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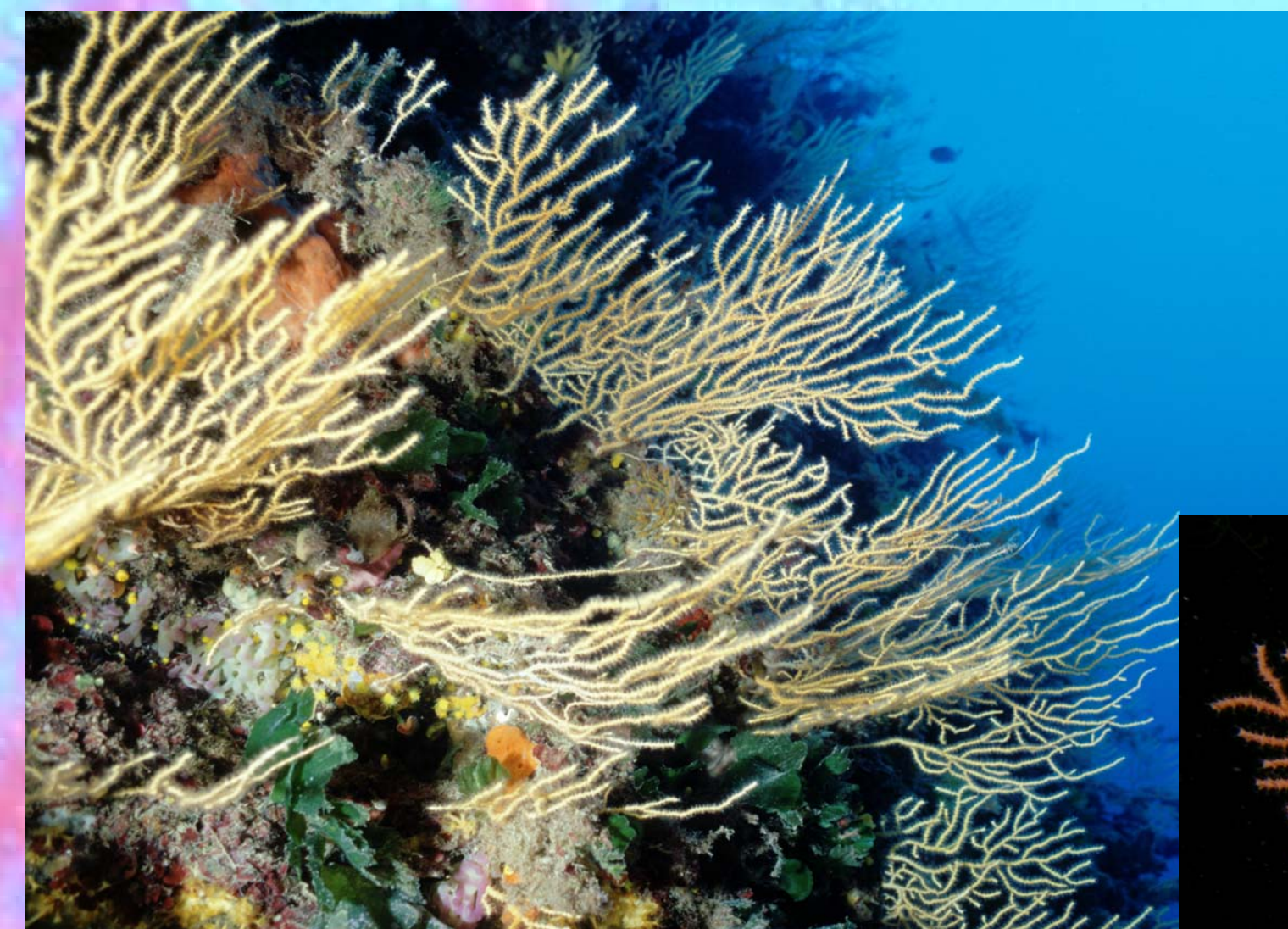
