

Eutrophication: Present reality and future challenges for South Africa

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Abstract

During the past 40 years, eutrophication has become an increasing threat to the usability of South African freshwater resources. Despite legislation moderating the discharge of phosphorus from some wastewater treatment works since the 1980s, eutrophication of freshwater resources is now widespread. Two important consequences are blooms of cyanobacteria, carrying the threat of cyanotoxin contamination, and excessive growth of macrophytes, which clog water-supply structures and reduce the recreational value of aquatic resources. Eutrophication-management options include reduction of phosphorus in detergents, biomanipulation of the food web, accurate prediction of cyanobacterial growth cycles, and mechanical disturbance of the epilimnion. The implementation of adaptive management to deal with eutrophication would ensure the testing and application of the most appropriate methodology to each eutrophic water body. Continued monitoring and reporting of trophic status are essential to establish whether interventions are having any effect.

Keywords: biomanipulation, cyanobacteria, eutrophication, forward prediction, management, low-p detergents, phosphorus, zero-phosphate