



Environmental factors controlling benthic foraminiferal distribution in Hurghada area, Red Sea coast, Egypt

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Benthic foraminiferal assemblages were investigated at Hurghada on the Red Sea coast of Egypt, to determine the distribution and their common environmental factors that control on this distribution. 43 sediment samples were collected and environmental factors (T°C, pH, and salinity ‰, water depth, grain size, organic matter and carbonate content were measured. Faunal abundance (14-1755 tests/g) with an average 709 tests/g, and faunal diversity (6-39 specimens) with an average 31 specimen. Cluster analysis was divided the Hurghada site into four distinct biotopes based on the faunal data: Biotope (1) is dominated by a *Quinqueloculina seminula* & *Quinqueloculina laevigata*, and *Triloculina terquemiana* assemblage. Biotope (2) is dominated by a *Sorites marginalis* & *Triloculina trigonula* assemblage. Biotope (3) is dominated by an *Amphistegina lessonii*, *Ammonia beccarii* and *Elphidium* spp assemblage. Biotope (4) is dominated by a *Peneroplis planatus* & *Coscinospira hemprichii* & *Sorites orbiculus* and *Neorotalia calcar* assemblage. Some of the recorded foraminiferal tests showed abnormalities in their apertures, coiling and shape of chambers. The distribution of benthic foraminiferal species is governed by environmental factors such as salinity, temperature, substrates-type, water depth and pH. *P. planatus* and *C. hemprichii* positively correlate with extreme salinity and temperature, indicating that these species reflect a warm, arid climate conditions. Aside, the heavy metals (Cu, Cd, Zn, Pb, Ni and Mn) concentrations in the sediment samples were analyzed using ICP-OES. The comparative study between the faunal content and the heavy metals enrichments in each sample displayed positive character indicating the worsening of the environmental conditions. Keywords: benthic foraminifera, Hurghada, Red Sea, Egypt