

# Earth 'at risk of ecological breakdown'

November 7 2016

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A composite image of the Western hemisphere of the Earth. Credit: NASA

The Earth is risking a major ecological breakdown that could eventually render it largely uninhabitable.

This is one of the warnings contained in "Surviving the 21st Century," a powerful new book released recently by global science publisher Springer International.

Our combined actions may be leading to "...a gross ecological breakdown that will strike humanity harder than anything in our experience," the book cautions.

Author and science writer Julian Cribb says "In the past week alone has come news that global populations of fish, birds, mammals, amphibians and reptiles declined by 58 per cent between 1970 and 2012. From 20-30 per cent of known species now appear at risk of extinction."

"This is an extermination of life on Earth without precedent. The [human impact](#) is on track to exceed the catastrophe that took out the dinosaurs.

"Many people don't realise it, but our own fate is completely bound up with these other creatures, plants and organisms we heedlessly destroy. They provide the clean air and water, the food, the nutrient recycling, the de-toxing, the medications, the clothing and timber that we ourselves need for survival.

"Humans are now engaged in demolishing our own home, brick by brick. Every dollar we spend on food or [material goods](#) sends a tiny, almost-imperceptible signal down long industrial and market chains to accelerate the devastation.

"Together those signals are causing the very systems we ourselves need for survival to break down, as forests fall, deserts spread and oceans acidify."

A recent study by Princeton University found oxygen levels in the Earth's atmosphere have fallen by 0.1 per cent in the past 100 years,

probably due to land clearing, [ocean acidification](#) and burning of [fossil fuels](#). "Though it is still a small signal, it is another indicator of our ability to disrupt the Earth's life-support system," Cribb says.

The world is currently burning enough fossil fuels to raise its temperature by 4-5 degrees Celsius by 2100 – an event that will probably prove unsurvivable for the majority of large wild animals, and most humans too. "Yet we're still arguing about whether its real and what we should do," he adds.

"Today humanity is facing ten huge existential threats, all of our own making. The good news is that we have the brains and the technologies to solve them – and to prosper from their solution.

"However we currently lack the collective will, the ability to co-operate and the institutions to save ourselves. That is a worry."

Drawing on the world's leading scientific thinkers, "Surviving the 21st Century" identifies systemic solutions for all of the ten major threats facing humanity, and actions which we must take both as a species and as individuals.

"This is absolutely a book about solutions – and opportunities. It is about hope – though a hope that is well-founded, on fact and science, not simply on belief, ignorance or wishful thinking. It's about understanding and facing up to the things which imperil our future, so that we can overcome them," Cribb says.

In the book he argues that by moving food production back into cities, using advanced technologies and recycling of water and nutrients, humanity can re-wild 24 million square kilometres of the Earth's surface. This would help to end the 'sixth extinction' now taking place as well as locking up huge amounts of carbon causing climate change. It would

create new jobs and new industries for both urban and rural populations.

**More information:** Julian Cribb. Surviving the 21st Century: Humanity's Ten Great Challenges and How We Can Overcome Them. ISBN: 978-3-319-41269-6 (Print) 978-3-319-41270-2 (Online) [link.springer.com/book/10.1007/978-3-319-41270-2](https://link.springer.com/book/10.1007/978-3-319-41270-2)

Provided by Springer International

Citation: Earth 'at risk of ecological breakdown' (2016, November 7) retrieved 26 April 2024 from <https://phys.org/news/2016-11-earth-ecological-breakdown.html>

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