Unifying and analyzing vegetation-plot databases in Europe: the European Vegetation Archive (EVA) and the Braun-Blanquet project

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Introduction

Vegetation-plot databases have enormous potential for biodiversity research and for developing systems of vegetation and habitat classification (Chytrý et al. 2011). In Europe there are about 2 million of vegetation-plot records stored electronically (Schaminée et al. 2009). However, this information is relatively unexploited and geographically focused on national or sub-national scales. It is therefore an urgent task for vegetation scientists and biodiversity managers to develop international synergies addressing supra-national and continental scales.

Here we present two projects that are being pursued by the European Vegetation Survey (EVS) Working Group of the International Association of Vegetation Science (www.euroveg.org).

The European Vegetation Archive (EVA)

The main purpose of the European Vegetation Archive (EVA) is to create the conceptual background for the development of pan-European analyses based on national vegetation databases (http://euroveg.org/eva-database). EVA represents a key infrastructure for unifying vegetation-plot data, aiming at establishment of a centralized European vegetation database and stimulating international feedbacks between database managers and potential users.

EVA is conceived as a dynamic system for sharing data among national databases while they would continue their normal, country-focused activities. The EVA consortium has developed Data Property and Governance Rules that guarantee the rights of the data contributors are respected. Thus, individual data contributors can decide on the mode of data availability from restricted to open access, and different options of data sharing can be agreed for particular projects developed between EVA and external partners.

A new version of the software TURBOVEG (Hennekens & Schaminée 2001) and complementarities with the SynBioSys Europe information system (Schamineé et al. 2007) are being developed as the management software for EVA. These tools will allow us to combine the species cheklists linked to national vegetation databases into standarized taxonomical lists to be used in the analysis of vegetation data. Given the complexity of managing the taxonomy of large datasets, this system provides a dynamic feedback to regularly update the links between species names of the original databases.

The Braun-Blanquet project

The European Vegetation Survey is developing projects to benefit from EVA infrastructure but also to involve other collaborators beyond the consortium. An example is the Braun-Blanquet Project (http://euroveg.org/projects), the main aim of which is the compilation and analysis of floristic and geographical information related to European phytosociological alliances as defined in the new European syntaxonomical overview (EuroVegChecklist, Mucina et al.).
This project is dedicated to Josias Braun-Blanquet, whose legacy has been the inspiration for collecting most of the data that will be analyzed (Westhoff & van der Maarel 1973). At the moment 22 extensive datasets from 18 European countries are involved in this project. Thanks to the relatively homogeneous information provided at the plot level, c. 60% of the samples included in the vegetation databases can be characterized at the level of alliance. This information will be summarized in the form of constancy-based synoptic tables, and will be essential for offering a parameterized overview of European vegetation types and for developing further research at habitat level.

In order to make all this information useful for conservation managers, the European Vegetation Survey team is working

with the European Environment Agency to supply real data and scientific background to the EUNIS habitat classification. This classification is currently used as a crucial tool of nature conservation survey, planning and reporting in Europe in Europe (http://eunis.eea.europa.eu/).

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