



**58<sup>th</sup> Annual Symposium  
of the International Association  
for Vegetation Science:  
Understanding broad-scale  
vegetation patterns**

**19 – 24 July 2015, Brno, Czech Republic**

**Abstracts**


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# 58<sup>th</sup> Annual Symposium of the International Association for Vegetation Science

## Abstracts



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**Abstracts**

**Edited by  
Milan Chytrý, David Zelený & Eva Hettnerbergerová**

**Masaryk University, Brno, 2015**

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Dedicated to the memory of J. Bastow Wilson (1944–2015)

## Jandt U.

Oral presentation

### The advantage of playing by the rules: species with highest co-occurrence probability outperform those with certain trait values

Ute Jandt<sup>1,2,\*</sup>, Eva Breitschwerdt<sup>1</sup> & Helge Bruehlheide<sup>1,2</sup>

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Functional traits are being considered as a key tool to understand community assembly rules. We challenged this view by testing whether species that are more likely to co-occur with the resident species show higher survival rates and better performance than those that are more similar/dissimilar to the resident community or randomly chosen species. During a two-year field experiment in German grasslands of different levels of diversity and land-use intensity we investigated the survival and RGR of species transplanted into the community. The added transplant species were selected according to four different scenarios: species with highly similar or dissimilar traits to the resident community, species with the highest degree of empirical co-occurrence to resident species (derived from vegetation records held in the German vegetation reference database) and species chosen randomly from the local grassland species pool. Using linear regressions, survival rates and RGRs were related to land-use intensity, climate, community weighted mean trait values and functional diversity of key functional traits. Individuals of species selected by the scenario based on co-occurrence probability of added and resident species survived best and performed in most cases better than those selected based on trait information and on random selection. Of all climate variables, soil moisture had the highest influence on plant growth. The single most important environmental driver of RGR of transplants was land use. Among all traits, community weighted mean and functional diversity of specific leaf area were the most frequent predictors for the transplants' RGR of most response variables over the whole study period. In consequence, there is a high and so-far untapped potential of using vegetation databases to predict community assembly and individual performance from vegetation databases.

## Janečková P.

Oral presentation (young scientist)

### Drivers of functional and taxonomical diversity within fragmented grasslands

Special session: Old wine in new bottles: trait-based understanding of plant responses to disturbance

Petra Janečková<sup>1,2,\*</sup>, Štěpán Janeček<sup>1,3</sup>, Jan Homík<sup>2</sup>, Duccio Rocchini<sup>1,4</sup> & Francesco de Bello<sup>1,2</sup>

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Seminal grasslands are biodiversity hotspots in the increasingly fragmented Central European landscape. In consequence vegetation scientists and conservationists are looking for factors maintaining such diversity under the threat of land-use changes. In our study, we surveyed around 1200 grassland patches within a region of 400 km<sup>2</sup> in the Železné hory Mts. (Czech Republic). According to field measures and remote sensing information these patches varied in terms of productivity, wetness, disturbance, size and connectivity and different historical trajectories. We evaluated the effects of these factors on both taxonomical and functional biodiversity, and community functional properties. As expected, taxonomic diversity was positively correlated with grassland area and connectivity and was also higher on traditionally managed meadows. This effect of management is nevertheless meadow type specific and is much more pronounced on wet compare to dry meadows. Functional diversity, such as taxonomical, is positively affected by meadow size, but on the contrary, is higher on dry meadows. Mown meadows host less clonal, smaller, earlier flowering species with lighter seeds, however there are considerable differences among habitat types. In addition, the decrease in meadow size has more negative effect on species richness in unmanaged meadows in contrast to managed ones. This indicates the high importance of traditional management for maintaining species diversity of smaller grassland patches which often represent important landscape elements maintaining connectivity but are mostly omitted in conservation planning.