

{rokbox title=|Iberian Peninsula and the study area in the SW Spanish coast (Gulf of Cádiz) ::

Image: Authors|

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[**Spatial distribution patterns of striped venus clam \(*Chamelea gallina***](#)

[**, L. 1758\) natural beds in the Gulf of Cádiz \(SW Spain\): Influence of environmental variables and management considerations.**](#)

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Abstract: Spatial distribution of characteristic population parameters (density, biomass and mean size) of *Chamelea gallina* were analyzed from systematic survey data applying a geostatistical approach in the Gulf of Cádiz (SW Spain). The influence of static (depth and distance to inland outflows), dynamic (sediment and water column features) environmental variables on density, biomass and mean size was also investigated. The global estimations of kriged density mean was 8.30 ind m⁻², biomass mean was 23.78 g m⁻², and mean size was 18.71 mm, with the species heterogeneously distributed along the whole sandy subtidal strip of the coast of Huelva. The resulting kriged map shows the location and extension of the patches (5 NM range) in the study area; where the highest density and biomass hot-spots were observed near the river mouths, except for the Guadiana River. This species was present from 3 to 16 m, but preferred the depth window between 6-8 m, having a density and biomass peak at approximately 7 m depth. A negative and significant correlation was found between density/biomass and the coefficient of variation of mean size suggesting a density-dependent process. The most influential factors on density and biomass were depth, sediment characteristics (grain size and percentage of organic content), distance from river mouths and waste water treatment plants, and sea bottom temperature. This study, in addition to reporting on the current status of these natural beds and the influence of dynamic and static environmental variables on their distribution, proposes an additional approach to estimating several biological parameters in *C. gallina* that could be valuable for the spatial management of this commercial resource and highlight the role of marine protected areas.

Keywords: *Chamelea gallina*, Gulf of Cádiz, Spatial distributio, nGeostatistics, Environmental influence