

Monitoring of marine phanerogams' habitats and assessment of areas exposed to anchoring in the International Marine Park of Bonifacio (Sardinia Area)

Cossu Andrea^{1*}, De Luca Mario¹, Donno Yuri²

¹ DADU - Dipartimento di Architettura Urbanistica e Design, Università di Sassari, Italy

² Parco Nazionale Arcipelago di La Maddalena, Italy

* acossu@uniss.it

The International Marine Park of the Strait of Bonifacio and the National Park of La Maddalena have started a series of investigations in the marine areas under their jurisdiction. Through the European project, GECT (European Group of Territorial Cooperation), studies have been carried out to define the type, the structural characteristics of the *Posidonia oceanica* seagrass and to evaluate the impact of dropping anchors. The study, carried out by a team of experts from the institutions named above, used shared methodologies in relation to the same type of challenges and problems. The study areas on the Sardinian side were Passo Asinelli pass, Porto della Madonna harbor and Cala Portese cove. For each site two stations were identified, a monitoring and a control one. The type of meadow, its morphological and structural characteristics (matte, rocks, degree of fragmentation, height of matte, etc.) and the possible presence of marks/signs caused by the dropping of anchors were assessed in selected areas. The compactness of the matte, estimated using a penetrometer, the percentage of seabed covered by the plant and density were assessed by direct method by divers. The results for the leaf density show the meadows are in regression; however, there are better conditions in Porto Madonna where the monitoring and control stations show density near to normal values. Particularly low values were measured in Passo Asinelli where, despite prohibitions, the high pressure of tourism generates stress to the plant formation. The leaf standing crop, the leaf area index and measures penetrometric lead to conclusions almost similar indicating best ecological conditions in Porto Madonna, confirming previous results. The indicators used show an ecological status of lesser quality for the sites of both Passo Asinelli and, more visible, of Cala Portese. Porto Madonna, on the other hand, shows values equal to the minimum requirements for a meadow surface.