

Importance of *Posidonia oceanica* meadows for the distribution of the mollusc bivalve *Pinna nobilis* (Linnaeus, 1758) in the Capo Carbonara Marine Protected Area

Cinti Maria Francesca*, Frau Francesca, Atzori Fabrizio, Corrias Stefano

Area Marina Protetta Capo Carbonara, Comune di Villasimius, Italy

* mariafra.cinti@gmail.com

Posidonia oceanica meadows are the preferential habitat for many plant and animal protected species including the mollusc bivalve *Pinna nobilis*. In this study, we evaluated the importance of the substrate structure for the distribution of the species in the Capo Carbonara Marine Protected Area (Sardinia south east), recognized as a Specially Protected Area of Mediterranean Importance (SPAMI) and Site of Community Importance (SCI ITB040020) of the Natura 2000 network.

For this purpose four study areas, exposed to the North West and South East of the Capo Carbonara promontory, and characterized by *P. oceanica* meadows on both sandy and rocky substrates, with a total area of about 20ha, have been investigated. Visual sightings were conducted *in situ* during the months of September and October 2013 and 2014 along linear transects at depths between 1 and 10 meters to collect information on the presence, morphometric characteristics and depth of specimens of *P. nobilis*. A total of 139 individuals were recorded, 126 of them were alive (90.6%) and 13 were dead (9.4%); 51 individuals (36.7%) were found on rocky substrates, with a mortality rate of 6.2%, an average height of 34.4 ± 9.9 cm, and at an average depth of 4.7 ± 1.7 m. On sandy substrates, the number of individuals was 88 (63.3%), with a mortality rate of 11.4% and average height of 39.65 ± 14.3 cm, at the average depth of 5.8 ± 2.1 m.

This study confirmed the importance of *P. oceanica* for the distribution of *P. nobilis*, which showed a preference for *P. oceanica* meadows set on sandy substrate.

Therefore, for the management purposes of the Capo Carbonara Marine Protected Area, it would be interesting to understand which are the main causes of the greater mortality registered on sandy substrate and if these causes are related to environmental (i.e. sedimentation, predation) and/or anthropogenic (i.e. anchoring, collecting) factors.