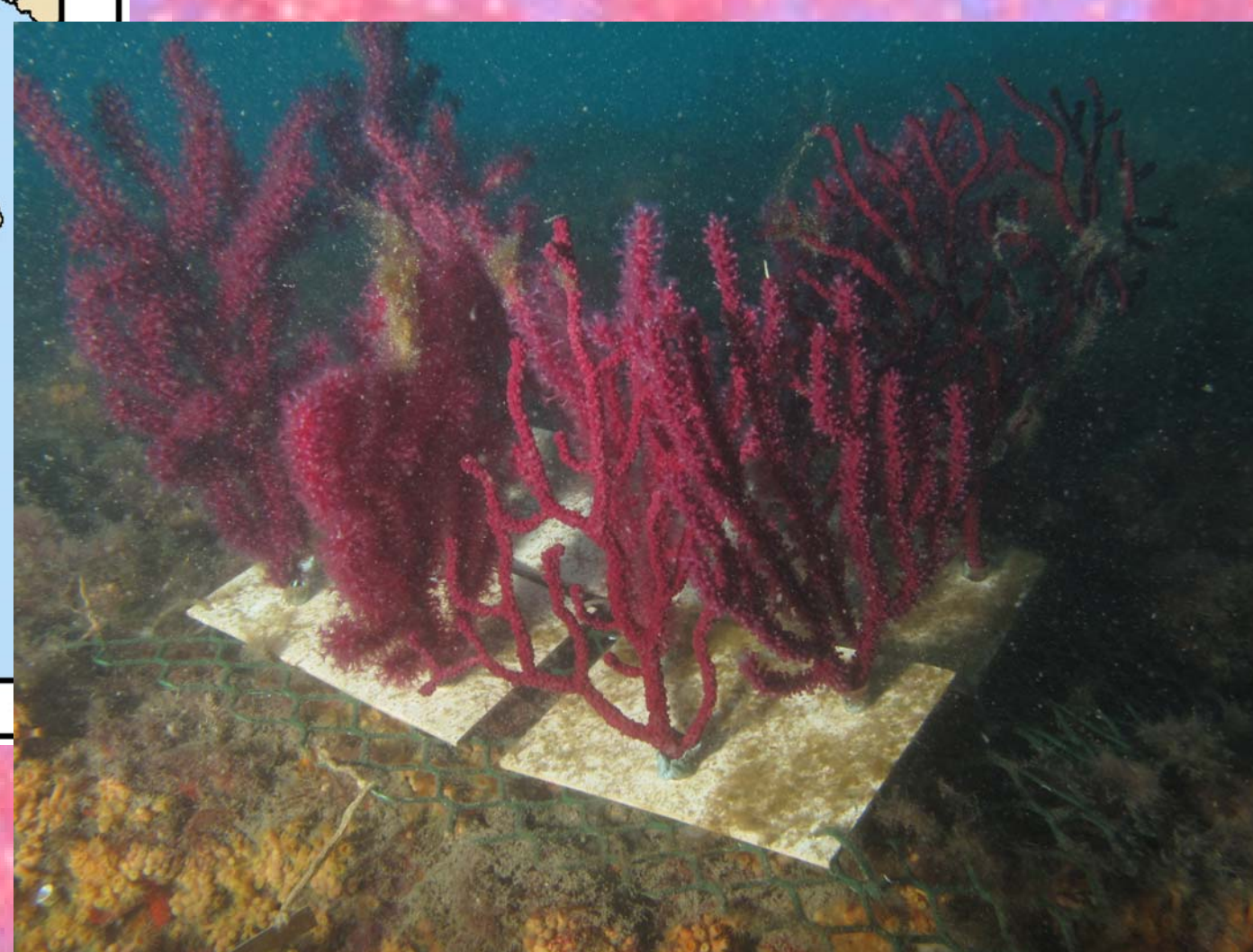
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## Introduction

