

# Environmental monitoring of the Pericumã River using the GLOBE hydrosphere protocol.

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## Resumo da Pesquisa

This research proposal investigates how disorganized urban occupation affects the water quality of mangrove ecosystems in Turiçu, Maranhão. The study analyzes essential physicochemical parameters at points with different levels of anthropogenic pressure, seeking to generate scientific evidence linking inadequate sanitation to impacts on public and environmental health.

## Introduction

The mangroves of Turiçu face increasing pressure due to unplanned urbanization. Local communities depend on fishing and shellfish harvesting in these potentially contaminated waters, creating a cycle of environmental and socioeconomic vulnerability that demands urgent attention.

## General Goal

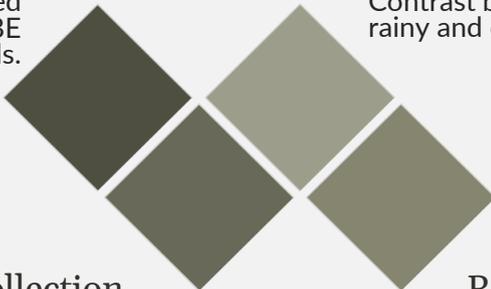
To analyze the physical-chemical characteristics of water in urban areas within the mangrove swamp, as well as to compare the results of 3 different samplings, carried out at 3 sampling points: the first sampling in a highly occupied area, the second sampling in a medium-occupied area, and finally, the third sampling in a low-occupied area.

## Specific Goals

- 1. To gather data on the physical and chemical quality of mangrove water in urban areas.
- 2. To highlight the environmental impacts caused by improper occupation in mangrove areas, raising public awareness about the proper disposal of waste, as well as the harmful effects of improper disposal, emphasizing the need for more effective public policies in this area.

## Physicochemical Analysis

Parameters measured following GLOBE protocols.



## Seasonal Comparison

Contrast between rainy and dry periods.

## Sample Collection

Samples at three levels of urban density.

## Risk Assessment

Impacts on the health of the local community.

## Metodologia de Pesquisa

The study employs a multi-parametric approach to assess water quality at three sampling point categories, differentiated by the level of urban pressure. Sample collection considers seasonal variations between rainy and dry periods, allowing for a comprehensive analysis of anthropogenic impacts.

In addition to environmental monitoring, the research incorporates an assessment of the risks perceived by the local population, whose livelihoods depend directly on these aquatic ecosystems.

## Expected Results and Impact



### Scientific Evidence

Generating concrete data that establishes the connection between inadequate sanitation in informal settlements and the degradation of water quality in mangroves.



### Community Awareness

Increasing local awareness of the environmental and public health risks associated with the contamination of waters used for fishing and shellfish harvesting.



### Basis for Public Policies

Providing technical and scientific support for advocating for improvements in sanitation, urban planning, and mangrove conservation with public administrators.

☐ **Alignment with the UN SDGs:** This work directly contributes to achieving SDG 6 (Clean Water and Sanitation) and SDG 14 (Life Below Water), promoting environmental sustainability and the well-being of coastal communities.

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Parameters Analyzed

pH, dissolved oxygen, nitrate, salinity, and electrical conductivity.

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Density Levels

High, medium, and low urban pressure at collection points.

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Períodos Sazonais

Seasonal periods