



BENTHIC COMMUNITIES IN CHEMICAL MUNITIONS DUMPING SITE AREAS (BALTIC SEA) WITH SPECIAL FOCUS ON NEMATODES

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ABSTRACT

Assessment of biological effects of chemical warfare agents (CWAs) dumped in the Baltic Sea has been one of the tasks of the Chemical Munitions Search & Assessment (CHEMSEA) and Towards the Monitoring of Dumped Munitions Threat (MODUM) projects. Three sites that have been selected for the investigations are: Bornholm Deep, Gotland Deep and Gdansk Deep. Fauna collected from these locations were compared with reference area located between the studied regions, on the similar depths, deeper than 80 meters. In total several scientific cruises took place in different seasons of years 2011-2013.

Total lack of any representatives of macrozoobenthos at all investigated dumping sites was noted. Practically the Baltic deeps are inhabited only by nematodes meiofauna representatives. Therefore nematodes were used as a key group to explore the faunal communities inhabiting chemical dumping sites in the Baltic deeps. In total 42 nematode genera belonging to 18 families were identified (Table 2). The dominant genus was *Sabatieria* (Comesomatidae) accounting for 37.6% of the overall nematode community. *Terschellingia* (Linhonomeidae) was subdominant, reaching relative abundance of 24.5% in the investigated sediment samples. The lowest number of nematodes was found at the Bornholm Deep and the most abundant nematode community was recorded for reference stations, with mean densities of 422.6 ind. 10cm⁻² (± 166.8 SE). Significant differences in nematode abundance among investigated sites were observed (Kruskal-Wallis H=30.96, p<0.0001). Nevertheless, relatively high diversity of nematodes was found in the investigated area. A clear difference in multivariate nematode community structure between dumping area and reference site suggests that nematode assemblages can mirror environmental conditions.

One of the most successful nematode species was morphologically identified as *Halomonhystera disjuncta*. Presence of this active colonizer and resistant to highly disturbed environment species may indicate that dumping sites sediments are characterised by toxic, unfavourable for other metazoans conditions. Moreover, ovoviviparous reproduction behaviour, what is an important adaptation of parental carrying of their brood in harsh environ-





**3rd Science for the Environment Conference
Aarhus Denmark 1-2 October 2015**

mental conditions, has been observed for specimens from Gdansk Deep and Gotland Deep. It is the first time that *Halomonhystera disjuncta*, with this uncommon for marine nematodes reproduction strategy is reported in deep-sea sediments of the Baltic Sea.



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