

Towards a consistent classification of European grasslands

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– **Outline, Version 08** –

Grasslands are a prominent feature of present-day vegetation of Europe, some of them being natural (like continental steppes, alpine and some coastal grasslands), while the majority originated from long-lasting agricultural use as pastures and meadows. Grasslands host a high proportion of Europe's biodiversity, which by far exceeds their proportional area. Therefore and because of the strong decline of high nature value grasslands in recent decades, many grassland types are listed as priority habitats in the Habitats Directive of the European Union. However, both the effective conservation and large-scale ecological comparisons are impeded by the fact that no consistent classification of the grassland types of the continent is available so far. During the last two decades many new statistical tools for large-scale classification have been developed, and they led to consistent, database-driven grassland classifications in several countries (UK, Netherlands, Czech Republic, Slovakia), but so far only very few attempts have been made to bring these idiosyncratic national classifications together to uniform supra-national or even continental classifications, and huge parts of Europe are still even lacking modern classifications of their grassland diversity at national scale.

Scope of the Virtual Special Feature and requirements for contributions:

With this Virtual Special Feature, we aim at making a major step forward in filling that gap. Therefore, we invite contributions that provide comprehensive large-scale classifications of major grassland types, that develop (and test) methodological tools to overcome the problems that until now limited the development of such consistent supra-national treatments, or a combination of both. The focus is on the widespread grassland classes *Molinio-Arrhenatheretea*, *Festuco-Brometea*, and *Koelerio-Corynephoretea*, but we are also open to studies of Mediterranean grasslands (e.g. *Thero-Brachypodietea*), alpine grasslands (e.g. *Elyno-Seslerietea*, *Juncetea trifidi*), coastal grasslands (e.g. *Ammophiletea arenariae*, *Juncetea maritimi*), grassland-woodland transitions (*Trifolio-Geranietea*, *Mulgedio-Aconitetea*), and even of extremely human-influenced grasslands such as the *Polygono-Poetea*.

In order to be eligible for the Special Feature, manuscripts must meet the following criteria:

(1) A classification paper needs to be large-scale and comprehensive. This specifically means:

- Inclusion of \pm all available relevés within the geographical and syntaxonomical scope of the study (although during analysis, the dataset might be reduced, e.g. in order to achieve its better representativeness)
- Geographical focus on natural (bio)geographical regions rather than on countries. The areas analyzed should be significantly larger than a single medium-sized European country. Using international datasets from several countries in single studies should contribute to the idea of moving towards a consistent classification of European grasslands.
- Minimum spatial extent in relation to syntaxonomic coverage:
 - * Studies of one or several classes: 400,000 km² (or 200,000 km² in diverse mountain areas)
 - * Studies of one or several orders: 1,000,000 km² (or 500,000 km² in diverse mountain areas)

areas)

* Studies of one or several alliances and on narrowly distributed orders and classes: full distribution range in Europe

(Studies on syntaxonomic units smaller than alliances are not eligible)

(1a) For classification papers, we strongly recommend:

- In addition to one abbreviated synoptic table in the printed version of the paper, detailed tables with full species composition of the individual syntaxa should be presented in the Electronic Appendix.
- The relevés underlying the classification should be made available in databases that are registered in the Global Index of Vegetation-Plot Databases (www.givd.info).
- The Electronic Appendix should contain colour photographs of each of the major vegetation types distinguished. (A subset of these photographs might appear also in the print version.)
- The Electronic Appendix should contain a syntaxonomic overview of the proposed classification with relevant synonyms and nomenclatural assessment following the ICPN (Weber et al. 2000). (All nomenclatural decisions, like descriptions of new syntaxa and typifications, where print publication is required by the ICPN, will be presented in an Appendix of the print version.)

(2) A methodological paper should propose a new method and test it by using national or regional datasets of grasslands. Possible methodological topics to be addressed include the suitability of classification methods developed for national classifications at much larger spatial scales, problems arising from the combination of different national vegetation databases, and effects of different plot sizes and the inclusion/non-inclusion of certain species groups on classification results. Combinations of (1) and (2) are possible.

(3) Papers on conceptual issues or on applications of grassland classifications may be considered.

(4) All papers need to go significantly beyond the previous state of knowledge (e.g. it would not be appropriate to present a joint classification of a certain syntaxon in two countries if each of them has a previously published modern classification).

(5) All papers need to apply up-to-date methodology and meet high quality standards regarding the form of presentation. In particular, the requirements defined in the *AVS Guidelines for vegetation classification papers* must be met.

(6) All papers should present and discuss the significance of their methods and results for developing a consistent pan-European classification of grassland vegetation, and they should provide and outlook what the next steps in this direction from their perspective should be.

This Special Feature is produced in conjunction with the **8th European Dry Grassland Meeting 2011 in Uman'**, Ukraine, and the **21st Workshop of the European Vegetation Survey (EVS) 2012 in Vienna**, Austria, but papers not presented at one of these conferences are also eligible. We consider the announcement of the plans for such a Special Feature as a major incentive to produce suitable papers that otherwise might not have been written in the near future, and we particularly hope that the perspective of a publication in an attractive international journal will stimulate international cooperation.

We are fully aware of the enormous effort required for producing supra-national classification papers. Therefore we will have “relaxed” deadlines and we will produce this Special Feature as a “Virtual Special Feature”, i.e. each individual paper will be published after acceptance independently with the indication that it belongs to that Special Feature. Once all invited papers (or at least the majority of them) are published, a “Synthesis and Outlook” will conclude the Virtual Special Feature.

