



Blackspot seabream early life stages dispersal by hydrodynamic modelling (Strait of Gibraltar - Alboran Sea)

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The Blackspot seabream (*Pagellus bogaraveo*) is a commercially appreciated demersal fish, widespread in the north-eastern Atlantic and middle-western Mediterranean. The Strait of Gibraltar (SoG) is an important fishing area where artisanal fleets from Spain and Morocco target this species using special longline gears known as “voracera”. Different studies on the health status of this species claim an overexploitation of the resource without any kind of objective management measures implemented yet by the associated countries. Improving the knowledge of the population dynamics, and particularly during the spawning window, is crucial for a better management of the fishing effort for this species. There is an agreement in literature in considering the SoG as an especially energetic and dispersive spawning zone for this species. Once spawned, eggs and larvae (ELS) are assumed to be scattered by the currents towards both sides of the SoG, mostly to the eastwards Alboran basin, where high concentrations of juveniles occur.

A high resolution hydrodynamic model coupled to a Lagrangian particle tracking system is employed to assess the potential dispersal pathways of blackspot seabream ELS spawned in the SoG. Recursive releases of passive tracers in different virtual spawning spots and depths within the SoG region are tracked under different tidal conditions in order to obtain an overall characterization of the spatial dispersion patterns of the studied species. Semidiurnal tidal currents emerge as the primary factor in determining the horizontal dispersion and pathway of the spawning products, although the spring-neap tidal cycle and the spawning depth can be also important variables depending on the region considered as well as the arrival zone for the ELS dispersal paths over the Alboran Sea.