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THE HEAVY METALS CONTENT IN THE SPROUTS OF *GLYCERIA MAXIMA* (Hartm.) Holmb. AND IN RIVER SEDIMENTS (NORTHERN POLAND)

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Abstract

The aim of this study was to evaluate the content of Zn, Mn, Cu and Ni in the aboveground and underground shouts of *Glyceria maxima* and in the bottom sediments of the Słupia River. These studies allow for assessment of the existing and potential hazards resulting from toxic influence of heavy metals on water environment and human health. The concentration of research elements was determined by atomic absorption spectrometry (AAS). Results indicate that the concentration of heavy metals in the examined bottom sediments remained within the limits of the geochemical background for majority of the determined elements. The concentrations of Zn and Cu, sporadically exceeded the level of the geochemical background at the stations in the central part of the city, and in the case of Ni in all researched positions. Following the LAWA classification, the bottom sediments within the Słupsk area were classified in the first class, as slightly contaminated. It was found the *G. maxima* underground sprouts accumulated several times more of Zn, Mn, Cu and Ni than their aboveground sprouts. The indices of quality of the tested bottom sediments and the enrichment factors of the sprouts with heavy metals indicate that the Słupia River is the least contaminated along the segments of the river with a low or moderate transformation of the river bed and the largest load of Zn, Mn, Cu and Ni is found at the stations with a high transformation of the river bed. The strong positive correlations between the concentrations of Mn in bottom sediments and the level this element in aboveground and underground sprouts indicate that the sprouts of *Glyceria maxima* are potentially useful in biomonitoring environmental contamination with Mn.

Key words: bottom sediments, heavy metals, indicators of quality of sediments, macrophytes

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