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WATER QUALITY EVOLUTION AND CLASSIFICATION IN THE SÃO MARCOS RIVER/RS

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Water has significant economic and social value, being used for human supply, recreation, irrigation, among others. Maintaining its quality is essential to protect human health and ecosystems. At the national level, Federal Law No. 9.433/97 establishes the National Water Resources Policy, which establishes the need for water resources management, including the classification of water quality, citing CONAMA Resolution No. 357/05 as a reference for such. At the state level, CRH-RS Resolution No. 405/22 establishes the classification of the Taquari-Antas Hydrographic Basin based on CONAMA Resolution No. 357/05. Analyzing these resolutions, the São Marcos River, belonging to the Taquari-Antas Hydrographic Basin, should meet the limits established for Class 3 by 2022 and for Class 2 by 2032. In this context, the objective of this work was to verify the classification compliance of a section of the São Marcos River, based on data collected between the period of 2016 to 2023. Physicochemical and microbiological parameters data were collected at a point downstream of the São Marcos River Small Hydroelectric Power Plant (SHPP) dam, during the period of 2016 to 2023, totaling 11 sampling campaigns. The results obtained for pH, BOD, DO, Nitrate, Chlorophyll-a and Turbidity met the limits for Class 2 throughout the analyzed period. Thermotolerant coliforms remained above the limits established for Class 3 in the sampling campaigns from 2016 to 2020, however there is a trend of proximity to meeting the requirements for Class 2 in the last sampling campaign carried out (Aug/22 to Aug/23). Regarding phosphorus, the concentrations presented significant variations in the analyzed period, remaining above the limits established for Class 3 in 55% of the sampling campaigns conducted, however in the last sampling campaign (Aug/23) the result was below the limit defined for Class 2. Comparing the classifications of the sampling campaigns carried out in the years 2016 to 2023, there is a trend of improvement in water quality, and in the last sampling campaign (Aug/23) all parameters analyzed were in compliance with the classification.

Palavras-chave: Classification of water quality, water resources management, CONAMA Resolution No. 357/05

Apoio: UCS, PCH Rio São Marcos