

ratios. Through fieldwork in addition to laboratory experiments we will provide critical insights into local filter feeder communities and their responses to dredging pressures. Identifying relative impacts of different types of stress in combination with thresholds and guidelines will assist stakeholders and managers alike in reducing risks and consequences from dredging operations.

**Sponge community gradients in submerged caves of the Eastern Mediterranean**

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Marine caves are geomorphologically complex ecosystems characterized by strong environmental gradients resulting in zonation of sessile communities and biological impoverishment towards the inner dark sectors. Sponges dominate in cave habitats, which have been characterized as reservoirs of poriferan biodiversity in the Mediterranean Sea. In the present work spatial variability of sponge communities in two submerged caves was surveyed in a region poorly explored for its cavernicolous biodiversity, i.e. the Aegean Sea (Eastern Mediterranean). Sampling was carried out with SCUBA diving through classical (qualitative samples and scraped quadrats) and non-destructive (photo-quadrats) methods, at different sites (walls and ceilings) along the exterior-interior axis of the two caves. In total, 270 sponge specimens were examined and 126 photo-quadrats were analyzed for sponge species richness, coverage, morphological diversity, and associated macrofauna.

The cavernicolous sponge fauna consisted of 76 species, with almost half of them found in both caves. Poriferan percent coverage, species richness, and diversity increased from the exterior environment to the middle zone of the cave walls and decreased thereafter. Lower values were recorded for the corresponding sites of ceilings, with a decreasing trend from the exterior to the middle zones and then an increase towards the dark interior. Morphological diversity was generally higher in the outer environment and anterior parts of the caves with middle and inner zones dominated by encrusting and cushion shaped forms. Although the abundance of sponge associated fauna decreased towards the dark cave interior, sponge specimens functioned as habitat engineers supporting richer populations of motile invertebrates in comparison to the surrounding bare rock.

The surveyed caves can be ranked among the richest of the Mediterranean Sea, concerning their poriferan diversity. The observed spatial variability in the studied sponge community parameters, among and within cave sectors with different topographic and physico-chemical features, is indicative of a complex ecosystem with great heterogeneity, individuality and conservation value.

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**Insights into the genetic connectivity of the marine sponge *Stylissa carteri* in the Saudi Arabian Red Sea**

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Despite the ubiquity of sponges and the ecological function they play in reef ecosystems, little is known about population-level connectivity in these organisms, limiting our understanding of sponge population dynamics. Information about larval dispersal in sponges is extremely rare. Despite the scarcity of data, the prevalent hypothesis is that dispersal in sponges occurs over short distance ranges. However, this has rarely been tested. To date, microsatellite markers have only been developed for a few sponge species and no sponge population genetics studies using microsatellites have been conducted in the Red Sea. Here we present the development and use of ten novel polymorphic microsatellite markers to characterize the genetic connectivity of populations of a common reef sponge, *Stylissa carteri*, on Saudi Arabian coral reefs. By looking at genetic relatedness among individuals within reefs (<1km) and genetic patterns among reefs (>200km) and along an inshore-offshore gradient, we explore the genetic structure of this species along the Saudi Arabian coast. Finally we examine the role of life history traits such as clonally and larval dispersal potential as factors explaining the observed patterns of genetic structure.

**A new genus and four new species of Aplysinidae sponges (Porifera, Demospongiae) from the Eastern Tropical Pacific**

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A new genus and four new species of Aplysinidae are described from the Gulf of California, México. *Retidendron* gen. nov. stands out by its peculiar anastomosed skeleton in one or two planes from which a sequence of dendritic fibers arises primarily from the deep choanosome. In addition to the common traits characteristic of the Aplysinidae, the new genus has pithed and stratified-bark body fibers with no foreign detritus, that change in color at death or by exposure to air. Three new species from *Retidendron* are here presented: *R. dominator*, *R. rex* and *R. horridus*. The first features a single thick walled hollow tube or a cluster of them; the second has a massive body with short irregular off-lined