be able to apply mathematics and the models to be an effective data analyst, one also has to acquire a feel for data and how it interacts with the models, and there is a lot of statistical lore to help. Earl McCoy’s chapter in the book provides a good discussion of the ecological aspects of this messiness, but in general statistical messiness is under-represented in this book.

Despite my misgivings, there is still a lot to be gained from reading this book. It provides some decent overviews of different contemporary methods and models that can be used by ecologists who want to analyse their own (or other ecologists’) data. But where it (like, in fairness, many other statistics books) falls short is in helping ecologists understand their experiment and data in the way that a statistician would. This book will be helpful for ecologists wanting to apply statistics to their data, but if they want to understand what they are doing, they might have to wait for the play to come.

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**The past as ecological prelude**


*Key words:* Anthropocene; biodiversity conservation; ecosystem management; long-term data; paleoecology.

This lean volume—178 pages of text divided into eight chapters, followed by 29 pages of references—clearly lays out something long evident to many ecologists: the importance of understanding the deep past if we are to navigate the transition from present to future with as much insight as possible. This book, then, represents a primer on the relevance of paleoecology to conservation biology. More specifically, Gillson clarifies that the book’s aim is “to explore the role of long-term data from palaeoecology, historical ecology, and other disciplines to the emerging science of ecosystem management,” or, worded slightly differently, “to explore how long-term data can contribute to conservation philosophy and practice.” She concludes that “long-term data can be used to define the historic range of variability” and thresholds for ecosystem shifts, or (a bit more vaguely), that insights from palaeoecology “can help in building resilience and adaptive capacity of the transient landscapes of the Anthropocene.”

The book’s basic notion—that we can better understand current and future ecological changes if we understand past changes—is inarguable, and worth reiterating. Gillson does a fine job of making this point, and chooses useful case studies to provide nuance.

The first and final chapters introduce and summarize, respectively, the book’s primary themes, while each of the six central chapters describes a separate conservation dilemma or controversy, including abundant examples of how paleoecological perspective can deepen current dialogue. “The Conservation Paradox,” name sake of the opening chapter, is described thus: “the paradox of new conservation is that we seek to preserve systems that are incessantly in flux, and conservation goals are moving targets.” (More on the alleged newness of this in a moment.) Focal topics of the central chapters are: conservation of African elephants and their savanna habitat; re-wilding strategies in response to the extinction crisis; fire management; climate change; ecosystem services and “sustainability;” the relationship of nature and cultures in the Anthropocene. Along the way, the author explores philosophical notions—e.g., what is “natural”; what is wildness?—as they relate to specific case studies. Each chapter concludes with a 1–2 page summary of its main points.

As for the book’s potential readership, this could serve as an excellent text for a graduate or advanced undergraduate seminar in conservation biology, environmental policy, or, ideally, those linking the two (Gillson correctly asserts that “relatively few conservation decisions… can be made on purely scientific grounds.” The book could also be useful for conservation professionals and faculty looking for a handy distillation of case studies and relevant literature.

The prose is generally clear and easy to follow, and topics are well chosen (what ecology or conservation biology seminar couldn’t latch onto at least a couple of those chapter topics?). Many of the figures and tables are well-designed, and could be quite useful for teaching. The book’s international emphasis, and wide-ranging geographic examples are strengths. For example, the chapter on fire management includes examples from New Zealand, North America, Madagascar, Australia, and elsewhere, and the chapter on re-wilding describes examples from Siberia and North America, as well as separate stories from mainland and coastal Europe. Almost any reader is likely to find an interesting example that was previously unfamiliar.
There are some minor errors, which, for some readers, may be aggravating. For example, I found a few typos, as well as (in at least one case) presentation of papers written by multiple authors as if the senior author was solitary. More substantively, the generally well-stocked references section felt a bit self-referential—there are more than 20 references by Gillson and her co-authors. Beginning with the title, reiterated in the first sentence, and permeating the entire volume is the presumption that we are now living in a new geologic epoch, “the Anthropocene.” Yet the deeply controversial nature of this idea is never addressed. In the end, my greatest concern was really more a sense of puzzlement: why were the central ideas of the book—that paleoecology can yield important insights to inform current and future conservation decisions, and that conservation targets are ever-shifting—presented as new? The importance of paleoecology to conservation biology was articulated, for example, in a key paper more than a quarter-century ago. (Hunter, M. L., Jr, G. Jacobson, and T. Webb. 1988. Paleoecology and the coarse-filter approach to maintaining biological diversity. Conservation Biology 2:375–385; this paper, by the way, was not cited.) However, these are relatively minor misgivings; the book’s strengths far outweigh any such weaknesses. Gillson does a laudable job explaining how “environmental archives”—the treasure trove of insights provided by paleoecologists—can illuminate current conservation issues, shedding a rare light on the path forward.

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**Ghost fire of the North: the historical account of a lost boreal forest mega-fire**


*Key words: boreal fire; fire management; fire policy; mega-fire; smoke plume.*

The Chinchaga River Fire was the largest of a complex of fires that burned nearly 3 million hectares of Canada’s boreal forest during the summer of 1950. At 1.4 million hectares in extent, this remains the largest wildfire in North American recorded history. *The Chinchaga Firestorm* sparks new life in this fire by describing this multi-faceted powerful event with the technical focus and depth of a scientific investigation woven into an engaging narrative drawn from historical archives and personal accounts. Simultaneously a compelling read and rich source of knowledge, Tymstra’s book is equally stimulating for a general audience and for seasoned environmental scientists, managers, and policy makers.

This historical ecology volume is organized into eight chapters, with endnotes and an extensive bibliography. The opening chapters present the story of Frank “Trapper” LaFoy, the lone forest ranger for the Peace River Division of the Northern Alberta Forest District in 1950. As the story develops the author introduces us to other members of the Keg River community as they scramble to protect their homesteads, threatened by the expanding Chinchaga River Firestorm. These personal accounts emotionally connect the reader to this event, which is after all a story about people, places and our human relationship with the natural world. In the end, LaFoy’s tactical decisions were arguably responsible for protecting his community from imminent destruction. Tymstra effectively utilizes a humanistic perspective to engage the reader in what could otherwise become a pithy fire science and management discussion, especially when explaining the complex science behind the Great Smoke Pall.

From September 20–22, 1950, high winds spread the Chinchaga River Fire across more forest than any other weather period that summer, generating so much smoke the US Weather Bureau referred to it as the Great Smoke Pall. A truly transcontinental event, by September 24, 1950, the smoke was so dense and widespread that the day became known as Black Sunday across Ontario, Canada and into the states of Indiana, Pennsylvania, and New York. In fact, the Great Smoke Pall traveled as far and wide as did topsoil during the 1930s Dust Bowl on the North American prairie system, and gave rise to rumors of atomic explosions, war with Russia, and the end of the world. Chickens went to roost by midday and street lamps and automobile headlights lit the roads. One might find the sheer extent of Black Sunday surprising, if not surreal, until we learn of 17 other incidents with similar impacts in North America’s recorded history. Through this discussion the author reminds us that impacts from powerful events such as the *Chinchaga Firestorm* are never limited to their immediately visible boundary.

One would be remiss to not discuss the most unique aspect of this story—the optical phenomenon whereby the