style than I ever could. This introductory material certainly adds to the merits of these volumes.

Both volumes self-review their contents in the introductory first chapter. Volume 1 contains chapters on atmospheric models, marine models, ecological modeling, water quality modeling of rivers and lakes, multimedia modeling (defined as transport and fate of chemicals in the atmosphere, surface water, soil, groundwater, and biota), environmental noise modeling, information management, and the future of environmental modeling. Volume 2 has chapters on modeling air spray drift, metropolitan airshed modeling, particle dispersion modeling, long-range transport models, rainfall-runoff modeling applied to catchment hydrology, and others to total 17 chapters between the two volumes. Volume 2 also contains "A Guide to the Reader of... Volumes 1 and 2," which summarizes by subject matter the contents of both volumes.

Editor Zanetti states in Volume 2 that "Hopefully, the Environmental Modeling series will not be just black ink on white paper." The intent is to include "computerized" chapters and user-friendly software in the series in the immediate future, with the hope that "... the inclusion of user-friendly versions of environmental models as part of the chapter material will allow readers to run environmental simulations to verify their understanding of modeling theories and numerical implementations." While this software is not included with the first two volumes, the idea of producing such educational aids is a noble one, and I hope it comes to fruition. It is not clear whether this software would apply to chapters in Volume 1 or 2, or to new material in succeeding volumes (in fact, it is not clear whether there will even be further volumes with more models). Even so, the addition of appropriate educational and supplementary software would certainly distinguish this series.

Potential buyers of this two-volume series should realize that the subject matter treatments are fairly mathematical, as would be expected from the international community of scientists and engineers engaged in quantitative environmental modeling. However, the presentation and content of each chapter is quite strong and useful. Each chapter has extensive reference lists, and the editorial quality is excellent. The volumes are each fairly expensive, but even if only two or three chapters in each volume apply directly to your interests, it is quite educational to discover the application of mathematical techniques in model-building for other environmental systems. However, $150 to $200 per volume is a lot to pay for two or three chapters of information. The volumes are clearly priced for library purchase, and I would suggest your library obtain them for reference use. — R.J. WAGENET, Department of Soil, Crop and Atmospheric Sciences, Cornell University, Ithaca, NY 14853.

Wetlands, Second Edition


Wetlands, in its second edition, remains the single best combination text and reference book on wetland ecology. This edition, 183 pages longer than the first, is a significant expansion of the first edition, including a new 39-page chapter on wetland creation and restoration. The chapters on hydrology, biogeochemistry, tidal salt marshes, freshwater marshes, northern peatlands, riparian wetlands, and values and functions of wetlands have been expanded by 10 to 16 pages each. The literature references are more than twice that of the first edition, for a total in excess of 1400. Those who have been using the book as a text will be pleased that the authors have retained the original format, grouping all 18 chapters within five parts titled Introduction, The Wetland Environment, Coastal Wetland Ecosystems, Inland Wetland Ecosystems, and Management of Wetlands. What had been Summary sections in each chapter have been made more effective by moving them to the opening chapter page as introductory material.

Further improvements on the first edition include new and re-drawn graphs and charts, more photographs, and corrections of annoying data misprints in many of the figures illustrating wetland models. Only a few errors occur in the text, but the diagram of van der Valk's general model of Gleasonian wetland succession still contains serious errors. In the chapter on hydrology, the authors could have had better illustrations of groundwater and surface water relationships had they used Novitzki's original diagrams rather than re-drawing them. But on the whole, the illustrations are much more well done than in the first edition.

The second edition remains focused on wetlands of the USA, with only a modest addition of material from wetlands in Canada and other continents. For a more global perspective, readers should consult M. William's (ed.) Wetlands: A Threatened Landscape (Basil Blackwell, Inc., 1990). The main weakness of the text, with respect to geographic coverage in the USA, is that the vast scattered forested wetlands of the glaciated northeastern USA, the Saint Lawrence basin, and eastern maritime region of Canada still receive little recognition. They are by far the most common of the freshwater wetlands in this region, most occur on a mineral soil substrate, and they differ significantly from the systems treated in the chapter on northern peatlands. While the revisions of this edition will be most appreciated by professionals in the wetland field, the clarity of the writing and the illustrations make this a valuable information source to inform the growing body of citizens who are coming to appreciate the values of wetlands to human society. The authors made a major contribution with their first edition, and this edition is a significant contribution in its own right. — JOSEPH S. LARSON, The Environmental Institute, Graduate School, University of Massachusetts, Amherst, MA 01003-0820.

Multiojective Decision Support for Environmental Management


DEFINITE: Decisions on a FINITE set of alternatives


This book is aimed at the researchers and consultants who assist policy makers to make decisions on environmental problems in the face of multiple planning objectives, as is usually the case. The author is a researcher in the Institute for Environmental Studies at the Free University of Amsterdam. He draws on his previous work in this area as well as the extensive