

Opinion **Climate change**

Clever science alone cannot prevent the next mass extinction

We must accept that having more children is not in our interest as a species

CAMILLA CAVENDISH

Camilla Cavendish YESTERDAY

We cannot win a war against water. So says the chair of the UK Environment Agency, warning that climate change may force homeowners in Britain to [retreat from the coasts](#).

Nor should we persist in our war against nature more broadly. That is the message of the UN's sober but devastating [report into biodiversity](#), which warns that human overpopulation is harming the very plant and animal species on which we rely for survival.

It's hard to get one's head around the [UN forecast](#) that up to 1m of the planet's estimated 8m species now face extinction. The assessment says that our dominant species is now eroding the ecosystems that form the foundations of our economies and our quality of life. The debate is no longer simply about ethics and cuddly polar bears. It has become about self-interest and the need to preserve those ugly but essential creatures, insects and nematodes, which are vital to pollination and soil fertility. Perhaps, as a result, it will gain more traction.

A "background" level of extinction, an ebb and flow of species, is perfectly normal. Some species die out because they are poorly adapted; some vanish without us ever having been aware of their struggle for survival. But mass extinctions are different — they swallow both the fit and the unfit. Five such events have been especially devastating. The most recent was at the end of the Cretaceous period, 65m years ago. It wiped out not just the dinosaurs, but 75 per cent of all species.

Now we face what some scientists believe will be the sixth mass extinction — one brought about by humans. The forecasts are not at Cretaceous levels yet, but they are deeply alarming. Scientists have catalogued only a small fraction of all species. We know far too little about which bricks in the pile might, if removed, topple whole structures.

Clever science cannot turn this tide. Far-sighted organisations have already created gene banks, seed banks and zoological reserves. But, in the long term, species can only survive in the wild. Complex ecosystems are extremely hard to recreate once damaged.

In her book [The Sixth Extinction: An Unnatural History](#), Elizabeth Kolbert has vividly

described the vain struggles to save species ahead of the extinction wave. She writes of ecologists visiting Panama and Costa Rica, trying and failing to salvage the golden toad and 19 other amphibians. She has trudged with biologists through the Adirondacks in the US, where once commonplace bats were suddenly dying. She describes ecosystems upended not only by farming, logging and fishing, but also by trade, travel and science. Doctors using the African clawed frog to develop pregnancy tests have unwittingly spread a [fatal fungal disease](#) among frog species in Central America.

What is striking about these experiences is how swiftly tipping points can be reached — and how powerless we are to respond. We are out of our depth trying to fathom or control the biosphere's complex connections.

It is hard to disentangle the threat to species from climate change, for example, because each problem exacerbates the other. Species find it harder to survive as temperatures warm and a loss of peat bogs, rainforests and other carbon sinks accelerate the volume of greenhouse gases in the atmosphere. According to the UN report, coral reefs could shrink by at least 70 per cent if the world warms by a further 0.5C — or virtually disappear by 1C.

Our slowness to appreciate the danger seems strange, when scientists have been warning of it for decades, and when human impact is so glaring. The UN says that about three-quarters of the land, two-thirds of our oceans and 85 per cent of wetlands have already been altered or lost. Yet modern life is increasingly disconnected from nature.

We move to cities and entertain ourselves indoors. Fewer people notice depleted hedgerows, or that the swallows no longer nest. We waste food without knowing its provenance. We used to talk about “food miles” — how far products had travelled. Now, we are inured to supermarket shelves of vegetables shipped around the globe in all seasons.

These issues are almost too big to think clearly about. But we are poorly prepared partly because we long ago internalised the fact that the [global population](#) increase in the 20th century has been three times the level it had reached during all of previous human history, from 1.5bn in 1900, to 6.1bn in 2000. The population growth rate peaked in the 1960s, but the total is still growing, partly because sub-Saharan Africa is not following other continents in the trend of falling birth rates. There is some disagreement between [the UN forecast](#) of global population growing to 11bn in 2100, and that of the International Institute for Applied Systems Analysis, which predicts the global population will [peak at 9.4bn](#) in 2070 and then decline. Whichever view you favour, it will clearly be a priority to help African countries adopt education programmes to slow population growth.

Having more children is not in our interest as a species. But many governments worry about the impact of falling fertility on their own nation's gross domestic product: [Germany](#),

[Singapore](#), [France](#) and [Poland](#) pay baby bonuses to encourage couples to have children — though a rather tasteless Danish campaign, urging couples to “[Do It For Denmark](#)”, doesn’t seem to have worked.

It is irresponsible to welcome the UN report with warm words, while promoting increases in population. We started a war with nature to survive. But if we do not call a truce now, the losers will be us.

The writer, a senior fellow at Harvard University, is the author of ‘Extra Time: Ten Lessons For An Ageing World’

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