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Conservation status of threatened plant species in the protected areas SIC IT4060002 “Valli di Comacchio” and SIC IT4060003 “Vene di Bellocchio” (Emilia-Romagna): a preliminary overview

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“Valli di Comacchio” and “Vene di Bellocchio” are part of the Po River Delta regional park, one of the most extensive Italian wetlands. For several years, in the past, this area has been subjected to intense anthropogenic pressures, such as salt production, fish farming and urbanization, resulting in the reduction and fragmentation of the original natural habitats. Despite that the coastal wetland preserves areas of high naturalistic and scientific values which comprise a system of lagoons, characterized by brackish or salt water. The natural vegetation is represented mostly by halophytic shrubs and by perennial or annual pioneer grasslands of coastal salt muds. These sites are part of “Rete Natura 2000” and have been designed as SCI (Site of Community Importance, according to the Habitat directive; codes IT4060002 and IT4060003), and as ZPS (Zones of Special Protection).

This study is part of a three-year long project on the conservation of plant biodiversity in this unique environment. In fact, the first step consists in a preliminary survey on the status of plant populations belonging to threatened or rare species reported in these areas of the Po Delta [1, 2].

During the first sampling campaign we verified the presence/absence of the taxa reported in literature in each studied site. We confirmed the presence of small populations of some rare orchids such as *Anacamptis coriophora*, *A. palustris*, *A. morio*, *A. pyramidalis*, *Cephalanthera longifolia*, *Ophrys apifera*, *O. bertolonii*, *O. sphegodes*, *Neotinea tridentata* and *Serapias vomeracea*. Populations of *A. laxiflora*, *C. rubra*, *O. tenthredinifera*, *Orchis anthropophora* and *O. simia*, instead, seem to be disappeared. The Comacchio Saltworks vegetation consisted in species typical of saltmarshes, like *Limonium bellidifolium*, *L. densissimum*, *L. virgatum*, *Crithmum maritimum*, *Spartina maritima*, *Halocnemum cruciatum* and *Salicornia veneta*. In areas characterized by coastal salt muds we reported populations of *Cistus criticus*, *Centaurea tommasinii* and *Polygonum maritimum*.

This checklist was useful to map the current distribution of natural populations. Each of these populations was plotted for the future investigations and for each plot we will determine the number of reproductive individuals, and we will analyze the principal functional traits to determine the potential growth rate and the capacity to disperse and establish.

Moreover, we used a molecular approach for the identification of taxonomically problematic genera or complexes of taxa. The DNA barcoding method was very useful for groups of plants with high phenotypic plasticity and high hybridization frequency such as the genera *Salicornia*, *Spartina* and *Halocnemum*.

References

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2. Pellizzari M., Barbieri C., Caramori G., Pagnoni G.A., Piccoli F., 2007. La vegetazione della Salina di Comacchio (Ferrara, Parco del Delta del Po): ripristino ecologico e conservazione degli habitat. *Fitosociologia*, 44: 77-82.