

Contrasting marine biodiversity patterns between Western and Eastern of the Alboran Sea

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Abstract

The Alboran Sea is an exceptional ecoregion in between the South European Atlantic Shelf and the Western Mediterranean ecoregions. Oceanographic conditions in the Alboran Sea are strongly influenced by Atlantic and Mediterranean currents, which suggest that this particular ecoregion could function as a transition zone from Atlantic to Mediterranean biodiversity. The Alboran Sea is a major contributor to species richness of temperate seas and it is considered as a biodiversity hotspot. Yet, there is little data on patterns of distribution of biological diversity across the Alboran Sea. Here, we investigated the biodiversity of this transition zone to better understand how the unique ecological traits of this area are determined by surrounding ecoregions, and the degree of influence that ecoregions confer to the Alboran Sea. We used underwater visual census to quantify marine fish and invertebrates across the whole region. Our results showed a general decrease in marine biodiversity as we move away from the Gibraltar Strait towards Western Mediterranean waters. This general trend is in fact two contrasting patterns between Western and Eastern Alboran Sea. In the Western side of the Alboran Sea, there is a decline in species richness while in the Eastern side of the Alboran Sea species richness increases. These contrasting trends in biodiversity between the Western and Eastern sides of the Alboran Sea seems to be explained by environmental variables or oceanographic currents that affect the distribution of marine life, and support for two functionally distinct Alboran Seas within this singular ecoregion.

Biography

Jose A Sanabria is Marine Biologist (University of La Laguna) and now is a PhD student of BITES Lab at Centre d'Estudis Avançats de Blanes, Spain (CEAB-CSIC). He has a short career in the marine research, and contributed in national and international conferences in the field of Biodiversity and Marine Biology.

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