The impact of industrial pollution on the ecosystem of Réghaia Lake (Algeria)

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ABSTRACT

This study lies within the framework of the anti-pollution action plan of Réghaia Lake. This lake, partially fed by the ground water of Mitidja, is regarded as an area of international importance because it is the last vestige of Mitidja. It is currently the only wetland in the biogeographic area of Algiers, thus making it a stopover for migratory birds after their crossing of the Mediterranean. The area is characterized by a great diversity of flora and fauna, and a large variety of ecosystems. Réghaia Lake has a considerable wealth of flora estimated at about 233 listed plant species: the equivalent of 13% of the North Algerian flora. The area is also home to four species of rare birds, three of which are classified as threatened on the red list of the IUCN. Because of this diversity, it was registered on the Ramsar list in November 2002 during the eighth meeting of the Conference of the Contracting Parties to the Ramsar Convention in Valencia, Spain. The lake, which has a surface area of 75 ha, is also variously polluted both by urban and industrial wastewater coming from the towns of Rouiba and Réghaia (heavily industrial areas), and by water traversing farmlands and causing the leaching of fertilizers and pesticides. The water pollution evaluation was carried out using physicochemical parameters to identify the nature of the pollutants and to measure the levels of pollution. The enrichment of nutrients in the lake water promotes changes such as increased production of algae, increased growth of macrophytes, and the degradation of water quality. This eutrophication causes the disappearance of susceptible species and the spectacular development of resistant species in their place. Pollution was thus detectable by measuring the levels of these resistant species, and the lake water appeared to be of very bad quality. Given the rate at which wastewater is discharged into the lake, the effect of dilution would not be enough to maintain the physico-chemical and biological pseudo-balance of the lake. The aim of this study is to determine the effects of this pollution on the ecosystem and to highlight the pollution bioindicators with a view to restoring the lake by ecobiological means.

Keywords: Environment; Water; Pollution; Biodiversity

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