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Benthic foraminiferal response to natural and man-made eutrophicationin the oligotrophic southeast Mediterranean shelf

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During the last decades, the very oligotrophic shallow water environment of the SE Levantine basin has been subjected to both natural as well as man-made eutrophication influences covering the full range of trophic levels. Living benthic foraminifera are known to respond to environmental factors, and are abundant and diverse in the Israeli shallow shelf. The present study aims to record the response of this group to changes in seasonality and trophic levels in the inner shelf, using them as sensitive tracers of the natural and perturbed conditions. For this purpose, 3 permanent stations along the Israeli coast varying between oligotrophic and hyper-eutrophic conditions are sampled bimonthly by the R/V Shiqmona, including water column and sediment parameters. Total standing stocks (TSS), simple diversity and in-sediment distribution depth of living benthic foraminifera vary remarkably along the inner shelf, tracking the trajectory of eutrophication. While the oligotrophic environments show high seasonality, TSS and biodiversity, the anthropogenically eutrophic environments show small seasonal variations and low to moderate TSS and simple diversity values.