# Book Reviews

## Ecological Restoration and Environmental Change: Renewing Damaged Ecosystems

*Stuart K. Allison. 2012. New York, NY: Routledge. $85.00 hardcover. ISBN: 9781849712859. 245 pages.*

Restoration science, like all applied sciences, includes a significant social component in its study and practice. What individual or societal choices in the past led to a need for intervention? Which habitats, of the myriad in need of attention, are targets for restoration efforts? And what goals do practitioners choose in order to guide their choice of techniques? These are all, to some extent, active human decisions—by individuals, citizen groups, nonprofits, governments, or society as a whole—that strongly influence the restoration process.

Stuart Allison, in his book *Ecological Restoration and Environmental Change*, examines the past and present, and offers recommendations for the future, of restoration science with a strong eye toward the place of human decisions in the practice of restoration. He examines how differences in backgrounds or training can lead to different approaches to ecological restoration. He argues that restoration science will continue to be vital for maintaining biodiversity and ecosystem function in a world where human activities increasingly dominate. But he also argues that it will be most effective if it directly accounts for, and also takes advantage of the ways that the public connects with nature.

Organized into eight chapters, this text is a mix of topical reviews with considerations of the role that individuals' perspectives play in their decision making. A key thread throughout the book is the question "why do we restore?" Allison considers this question from the perspective of both environmental ethics and personal motivation. He freely considers his own motivations and biases—indeed, his own personal reflections on how his upbringing and where he works and teaches has influenced his own views (e.g., Chapters 1, 3) are a strength of the book. For example, he describes his own internal conflict between managing the tallgrass prairie preserve he oversees as an "historical artifact" versus as a shifting "novel ecosystem" that must incorporate the realities of invasive species and climate change (Chapter 5). Scientists and practitioners all over the world are having similar discussions, and the outcomes of those discussions will determine, to a significant extent, how restoration is practiced in the coming decades.

Of course, attitudes and approaches toward restoration differ among professional practitioners, and Allison argues that these differences are, to an extent, a product of where someone is from (Chapter 6). He observes that practitioners from North America and Australia have been, until recently, more likely to emphasize returning ecosystems to historical conditions than their European counterparts. By contrast, practitioners from Europe are more likely to be motivated to promote and preserve biodiversity and to maintain ecosystem function with less fidelity to historical conditions. Allison uses a survey of the published restoration literature from 2006–2010 and a small web-based survey of restoration practitioners to support his observation, though he also acknowledges that the goals of North American and Australian practitioners are increasingly coming to resemble their European counterparts. Allison hypothesizes that the existence, in the relatively recent history, of a wild landscape in North America and Australia relative to the much longer cultural history of European landscapes has generated these differences in attitudes among restoration scientists. It is a valuable point to make—that how a professional applies restoration science can be shaped by one's cultural history and sense of nature.

Allison's emphasis on how people view nature anchors his vision of the future, namely that we should acknowledge and even build on social-natural connections in an era of a "renewed restoration" (Chapter 7). What this means, practically speaking, is that some projects should accept, or even embrace the legacies of past activities that may have contributed to the need for restoration in the first place. For example, ecological functioning and biodiversity can coexist in mixed-use projects for the benefit of both nature and society—particularly in urban areas or industrial sites. It also justifies the maintenance and restoration of highly human-influenced landscapes such as European grasslands. When past and present human activities in a landscape are built into a restoration project, it can build broad support for action and an appreciation of nature itself. It is a very democratic vision, and one that encourages optimism for how society will confront the environmental challenges of the future.

Of course, any answer to the question, "why do we restore?" must acknowledge the pressures that human activities are placing on the biosphere. *Ecological Restoration and Environmental Change* briefly examines threats to biodiversity and ecosystem functioning (Chapter 3) as well as the threats posed by climate change (Chapter 4). It also considers how restoration will likely acknowledge such realities as permanent shifts in species composition following species invasions (e.g., novel ecosystems), and whether managed relocation of vulnerable species should be undertaken in the face of climate change (Chapter 5). These chapters are good introductions to these topics, particularly for readers who are relatively unfamiliar with the subjects in the context of restoration. Likewise, Chapter 2 traces the history of restoration science from the late 19th Century to where it is today. It includes such familiar figures as Aldo Leopold and Tony Bradshaw, but also some less-familiar ones whose contributions should be more widely known.

