

Is the Bay of Biscay Atlantic or Mediterranean?

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Abstract

Marine biodiversity along the Iberian Peninsula coast is a unique crossroad, as it is surrounded by three ecoregions of the world: The South European Atlantic Shelf, the Alboran Sea, and the Western Mediterranean. Ecoregions are characterized by distinct environmental traits and associated biodiversity. The Mediterranean Sea is a highly diverse ecoregion whose waters are known to influence nearby regions outside the Mediterranean basin. Here, we looked at the marine biodiversity along the Iberian coast to quantify how benthic communities in the Atlantic coast deviated from the Mediterranean communities. We used underwater visual census to quantify fish and invertebrates and used multivariate techniques to quantify how communities in the Atlantic deviated from the Mediterranean type community. Our data showed how Mediterranean influence weakened as we move away from the Gibraltar straight up to the entrance of the Bay of Biscay. However, benthic communities in the Bay of Biscay become increasingly more Mediterranean-like communities as we get closer to France, reversing the trend found in Portugal and western Galicia coasts. Similarity with the Mediterranean type community decreased from over 50% in sites near the Gibraltar Strait to less than 15%, at the entrance of the Bay of Biscay. Then, despite the larger geographic distance, communities within the Bay of Biscay steadily recovered resemblance with the Mediterranean type community as we approached France. This pattern seemed to be caused by changes in environmental variables such as sea surface temperature and confirms the Mediterranean influence on Atlantic biodiversity well beyond Mediterranean boundaries.

Biography

Natalí Lazzari finished her Master's degree in Marine Biology at the University of La Laguna, Spain and now she is coursing her PhD in Biodiversity from Consejo Superior de Investigaciones Científicas (CSIC) and the University of Barcelona. In her short career, she has participated in few national and international congresses and has collaborated in the marine department of the University of La Laguna.

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