

Trout and Char of the World

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I am not particularly a fan of edited volumes, although I have edited or written chapters for my share of them. Too often they are collections of only weakly related papers, some of which probably would not have gotten published in a regular journal. This book is a happy exception to that observation. While the 21 chapters vary highly in approach and style, the collection holds together well and the writing is clear, a tribute to the editors. This is not a book you will read cover-to-cover, however. Instead, if you are fascinated by salmonid fishes, you will want to have a copy handy for browsing for inspiration (e.g. Chapter 3, or essays that wind up the book) or for information on diversity of topics such as life history diversity (7), trout in literature (4), and systematics (5). I especially recommend it for satisfying curiosity about unusual trout or char in unexpected places, such as the Softmouth Trout *Salmo obtusirostris*, a clade of *Salmo* found only in four rivers in the Balkans. Their mouth curiously resembles that of grayling *Thymallus* spp. more than it does of other *Salmo*. Accounts are presented with maps and photographs of live fish, with access to recent literature in many languages.

Most biologists who work with trout and char, at least those that I know, as well as many anglers, have a fascination for their evolution and inter-relationships. Distinctive forms have evolved rapidly in isolation in many parts of the northern hemisphere and provoke continuous controversies over their origins and species status. Many of the controversies are addressed here, such as the nature of lineages making up the Cutthroat Trout *Oncorhynchus clarkii* spp. complex of North America with its multitude of lovely isolates. The attempts here to resolve controversies do not always lead to satisfactory resolution, but yeoman effort is made to address them, even if species boundaries are “blurry” (p. 28). Rapidly developing genomic approaches to systematics (e.g., restrictive site associated DNA sequencing) may resolve many such controversies, but ultimately determination of species will still require human judgement and debate. Clearly, one purpose of the book is to celebrate the diversity of trout and char, regardless of what we name the various lineages. In the meantime, if you really want to know how many species of trout and char there are currently recognized, you should buy the book.

Another reason for having the book handy is that you get a much better and reliable impression of the geographic distributions of trout and char than easily found (if at all) elsewhere; over 50% of the book (11/21 chapters) is devoted to their distribution and biology in the various regions of the world that support them. I suspect that much of this information is not readily available elsewhere in English, such as that found in the seemingly endless account of trout and char diversity in

Russia by Markevich and Esin, with maps and photos (16). I must admit, however, that my favorite account in the book is that of Hendrickson and Tomelleri on native trout of Mexico. This chapter (8) is a tale of adventure in finding rare trout in remote mountains, complete with photographs of habitat and Tomelleri’s gorgeous drawings to illustrate the brilliant diversity of the endemic—and disappearing—trout.

While the book focuses on native taxa, one of its strengths is the discussion throughout of species found outside their native ranges, especially Rainbow Trout *O. mykiss*, Brook Trout *Salvelinus fontinalis*, and Brown Trout *S. trutta*. I was once again impressed with the enormous efforts made to introduce these species into waters around the globe, even in tropical countries. The negative consequences to the native aquatic biota, including native salmonids, is discussed, but the importance of introduced species to fisheries and aquaculture is also recognized. As attitudes towards non-native species change, which various chapters imply is happening, management should increasingly shift in favor of native species as is happening in South Africa and western North America. However, there is no question that trout and char will remain important both for recreational anglers and for aquaculture. The review of the “management paradox” of native vs nonnative species by Hansen et al. (19) is an excellent introduction to the subject.

Despite the qualities of trout and char that make them so sought after, as well as their economic and ecological importance, most taxa are in decline and a few are already extinct. A rough assessment of global status of taxa (Chapter 23), suggests that three-quarters of the taxa are sliding towards extinction. Many taxa lack decent—or any—status assessments. However, given what we know about damage worldwide to cold-water habitats, the actual number of taxa facing extinction is undoubtedly high. The likelihood of extinction for each taxon increases as global warming speeds up (20). The main exceptions are likely to be the handful of species introduced worldwide, that will persist with intense management to support fisheries. The book ends with chapters that make the case for a global conservation effort that takes advantage of the charismatic nature of native trout and char. Protecting them not only keeps some extraordinarily beautiful lineages of fishes going, but protects coldwater ecosystems of lakes, rivers, and streams all over the world. For those who need a guidebook to start work on global or local conservation of trout and char, this book provides the background and inspiration needed. **AFS**