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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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Project LIFE TETIDE on Capraia, management of invasive plants species in Mediterranean island ecosystems

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Biological invasions pose substantial threats to biodiversity by disrupting the composition and functionality of native ecosystems, especially on islands more vulnerable to this process[1,2]. An important financial tool that makes feasible the conservation of habitats and species throughout the management of biological invasions is the EU LIFE program, which funds projects for the environment and climate action. The project TETIDE "Turning Eradication Targets Into Durable Effects" is a LIFE project involving numerous partners throughout the Mediterranean basin (in Italy, Malta and Croatia) and focusing on the conservation of habitats and native species through the management of invasive alien species and the involvement of island communities in active conservation efforts. Among the project tasks, the work package 3 aims to increase the conservation status of 7 Natura 2000 habitats on Capraia Island throughout the control and eradication of invasive alien plants (IAPs: *Opuntia stricta*, *Opuntia ficus-indica*, *Zantedeschia aethiopica*, *Nicotiana glauca* and *Chasmanthe floribunda*).

To fulfil this purpose the WP3 foresees i) the creation of an updated map of the target invasive species, in preparation for their removal ii) local control of *Chasmanthe floribunda* in public areas of Capraia settlement iii) planting of native species in areas subjected to removal of IAS iv) distribution of native plants with ornamental values to the citizen.

As a first step towards the drafting of an executive project for the interventions of removal, in collaboration with the Company NEMO srl, we conducted a detailed map of the current distribution of the target invasive plants. Further experimental trials for the correct management of the waste material will be crucial for choosing the type of intervention and its costs.

As revealed by mapping, invasive species were more prevalent in areas of the island with higher levels of anthropogenic pressure and disturbance, while only *O. stricta* also spread to natural habitats. Overall, the invasion extends over 71 hectares (3.6% of the island's surface), of which approximately 70 hectares are invaded by *O. stricta*. The habitats most impacted by alien plant invasion include 5330 "Thermo-Mediterranean and pre-desert scrub", 5320 "Low formations of *Euphorbia* close to cliffs", 1240 "Vegetated sea cliffs of the Mediterranean coasts with endemic *Limonium* spp.", and 6220* "Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*", all primarily invaded by *O. stricta*.

Furthermore, WP10 foresees the monitoring of the habitats most impacted by this species. To date, the impacts of these species have been analyzed within the PNRR CN5-NBFC-spoke 7 project. The results regarding the impact on native vegetation show that, although value for species richness and Shannon diversity index were not found significant, the species composition is significantly different between invaded and control plots. In particular, the plant community is more homogeneous in the invaded plots than in the controls, maybe because of the apparent replacement of the shrub layer of Mediterranean scrub vegetation due to the *O. stricta* occurrence.

[1] Kumar Rai, P., & Singh, J.S. (2020). Invasive alien plant species: Their impact on environment, ecosystem services and human health. *Ecological Indicators*, 111, 106020.
[2] Russell, J.C., Meyer, J.Y., Holmes, N.D., & Pagad, S. (2017). Invasive alien species on islands: impacts, distribution, interactions and management. *Environmental Conservation*, 44, 359–370.