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### Toxic mystery in the depths - A case study of the Baltic Sea

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The distribution of heavy metals in coastal sediments of three Polish beaches was assessed. Core sediments collected in the central part of the Polish coast were characterized by seasonally increased concentration of Cd, Ag, Ba, Al, Cu, Cr and Bi. Despite the fact the majority of dredge material collected could be classified as light or trace contaminated by Cr, Cu, Zn, Ca and Hg among the studied beaches the highest content of Cd and Ag was discovered in Czolpino, located in the area of national park. It was discovered that 13 km of the beach in Czolpino was incidentally contaminated by an unidentified substance probably originated from chemical munitions dumped in

the Baltic Sea after World War II. Chemicals originating from chemical warfare materials can spread from the disposal sites of the containers due to the impact of waves and sea currents. The behaviour of warfare agents in the marine environment is additionally influenced by the physical properties of the agents. All warfare agents react with sea water, but reaction rates can vary enormously depending on the chemical structure. Such reaction products are usually less or no longer toxic. Some compounds, however, show an extremely low solubility and slow degradability and this is why wide-scale threat to the marine environment from dissolved chemical warfare agents still exists.

#### Biography

Bigus K has completed her PhD in Pomeranian University in Slupsk. Her thesis concerned "Spatiotemporal variation of chemical and biological properties of sand sediments of selected beaches of the southern Baltic Sea" and was prepared under supervision of Prof. Jan Trojanowski. Till the 2016 she is a vice-director of the Institute of Biology and Environmental Protection

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