Book Review

Ecology of Australian freshwater fishes. Paul Humphries and Keith Walker (editors). ISBN 9780643097438. CSIRO Publishing, 150 Oxford Street, Collingwood, Victoria 3066, Australia. 440 pp. AU\$130 (hardback). Reviewed by Ben Stewart-Koster¹

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Ecology of Australian Freshwater Fishes was a very enjoyable book to read. The geology and hydrology of the world's oldest and driest inhabited continent makes the ecology of the native fishes a fascinating pursuit. The past 30 y of research has yielded many interesting insights into the factors that govern the unique aquatic biota of Australia, and this book is a valuable summary of this research. It has 13 chapters written by some of Australia's eminent aquatic ecologists. Topics include the biogeographical constraints and evolutionary processes that have shaped the native fauna, trophic ecology, and reproductive biology of fishes; the biotic interactions and habitat conditions upon which the fishes depend; and the management and conservation challenges now and in the future. It covers a broad array of topics which, as acknowledged by the editors in the first chapter, requires omission of finer details as they currently stand lest the book be almost immediately outdated. Nonetheless, I think the book will prove a very useful addition to the library of many readers of *Freshwater Science*.

The book reads as part review and synthesis and part textbook. Many chapters include introductory descriptions of methods of analysis and investigation relevant to that section. For example, Chapter 8 (Crook and Gillanders) provides a helpful review of methods for aging fish, including length–age relationships and otolith microchemistry, before reviewing features and factors that affect growth and development of Australian fishes. Similarly, Harris et al. (Chapter 9) provide an introduction to models of population dynamics in a way that asks researchers to delve into this quantitative world for Australian freshwater

fishes. The multifaceted approach inevitably limits the depth of the review aspect of the chapters, but I found that it helped put current knowledge into context. I think it increases the value to the intended audience.

I particularly enjoyed the chapter on movements and migration (Koehn and Crook, Chapter 5) because the Australian freshwater environment is characterized by such unpredictable hydrology that a capacity for movement is essential for many species to persist. In that vein, it is not surprising that Australian ecologists have published a number of important works on the ecology of fish movement. From the rapid dispersal events associated with the boom–bust ecology of the desert rivers to the large-scale migrations in the heavily impacted rivers in the Murray–Darling Basin, movement is an integral part of the ecology of many Australian species. This chapter elaborates the many facets of fish movement and highlights some interesting findings and knowledge gaps, including research on the fishes of the tropical north, which is emerging as an exciting area of aquatic ecology.

In summary, I think this book will be of interest to a range of readers. Obviously, the focus is on the Australian fish fauna. However, it retains a broad focus on issues relevant to fish ecology globally (e.g., invasive species, habitat fragmentation, and barriers to movement) that makes it relevant to readers in other regions as well. Advanced undergraduate students will find the book a useful introduction to specific fields of fish ecology, graduate students should find it a helpful guide book to key references in the literature, and practicing ecologists would find it very helpful as a guide to complimentary areas of their research. The discussions of key knowledge gaps and promising areas for research should prove useful to students and advisors searching for that ideal project. Even anglers are likely to enjoy the chapters on freshwater habitats (where will I find that big one that got away?), trophic ecology (what bait should I use to catch it?), and age and growth (now that I've landed it, how old might it be?). A lot has been learned about Australian fish ecology in the past 30 y, and this volume provides an excellent trip through the literature. At \$130 (Australian) I highly recommend it as part of the aquatic ecologist's library.