

## VARIATION OF PHYTOPLANKTON COMMUNITY IN THE BIEBRZA RIVER

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Evaluation of ecological status of freshwater refers to water bodies with low antropopression (according to the WFD 2000/60/EC). Reference conditions are set with the consideration of the elements of biological, physicochemical and hydromorphological quality. In order to consider biological reference conditions for lowland rivers, it is necessary to study precise biodiversity of aquatic flora. One of the main components characterizing biodiversity is phytoplankton. As it is community located at the beginning of the food chain, its impact on the whole freshwater ecosystem shouldn't be underestimated. Phytoplankton taxa is the one of the most sensitive to water quality changes, indicating water production capacity and changes caused by pollution. Also, due to the short life cycle and reproduction rate, phytoplankton composition reflects immediately the nutrient supply and contamination. Thus, phytoplankton demonstrates actual water body conditions and is unequivocal indicator of changes in homeostasis of the ecosystem.

Following poster presents the results of mesophytoplankton taxonomic composition studies in the Biebrza river (North-East Poland). The Biebrza river is one of the reference rivers for East Region and is considered as an unique ecosystem. The research was conducted from April till August 2005. Samples of phytoplankton were taken in 11 points, from main stream in the reaches of the Biebrza river.

During studying the content of samples, seasonal domination of diatoms, green algae and chrysophyta were found. Main species are listed below:

Diatoms – *Fragillaria* (*F. cappucina*, *F. crotonensis*), *Tabellaria*, *Stephanodiscus*, *Cyclotella*, *Melosira*, *Navicula*, *Nitzschia*, *Diatoma*, *Gomphonema*, *Asterionella* (*A. formosa*), *Meridion* (*M. circulare*);

Green algae – *Pediastrum* (*P. boryanym*, *P. simplex*), *Closterium*, *Scenedesmus* (*S. quadricauda*, *S. obligus*), *Coelastrum*;

*Chrysophyta* – *Synura*.

The biggest biodiversity and quantity of phytoplankton taxa were found in the Biebrza river reaches: 42.1 km far from the source of a river (point number 1); 91.4 km (5); 109.3 km (6); 117.8 km (7); 129.1 km (8); and 160.6 km (11) downstream. Variation of phytoplankton taxa along the river is caused by different land use, changes in the water levels and occurrence of many old river beds and human settlements. Most of the recognized taxa are typical for potamoplankton, and its biodiversity shows low level of degradation of the Biebrza river.