TABACARIE LAKE WATER QUALITY MONITORING

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Abstract

Water quality monitoring is a very important task in environmental studies worldwide. The aim of this paper is to present original results concerning Tabacarie Lake water quality parameters monitoring in the last nine years. Tabacarie Lake is located in Constantza district on the Black seaside coast, having a surface of about 9.5x10⁵ m² and an average water volume of about 1.7x10⁶ m³. Eight sampling sites were established around the lake and analyses were carried out weekly, six months per year. Alkalinity, Chemical Oxygen Demand by potassium permanganate method (CODMn), Dissolved Oxygen (DO), Total and Calcium Hardness, Salinity and Sulfides were the monitored quality parameters, using standard titrimetric analytical methods according to Romanian regulations. The obtained data were processed using chemometric procedures and shown interesting patterns. The yearly averages of the quality parameters for all sampling sites ranged as follows: “p” alkalinity 0-1.03 meq/L, “m” alkalinity 4.39-7.23 meq/L, CODMn 2.17-18.02 mgO₂/L, DO 2.21-12.36 mg/L, total hardness 4.32-9.67 meq/L, calcium hardness 1.55-4.73 meq/L, salinity 0.23-0.51g/L and sulfides 0.85-0.99mg/L. The values of quality-monitored parameters are variable in quasi-large ranges, depending on the position of the sampling sites and the seasonal characteristics, but excepting sulfides all of them are in the limits imposed by the last regulations.

Keywords: lake water, alkalinity, CODMn, dissolved oxygen, hardness, salinity, sulfides

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