

Distribution of benthic foraminifera along the Iranian Coast

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This study focuses on the distribution of benthic foraminifera along the Iranian coast of the Gulf from the northeast close to Shatt Al-Arab/Arvand Rud to the southeast near the Strait of Hormuz where it connects to the Indian Ocean. The Gulf is a naturally stressed environment due to extremes of salinity, temperatures and anthropogenic influences such as rapid urbanization projects, maritime transport, large numbers of desalination plants and oil platforms. These activities over time continue to compound the already stressed environment. Historical records on foraminiferal diversity and distribution in the Gulf commonly underestimate its benthic foraminiferal composition and diversity.

Thirty-two samples collected from depths ranging between 20 to 45 m were analyzed for total foraminiferal assemblages. A total of 224 benthic foraminiferal species and subspecies belonging to 63 genera, 34 families, 22 superfamilies and 6 orders were recognized. The assemblages are dominated by hyaline taxa (45.3%) and porcelaneous foraminiferal (35.3%), while agglutinated foraminiferal groups comprise a lower proportion (19.4%). The ten most abundant genera include Asterorotalia (13.3%), Quinqueloculina (12.4%), Bolivina (9.8%), Nonion (8.6%), Ammonia (5.5%), Textularia (5.4%), Elphidium (5.2%), Cibicides (3.9%), Challengerella (3.6%) and Hanzawaia (3.4%). The most common species are Nonion sp. 1 (5.45%), Asterorotalia dentata (5.03%), Quinqueloculina sp. 1 (4.8%), Nonion sp. 2 (4.5%), Rotalinoides cf. R. gaimardii (3.3%), Asterorotalia sp. 3 (3.2%), Quinqueloculina sp. 8 (3.1%), Bolivina cf. B. persiensis (3.0%), Bolivina cf. B. striatula (2.9%), and Ammonia sp. 1 (2.9%). We speculate that feeding strategy, e.g., herbivore (Nonion, Ammonia, Elphidium and Asterorotalia), the proportion of finer sediments (mud), availability of nutrients and presence of oxygen are factors controlling the diversity and distribution of benthic foraminifera in the Gulf. Due to the importance of this water body in a changing world climate, this study updates the knowledge on the type and distribution of benthic foraminiferal groups.