

Seasonal Variation in Copepod Community Structure in the Central Red Sea

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Tropical ocean ecosystems are expected to become warmer and more saline in the future. The Red Sea is a semi-confined sea that combines high temperature, salinity and oligotrophic conditions. The majority of studies regarding zooplankton in the Red Sea have concentrated on its northern extent, especially the Gulf of Aqaba, with a lack of studies investigating the central Red Sea. The aim of the present study was to examine the seasonal variation in the community structure of the dominant species of copepods in the central Red Sea. A clear seasonal succession of copepod species was found. During the summer months, when water temperature rises above 32°C a significant decrease in the total copepod abundance was observed. Additionally, the mean relative abundance of copepod carcasses was significantly higher in the summer months, where up to 70 % of the standing stock of copepods were dead. Furthermore, our study showed that a substantial fraction of the female copepod population was unfertilized and this fraction increased during the summer months. Our study contributes to a better understanding of the community structure of copepods in the central Red Sea and investigates some of the implications of high temperatures in the ecosystem.

Keywords: Zooplankton, Red Sea, Fertilization limitation, Non-predatory mortality, Seasonal variation

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