

VERTICAL DISTRIBUTION OF PHYTOPLANKTON COMMUNITY RELATED TO WATER QUALITY IN BOUKERDENE RESERVOIR, NORTH OF ALGERIA

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Abstract:

Phytoplankton is sensitive aquatic organisms, and their composition and abundance can reflect the eutrophic situation in a reservoir. Thus, eutrophication is defined as development of phytoplanktonic blooms caused by the increase in nutrient concentration in aquatic ecosystems, inducing the degradation of their quality. Indeed, different human activities generate wastes that cause changes in the natural hydrological conditions of the aquatic system, and induce eutrophication. In this regard, the objectives of this study were to characterise the phytoplankton composition and vertical distribution of biomass in relation with abiotic variables regulating its development.

The lake Boukourdane studied, is located in northern Algeria, in a sub-humid area. The analysis of phytoplankton community composition, showed five groups which were Diatomophyceae, Dinophyceae, cyanobacteria, chrysophyceae and Chlorophyceae. Diatomophyceae are the dominant organisms in the phytoplankton community in spring, in summer and in autumn. While, on surface, Chlorophyceae dominated in November to February and in December to January at 5 m and 20 m depth. Likewise, with increasing depth, the phytoplankton community evolving in Lake Boukerdene have undergone a significant decline, which has reduced the number of species and their density

Analysis of nutrient indicates that there is a temporal and a vertical variation in the reservoir. Nevertheless, the hydrological factors and the temperature related to the climate would be two of the principal causes of the temporal variations of the species.

Keywords: phytoplankton; cyanobacteria; water reservoir; eutrophication; nutrient.