

Szalinska, E., Koperczak, A., Czaplicka-Kotas, A. Heavy Metals in the Bottom Sediments of Lake Goczalkowickie Tributaries. *Ochrona Srodowiska* 2010, Vol. 32, No. 1, pp. 21–25.

Abstract: The results of the research performed so far make it clear that the water and bottom sediments of Lake Goczalkowickie are contaminated with heavy metals. Since Lake Goczalkowickie constitutes an important part of the water supply system for Upper Silesia and in addition a natural habitat for fish and aquatic wildlife, their contamination has become a cause for grave concern. The study reported on in this paper had two major objectives: to assign each heavy metal (cadmium, copper, lead, zinc, iron and manganese) detected in Lake Goczalkowickie to particular tributaries as the source of origin, and to determine the spatial distribution of each contaminant with-in the catchment area of each tributary. Bottom sediments were chosen as the material for analyses, because in aquatic ecosystems they can be regarded as "archives of pollutants". The study has produced the following findings. The bottom sediments occurring in the tributaries of Lake Goczalkowickie are contaminated with heavy metals differing in patterns of spatial distribution. The high heavy-metal concentrations in the bottom sediments are attributable predominantly to the anthropogenic sources located in the catchment area of Lake Goczalkowickie (fish farming and runoffs from agricultural operations). This finding does not hold for iron, as the high concentration of this heavy metal is associated with leachates from peat lands. The high concentrations of heavy metals in the bottom sediments pose serious toxicological hazards to the bottom fauna. Owing to the fact that the majority of the sediments are retained by the pump stations, Lake Goczalkowickie is not directly endangered.

Keywords: Bottom sediments, heavy metals, Lake Goczalkowickie.