

Využitie bioindikačných vlastností bentických rozsievok (BACILLARIOPHYCEAE) pre účely hodnotenia ekologického potenciálu vybraných vodných nádrží Slovenska

Dana Fidlerová

Abstract

The object of this study were 23 water reservoirs in Slovakia. These reservoirs are classified as heavily modified water bodies (HMWB), therefore it is necessary to assess their ecological potential according to the requirements of the Water Framework Directive (WFD). Benthic diatoms are one of the bioindicators' groups, which should be potentially used in this assessment. The most common tools for evaluation of the water quality with using diatoms are indices based on their bioindicative properties. The main objective of the presented research was to select the most appropriate diatom-based index or indices respectively for the assessment of ecological potential of water reservoirs in Slovakia. For the assessment of ecological potential of reservoirs can be used diatom indices developed for running or standing waters respectively. Twenty-two diatom indices from above mentioned groups together with environmental variables obtained during the period of 2011-2014 in the routine biomonitoring of water reservoirs were explored in this study. The following criteria were assessed: i) correlations of tested indices with environmental variables; ii) the total variance of indices; iii) the ability of indices to distinguish undisturbed conditions from those disturbed and iv) the ability of indices to distinguish the differences between the 2 biotypes in the multipurpose reservoirs and between 3 biotypes in drinking water-supply reservoirs as well. The most suitable diatom-based indices for the assessment of ecological potential of the studied reservoirs were IPS and LTDI.

Anotácia

Táto štúdia je zameraná na testovanie indexov založených na bentických rozsievkach. Cieľom je vybrať najvhodnejší index, resp. indexy na hodnotenie ekologického potenciálu vodných nádrží na Slovensku, ktoré patria medzi výrazne zmenené vodné útvary.

Kľúčové slová

bentické rozsievky, rozsievkové indexy, vodné nádrže, rámcová smernica o vode, ekologický potenciál

Annotation

The present study focuses on the testing of diatom-based indices. The aim is to select the most appropriate index or indices respectively for the assessment of ecological potential of water reservoirs in Slovakia, which belong to heavily modified water bodies.

Keywords

benthic diatoms, diatom indices, water reservoirs, Water Framework Directive, ecological potential