

## **Diversity patterns in European grasslands under the joint influence of nature and agriculture (working title)**

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– **Outline, Version 08** –

European (Palearctic) grasslands are well known for their particularly high biodiversity in many taxa. For example, at small spatial scales vascular plant diversity of certain types – mostly mown, semi-dry basiphilous grasslands – even exceeds tropical rainforests, which otherwise are considered the most diverse ecosystem on earth. Further, a high proportion of the flora and fauna of Europe are grassland specialists, including many endemics. While it has long been known that European grasslands are extraordinarily diverse at any spatial scale from millimetres to the whole continent, the factors responsible for such a hotspot of biodiversity are still not well understood. Most of the European grasslands are not the natural climax vegetation but developed from forests and were maintained over centuries by agricultural use. Grassland habitats in Europe (except the east European steppes) were always restricted to discontinuous patches that even at their optimum and including the steppes hardly occupied more than 20% of the continent. Therefore, major explanations brought forward for high biodiversity in other ecosystems, like naturalness, lack of disturbance, or huge area, seem not to be the main drivers of European grassland diversity, while agricultural management obviously plays an important role. Moreover, there are huge differences in diversity between different types of grasslands, and even ecologically similar grassland types may differ in their diversity significantly between regions.

With this Special Feature, we want to shed light on the mystery why European grasslands, and particularly the dry grasslands, became a global biodiversity hotspot. What is the contribution of abiotic environmental conditions and of agricultural practices? How do historical and actual conditions interact in shaping the diversity patterns we find today? What is the evolutionary-phylogeographic origin of the faunas and floras of European grasslands? To what extent did humans through their agriculture even stimulate evolution, leading to new grassland specialist species? And finally, given the fact that high nature value grasslands are among the most threatened habitats of the continent, what types of agricultural management are capable of conserving and maintaining grassland biodiversity?

### Scope of the Special Feature:

*The collection of contributions in this Special Feature shall address the biodiversity of European grasslands comprehensively, including the underlying causes and potential consequences. We invite manuscripts addressing biodiversity patterns of grassland flora and fauna of any spatial or temporal scale. Both correlative and experimental studies are possible, as well as are reviews and synthesis papers. While we welcome well-designed case studies on specific aspects, comparative studies across regions, taxa, scales, or dimensions of biodiversity would be particularly suitable. Papers addressing aspects of biodiversity conservation in high nature value grasslands are also invited.*

*In this Special Feature, we apply the term “grasslands” in a wide sense, including both natural climax communities (steppes, alpine grasslands, coastal grasslands) and grasslands of zoo-anthropogenic origin, and ranging from dry through mesic to wet. As for the comprehension of the patterns in the zoo-anthropogenic grasslands of Europe, the knowledge of the natural grassland vegetation of the steppes in the whole Palearctic realm is crucial, we also welcome contributions from North Africa, West and Central Asia.*

*We strongly encourage all authors to present and discuss their results in a way that contributes to the overall understanding of grassland diversity in the Palearctic realm.*

## Procedures and deadlines:

- The idea of this Special Feature has emerged during the 8th European Dry Grassland Meeting organised by the European Dry Grassland Group (EDGG, [www.edgg.org](http://www.edgg.org)) in Uman', Ukraine, in June 2011, but we encourage non-EDGG members to submit papers, including such dealing with non-xeric grassland types (e.g. mesic, wet, and salt grasslands)
- We plan this Special Feature for *Agriculture, Ecosystems & Environment* (AGEE; Impact factor = 2.790), where Camilla Wellstein is in the Editorial Board, because we consider the topic particularly suitable for this journal. We are optimistic that the chief editor will accept our proposal for a Special Feature, but there is no guarantee. The length of SF's in AGEE is quite flexible, typically ranging from 110–340 pages; thus we could accommodate between 10 and 40 papers, depending on the number of high-quality contributions that are proposed.

Alternative venues include *Biodiversity & Conservation* (IF = 2.146) and *Journal of Vegetation Science* (JVS; IF = 2.457), and there are several other options, but we are optimistic that there is no need to try them.

- If you are interested in contributing to the Special Feature, please submit a **preliminary abstract** of your planned article (in regular AGEE format, see journal homepage) until **30 November 2011 (extended!)** together with an indication when you likely would be able to submit such a paper (if invited) to [dengler@botanik.uni-hamburg.de](mailto:dengler@botanik.uni-hamburg.de). Feel encouraged discussing the suitability of a certain topic with one of the guest editors prior to submitting you abstract.
- All preliminary abstracts submitted by the deadline will be screened by the team of guest editors for scientific quality and novelty as well as for conformity with the criteria given above. Based on this evaluation, we will assign each article to one of three categories “to be invited”; “to be invited conditionally” (“Conditionally invited” means that you will receive suggestions from us what you should change in order to make your paper eligible), or “to be declined”.
- We then will submit the overall outline of the Special Feature together with the submitted abstracts and our rating of these to the chief editor of AGEE for evaluation. Based on this, he will decide whether we are offered to produce the SF or not, and he also might modify our proposed paper selection. Therefore, the number and quality of your abstracts submitted to us until **30 November 2011** is decisive!
- If AGEE accepts our proposal of the Special Feature, we will invite all the authors of the positively evaluated abstracts to submit their full manuscripts as Special Feature contributions online on the AGEE homepage until some deadline to be defined, likely **31 May 2012**.
- The papers submitted after invitation will be subject to regular peer review (including the possibility of rejection) with one of the five guest editors being the co-ordinating editor.
- Those papers from the Special Feature that are accepted after revision together with an Editorial/Synthesis by the guest editors will be published in an AGEE issue of its own, likely some time in **spring 2013**.
- Contact to the guest editors:
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## Also of interest:

We are planning to produce a companion Virtual Special Feature on grassland classification (“Towards a consistent classification of European grasslands”) for *Applied Vegetation Science* (AVS; IF = 1.802), guest-edited by J. Dengler, W. Willner & M. Chytrý. If interested, please contact [dengler@botanik.uni-hamburg.de](mailto:dengler@botanik.uni-hamburg.de) for details.

If you are interested in dry grasslands s.l., their flora, fauna, vegetation and conservation, you are invited to join the European Dry Grassland Group (EDGG; [www.edgg.org](http://www.edgg.org)). Membership is free, but comes with a number of benefits, like a quarterly electronic journal, annual conferences and research expeditions. In this case, just send a formless application to [dengler@botanik.uni-hamburg.de](mailto:dengler@botanik.uni-hamburg.de).