

Radial distribution of Cu, Zn, Pb, Cd in peat deposits of Western Siberian mires

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During the studies character and conditions of heavy metals migration and a number of macrocomponents in peat bog deposits have been conducted. According to the results differential intensity of accumulation and dispersion of heavy metals throughout the depth of the peat deposits, as well as in the parent rock was set.

Analyzing the concentration of Zn and Pb in the peat at all sites with different conditions of migration even distribution in peat deposits has been established. As well as minor deviations from the mean, from a depth of 50 cm and 250 cm, were observed. In this case, the mean concentrations for Zn were 25 mg/dm³ and 1,9 mg/dm³ for Pb. Cu accumulation is observed from 0 to 80 cm with an even decrease in the concentration from 6.4 mg/dm³ to 3.2 mg/dm³ towards bedrock at the autonomous eluvial site. In this case, there is a lack of parent rock influence. It should be claimed that there are anthropogenic factors of Cu transfer. The influence of atmospheric precipitation, dust and wind should be ignored, because of the lack of high concentrations of the element in other areas with different migration conditions. On other sites of the study area dynamics of the concentration of Cu is similar to Zn and Pb.

Dynamic distribution of Cd in autonomous elemental landscape peat deposits has uncharacteristic increase in concentration in comparison with other areas. From the surface layer to a depth of 140-150 cm concentration of Cd is 0.33 mg/dm³, then at the depth of 260 cm it reduces to 0.07 mg/dm³, and increases again to 0.42 mg/dm³ at parent rock. High values in the subsurface horizon may indicate contamination by surface runoff.

Exceeding the established Clarkes numbers is not revealed on any of the elements. Analysis of the radial differentiation of heavy metals at the peat profile showed that radial heterogeneity is poorly expressed for elementary landscapes. At transaccumulative and transit sites weak accumulation of Cd is observed. Other elements - Zn, Pb and Cu are preferably in a dispersed state. Eluvial site is characterized by a weak accumulation of studied heavy metals.