

references is included. The author is based at Oklahoma and the book is generally written for a US readership, although most of the content has international relevance. In the final chapter the author illustrates the principles with a practical example: a back lawn. Perhaps some additional examples from different turfgrass situations might have added to the book's scope, but it delivers on its aim of explaining physiological needs and the management techniques to supply those needs.

Alan Hopkins

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*Crop Wild Relatives: A Manual of in situ Conservation.* Edited by D. Hunter and V. H. Heywood. Earthscan: London (2010), pp. 440, £29.99 (Paperback). ISBN 978-1-84971-179-1.

Crop wild relatives (CWR) are the group of plant species which are more or less closely related to crops and to which they can potentially contribute traits (resistant to stress, disease, drought and other factors) desired by plant breeders; as such they are likely to provide for climate change mitigation and will thus play a key role in future food security. The book is based on experience gained during a recent Bioversity International project and focuses on case studies for *in situ* CWR conservation from five countries. The 16 chapters introduce CWR science, *in situ* conservation planning, *in situ* conservation establishment, major threats and raising awareness of CWR diversity. The chapters are very well written and provide a fair overview of the existing literature, but the editor should be commended for the integration of practical experience gained from the five country studies into the description of each facet of *in situ* conservation planning and establishment. The one major omission is a thorough chapter on complementary *ex situ* CWR conservation: *ex situ* CWR conservation is a necessary safety backup. A lesser, but important, second omission is the lack of the link between CWR conservation and use. It could be argued that without use no element of agro-biodiversity can be sustainably conserved. There have been several texts published in recent years but this is a significant addition and despite some minor quibbles I recommend this text to all those interested in agro-biodiversity and protected area conservation.

Nigel Maxted

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*Wild Crop Relatives: Genomic and Breeding Resources. Millets and Grasses.* Edited by C. Kole. Heidelberg: Springer (2011), pp. 342. €149.95. ISBN: 978-3-642-14254-3.

This series is dedicated to the Father of the Green Revolution, the late Dr Norman E. Borlaug. It provides a wealth of information about crop wild relatives in ten volumes ranging from cereals to forest trees. The specific volume reviewed here addresses wild relatives of cultivated millets and grasses – small-seeded Poaceae grown as cereals, forages, ornamentals and/or turf.

In 16 well-organized, genus-specific chapters (*Agrostis*, *Bromus*, *Cenchrus*, *Cynodon*, *Dactylis*, *Dichanthium*, *Eleusine*, *Eragrostis*, *Festuca*, *Lolium*, *Panicum*, *Paspalum*, *Pennisetum*, *Phleum*, *Setaria* and *Zoysia*), the 48 eminent authors nicely summarize available information for each genus in tables, text and figures, with accompanying references. For each genus, the chapters comprehensively review the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of wild crop relatives, and relate this to available information on their domesticated counterparts. Evolution, phylogenetic relationships, genetic erosion and conservation efforts, potential for domestication and exploitation in crop improvement are all addressed. Individual chapters are well presented, although several would have benefited from more thorough copy-editing.

While the series can be recommended to public- and private-sector agricultural research institutions globally, this specific book will also be greatly appreciated by graduate students and research scientists concerned with genetic resource conservation and improvement of small-seeded grasses cultivated as cereals, forages, ornamentals and/or turf crops, and those dealing with control of related weeds.

C. Tom Hash