

## **NUTRIENT AND SEDIMENT TRANSPORT IN A SMALL LOWLAND RURAL RIVER**

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The problem of the nutrients concentration in small rural usually not monitored rivers becomes more important for Poland. Warsaw University of Life Sciences carries on the investigation in small lowland Zagożdżonka watershed located in Central Poland. The results of changeability of Dissolved Reactive P (DRP), Total Phosphorus (TP) and Nitrates in the river, investigated during years 1991-1995 has been analyzed. The concentrations and loads from two measuring point (Czarna and Płachty Stare gauging station) has been compared with second years (1999-2000) and third (2008-2009) investigation period. The high DRP and TP concentration has been recorded during each period with average 0.44 mg PO<sub>4</sub>/l (highest ever recorded 1.95 mg PO<sub>4</sub>/l) for DRP and maximum TP estimated for 5.78 mg P/l. The nitrates concentration varied more. The average concentration for the first investigation period has been investigated for 1.18 mg NO<sub>3</sub>/l and 4.16 mg NO<sub>3</sub>/l for the second period.

The changeability of suspended sediment (SS) and phosphorus forms has been investigated during flood events. The pikes of suspended sediment concentration varied from 53.7 mg/l to 16.3 mg/l depend on flood event and in most of cases priori the runoff peak. The TP shows different concentration pattern depend on event, and reach values from 0.18 mg P/l to 1.18 mg P/l for TP. The concentration of TPP (Total Particle Phosphorus) varied from 1.2 g P/kg sediment to 35.2 g P/kg sediment. The inverse relationship between TPP and SS has been considered.