

Title: Comparison of different scales of zooplankton variability in four sites of the Northeast Atlantic Shelves in relation to latitude and trophic status.

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Abstract:

Seasonal, interannual and residual components of zooplankton variability were calculated and compared between four coastal sites located in the Northeast Atlantic Shelves Province: Bilbao 35 (B35) and Urdaibai 35 (U35) (Bay of Biscay), L4 (English Channel), and Stonehaven (SH) (North Sea). Mesozooplankton (200 μm mesh size nets) abundance data from fifteen-year time series (1999-2013) were used. The variability was analysed separately for three zooplankton categories: holoplankton groups, meroplankton groups and copepod-cladoceran genera. The Correspondence Analysis of the variability at different scales revealed a latitudinal pattern of variation mainly accounted for by the highest contribution of the seasonal component of variability at SH and the highest contribution of the residual component at U35 and B35. The scales of variability were compared between and within sites by using paired t-tests. The largest differences were found between SH and U35, since differences at all scales, i.e. seasonal, interannual and residual, were obtained. L4 showed more differences with U35 and B35 than with SH. Within sites, in SH no differences were found between seasonal and residual variability in any case and seasonal variability was higher than interannual variability in all cases in contrast to that observed in the other sites.

Keywords: eutrophication effect, latitudinal effect, time scales, zooplankton.

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