

Book reviews

The Hidden Universe: Adventures in Biodiversity by Alexandre Antonelli (2022) 288 pp., Ebury Press/Penguin Random House, London, UK. ISBN 978-1-5291-0916-0 (hbk), GBP 14.99.

Globally, biodiversity is in crisis. Following centuries of overexploitation and the industrialization of human society, over 1 million species are estimated to be at risk of extinction (Purvis, 2019) and many ecosystems are in severe decline. These have massive implications for billions of people, affecting our food and water supply as well as our health and cultural heritage. After more than 2 years of delays because of the Covid-19 pandemic, in December 2022 world leaders met in Montreal to negotiate and finally adopt a landmark Global Biodiversity Framework, setting clear targets for countries to mitigate biodiversity loss. Following the failure to reach prior targets (Dickie, 2022), this new framework was considered critical for nature and human society, and for ensuring the rights of Indigenous People are a central priority. The ambitious framework was adopted by most countries, making biodiversity conservation not just a cause for ecologists and environmentalists, but a priority for international cooperation.

In light of this renewed interest comes a new book by Kew Gardens' Director of Science Alexandre Antonelli. *The Hidden Universe* sets out to provide a broad, accessible overview of biodiversity. Likening the diversity of life on Earth to stars in the universe, Antonelli discusses the five points of the biodiversity 'star'—species, genes, evolution, function and ecosystems—and their importance, the threats facing them, and approaches to protect them. He draws upon his own lengthy career in botany, the history of science, and recent developments in understanding and protecting nature. Some of the most engaging passages are anecdotes from his own field research, including in his native Brazil, and later, when he was affiliated with the University of Gothenburg in Sweden and Kew Gardens in the UK.

Antonelli succeeds in providing a broad, layman's overview of biodiversity and related issues that is accessible and concise. I particularly enjoyed reading about Antonelli's life and experiences, in passages that are woven into his wider points. Highlights include him recalling visits to Kew's portfolio of international conservation projects, fighting *The Washington Post* over an editorial that argued we should not try to save threatened species (Antonelli & Perrigo, 2017), and struggling to secure a research visa for Brazil to study new

plants. Although many of the points made are not anything ground-breaking, I appreciated Antonelli's modern lens; he discusses biodiversity's links with Indigenous ecological knowledge, colonialism and the rights of nature as much as the historic work on Linnaeus and Wallace. There is emphasis on people being central in protecting biodiversity, and Antonelli liberally credits his diverse global network of collaborators and students as well as highlighting his own achievements. Descriptions of Kew's broad range of collaborations—from a research site in Madagascar to furniture giant IKEA—provide a rich illustration of what modern conservation looks like. There is even a comprehensive glossary with key terms, and *The Hidden Universe* is beautifully illustrated with graphs, diagrams and images of species that make up our biosphere, as one would expect from a classic work of natural history.

I went into this hoping to gain deeper insight into what biodiversity means, how it is measured and how we conserve it. For its subject, *The Hidden Universe* is slim and it could easily have been twice as long. The closing chapter also fell a little short of my expectations: a series of recommendations focused on individual actions such as making environmentally conscious choices about diet, household and garden, which—although they form a part of the solution—are smaller than the structural, global changes we really need to halt biodiversity loss. This was better executed in another excellent book on a similarly huge topic: Tim Flannery's *The Weather Makers*, on climate change, which lists a series of recommendations and breathes more life into some ambitious and country-specific recommendations for Flannery's fellow Australians. I would have liked Antonelli to provide a more ambitious vision for a future where nature can thrive, as he would be well placed to posit steps for systematic changes that could be taken at the level of large institutions or indeed countries such as Brazil, the UK or Sweden to give nature the space and resources it needs to recover and continue to provide for us and the many species with whom we share our planet.

This is an accessible and engaging book for anyone new to and interested in biodiversity, and it provides a good summary of modern conservation. Antonelli successfully breaks down this huge topic into digestible and engaging portions, and his inspiring journey and inquisitive personality shine throughout the book. However, a seasoned researcher or conservation practitioner will not find many new ideas here. Nevertheless, I hope this

book will help promote the importance of biodiversity to a wide audience in this critical decade to protect nature.

References

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The Killer Whale Journals: Our Love and Fear of Orcas by Hanne Strager (2023) 280 pp., Johns Hopkins University Press, Baltimore, USA. ISBN 978-1-4214-4622-6 (hbk), USD 29.95.

It's early afternoon, and in the Lofoten Islands, Norway, the autumn sun only just makes it above the horizon. Hanne Strager is about to board a boat she's never seen, alongside a crew of people she's never met. In accepting a job as a cook on board the old fishing-boat-turned-research-vessel *Old-Bi*, she is embarking on a lifelong adventure studying killer whales, and in *The Killer Whale Journals*, she is kind enough to take us along with her.

The book—part history, part natural history, part autobiography and part travel book—is perhaps a little difficult to classify, but that is not a bad thing. It is meticulously researched yet anything but dense or slow; I found *The Killer Whale Journals* a great read that is further enhanced by a number of beautiful reprints and photographs, including some by wildlife photographer Paul Nicklen. The writing style is engaging and easy to follow, keeping the reader on board as we move with Strager from place to place.

