

Monitoring of the coastal ecological system and GIS implementation for the management and preservation of the MPA Gaiola Underwater Park

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Abstract

Starting from 2010 in the MPA Gaiola Underwater Park it has been implemented a plan for the biological and environmental monitoring, aimed to the acquisition of data on the environmental condition of the MPA and to the comprehension of its evolution, in order to verify the efficacy of the preservation activities and to plan the next management strategies. The different valuable aspects characterizing the MPA had been taken into consideration: both the biological relevance and the presence of underwater archaeological remains in the area due to volcanic-tectonic activity (bradyseism). The study activity was finalized to obtain a complete description of the valuable and the degrade elements of the MPA; geo-morphological, biological and archaeological data had been analyzed together with data related to the illicit actions damaging the park. After the acquisition, all the information had been integrated through software ArcGIS9.2 in order to archive and analyze data with a Territorial Informative System, characterized by a clear and intuitive graphic interface. Particularly it had been realized a Bionomic Map, a tool useful to locate the sub-areas characterized by the highest archaeological and biological interest in the MPA. In-depth analysis had been realized for the Gaiola Sub-Area, characterized by the highest concentration of archaeological remains, and the Cavallara Sub-Area, characterized by the dominance of the Coraligene biocenosis, which is in the list of the Mediterranean costal biocenosis to protect according RAC/SPA (Specially Protected Areas Regional Activity Centre).

Overarching Themes:

Successfully Implementing the Ecosystem Approach

Day-Specific Topics and Subtopics:

Science and Knowledge at the Service of Effective
Management
Inventories of species and habitats
Impact studies
Conservation biology