

SPATIAL DISTRIBUTION OF SUBTIDAL MEIOFAUNA COMMUNITIES ALONG A SALINITY GRADIENT IN TWO SOUTHERN EUROPEAN ESTUARIES (PORTUGAL).

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Global climate changes contribute to the occurrence of stronger and more frequent extreme events, which have unmistakable impact on temporal and spatial distribution patterns of benthic communities. The interest of studying benthic fauna response to extreme events is to obtain useful information on detecting which organisms better reflect ecological status of systems, and, on the other hand, to understand early warning indicators able to function on a sea level rise situation.

Meiofaunal communities from two Portuguese estuaries (Mondego and Mira) with different anthropogenic impacts (EFICAS project) were studied, and data collected under different freshwater discharge situations and along the salinity gradient (<0.5 to >30), are hoped to reduce knowledge gaps existent on the quantitative distribution of these organisms in Southern European estuaries.

In both estuaries, spatial patterns regarding meiofauna abundance and species composition clearly reflected salinity gradients; densities increased from freshwater to seaward areas, and three distinct assemblages were identified: (i) Freshwater areas, where Total meiofauna, Nematoda and Harpacticoids copepods presented the lowest densities in the whole estuary; (ii) Oligohaline and Mesohaline areas, which presented low Total meiobenthic densities and low diversity; (iii) Polyhaline and Euhaline areas, where Meiofauna reached the highest densities and diversity. Although the salinity gradient is strongly linked to sediment's properties, and the set of environmental and biotic factors created along systems interact to regulate meiofauna communities, other environmental factors, such as granulometry, nutrients concentration and sediment's organic matter content, were found to play an important role in structuring meiofauna communities from Euhaline areas of both estuaries.