

Preface to the second edition

Why a second edition? And how different is it from the first? These are two obvious questions that a writer must address. Overall, this is a major revision in form, but built around the same principles. Some chapters, such as Flooding and Fertility, are revised with new figures. Other chapters, including Services and functions and Restoration, are entirely new.

Having had ten years to observe reactions to the first edition, I now have a better understanding of how ecologists in general, and American students in particular, think about wetlands. I have therefore re-balanced and reorganized the book to better reflect these realities. At the same time, I have stuck to the view that a small number of general principles are needed to unify wetland ecology, and that a small set of causal factors are present in all wetlands, albeit in differing relative importance.

Over the book as a whole, I have reorganized the flow of ideas to place causal factors nearer the beginning, and in order of relative importance. Students, then, can start immediately with effects of flooding in Chapter 2 and fertility in Chapter 3. The more conceptually difficult material (such as zonation, biodiversity, and valuation of ecological services) has been moved to later in the book.

Each chapter begins with a few basic principles up front and early, usually accompanied by a few clear examples to illustrate the principle. The more difficult concepts are introduced later in each chapter. The inevitable exceptions also occur here – but only once the general principle is well established.

There is an entire new restoration chapter which draws upon practical examples from around the world, including the Everglades, coastal Louisiana, the Danube River, and the Yangtze River. As noted in the first edition, there is still an unfortunate tendency for wetland ecologists to work in geographical and taxonomic isolation, and this chapter tries to bring together a consistent worldwide perspective on restoration.

There is also a new chapter on research. I have moved certain topics to this chapter, in the view that an overview of tactics and strategies may be of most use to advanced students who are planning their own investigations.

Biodiversity conservation grows in importance with each passing year. I have rewritten the chapter on biodiversity to make the hierarchy of causation more clear. I have also introduced new information such as the IUCN *Red List* and principles for designing wetland reserve systems. I have also introduced wetland evaluation systems for land use planning.

I have removed examples and topics that time has taught were extraneous, and added in others, always trying to keep an international perspective, since wetland plants and animals do not recognize political borders. There are many new figures, including some drawn specifically for this book, as well as new photographs.

Names are always an issue. I have used common names for most groups where nomenclature is well established – particularly birds and mammals – but scientific names for plants and insects, owing to their diversity. In some cases, in appropriate context, I deviate from this rule. Since names continue to change (e.g. *Scirpus*, *Schoenoplectus*), I have resisted the temptation to make everything internally consistent. This sort of consistency introduces problems of its own – for example, if I were to change every incidence of *Scirpus* to *Schoenoplectus*, then students consulting the original papers could be misled. Hence, in most cases, I have used names that were current when the work was published.

One of the most basic principles of science is to have multiple working hypotheses. I have tried to include competing points of view in this book. I would like to think that we could encourage our students to accept that there are unknowns in science, and to respect differences of opinion as healthy, and as an opportunity for designing the research that will resolve the confusion.

Some people think the only way to read a book is to start at the beginning and plow through every word until the end, which might indeed seem challenging. This is not, in my opinion, the best option for using this book, or any book. Here are some others. (1) You could start by flipping through the book for just the color plates – they tell a story of their own. (2) Next you could choose a handful of black-and-white illustrations that catch your attention – each also tells a story. (3) You could read the first chapter for an overview of wetlands – the short story. (4) You could then read Chapters 2–8 that deal with causal factors in wetlands. (5) If you are a busy manager, you could consult Chapters 13 and 14 for restoration and conservation issues. (6) I would suggest that Chapters 9–12 be left for a second reading. They deal with more advanced topics that may be of more interest to graduate students and research scientists. (7) A very short course in wetlands and conservation would consist of Chapters 1 and 14 only. A longer course in wetlands and conservation would consist of Chapters 1–8 and 13–14. (8) Each chapter could also stand alone, so if there is a particular topic that you need to learn about – say nutrients or grazing – go directly to the chapter on that topic. (9) Finally, as I still have to remind my classes, there is an index. Use it. Some time has gone into selecting these topics. It is not just generated by a machine, but by human thought. Feel free to dive into a selected topic – say dams or coarse woody debris or amphibians or fire – and then work your way outward. Overall,

the point is to make this book your own and use it in whatever way helps you grasp the material most quickly.

Although the volume of information on wetlands will always grow, I would like to think that the principles in this book are timeless, since wetlands themselves will always be organized by a few causal factors, leaving us with the task of documenting their consequences – for ecological processes, for surrounding landscapes, and for the wild species that live in wetlands.

PAUL KEDDY