

**Impact of Anthropogenic Pressure on Aquatic Conditions in Lake Track in Olsztyn – Jolanta Grochowska, Helena Gawrońska**

Summary

The research was carried out on a small (52.8 ha) and shallow (4 m) Lake Track in Olsztyn, exposed to a considerably intense anthropogenic pressure. In the middle 1800s this reservoir was dried out and most of the contiguous land was designated for agricultural purposes. The lake was restored in the mid 1900s. At present, the drainage basin of Lake Track is 216 ha. Urban land comprises the largest portion of this area, i.e. 49.3%, barren land 41.4% and forests 6.1%. The lake receives storm waters but for years it had also received sanitary sewage. The results of this research allowed classifying the lake as nutrient-rich, with fairly advanced eutrophication processes. The waters were characteristic of very high nutrients content, up to 0.75 mg P/dm<sup>3</sup> and 3.87 mg N/dm<sup>3</sup>. The high fertility of Lake Track was additionally confirmed by high BOD<sub>5</sub> values, i.e. up to 9.5 mg O<sub>2</sub>/dm<sup>3</sup>, high chlorophyll content, usually from 30 to 40 mg/m<sup>3</sup> but reaching 123 mg/m<sup>3</sup>, and low water transparency, oscillating between 0.6 and 0.9 m. The reason for the lake's high trophic level was no doubt the excessive loading from the drainage basin. The actual nutrient runoff from the drainage basin to the lake exceeded the critical loads, as defined by Vollenweider. Low quality of the lake's waters and the parallel high external loading indicate that preventive measures should be taken, aimed at reducing the external loading.