



Spatial heterogeneity of zooplankton abundance and diversity in the Saudi coastal waters of the Southern Red Sea

Ali Al-Aidaroos, Mohsen El-Sherbiny, and Gopikrishna Mantha

Department of Marine Biology, Faculty of Marine Science, King Abdulaziz University, P. O. Box 80207, Jeddah 21589, Kingdom of Saudi Arabia (aaidaroos@kau.edu.sa)

The horizontal distribution, abundance and diversity of zooplankton has been studied at 50 stations along the Saudi coastal waters of the southern Red Sea (27 stations around Farasan archipelago, 9 around Al-Qunfodah and 14 around Al-Lith) during March-April 2011 using a plankton net of 150 μm . The zooplankton standing crop fluctuated between 1058 and 25787 individuals/m³ with an average of 5231 individuals/m³. Zooplankton was dominated by holoplanktonic forms that representing 80.26 % of total zooplankton, while meroplanktonic constituting 19.74% and dominated by mollusc larvae. Copepods appeared to be the predominant component, formed an average of 69.69 % of the total zooplankton count followed by chaetognaths and urochordates (4.5 and 4.1% of total zooplankton respectively).

A total of 100 copepods species in addition to several species of other planktonic groups (cladocerans, chaetognaths, urochordates) were recorded in the study area. The copepod diversity decreased northward (94, 69 and 62 species at Farasan, Al-Qunfodah and Al-Lith respectively). In general, adult cyclopoid copepods dominated the zooplankton community in term of abundance and species number (19.55 %, 65 species) with dominance of *Oncaea media*, *Oithona similis* and *Farranula carinata* followed by adult calanoid copepods (19.38%, 35 species) with dominance of *Paracalanus aculeatus*, *Clausocalanus minor*, *Acartia* (*Acanthacartia*) *fossae* and *Centropages orsinii*. Harapacticoids densities were low in abundance, represented only by 5 species and dominated mainly by *Euterpina acutifronis*. Some copepod species decreased northward: *Acartia amboinensis*, *Canthocalanus pauper*, *Labidocera acuta*, *Corycaeus flaccus*, *C. typicus*, *C. agilis*, *C. catus*, *C. giesbrechti*, *C. latus*, *C. furcifer* and *Euterpina acutifronis*, while others increased northward (*Acartia fossae*, *Undinula vulgaris* and *Centropages orsinii*). Among copepod orders, *Monstrilloida* and *Siphonostomatoida* were observed only in southern area (Farasan archipelago).

Keywords: Zooplankton, copepods, abundance, diversity, Red Sea, Saudi Arabia.