



**57<sup>th</sup> INTERNATIONAL CONGRESS  
ITALIAN SOCIETY OF VEGETATION SCIENCE**

Società Italiana di Scienza della Vegetazione

**VEGETATION SCIENCE IN THE ERA OF NATURE RESTORATION**

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*Book of Abstracts*



*Ecosystem restoration is a hot topic in the scientific community and the urgency of a long-term and sustained recovery of biodiverse and resilient nature is increasingly recognised politically, with the European Nature Restoration Law being the first continent-wide law on ecosystem restoration. Venice has long been recognised as the stage of the world and, for its long history of resilience and integration with the natural environment, has been appointed the Sustainability Capital of the World. We are therefore delighted to welcome you to the 57th International Congress of the Italian Society of Vegetation Science, where Venice will once again become the world's stage on which ecosystem restoration will be the theme of the play.*

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# PATTERNS OF $\alpha$ AND $\beta$ -DIVERSITY HIGHLIGHT UNIQUENESS-BASED CONSERVATION PRIORITIES FOR PLANT COMMUNITIES IN ITALIAN AGRICULTURAL LANDSCAPES

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Agrosilvopastoral management can enhance biodiversity in agricultural landscapes by promoting ecosystem diversification<sup>1</sup>. To assess their conservation priority based on contribution to plant diversity, we surveyed plant communities in 25 m<sup>2</sup> plots across croplands, grasslands, shrublands, forests, and wetlands in 50 agricultural areas all over Italy in the spring-summer of 2023. We compared the plant communities in terms of  $\alpha$ -diversity,  $\beta$ -diversity, and species composition using analysis of variance (PERMANOVA) and Indicator Species Analysis (INSPAN). Grassland plant communities had the highest  $\alpha$ -diversity and wetland plant communities had the lowest. All ecosystem types contributed to  $\beta$ -diversity; however, we observed a negative correlation between local contribution to  $\beta$ -diversity (LCBD) and  $\alpha$ -diversity. Wetland plant communities had the highest LCBD and species uniqueness, followed by croplands and grasslands. Wetland species such as *Phragmites australis*, *Myriophyllum spicatum*, and *Lemna minor*, along with woody species like *Prunus spinosa*, *Rubus ulmifolius*, and *Quercus* spp., were key contributors to  $\beta$ -diversity. Each ecosystem type had a distinct plant community composition (PERMANOVA) and indicator species (INSPAN). Based on our evidence, wetland plant communities had the highest conservation priority due to their unique species composition. Nevertheless, our findings highlight the importance of maintaining diverse agricultural landscapes encompassing a range of anthropogenic, natural, and semi-natural ecosystems to safeguard the overall plant diversity. Conservation efforts should prioritize the preservation of such diversified agricultural landscapes.

[1] Benton, T.G., Vickery, J.A., Wilson, J.D. (2003). Farmland biodiversity: is habitat heterogeneity the key? *Trends in ecology & evolution*, 18(4), 182-188.