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Decapod larval communities of the Mediterranean and Atlantic basins

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The study focus on the incompletely understood Gulf of Cadiz - Strait of Gibraltar - Alboran Sea system (Atlantic - western Mediterranean connection) that makes the transition between temperate and tropical waters and is considered an important hotspot for exploring potential invasions of species or ecosystem separation. Decapod communities and the mechanisms of retention/dispersal were analyzed for this dynamic area utilizing data on decapod larvae and ocean water masses collected on summer surveys. Asymmetries in the larval assemblages composition were found. The northern Alboran inner shelf was strongly influenced by offshore currents and mesopelagic species were an important component of the larval communities. Contrastingly, the Gulf of Cadiz shelf was dominated by coastal benthic larvae. Vertical data showed the Alboran larvae preferably distributed in surface water layers, while in the Gulf of Cadiz shelf an extended distribution was observed. Results lead us to hypothesize that the hydrological and hydrodynamic conditions of each basin are responsible for the different distribution patterns of the larval assemblages. Different shelf characteristics and oceanic circulation of both basins were considered the main drivers of decapod distribution. Key environmental and behavioural factors such as the origin of larvae, adult habitats, larval vertical displacement range also influenced the larval dispersal range.

Keywords: Decapoda, larval transport, connectivity, Algarve, Mediterranean Sea, Strait of Gibraltar

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