

# BOOK OF ABSTRACTS



VALENCIA (SPAIN) | 23-27 OCTOBER | 2023  
*Plant Conservation and Ecosystem Restoration  
in the Mediterranean*



**4th Mediterranean Plant  
Conservation Week**

VALENCIA | 23-27 OCTOBER | 2023

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## Long-term assessment of ecological restoration activities in desertification prone Mediterranean areas: a study case from Sicily

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One of the most worrying consequences of climate change and deep human impact in semi-arid Mediterranean areas is the increasing desertification risk and the related processes of soil degradation and loss of plant cover and biodiversity. Under such conditions, active restoration tools are generally needed to reverse these otherwise irreversible changes. In similar contexts, interventions were carried out within the “Macalife” Project (LIFE 04/NAT/IT/000182) in the Special Area of Conservation “Macalube di Aragona”, in southern Sicily (Italy). Here, intensive agricultural practices, unregulated grazing and frequent wildfires have seriously threatened several local plant communities. Furthermore, plant establishment is locally hampered by a long-lasting drought period, clayey and salt-rich soils, and periodic soil movements resulting from sedimentary volcanism. Interventions were addressed to restore the most important plant communities corresponding to several habitats of community interest according to 92/43 EU Directive, like the Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea* (6220), and the halo-nitrophilous scrub *Pegano-Salsolietea* (1430) and to improve the conservation status of some endemic and endangered plant species like *Tripolium sorrentinoi*. All the target species used for reinforcement actions carried out during the project were propagated through local nurseries, using seeds exclusively collected from individuals occurring on site, and some woody plants were also inoculated with symbiotic microorganisms (plant growth-promoting bacteria and mycorrhizal fungi). We assessed the effectiveness of interventions more than 10 years after the last monitoring activities. Particularly, we evaluated the increase of plant cover and/or the number of individuals and the mean height of the target species (*Lygeum spartum*, *Tripolium sorrentinoi*, *Atriplex halimus*, *Salsola oppositifolia*, *Salsola vermiculata*, *Suaeda vera*, etc.) characterizing some of the habitats occurring in the nature reserve. The very promising results from monitoring activities suggest that the use of local plant germplasm and proper propagation techniques may allow restoring native Mediterranean habitats under desertification threat.

**Keywords:** biodiversity, Habitat Directive, land degradation, Macalube, microorganisms