

{rokbox title=|Decapod crustacean (top) and fish larvae (bottom) :: Image: Authors | thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-estructura-meroplankton-sistema-frontal-meps-manolo-hidalgo-et-al-2014-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-estructura-meroplankton-sistema-frontal-meps-manolo-hidalgo-et-al-2014.jpg{/rokbox}

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[Hydrographic and biological components of the seascape structure the meroplankton community in a frontal system](#)

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Abstract: Studies investigating the environmental influence on the structure of meroplanktonic communities generally focus on fish larvae. To our knowledge, no study to date has combined information on other important groups of the meroplankton such as decapod crustaceans and cephalopods. Here, we investigate the spatiotemporal distribution of a summer meroplankton community in the upper water column of the Balearic Sea (Western Mediterranean). The study compares 2 contrasting years (2004 and 2005) in terms of hydrographic (i.e. thermal pattern, spatial structure of the oceanic front) and biological (i.e. origin and composition of phytoplankton) components of the pelagic seascape. Our results reveal that both year-specific drivers, such as salinity gradient, and common factors between years, such as chlorophyll concentration, influence the community structure. This resulted in a contrasting influence between years of hydrographic and biological components of the seascape, which implies an alternating effect of dispersal pathways and retention to coupling productive conditions. The study characterizes recurrent environmental scenarios associated with different co-occurring fish and decapod crustacean larvae (i.e. mixed assemblages), the most relevant being: (1) recent Atlantic waters of low salinity, (2) resident waters of higher salinity, and (3) high chlorophyll concentration at depth of chlorophyll maximum. This study sheds new light on the complex responses of plankton communities to exogenous drivers in highly variable environments such as frontal systems.

Keywords: Pelagic seascape, Environmental gradients, Meroplankton community structure, Oceanic fronts, Ichthyoplankton, Decapod crustacean larvae, Western Mediterranean, Larvae coexistence