

# Learn from the pandemic to prevent environmental catastrophe, scientists argue

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The dynamics of the SARS-CoV-2 pandemic share "striking similarities" with the twin environmental crises of global heating and species extinction, argue a team of scientists and policy experts from the

UK and US.

They say that lessons learned the hard way in containing COVID-19—the need for early intervention to reduce death and [economic damage](#); the curbing of some aspects of people's lifestyles for the good of all of us—should also be at the heart of averting environmental catastrophe.

"We've seen the consequences of delayed action in the fight against COVID-19. The consequences of continued inaction in the face of catastrophic [climate](#) change and mass extinction are too grave to contemplate," said Prof Andrew Balmford, from the University of Cambridge's Department of Zoology.

Writing in the journal *Current Biology*, Balmford and colleagues argue that the spread of coronavirus shares common characteristics with both global heating and the impending "sixth [mass extinction](#)".

For example, each new COVID-19 case can spawn others and so lead to escalating infection rates, just as hotter climates alter ecosystems, increasing emissions of the greenhouse gases that cause warming. "Both are dangerous feedback loops," argue the scientists.

The team also draw comparisons of what they term "lagged impacts". For coronavirus, the delay—or lag—before symptoms materialise means infected people spread the disease long before they feel effects and change behaviour.

The researchers equate this with the lag between our destruction of habitat and eventual [species extinction](#), as well as lags between the emissions we pump out and the full effects of global heating, such as sea-level rise. As with viral infection, behaviour change may come too late.

"Like the twin crises of extinction and climate, the SARS-CoV-2 pandemic might have seemed like a distant problem at first, one far removed from most people's [everyday lives](#)," said coauthor Ben Balmford from the University of Exeter.

"But left unchecked for too long, the disease has forced major changes to the way we live. The same will be true of the environmental devastation we are causing, except the consequences could be truly irreversible."

The authors find parallels in the indifference that has long greeted warnings from the scientific community about both new zoonotic diseases and human-induced shifts in climate and habitat.

"The lagged impacts, feedback loops and complex dynamics of pandemics and environmental crises mean that identifying and responding to these challenges requires governments to listen to independent scientists," said Dr. Brendan Fisher, a coauthor from the University of Vermont. "Such voices have been tragically ignored."

The similarities between the SARS-CoV-2 pandemic and environmental disaster lie not just in their nature but also in their mitigation, say the scientists, who write that "there is no substitute for early action".

The researchers include an analysis of the timing of lockdown across OECD countries, and conclude that if it had come just a week earlier then around 17,000 lives in the UK (up to 21 May 2020) would have been saved, and nearly 45,000 in the US.

They say that, just as delayed lockdown cost thousands of lives, delayed climate action that gives us 2oC of warming rather than 1.5 will expose an estimated extra 62-457 million people—mainly the world's poorest—to "multi-sector climate risks" such as drought, flooding and

famine.

Similarly, conservation programmes are less likely to succeed the longer they are delayed. "As wilderness disappears we see an accelerating feedback loop, as a given loss of habitat causes ever-greater species loss," explained Princeton Professor and co-author David Wilcove.

The scientists point out that delayed action resulting in more COVID-19 deaths will also cost those nations more in economic growth, according to IMF estimates, just as hotter and more disruptive climates will curtail economic prosperity.

Intervening to contain both the pandemic and the environmental crises requires decision-makers and citizens to act in the interests of society as a whole, argue the researchers.

"In the COVID-19 crisis we've seen young and working age people sacrificing education, income and social connection primarily for the benefit of older and more vulnerable people," said co-author Prof Dame Georgina Mace from UCL.

"To stem the impacts of climate change and address biodiversity loss, wealthier and older adults will have to forgo short-term material extravagance for the benefit of the present-day poor and future generations. It's time to keep our end of the social bargain," Mace said.

Cambridge's Andrew Balmford added: "Scientists are not inventing these environmental threats, just as they weren't inventing the threat of a pandemic such as COVID-19. They are real, and they are upon us."

**More information:** Andrew Balmford et al, COVID-19: Analogues and lessons for tackling the extinction and climate crises, *Current Biology* (2020). [DOI: 10.1016/j.cub.2020.06.084](https://doi.org/10.1016/j.cub.2020.06.084)

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