Rather than a presentation of issues related to more technical "how to restore?" questions, *Ecological Restoration and Environmental Change* focuses on the "why restore?" questions. (A more targeted title may have been

useful to better guide potential readers in this regard). It also offers one view of how restoration and society can best interact in a way that is mutually beneficial. Readers who are interested in exploring the intersections between restoration science and society will find this book worthwhile, even where they may arrive at different conclusions. *Ecological Restoration and Environmental Change* provides a useful framework for further thought and discussion about the role of people in the past, present, and future of restoration science.

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## Restoring Paradise: Rethinking and Rebuilding Nature in Hawai'i

*Robert J. Cabin. 2013. Honolulu, HI: University of Hawaii Press. $24.99 Paperback. ISBN: 978-0824836931. 272 pages.*

Hawaii. The name alone evokes immediate recognition to nearly everyone as some idyll of paradise. For most this idyll is vividly seen in television and movies that show the aqua blue ocean full of surfers lapping onto beaches of sugary white sand or verdant forests that have a nearly surreal green to them. All the while the characters inhabiting this idyll drink mai tais, drive sports cars, and live it up in Waikiki. In fact as soon as one deplanes at nearly any of Hawaii's airports, they drink in this lush, warm, and truly beautiful place. Hawaii's beauty, however, is often false as viewed through the eyes of an ecologist. Nearly every location that one sees in Hawaii Five-0, Magnum PI, Lost, or in person is novel. That is, the species most people view as Hawaiian are in fact transplants from around the world. Hence the reason Hawaii serves as the 'generic' tropical forest in every movie, TV show, or story.

Today little remains of what might be considered intact or native ecosystem left on land, especially on the inhabited islands of the archipelago. What does remain, however, is the focus of great conservation effort to both protect what remains and restore what is possible. In a state that houses both the greatest number of endangered species and the most invasive species, these efforts are paramount to staving off further losses that have lead Hawaii to be dubbed the undesirable term of extinction capital of the world. Robert Cabin (pronounced Kay Bin) seeks to help further this discussion of restoration by promoting the positive steps Hawaii has taken to in his new book *Restoring Paradise: Rethinking and Rebuilding Nature in Hawai'i.*

*Restoring Paradise* is a hybrid book in that it is part autobiography, part history, part philosophy, and part science. Thus, it has both the advantage of offering some broad appeal and the disadvantage of having some disjunct elements to it. The book itself is told over three broad sections comprised of ten chapters. The first section, entitled "If You Plant It, Will They Come" focuses on the author's time spent in USDA Forest Service working at Hakalau Forest National Wildlife Refuge on the Island of Hawaii (typically referred to as Big Island). Hakalau was established on former ranch land as a means to conserve endangered forest birds and their habitat and is one of the few National Wildlife Refuges focused on endangered species as its primary mission. Since its creation, the refuge has worked to restore habitat primarily via reforestation of native plants and removal of invasive species. Cabin recounts the history of restoration efforts at Hakalau well through interviews with current and former employees and colleagues associated with the refuge, discussing how the refuge went from essentially degraded pastures to a partially restored habitat that is now supporting forest birds. Aside from the history, however, the main focus in this first section is really on the process of how restoration occurs on the ground. Specifically, Cabin focuses on the day-to-day challenges of accessing field sites, the challenges of re-establishing native plant communities amongst a sea of invasives, and the need to be flexible to new challenges.

The second section of the book entitled "Restoration Roundup" starts in Hawaii Volcanoes National Park and travels northwest across Maui and ultimately to Kauai in a series of three island-specific chapters. Each of these three chapters carves out a unique case study of how restoration started and continued in very challenging circumstances that would at first glance appeared to have been destined for failure. For instance, established in 1916 primarily for its volcanic scenery, Hawaii Volcanoes National Park was overrun with feral goats that lay waste to the endemic plants for decades until the 1970s when Don Reeser led management efforts to fully rid the park of goats. Although many believed eradicating goats at the landscape scale was impossible, the National Park Service demonstrated that it was in fact possible. Similarly, the story of restoring degraded lands on both Maui and Kauai through intense replanting of native species coupled with invasive plant management shows how the efforts of several dedicated individuals led to success. These three stories of success are both uplifting and powerful examples of what has been accomplished in Hawaii. As Cabin mentions early on in the book, it is easy to recount Hawaii's many sad stories and there is much value in highlighting the state's positive outcomes to others through these three chapters.

The final section of *Restoring Paradise* entitled "Herding Cats with Leaf Blowers" serves two main purposes.