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Book Review

Here we present recently published books that might be relevant for grassland scientists and conservationists, both specific grassland titles and faunas, floras or general books on ecology and conservation biology. If you (as an author, editor or publisher) would like to propose a certain title for review, or if you (as an EDGG member) would like to write a certain review (or reviews in general), please contact the Book Review Editor (anyameadow.ak@gmail.com).

Mucina, L., Bültmann, H., Dierßen, K., Theurillat, J.-P., Raus, T., Čarni, A., Šumberová, K., Willner, W., Dengler, J., Gavilán García, R., Chytrý, M., Hájek, M., Di Pietro, R., Iakushenko D., Pallas, J., Daniëls, F.J.A., Bergmeier, E., Santos Guerra, A., Ermakov, N., Valachovič, M., Schaminée, J.H.J., Lysenko, T., Didukh, Y.P., Pignatti, S., Rodwell, J.S., Capelo, J., Weber, H.E., Solomeshch, A., Dimopoulos, P., Aguiar, C., Hennekens, S.M. & Tichý, L. 2016. Vegetation of Europe: Hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities. *Applied Vegetation Science* 19, Supplement 1: 1-264.

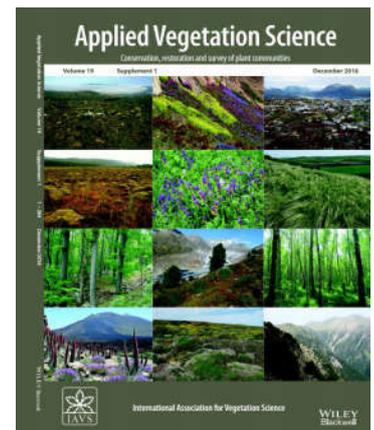
The theory and practice of vegetation surveys has developed greatly in Europe in recent decades, motivated by the need for a reliable vegetation classification as a tool for nature conservation and land-use planning (Rodwell et al. 1995). After several decades of phytosociological studies scattered all over Europe, the need for a single classification system which can be used as a reference arose. Accordingly, the last two decades have seen the development of several national vegetation surveys in Western and Central European countries, but the first overview at European scale was given by the publication *The Diversity of European Vegetation* (Rodwell et al. 2002), which can be seen as a pioneer. Since then, much progress has been made in the knowledge of European vegetation through the activities of the European Vegetation Survey and, at the same time, national vegetation surveys were conducted in Southern European countries. All this progress made clear the need for the development of a new and more complete overview of the vegetation at the European level, and a big team of vegetation scientists took over this task.

Last November a special issue of *Applied Vegetation Science* was published devoted to the long-awaited work "Vegetation of Europe: Hierarchical floristic classification system of vascular plant, bryophyte, lichen, and algal communities". This milestone publication presents a new, global hierarchical syntaxonomic system of alliances, orders and classes of the Braun-Blanquet syntaxonomy for vascular plant, bryophyte,

lichen and algal communities and provides a list of diagnostic species for all classes of European vegetation. In total, 150 classes are accepted in the EuroVegChecklist contained within this publication: 110 dominated by vascular plants, 27 by bryophytes and lichens and 13 by algae. A brief ecological and geographical diagnosis is provided

for each class, as well as synonyms for all ranks, and 15,734 diagnostic taxa are assigned to classes. All this information is provided in several appendices, of which appendices 1-3 make up the core, corresponding to the Conspectus of the high-rank syntaxa of the European vegetation dominated by vascular plants (EVC1), bryophytes and lichens (EVC2) and algae (EVC3), respectively. The ordering and grouping of classes follows the conceptual framework of vegetation zonation. The EVC1 starts with the zonal classes, following an order from the north to the south, thus, from the Arctic and Boreal to Temperate and Mediterranean zones. Intrazonal vegetation is included as separate group of classes inside the respective zone, and, finally, azonal vegetation is grouped according to the main ecological gradients such as moisture regime or salinity. Anthropogenic vegetation goes in the end. The main grouping of the bryophyte and lichen classes reflects substrate, soil, rock and bark, leaves and wood. Finally, algal syntaxa are first divided into non-marine and marine habitats. The former are ordered from wet to dry environments, and the latter are ordered along the tidal zonation. The diagnostic species of the classes included in EVC1, EVC2, EVC3, as well as selected references linked to these classes, are provided in several on line appendices.

The software tool EuroVegBrowser collates the syntaxonomic systems of vascular plant communities (EVC1), bryophyte and lichen communities (EVC2) and algal communities (EVC3), the species lists and the bibliographic files and enables viewing and browsing through the accepted syntaxa in a hierarchical



structure. I have experienced myself the usefulness of this tool, which can be easily installed following the instructions detailed in Appendix S5.

