

Zooplankton diversity in Lisbon Bay: seasonal variation and temporal changes in the Portuguese upwelling system

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Coastal areas are complex systems subject to high levels of anthropogenic pressure and extremely vulnerable to climate change. Zooplankton plays a key role in pelagic food webs and variations in the community composition are pointed as good indicators of ecosystems changes. Samples collected at a coastal station off Cascais (Portugal) since February 2005 have been providing long-term data on zooplankton biodiversity for the north-western Portuguese coast. The results shed some light on the seasonal and temporal species succession at the study area and disclosed some important species specific trends. Bivalve veligers, almost absent in the beginning of the study (2005-2009), represents about 50% of the last years total zooplankton abundance in summer months. Gelatinous zooplankton revealed an increasing trend in recent years, especially in warmer months when they usually bloom. However, these organisms are poorly known in the western coast of Iberian Peninsula. In an attempt to address this lack of information, a citizen science program was therefore launched with the purpose of monitoring gelatinous populations in the Portuguese coast: the GelAvista program. This program, together with the data from the coastal station, has been providing the first information on diversity, distribution, abundance and seasonality of gelatinous organisms in Portugal. The GelAvista program is crucial to identify vulnerable areas, where gelatinous populations may have large impacts on zooplankton communities, including fish larvae, with successive costs for pelagic food webs.

Key words: Zooplankton, gelatinous, coastal, species succession, Portugal.

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