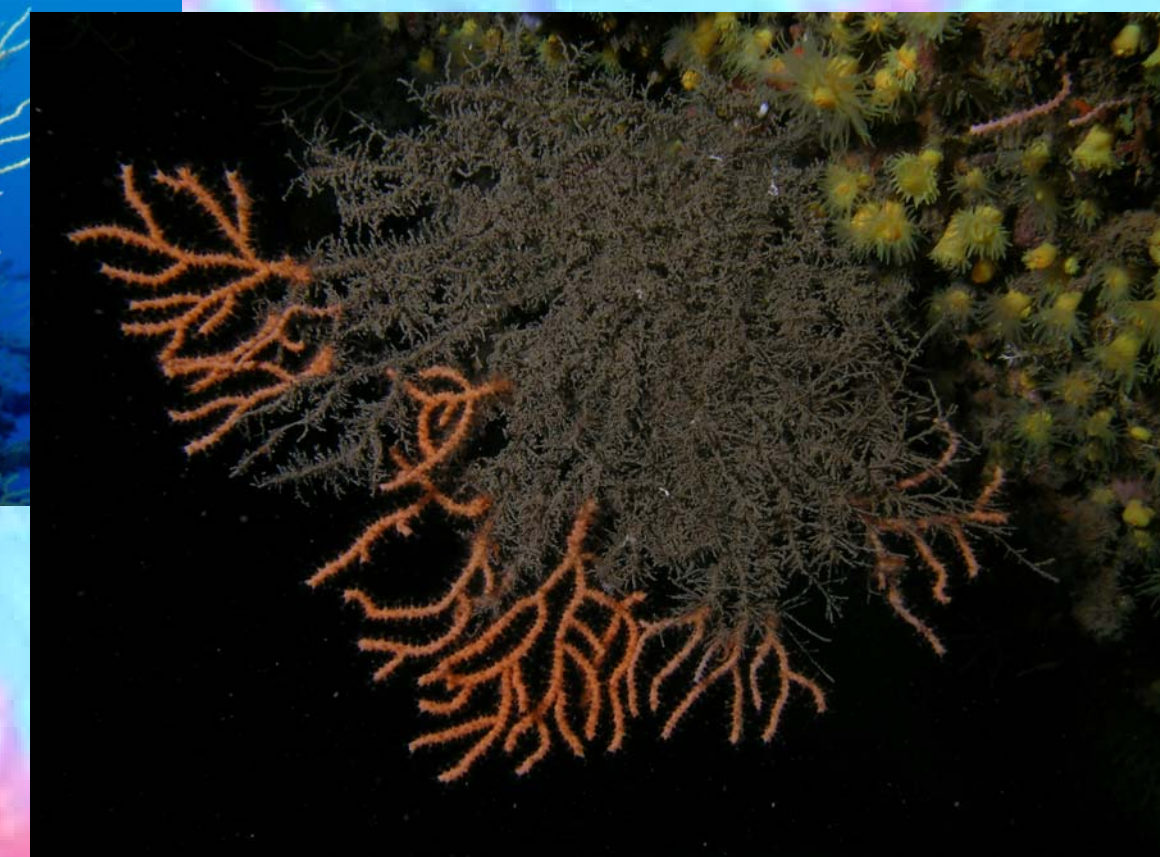
Mediterranean gorgonian forests are threatened by several human activities and are affected by climatic anomalies, which promote the development of mucilaginous aggregates and increase the susceptibility to pathogens and epibionts. In the last decade, these phenomena led to several gorgonian mass mortality events in the north-western Mediterranean Sea (Cerrano et al., 2006; Coma et al., 2006). Although these phenomena have been largely investigated, little is known on the possible impact of gorgonian habitat loss on the associated fauna (Ponti et al., 2011). The effects of *Eunicella cavolinii* and *Paramuricea clavata* on the abundance and distribution of vagile organisms were investigated by a field experiment carried out from June to October 2010.



