



TRANSPORT OF NUTRIENTS IN THE RIVER-LAKE SYSTEM OF THE LOWLAND DOJCA RIVER AND WOLSZTYŃSKIE LAKE (WESTERN POLAND)

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Fig. 1.Location of Dojca catchment in Poland

The Dojca is a right-bank tributary of the Northern Obra Canal, which it flows into at 125.6 km. The total length of the watercourse, including meandering, is 39.97 km. The system of the Dojca river network is dendritic and clearly asymmetric towards the east, with a lack of supply from the west (fig. 2). The total area of the catchment is 268.63 km² and consists of 8 elementary catchments with different shares in the total catchment (from 1.35 to 33.58%). Due to the scale and nature of hydromorphological changes, Dojca has the status of heavily modified water. Ways of developing of the river banks (Fot. K. Parszuto)

The river is the main supplier of water to the urban Wolsztyńskie Lake, this is why research stations were located on all its tributaries as well as on the inflow to - and outflow from the lake. The research was conducted on an annual cycle, from October 2017 to 2018, on average once a month. The chemical composition of the water (total, ammonium and nitrate nitrogen, total and phosphate phosphorus) and the flow rate were analysed.







day

Fig. 6. Average values of phosphorus concentrations in tributaries

Fig. 3. Elemental catchment of Dojca river Fig. 2. Location of the measuring stations (1-11)

The flow rate changed significantly, from 0 to 1649 L/s. In sub-basins 1-6, the flow rate was higher in autumn, in the remaining ones (7-10) in summer. The last measuring (11) station showed a stable flow (Fig. 3). This had an obvious impact on the amount of macroelements supplying Dojca. It was shown that the source of nutrient pollution was primarily the area runoff from the catchment area intensively used for agriculture with dispersed residential and farm buildings. The chemical composition of the water in the river, both in terms of concentrations, dominant forms of biogenic elements and their mutual proportions, indicated the lack of direct sewage pollution.

Acknowledgements

Project financially supported by the Minister of Education and Science under the program entitled "Regional Initiative of Excellence" for the years 2019-2023, Project No. 010/RID/2018/19, amount of funding 12.000.000 PLN