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HUMAN DIMENSIONS OF ECOLOGICAL RESTORATION

Human Dimensions of Ecological Restoration

*Integrating Science, Nature,
and Culture*

Edited by Dave Egan, Evan E. Hjerpe, and Jesse Abrams

Foreword by Eric Higgs

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“The Roots Go Deep,” by Sandy Kucinski, is reprinted in chapter 25 by kind permission of the author.

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*To my parents, Cleon and Betty Egan,
and their grandchildren — Dave Egan*

To Mom, Dad, Dair, and Harley — Evan E. Hjerpe

*To my family, to friends near and far, and especially
to Louis — Jesse Abrams*

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FOREWORD

*Eric Higgs, School of Environmental Studies,
University of Victoria, British Columbia, Canada*

There is something remarkable about the way people connect with place and each other through ecological restoration, a point made persuasively in these chapters and cases assembled by Dave Egan, Evan E. Hjerpe, and Jesse Abrams. That is also how I saw it in 1984, when a group of graduate students from the University of Waterloo joined the late Robert Dorney for a weekend field trip near Colpoys Bay in southern Ontario, Canada. Bob was a pioneer in ecological restoration and had a restless curiosity about ecosystems and how to put them back together. Trained in wildlife ecology by Aldo Leopold at the University of Wisconsin–Madison in the late 1940s, Bob moved through several careers before settling in as one of the original faculty members of the University of Waterloo’s environmental studies program in 1967. He later cofounded Canada’s first comprehensive ecological planning and design firm, Ecoplans, which abetted his commitment to real-world practice. Bob was also locally famous (infamous, if you asked his neighbors) for ripping up the front yard of his suburban home in the late 1960s to install a “mini-ecosystem.” He was not a man given to convention, which is why on a chilly Saturday morning in October my fellow graduate students and I were ready for anything.

For several years on the piece of former farmland he owned with several friends, Bob was experimenting with techniques for restoring the land that had been damaged by intensive farming decades earlier. After more than fifty years the thin soils remained inhospitable to native species. He didn’t have much to work with in terms of recipes for recovery since, at the beginning of the 1980s, there was no organized mass of scientific information about prairie and forest restoration, no professional or scientific journal to chronicle accomplishments, no Society for Ecological Restoration, and no nearby models for inspiration. The very term “restoration” was not commonly applied at the time. “Reclamation” and “revegetation” were the currency, but neither of them implied a practice faithful to ecological ideas. Bob set up two experiments. One was a grid of 1-by-2-meter plots in which he tried various treatments—soil augmentation, tilling, seeding, solarization—to ascertain what might work to break up the obdurate ground cover of orange hawkweed (*Hieracium aurantiacum*). Bob walked us carefully through these private experiments (they weren’t part of a funded

research project) and then asked us to imagine how we might shift from isolated plots to successful restoration at a sublandscape level. We puzzled over coffee while Bob presented his first thoughts on nodal recovery. If we created small islands of native biodiversity in an oldfield matrix, might these nodes, through succession and windborne distribution, result slowly and affordably into an ecosystem of great native biodiversity?

We sketched a layout for the field that lay below the cabin. We walked it carefully, doing rapid appraisals of soil and vegetation conditions, and noting especially any promising native floristic assemblies. Next morning we set to work on designing the restoration project, salvaging some native plants from a local source, flagging the site for follow-up study, and shoring up the nodes of biodiversity with plants and seed. We worked hard and fast, and as we did we were impelled by a vision of a recovered landscape, the same powerful type of vision that attends anyone who truly grasps ecological restoration. More than this, we came together as a group by sharing our insights, debating the merits of various interventions, and having a good amount of fun.

