World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Metazoan Meiofauna and Their Abundance in Relation to Environmental Variables in the Northern Red Sea

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Abstract : The composition and distribution of the benthic meiofauna assemblages of the Egyptian coasts along the Red Sea are described in relation to abiotic variables. Sediment samples were collected seasonally from twelve stations chosen along the northern part of the Red Sea to observe the meiofaunal community structure, its temporal distribution and horizontal fluctuation in relation to environmental conditions of the Red Sea marine ecosystem. The meiofaunal assemblage in the area of study was well diversified including 140 taxa. The temperature, salinity, pH, dissolved oxygen, and redox potential were measured at the time of collection. The water content of the sediments, total organic matters and chlorophyll a values were determined, and sediment samples were subjected to granulometric analysis. A total of 10 meiofauna taxa were identified, with the meiofauna being primarily represented by nematodes (on annual average from 42% to 84%), harpacticoids, polycheates and ostracodes; and the meiofauna abundances ranging from 41- to 167 ind. / 10 cm2. The meiofaunal population density fluctuated seasonally with a peak of 192.52 ind. / 10 cm2 during summer at station II. The vertical zonation in the distribution of meiofaunal community was significantly correlated with interstitial water, chlorophyll a and total organic matter values. The present study indicates that the existing of well diversified meiofaunal group which can serve as food for higher trophic levels in the Red Sea interstitial environment.

Keywords : benthos, diversity, meiofauna, Red Sea
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020