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Irene Nadal, Simone Sammartino, Jesús García-Lafuente, José C. Sánchez Garrido, Juan Gil-Herrera, **Manuel Hidalgo**, Pilar Hernández, 2022. [Hydrodynamic connectivity and dispersal patterns of a transboundary species \(*Pagellus bogaraveo*\) in the Strait of Gibraltar and adjacent basins.](#)

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Abstract: The blackspot seabream (*Pagellus bogaraveo*) is a benthopelagic fish species highly appreciated by consumers and an important target of the Spanish and Moroccan fisheries in the transcontinental waters of the Strait of Gibraltar area. It is also one of the most exploited resources of the region, which has led to a situation of overexploitation and a notable drop of catches. To gain insight into the sustainability of this resource and certain patterns of the spatial adaptation of the species, a high-resolution circulation model coupled to a Lagrangian tracking module has been employed to investigate the dispersal pathways of blackspot seabream, using eggs and larvae (early-life-stages, ELS) as purely passive particles advected by currents. Several spawning scenarios consisting of different spatial (depths and sites) and temporal (tidal phase and strength) initial conditions have been analyzed to identify the most likely pathways of ELS dispersion. Eastward transport by the Atlantic Jet exiting the Strait of Gibraltar is the most influencing process in that dispersion. Regarding temporal fluctuations, fortnightly tidal modulation is the prevailing factor to determine the horizontal paths of the ELS, spring tides being the cause of the greatest scattering of propagules. Spawning depth in the Strait of Gibraltar is a critical condition, as revealed by the model sensitivity tests. Potential implications of the results of the study to improve the assessment and management of this species are discussed.

Keywords: Alboran Sea, blackspot seabream, early-life-stages (ELS), hydrodynamic connectivity, pelagic larval duration (PLD), Strait of Gibraltar, transboundary stock