



Long-term studies of the coastal Black Sea zooplankton communities: which environmental factors explain dynamics better?

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We analyzed the impact of 12 environmental factors on the structure of the coastal zooplankton communities: temperature (as a proxy of the seasonal signal), productivity (four proxies associated with surface chlorophyll concentration), wind, turbidity, interannual variations per se, minimum winter temperature, and factors linked to concentration of the ctenophore *Mnemiopsis leidyi* (larvae, juveniles and adults). Our 27-year dataset (918 samples taken every 10 days) was based on planktonic samples collected between 1991 and 2017 in the Northeast coastal area of the Black Sea. We show that since 1999 temperature and productivity were dominant factors influencing plankton communities structure, while other factors were minor. Conversely, before 1999, during the period of *M. leidyi* uncontrolled bloom, abundance of this ctenophore was one of the major factors explaining the structure of the coastal zooplankton communities. We further found robust correlations between temperature and surface chlorophyll concentration on one side and plankton abundances and biomass on the other, which may have a prognostic value.