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The evaluation of hydrochemical parameters and lithological characteristics of sediments in some lakes from Danube Delta - Romania Study case: Matita, Babina, Rosu, Uzlina and Isacova Lakes - 2010.

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This study attempts to estimate the quality of water and sediments from five lakes of Danube Delta – Romania. Due to the great variety of plant and animal species, delta lakes are considered sensitive ecosystems which may become quite susceptible to anthropogenic influences.
The water and sediment samples were gathered from a considerable number of sampling stations during the two campaigns performed in the summer and autumn of 2010. Different techniques were applied to assay variations in surface waters and lacustrine sediment quality. Water samples measured parameters were: dissolved oxygen, temperature, electrical conductivity, total dissolved solids, pH, redox potential, nitrates, nitrites, phosphates, sulphates etc. The main lithological parameters studied were: total organic matter, carbonates and siliciclastic material.
The preliminary results indicate that these investigated lakes are quite influenced by external factors as: morphological features, climatic parameters (pressure, humidity, temperature, wind-speed, rainfall etc) and their position within the deltaic hydrological network. Performed analyses showed that the correlations between different parameters differ with respect to sampling station positions.
The physico-chemical characteristics of the lakes and connection canals show small variation ranges. In some sampling stations, lower concentration of oxygen and medium pH change from slightly alkaline to alkaline were incidentally observed. The registered data also confirmed the influences of seasonal characteristics. Chemical analyses do not show high values for nitrates, nitrites and sulphates. As regards to phosphate concentration we found out some higher values. In this respect, we have to perform other detailed chemical analyses in order to establish their origin in water. Overall the physico-chemical investigations reveal normal values, which are in agreement with environmental quality standards for surface waters.
Sediment cores present uniform profiles, being homogenous in color, varying from light grey brown to dark grey brown, showing sometimes gradual colored particular layers. The water content indicate a general decrease with depth, all cores having a high content of water in the top (fluffy sediments) which decrease downcore, where the sediments become more compact. The bottom sediment samples are quite similar in terms of sedimentology (textural and structural), belonging to the category which range from silty to silty clayey (fine and very fine) and sometimes sandy deposits. Every examined core presents an individual high percentage of organic matter at the top, a subsidiary low content of carbonates and the rest being represented by siliciclastic material.
The preliminary assessments performed in 2010 indicate that all five investigated lakes presents a normal environmental status for such water systems with no evident pollution trace. Further detailed chemical analyses are needed to argue the origin and mineralogical composition of organic matter and carbonates which were found out in these reservoirs.
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