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The Flickering

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Earth systems are being rushed towards their tipping points by governments that offer us nothing but chaos.

By George Monbiot, published in the Guardian 31st October 2023

Can you see it yet? The Earth systems horizon – the point at which our planetary systems tip into a new equilibrium, hostile to most lifeforms? I think we can. The sudden acceleration of environmental crises we have seen this year, coupled with the strategic uselessness of powerful governments, rushes us towards the point of no return.

We're told we are [living through](#) the sixth mass extinction. But even this is a euphemism. We call such events mass extinctions because the most visible sign of the five previous catastrophes of the Phanerozoic era (since animals with hard body parts evolved) is the disappearance of fossils from the rocks. But their vanishing was a result of something even bigger. Mass extinction is a symptom of Earth systems collapse.

In the most extreme case, the [Permo-Triassic event](#), 252m years ago – when 90% of species were snuffed out – planetary temperatures spiked, the circulation of water around the globe more or less stopped, the soil was stripped from the land, deserts spread across much of the planet's surface and the oceans drastically deoxygenated and acidified. In other words, Earth systems tipped into a new state that was uninhabitable for most of the species they had sustained.

What we are living through today, unless sudden and drastic action is taken by us and our governments, is the sixth great Earth systems collapse.

In many Earth systems, we now see the kind of instability – systems theorists call it [flickering](#) – that might suggest they are approaching tipping points. A paper published this year [proposes that](#) the total loss of late-summer sea ice in the Arctic is now baked in, and could happen as early as the 2030s. This, in turn, is likely to trigger even more extreme

weather events in the northern hemisphere through the weakening of the jet stream.

In the Antarctic, the melting of sea ice has **accelerated drastically** across the southern summer this year, after which it strangely **failed to recover** during the southern winter. This suggests an accelerating change of state, which could lead to the cascading collapse of the freshwater ice shelves perched above the sea ice, with **catastrophic results** for rises in global sea levels.

The melting, in turn, appears to be affecting circulation of currents in the Southern Ocean, which has **slowed** by about 30% since the 1990s. This impedes the transfer of heat and cold and reduces oxygenation. There are **similar impacts** in the northern hemisphere, where Arctic ice melt has reduced the Atlantic's circulation.

New research in the Amazon **has found** what scientists call “precursor signals” of “an approaching critical transition”. A combination of deforestation and climate breakdown could cut off the circulation of rainfall in the basin, triggering a rapid flip from rainforest to savannah.

The vast carbon sinks in tropical wetlands and permafrost peatlands in the Arctic also seem to be approaching a tipping point, **suggested by** sudden spikes of methane, **carbon dioxide and nitrous oxide**. These are among the world's most important stores of carbon, but through classic self-accelerating feedback, some of them are now **turning into** powerful sources of greenhouse gases.

July this year was the **hottest month ever recorded**. September **broke** the previous record for that month by a massive 0.5°C. A paper published last year **explains how** this climate breakdown could trigger societal collapse. For instance, in less than 50 years a **third of the world's people** could be living in places as hot as the hottest parts of the Sahara are today, many of them in regions that are already highly politically unstable. Even that is not the worst of it. One possible outcome of the rising carbon dioxide concentrations this century is the sudden loss of stratocumulus cloud decks, **causing** about 8°C of extra surface heating.

As in previous great Earth systems collapses, we see these impacts reflected in the loss of species. A recent paper **reveals that** 48% of the world's species are declining in population size, while only 3% are rising. Far more wildlife could be heading towards extinction than previously estimated. If species loss is a symptom of systemic collapse, we might already be living on borrowed time.

None of this is certain, unless we make it so. But far from stepping up to confront the greatest crisis humanity has ever faced, our governments accelerate towards the horizon. For instance, Rishi Sunak, hitherto a mere trip hazard in the UK's political history, now seems to have discovered his purpose: trashing the planet on behalf of corporate power. Government sources say he will use next week's king's speech to [redouble his attack](#) on green policies. On Monday, his government [announced](#) 27 new North Sea oil and gas licences. On the same day, a study in Nature Climate Change [revealed](#) that the remaining carbon budget – the net amount of carbon dioxide humans can still emit to retain a 50% chance of staying within 1.5°C of global heating – will be exhausted in just six years of business as usual. Only an emergency decision to leave fossil fuels in the ground is likely to prevent this temperature threshold being breached.

Every hour is now an “if only” moment: offering a better chance of avoiding collapse than the hour that follows. Grim as our time on Earth is, future generations will look back on it as a golden age. A golden age of wildlife, of mild weather, stability, prosperity, of opportunities to act. Our living world is a grey shadow of what it once was, but a vibrant paradise in comparison with what it will be. Unless, unless.

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