

gene sequence we developed a multilocus sequence analysis scheme for the genus. A species identification based on DNA-DNA hybridization experiments indicated the presence of at least four *Rhodopirellula* species in our strain collection. A detailed analysis of the genetic diversity in relation to geological scales will be presented.

COPEPODA HARPACTICOIDA FROM THE RÍA DE FERROL (NW IBERIAN PENINSULA): PRELIMINARY RESULTS.

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The rías are fluvial valleys flooded by the sea, very typical and common of the Galician coast (NW Spain). The Ría de Ferrol has one of the largest biological diversity among the Galician rías because of its particular hydrodynamics and sedimentary conditions. Its benthic fauna is well-known but there is a lack of researches about some zoological groups such as Copepoda Harpacticoida and meiofaunal taxa in general. Because of that, a joint research project of the USC (Galicia, Spain) and the DZMB (Wilhelmshaven, Germany) was carried out in order to study the subtidal soft-bottom meiofauna, paying special attention to Copepoda Harpacticoida. During May and June 2006 samples were collected by means of SCUBA diving. Eight stations were chosen along the ría, of which 4 were sandy and 4 muddy, and covered a range of depths and different conditions of salinity and pollution levels. In each station, 3 sampling sites 50 meters away from each other were selected. In each site, two corers were taken, one of them for faunal studies and the other to determine physicochemical parameters.

A "HOT SPOT" FOR LEPTOSTRACAN DIVERSITY (CRUSTACEA: LEPTOSTRACA): THE GALICIAN RÍAS (NW IBERIAN PENINSULA).

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Leptostracans (Phyllocarida: Leptostraca) are a small group of marine crustaceans characterised by the presence of a hinged rostrum, a carapace that covers the thoracic segments, eight pairs of phyllopodus thoracic appendages and seven abdominal segments. To date, about 40 extant species are known from shallow waters to the deep-sea. These crustaceans have, however, scarcely been reported from the Iberian Peninsula waters. The Galician rias (NW Spain) are a complex estuarine system which has a great variety of soft-sediment habitats inhabited by a rich benthic fauna. In the last years, examination of leptostracan collections from the rias has resulted in the description of a number of new species and new records of other taxa as well. The Ría de Ferrol is the richest in number of species, with six species belonging to two genera recorded so far. This is the largest diversity of leptostracans ever recorded from a single area. In this communication, we describe the composition and spatial distribution of the leptostracan fauna of the Ría de Ferrol, which seem to be strongly related to the granulometric composition of sediment and hydrodynamism.

BENTHIC AND BIOGEOCHEMICAL RECOVERY AFTER AN INDUCED HYPOXIC EVENT: THE STRUCTURING ROLE OF MACROFAUNA SUCCESSION.

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Oxygen is necessary to sustain marine invertebrate life and may thus be considered as an important factor in structuring marine benthic communities. To assess biogeochemical, macrobenthos and nematode community recovery after depleted oxygen bottom water concentrations, hypoxic sediments were created by covering tidal flat sediments along the Westerschelde estuary using plastic sheets. Macrofauna recovery developed through different succession stages and was structured by tolerance, facilitation and inhibition models: early colonizers had either no effect or a positive effect on subsequent colonizers, while later succession species negatively affected the stable conditions created by the early colonizing tube-builders. Transitions between different stages were related to changes in environmental characteristics and biotic-environmental interactions (e.g. exploitation competition for food). Nematode community and biogeochemical recovery were related to macrobenthic succession. Dense polychaete tube aggregations and the development of a fresh diatom bloom, as a result of the low grazing pressure by surface deposit feeding macrofauna during the first stage, enhanced nematode

recruitment success. Bioturbation impact of later succession species increased oxygen input in the sediment, resulting in an enhanced nitrification, denitrification and energy use.

SPECIES AND FUNCTIONAL DIVERSITY CORRELATION IN COASTAL BENTHIC COMMUNITIES.

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Species and functional diversity correlation of different coastal benthic communities (i.e. different niches and environmental regimes) was investigated in marine and transitional water ecosystems in the N.E. Aegean Sea based on quantitative benthic samples. Species diversity and community structure patterns in the ecosystems studied were obtained by standard approaches, while functional diversity was derived by summarizing distances between species in trait space. Traits were defined based on species different attributes and energy trade offs with their environment. No remarkable alteration in species diversity between the marine and transitional water ecosystems was observed, whereas functional diversity values were higher in transitional coastal communities in comparison to the marine ones. Community structure patterns indicated a strong separation between marine and transitional water communities suggesting a clear qualitative and quantitative species distribution shift. The fact that functional diversity response, and hence ecosystems processes, varied independently from species diversity (i.e. species richness) in the studied ecosystems, should be probably attributed to key-stone species specific resource requirements and their tolerance to certain environmental conditions prevailing in each one ecosystem.

NICHE CONSTRUCTION AND BIODIVERSITY IN ESTUARINE SOFT SEDIMENTS.

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All organisms modify their environment in some way: either actively, by constructing habitational structures or by their trophic activity, or passively, by their physical presence or excretion. Recent investigations of biodiversity and ecosystem function in marine soft sediments have shown that diversity and ecosystem function correlations are not consistently positive and are frequently idiosyncratic to assemblage species identity, i.e. some organisms have much greater functional effects than others. Niche construction is the concept that organismal engineering activity can create or destroy niche space for itself and other organisms by modifying energy and resource flows. Estuarine macrofauna such as *Nereis diversicolor*, *Corophium volutator*, *Macoma balthica* and *Hydrobia ulvae* have been shown to significantly reduce microphytobenthic (MPB) biomass but increase diversity presumably through their selective grazing activity. However, they also bioturbate the sediment, resuspend sediment and release nutrients to the water column which can all effect biomass and biodiversity of MPB. Results of an experiment investigating the effects of macrofaunal modification of the water column on MPB biomass and diversity in the presence and absence of the macrofaunal grazing effect are presented.

WHICH GORGONIAN SPECIES CAN BE ENDANGERED BY CLIMATE ANOMALIES?

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During the last ten years extensive mortality events increase their frequency also in the Mediterranean sea affecting mainly benthic filter feeders and in particular gorgonians. Long periods of unusually high sea water temperatures can deeply compromise the physiological integrity of several taxa. To obtain information on the resilience and resistance of gorgonian species, we compared by laboratory experiments the reaction of two of the most common Mediterranean gorgonians (*Paramuricea clavata* and *Eunicella singularis*) to temperature increase. The oxygen consumption of the gorgonians was monitored with LDO probes over eight hours under different temperature conditions (from 14°C to 25°C). The number of the open polyps and the percentage of the necrosis tissue are also analyzed. For both of the species, the oxygen consumption is not related with temperature. However at 25°C, the zooxanthellate *E. singularis* shows a higher respiration rate, no sign of necrosis and few open polyps. Field data suggest this species can better regenerate after necrosis episodes due to thermal stress compared to other gorgonians, highlighting a possible positive role of zooxanthellae in the future warm Mediterranean scenario.

COMMUNITY AND TROPHIC DIVERSITY OF CONTINENTAL SHELF FAUNA IN THE CATALAN SEA.

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