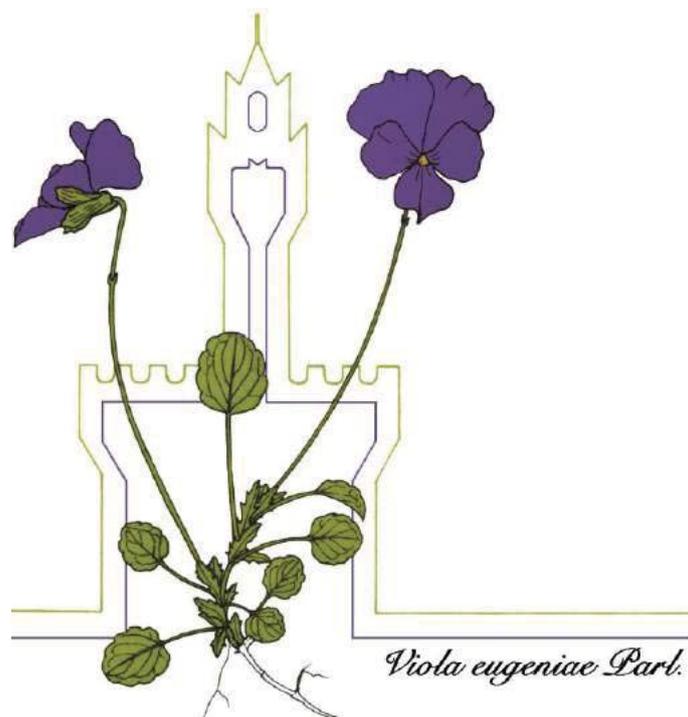


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ABSTRACTS

KEYNOTE LECTURES, COMMUNICATIONS, POSTERS

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Are the effects of the overstory on herb and shrub layers important in forest habitat monitoring? The case of *Quercus suber* woodlands

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Habitat conservation has been identified as relevant for the preservation of biodiversity in the European Union (92/43 EEC Habitats Directive, hereafter: HD). According to the Art. 11 and Art. 17 of this Directive (1), each European country is obliged to monitor the Annex I Habitats every six years to periodically evaluate if the conservation targets are achieved. In this context, the Tuscan Region promoted a project (Monito-Rare) aiming to develop a new monitoring system that allows the recovery of a better level of information. This approach adopts for each habitat type an “ad hoc methodology” taking as a starting point the directives proposed by ISPRA and MATTM (2). Our study has tested the effects of overstory data (structural data such as cover, average height and basal area of tree species) on the shrub and herb layers to check the importance of tree structure and composition for forest habitat monitoring. The research was carried out in the EU Habitat “*Quercus suber* forests” (code 9330), that includes woods characterized by dominance of the cork oak (*Quercus suber* L.), differentiated respect to the *Q. ilex* forests by a lesser tree coverage that leaves ample space for herbaceous and shrubby species (3). Tuscan cork oak woodlands represent a high proportion of this habitat on mainland Italy. In order to capture its habitat variability they have been investigated within two different Special Areas of Conservation (SACs) representative of habitat in Tuscany (Monte Leoni and Val di Farma), through a stratified sampling that takes into account the geological substrate (siliceous crystalline formation of quartzitic-anagenetic type named “Verrucano” versus other substrates), a variable considered discriminating for this type of habitat. Within each SAC we randomly selected a number of plots proportional to the surface covered by the habitat. We sampled a total of 49 circular plots of 200 m², 25 in Monte Leoni (17 patches) and 24 in Val di Farma (9 patches). To investigate the fixed effects of SAC (type of substrate and patch) on community composition (abundance data) of the understory, we used permutational multivariate analysis of variance (PERMANOVA; 4). We used as covariates the basal area of cork oak, other oaks and other trees. The results underline the key role of substrate in driving understory composition in the *Q. suber* woods, showing a statistically significant difference in species composition between the forests growing in the two types of substrate. While Verrucano substrate is characterised by an higher abundance of *Arbutus unedo* L., *Erica arborea* L., *E. scoparia* L. and *Myrtus communis* L., the other substrates are dominated by *Phillyrea latifolia* L. and *Brachypodium rupestre* (Host) Roem. & Schult. There is also great floristic variability between the patches within the SACs. The covariables basal area both of other oaks and of other trees have a significant effect on understory composition. Moreover, our results indicate that in the habitat type 9330 the understory varies significantly in function of structure and composition of the tree layer, highlighting the importance of considering the overstory data when monitoring forest communities included in HD.

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3) E. Biondi, C. Blasi, S. Burrascano, S. Casavecchia, R. Copiz, E. Del Vico, R. Venanzoni (2009) Ministero dell’Ambiente e della Tutela del Territorio e del Mare, DPN <http://vnr.unipg.it/habitat>

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