



Foraminiferal single chamber analyses of heavy metals as a tool for monitoring permanent and short term anthropogenic footprints

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In order to establish environmentally sustainable industries there is a need for high-resolution temporal and spatial monitoring of heavy metal pollutants even at low concentrations before they become hazardous for local ecosystems.

Here we present single chamber records of Cu, Zn and Pb in shells of two benthic foraminifera species with different shell types from two shallow coastal stations in Israel: An area adjacent to an electrical power plant and desalination factory (Hadera) and an industrially free nature reserve (Nachsholim). Records of both foraminifera species show elevated metal concentrations in Hadera clearly identifying the footprint of the local industrial facilities. Moreover, short-term events of elevated Cu and Pb concentrations were detected by single chamber analyses. This study demonstrates the potential of using heavy metals anomalies in foraminiferal single chambers as a tool for detecting the industrial footprint of coastal facilities as well as short term events of elevated heavy metals.