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### Winter zooplankton in the ROPME Sea Area

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#### **Abstract**

The zooplankton community in the Sea Area of the Regional Organization for Protection of the Marine Environment (RSA) was studied at 59 stations during winter 2006, where a total of 231 species were identified, belonging to numerous taxonomic phyla. The community experienced considerable spatial differences in species composition and the total count relative to the variability of ecological conditions in the different parts of the RSA. The inner part was more diversified (210 species) than the outer part (144 species), but 120 species existed over the whole area, 89 species were localized to the inner part, and 24 species to the outer part. In addition, 116 species have never been recorded in the RSA, particularly in the inner region, indicating their transference with the low salinity surface current water from the Sea of Oman.

The zooplankton count displayed clear patchiness distribution, reflecting different reproduction levels in the area, fluctuating between  $<5 \times 10^3$  and  $43 \times 10^3$  organisms/m<sup>3</sup> in the inner part, and  $15 \times 10^3$  –  $71.7 \times 10^3$  organisms/m<sup>3</sup> in the outer part. Clear spatial differences were observed in the distribution of the dominant species for all the existing taxonomic groups.

As anywhere in the world ocean copepods were the dominant component, forming 78.4 - 82.3% of the total zooplankton, followed by Larvaceans (3.7 – 5.7%), while all other groups had mostly low counts, and occasionally attained pronouncedly high counts, like the protozoan tintinnids, hydrozoan medusae, siphonophores, planktonic molluscs, cladoceran, Ostracods, Mysidacea, Chaetognatha, and thaliacians. The meroplankton demonstrated relatively low contribution (6.8%) to total zooplankton, reporting crucial role (up to 35.3%) in the inner part and less (up to 22%) in the outer part, with absolute dominance of the mollusks larvae (up to 95%), particularly the lamellibranch veligers.

Significant correlations were observed between the zooplankton abundance and the environmental conditions, while cluster analysis of both the environmental parameters and environmental conditions demonstrated pronouncedly variable patterns of similarity among the sampling stations.