APPLICATION OF BIOINDICATION IN ASSESSING THE IMPACT OF STORMWATER SYSTEM ON AQUATIC ENVIRONMENT

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Abstract: Modern industrial, agricultural and construction development has brought improvements in living conditions, but has also increased the amount of pollution in the environment. Demographic growth, urbanization and intensification of economic activities are leading to the degradation of aquatic and terrestrial ecosystems. Atmospheric precipitation collects pollutants from urban surfaces, which then end up in sewage systems, contaminating surface waters. Climate change further destabilizes the distribution of precipitation, leading to periods of drought and heavy rains, exacerbating the problem of water pollution. Flora and fauna must adapt to new conditions, affecting the structure and extent of ecosystems. Monitoring the environment with bioindication, or analysis of the occurrence of indicator organisms, makes it possible to assess pollution levels and water quality. These methods are important, because they enable to identify the areas in need of protection, in addition to being less costly and environmentally harmless. Current legislation increasingly takes biological methods into account in assessing the ecological status of water bodies. This work presents the results of bio-indicative studies of periphyton sampled in the Bystrzyca River in four points being under influence of stormwater discharge and one reference point localized before stormwater system outflow. The quantitative data concerning number of chosen freshwater algae species was analyzed using entropy based indices for examination of community structure.

Keywords: biondication, periphyton, community structure, aquatic environment, surface water, stormwater system