



Introduction: Vegetation science and the habitats directive: approaches and methodologies of a never-ending story

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Abstract

Rendiconti Lincei has dedicated a Special Issue to present a number of case studies highlighting the role played by the European Vegetation Survey Working Group established by Sandro Pignatti and his colleagues in support to the implementation of the Habitats Directive. Studies include theoretical analyses as well as researches conducted at different spatial and temporal scales focused on the assessment and monitoring of the conservation status of habitats and target plant species, identification of new habitats and subtypes, and their diagnostic species.

Keywords Diagnostic species · Habitat conservation · Habitat monitoring · Vegetation classification · Vegetation modelling · Vegetation database

1 Background

The idea of this Special Issue dedicated to “Vegetation Science and the Habitats Directive” was presented at the 25th Workshop of the European Vegetation Survey (EVS) Working Group of the International Association for Vegetation Science held in Rome at the “Accademia dei Lincei” in April 2016. The idea was enthusiastically supported by Sandro Pignatti as a way of celebrating the 25th anniversary of the EVS that was formalized after the first workshop held in 1992 at the Botanic Garden of Rome by Pignatti himself together with Georg Grabherr, Laco Mucina, John Rodwell and Joop Schaminée. The EVS has three main aims: to promote common standards in the recording of plant communities (Pignatti 1995; Rodwell et al. 1995); to develop software for the storage, analysis and display of vegetation data and analyses (Tichý 2002; Chytrý et al. 2016); and to

work towards an overview of European vegetation (Mucina et al. 2016). Thanks to this vision, the EVS was able also to provide adequate expertise towards the understanding and implementation of the Habitats Directive (92/43/EEC), which was adopted in 1992, and became a cornerstone of Europe’s nature conservation policy focused on the conservation and monitoring of natural habitats and wildlife species (Evans and Arvela 2011; Janssen et al. 2016).

2 Main topics

The analysis of European vegetation at different spatial and temporal scales allowed EVS members to develop and apply methods and approaches for the interpretation, monitoring, assessment of the conservation status and elaboration of conservation and restoration strategies of European habitats. This special issue collects a number of case studies focused on such topics at different geographical scales. Rodwell et al. (2018) highlight the role played by the phytosociological classification of plant communities in the development of habitat classification schemes at continental scale and conducting cross-walks among them. Within this theoretical framework, Gigante et al. (2018) present a national assessment of the conservation status of habitats, while Agrillo et al. (2018) show an example of the use of vegetation classification and modelling procedures to identify European *Q. suber* woodland subtypes to establish a protocol for habitat

This peer-reviewed contribution is from the European Vegetation Survey working group established in 1992 by Alessandro Pignatti and colleagues in Rome.

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monitoring and assessment. Vegetation data are useful for developing effective indicators to assess and monitor the conservation status of habitats at both national (Tsiripidis et al. 2018) and local scales (Carli et al. 2018). Moreover, they can be used to identify diagnostic plant species to differentiate habitat subtypes (Bonari et al. 2018) and to highlight rare plant communities deserving conservation through inclusion in Annex 1 of the Habitats Directive (Fanelli et al. 2018). Understanding the temporal patterns of vegetation can be useful in detecting the dynamics of habitats for elaborating effective conservation actions (Lelli et al. 2018; Tardella et al. 2018). Ecological features and dynamics of habitats can also have a significant effect on the distribution and survival of target species (Alessi et al. 2018; Dokane et al. 2018).

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