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twork-species-habitats-dejuan-et-al-2023.jpg{/rokbox}

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[The continental
shelf seascape: a network of species and habitats.](#)

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Abstract: The diversity of benthic communities on continental shelves is tightly linked to the diversity of habitats. Therefore, considering seascape habitat composition can help to gain insights into the spatial variability of benthic communities and move away from single habitats approaches. This perspective needs different analytical methods, such as network analysis that enable the study of complex ecological interactions. This work explores the relationships between habitat and benthic species diversity in the Menorca Channel (the Balearic Islands, western Mediterranean). The seascape in the study area is a mosaic of alternating biogenic and sandy habitats that increases the total benthic species richness. Of the 442 benthic species included in the analyses, 286 species are shared by the six habitats identified, contributing to ecological connectivity across the seascape; 73 generalist species inhabit all six habitats simultaneously, however, 156 species are specialists and are linked to a single habitat, particularly to biogenic habitats, which increases specialization and the vulnerability of the species to habitat fragmentation. The network approach shows a tight link between epibenthic species diversity and the distribution of habitats over the continental shelf, providing essential information for optimal conservation strategies that move from a focus on protecting the most sensitive habitats to marine conservation schemes that encompass a diversity of habitats.

Keywords: benthic communities, maërl beds, species richness, graph theory, bipartite networks, Mediterranean