Described so often is the elation that one feels in working with and for natural processes. When ecosystems come together, *so do we*. During the last twenty-five years I have reflected on the many reasons ecological restoration has this effect. Certainly, people are enlarged by their exposure to natural patterns and processes; getting their hands dirty is a rare experience for many in an urbanizing world. Neighbors are brought into contact, naturalists are given a cause, political activism is kindled, and new economic arrangements emerge. Restoration satisfies emotional and moral hungers, too. We experience a lift from knowing that our depredations are at least partially absolved through restoration. We are brought to the brink of humility when we realize how easy it is to act carelessly and how hard it is to rebuild and restore. We are guided by new or rediscovered norms of wise practice. An overarching theme of this book is that the gap separating culture and nature narrows through ecological restoration; we might never bring these two together in any practical sense, but we realize that these are categories worth challenging or negotiating.

Sometimes a spark is all that is needed to ignite awareness, such as the experience I had many years later with a group of restoration students at the University of Victoria, where I now teach. Working with a local parks support group and park staff, students pulled invasive species and planted shrubs and seeds to restore a vestige of coastal Douglas fir (*Pseudotsuga menziesii* var. *menziesii*) ecosystem in Beacon Hill Park. It was not much more than two hours of labor, but when the students reported on their experience in short essays, the message was consistent: they felt connected to the place in a way they had never felt before. Several mentioned they would be back to check their plantings in future years. It is not just that bonds are formed easily, like a first romantic blush, but that the experience of love-at-first-sight endures and leads to a recognition of how such bonds are formed in other places and other times.

Finding ways of building the social, cultural, and economic capital sufficient for durable projects is a challenge that we will understand better by understanding the human dimensions of ecological restoration. This is a major contribution of this book. The contributions range from schoolyards to stewardship, and involve the works of scientists, activists, and farsighted agency staff. The chapters in each section explain the

value of collaboration, volunteerism, economic innovation, education, traditional ecological knowledge, and well-wrought policy. The supporting cases amplify the main themes; a fine-grained understanding is critical to know what works and what falls short in developing restoration capacity.

We face challenges now that were relatively unknown in restoration twenty-five years ago, and a better resolved understanding of the social, economic, political, and cultural dynamics of restoration is vital to the continued success of our practice. Consider the emergence of new markets for carbon offset and the benefits that accrue economically from restoration. The notion of pricing ecosystem services in relationship to the development and recovery of natural capital is a radically new idea. Restoration stands to benefit considerably from replacing or augmenting services that can be accounted locally, nationally, and internationally. Newly developed financial instruments for conservation and restoration stand to benefit ecosystems, even while these same instruments bring new resources to communities, some in desperate need of such support. There is a worrisome side, too. The pragmatic approach of pricing ecosystem services monetizes features of ecosystems that lend themselves well to crisp accounting (e.g., flood detention) and leaves others in the shadows (e.g., social rejuvenation). Many of the examples in this book point to the subtle interplay of social and economic forces, and the particular values that need attention. Schoolyard restoration, for example, may not sequester much carbon or return hard dollars to the school, but the learning that takes place can be inestimable.

So, too, are we facing the prospect of novel ecosystems, those that depart from historical precedents through rapid environmental (climate) and ecological change (species invasion). Either one of these emerging problems presents problems of mind-numbing complexity, not only at an ecological/economic level but at a social/cultural one, too. The fine-grained accounts of real-world practices described in the following pages will make a difference in our ability to comprehend why direct intervention in ecosystems through restoration is both so satisfying and so successful. At the same time the social learning through such experiences builds resilience and makes it easier to adapt our approaches to changing circumstances.

History will continue to matter, but the challenge will be in sorting out collective values toward a new nature, one that may focus more on stabilizing self-regulating functions that provide desired services (however “desired” is cashed out). Once again, the importance of detailed studies of how people are engaged with ecological restoration will form the basis of a value system that respects the intrinsic properties of historically significant ecosystems and, at the same time, allows for appropriate gestures to changing circumstances.

Good restoration will acknowledge these challenges, but so too will it incorporate measured and modest human care. This is the essence of the arguments made in this book: people are integral to the flourishing of ecosystems, and restored ecosystems teach us a great deal about ourselves.