

{rokbox title=|Paramuricea clavata :: Imagen: David Díaz (COB-IEO)|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-amp-mediterraneo-david-diaz-arizmendi-et-al-plos-one-2015-thumb.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-amp-mediterraneo-david-diaz-arizmendi-et-al-plos-one-2015.jpg{/rokbox}

Rosana Arizmendi-Mejía, Cristina Linares, Joaquim Garrabou, Agostinho Antunes, Enric Ballesteros, Emma Cebrian, **David Díaz**, Jean-Baptiste Ledoux, 2015. [Combining Genetic and Demographic Data for the Conservation of a Mediterranean Marine Habitat-Forming Species.](#) PLoS ONE

10(3): e0119585. doi:10.1371/journal.pone.0119585

Abstract: The integration of ecological and evolutionary data is highly valuable for conservation planning. However, it has been rarely used in the marine realm, where the adequate design of marine protected areas (MPAs) is urgently needed. Here, we examined the interacting processes underlying the patterns of genetic structure and demographic structure of a highly vulnerable Mediterranean habitat-forming species (i.e. *Paramuricea clavata* (Risso, 1826)), with particular emphasis on the processes of contemporary dispersal, genetic drift, and colonization of a new population. Isolation by distance and genetic discontinuities were found, and three genetic clusters were detected; each submitted to variations in the relative impact of drift and gene flow. No founder effect was found in the new population. The interplay of ecology and evolution revealed that drift is strongly impacting the smallest, most isolated populations, where partial mortality of individuals was highest. Moreover, the eco-evolutionary analyses entailed important conservation implications for

P. clavata

. Our study supports the inclusion of habitat-forming organisms in the design of MPAs and highlights the need to account for genetic drift in the development of MPAs. Moreover, it reinforces the importance of integrating genetic and demographic data in marine conservation.

Keywords: