

Obolewski, K. Use of Macroinvertebrates as Bioindicators for the Assessment of Surface Water Quality in Urban Areas: A Case Study. *Ochrona Srodowiska* 2010, Vol. 32, No. 2, pp. 35–42.

Abstract: Water quality was assessed using samples collected at 11 sites, which were located along the Slupia River within the city of Slupsk and differed in the extent of riverbed transformations. The ecological state of the river section examined was determined using biological and chemical analyses in compliance with the biomonitoring guidelines. Water quality was found to be good (class I) as regards the pH and the concentrations of biogenic substances and chlorides. BOD₅ alone showed increased levels at sampling sites with major transformations in the riverbed. Water quality was also assessed by analyzing the macrozoobenthos with the aid of such bioindicators as BMWP-PL, ASPT, OQR and the Margalef biodiversity index (d). The comparison of these bioindicators revealed that within the urban area the ecological state of the river water was not as good as could have been inferred from the values of its chemical quality parameters. The investigated section of the Slupia River was characterized by waters of class III and class IV quality, which substantiates the negative influence of urbanization on riverine ecosystems. The study has demonstrated that riverbed transformations due to partitioning or placing concrete elements inhibit the growth of hydrobionts and thus deteriorate the ecological state of the river.

Keywords: River water, biomonitoring, bioindicator, macrozoobenthos.