

Pietruczuk, K., Szoszkiewicz, K. Relation Between Macrophyte-based Classification of Rivers and Physico-chemical Quality of Riverine Water, Exemplified in the Rivers of Wielkopolska. *Ochrona Srodowiska* 2012, Vol. 34, No. 1, pp. 41–46.

Abstract: In the time span of 2007–2009, assessments were carried out for 153 monitoring stations located along the rivers of Wielkopolska, which were classified according to the 5-class system of ecological status. Their classification was based on the Macrophyte Index for Rivers (MIR). The MIR values were then compared with the results obtained from physico-chemical analysis of water samples taken at different types of rivers. Statistical analysis included the following hydrochemical parameters: annual averages, growth season averages (June–September), annual maximum and minimum values and quartiles. The study revealed a significant relation between the macrophyte index and nutrient content of the water, as well as BOD₅, organic carbon, conductivity and chlorophyll *a* in sandy rivers and stone-and-gravel rivers. The highest correlation values of the macrophyte index were observed with BOD₅, chlorophyll *a*, organic carbon and Kjeldahl nitrogen. The macrophyte index most accurately reflects annual average values and, in a very similar way, the average values of the growth season and the highest values in a year.

Keywords: Macrophytes, monitoring, ecological status.