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Naiman, Robert J., and Robert E. Bilby, editors. 1998. **River ecology and management: lessons from the Pacific coastal ecoregion**. Springer-Verlag, New York. xxiv + 705 p. \$189.00. ISBN: 0-387-98323-6 (alk. paper).

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*River ecology and management: lessons from the Pacific coastal ecoregion* offers a number of outstanding features. First, the regional emphasis allows for comprehensive, intensive coverage of existing information and recent advances in stream ecology that have occurred in the Pacific Northwest—an area rich in lotic resources, aquatic scientists, and contentious management issues. Second, this book contains a blend of conceptual, basic ecology, empirical findings and applications, and generalized management approaches. Third, the philosophical, political, and sociological aspects of resource management are incorporated, which is atypical of classic ecology texts, but is becoming more commonplace in the conservation literature. The book is not an update of H.B.N. Hynes' classic *The ecology of running waters* (1970. Liverpool University Press, Liverpool, Great Britain), and it is not the product of a conference or symposium, nor does it dwell on the plight of Pacific salmon or other imperiled species: but it is a thorough summary of the state of our knowledge and the future of flowing waters, their inhabitants, and the watersheds of the Pacific coast.

The editors begin the volume with a concise, conceptual framework of stream ecology and description of the region and associated ecological and anthropogenic issues. The remainder of the book consists of 26 chapters in five sections. (1) "The physical environment" describes fluvial geomorphology, hydrology, and water quality, with an emphasis on processes, forms, and watersheds of the region. (2) "The biotic environment" includes biotic stream classifications and coverage of all trophic levels of organisms that occupy streams, as well as riparian wildlife. The approach is from the community level, highlighting physical and biotic interactions at varying spatial scales. This section most resembles material from a classic stream ecology text, but is modern in content and presentation. Material here is universal among regions. (3) "Ecosystem processes" is the longest section of the book and covers what is often termed "ecosystem ecology" from the standpoint of process, structure, and function. There is no systematic organization among chapters of this section; rather, it includes both spatial (e.g., landscapes, riparian forests, hyporheic zone) and functional approaches (nutrients, woody debris, trophic dynamics, biodiversity). Disturbance and effects of human activities are recurring themes in this section. (4) "Management" spans monitoring and assessment, including statistical considerations and broad-scale and community approaches, but also covers sociopolitical topics, such as social organizations, economics, and law. And finally, (5) "The future" focuses on watershed management and restoration, and includes a curious but interesting discussion on the role of nonprofit groups in conservation and an insightful closing on watershed ecosystem management and strategies for the future.

The book was designed to synthesize the many advances in stream ecology and management of the last two decades and was developed around the premise that an understanding of fundamental ecological and social processes will lead to improved management. The chapter authors are primarily faculty and students of University of Washington and resource professionals of the U.S. Forest Service, but include contributors from other institutions and the private sector, mostly located within the region. Organization

of the book is logical; writing and figures are clear; typographic errors are present, but few; the index is adequate; and the overall appearance is attractive. Each chapter opens with an overview in the form of a bulleted list of paragraphs, and each concludes with a literature cited section. The amount and quality of literature cited constitutes a useful resource in itself. There is some redundancy among chapters within the book and with those of other recent books, but overall the compilation and synthesis of this material should prove valuable.

It is unclear to me what niche this book will fill in education, research, or management. While I view its most appropriate application as a graduate or upper-level undergraduate stream ecology text, faculty and students from other regions may be hesitant to embark on such an in-depth course of study of the Pacific coastal ecoregion. However, the wealth of science and literature in the book renders it a useful summary and reference for aquatic and watershed researchers, and most of the concepts and applications extend beyond the ecoregion. Most importantly, this book should be required reading for all ecosystem and natural resource managers of the Pacific Northwest—aquatic, terrestrial or social. The lessons to be learned from the history, conceptual paradigms, research findings, and management approaches presented in this book are many and varied and would benefit managers of other ecoregions as well. I recommend the book to all of the above, but this is an advanced treatment of the subject and less suitable for the lay reader or students of unrelated disciplines.

Unfortunately, the hefty price of this book may limit the breadth of the niche it will occupy. At first glance, the cost of this book (\$189.00) may appear excessive, but upon further examination, it is reasonable, compared to other recent publications. The cost per printed page of Naiman and Bilby's book is \$0.27—not out of line for hardbound volumes of comparable quality. Three recent aquatic ecology texts from other publishers cost \$0.11, \$0.12, and \$0.44 per page. However, to the relief of students and scientists of stream ecology, the latter three books are also currently available in paperback edition at substantially lower prices (\$0.06, \$0.08, \$0.15 per page). In time, a paper cover edition of *River ecology and management: lessons from the Pacific coastal ecoregion* would be welcomed by the scientific community and would surely increase the access and utility of this important work.

Many of the "lessons from the Pacific coastal ecoregion" were learned the hard way, through trial and error and unplanned experiments. Most of the case studies and examples presented are from this region, but the messages are universal. This book provides a benchmark of the current state of our knowledge of stream ecology and management of the Pacific coast, a region of rapidly changing landscape, resources, and sociopolitical climate. The book's final section, "The future," is perhaps its most important, which along with the preceding background material, forms the necessary components to guide and improve management of flowing-water ecosystems. I await similar detailed studies of riverine science from other regions that may be stimulated by this book as well as an update on progress and developments for future decades in the Pacific coastal ecoregion.

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