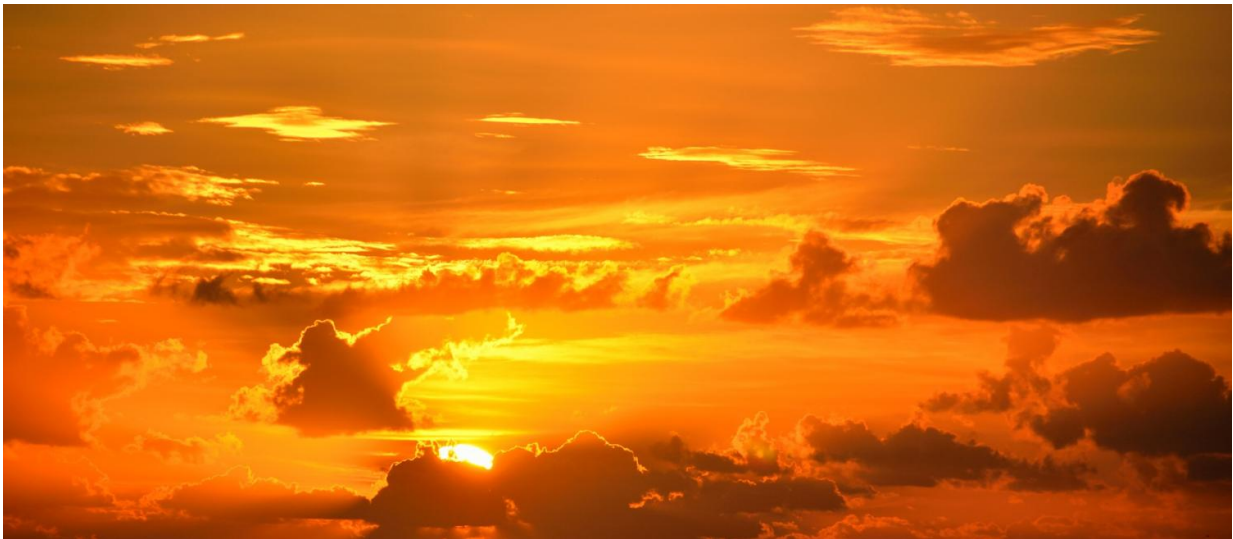


11,000 scientists warn: climate change isn't just about temperature

November 6 2019, by Thomas Newsome



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Exactly 40 years ago, a small group of scientists met at the world's first climate conference in Geneva. They raised the alarm about unnerving climate trends.

Today, more than 11,000 scientists have [co-signed a letter in the journal BioScience](#), calling for urgently necessary action on climate.

This is the largest number of scientists to explicitly support a publication calling for climate action. They come from many different fields,

reflecting the harm our changing climate is doing to every part of the natural world.

Why no change?

If you're thinking not much has changed in the past 40 years, you might be right. Globally, [greenhouse gas emissions](#) are still rising, with increasingly damaging effects.

Much of the focus to date has been on tracking global surface temperatures. This makes sense, as goals like "prevent 2°C of warming" create a relatively simple and easy-to-communicate message.

However, there's more to [climate change](#) than global temperature.

In our paper, we track a broader set of indicators to convey the effects of human activities on greenhouse gas emissions, and the consequent impacts on climate, our environment, and society.

The indicators include human population growth, tree cover loss, fertility rates, [fossil fuel subsidies](#), glacier thickness, and frequency of extreme weather events. All are linked to climate change.

Troubling signs over the past 40 years

Profoundly [troubling signs](#) linked to human activities include sustained increases in human and ruminant populations, global tree cover loss, [fossil fuel consumption](#), number of plane passengers, and carbon dioxide emissions.

The concurrent trends on the actual impacts of climate change are equally troubling. Sea ice is rapidly disappearing, and ocean heat, ocean

acidity, sea level, and extreme weather events are [all trending upwards](#).

These trends need to be closely monitored to assess how we are responding to the climate emergency. Any one of them could hit a point of no return, creating a catastrophic feedback loop that could make more regions of Earth uninhabitable.

The need for better reporting

We urge national governments to report on how their own results are trending. Our indicators will allow policymakers and the public to better understand the magnitude of this crisis, track progress, and realign priorities to alleviate climate change.

Some of the indicators could even be presented monthly to the public during news broadcasts, as they are arguably more important than the trends in the stock exchange.

It's not too late to act

In our paper we suggest six critical and interrelated steps that governments, and the rest of humanity, can take to lessen the worst effects of climate change:

- prioritise [energy efficiency](#), and replace fossil fuels with low-carbon renewable energy sources,
- reduce emissions of short-lived pollutants like methane and soot,
- protect and restore the Earth's ecosystems by curbing land clearing,
- reduce our meat consumption,
- move away from unsustainable ideas of ever-increasing economic and resource consumption, and
- stabilise and ideally, gradually [reduce human populations](#) while

improving human well-being.

We recognise that many of these recommendations are not new. But mitigating and adapting to climate change will entail major transformations across all six areas.

How can you help?

Individuals can make a difference by reducing [meat consumption](#), voting for political parties and members of government bodies who have clear climate change policies, rejecting fossil fuels where possible, using renewable and clean sources of energy, reducing car and air travel, and joining citizen movements.

Lots of small changes will help inspire larger scale shifts in policy and economic frameworks.

We are encouraged by a recent global surge of concern. Some governments are declaring [climate](#) emergencies. Grassroots citizen movements are demanding change.

As scientists, we urge widespread use of our indicators to track how changes across the six areas above will start to change our ecosystem trajectories.

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