Congratulations to the authors of this major contribution, who deserve the gratitude of all scientists working in this field for providing this comprehensive overview of European syntaxonomy. It is indeed a stepping stone in the European Vegetation Survey, which will be used by vegetation scientists as a reference in their vegetation classification surveys, as well as in vegetation ecology studies. But it will also have high impact outside vegetation science, as it offers a single classification system for all Europe which will be easily available for ecologists, environmental managers, conservation biologists, etc. We must consider that the typologies produced by vegetation classification are useful not only for communication about complex vegetation patterns or the formulation of hypotheses about the ecological and evolutionary processes shaping these patterns, they are also useful for creating maps that display the spatial variation of vegetation and related ecosystem services, for surveying, monitoring and reporting plant and animal populations, communities and their habitats, as well as for the development of coherent management and conservation strategies (Dengler et al. 2008). Thus, the EuroVegChecklist can be considered an essential tool for European nature conservation as it provides a solid common currency to which all the national concepts can be cross-referenced, thereby enabling uniform interpretation of habitat types across Europe.

As the authors state in their introduction, “this new, nomenclaturally stable and scientifically robust vegetation system will not be viewed as an end point. Our EuroVegChecklist was compiled in a spirit of serving vegetation science and its users. It is our expectation that it will be further expanded, revised and made user-friendly”. I must agree with the authors on this point, as any vegetation scientist who goes through this excellent publication will certainly have his or her own opinion about the decisions taken by the authors for some vegetation types. In some cases, even the authors themselves do not agree with some of the solutions, as they have clearly specified in the Conspectus. Generally speaking, I must say that the number of classes for vegetation types dominated by vascular plants tends to be quite big, as for example the separation in three classes of the zonal temperate broad-leaved forests, or the large number of segetal and ruderal classes. Certainly, if a more synthetic approach would have been followed, the criticism would come from the contrary opinion. As the authors state in their discussion, “Currently, the only operational way that probably everybody practising syntaxonomy would agree upon for how to define a *class*, is the

classical Braun-Blanquetian *extensive definition*: a class contains a set of *orders* – a situation that is not satisfactory”. And here we have to introduce the problem of context dependence, and the fact that it will not be easy to delimit how many classes we have in the European vegetation. In the end, the EuroVegChecklist is an expert-based synthesis of the European vegetation, and consequently will be from now on the essential reference for any study on vegetation classification in Europe. The compilation of large electronic databases of vegetation plots achieved by the European Vegetation Archive (EVA, Chytrý et al. 2016) allows for broad scale vegetation surveys, both at the geographical and the ecological scale, that is, enables the combined analysis of groups of classes at the European scale. Only with these broad-scale analyses following standard procedures (De Cáceres et al. 2015) will vegetation scientists be able to obtain a sound classification for the European vegetation at the class level, and will also be able to provide a more precise definition of vegetation units.

References:

- Chytrý, M., Hennekens, S.M., Jiménez-Alfaro, B., Knollová, I., Dengler, J., Jansen, F., Landucci, F., Schaminée, J.H.J., Ačić, S., (. . .) & Yamalov, S. 2016. European Vegetation Archive (EVA): an integrated database of European vegetation plots. *Applied Vegetation Science* 19: 173–180.
- De Cáceres, M., Chytrý, M., Agrillo, E., Attorre, F., Botta-Dukát, Z., Capelo, J., Czúcz, B., Dengler, J., Ewald, J., (. . .) & Wilser, S.K. 2015. A comparative framework for broad-scale plot based vegetation classification. *Applied Vegetation Science* 18: 543–560.
- Dengler, J., Chytrý, M. & Ewald, J. 2008. Phytosociology. In: Jørgensen, S.E. & Faith, B.D. (eds.) *Encyclopedia of ecology*, vol 4, pp. 2767–2779. Elsevier, Oxford, UK.
- Rodwell, J.S., Pignatti, S., Mucina, L. & Schaminee, J.H. 1995. European vegetation survey: update on progress. *Journal of Vegetation Science* 6: 759–762.
- Rodwell, J.S., Schaminee, J.H.J., Mucina, L., Pignatti, S., Dring, J. & Moss, D. 2002. *The Diversity of European Vegetation: an overview of phytosociological alliances and their relationships to EUNIS habitats*. National Reference Centre for Agriculture, Nature and Fisheries, Wageningen, NL

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