

Meiobenthos community structure in the Deep Hypersaline Anoxic Basins in the Eastern Mediterranean Sea. Comparison of the foraminiferal and the metazoan assemblages within and outside the anoxic brines.

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Deep Hypersaline Anoxic Basins in the Eastern Mediterranean Sea (Discovery, L' Atalante, Urania & Bannock Basins) are extreme deep-sea environments. They are characterized by oxygen depletion, extremely high salinity, elevated pressure, methane and hydrogen sulfide concentrations and unique geochemical composition.

Sediment samples have been collected from all DHABs both within and outside the influence of the brine in order to study the structure and the diversity of meiobenthic communities in relation to the prevailing environmental conditions.

Nematodes and foraminifera dominate the meiobenthos outside the brine area. Low meiofaunal densities supported by low values of chloroplastic pigments and mineralization rates are indicative of the typical oligotrophic environment of the deep Eastern Mediterranean Sea.

In the brine area, sediment chemistry and community structure differ considerably. High quantities of organic matter, enhanced mineralization rates and surprisingly high meiofaunal densities were found in the brine areas. Nematodes, benthic foraminifera (fam. Allogromiidae), bivalves and gastropods dominate the meiofaunal community. These taxa are known to harbour prokaryotic symbionts and thrive in organically enriched – oxygen depleted habitats.

In addition, high numbers of planktonic organisms were found in the sediment samples within the brines, indicating that Deep Hypersaline Anoxic Basins behave as natural sediment traps by accumulating sedimentary organic matter and decaying organisms.