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NATURAL REMEDIATION OF THE MAIN EFFLUENTS OF TROTUȘ RIVER AFFECTED BY HEAVY METALS POLLUTION

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Abstract

The hydrographic basin of Trotuș River is a region with an important impact for science because of the geographic variety and here are important constructions on watercourses that have an important ecological impact. The purpose of this paper is to highlight the natural remediation related to heavy metals (Cd, Pb, Hg, and Ni) pollution of the main tributaries of the Trotuș River from Bacău County in 2010-2015. From the year 2010 to 2015 the presence of heavy metals was monitored from Trotuș River and its main tributaries and for monitoring purposes the hydrologic basin was divided into nine sections: Trotuș River, Asău River, Ciobănuș River, Izvorul Alb River, Plopu creek, Slănic River, Tazlău River, Tazlăul Sărat River, Uz River.

The data set from each year was collected and, following the internal procedure, an annual average for Cd, Ni, Pb, and Hg was calculated. There were some exceedances of acceptable concentrations of Cd and Pb during the monitoring period 2010-2012 as a result of the existence of pollution sources upstream sections of the study area. In 2012 it appears that the concentrations of heavy metals have started to decrease. In the next years, 2013 to 2015, in all monitoring sections, the concentrations of these metals were within the permissible limits or below the detection limit of the analysis device. Throughout the study periods, there were not exceeding concentration of Hg and Ni in any monitoring section. This decrease in heavy metal pollution is primarily due to basic management measures applied to these watercourses.

Key words: H.B. of Trotuș River; monitoring of H.M. pollution; priority hazardous H.M.; water self-purification process

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