



**PUBLICATIONS:  
BOOK REVIEW**

# **Centrarchid Fishes: Diversity, Biology, and Conservation**

**Edited by S. J. Cooke and D. P. Philipp**  
**Wiley-Blackwell. 2009. 539 pages. \$224.**

The family Centrarchidae (sunfishes) represent some of the most ecologically and economically important freshwater fishes in North America. The book is a textbook-style volume that investigates this family in a comprehensive manner, with 13 chapters written by different authors. The chapters span topics such as phylogeography, ecomorphology, reproduction and early life history, energetics, aquaculture, fisheries, and species identification. The editors did a great job of soliciting authors with much experience in each subject area, resulting in a text that is broad in its scope and at the same time detailed in its content.

Did you know that there are at least three extinct species of centrarchids, including an extinct member of the genus *Micropterus*? I didn't. The first chapter ("Species Diversity, Phylogeny, and Phylogeography of Centrarchidae") is a fascinating chronology of our phylogenetic perceptions of centrarchids. The chapter contains excellent images of fossils for various members of the family.

For researchers and fisheries managers, many of the chapters will be valuable resources. Chapter 2 summarizes hybridization within the family and describes details such as the sex ratios and degree of sterility for a range of hybrids (e.g., *Lepomis macrochirus* x *L. cyanellus*) which is an important consideration to evaluate impacts of species introductions. Chapter 7 reviews a large amount of energetics work for a wide range

of centrarchid species. It includes an interesting "genealogy of large-mouth bass models" showing how energetic model parameters have been borrowed and improved from one study to the next. Chapter 10 reviews culture methods for members

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of the group, including use of triploid technology, grow-out strategies, and nutrition requirements for each major genus. Physiology and performance metrics are summarized in Chapter 8, which represents the first synthesis of baseline values for measures such as plasma hormones, muscle enzymes, and stress responses for centrarchids. Fishery managers and researchers will find it very useful to have these parameters and studies compiled into one volume, where it will be easy to compare values across species.

The book also summarizes the ecology of Centrarchidae and puts the work in the context of broader ecological principles. Examples of competition, optimal foraging, biotic and abiotic influences on recruitment, and reproductive behaviors are described with numerous examples using a variety species within the family. Because centrarchids contain a very wide range of life history types

and feeding strategies, readers will find this book useful when exploring ecological patterns for just about any freshwater fish. The book is strong enough in this area to be used as a reference in a fish ecology course.

Chapter 11 explores centrarchid fisheries and gives a solid overview of the popularity, economic implications, types of fisheries, and regulations used to manage these fisheries across their current range. Some of the information here has been published in other places, but again having it in one place for all these species will be useful.

My primary criticisms of the book are related to organization of the text and a few omissions. Some of the chapters contain content that overlaps substantially. Some of this is necessary, but the Chapter 8 "Population and Community Ecology" contains a fair amount of information that is similar to topics in Chapter 5 "Early Life History and Recruitment." Chapter 4 entitled "Alternative Reproductive Tactics" had some overlap with the chapter on hybridization. The overlap is not a major flaw but it makes the book a bit redundant in places.

Chapter 12 entitled "Contemporary Issues in Conservation and Management" could have been more explicit in separating conservation issues from management issues. For example, that chapter describes recreational fisheries broadly as a threat to centrarchid populations. Fishing influences the size and age structure of centrarchid populations, but to my knowledge there are no examples of species losses owing to fishing. The text here could do a better job of



separating the threat of population structure changes (a management problem) from the threat of species extirpations (a conservation problem).

The final chapter of the book is about 150 pages and entitled "Centrarchid Identification and Natural History." This section details the physical characteristics, size/age, coloration, range, habitat, food habits, reproductive characteristics, and other information for all 34 species in the family. Once again, it makes the book an excellent reference, and this section provides much

more detail about each species than the typical "Fishes of My State" textbook. I was, however, surprised the book did not contain a set of color plates for all species in the family. Finally, the cost of the book is high, especially given the lack of color plates. This will preclude some people from acquiring the book, which is unfortunate.

In summary, this book compiles an amazing amount of information into one source that will be an important reference for a wide range of professionals working on conservation,

management, culture, and ecology of this widespread family of fishes. The aforementioned misgivings aside, this book is an excellent work that should be in the library of just about any professional whose work includes freshwater fishes.

—Mike S. Allen,  
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