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## BOOK REVIEW

**Biological Diversity – Frontiers in Measurement and Assessment, A.E. Magurran, B.J. McGill (Eds.). Oxford University Press, Oxford (2010). 368 pp., £39.95 (paperback), £75.00 (hardback), ISBN: 978-0-19-958067-5 (paperback), 978-0-19-958066-8 (hardback)**

Measuring biological diversity has been the scope and indeed title of a previous book by Anne Magurran. Instead of updating her previous volume, she and colleague Brian McGill opted for something emphasising the cutting-edge, in addition to covering the traditional methodologies. The author's list reads like the who-is-who of quantitative ecology, featuring, among others, Colwell, Gotelli, Chao, Jost, Gaston, He, Vellend, Ugland, Rosenzweig, as well as the editors themselves.

The five parts (plus a concluding sixth) built on 21 chapters, following this idea in a recursive way. They move from the general to the specific, which each one of them progressing from the traditional to the "frontier". Part I, Basic Measurement Issues, sets the scene very generally. Already here a gem can be found in the form of a chapter on the relevance of detectability (by Buckland and co-authors), which belongs to the best and most persuasive introductory text to sampling designs I have come across. Part II, Diversity, comprises what the reader expects to find: species richness estimation from samples, diversity indices and diversity turnover in time and space. Here a first downside of edited books became noticeable. The chapter introducing, tabling and reviewing diversity indices does not include the rather fundamental critique of Lou Jost. Rather, he and colleagues are given "their own chapter". This separation feels unnatural, as if the editors wanted to avoid conflicting view to make bad reading. When read together, however, the picture is comprehensive and balanced. Part III, Distribution, covers both frequency distributions of species and spatial distribution of diversity. Noteworthy, in my opinion, are the occurrence-occupancy review (positive) and the spatial structure of biodiversity (negative), the latter written by McGill and more reflecting

the methods he routinely employs (geostatistics) than what is available. Part IV covers Alternative Measures of Diversity, bringing into focus the current fad of functional/trait-based, phylogenetic and molecular diversity indices. Trait and phylogenetic diversity are handled very competently in the form of excellent reviews, which can be highly recommended for teaching at any university level, while the genetic chapter delves more into molecular, rather than statistical, topics. Part V, Applications, reports four case studies employing the methods outlined so far. These examples estimate richness (and sampling effort) of microbes, effects of disturbance on diversity, landscape-scale diversity and extinctions in the fossil record. Because of their focus on a specific data set, rather than a specific measure of diversity, they are more enjoyable to read, albeit less informative. The last chapter in this part is on species density, i.e. how to correctly quantify richness per area, and would be much better placed for part I. A comprehensive and up-to-date reference section followed by an extensive index concludes the book.

The quality and usefulness of edited books depend exceedingly on the skill of the editors. Their talent in outlining each chapter and recruiting a set of author who are competent yet willing to comply with the editors' scope is crucial to turn a book from well-intended to a well-done. This book has the hallmarks of an excellent edited book – excellent scientists as contributing chapter authors, a clear layout of the content, a clear intended readership – but, alas, it lacks the final touch to turn it into a must-read. Several chapters are highly recommendable as introductory texts also for scientists moving "sideways", e.g. from molecular ecology into biodiversity research or from vegetation science into conservation.

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