

Australian Freshwater Ecology. Processes and Management

Andrew J. Boulton and Margaret Brock, 1999
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AUSTRALIAN students of inland waters have had access to few texts written over the last two decades which adequately represent the complexity of the Australian aquatic environments. *Australian Freshwater Ecology* will undoubtedly bridge that gap.

For the context and justification of the book, look no further than the Acknowledgments and the Preface sections, where statements of explicit biases will be a clear guide to any reader. This book displays a passion for Australian wetlands and highlights a need to improve their plight, offering detailed scientific explanations rarely seen in multidisciplinary university courses. The book lacks the arrogance of know-it-alls; instead it elevates the Australian inland aquatic scientific community to co-author status, with 68 contributing guest authors providing 79 boxes of text. These are embedded within Boulton and Brock's experiences, and their compilation of recent and relevant Australian works.

In the Preface, the authors draw the reader's attention to the "... meteoric rise in pure and applied research in aquatic ecology in Australia since the mid-1980s...", a more holistic field of ecology and the "intimate linkage between catchments, groundwater and wetlands". The authors "... integrate processes and management, recognising the necessity of rigorous science to underpin flexible and adaptive management."

To established researchers in the field these perceptions will ring true, even if only to affirm current trends in Australian inland aquatic praxis, and their utterances of "at last" will be audible across the continent. The book is organized accordingly, where the consequences of climate, hydrology and scale are covered in the first part. The largest part of the book covers the consequences of depth and water circulation in standing waters, the consequences of flow in running waters, and the consequences of presence or absence of water. For each of standing water and running water, the authors prepare an exposé of physical, chemical and biological processes in separate chapters. Within each chapter the

breakdown continues. For instance in Chemical Processes in Standing Waters, the chapter progresses with dissolved gases, ionic composition, metals, macro-nutrients, and dissolved organic matter, all in 23 pages. This breakdown is designed to present to the reader the components of aquatic systems in a thematic approach rather than the structural, component-based approach of existing well-known limnological texts.

The third part of the book deals with applied aspects: water issues, catchment issues, and integrating ecology with management. Australian examples are used throughout, and the management issues covered include nearly all those you could possibly imagine (simply too extensive to cover here!). An interesting presentation in the final chapter is an overview of the administrative aspects of research, monitoring and state of environment reporting in Australia.

The page layout is busy, using boxes of text to draw the reader's attention to an issue relevant to the section. Summary tables are frequently used. The many figures are clear and valuable, diagrammatically depicting consequences and influences in, and the dynamic nature of, aquatic systems by using arrows of varying widths and sizes (a little overdone at times — on one figure I counted 32 arrows). Black and white photographs are included on most pages, all of them in postage stamp size categories (which does little justice to pictures of habitat and landscape).

The authors have provided us with a reference text, a book that includes a glossary of 257 words, terms, phrases and abbreviations, plus a list of all contributing authors and their contact addresses. The bibliography contains over 400 references, a significant proportion of them produced in the last 10 years, and dominated by Australian works. The index is thorough, 18 pages in length. The success of this book will hinge on these structures; one of the drawbacks of a thematic approach is that those of us still languishing in reductionist limnology will need good footholds to find out about components of inland waters.

The book covers the breadth of the inland aquatic sciences by introducing topics to the reader in the context of integration. It has sufficient detail to adequately challenge the good senior undergraduate, to inform the postgraduate student, and to use as a reference text in professional employment. In short, whether as a student, researcher or practitioner, this book is a "must buy".

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