

Nutrient Dynamics in Pre-Deltaic and Deltaic Lakes: A Comparative Study

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Abstract: This study aims to provide a comparative analysis of nutrient concentrations in two lakes with controlled hydrological regimes that are directly influenced by the Danube River. The lakes are differentiated by their distinct geographical settings: one located in a pre-deltaic area and the other within the deltaic zone. Eight chemical indicators were analysed in surface water samples collected seasonally between 2019 and 2023. The results show higher concentrations of nitrates and nitrites in Lake Fortuna, associated with its natural hydrological connectivity, whereas Lake Parcheș exhibited a higher proportion of organic nitrogen and phosphorus and better self-purification capacity. These findings suggest that the hydrological regime plays a significant role in nutrient dynamics and potential eutrophication risk.

Keywords: comparative analysis; Danube Delta; eutrophication; freshwater lakes; nutrients.

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