Experimental sites and an example of forested plot with transplanted branches of *Paramuricea clavata*.



Forest of *Eunicella cavolinii* and a suffering colony after a mass mortality event.



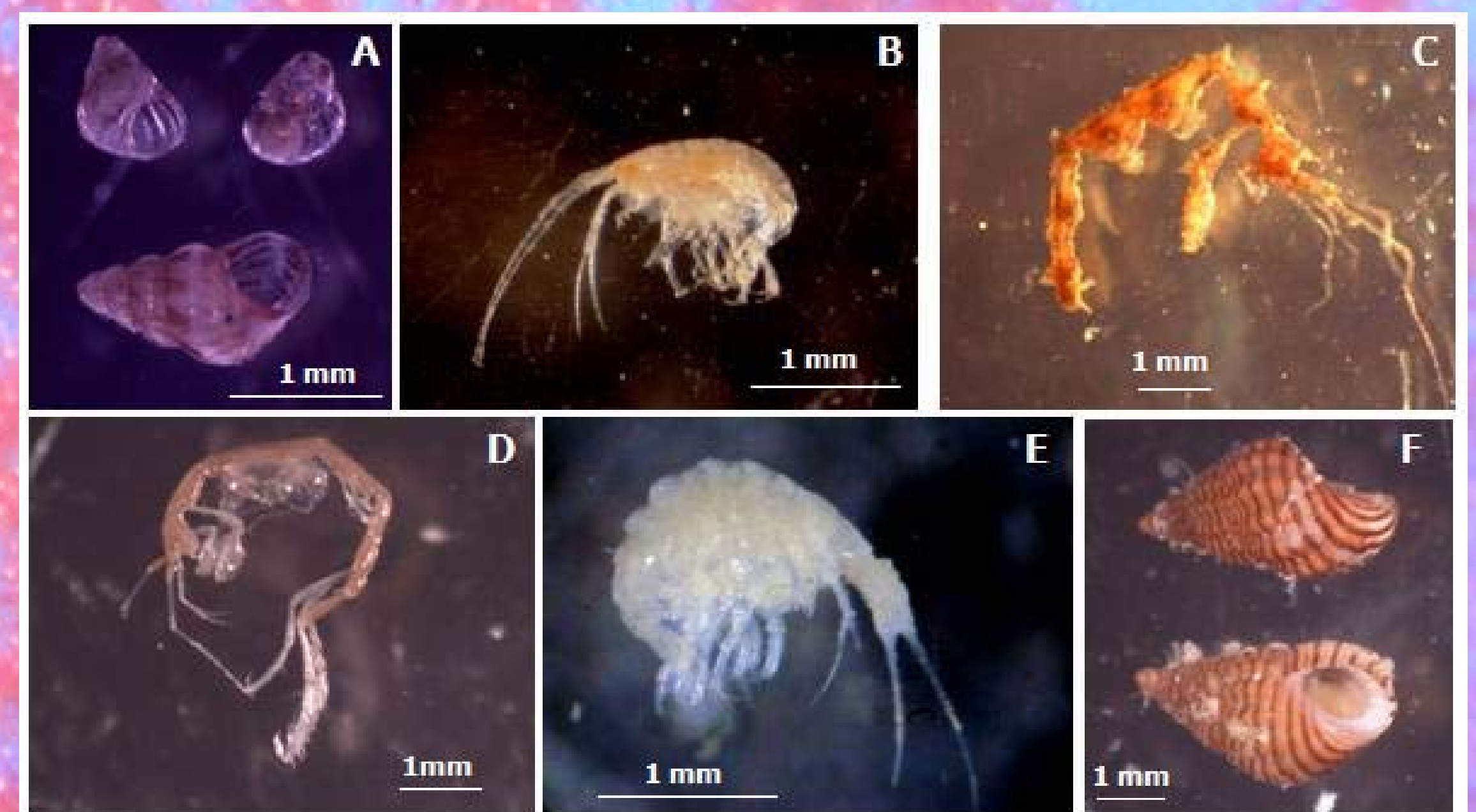
## Materials and Methods

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. Measures carried out at the end of the experiment confirmed that the gorgonians biomass on the panels was distributed homogeneously among plots.

