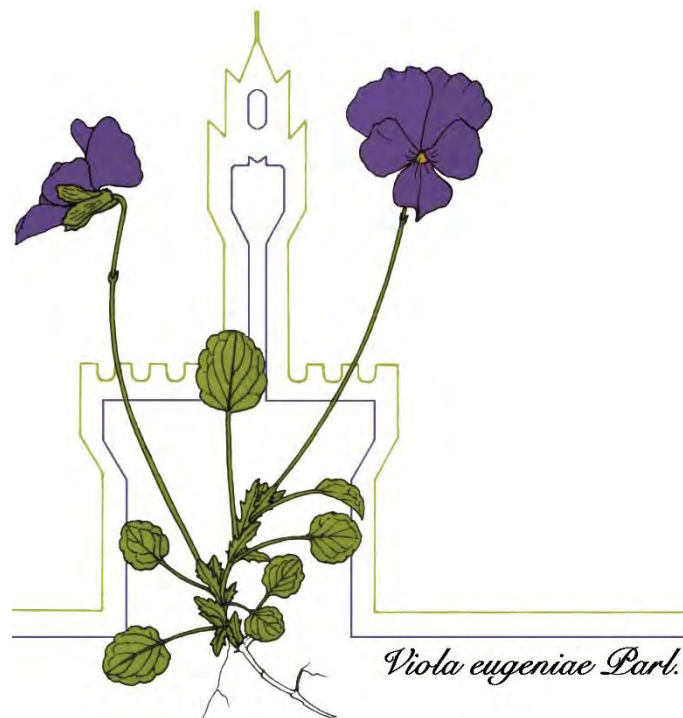


# 116° Congresso della Società Botanica Italiana

VII INTERNATIONAL PLANT SCIENCE CONFERENCE (IPSC)

ONLINE, 8 - 10 SEPTEMBER 2021



## ABSTRACTS

KEYNOTE LECTURES, COMMUNICATIONS, VIDEO ABSTRACTS

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### 3 = Occurrence and distribution of alien plants along the sandy coastal ecosystems of the Italian peninsula

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Although coastal ecosystems are transitional environments highly resilient to natural disturbance, they are strongly threatened by anthropogenic impact, especially due to invasion by alien plant species. Here we present a descriptive study on the occurrence and distribution of alien species along the Italian coasts, based on the analysis of data collected in sandy coastal ecosystems from 2002 to 2018. The data come from a standardized survey of 644 square (4m<sup>2</sup>), georeferenced plots distributed along the Italian coasts into 8 macro-sites belonging to the Mediterranean bioclimatic region (Fig. 1), of which 152 (23.6%) are invaded. We counted a total of 244 species of which 13 were alien (5.3%), most of them neophyte-invasive (84.6%) and only two naturalized (*Avena sterilis* and *A. fatua*). The two species of the genus *Avena*, as well as *Arundo donax*, can be considered as archaeophytes. More than half of the exotic species observed (53.8%) originate from the American continent, probably as a consequence of the intense trade and migratory exchanges that for centuries have linked the New Continent to Europe and which have also involved the transport of plants between the two continents. Instead, only two species were African (genus *Carpobrotus*) and only one was Australian (*Acacia saligna*). The African alien species were found only along the Tyrrhenian coast, mainly in the Latium macro-sites (LA1, LA2 and LT1). On the contrary, the only Australian species (*A. saligna*) was observed principally along the Adriatic coast, but its presence was also recorded on the Tyrrhenian side (CA1, in Campania region), even though in a single plot. *Xanthium orientale* subsp. *italicum* was the only specie detected in all macro-sites. There was a clear disproportion between the number of plots invaded in the Adriatic (5.3%) and in the Tyrrhenian coasts (95%), probably due to the smaller extent of the former (respectively about 70 km and 167 km, Fig. 2). As to biological forms, most of the native species were Therophytes and Hemicryptophytes (respectively 39.4% and 25.8%), as expected in dune environments; alien species were instead mostly represented by Phanerophytes (38.4%, all of them invasive) and Therophytes (30.8%; Fig. 3). Compared to previous works where species classified as invasive were mainly herbaceous (Therophytes and Hemicryptophytes), we detected an increase in the presence of invasive Phanerophytes. The mean richness of native species in invaded sites was generally lower than in not-invaded sites, except for two sites (PU1 and TO1, respectively in Apulia and Tuscany regions) where it was similar. The highest values of mean species richness in Invaded vs. Not-Invaded sites were detected in TO1 (9.54) and in PU1 (9.45), respectively; the lowest value was recorded in CA1 (3.5 Invaded and 5.5 Not-Invaded, Fig. 4). According to the EUNIS classification, the habitat types with the greatest number of invaded plots were the embryonic and mobile dunes (B1.3, 27.6%), the coastal stable dune grassland (B1.4, 15.7%), and the coastal dune scrub (B1.6, 11.8%). Furthermore, the invasion phenomenon mainly characterized sites under intensive anthropic disturbance (D) to which it was not possible to associate a specific habitat type (34.2%, Fig. 2).

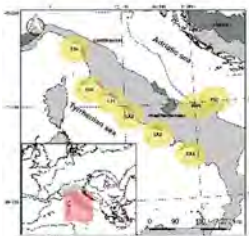


Fig. 1. Site map.

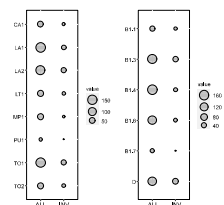


Fig. 2. Distribution of plots per site (on the left) and per habitat type (on the right).

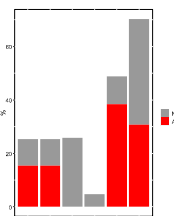


Fig. 3. Biological forms. All species (grey) vs. Alien species (red).

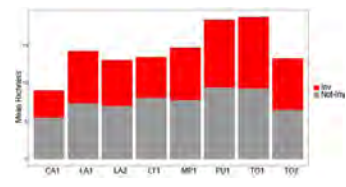


Fig. 4. Mean richness of native species per site. Invaded (red) vs. Not-Invaded plots (grey).

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