Analysis of benthic macrofauna on sandy bottoms of the Valencian Community (Western Mediterranean) in relation to the geographic location and the influence of environmental factors.

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As part of the actions made in compliance with the Water Framework Directive (2000/60 /EC), since 2005, has been held a monitoring study for the assessment of the Ecological Quality Status of soft substrate benthic ecosystems at the coast of the Valencian Community.

Sampling was performed on a stations network set along the entire coast of Valencia, located on sandy bottoms around the -10 m isobath.

Samples were taken with a Van Veen grab. The faunal composition was analysed from living specimens of each replica retained by a sieve of 0.5 mm. Particle size and organic matter content of the sediment were determined as well.

The inventory of species of each sample were used to calculate different biological indices (BOPA and AMBI) with which the ecological quality status (EcoQ) of each zone was established according to the five levels of the Water Framework Directive.

After several years of monitoring, it has been detected many cases in which the response of the indexes is doubtfully according to other environmental data available on the station. Thus, a deeper understanding of the particularities of each biocenosis, at each geographical location, may be necessary for an adequate interpretation of the results provided by the biological indices.

The study show the results of the multivariate analysis developed from the species lists on a series of strategic locations throughout the coast of the Valencian Community, where it can be established an assessment of the degree of expected environmental stress, depending on the presented alteration factors.

The use of different criteria for automatic grouping, between stations and between species, allow appreciate relationships or trends that are not shown by the index normally used.

The results are discussed in relation to the nomination of each settlement to a defined benthic biocenosis; to the influence of the geographical area on the faunal composition of the same biocenosis; to the groups of species in relation to environmental stress factors; and how these aspects affect the response of the biotic indexes.