## Results

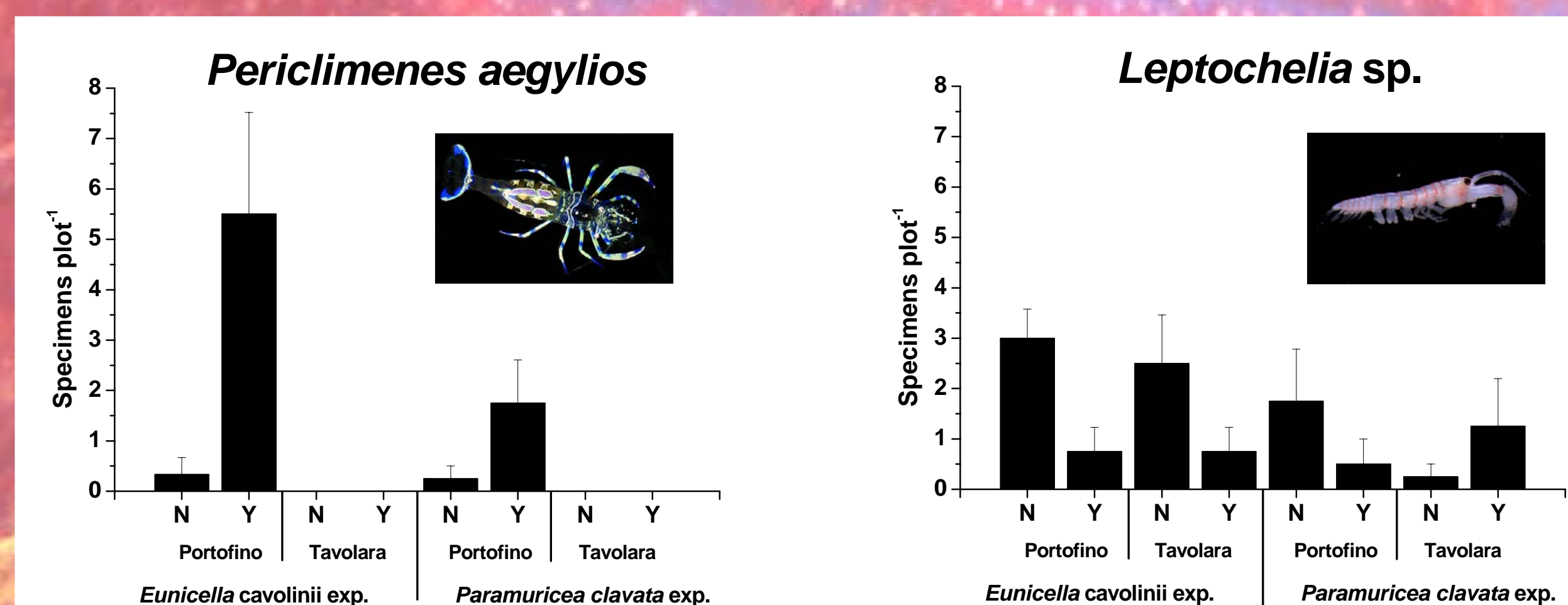
Overall 250 taxa belonging to the phyla Nematoda, Nemertea, Platyhelminthes, Anellida, Arthropoda, Mollusca and Echinodermata were found. Most abundant classes were represented by Malacostraca, Gastropoda and Pycnogonida.

Despite high local heterogeneity and large differences between sites, both in terms of environmental characteristics and fauna, the abundances of vagile species were slightly affected by gorgonians presence. Significant effects were limited to few species and vary according to sites and/or gorgonian involved. For instance, where present (e.g. in Portofino), the shrimp *Periclimenes aegylios* was facilitated by both gorgonians, while the tanaid *Leptochelia* sp. was generally scarce in presence of gorgonians at both sites.