This is not a traditional natural history book, and if you are looking for a definitive book on killer whale biology or ecology, this one may not be the most obvious choice. But that is intentional. Whilst *The Killer Whale Journals* is, of course, a book about killer whales, it is also a book about killer whale research, and about the relationships between people and this fascinating species. In examining the latter, Strager takes us around the world, highlighting the killer whales of Norway as well as Iceland, Greenland, Russia, Australia, Gibraltar and, of course, the Pacific Northwest. The chosen case studies cover the full range of human-whale relationships, from collaborations to persecution, from fear and mistrust to near-reverence. Strager takes us along on her personal journey as she forges her own research career, but also guides us on a historical journey as whale-watching and ecotourism emerge in areas where people were previously more likely to persecute the local killer whales than take visitors to watch them. Although *The Killer Whale Journals* is not a book about killer whale ecology per se, it does include some wonderful, detailed descriptions of behaviours observed by the author or her collaborators in the field. It also includes some unusual anecdotes, such as the 'whales in the potato field' (pp. 127–140), which you are unlikely to come across elsewhere. Some of these descriptions can be uncomfortable to read, detailing persecutions and overfishing, and describing the consequences of ecological misconceptions that leave the reader reflecting once again on the apparent inability of humans to learn oft-repeated lessons from nature.

Refreshingly, the book covers little about captive killer whales. It would be difficult to avoid this topic altogether, but aside from a discussion of the notorious Russian 'whale jail' (pp. 158–175), captivity receives only a passing mention. Instead, this book tells of the birth of killer whale research, of the scientists who pioneered techniques still familiar to those of us working with wild cetaceans today. The book is populated with interactions and interviews with other killer whale researchers, and you can feel the joy Strager derives from these collaborations as she describes the visits made to many of their study sites. These are the parts of the book that feel like wonderful pieces of travel writing; Strager is clearly a person who deeply loves spending time on or by the ocean. I found the descriptions of the Green Cape, the site of the Far East Russian Orca Project in the Avacha Gulf, particularly engrossing.

The Killer Whale Journals is a fast-paced tour of killer whales and the people who live and work with them. You will almost certainly

learn something from this book, even if it's not what you expected to learn about. It will be particularly enjoyable to anyone who enjoys travel writing, the history of research, good storytelling, nautical yarns or captivating encounters with the wonders of the natural world.

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Why Sharks Matter: A Deep Dive with the World's Most Misunderstood Predator by David Shiffman (2022) 285 pp., Johns Hopkins University Press, Baltimore, USA. ISBN 978-1-4214-4364-5 (hbk), USD 24.95.

'But aren't you scared of sharks?' This was one of the first questions friends and family asked when I announced I would be moving to Australia. But as someone who works in wildlife conservation and is fond of being underwater, I have never understood this omnipresent fear of sharks. I have been fortunate to dive with beautiful shark species, and revel in knowing how important these predators are for our oceans. A healthy dose of respect is vital for safe encounters with these wild animals, but apart from a select few large species, fear of being bitten by a shark never factors into the equation when I get in the water.

This is a sentiment I know many other marine conservationists share, including David Shiffman, the author of *Why Sharks Matter*. Having dedicated his career to studying and advocating for the protection of sharks, Shiffman is no stranger to the plethora of cultural, political and socio-economic issues and contentions that surround the conservation of this diverse group of fish. In this book, he delves into dispelling myths spawned by misinformation or the use of inflammatory language that often characterizes media reports of shark bite incidents, pointing out how sharks have been vilified and misunderstood all along.

In the chapter *Sharks Are Not a Threat to Humans* Shiffman argues 'that humans are better off with healthy shark populations than we are without sharks in our waters, and that the benefits of having sharks around outweigh the costs' (p. 23). He highlights the importance of changing the narrative and the language we use when talking about sharks, such as saying 'shark bite' instead of the more sinister 'shark attack' and avoiding the use of 'shark infested waters', which 'suggests that there's something wrong or bad about sharks being there' (p. 30). He goes on to point out that widespread fear of sharks and people's 'nonchalance about the

fate of sharks has resulted in political marginalization of shark conservation and management efforts' (p. 43). Explaining that sharks are not generally dangerous to humans is the first step in convincing people of the need for their conservation. But Shiffman takes his argument one step further, saying that 'simply acknowledging that these animals are not bad is less powerful than understanding that they're actively good, and that bad things happen without them' (p. 61).

At just over 250 pages, *Why Sharks Matter* provides a great introductory overview to all things shark, while not feeling like a science-heavy textbook. Although it opens by explaining all the reasons sharks matter ecologically, much of the book is dedicated to exploring the challenges surrounding the conservation and protection of these maligned and misunderstood predators. The author does not shy away from discussing the contradicting and sometimes controversial policies that exist in this field, or the intricacies of the international management of species and fisheries. Over the course of several chapters, Shiffman discusses the benefits and drawbacks of existing methods for protecting shark populations, such as the differences between target- vs limit-based policies. Although also covering topics from an international perspective, many of the examples provided are US-centric, which is unsurprising given that this is where the author has done extensive work and research.

Why Sharks Matter includes 16 colour plates that help illustrate many of the species and themes discussed. The book is well-referenced, with evidence and articles provided to support the author's arguments. Scientific concepts are presented in a straightforward and simple way, often with a colloquial tone, which makes the content less technical and more accessible to a broad audience. Shiffman interlaces serious conservation issues with popular culture and media references, and the text is peppered throughout with a good dose of humour, personal anecdotes and lessons learnt.

In the chapter *How Are Scientists Helping Sharks?* we hear first-hand from the people working across a wide range of shark-related research. From those working on tracking and behaviour to those trying to age sharks or understand what role wildlife tourism has to play in shark conservation, these vignettes are a great way for readers to get a glimpse of the diverse opportunities and disciplines in this field. I was especially delighted to see so many inspiring women highlighted, as well as Minorities in Shark Sciences, a group that is improving representation, diversity, and inclusion in shark conservation. The book closes with a description of several notable shark organizations working around