

{rokbox title=|Paramuricea macrospina lives in the Menorca Channel between 60 and 100 m depth :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-genetic-diversity-and-population-structure-paramuricea-macrospina-menorca-channel-paletta-et-al-2019-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-genetic-diversity-and-population-structure-paramuricea-macrospina-menorca-channel-paletta-et-al-2019.jpg{/rokbox}

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[Exploring the genetic diversity and the population structure of the mesophotic \*Paramuricea macrospina\* in the Menorca Channel.](#)

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**Abstract:** Gorgonians play an important structural and functional role promoting high diversity and biomass of associated fauna. Up to now, studies on gorgonian ecology in the Mediterranean Sea have been focused mainly on the SCUBA diving depth range. Although increased availability of remotely operated vehicles allowed access to the deeper areas, gorgonian assemblages located on continental shelf and slopes are still barely known. Gorgonian assemblages on continental shelves are extremely vulnerable to anthropogenic impacts, especially bottom trawling and longline fishing. To implement effective management and conservation policies it is crucial to understand patterns of genetic structure among populations since connectivity enhances the resilience of populations. *Paramuricea macrospina* is a key structuring gorgonian in the Menorca Channel's (Balearic Archipelago) outer continental shelf where it covers vast extensions, reaching very high densities. Combining two mitochondrial markers and 10 microsatellites, this study gives the first insight into the genetic diversity and population structure of *P. macrospina* between 60 and 100m depth in the Menorca Channel and at a horizontal spatial scale of about 60 Km. Overall, we demonstrate a low genetic diversity and a lack of genetic structure among populations, which may be explained by the geomorphology and hydrodynamic features of the Menorca Channel (e.g. internal waves, high currents). Our study suggests some connectivity among *P. macrospina* populations in accordance with the high recruitment rates observed. This connectivity may increase the resilience and foster the recovery of impacted populations since the study area will become a Marine Protected Area of the Natura 2000 network in the near future. Nevertheless, complementary studies based on a larger sample size should be conducted to complement our

results. In addition, temporal genetic monitoring of these populations should be envisaged to monitor the potential reduction of genetic diversity of this mesophotic species.

Keywords: Anthozoa, Connectivity, Mediterranean sea, Microsatellite loci, Management