

## Summary

The results of research on the role of water mass movements arising as a result of anthropopresion, in heavy metals arrangement in sediments have been presented on the example of dam reservoir in Rybnik. The carried out thermo-visual measurements of the thermally polluted Rybnik dam-reservoir revealed spatial diversification of water temperature. The zones of diverse dynamics of water mass movements have been shown, including the zone of intensive water flow and the zone of stagnation. It has been proved that the values of these concentrations are strongly diverse in space. This is the result of the eutrophication grade, bioaccumulation process, and anthropomixtion. As a result of specific water movement, which transports biomass inside the ecosystem, the zone, developed in which the transfer of heavy metals to the sediments is intensified. This zone of about 150 ha in area was located. The maximum concentrations of metals described in this area are: for cadmium – 30 mg/kg, for nickel – 55 mg/kg, for chromium – 130 mg/kg, for lead – 160 mg/kg, for copper – 1000 mg/kg, for zinc – 1300 mg/kg. In the case of mobile fractions, potentially capable of freeing themselves from sediments the concentration values are: for cadmium – 14 mg/kg, for nickel – 15 mg/kg, for chromium – 4 mg/kg, for lead – 8 mg/kg, for copper – 100 mg/kg, for zinc – 600 mg/kg. The participation of mobile fractions of metals in their total quantity was: for zinc – 46%, for cadmium – 46%, for nickel – 27%, for copper – 10%, for lead – 5%, for chromium – 3%. The relationship between the total concentrations of metals likewise their mobile forms and the content of organic matter in sediments, points to the role of biomass of plankton organisms and detritus as bio-sorbent in the process of transporting and transferring metals from water to sediments. With reference to water mass dislocation effect inside the reservoir under the influence of anthropogenic factor, in the situation when this factor is stronger than the factors which cause natural water movements, author suggests using the term anthropomixtion.