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Patterns of Richness and Abundance of Polychaetes Communities from the Continental Shelf in the North Eastern Atlantic Ocean: A Neutral Community Models Approach

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Polychaetes colonize a large range of soft and hard marine sediment habitats from intertidal to hadal zones and are considered to be good surrogates to identify the main environmental conditions that control the structure and functioning of benthic communities. An important focus for biodiversity studies has been trying to explain the patterns of richness and abundance of species, including those of polychaete communities. The aim of our analyses is to characterise the biodiversity and distribution patterns of abundance of polychaete species from the continental shelf in the North Eastern Atlantic Ocean. Here we apply a rank analysis approach to analyse abundance data of polychaetes from the North Sea and English Channel as well as time series analysis over 30 years in the English Channel.

These patterns can be shown to arise from neutral community models in which all individuals are ecologically equivalent. Neutral models refer to communities of ecological similar species in which individuals compete with one another and where no trophic interactions described. More so, neutral community models provide a general theory of biodiversity capable of predicting the fundamental processes and patterns of community ecology.

These approaches try to draw the diversity pattern of this marine invertebrate group on a large biogeographical scale to identify the main factors structuring these patterns.