a day.

So who are the scientists who have endorsed the report?

Some 11,000 researchers of all types and varieties from 153 countries have endorsed the research

The authors say they didn't target individuals so there is a marked lack of some of the bigger names in climate change research.

All the details of who's signed the endorsement have been published online. "We have rising emissions, rising temperatures, and we've known this for 40 years and we haven't acted - you don't need to be a rocket scientist to know we have a problem," said Dr Newsome.

What do the authors want to happen now?

The researchers are fed up because multiple climate conferences and assemblies have failed to produce meaningful action. However they believe that the growing, global protest movement offers hope.

"We are encouraged by a recent global surge of concern - governments adopting new policies; schoolchildren striking; lawsuits proceeding; and grassroots citizen movements demanding change.

"As scientists, we urge widespread use of the vital signs and hope the graphical indicators will better allow policymakers and the public to understand the magnitude of the crisis, realign priorities and track progress."

So what about human population growth?

The idea of trying to influence human population growth is highly controversial and has been deemed too hot to handle by UN negotiators. The authors say that looking the other way is no longer an option.



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Human population growth needs to be addressed, say the authors

"It is certainly a controversial topic - but I think that population should be talked about when considering human impacts on the Earth," said Dr Newsome.

"It's important when presenting these results to look at some positives, and one of the more positive things that we've pulled out of this data is that there is now a slight decline in birth rates at a global level."

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