



Mark Carwardine's **AT A GLANCE...**

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THE SIXTH EXTINCTION

WHAT IS THE SIXTH EXTINCTION?

Over the last half a billion years, life on Earth has been nearly wiped out five times. These mass extinctions were caused by climate change, volcanic eruptions and, 65m years ago, a giant asteroid smashing into the planet. Many experts believe that the annihilation of wildlife we are witnessing today means that we are in the middle of a sixth mass extinction. What makes this one different is that we are to blame.

DOES EVERYONE AGREE?

No. Some scientists argue that we are not yet in the throes of a sixth mass extinction, though even most doubters agree that we are on the brink. What is beyond dispute is that we are living in a time of very elevated extinction rates. The great fear is that mass extinctions are believed to unfold gradually, and then suddenly. So we'll bump along where everything seems moderately okay and then, suddenly, we'll be past the tipping point.

ISN'T EXTINCTION NATURAL?

Yes. Some 99.9 per cent of all species that have ever lived are now extinct. First, there is 'background extinction' – the tick, tick, tick of species gradually disappearing through natural selection because they succumb to competition, as Darwin predicted in his theory of evolution. Second, there are mass extinctions – periods in the Earth's history when

a significant proportion of species are wiped out – when luck, not competitive inferiority or superiority, plays a fundamental role in determining which species survive and which don't.

SO WHAT'S CAUSING THE SIXTH MASS EXTINCTION?

Quite simply, human overpopulation and over-consumption. There were 2.5 billion people on the planet in 1950, there are 7.6 billion today, and there are expected to be more than 9 billion by 2050. The more people, the greater the pressure from habitat destruction, direct exploitation, pollution, the spread of alien species and global warming.

HOW MANY SPECIES ARE WE LOSING?

Estimates vary widely. The Millennium Ecosystem Assessment, which involved 1,360 experts worldwide, estimated an extinction rate of 24 species a day. Scientists at the UN Convention on Biological Diversity recently concluded that the figure should be 150 per day. Other estimates are much higher – between 1,000 and 10,000 times the 'natural' extinction rate (which is believed to be roughly two out of every million species disappearing per year – so slow that speciation and extinction more or less equal out). However, there is



An asteroid caused the extinction of the dinosaurs 65m years ago.

general agreement that extinction rates have reached levels unparalleled since the dinosaurs died out 65 million years ago – with no sign of a slowing down.

WHY DOES IT MATTER?

A study published in July 2017 in *Proceedings of the National Academy of Sciences* estimates that – shockingly – we have lost more than half of all individual animals since 1970. The scientists found that more than a billion populations of mammals, birds, reptiles and amphibians have been lost all over the planet. It's not just about losing endangered species – we are swinging a wrecking ball through the Earth's biosphere.

WILL WE BE AMONG THE SURVIVORS?

When a mass extinction occurs, it takes millions or tens of millions of years for life to recover and, when it does, it generally has a new cast of characters. Humans are very adaptable, but no one knows if we might be among them. Even if we can survive, what sort of world would we be living in? And – this is the big question – do we really want to keep going down the same trajectory to find out? 🐾

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MARK CARWARDINE is a frustrated and frank conservationist.

Every month he demystifies some of the most important issues affecting the world's wildlife and assesses the organisations that protect it.

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➕ FIND OUT MORE

Read *The Sixth Extinction* by Elizabeth Kolbert.