Procedures and deadlines:

If you consider to write a paper for this Grassland classification VSF, please contact the guest editors as soon as possible, i.e. before you even do the first step of collecting or analysing the data, and not only at abstract submission!!!

Only when we are informed, we can coordinate the different teams of authors and help to avoid overlaps in their works. By chance, we have just detected one case where obviously three teams of authors worked on largely overlapping classification papers without knowing from each other, but only one had informed us. Such a lack of communication could lead to an enormous double- or triple work. It is obvious that in such a situation we either have to ask the author teams of overlapping topics to join each other, or we could only invite one of the proposed contributions!

Also only those authors who have informed us about their plans in advance, will receive some potentially highly relevant information from us, such as modifications in deadlines and procedures, changes in the formal or methodological requirements for papers or the possible availability of preliminary versions of the EuroSL, the planned electronic standard checklist of all European plants with cross-walks to national Turboveg lists, to be used for such supranational vegetation studies.

Generally it is wise to discuss the suitability of a certain topic with one of the guest editors prior to submitting your abstract

- If you are interested in contributing to the Virtual Special Feature, please send a preliminary abstract of your planned article (in regular AVS format), until **31 December 2011** to dengler@botanik.uni-hamburg.de together with an indication when you likely would be able to submit such a paper (if invited). Following the Virtual Special Feature idea, there will be a second deadline for abstract submission after the EVS workshop in Vienna, i.e. in **summer 2012**.

Requirements for the Abstract

*Please prepare your abstract in regular AVS format, i.e. **up to 350 words and normally structured into Question(s), Location, Methods, Results, and Conclusions**. The abstract should be as detailed as possible to allow a sound evaluation. All co-authors should be listed with contact data (but in large cooperative works further co-authors might join for the final paper).*

If you are proposing a classification paper for which the analyses have not been carried out yet, please modify the Abstract as follows.

** In the **Location** section, you should give a precise definition of your geographic scope.*

** As our evaluation will largely be based on the **Methods**, this part should be very detailed (probably more detailed than it will be in the Abstract of an accepted paper). You should clearly specify how you will obtain the data (i.e. from which databases or which primary sources), how you ensure comprehensiveness, what are your criteria for pre-selection (floristic composition, plot size, geographic stratification etc.), which methods do you intend to use for classification, and how do you plan to translate your numerical classification into a phytosociological system.*

* As at that stage you obviously cannot present a **Results** section with concrete data (as it will be required in the Abstract for publication), you should outline in this preliminary Abstract how you are planning to present the results: Which syntaxonomic levels? Will you use formal syntaxonomic units? Will you perform also a nomenclatural revision? How will you characterise the units (e.g. species group method or combination of character- and differential species)? How are you planning to present the results.

* You can leave out the **Conclusion** section.

- All preliminary abstracts submitted by one of the two deadlines will be screened by the guest editors for scientific quality and novelty as well as for conformity with the criteria given above. Based on this assessment, the guest editors will propose to the Editors-in-chief a list of papers to be invited, who then will decide whether or not to start the production of the Virtual Special Feature. **Therefore, the number and quality of your abstracts submitted to us by 31 December 2011 is decisive!**
- After this general decision has been taken based on the abstracts, the authors will be informed whether their article is invited, conditionally invited, or declined. (“Conditionally invited” means that the authors will receive suggestions what should be change in order to make the paper eligible). The invited and conditionally invited articles then can be submitted to AVS through the journals electronic submission system, probably until **spring 2013**.
- The papers submitted after invitation will be subject to regular peer review procedure (including the possibility of rejection) with one of the three guest editors being the coordinating editor for each of them.
- Those papers from the Virtual Special Feature that are accepted after revision will be published continuously in regular issues of AVS, i.e. the publication of the first papers will not be delayed by the latest. The Virtual Special Feature will be concluded approximately in **autumn 2013** with a synthesis paper.
- Contact to the guest editors:
 - Jürgen Dengler: dengler@botanik.uni-hamburg.de
 - Wolfgang Willner: wolfgang.willner@vinca.at
 - Milan Chytrý: chytry@sci.muni.cz

Also of interest:

*We are planning to establish a comprehensive and **consistent electronic reference list of all plant taxa of Europe** to be used for supra-national vegetation analyses (“EuroSL”). A first meeting of the respective working group will take place on 2-3 December 2011. Certainly, a complete functional product will need a serious amount of time for completion. However, we encourage all those of you who are going to combine several national vegetation databases with different plant nomenclature to contact dengler@botanik.uni-hamburg.de in advance to receive information on the present status of this EuroSL project and on how far you could make use of possible preliminary products. We will try to coordinate all activities regarding the combination of national Turboveg lists in such a way that double work is avoided and the largest possible compatibility of the resulting supranational databases is ensured.*

A first Special Feature of AVS on vegetation classification has just been published. The nine articles are available free access from <http://onlinelibrary.wiley.com/doi/10.1111/avsc.2011.14.issue-4/issuetoc>

*We are planning to produce a **companion Special Feature on grassland diversity** (“Diversity patterns in European grasslands under the joint influence of nature and agriculture”) for*

Agriculture, Ecosystems and Environment (AGEE; IF = 2.790), guest-edited by J. Dengler, M. Janišová, P. Török, M. Wiezik & C. Wellstein. If interested, please contact 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). 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.