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Sensitivity of coastal areas to oil spills is a critical issue due to high population density, ecological importance of coastal areas and the overall increase in maritime traffic observed in the recent past. Here we present a preliminary Environmental Sensitivity Index (ESI) map for a portion of the Aveiro coastal and estuarine area (W. Portugal), between *São Jacinto* and *Costa Nova do Prado*. ESI maps identify the shoreline sensitivity and are prepared prior to an oil spill event, in order to assist oil spill management and emergency response authorities. Following the United States National Oceanic and Atmospheric Administration (NOAA) Guidelines for ESI mapping, the Aveiro shoreline sensitivity was evaluated and the existent biological resources that can potentially be affected were identified and mapped. Shoreline sensitivity was classified using an ESI shoreline rank from 1 to 10 (least to most sensitive), based on aerial photography and field work. Since the study area is part of one of the Special Protection Areas from the European Union (Directive on the Conservation of Wild Birds), bird species were mapped. All data were integrated into a GIS Database (ArcGIS®), and a preliminary ESI map for the Aveiro region was produced using the ESI standard set of symbols for representing shoreline sensitivity and biological resources. As concerns to *Ria de Aveiro* (estuarine domain) ESI classification indicates that salt-marshes are the most sensitive shoreline type in the study area, while exposed solid man-made structures, mainly founded at the *Ria de Aveiro* entrance, are the least sensitive. The less sensitive natural shoreline type of all the study region are fine-to-medium grained beaches in the ocean-exposed zone, except where rip-rap structures, common in this area, are found.

Keywords: *Environmental Sensitivity Index Maps, Oil spills, Sensitive Areas, Geographic Information Systems, Aveiro.*

Cambios del nivel marino en el Golfo de Vizcaya durante el Holoceno como referencia para la evaluación del ascenso marino en el Antropoceno

Holocene sea-level changes in the Bay of Biscay as a reference for the assessment of sea-level rise during the Anthropocene

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Con el objetivo de establecer un modelo general de ascenso en el nivel marino durante el Holoceno de validez regional para el margen S del Golfo de Vizcaya, se seleccionaron 55 muestras procedentes de 21 sondeos perforados hasta sustrato en 3 estuarios diferentes, que fueron analizadas sedimentológica y micropaleontológicamente, y datadas mediante radiocarbono. Estas muestras fueron escogidas por su representatividad de diferentes subambientes estuarinos y alturas topográficas. Las asociaciones de foraminíferos permiten reconstrucciones precisas de posiciones pretéritas del nivel marino, y mediante su comparación con análogos modernos y su relación con la posición topográfica, es posible reconstruir su ambiente deposicional de formación (valor indicativo de los sea-level index points-SLIPs). La tendencia general muestra 2 fases principales: (1) un ascenso rápido del nivel marino relativo desde ~27 m por debajo del nivel medio del mar (dnmm) en 10.000 años cal BP hasta ~5 m dnmm a 7.000 años cal BP; y (2) un ascenso marino relativamente lento desde 7000 años cal BP hasta la actualidad, aportando una cifra entre 0,7 y 0,3 mm año⁻¹ de ascenso marino pre-antropogénico.

Por otra parte, el estudio de 5 sondeos cortos perforados en las marismas actuales de 3 estuarios y la reconstrucción del nivel marino reciente basada en la aplicación de una función de transferencia a sus respectivas asociaciones de foraminíferos, junto a su comparación con los registros instrumentales de los mareógrafos locales y regionales, sugiere una velocidad de ascenso regional del nivel marino de 1,9 mm año⁻¹ desde 1920 AD, posiblemente relacionada con el impacto antrópico del calentamiento climático en curso. Esta cifra se revela entre 3 y 7 veces superior a los valores obtenidos para los últimos 7.000 años en esta región.

Palabras clave: estuarios, curvas del nivel marino, Holoceno, Antropoceno, Golfo de Vizcaya.

