Book Review

Grasses and grassland ecology

D.J. Gibson. Oxford, UK: Oxford University Press, and New York: Oxford University Press Inc, 2009, £70/US $140 (hard cover), 320 pp. ISBN 978-0198529187, and £34·95/US $70 (paperback) ISBN 978-0198529194.

The stated aim of this book is to provide an ecologically oriented introduction to grasslands that summarizes the findings of recent international research in the context of the older classical literature. In his preface the author notes that he identified a need for such a textbook for his post-graduate teaching course on grassland ecology at Southern Illinois University, and he hopes that this volume will meet the needs of these and other students internationally, as well as being a useful book for researchers and others with an interest in grassland. There can be few authors who have the breadth of knowledge to compile such a wide-ranging text and David Gibson has largely succeeded in achieving his aim.

The first two chapters deal with grasses and grasslands in a general sense, considering questions of definition, global extent, their uses and functions, as well as a more detailed consideration of their evolution and of systematics and classification. Chapters 3 and 4 deal respectively with morphology and anatomy of grasses, and with the physiology of grasses, though the author skirts the issue as to whether to include non-graminaceous species of grasslands, generally avoiding them. A consideration of legumes and other forbs, as well as woody browse species would have been a useful addition here, especially given the book's intended international context. Nonetheless, these introductory chapters provide a sound basis for understanding the more ecologically oriented chapters which comprise the remaining two-thirds of the text.

Chapters 5 to 7 are presented under the headings of population ecology, community ecology and ecosystem ecology. This division works successfully although there are some inevitable problems of where to include particular topics, partly resolved by cross-referencing. These three chapters focus on the ecological literature relating to grasslands but, given the importance of grazing and agricultural use, particularly by domesticated herbivores, there are few reminders here of the importance of grazers in maintaining grassland ecosystems. The chapter on ecosystem ecology might have been strengthened by a greater consideration of herbivores as part of the ecosystem although it does indicate that this is addressed later in chapter 9, under the heading of disturbance. A sub-section on grassland soils in chapter 7 provides a useful summary of this important aspect and leads logically to chapter 8, which considers the world's grasslands. Chapter 8 adds greatly to the international appeal of the book, with useful summaries of grasslands in relation to climate and examples drawn from Europe, North America and China. Some additional paragraphs here could have strengthened the appeal of the book still further; in particular, more detailed consideration of the classification of European grasslands and a clearer explanation of temperate semi-natural grasslands and high-nature-value grasslands would have been welcome.

Chapters 9 and 10 are the most applied parts of the book, and cover the topics of disturbance and management and restoration. The role of fire and herbivory, by both wild and domestic animals and by invertebrates, are considered in some detail, but the relationship between grazing and sward biodiversity could perhaps have been covered more thoroughly. The final chapter closes the book with some useful examples of the use of management tools for meeting human needs and conservation, and includes sample evaluation sheets for recording rangeland condition and also restoration case studies.

The scope of this book is considerable and the author is to be congratulated on his synthesis, as many of the individual chapters could themselves have been the subject of a separate monograph. The book's layout and an appropriate content of tables, figures and sketches, and the inclusion of colour plates illustrating contrasting grassland types, create a pleasing impression. About sixty pages are taken up with references and indexes, which is a good indicator of a book that has been well prepared for the academic and student market. This is a useful and welcome addition to any grassland library, bridging the gap between ecology texts and more agriculturally focused grassland science texts.

Alan Hopkins
Exeter, UK

doi: 10.1111/j.1365-2494.2009.00699.x