

Where meiofauna? An assessment of interstitial fauna at a Belgian beach

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Meiofauna are frequently overlooked in biodiversity assessments, resulting in a lack of understanding regarding their current status and the potential impact of anthropogenic activities on these animals. This study marks a new effort to characterize meiofaunal communities along the Belgian coast, an area largely unexplored in this respect. The intertidal zone of the Small Beach in Ostend serves as a first case study for this purpose. Sampling was carried out on five separate occasions throughout the year, with abiotic data collected during each sampling event. Collected specimens were sorted under a stereomicroscope according to their taxonomic group, resulting in a retrieval of 1,742 organisms.

Among these, Platyhelminthes and Nematoda were the most abundant taxa. Through metabarcoding of the 18S ribosomal region, a preliminary biodiversity assessment was conducted, yielding a total of 106 Amplicon Sequence Variants (ASVs). After filtering out rare reads, 65 metazoan ASVs were retained: 12 representing Polychaeta, 17 Proseriata (Platyhelminthes), 15 Copepoda, 4 Acoela, 16 Nematoda and 1 representing Rhabdocoela. Identification of the ASVs through blasting, generated a rather low species richness. The highest species richness was observed among Proseriata and Nematoda, each comprising six different species. Additionally, four different species of Polychaeta and Copepoda, two species of Acoela, and one species of Rhabdocoela (Platyhelminthes) were identified. Comparing these findings to what has been reported on similar beaches, it appears that the meiofaunal communities on Ostend beach exhibit an overall low richness. This could be linked to the potential impact of beach nourishments and human trampling on these organisms. However, confirming this hypothesis requires further research.

Keywords

Biodiversity; Ostend; Metabarcoding; 18S RDNA; Platyhelminthes; Acoela; Copepoda; Nematoda; Polychaeta