Keywords: *estuaries, sea-level curves, Holocene, Anthropocene, Bay of Biscay.*

Seasonal flux of diatoms in the NW Iberian Margin: from the water column into the ocean sediments

Da superfície para o fundo do oceano: fluxo sazonal de diatomáceas na margem NW Ibérica

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Coastal upwelling regions, as the Iberian margin, are highly productive and play an important role in the Earth climate regulation. To better understand the present-day climatic system and better estimate future climate, the knowledge of the past conditions is obligatory. The lack of instrumental records beyond 150 years requires the use of natural archives like marine sediments. Otherwise, to make optimal use of these sediments it is necessary to calibrate the sediment properties (e.g. diatom content and assemblages' composition) to the modern oceanographic conditions. This study aims to understand the present-day seasonal abundance and diversity of siliceous microorganisms, especially diatoms, how these microorganisms relate to hydrographic conditions, and their transference/preservation into the sediments.

Thus, we are studying the diatom flux between water column, sediment traps and surface sediment samples off Vigo, including the integration and comparison with other productivity and hydrographic data. Preliminary results show that the diatom assemblages observed in the water column and sediment traps samples evidence seasonal productivity. The major productivity/hydrographic features observed are: the spring bloom and late spring to summer coastal upwelling, which are associated with high diatom abundances and elevated percentages of *Chaetoceros spp.* and *Leptocylindrus spp.*, including resting spores.

Freshwater *genera* indicate major river input during autumn/winter/early spring.

Surface sediment samples are dominated by resting spores of the same groups, *Leptocylindrus spp.* and *Chaetoceros spp.*, which are very resistant to dissolution. These *genera* blooming capacity and spore resistance makes them especially effective productivity markers both in sediment traps and sediment samples.

Palavras chave: afloramento costeiro, diatomáceas, fluxo de microorganismos siliciosos, Margem Ibérica NW, produtividade primária.

Keywords: coastal upwelling, diatoms, NW Iberian Margin, productivity, siliceous microorganisms flux.

The role of blocking events during the 8.2 ka event over the mid-latitudes of the eastern North Atlantic region

O papel dos bloqueios durante o evento 8.2 ka nas médias latitudes do Atlântico Norte

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Vegetation and climate changes in southwestern France/northern Spain are documented for the extreme climate event about 8200 years ago in a well-dated shelf core, KS05-10, retrieved in the southern margin of the Bay of Biscay (Basque country, 43°22'765N, 2°16'744W). The Bay of Biscay pollen record detects an abrupt cool and wet episode, between 8.3 and 8.1 ka, marked by the contraction of temperate trees (particularly hazel) and expansion of ubiquitous plants (mainly *Cyperaceae*), respectively. The relatively cold conditions were probably the result of the weakening of the Meridional Overturning Circulation (MOC) triggered by the final catastrophic drainage of the proglacial Laurentide lakes and consequent input of freshwater in the North Atlantic region. The cooling led to the strengthening of the thermal gradient between high and low latitudes and the southern migration of the Atlantic westerly jet stream to the European mid-latitudes. This atmospheric mechanism together with the prevalence of strong zonal flow and frequent low pressure systems (associated with less blocking events) over southwestern France/northern Spain would have favoured the increase in precipitation rate and therefore moister conditions in that region.

Palavras chave: evento 8.2 ka, Holocénico, sudoeste da Europa, Corrente de Jato Atlântica, eventos de bloqueio, *Corylus*, *Cyperaceae*.

Keywords: 8.2 ka event, Holocene, Southwestern Europe, Atlantic westerly jet stream, Blocking events, *Corylus*, *Cyperaceae*.

Planktonic foraminifera proxies calibration off the NW Iberian margin: temperature and nutrients view

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The NW Iberian upwelling system has been studied both in terms of physical, biogeochemical and geological processes. However there are few studies combining hydrographic and biogeochemical conditions with the past oceanic or climate conditions. This fact has special relevance since it will improve the prediction of future changes against possible climate alteration and anthropogenic influence. In order to minimize this lack of information from the upper water column