

**Obolewski, K. Use of Macrozoobenthos for Biological Assessment of Water Quality in Oxbow Lakes of Varying Hydrological Connectivity to the Main River Channel in the Example of Lyna River Valley. *Ochrona Srodowiska* 2013, Vol. 35, No. 2, pp. 19–26.**

**Abstract:** This study presents influence of hydrological connectivity between oxbow lakes and the river on water quality determined based on the structure of aquatic invertebrate communities in oxbow lakes. Five oxbow lakes of the Lyna River were investigated, *i.e.* two lotic, two semi-lotic and one lentic ecosystem. It was shown that Chaoboridae (Diptera), Oligochaeta and Hydrobiidae (Gastropoda) were the most abundant groups of invertebrates, often accompanied by Chironomidae larvae (Diptera). Ephemeroptera and Trichoptera were the only invertebrate bioindicators observed in the studied water bodies. The EPT% index, determined based on their abundance, as well as EPT:C, determined based on their proportion to Chironomidae, indicated that groups of these organisms sensitive to environmental conditions occurred at low abundance in all hydrological types of oxbow lakes. Family Biotic Index (FBI), Biological Monitoring Working Party index (BMWP-PL) and Average Score per Taxon (ASPT), both adapted to the Polish conditions, revealed low water quality regardless of the degree of hydrological connectivity. This study shows that the structure of invertebrate communities inhabiting oxbow lakes can be a source of valuable monitoring data. BMWP-PL seems to be the most objective among the biotic indices. Hence, it can be applied in biomonitoring research of many types of aquatic ecosystems.

**Keywords:** Water quality, bioindication, biomonitoring, macroinvertebrates, biotic indices, biodiversity.