Long-term Blue Mussel Samples from the German Environmental Specimen Bank show first Evidence of Munition Contaminants Uptake



Dr. Jennifer Strehse

North Sea Wrecks Symposium 20 April 2023



Time series analyses – Publication





Article

Long-Term Trends for Blue Mussels from the German Environmental Specimen Bank Show First Evidence of Munition Contaminants Uptake

Jennifer Susanne Strehse ^{1,*}, Tobias Hartwig Bünning ¹, Jan Koschorreck ², Anita Künitzer ²

Citation: Strehse, J.S.; Bünning, T.H.; Koschorreck, J.; Künitzer, A.; Maser, E. Long-Term Trends for Blue Mussels from the German Environmental Specimen Bank Show First Evidence of Munition Contaminants Uptake. *Toxics* 2023, 11, 347. https://doi.org/10.3390/ toxics11040347

- Institute of Toxicology and Pharmacology for Natural Scientists, University Medical School Schleswig-Holstein, Brunswiker Straße 10, 24105 Kiel, Germany; maser@toxi.uni-kiel.de (E.M.)
- German Environment Agency, Wörlitzer Platz 1, 06844 Dessau, Germany
- Correspondence: strehse@toxi.uni-kiel.de

Abstract: Submerged munitions are present in marine waters across the globe. They contain energetic compounds (ECs), such as TNT and metabolites thereof, which are considered carcinogenic, exhibit toxic effects in marine organisms, and may affect human health. The aim of this study was to investigate the occurrence of ECs and their trends in blue mussels from the annual collections of the German Environmental Specimen Bank sampled over the last 30 years at three different locations along the coastline of the Baltic and North Sea. Samples were analyzed by GC-MS/MS for 1,3-dinitrobenzene (1,3-DNB), 2,4-dinitrotoluene (2,4-DNT), 2,4,6-trinitrotoluene (TNT), 2-amino-4,6-

