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Book review

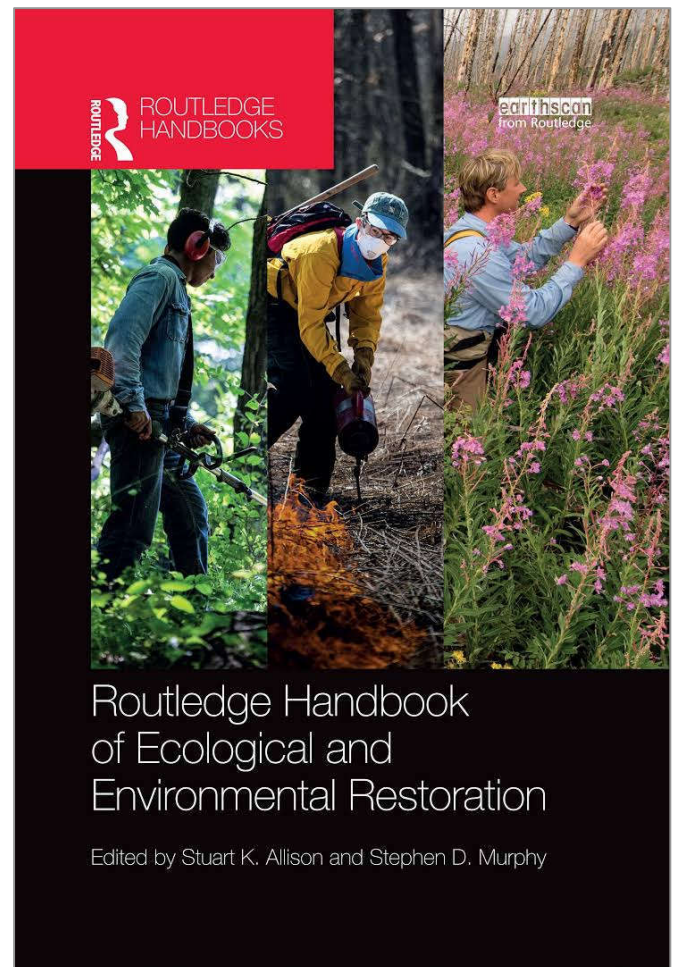
Allison, S. K. and Murphy, S. D. 2017. Routledge Handbook of Ecological and Environmental Restoration. – 604 pp., Routledge, Oxon, U.K. ISBN: 978-1-138-92212-9. £165.00 (hardback)

Grassland ecosystems around the world are threatened by severe area loss and degradation, mainly due to the changing intensity of management, either in the form of management intensification or underuse and abandonment (Dengler et al. 2014; Wesche et al. 2016). As their vascular plant species richness at small scales can even exceed that of rainforests (Wilson et al. 2012), the biodiversity of Palearctic grasslands is outstanding; thus, their conservation and restoration is a crucial task (Török & Dengler 2018).

In recent years there has been an increase in the global attention paid to ecological restoration. Although there were former edited books providing a general synthesis of ecological restoration (Perrow & Davy 2002; van Andel & Aronson 2006), the rapidly evolving nature of the field made it necessary to put together a new volume that discusses both current practice and future opportunities and difficulties generated by our constantly changing world. This book was compiled by a team of 80 respected contributors from 16 different countries from all around the world, and provides a broad synthesis of the current knowledge on ecological restoration, from both a scientific and a practical point of view.

Besides the introduction, the book consists of four parts. The first part provides the basis for restoration in the 21st century. This part discusses the need and reasons for restoring ecosystems, such as conserving biodiversity, recovering natural capital and ecosystem services, testing ecological theories and reconnecting humanity with nature. It also provides an historical perspective, deals with the principles of restoration at different levels (population and landscape-scale levels), and assesses the role of social processes and social engagement in ecological restorations.

The second part is the longest (approximately half of the book) and can be considered as the main section. This part covers the acquired knowledge about the restoration of key ecosystems in 18 chapters, dealing with ecosystems from boreal forests to coral reefs, including also restoration in urban areas. The chapter about temperate grasslands first describes the types, origin and present distribution of temperate grasslands, then discusses why temperate grasslands have been lost or degraded and reasons to restore them, identifying also the limitations and obstacles that stand in the way of their successful restoration. The chapter then discusses the different methods that can be used in grassland restoration, either in the restoration of



degraded grasslands or in the establishment of new ones. Examples of restoration of main grassland types are also provided.

The third part covers the socio-economic context of environmental restoration. From the social point of view it assesses international restoration-related law and policy issues, the importance of volunteer programmes and the human community in general, and the integration and participation of different key stakeholders, emphasising the need for a social-ecological system approach. From the economic point of view this section discusses the role of businesses that are engaged in restoration projects, market-based instruments (e.g. grants, subsidies, penalties and taxes) and the potential of profit motivation as a positive influence on ecological restoration.

The fourth part looks into the future. The first chapters assess the challenges set up by different aspects of global environmental change, like climate change and invasive species. This section also deals with the applicability of resilience concepts in the management and restoration of ecosystems, and with the potential of ecological restoration to reverse the losses in ecosystem services. A separate chapter focuses on the new field of economics of restoration, which is the application of economic principles to

restoration ecology, including also the restoration of natural capital. The last chapters emphasize the importance of an interdisciplinary approach and the collaboration among restoration researchers, practitioners and stakeholders; and summarize how restorationists use social media to promote environmental and restoration issues.

To sum up, the authors compiled an impressive amount of useful information covering most of the issues related to ecological restoration. As it is usual with edited books, there is some variation in the style of the chapters, but it does not influence the readability and comprehension of the book, as they are generally well-written and complemented with well-structured tables and figures that assist the understanding of the text. Several case studies are also presented, and numerous boxes accompany the main body of the text. One shortcoming of the book is that the majority of authors are from institutions from the USA, which means that although Europe is quite well-covered and Australia may even be a bit overrepresented, the rest of the world, especially Asia, remained underrepresented. Despite this, due to its integrative approach and the diversity of topics covered, this handbook can be recommended for both restoration scientists and practitioners, and the editors are quite right stating that this is an 'unrivalled volume'.

References

- Dengler, J., Janišová, M., Török, P. & Wellstein, C. 2014. Biodiversity of Palaeartic grasslands: a synthesis. *Agriculture, Ecosystems & Environment* 182: 1-14.
- Perrow, M.R. & Davy, A.J. (eds.) 2002. *Handbook of ecological restoration*. Cambridge University Press, Cambridge, UK.
- Török, P. & Dengler, J. 2018. Palaeartic grasslands in transition: overarching patterns and future prospects. In: Squires, V.R., Dengler, J., Feng, H. & Limin, H. (eds.) *Grasslands of the world: diversity, management and conservation*, pp. 15-26. CRC Press, Boca Raton, Florida, US.
- van Andel, J. & Aronson, J (eds.) 2006. *Restoration Ecology*. Blackwell Publishing, Malden, MA, US.
- Wesche, K., Ambarlı, D., Kamp, J., Török, P., Treiber, J., & Dengler, J. 2016. The Palaeartic steppe biome: a new synthesis. *Biodiversity and Conservation* 25: 2197–2231.
- Wilson, J.B., Peet, R.K., Dengler, J. & Pärtel, M. 2012. Plant species richness: the world records. *Journal of Vegetation Science* 23: 796–802.

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Lychnis flos-cuculi, near the village of Zaježová, Javorie Mts. (Slovakia), May 2018. Photo: M. Janišová.