

Natural systems in Australia are unraveling. If they collapse, human society could too

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Credit: AI-generated image ([disclaimer](#))

In the long-delayed [State of the Environment](#) report released this week, there is one terrifying sentence: "Environmental degradation is now considered a threat to humanity, which could bring about societal collapses."

Hyperbole? Sadly not.

Climate change has already warmed Australia 1.4°C and changed rainfall in some regions. Natural ecosystems are already struggling from [land clearing](#), [intensive agriculture](#), soil degradation and poor water management. Climate changes and related sea level rise are making this worse. It's a mistake to think this won't affect us.

It can be easy to live in cities and believe you're somehow walled off from environmental disaster. This is a fiction. Healthy environments provide [clean air](#), clean food, [clean water](#) and a safe place to live—all essential to a [healthy life](#).

Our lives will not be easy if we continue eating away at the ecosystems that prop us up. It is no exaggeration to say societal collapse is a possible outcome.

Why is the news so bad?

Every day, we rely on [services provided](#) by healthy ecosystems.

The long-delayed report shows the sobering consequences of willful disregard for environmental protection and focusing on natural resource exploitation. Burning [fossil fuels](#) causes [climate change](#) and ocean acidification. Land clearing destroys existing ecosystems. Intensive agriculture reduces biodiversity.

Australia's fragile ecosystems are acutely vulnerable to decades of environmental disregard. Swathes of the continent are increasingly flipping from extreme drought and devastating fires to unprecedented floods under highly variable rainfall patterns. In the last few years, unprecedented bushfires and floods have forced thousands out of their homes. This worsens housing shortages, income insecurity and [human](#)

[health](#).

Our land temperatures have increased by [1.44°C since 1910](#). Very high monthly maximum temperatures have [increased sixfold](#) over the 60-year period since 1960. These effects have come from a 1.1°C rise globally. We're still [on track for 3°C](#). This is highly problematic as [humans have limited capacity](#) to withstand heat exposure, and ecosystems suffer in the heat.

4 things a well-functioning environment does for us

1. Clean food

Food systems require [intact ecosystems](#) to remain productive, without which [crop yields](#) and rural incomes drop. Hunger can ensue. The consequences of food shortages to date in Australia have been small compared with [other countries](#). But with repeated intense droughts, heatwaves, fires and floods these shortages could rapidly escalate. In 2008, we saw riots and social upheaval across multiple continents. A key cause was the [global food crisis](#). This year, food prices have skyrocketed again in the wake of [Russia's invasion](#) of Ukraine.

2. Clean air

Australia has traditionally had some of the cleanest air in the world. But smoke from the megafires over the [Black Summer of 2019–2020](#) caused 417 deaths, as well as thousands of hospital admissions. Health costs were estimated at almost \$A2 billion. People lost days at work and at school, and some will have ongoing health problems. Climate change is predicted to steadily [worsen our bushfires](#).

3. Adequate clean water

Water is essential for human life, health and activity, and the healthy functioning of ecosystems. As the driest inhabited continent, Australia's water is one of our most valuable resources. Unfortunately, it is often [poorly managed](#). Many Indigenous communities [do not have](#) clean, healthy drinking water, while dozens of non-Indigenous communities had to [truck water](#) in during the last drought.

Land clearing disrupts ecosystems, threatens biodiversity and can alter stream flow and water quality. Run-off from agriculture damages aquatic [ecosystems](#) and encourages algal blooms and species loss. Again, this isn't just pain for the environment.

The Murray–Darling Basin is home to more than 2.2 million people and more than [four million](#) people depend on these rivers for their water. Already, the basin's rivers and catchments are rated as poor or very poor.

4. Livable climate

Climate change is pushing the south-west of Western Australia into a new normal of [near-permanent drought](#). This has already [massively reduced](#) the inflows into Perth's dams, requiring more use of groundwater and desalination. South-eastern Australia is also drying, stressing plants and animals. We're already seeing agricultural [productivity dropping](#). As parts of Australia dry out, it's hard to see how drought-prone towns and regions will remain viable.

What will happen if we don't repair the environment?

Humans can only [withstand heat](#) up until a point. After that, exposure to extreme heat leads to damage to tissues and organs, and, eventually damage and death. The same goes for the [livestock](#) we rely on, which are at risk of serious health threats from heat. Heat hits weight gain, milk

production and reproductive success.

The profitability of broadacre crops such as wheat and barley is an estimated [22% less since 2000](#) than it would have been if climate change wasn't happening. In turn, this is leaving many Australians in rural and regional communities facing worsening incomes and health.

Irrigation water is less reliable, while increases in temperature reduce both quantity and quality of fruit and vegetable crops. The [nutritional value](#) of foods also declines under extreme heat.

In short, we can no longer pretend we live in a world walled off from nature. Damaging nature damages humans. Think of the cartoon trope where a character cuts off the tree branch they're sitting on.

We have created these problems collectively. To avoid social upheaval, we have to [repair the damage](#)—together.

The [federal government's newly announced](#) Environmental Protection Agency is a good start. It must be adequately resourced and have powers to enforce compliance.

Beyond that, we urgently need coordinated policies, sound supporting science and effective data systems, prioritized actions, commitment and investment and community support.

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