

Self-purification Capacity of Surface Waters under Considerable Anthropopression – Rudolf Bujok

Summary

The analysis of water self-purification process includes headstreams of rivers in the Upper Silesian agglomeration: the Bierawka, the Kłodnica, Bielszowicki creek and the Szotkówka. These are rivers characterized by small natural flows and a significant anthropogenic pollutant load. Results of our own research on the self-purification rate were used. The attention was focused on biodegradable substances. The biodegradation rate coefficient k_1 and water assimilative capacity were determined. Within the same rivers, their particular parts differ in types of a riverbed and swift currents alternate with slow flows. In the case of Bielszowicki creek and the Szotkówka River impoundments were observed, which results in different self-purification conditions. In all investigated parts the rate of organic substance removal, characterized by k_1 coefficients, was usually much higher than the literature values for comparable rivers, which usually are below 2.0, rarely exceeding 3.0. The creek impoundments occurring in the watercourse beds do not always have a positive impact on the water quality. The role of the creek impoundments in the river self-purification process and their impact on water ecosystems require separate investigations.