

NEMATODE DIVERSITY AND ZONATION PATTERNS ON SANDY BEACHES

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The European coastline consists for more than 30 % of sandy beaches. In spite of their rather barren and desert-like appearance, these European coasts harbour a highly diverse fauna and flora and some of them are even highly productive. On the other hand these beaches are subjected to strong anthropogenic pressure (e.g. pollution, eutrophication, coastal fisheries and tourism), which has substantial impact on the interstitial life and functioning of the sandy beach ecosystem. In contrast to the well-documented tropical sandy beaches, little is known about the structural and functional diversity of the different benthic components. This study aims to get an idea about the structural and functional diversity of meiobenthos (all Metazoans between 1 mm and 38 μm), emphasizing on free-living marine nematodes, of three European sandy beaches (*i.e.* Belgium, Poland and Italy). Nematodes are very suitable for monitoring and will be used in the second part of this study to compare and evaluate the diversity and productivity between 'disturbed' and 'undisturbed' sandy beaches.

In order to document the structural and functional diversity of the meiobenthos of the above-mentioned European sandy beaches, quantitative samples along transects have been collected on both disturbed and undisturbed parts of the beaches. Meiobenthos was processed and identified by standard procedures and further analysed by means of statistical and multivariate techniques. Only nematodes have been analysed at species level.

12 different meiofaunal and around 150 species of free-living marine nematodes in total have been recognized on these beaches. Nematodes dominated almost all sampling stations. Among the free-living marine nematodes several new species have been found, indicating the very poor knowledge of the European sandy beach nematofauna. The nematode biodiversity was highest on the Belgian beaches (*ca* 90 species), followed by the Italian beaches (*ca* 40 species) and Polish beaches (*ca* 20 species). Nematode zonation patterns have been detected as well.