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## BOOK REVIEWS

### **Human Dimensions of Ecological Restoration: Integrating Science, Nature, and Culture.**

Edited by Dave Egan, Evan E. Hjerpe, and Jesse Abrams. 2011. Island Press, Washington, D.C., USA. 410 pages. \$90.00 (hardcover), \$45.00 (paper), \$45.00 (e-book). ISBN: 978-1-59726-689-5.

The practice of ecological restoration has long been a key element in the management of ecosystems, but it has only been since the 1980s that research on resource management has specifically studied this practice and its foundations in restoration ecology. One major focus of this research has been the application of the theories and methods of the social sciences to ecological restoration activities.

Fairly recently, the application of the social sciences to resource management, in general, and to ecological restoration, in particular, has been couched in the broadest of terms. Beginning in the 1990s, this application was expressed in terms of the human dimensions of resource management. The term "human dimensions" has generally been used to refer to the human and social aspects of resource management. But in empirical research, the term has been used more specifically to refer to the study of these aspects based on applications of particular social science disciplines. Those human dimensions receiving the greatest attention in the research literature have included:

- The psychology of human actors, as applied to the practice of resource management (e.g., their values, beliefs, attitudes, and behaviors as these relate to resource management);
- The sociology of human interactions, groups, institutions, and networks as they relate to management organizations (e.g., the structures and processes of management agencies, private companies, nongovernmental and nonprofit organizations, etc.);
- The political science aspects of ecological restoration efforts, with a focus on political institutions and processes for societal governance of natural resources—in particular, the public sector allocation of resources to achieve societal goals, as well as the role of political power as a primary influence in those institutions and processes; and
- The economics of resource management, whereby economic theory and research methods are applied to better understand the societal allocation of scarce resources, within a monetary and market context, and its impacts—with a specific focus on human values as expressed in monetary terms, and thus the economic benefits and costs (i.e., market and nonmarket impacts) of management activities.

These disciplinary lenses on resource management are increasingly being used to provide a greater understanding of the structures and processes of ecological restoration, as one important element of that management, just as they are being applied to related fields such as conservation biology, human ecology, and fish and wildlife management. However, given the only recent recognition of human dimensions, as well as ecological restoration, as important areas of focus for the practice of resource management and its scientific study, it is not unexpected that few scholarly books have addressed the nexus of these two topics, i.e., the application of human dimensions to ecological restoration.

The edited book of papers entitled *Human Dimensions of Ecological Restoration—Integrating Science, Nature, and Culture* represents one significant effort to help fill this void. This book, which is part of the *Science and Practice of Ecological Restoration* series developed by the Society for Ecological Restoration, is as its subtitle suggests a compilation of papers representing a diversity of socio-cultural and economic aspects of the restoration of natural areas. In their introduction (page 13), the book's editors emphasize that this collection seeks to "delve into some of the often neglected and, therefore often misunderstood aspects of ecological restoration". The editors further note that they:

"...draw on the experiences of the chapter authors in this book—a diverse assortment of restoration practitioners and researchers from around the world. We hope the lessons contained herein will be valuable to restoration veterans and greenhorns alike, scholars and students in a range of environmental and natural resource fields, and individuals who care about restoring their local lands and waters as well as themselves and their communities" (page 13).

This interdisciplinary compilation of papers provides a myriad of case studies that are global in scope, presenting a wide-ranging collection of rich, thoughtful discussions about the practice of ecological restoration in places as varied as the United States, Africa, and Asia. These diverse studies, moreover, represent a variety of research topics about restoration that are of interest to social scientists; the broad range of subjects of study examined here includes urban restoration, community-based forest management, the political ecology of restoration projects, the role of landscape history, and environmental education. This collection of studies also suggests the varied array of

disciplines and methods employed by the chapter authors as social scientists, including literature review, qualitative case analysis, survey research, economic analysis, techniques for public involvement and collaboration, and the assessment and evaluation of project planning and implementation.

