

BOOK REVIEW

REVIEW OF *LARGE-SCALE ECOSYSTEM RESTORATION: FIVE CASE STUDIES FROM THE UNITED STATES*

BY

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From the 1970s on, much of the focus of environmental law in the United States was on the abatement of pollution and (to a lesser extent) its prevention.¹ In recent years, however, significant efforts have been mounted to restore or rehabilitate natural aquatic systems that were degraded by contamination, land development, and other human activities. In *Large-Scale Ecosystem Restoration: Five Case Studies from the United States*,² Mary Doyle and Cynthia A. Drew have skillfully edited a fascinating collection of essays that describe the institutional, economic, ecological, and political aspects of five large-scale, publicly funded and administered ecosystem restoration projects. In particular, their book presents case studies of restoration programs in the Florida Everglades, the Platte River Basin, the California Bay-Delta, Chesapeake Bay, and the Upper Mississippi River Basin. Each case study consists of a detailed description of the program and its sociopolitical context, an analysis of the ecology of the system being restored, and a discussion of the economic costs and benefits of the program.

The book is a first-of-its-kind effort, and it presents a plethora of information regarding these ambitious, costly, and controversial programs. Notwithstanding the technical complexity of its subject matter, the work is

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¹ See generally RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* (2004); Christopher H. Schroeder, *Innovation: Lessons from the Early Environmental Movement*, 39 ENVTL. L. 285, 289 (2009) (discussing the proliferation of environmental laws in the 1970s).

² *LARGE-SCALE ECOSYSTEM RESTORATION: FIVE CASE STUDIES FROM THE UNITED STATES* (Mary Doyle & Cynthia A. Drew eds., 2008).

clearly written throughout. It sheds considerable light on the numerous challenges that inhere in restoring and protecting long abused water systems that are regulated by numerous governmental institutions and of vital interest to a multiplicity of stakeholders.

The program descriptions for each of the five restoration projects studied provide a wealth of information that is not available elsewhere. They describe—in terms fully comprehensible to nonscientists—the geographical and biological features of each aquatic system, the ways in which each has become degraded, how the need for system-wide rehabilitation became obvious, and the beginnings and evolution of restoration efforts. Each of these chapters is well documented and authoritative. Moreover, in many cases the program descriptions reflect the inside knowledge of key participants in the restoration efforts—a vital component of any truly comprehensive overview of those programs.

Each of the chapters regarding the ecology of the water systems was written by the same author, Dr. Thomas Crisman, who provides a crisp and understandable summary of the ecological features of the systems and the difficulties they raise for restoration through the technique of adaptive management. Although the aquatic resources under study vary dramatically, Crisman's chapters (which supplement the far briefer ecological descriptions that appear in the program description chapters) adhere to a common theme: Full restoration of the original, pristine condition of the waters in question is, as a practical matter, unattainable. As a result, restoration projects should set more proximate, achievable goals.

The five chapters concerning the political economics of ecosystem restoration also have a single author, Dr. Stephen Polasky. His chapters adopt a utilitarian analysis, attempting to compare the potential costs and benefits of the restoration efforts and to assay the sociopolitical phenomena that continue to be a critical determinant of the overall success—and the prospects for the ultimate success—of the projects. Although relatively brief, Polasky's chapters are one of the strongest aspects of *Large-Scale Ecosystem Restoration*. They are uniformly concise, realistic, and incisive.

This work is not without some shortcomings. At times information that appears in one chapter that discusses restoration of a particular ecosystem is repeated in other chapters concerning the same system. This redundancy can be distracting to the reader. In addition, the book would have benefitted from a more extensive effort to compare and contrast the complex ecosystem restoration efforts that the book considers. Mary Doyle's concluding chapter begins that process by preparing a "checklist" that can be used to assess the five projects focused on in the work as well as other similar projects. Doyle calls for inquiry into the timing and levels of project funding, the extent to which the project has set and met goals, the nature and status of federal-state relations, the quality of the science and its integration in decision making, the extent to which the project provides for the management and resolution of conflicts, and the extent of public awareness and support. While this checklist is certainly useful, Doyle's chapter might have been of greater benefit if it had systematically compared

and evaluated the projects. For example, it would be useful to have an informed assessment of the specific factors that led to success or failure in the restoration efforts, what techniques interested agencies, legislators, and citizens might employ effectively to encourage restoration efforts in future, and what circumstances have most encouraged the integration of peer-reviewed science into project decision making.

These caveats and cavils notwithstanding, however, *Large-Scale Ecosystem Restoration* is an ambitious, important, and successful book. It is vital reading for anyone with a serious interest in any of the five restoration projects that it treats. It will provide a valuable addition to the reading lists of undergraduate and graduate courses in ecology, geography, public administration, political science, environmental economics, and natural resources law, and it will also be of interest to general readers who are curious about how some of our nation's most important and celebrated water systems may be restored (even if only in part) to their past glory.