

PAH SOIL CONCENTRATIONS IN THE VICINITY OF CHARCOAL
KILNS IN BIESZCZADY
EWA LISOWSKA

Abstract: The aim of the study was to assess the degree of soil contamination by PAHs in the area of charcoal kiln basis, located in the East Carpathian Biosphere Reserve. The concentrations of PAH in soil samples derived from various sampling locations pointed to a strong or a very strong contamination of the ecosystem by these compounds ($8,95 \mu\text{g}\times\text{g}^{-1}$ – $283,53 \mu\text{g}\times\text{g}^{-1}$). PAH concentrations in the soil differed significantly between the sampling locations. Analysis of samples from different soil layers (to 30 cm) pointed to a threat of washing out into groundwater. The highest concentrations of PAH corresponded to soil samples collected near kilns (distance of 1.5 m), and were in the range of $17,81 \mu\text{g}\times\text{g}^{-1}$ – $435,54 \mu\text{g}\times\text{g}^{-1}$. PAH content in soil gradually decreased with increasing distance from the kilns to values $< 1 \mu\text{g}\times\text{g}^{-1}$. The analysis of the data from three sampling periods (June-August) pointed to higher concentrations of PAHs in soil collected in the middle of the burning season, what was probably due to their more intense emission and a relatively small amount of precipitation.