

## **Marine Protected Area Gaiola Underwater Park: the first *Posidonia oceanica* restoration habitat in the City of Naples**

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This work concerns the habitat restoration project of *Posidonia oceanica* (L.) Delile realized in the Marine Protected Area (MPA) Gaiola Underwater Park (Naples, Italy), included in the Special Area of Conservation, IT8030041 "Gaiola and Nisida Seabeds". It is the first seagrass transplant experiment in the City of Naples, where until about 60 years ago there was a lush meadow of *Posidonia oceanica*.

In fact the researches carried out by the MPA starting from 2015 confirm the previous studies, mapping vast parts of seabed characterized by *P. oceanica* dead matte (≈ 150 ha).

The planting of the cuttings was preceded by preliminary phase of study and mapping of the distribution of dead matte areas along the coast.

Therefore, 3 different experimental areas for the restoration on dead matte were selected, located at -15, -9 and -4 metres depth, in order to test different lighting and hydrodynamism conditions.

Only cuttings that had already been dig out were used for the restoration. These cuttings, with orthotropic and plagiotropic rhizomes, were found in the C Zone of the MPA Regno di Nettuno.

For the restoration, two different ground fixing strategies were adopted to study the best grip: biodegradable carpets in "R.E.C.S.® - Cocco" (Reinforced Erosion Control System) and iron staples, covering 200m<sup>2</sup> in total with more than 3500 transplanted cuttings.

The project is managed by the MPA Gaiola Underwater Park, in collaboration with the International School for Scientific Diving and it was realized thanks to the contribution of MASAF (1.40 Measure/ FEAMP 2014-2020).