

Environmental monitoring of the Pericumã River using the GLOBE hydrosphere protocol

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Summary

This innovative citizen science project engages high school students in systematic environmental monitoring of the Pericumã River using standardized GLOBE protocols. Through monthly water quality assessments measuring pH, dissolved oxygen, nitrate, conductivity, and salinity, students generate robust scientific data while developing critical scientific literacy and environmental awareness.

Research Introduction

The Pericumã River in Pinheiro, Maranhão faces increasing environmental pressures from urbanization and inadequate sanitation infrastructure. This research bridges the gap between scientific investigation and community action by empowering local students to become active environmental stewards while generating valuable data for policy advocacy.

Research Objectives

- Generate localized water quality dataset
- Identify spatial and temporal pollution patterns
- Train students as citizen scientists
- Assess educational impact on scientific literacy
- Inform local sanitation policies

Expected Results

- Robust environmental health assessment
- Enhanced student scientific literacy
- Increased environmental awareness
- Evidence-based policy recommendations
- Community-driven conservation action

Methodology

- Monthly water quality assessments
- Standardized GLOBE hydrosphere protocol
- Student-led data collection and analysis
- Comprehensive training workshops
- Longitudinal monitoring approach

Alignment with Global Development Goals

This project directly contributes to the Sustainable Development Goals, creating a model for community-based environmental stewardship that can be replicated across similar contexts in Brazil and beyond. By combining rigorous scientific methodology with educational empowerment and policy advocacy, it demonstrates how local action can drive meaningful environmental and social change.



SDG 6

Clean Water & Sanitation



SDG 4

Quality Education