SEASONAL VARIATIONS IN SOME ENVIRONMENTAL VARIABLES OF SELECTED INLAND

WATER BODIES IN NIGER STATE NIGERIA

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**ABSTRACT**

Niger state is blessed with a lot of inland water bodies including Numu Pond, Bosso Dam, Shiroro Dam, Dam, Kainji Lake, Chanchaga River, and a host-of others. These water bodies are important ecosystems since they are being used for irrigation purposes, domestic purposes such as washing, cooking, and bathing, fishing as source of livelihood, flood control and transportation. Physico-chemical properties of some of these inland water bodies in Niger state were investigated seasonally from the wet season of 2019 to the dry season of 2021 to determine seasonal variation, as well as providing a baseline data for monitoring water quality changes prompted by human induced factors. Surface water samples were collected and analyzed using standard methods, A two - way analysis of variance (ANOVA) was used to evaluate relationships between environmental variables and the inland water bodies with R-satistica. Findings revealed that mean temperature ranged from 28.2 to 30.3°C, neutral to weak alkaline pH range of 7.1 to 8.8, dissolved oxygen concentration (2.53-3.83mg/l) was marginally low while the BODs (0.75-1.13mg/l) was relatively high. The essential primary productivity nutrients, Nitrogen (0.25-2.0mg/I), Phosphate (0.11-1.64mg/l) and Sulphate (9.60-29.36mg/l) were relatively high in all the sampled inland water bodies. These inland water bodies are mostly oligomesotrophic in nature and thus require effective management strategies to ameliorate their status. Some of the physicochemical properties varied significantly (p<0.05) among the water bodies and with wide fluctuations across the seasons, however nearly all values obtained were within the recommended limit for fish production.

Keywords: Inland water bodies, seasonal variations, environmental variables, Human activities.