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Effects of Mediterranean gorgonians on vagile fauna distribution

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Mediterranean gorgonian forests are threatened by several human activities and are affected by climatic anomalies, which promote the development of mucilaginous aggregates and increase the susceptibility to pathogens and epibionts. In the last decade, these phenomena led to several gorgonian mass mortality events in the north-western Mediterranean Sea. Although these phenomena have been largely investigated, little is known on the possible impact of gorgonian habitat loss on the associated fauna. The effects of *Eunicella cavolinii* and *Paramuricea clavata* on the abundance and distribution of vagile organism were investigated by a field experiment carried out from June to October 2010. Gorgonian forests were simulated by transplanting three apical branches (~20 cm long) on plastic recruitment panels. Panels with and without gorgonians were arranged in plots of four panels each. For each gorgonian species, four forested and four non-forested plots were deployed, interspersed, in two different sites (Tavolara Island, Sardinia, and Portofino Promontory, Liguria) at 24 and 40 m in depth, for *E. cavolinii* and *P. clavata* respectively.

Overall, 250 taxa belonging to the phyla Nematoda, Nemertea, Platyhelminthes, Anellida, Arthropoda, Mollusca and Echinodermata were found. Despite high local heterogeneity and large differences between sites, the abundance of vagile species was somewhat affected by gorgonians presence. Significant effects are limited to few species and vary according to sites and/or gorgonian involved. For instance, the shrimp *Periclimenes aegylios* was facilitated by both gorgonians in Portofino but it was absent in Tavolara, while the tanaid *Leptochelia* sp. generally is absent/scarce in presence of gorgonians at both sites.

Gorgonians could directly affect vagile species by modifying microscale hydrodynamism, increasing refuges or predation, offering relieved substrata and food, facilitating some diners and indirectly, modifying the sessile assemblages.

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