Long-term ecological research of aquatic ecosystem at Guadalquivir estuary (1997-2014): community structure and food web

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A long term ecological research program (LTER) is developed monthly at the Guadalquivir estuary since 1997. Inter- and intra-specific euryhalinity differences both in prey and predators seem to determine spatial species distribution at this important nursery area: the less euryhaline species (marine recruits) tends to occur at physiologically more favourable salinities (lower osmotic stress and mortality risk); whereas most euryhaline species (estuarine species) occurred at ecologically more favourable salinities (lower inter-specific competition and predation). Likewise, inter-specific differences in spawning periods cause certain temporal segregation of those marine recruits using the estuary. High spatiotemporal coincidence of prey (mainly mysids and copepods) density peaks with that of their predators suggests food availability as a key factor in the estuarine nursery function. According to their distribution, the estuarine stretch situated seaward from the 5 isohaline position is mainly used as a nursery ground, principally during warm period (T > 15 °C). Thus, human management of the freshwater input to the estuary (from a 110 km upstream dam) modifies the nursery ground extent due to seaward/upstream displacements of the estuarine salinity gradient. During droughts, this freshwater control may also lead to a partial loss of the estuarine nursery function due to a decrease of prey availability linked to extremely high-turbidity events.

O3.20

Are Portuguese estuaries and coastal areas less invaded by non-indigenous species?

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Trends in abundance, temporal occurrence and spatial distribution of non-indigenous species (NIS) are included as an indicator to assess the compliance of Good Environmental Status in the European Marine Strategy Framework Directive. Available regional and national databases for NIS will be useful for the implementation of the Marine Strategy but there are still spatial gaps for some regions. In 2009 Portugal was among countries with the lowest reported numbers of NIS and no national online database on NIS. This study provides an updated list of NIS registered in Portuguese coastal and estuarine waters, including mainland Portugal and the Azores and Madeira archipelagos. A list of 129 NIS was catalogued for the Portuguese estuarine and coastal aquatic systems, most of which registered in the last three decades, showing that this area of the North Atlantic is not less prone to introductions than neighboring areas. Some case studies of NIS registered in different habitat types are shown to demonstrate the temporal and spatial trends of some well-established populations.

O3.21

The coastal system of the eastern Mediterranean Sea is becoming a province of the Red Sea

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Three major anthropogenic parameters have affected the biodiversity of the eastern Mediterranean in the last two decades: global warming, the invasion of thermophilic biota through the Suez Canal, and heavy fishery activity. Over 100 alien fish species have been reported from the eastern Mediterranean, 92 of which entered