

## Re-Visioning Conservation

**Rewilding North America. A Vision for Conservation in the 21st Century.** Foreman, D. 2004. Island Press, Washington, D.C. 295 pp. \$50.00 (hardcover). ISBN 1-55963-060-4. \$25.00 (paperback). ISBN 1-55963-061-2.

The biggest challenge conservation biologists face is persuading others how important conservation is. We must first convince them that our current extinction crisis is the most important scientific discovery of the twentieth century. We must next convince them that our science gives us the knowledge to halt the mass extinction via selecting, designing, and establishing new protected areas and active restoration. Finally, we must present a clear vision and agenda for twenty-first-century conservation that can stir citizens to vigorously support conservation. In *Rewilding* Dave Foreman plainly lays out these points (pp. 11, 110, and 177) as the organization for this book. The grizzly bear tracks on its cover invite closer examination and serve as a synecdoche for its contents.

Foreman first relates the “Bad News,” exploring the full depth, nature, and implications of our current extinction crisis. This sober, clear-eyed analysis of our current predicament distinguishes three waves of extinction with distinct dynamics. We first step back into the Pleistocene to explore just how and when human expansion out of Africa doomed large animals almost everywhere else. Disease and climate may have played supporting roles, but the evidence overwhelmingly supports Paul Martin’s overkill hypothesis. Foreman sees the spread of Europeans along

with their agriculture, silviculture, and fishing as the second wave and globalization and soaring human populations that have accelerated extinctions since 1970 as the third wave. The particular causes of extinction (“wounds”) are then explored in convincing detail. The points are clear: extinction is not a recent problem, and we cannot address the complex causes of today’s extinctions with simple remedies. *Rewilding* treats these topics in depth.

The second part of *Rewilding* is devoted to conservation biology—how the field developed and how it informs current efforts to conserve. Readers learn of extinction dynamics, metapopulation theory, shifting disturbance regimes, and the relevance of island biogeography. Historical approaches for selecting and designing protected areas are reviewed as a prelude for considering how these can be updated to address contemporary concerns for maintaining biodiversity. Foreman has done his homework here. We learn of prescient efforts by Victor Shelford and the Ecological Society of America in the 1920s and 1930s to establish a functional network of preserves. Foreman also emphasizes that John Muir, Aldo Leopold, Olaus Murie, and Bob Marshall all had training as scientists. Ecological concerns therefore have long been a basis for protecting wilderness (in contrast to some revisionist history). Foreman relates this history both for its own sake and to introduce the Wildlands Project, with its emphasis on protecting large connected areas with intact populations of carnivores and ecological processes.

These discussions lead to a fundamental point that distinguishes the vi-

sion related in *Rewilding* from much other recent work in conservation biology. Whereas others have effectively championed the importance of large areas and corridors, Foreman strongly emphasizes the importance of large carnivores for sustaining functional, diverse ecosystems. Here, he draws on the recent work of John Terborgh, Brian Miller, Jim Estes, William Ripple, and others to argue that top-down trophic cascades are not merely an ecological curiosity but fundamental for sustaining ecological integrity. By controlling the abundance of mesopredators and ungulates, which are prone to irrupt in abundance, predators play keystone roles in many ecosystems. As Ripple and Beschta (2004) point out, these studies support Leopold’s classic arguments on the ecological importance of predators. The obvious implication here is that restoring only token populations of predators in a few areas will not suffice to serve broad conservation goals. Predators also gain strategic importance. Instead of serving just as charismatic umbrella species (or colorful ornaments to adorn the logos of conservation organizations), predators become crucial components for maintaining ecosystem integrity.

The concluding section (“Taking Action”) focuses on solutions. Just how might we design a wilderness network that could truly function to sustain plant and animal diversity indefinitely? Drawing on ideas from Reed Noss, Michael Soulé, and others, *Rewilding* emphasizes the three Cs: cores, connectivity, and carnivores. This discussion is mostly conceptual but is grounded in enough specific examples to put empirical

flesh on the theoretical bones. Foreman does not hesitate to list criteria or prescribe specific actions designed to make sure these networks serve biotic goals. His considerable experience in practical conservation grounds and informs this discussion. Concrete examples (such as the sky islands of the southwestern borderlands of the United States) prevent this section from being too abstract or preachy.

Other books have tackled these goals with a similarly broad vision and depth of scientific understanding (e.g., Wilson 1994). However, no recent book I have read has laid out the bad news with such compelling force and detail or presented such informed and passionate arguments for thinking big as we seek to conserve nature through the current bottleneck. I have not encountered any more convincing summary of our current predicament and the key roles conservation biology should play in addressing these issues. Nor has any other book taught these lessons in such compelling and engaging terms. I was reminded of another voice from the Southwest. Like Aldo Leopold, Foreman urges us to construct our conservation efforts on a solid scaffold of science. Like Leopold, Foreman teaches us to appreciate natural and human history and the unique importance of large wilderness areas. Like Leopold, Foreman wants us to base our conservation on sound ethics and wise policies.

Is *Rewilding* a popular book aimed at a broad audience or a book for scientists and conservation professionals? General readers interested in learning more about our current extinction crisis and its causes are well served. Overhunting, habitat loss and fragmentation, modifications of historical disturbance regimes, exotic species, loss of predators, and climate

change are all covered with skill. In fact, I have seen no clearer discussions of these "ecological wounds." Foreman somehow manages to be comprehensive, historically informed, accurate, and succinct. This makes the book surprisingly well suited to serve as a text for introductory courses in ecology or conservation biology. Students will particularly appreciate the compelling nature of these stories and Foreman's ability to connect the dots among conservation science, tactical conservation issues, and strategic ideas for conserving the biota of North America. The book's provocative vision will certainly spark interest and lively discussion.

Scientists and professionals will appreciate Foreman's ability to place their work in geological, historical, and geographic perspective. Despite a lack of traditional academic credentials, he is a nuanced scholar with a commanding knowledge of our history and science (as evidenced by 47 pages of notes). Moreover, he is a great storyteller. Some might be tempted to ignore the book for having ideas about conservation that are so ambitious as to appear patently impractical. That would be a mistake. Even those who do not fully accept its sweeping vision for rewilding should read this book to follow the logic of its arguments, learn more of our history, and glean arguments for their own work. They might also consult the associated Web site (<http://TheRewildingInstitute.org>).

Who is our guide here? Ironically, this champion and scholar of conservation biology began his career as a citizen-activist. In the introduction, Foreman relates watching "the high desert between Albuquerque and the Sandias gradually disappear under a carpet of asphalt and buildings . . . roads ripped into the

wilderness, forests buzz-cut, rivers dammed, coal torn from the badlands" (p. 1). As related in *Confessions of an Eco-warrior*, Foreman (1991) entered the fray as a foot soldier working the trenches of Washington during pitched battles over wilderness in the 1970s. When this grew more frustrating than rewarding, he morphed into a subcommandante for the citizen activists of Earth First! The limitations of direct action soon became apparent, leading him to step back from the fray to ponder how ethics and conservation biology might provide a more secure platform for pursuing conservation. *Rewilding* reflects the maturity Foreman has won from these experiences and a conscience born of his unique odyssey.

Here is a valuable and multifaceted book from a multifaceted author. It is simultaneously a work of history, science, and policy that will appeal to several different audiences. Its chief value for conservation biologists may lie in the overviews it provides and the provocative vision it presents. The book forces us to take a step back and reconsider what we have accomplished and where our efforts still fall short. At a time when so many conservation efforts seem small or founder, we have particular need for such a positive and ambitious vision.

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