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CHARACTERIZATION OF LAKE GUAÍBA THROUGH PHYSICOCHEMICAL ANALYSES AFTER THE FLOOD

INTRODUCTION: The increase in extreme weather events, such as floods, has contributed to the degradation of water quality in several regions, causing significant impacts on public health and ecosystems. Therefore, studies focused on water monitoring and assessment are essential. OBJECTIVE: To characterize the water quality of Lake Guaíba (Porto Alegre, RS), through physicochemical analyses conducted at five sampling points in November 2024, in areas affected by the flood that occurred in May 2024. MATERIALS AND METHODS: Approximately 20 L of water were collected at each sampling point. The samples were subjected to physicochemical analyses according to established technical standards, determining the following parameters: pH, electrical conductivity, turbidity, phosphorus and ammonia concentrations, apparent color, and total dissolved solids. RESULTS: The results showed that pH values were within the recommended range, between 6.96 and 7.31. Electrical conductivity ranged from 28.90 to 340.00 µS cm^{-1}. Turbidity exceeded 5.0 NTU at all analyzed points, while apparent color ranged from 49 to 267 units. Phosphorus concentrations varied from 0.02 to 0.90 ppm, and ammonia concentrations ranged from 0.028 to 0.68 ppm. Regarding solids, total dissolved solids ranged from 4 to 92 mg/L, fixed solids from 1 to 71 mg/L, and volatile solids from 2 to 21 mg/L. CONCLUSION: Most pH values were within the recommended range for lacustrine waters. However, elevated levels of conductivity, turbidity, apparent color, phosphorus, ammonia, and total dissolved solids point to contamination and compromised water quality, with potential risks such as eutrophication and microbial presence. Continuous monitoring remains essential, particularly in post-flood scenarios. Compared to data collected during the flood, the results indicate signs of environmental recovery, although public health concerns still require attention.

Keywords: Flood; Climate change; Physicochemical parameters; Lake Guaíba; Environmental assessment.
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