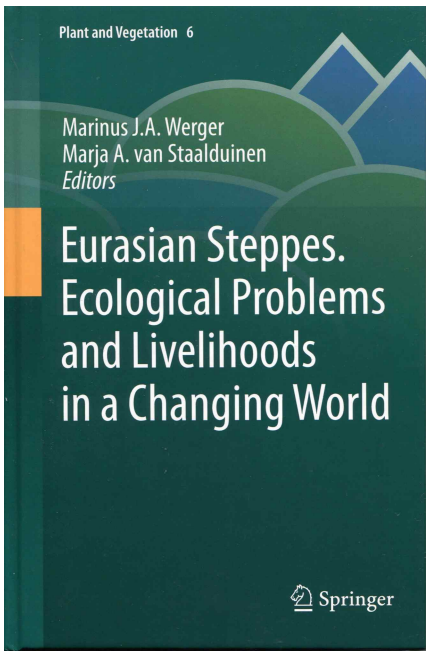
Werger, M.J.A., van Staalduinen, M.A. (2012) [Eds.]: Eurasian steppes. Ecological problems and livelihoods in a changing world (= Plant and Vegetation 6). XVI + 565 pp., Springer, Dordrecht. ISBN 978-94-007-3885-0. Price: 181.85 € (hardback) or 142.79 € (eBook).

According to its Bylaws, the EDGG deals both with semi-natural dry grasslands in Europe and the natural steppes of the Palaearctic biogeographic realm. Apart from some natural stands in Northern Africa, the natural steppes cover an extensive area of land from Ukraine in the West to Mongolia and China in the East, with perhaps 10 million km² in total (Dengler et al. 2014). Despite being one of the largest biomes of the world, information on the biodiversity and conservation of Eurasian steppes has largely been restricted to regional journals in Russian, Ukrainian, Kazakh, Mongolian or Turkish. Thus they can hardly be considered as being accessible to the international scientific community. Therefore, the efforts of the two Dutch editors to compile a recent overview of knowledge are highly laudable. Marinus Werger and Marja van Staalduinen did a tremendous job in bringing together nearly 60 renowned steppe researchers from all over Eurasia. The 21 chapters are organized into four major parts.

The first part (9 chapters, 286 pp.) is devoted to the natural history of the steppe regions. The detailed and competent treatise of the central Asian steppes (here basically referring to those located in China and Mongolia) by Wesche & Treiber starts with the physical and biogeographical background, then elaborates on abiotic and anthropogenic drivers of species composition and productivity. Chapter 2, on the Russian steppes (both in Europe and Asia) by Smelansky & Tishkov, provides a good overview about their spatial distribution, to what extent they are protected in various types of conservation areas and how they are affected by land use and land use change. Rachkovskaya & Bragina firstly present a detailed phytogeographic regionalisation and vegetation typology for the Kazakh steppes, before they explain about regional agricultural use and conservation. For the Central Anatolian steppes, Kürschner & Parolly provide a physico-geographical introduction, publish a syntaxonomic overview and illustrate how land use changes have affected the steppes (e.g. transformation of rangelands into arable land to a significant extent). In the Ukraine, as the last region of natural steppes presented, Korotchenko & Peregrym report that compared to the other mentioned countries, the steppes have been destroyed to the greatest extent, with only c. 3% of their original area remaining. The four other chapters refer to European countries outside the steppe biome, namely Spain, Hungary, Slovakia and Romania. While the authors of the chapters on the first two steppe regions argue that the steppes there are at least partly natural, in the two remaining countries it is clear that steppe-like dry grasslands are of a secondary nature. This, however, does not diminish the value of these chapters in the context of the book.

Part II is entitled "Degradation" and contains two different categories of contributions. The first two papers are appropriate to the title, Bazha et al. reporting on the degradation of Mongolian steppes through overgrazing and Dong et al. on restoration measures in "desertified" steppes of China. The two following articles, by contrast, deal with the conservation of two of the eminent big herbivores of the Eurasian steppe, Neronov et al. on the population development of the saiga antelope (*Saiga tatarica*) and Wit et al. on a re-introduction project for the Przewalski horse (*Equus przewalskii*) in Mongolia. Part III presents four articles from different regions on the effect that climate change has now, and the effect it is likely to have in the future, on the steppe ecosystems. Climate change might have a particularly dramatic effects on the steppe types developed over permafrost, but according to the contribution of Sharkhuu & Sharkhuu, the effect of increased air temperature hardly affected the frozen ground, due to the buffer capacities of the vegetation, but overgrazing might accelerate the melting process. Finally, part IV looks into the livelihoods of the local people, mostly nomads and herdsmen, and how their lives are connected to the conservation of steppes.



All in all, this is a well compiled, readable book with a wealth of information. As an edited volume that consists of independent contributions from various authors with different perspectives, everything does not always match in style of presentation, line of reasoning and applied terminology. However, the publishing house is certainly right when it claims in the Internet that "there is no other book in which so much expert knowledge on change in steppe ecology, changes in steppe land use, and changes in the livelihoods of steppe inhabitants have been integrated". Having brought all these researchers from the numerous countries together in one volume, this can certainly be a major step towards a more consistent and integrated approach in the future. The presentation is very pleasant, with many coloured photos and maps, well-structured tables and diagrams. The only disappointing aspect is the excessively high price. While this appears already too high for western European standards, it is clearly prohibitive in the "home countries" of the steppe biome, making this book largely inaccessible to the major part of its potential readership. This is a real pity!

Dengler, J., Janišová, M., Török, P., Wellstein, C. (2014): Biodiversity of Palaearctic grasslands: a synthesis. Agric. Ecosyst. Environ. (in press).

Jürgen Dengler, Bayreuth, Germany
juergen.dengler@uni-bayreuth.de