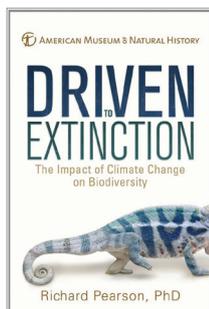


Climate change, biodiversity and extinction risk

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Driven to extinction: The impact of climate change on biodiversity

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Richard Pearson

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Warnings about the drastic impacts of climate change on the natural world are nothing new. In an era of sensationalised media and half-truths surrounding the climate change 'debacle', society is in need of hard evidence. *Driven to Extinction* strives to give us just that. Be warned: the evidence tells an uncomfortable story.

Drawing extensively on the scientific literature, the book presents a timely overview of what science can tell us about climate change and its impact on the earth's plants and animals. From poleward and upslope shifts in the distribution of species, to advanced spring phenology, the reader is left convinced of the fingerprint of human-mediated changes in climate on our planet's biodiversity. But are we really facing an impending disaster of species loss? Pearson's level-headed approach to tackling this question is commendable, and in many ways this book presents an unbiased answer.

The foundation and direction of the book is laid in the opening chapter, which argues that the best representation of our current understanding of the matter points to the reality of contemporary climate change and implicates humans in driving the process. The fragility of the relationship between particular species and climate, the significance of contemporary climate change on the broader geological timescale and the role of warming in desynchronising the phenology of closely dependent species are explored in the next three chapters. Chapter 6 looks into the future, using warming scenarios and likely species responses to predict possible rates of extinction in the coming century. Here we are introduced to some alarming numbers – with recent research suggesting that as many as one-quarter of our planet's species may be committed to extinction within the century.

Following this stark picture, Pearson demonstrates equanimity by giving extensive consideration to some alternatives to widespread species loss in the future. It is possible that some species may adapt to warming and change, that complex communities of species may allow for compensation and that drastic ecosystem-level phase shifts in response to climate may not be all bad. Notwithstanding the consideration given to these alternatives, Pearson expresses doubt as to whether these alternatives have the capacity to mitigate the effects of rapid climate change across all species and systems.

Driven to Extinction must be lauded for transforming information from over 150 scientific articles, books and reports into a coherent and captivating tale. Brimming with examples of demonstrated effects on species, communities and ecosystems, the book presents a meticulous exploration of the length and breadth of how climate change is affecting life on our planet and how it might continue doing so. All of this information is condensed into a simply written and easy-to-understand account that just about anyone will be able to appreciate. In short, Pearson has made information from the scientific research and literature freely accessible to the layperson, typifying the purpose of popular science literature. The book is available in softcover, hardcover and ebook formats. The hardcover edition includes full-colour photographs of some of the extraordinary species used as examples in the text.

Despite its substance, the book could have been improved in some ways. The sceptic may notice Pearson's susceptibility to the confirmation trap: he cites and supports only those sources of information that support the overall argument of the book and downplays the alternatives. Furthermore, the oversimplified explanations, broad generalisations and emotive language will perhaps make for a less satisfying read for the expert in the field. Despite these minor criticisms, the book achieves its self-proclaimed purpose: to demonstrate the severe threat that climate change poses for many species.

So what can we do about climate change? The final chapter acknowledges that climate change acts in concert with other important threats to biodiversity such as habitat loss. Conservation strategies must commensurately emphasise the preservation of larger protected areas and corridors that buffer against the effects of climate change. At the end of the day, however, we must address the root of the problem: the notorious rise in greenhouse gases. Although to achieve this will involve globally binding policies and action, the final sentence of the book lays emphasis on the role of the individual: 'It is up to you as a citizen to help chart our course for the future.'

Every responsible citizen should take the time to read this book.