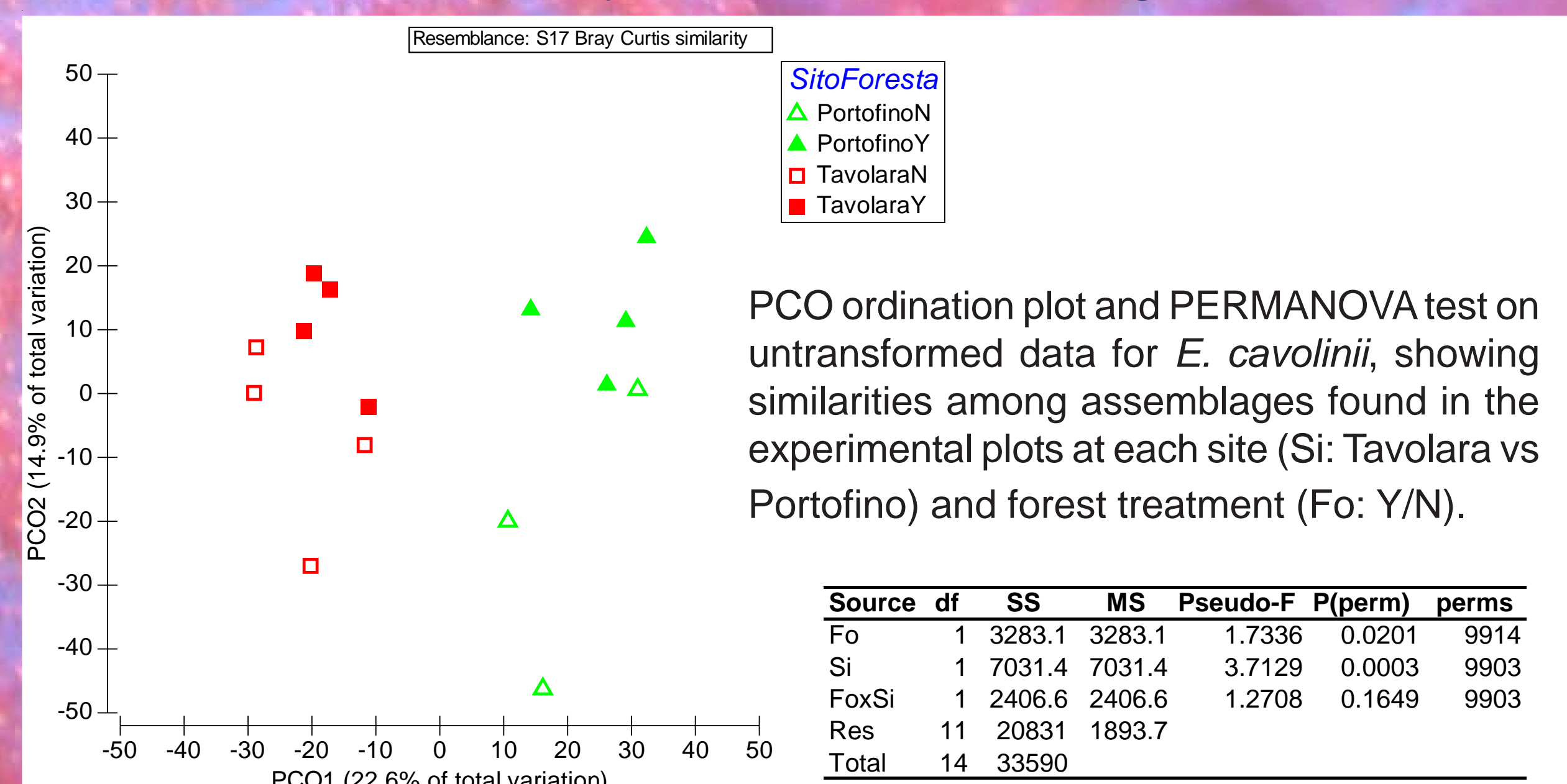


Examples from the most abundant taxa found: A, *Pusillina philippi*; B, *Stenothoe* sp.; C, *Pseudoprotella phasma*; D, *Phtisica marina*; E, *Cressa* sp.; F, *Alvania lineata*.

While *P. clavata* did not significantly affect the overall vagile community structure, *E. cavolinii* clearly modified the assemblages.



Mean abundance ( $\pm$  s.e.) on experimental plots with (Y) or without (N) gorgonian forests (i.e.: *E. cavolinii* and *P. clavata*) in Portofino and Tavolara sites.



## Discussion

This study increase the knowledge on vagile species diversity in the Mediterranean coralligenous habitat in relation to the gorgonian forests. 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.

## References

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