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## **Modern distribution of benthic foraminifera from the Tagus Prodelta and Estuary, Portugal**

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The Tagus Prodelta on the Iberian Margin is located in an area, where the productivity and local oceanography is controlled by the Tagus river input and seasonal coastal upwelling. The Tagus river is the longest river of the Iberian Peninsula and extreme flood events lead to major discharge of suspended and bed load sediments, especially during the winter months.

The modern distribution and microhabitat of 21 different benthic foraminiferal taxa (15 calcareous and 6 agglutinated) have been studied in the Tagus Prodelta and Estuary in order to obtain a better understanding of the species dynamics and their trophic preferences. In addition, the stable oxygen and carbon isotopes were analyzed for eight different species from six surface samples from the Tagus Prodelta and Estuary. The results are discussed in relation to the oceanography of the area.

At the box core stations, most of the living foraminifera are concentrated in the oxygenated top centimetre of the sediment. They generally show shallow-infaunal behaviour. Some infaunal taxa inhabit the presumably anoxic sediment down to 10 cm depth. The deep infaunal species are suggested to feed selectively on refractory organic matter or on the bacterial stocks, while the opportunistic shallow-infaunal species presumably feed on fresh phytodetritus or labile organic matter. The highest abundance of living benthic foraminifera was found in sediments close to the Tagus river plume, where the sediments had a relatively high organic carbon content.

The variation in the isotopic values for the different species is partly controlled by the chemical and physical properties of the water masses and partly by differences in their microhabitats. The spatial distribution of the  $\delta^{13}\text{C}$  values reflects relatively high organic flux at the site which is closest to the coast and to the Tagus river plume. Low  $\delta^{18}\text{O}$  values for foraminiferal shells in the Tagus Estuary, compared with the values obtained in the Prodelta, reflect reduced salinity and higher temperatures in the Estuary.