

On the use of diatom-based biological monitoring Part 1: A comparison of the response of diversity and aut-ecological diatom indices to water quality variables in the Marico-Molopo River catchment

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Abstract

Two main approaches have been followed in using diatoms as bio-indicators in the past few decades namely species diversity indices and aut-ecological indices. This study, based on 102 water quality and epilithic diatom samples from the Crocodile Groot-Marico catchment in South Africa, evaluated both types of indices by establishing how well they reflect changes in water quality. It was found that less of the variation in diversity indices could be attributed to changes in water quality variables than was the case for the aut-ecological indices. Furthermore it was found that species diversity indices tend to be higher at intermediate levels of pollution, rather than at low levels of pollution.

Keywords: diatoms; Bacillariophyceae; bioindicators; species diversity indices; water quality; aut-ecological indices