



VARIABILITY AND ASSESSMENT OF WATER QUALITY PARAMETER OVER SEASON IN THE COX'S BAZAR COAST OF BANGLADESH

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Master of Science in Fisheries Resource Management**

Department of Fisheries Resource Management

Faculty of Fisheries

**Chattogram Veterinary and Animal Sciences
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AUGUST, 2022

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The Author

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**This is to certify that we have examined the above Master's thesis and have
found that is complete and satisfactory in all respects, and that all revisions
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List of Abbreviations

PPT = Parts Per Thousand

PPM = Parts Per Million

Kg = Kilogram

mg/l = Milligram Per Litter

⁰C = Degree Centigrade

% = Percentage

cm = Centimeter

DO = Dissolved Oxygen

TDS = Total Dissolved Solids

No. = Number

CO₂ = Carbon Dioxide

ABSTRACT

The goal of the currently being examined dissertation is to provide a brief review of various physico-chemical characteristics of water with seasonal variations of the Bakkhali river estuary and Rezukhal estuary of Cox's Bazar coast of Bangladesh was cover the over season from March 2020 to February 2021. For research work, samples were obtained from Bakkhali river estuary and Rezukhal estuary sampling sites of the region. Seven physico-chemical parameters were examined during the assessment. It included the water's salinity, pH, DO, temperature, TDS, transparency, alkalinity. Average value ranges from salinity (23.72 ± 4.31)mg/l, pH (7.44 ± 0.76), DO (6.40 ± 1.02) mg/l, temperature (23.35 ± 5.16) °C, TDS (486.04 ± 67.32) ppm, transparency (47.5 ± 13.09) cm and alkalinity (196.45 ± 47.50) ppm respectively. No station or season-related significant variables were observed throughout the research period. However a seasonally significant relationship between temperature and salinity was observed. Additionally, while there is some variation in connection between all of the studied metrics, DO and pH had demonstrated a highly significant positive relationship. The results of seasonal variability of water quality measures, showed maximum during winter and monsoon seasons. Pre-monsoon, post-monsoon, and winter saw a rise in the amount of physicochemical parameters in water, whereas monsoon season saw a drop. In contrast, only TDS in the research period was increased during monsoon season due to pollution or inadequate rainfall. Physical and chemical parameters' variability has been calculated in accordance with plausible seasonal and geographic fluctuations. As a result, the study's findings had given researchers comparable insights into the water quality indicators in Bangladesh's coastal region, allowing for easier zonation of fishing and fish culture activities. It would be helpful for policymakers in improving management practices for maintaining water quality and conserving the fish population.

KEYWORD: Water Quality, Bakkhali River Estuary, Rejukhal Estuary, Seasonal Variation, Physico-chemical parameter.