Water quality in the Mastnik catchment area and it`s influence on Slapy reservoir

Abstract

Despite major investments in remediation of waste water and reduction of fertilizers the quality of surface water on small rivers in agricultural and rural regions of the Czech Republic is still very low. Among the problematic rivers is also the river Mastník. This river runs through agricultural area of the Central Bohemian Uplands and as a right-hand side tributary it flows into the Vltava river, in particular to Slapy reservoir. According to the data of concentration of indicators coming from monitored profiles of the State public enterprise Povodí Vltavy which were completed by our own monitoring profile the quality of water has been analyzed. Furthermore, the effect of Mastník on the water quality in Slapy reservoir has been evaluated. It was discovered that the steps that are being taken, mainly construction of sewage treatment plants, are leading to gradual improvement of quality of the surface water. Nowadays the final quality of water is influenced by growing concentration of chlorophyll. This growth is caused by warmer waters and that leads to higher eutrofisation of rivers in the catchment area. The most significant eutrofisation is showing in the creek of Mastník where it´s affected by Slapy reservoir. In the vegetative period the temperature of water in this creek is in average about 6°C higher than in the Slapy reservoir. However any significant impact of Mastník on Slapy reservoir wasn´t proved.

If the quality of waters in the Mastník catchment area should be maintained or improved there has to be awareness of the effect of negative climatic changes. Providing that current conditions preserve, water quality will decrease; therefore it is desirable to reduce the amount of pollutants coming into surface water. In case of Mastník it is in particular about improvement of remediation of waste water from small households and reduction of water erosion impact on agricultural soil**.**

Keywords: Mastnik River catchment area, point and non-point sources of pollution, agriculture, eutrofisation, Slapy reservoir