

Nematode community structure and diversity on intertidal beaches at Bandar Abbas (Persian Gulf)

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Marine nematodes are the most abundant metazoans, both in species numbers and density, in a variety of marine sediments. Hitherto, there are however no published studies on marine nematofauna from the Persian Gulf area. In this study, the abundance, genus composition and biodiversity of nematodes of intertidal sandy beaches at four locations at Bandar Abbas on the northern part of the Persian Gulf, are investigated. In each sampling location, we selected three stations along a distance gradient from a local pollution source. The univariate descriptors of nematode abundance and genus diversity were analysed using ANOVA with the factor station nested in the factor location. Community composition was analysed using multivariate statistics. A total of only 39 genera belonging to 17 families were identified, which is low compared to most previous studies on beach nematofauna. There were significant and consistent differences in abundance as well as genus diversity between locations. Sediment granulometry correlated positively with genus diversity, and the location exposed to the strongest pollution input had the lowest nematode diversity but at the same time a high nematode abundance. Distance from the pollution source only had a significant impact on genus number and on taxonomic distinctness, a diversity index which measures the average phylogenetic distance between any two genera in the community. In the whole study area, five genera (*Daptonema*, *Ptycholaimellus*, *Paramonhystera*, *Terschellingia* and *Theristus*) together comprised 75% of the nematode communities. Several of these dominant genera had their highest relative abundances in the stations closest to anthropogenic disturbance. Hence, even though the overall low diversity of nematodes indicates that the entire area experiences substantial stress, the local sources of disturbance still had measurable impacts on benthic community diversity.