

A Preliminary Assessment on Seasonal Variations of Quality Indicators of Tirana Lake

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Abstract: There are many factors influencing the condition of a lake including physical dimensions (morphometry), nutrient concentrations, oxygen availability, temperature, light, and fish species, etc. This work comprises results of the examinations of a number of indicators aiming to evaluate the environmental state of Tirana Lake water. Due to concerns about potential pollution resulting from watershed sources and adjacent increased human activities, investigation of the long-term changes in the trophic state of this lake was conducted during the period September 2011 - December 2012. Ammonia nitrogen ($\text{NH}_4^+\text{-N}$), soluble reactive phosphorus ($\text{PO}_4^{3-}\text{-P}$), nitrates and nitrites as well as physico-chemical parameters were analyzed every three months, in six different points of the lake. According to the results obtained, dissolved oxygen, phosphorus and ammonium nitrogen were found to be the primary limiting nutrients of the lake. Content of SRP and ammonium nitrogen resulted to be higher during June 2012, ranging from 24 to 65 $\mu\text{g.L}^{-1}$ and 0.28 to 0.44 mg.L^{-1} , respectively. Dissolved oxygen was found in low levels in samples collected during September 2011 (5.4 – 7.9 mg.L^{-1}) while high levels were found in winter and spring as well. Conclusively, estimation of the trophic state based on nutrient levels being present in waters of Tirana lake can classify it as a mesotrophic state ecosystem.

Keywords: *Trophic state, nutrients, Tirana Lake.*

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