Shepherding Nature
The Challenge of Conservation Reliance

Globally, more and more species are at risk of extinction as the environment and climate change. Many of these species require long-term management to persist—they are conservation reliant. The magnitude of this challenge requires a rethinking of how conservation priorities are determined and a broader societal commitment to conservation. Choices need to be made about which species will be conserved, for how long, and by whom. This volume uses case studies and essays by conservation practitioners from throughout the world to explore what conservation reliance is and what it means for endangered species management. Chapters consider threats to species and how they are addressed, legal frameworks for protecting endangered species, societal contexts and conflicts over conservation goals, and how including conservation reliance can strengthen methods for prioritizing species for conservation. The book concludes by discussing how shepherding nature requires an evaluation of societal values and ethics.

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The Challenge of Conservation
Reliance

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Preface

This is a book about conservation reliance—the need of many declining and imperiled species for ongoing, long-term conservation and management. It is also about shepherding nature—the need for a broad acceptance of the responsibility of humans to act as good shepherds. These are things that the four of us have spent much of our careers thinking about.

Our approach to this challenge has been shaped by our experiences and interests, so we should tell you a little about who we are. Three of us, J. Michael Scott (Mike), John A. Wiens (John), and Beatrice Van Horne (Bea), are scientists who have focused on ecology and conservation; the other, Dale D. Goble (Dale), has dealt with environmental law and its applications. All of us reside in the western United States. Mike grew up in California and received BS and MA degrees from San Diego State University, before moving north for a PhD from Oregon State University. Bea spent her early years in Oregon, the San Francisco Bay area, and Arizona, with undergraduate and advanced degrees (MS, PhD) from the University of California Santa Cruz, Oregon State University, and the University of New Mexico. Dale grew up in southern Idaho, not far from where his great grandparents had homesteaded. He went east for a philosophy degree from Columbia College and then returned west for a law degree from the University of Oregon Law School. John spent his younger years in Oklahoma and then obtained graduate degrees (MS, PhD) from the University of Wisconsin Madison.

After being suitably educated, we followed different but related career paths, mixing experiences in government, academia, and non-governmental conservation organizations. The experiences followed from and deepened our research interests in birds (Mike and John), mammals and populations (Bea), and policy and law (especially the
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Endangered Species Act; Dale), eventually converging on conservation.

Mike joined the US Fish and Wildlife’s Endangered Species Research Program in Hawai‘i and then directed the California Condor Research Program in California before moving to the University of Idaho as leader of the Cooperative Fish and Wildlife Research Unit and Professor of Wildlife.

John held faculty positions for 36 years at Oregon State University, the University of New Mexico, and Colorado State University before joining The Nature Conservancy as a Lead and Chief Scientist. He was subsequently Chief Scientist with Point Reyes Bird Observatory (PRBO) Conservation Science in California. He also spent time in Australia with the University of Sydney, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Division of Wildlife and Ecology in Darwin, and the University of Western Australia.

Bea was on the faculty of Colorado State University for 17 years before moving to the Washington, DC, area, first as the National Program Lead for Wildlife Research with the US Forest Service and then as the Ecosystems Coordinator for the US Geological Survey. She returned to the west as a Program Manager for the Pacific Northwest Research Station of the Forest Service and then Director of the Northwest Climate Hub for the US Department of Agriculture.

Following Law School, Dale spent 3 years with the US Department of the Interior in Washington, DC, and then returned west to become a Professor in the University of Idaho School of Law, where he was named a University Distinguished Professor and the Margaret Wilson Schimke Distinguished Professor.

All of us are now retired, and still in the West. Mike and Dale live in Moscow, Idaho, and John and Bea live in Corvallis, Oregon.

This is not our first book, nor our first collaboration. In addition to many papers, books, and monographs, Mike and Dale co-edited (with Frank Davis) *The Endangered Species Act at 30* (two volumes, Island Press, 2006); John wrote *Ecological Challenges and...*

Enough about us; how about this book? We build the book around a series of case studies—stories, really—because these are more compelling than a litany of facts and figures, and because they illustrate the many ways in which people, by struggling to save imperiled species, show how closely nature and human communities are intertwined. We draw freely from the places and organisms with which we are most familiar—Hawai‘i, the American West, and Australia; terrestrial habitats; birds and mammals. Because two of us have been immersed in the US Endangered Species Act and its applications for decades, we focus on species that are listed under the act. But because conservation reliance is a global challenge, we also bring in stories from elsewhere in the world. To help us out, we have enlisted colleagues from several countries to contribute essays from their own perspectives.

We have aimed to make this book readable as well as informative. Our narratives are science based but not science dense. To that end, we have minimized our use of references and citations, including them where we think a reader might wish to delve more deeply into a topic or example. The internet provides plenty of resources for those who might want more. We found the Red List website of IUCN (www.iucnredlist.org/) and those of nations that have threatened species statutes (e.g., www.fws.gov/endangered/) particularly helpful. In the tradition of legal writing and the humanities, we have made frequent use of footnotes to reduce interruptions to the flow of the text. Scientific names of species mentioned in the text are given in Appendix B.

\(^1\) A second edition was published in 2019.
Acknowledgments

We have been thinking about the issues we address in this book for most of our adult lives. But we haven’t done it alone. Our work and thinking has intersected that of many others. When it came time to put our thoughts and experiences together in this book, we called on many of these people for help and advice. They responded enthusiastically and constructively. Consequently, our list of acknowledgments is long.

Begin with Kyra Wiens and Kathryn Ronnenberg. Kyra read multiple drafts of the chapters, always finding ways to tighten and clarify our writing and bringing better organization to our sometimes-wandering prose. She understood what we were trying to say and often showed us a better way to say it. Kathryn looked over the book as a whole, checking references and style details and bringing a sharp eye to the resolution, layout, composition, and production of the figures. That the color-plate section is both instructive and visually stunning owes much to her senses of design and artistry.

Several other individuals deserve special mention. Sharon Scott read drafts of the entire book, catching cryptic errors that had avoided our attention and alerting us to confusing passages. Loyal Mehrhoff and John Woinarski read many of the chapters, offering thoughtful and unfailingly helpful suggestions based on their long experience with imperiled species in Hawai‘i [Loyal] and conservation issues and approaches in Australia [John]. Allen Thompson helped us better understand the philosophical and ethical contexts of conservation in frequent discussions over morning coffee. Pat Malatsi introduced John and Bea to the challenges and opportunities of conservation in Botswana. And several colleagues from around the world [listed on the title page] have contributed essays that give conservation a personal touch.
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To all of these individuals and organizations, our heartfelt thanks. You willingly and kindly responded to our frequent requests for information, discussions, and critiques. You forced us to think and rethink about the nuances of conservation reliance, and the book is the better for it.