

## Assessment of Water Quality in Marine Bathing Sites in Galle District, Sri Lanka

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The coastal area of the Galle District is facing a serious environmental challenge as a result of unwelcome polluting of its seas by various wastes. The overall objective of this study was to determine the current status of water quality along the coastal line in the Galle District, Sri Lanka. Furthermore, an attempt was made to make recommendations for reducing pollution levels. The study was carried out from December 2021 to February 2022, with monthly sampling taking place in a designated coastal area from Benthota to Ahangama. Temperature, pH, turbidity, conductivity, total dissolved solids (TDS), and salinity were measured in situ, and water samples were analyzed in the laboratory using standard procedures to evaluate Nitrate, Phosphate, Total Coliform, and Fecal Coliform levels. The average salinity level (33.95 ppt), Turbidity (2.5 NTU), TDS (23.71 mg/L), Nitrate level (0.03 mg/L), Phosphate level (0.845 mg/L), Total Coliform (27, MPN Index), Fecal Coliform (8.55, MPN Index) were below the maximum allowable limits of the ANZECC guidelines, according to the findings of the coastal water quality tests. Average pH ( $8.1 \pm 0.08$ ) was within the ideal ranges for above standards and an average value determined for Temperature ( $29.85 \pm 0.06$  °C) and Electrical Conductivity (50.055  $\mu$ S/cm) were much higher than the permissible threshold limits. According to the results, some sampling points were indicating the gross organic and inorganic pollution in selected marine bathing sites in Galle District coast. Furthermore, studies needed to assess heavy metal concentrations and monitor monsoon changes. While the community-based awareness programs should be implemented in the future, water quality data should be shared among relevant agencies for management decision-making. The study also recognized the need of implementing a sound management plan that includes coastal water quality monitoring and proper waste collection service.

Keywords: ANZECC, Coliform, Organic Pollution, Water Quality