



**57th 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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POSTER SESSION

AGRICULTURAL INTENSITY AND LOCAL FACTORS INFLUENCE PLANT DIVERSITY OF FARMLAND PONDS

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41 Wetlands rank among the world's most vulnerable ecosystems. Permanent farmland ponds represent remnants of natural habitats or man-made ecosystems that often have high conservation values in heavily human-modified landscapes as Mediterranean basin. However, in different agricultural systems their plant diversity still needs to be explored, as for example in Italy despite its key contribution to maintaining a significant share of macrophyte diversity at the European and global scales. We aimed to evaluate the relative importance of agricultural land-use intensity and local factors related to the pond, such as direct pond management and the water-land gradient, in influencing species richness and composition of aquatic and riparian plant communities. We carried out a vegetation survey in 45 farmland ponds in three agricultural areas with different levels of agricultural land-use intensity in Tuscany, central Italy. We tested if the selected factors influence species richness and composition using the PERMANOVA test, against the whole communities, wetland indicator species and synanthropic species. The species richness and composition of plant communities varied among the different land-use intensities, with aquatic plots in intensively managed areas generally exhibiting lower species richness and a higher presence of species associated with disturbed environments. Many alien species also occur. On the contrary, ponds in areas with lower land-use intensity hosted better preserved plant communities with abundant helophytes. Although agricultural land-use intensity influenced plant species richness and composition, it was not the most important driver of variation. Indeed, in most cases plot position resulted as the most important factor in shaping both aspects, followed by pond identity and agricultural land-use. More precisely, local factors related to the pond itself, including direct management and anthropogenic disturbance, along with local gradients like the transition from terrestrial to aquatic environments, play a more significant role in varying plant species richness and composition. Our research highlighted how ponds in areas with lower agricultural land-use intensity harbour higher plant diversity, hosting semi-natural habitats that deserve conservation efforts mainly focused on the key factor of management.