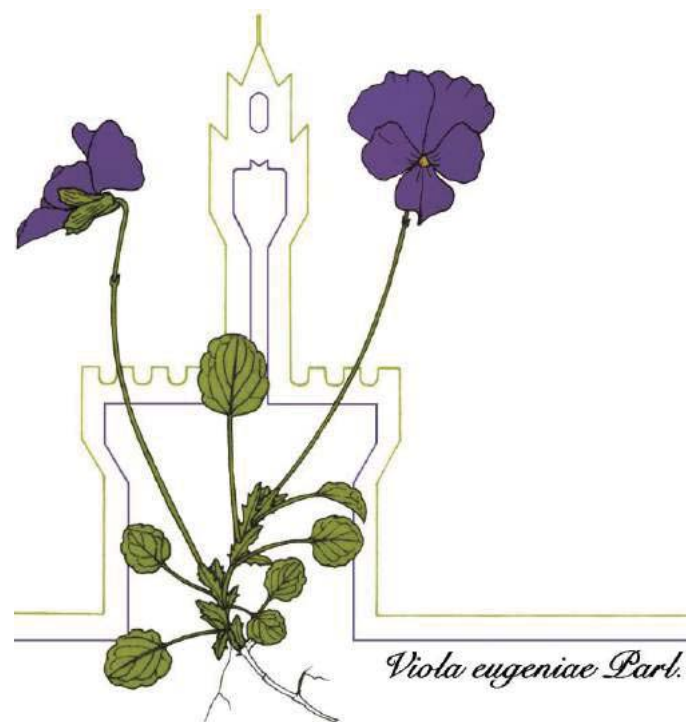


# 114° Congresso della Società Botanica Italiana

VI INTERNATIONAL PLANT SCIENCE CONFERENCE (IPSC)

Padova, 4 - 7 September 2019



## ABSTRACTS

KEYNOTE LECTURES, COMMUNICATIONS, POSTERS

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### 2.3 = Monitoring of coastal dunes habitats in Tuscany through the “MONITO-RARE” project

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“MONITO-RARE” is a project involving Tuscany Region and Universities of Firenze, Siena and Pisa, aimed to improve the knowledge and develop monitoring methodologies for species and habitats included in Natura 2000 Network and considered of community interest, according to Art. 11 and Art. 17 of the Directive 92/43/EEC. Among the habitat of interest (Annex I), coastal sand dune is one of the most threatened by multiple human pressures (1, 2), such as pollution, coastal erosion, effects of global warming, farming practices, urban development, and pressure from tourism (3). As part of this project, was carried out a first year of monitoring of dunal habitats (Natura 200 code 2110, 2120, 2210, 2230, 2240, 2250\* and 2260) in five SACs (Special Areas of Conservation) in order to cover different latitudes of Tuscany coast (“Dune litoranee di Torre del Lago/Selva Pisana”, “Tombolo da Castiglion della Pescaia a Marina di Grosseto”, “Dune costiere del Parco dell’Uccellina” and “Duna del Lago di Burano”). The coastal areas to the north and south of Arno basin are very different by climatic, geomorphologic (erosion) and anthropic factors. The northern coast is twice rainy as the southern one.

Nevertheless, sand dune habitats are distributed in a fine scale mosaic, not distinguishable through aerial photos and maps. For this reason, we opted for a stratified sampling in three EUNIS habitat types (B1.3, shifting coastal dunes; B1.4, coastal stable dune grassland; B1.6, coastal dune scrub) for psammophilous vegetation. According to Sperandii et al. (4), we recorded these communities by 262 random plots of 2 x 2 m surface in which were surveyed pressures and threats, floristic composition and an estimate of abundance using a percentage cover scale ranging from 1 to 10. Our sampling is congruent with RanVegDunes (GIVD ID EU-IT-020), the first Italian database gathering standardized, randomly-sampled vegetation data in coastal dune environments.

We detected significative differences in abundance and species composition between EUNIS habitat types, between SACs, and between habitat types within SACs. In particular, our data shows particular differences between communities of north and south of Tuscany: the northern SACs to Serchio river are heavily impacted by the presence of mass tourism, with bathing establishments, roads and human trampling. From these evidences can be deduced that trails installed within the DUNETOSCA Life Projects and aimed to reduction of tourism impact may be insufficient to reduce anthropic pressures in those contexts and adequate conservation strategies are required.



Fig. 1. Coastal dune vegetation (Parco dell’Uccellina)



Fig. 2. Plot of 2 x 2 m for floristic surveys

- 1) EEA (1999) State and pressures of the marine and coastal Mediterranean Environment. Environmental Issues Series No. 5, European Environment Agency, Copenhagen
- 2) Barcelona Convention, Athens (2012) UNEP/MAP 2012. State of the Mediterranean Marine and Coastal Environment [https://wedocs.unep.org/bitstream/handle/20.500.11822/364/sommcer\\_eng.pdf?sequence=4&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/364/sommcer_eng.pdf?sequence=4&isAllowed=y)
- 3) Ciccarelli D. (2014) Environmental Management 54, 194–204
- 4) Sperandii M.G., Prisco I., Stanisci A., Acosta A.T.R. (2017) Phytocoenologia 47, 231–232