

New insights in plant community ecology

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Since 2005, ECOVEG conferences aim to stimulate research and training in the field of plant community ecology by providing every year a forum for discussion and exchange to students, young scientists and researchers from European and African French-speaking countries. Topics are related to both theoretical questions (abiotic filtering, biotic interactions, species assembly rules, functional traits, phylogeny...) and environmental issues associated with plant communities (global change and disturbances, biodiversity conservation, ecosystem restoration, biological invasions...).

The present issue of *Plant Ecology and Evolution* includes a selection of four papers that were presented at the 7th International Conference on Plant Community Ecology (ECOVEG7) held from March 30 to April 1, 2011 in Lausanne, Switzerland. This conference was organized at Ecole Polytechnique Fédérale de Lausanne by Thomas Spiegelberger, Aurélie Thébault, Pierre Mariotte and Alexandre Buttler of the Ecological Systems Laboratory, welcoming 102 participants, 31 oral presentations and 41 posters.

Among the four selected papers, three of them illustrate the benefit of new approaches in vegetation ecology to cope with various ecological issues such as the restoration of endangered plant communities (Jaunatre et al., this issue, pages 13–23), the prediction of suitable habitats for rare plant species (Baumberger et al., this issue, pages 31–37), or the assessment of the role of wild ungulates to enhance seed dispersal in fragmented or changing habitats (Picard & Baltzinger, this issue, pages 24–30). The first authors of these articles are young scientists presenting results of their PhD work. These papers are representative of the diversity of approaches and research questions addressed at the ECOVEG7 meeting.

Jaunatre et al. used an experimental approach to compare various treatments to restore an old steppe plant community after intensive orchard cultivation in the Mediterranean region. It turned out that the main limitation to spontaneous recolonization was the relative low dispersal of the target species as compared to pioneer ruderal weeds. Hence, the most efficient restoration treatment is soil transfer that favours both steppe species and their associated microorganisms.

Baumberger et al. used an empirical modelling approach to predict suitable habitats for the reintroduction of a target endangered species in the French coastal salt marshes, using co-occurring plant species. This simple method proved to be more efficient than popular niche-based species distribution models by taking into account local biotic interactions, which are critical for rare species with low abundance.

Picard and Baltzinger used a comparative observational approach to estimate the contribution of three common wild ungulate species to external seed dispersal across distant and contrasted habitats. They revealed an unexpected variety of seeds transported by wild boar, concerning plant species from various habitats and with various dispersal modes.

In the fourth paper, which is the outcome of a forum organized during the ECOVEG7 conference and a literature survey, Spiegelberger et al. (this issue, pages 4–12) addressed the question of how do plant community ecologists consider the complementarity of observational, experimental and modelling approaches. Most of the recent papers published in specialised journals in plant ecology report studies involving a single approach, mainly observational or experimental, whereas combined approaches are favoured in generalist high-impact journals. Participants of the ECOVEG7 meeting acknowledged the need for strong combined approaches even though they are most often compelled, as individuals and for efficiency reasons, to focus on just one.

No doubt that these four contributions demonstrate that even in the current context of ‘molecular era’ (Robbrecht 2010), modern studies of plant communities, through their ability to link different approaches and disciplines, continue to play an important role in plant ecology.

REFERENCE

- Robbrecht E. (2010) Ecology and evolution in the molecular era. *Plant Ecology and Evolution* 143: 3–4. <http://dx.doi.org/10.5091/plecevo.2010.428>