

## Short-term changes in the zooplankton community during the summer-autumn transition in the open NW Mediterranean

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Short-term changes in the zooplankton community were investigated at a fixed station in the open NW Mediterranean during the DYNAPROC 2 cruise (September/October 2004). Results, from day and night sampling in the 0-1000 m water column, are presented for the major taxa of copepods (>500 µm), macroplankton and micronekton. Over the 4-week sampling period, density of the zooplankton community exhibited a decreasing trend, but irregular, and either delayed or amplified at several times. The migrant or epipelagic species, such as the copepods *Neocalanus gracilis*, *Euchaeta acuta*, *Pleuromamma gracilis* and *Nannocalanus minor* and the euphausiids *Meganyctiphanes norvegica* and *Nematoscelis megalops*, exhibited strong variations in their abundance throughout the sampling period. In contrast, density of the non-migrant and deep-living species, such as the copepods *Calanus helgolandicus* and *Monacilla typica* and the fish *Cyclothone*, remained more or less constant. One of the most drastic changes was concomitant with an intrusion of low-salinity coastal waters in the upper 100 m; copepod density showed a 2-fold increase, while concentration of euphausiids decreased drastically. Copepod diversity was then low, with *Neocalanus gracilis* being largely dominant in the upper 250 m. The omnivorous euphausiid species, *Meganyctiphanes norvegica*, became relatively rare compared to the carnivorous one, *Nematoscelis megalops*, which induced changes in terms of grazing pressure. Species population dynamics would have also influenced the trophic relationships. For example, higher abundances of thecosomes, which are efficient phytophagous organisms, were recorded during the second part of the sampling period, due to active reproduction. These changes and their influence on the ecosystem trophodynamics are discussed in relation to environmental features and hydrological events, and in the context of seasonal variability (transition from summer to autumn conditions). This study also documented the overwintering behaviour of *Calanus helgolandicus* which contributed to more than 75% of the copepod catches in the 550-1000 m stratum.

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