Thus, one strength of *Human Dimensions of Ecological Restoration* is exposing its readers—especially those less familiar with the applications of social sciences in research—to several key aspects and ramifications of research findings about human dimensions in relation to ecological restoration practices. As the book's publisher notes, "in twenty-six chapters written by experts from around the world, it provides practical and theoretical information, analysis, models, and guidelines for optimizing human involvement in restoration projects."

The book's editors supplement this collection of human dimensions studies with introductory and concluding chapters that frame the collection's background and suggest its implications, providing context for the studies and clarifying their value and significance. In addition, the editors seek to enhance the reader's understanding of the relationships among the concepts and findings of these varied studies by structuring the book's chapters based on three "overarching meta-themes." Themes under which these papers are grouped and introduced include: "participation" (with case studies and research reviews focusing on volunteerism, community-based restoration, and collaboration with stakeholders); "power" (with papers focusing on political ecology, planning, resource economics, and policy and politics); and "perspective" (with papers exploring newer, more expansive restoration activities such as "eco-cultural restoration" and "restoration-based education"). One could quibble about the appropriateness, comprehensiveness, and applicability of these meta-themes, but that is true of most simplifying frameworks for increased understanding; this reviewer does not do so.

However, one should note that this volume does, in general, suffer from some of the same weaknesses found in similar edited volumes, in that the chapters, when considered as a whole, seem at times somewhat unrelated, redundant, and even repetitious. Also, their coverage of key concepts, issues, and other topics can seem somewhat selective and spotty. The most serious aspect of this incompleteness is its bearing on the book's stated scope highlighted in the subtitle (i.e., integrating science, nature, and culture) and in the editors' statement that they "seek to show why recognizing and understanding the human dimensions of ecological restoration are critical to the success and longevity of all ecological restoration efforts" (page 1). Although this compilation is a commendable exploration of some key elements of the "human side of conservation," any reader who comes to the book without a background in the social sciences could finish reading its papers without a fully developed and well-rounded understanding of the complete range of possible social science applications to the practice of ecological restoration.

This shortcoming stands in marked contrast to the breadth and depth of ecologists and social scientists whose contributions are grounded in a broader, systems-theoretic approach, such as that provided by the continually expanding body of research and knowledge based on Resiliency Theory, with its holistic, comprehensive, integrative, and multi-disciplinary focus on social-ecological systems.

These shortcomings aside, this edited volume is a significant contribution to the field of ecological restoration and the education of current and future practitioners, including non-scientists who have had little exposure to the formal, rigorous study of some of the many ways in which human activities have impeded or promoted progress in restoring degraded ecosystems. *Human Dimensions of Ecological Restoration* is especially notable for exposing the uninitiated to the wealth of knowledge and activities provided by social scientists—scientists who are as diverse and specialized in their disciplines and approaches as their counterparts in the physical sciences. As the book's editors suggest, however, this book is nonetheless a most useful introduction to the human dimensions of ecological restoration for "scholars and students alike." Significantly, readers of the chapters in this volume can benefit greatly from its value for increasing awareness and appreciation of the human aspects of this growing field of resource management practice and the eclectic contributions of social scientists and practitioners actively engaged in advancing that practice.—Chuck Harris, Professor of Environmental Policy, Planning and Management, College of Natural Resources, University of Idaho, Moscow, Idaho 83844-1139, USA.

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**Mammals of Colorado.** Second edition. David M. Armstrong, James P. Fitzgerald, and Carron A. Meaney. 2011. Denver Museum of Nature & Science and University Press of Colorado, Boulder, Colorado, USA. 620 pages + xiii. \$55.00 (cloth), \$45.00 (e-book). ISBN: 978-1-60732-047-0.

In my view, the second edition of *Mammals of Colorado* is among the finest state-level books on mammals available. The book is a major revision of the first edition (Fitzgerald et al. 1994) and is a reference worth having, even if the first edition is already at hand. In this review, I summarize aspects of the new volume and provide comparisons to the first edition in an effort to persuade the reader that this is indeed the case.

The first four chapters of the second edition include background information and updated material about Colorado environments, mammals in general, the history of mammals and mammalogy in Colorado, and the stewardship