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A Holocene Land-Sea Correlation For River Tagus, Portugal

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The ESF EUROCORES EUROMARGINS project (SEDPORT) aims to investigate the impact of strong climatic oscillations that have occurred in the North Atlantic and over adjacent continents. The project is based on a transect of land and marine sediment sections and studies the controls of the sedimentary processes and depositional features in the Tagus valley and on the Portuguese shelf and upper slope near Lisbon during the last 12.000 years. Our sub-project assesses the history of the terrestrial sediment input from the River Tagus into the submarine system.

On land, 6 cross-sections were constructed across the Lower-Tagus floodplain using hand and mechanical coring. Samples were analysed for grain size, C/N ratio, organic C content, pollen and radiocarbon age. Initial results imply:

1. An Early- to Middle-Holocene transgression with associated estuarine deposits south of Santarém;
2. A prevailing prograding fluvial system after 5000 BP;
3. A strong increase in sedimentation after 2000 BP which probably results from agriculture and deforestation by man.

Sediment core GeoB-8903-01, taken off the Tagus mouth, was analysed for d18O on

planktonic foraminifera and grainsize. Initial results show strong fluctuations in d18O. These are probably related to changes in upwelling strength caused by atmospheric variation (NAO). A stepwise decrease in grainsize at $\sim$2400 BP and at $\sim$1000 BP suggests an increased suspension flux from River Tagus, which is probably linked to the human actions on land mentioned above.

Initial results show a correlation between Late-Holocene sedimentation changes in the Lower-Tagus floodplain and off-shore sedimention in marine core GeoB-8903-01.