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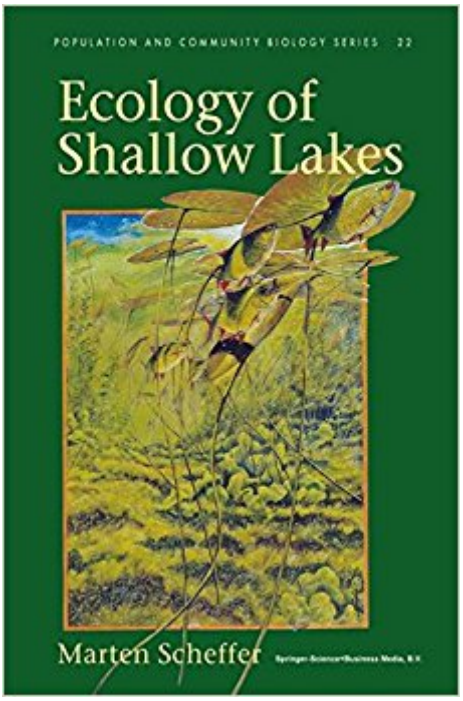
Ecology Of Shallow Lakes (Population And Community Biology Series)



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Synopsis

Ecology of Shallow Lakes brings together current understanding of the mechanisms that drive the diametrically opposite states of water clarity, shown by the cover paintings, found in many shallow lakes and ponds. It gives an outline of the knowledge gained from field observations, experimental work, and restoration studies, linked by a solid theoretical framework. The book focuses on shallow lakes, but the lucid treatment of plankton dynamics, resuspension, light climate and the role of vegetation is relevant to a much wider range of aquatic systems. The models that are used remain simple and most analyses are graphical rather than algebraic. The text will therefore appeal to students, scientists and policy makers in the field of ecology, fisheries, pollution studies and water management, and also to theoreticans who will benefit from the many real-world examples of topics such as predation and competition theory, bifurcation analysis and catastrophe theory. Perhaps most importantly, the book is a remarkable example of how large field experiments and simple models can catalyze our insight into complex ecosystems. Marten Scheffer wrote this book while at the Institute of Inland Water Management and Waste Treatment, RIZA, Lelystad, The Netherlands. He is currently at the Department of Water Quality Management and Aquatic Ecology of the Wageningen Agricultural University. Reviews`Much rarer are textbooks that so succinctly sum up the state-of-the-art knowledge about a subject that they become instant `bibles'. This book is one of these. It is probably one of the best biological textbooks I have read. Scheffer masterfully pulls all this information together under one cover and presents a coherent account, which will serve as a benchmark for the subject. The reader will not gain any great insight into the breeding biology of pike from this book, nor learn much about dragonflies or newts. They will, however, come to understand the essential nature of shallow lakes or, as the author puts it, `how shallow lakes work'. Overall, this book will be of great interest to practical and theoretical ecologists, students and managers in all fields of biology. All freshwater ecologists should certainly read it.' Simon Harrison in Journal of Ecology, 86 `The book by Scheffer can be seen as a milestone in the recognition of shallow lakes as a research topic in its own right. Scheffer uses three approaches concurrently to unravel the functioning of shallow lakes: 1) statistical analysis of large datasets from a variety of lakes; 2) simple abstract models made up of a few non-linear ordinary differential equations, which he calls `mini-models'; and 3) logical reasoning based on a mixture of results from fieldwork, experiments and models. What is new is that Scheffer links mathematics very nicely with what one feels is a correct description of the functioning of a shallow lake. Employing logical reasoning, Scheffer combines all these sources of knowledge into a general, coherent picture of the functioning of a shallow lake.' Wolf Mooij in Aquatic Ecology, 32

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Customer Reviews

this book is well written and easy to follow. a very good introduction to shallow lake ecology. the case studies were an excellent way to illustrate the conceptual points. my only compaint is the lack of detail on some subjects.

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