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The coastal dune field: the use of a GIS platform in the case study of Platamona-Marritza (Northern Sardinia, Italy)

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The need to have a management tool that highlights the equilibrium and evolutive trends of the Italian coastal dunes has encouraged the national scientific community to produce a GIS that can contain and compare all the cartographic, evolutive and vegetational information on the dune fields. This GIS was created in the framework of a more co-ordinated approach to the mapping and to field studies taking place within the MIUR-COFIN 2002 Research of National Importance entitled “The aeolian deposits of the Italian coasts and the beach-dune sedimentary fluxes”. The creation of the chart in digital format, on a scale of 1:10,000, through the interpretation of overlapping photographic images taken in 1998 and made available by the Ministry for the Environment and National Territory, enabled us to synthesise the results of historical studies and insert updated reliefs, obtained from field studies, that highlight and describe the evolutive, morphodynamic, sedimentological, vegetational and anthropic characteristics of the dunes. The choose of a suitable legend to define the natural and anthropic situation with a finite but sufficient and exhaustive parametric index has been the basis for the construction of the geodatabase whose fields have taken into consideration all the parameters considered necessary to describe the evolution of the coastal dunes. The result has been the creation of a national georeferenced chart and associated database on an ESRI ArcGis 8.2 platform. We present the product of a GIS developed to map and reconstruct the variations in the coastal dune environment in the sector of Platamona-Marritza characterized by a complex evolution as geological, vegetational and antropic features.