Analysis of a long-term time series of mesozooplankton data in the Saronic Gulf, Eastern Mediterranean.

Author's Names: E. Koulouvari[1,2], S. Zervoudaki[2], E.D Christou[2], E. Krasakopoulou[1], G. Tsirtsis[1].

Affiliations:

1. Department of Marine Sciences, University of the Aegean, Greece.
2. Hellenic Centre for Marine Research, Institute of Oceanography, P.O. Box 712, 19013, Athens, Greece.

Presenting author: Elli Koulouvari
Presenting author email: e.koulouvari@hcmr.gr

Abstract

Annual and interannual cycles of zooplankton abundance were studied, as well as the effect of environmental factors (temperature and chlorophyll-a) at a station in the Saronic Gulf, Eastern Mediterranean, located near the Psittalia Waste Water Treatment Plant (WWTP), which is subject to anthropogenic pressures. First, the total values of biomass, abundance and the dominant species/groups, of zooplankton were studied for a period of 30 years, from 1987 to 2018. The data were categorized into two periods: the warm period (June to November) and the cold period (December to May), as well as depending on the operating phases of the Wastewater Treatment Center. Then, two methods of multivariate analysis were applied (Cluster Analysis and MDS Analysis), in which the study period was divided into two categories: B (1987-2006) and A (2008-2018). Copepods was the yearly dominant group, with Cladocereans following in the warm period and Appendicularians in the cold period. The species *Penilia avirostris* was the dominant Cladocerean species in the warm season as well as in the annual results. In the cold period, individuals of the genus *Clausocalanus* (Copepods) dominated the samples. The MDS analysis, combined with Cluster analysis, showed a clear separation of the samples, based on the 3rd phase of operation of the Psittalia WWTP (2007). Finally, the station showed a clear natural bio-community improvement and long-term time series was confirmed to be a useful tool for predicting possibly harmful changes. The establishment of a long-term data base will provide great credibility for future studies.

Presentation Preference

- ✓ Oral Presentation
  Poster

Special Issue Consideration:

- ✓ I would like my abstract to be considered for the special issue of the Journal Marine Ecology.