

ANTROPOGENIC SOURCES OF NUTRIENTS EMISSION FOR THE BYSTRZYCA RIVER BASIN (PRELIMINARY RESULTS IN FIRST YEAR OF INVESTIGATION)

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The aim of this study is to present the current water conditions of the Bystrzyca river, with a special focus on phosphorus, nitrogen and potassium concentrations. We will try to locate the largest amount of nutrient sources in the river basin, and to estimate the influence of agriculture on the chemical composition of the river's water. The aim of the study will be to determine individual areas and sources of pollution, which indicate the highest amount of nutrients introduced into the Bystrzyca river. We need to find effective methods for the reduction of pollutants. The comparison between agricultural and non-agricultural emission sources of nutrients introduced into the river's water will also be analysed in this experiment.

The area of investigation is the Bystrzyca river basin. The Bystrzyca river is the left hand tributary of Wieprz river, and is 70 km long, located in Lubelska uplands and flows through the City of Lublin. The Bystrzyca's basin area, amounts to about 1315.5 km². The Zemborzycki reservoir is situated in middle course of Bystrzyca river (in the southern part of City of Lublin).

The experiment consists of twenty-six checkpoints in the Bystrzyca river basin. Twenty-one checkpoints are localised on the Bystrzyca river, from source to estuary. Five checkpoints are localised on estuaries of the main five tributaries. River water samples will be taken each month for three years. The samples will be analysed for P-PO₄, N-NO₃, N-NH₄, and K⁺ content. The content of phosphorus, nitrate nitrogen, and ammonium nitrogen will be measured by the colorimetric method, the content of potassium using the F-AES method (flame atomic emission spectrometry). Hydrological data and information about site sources of nutrients (from sewage treatment works) will be also collected and calculated in this experiment.

The paper presents preliminary results in first year of investigation.