



# Wetland Health Indices in Ecological Restoration Projects within the Kafue Flats, Zambia: A Five-Year Longitudinal Study

Chilufya Mwale<sup>1</sup>

<sup>1</sup> Mulungushi University

**Published:** 21 November 2009 | **Received:** 15 July 2009 | **Accepted:** 19 October 2009

**Correspondence:** [cmwale@yahoo.com](mailto:cmwale@yahoo.com)

**DOI:** [10.5281/zenodo.18896790](https://doi.org/10.5281/zenodo.18896790)

## Author notes

*Chilufya Mwale is affiliated with Mulungushi University and focuses on Environmental Science research in Africa.*

## Abstract

The Kafue Flats in Zambia are a significant wetland ecosystem facing ecological challenges that threaten its biodiversity and health. A longitudinal study using remote sensing data and field surveys to track changes in wetland health indicators at monthly intervals. Statistical models will be employed to analyse trends and patterns in the data. Significant improvements were observed in water clarity ( $r > 0.75$ ) and vegetation cover (increase of 20% from baseline). The restoration projects have had a positive impact on wetland health, with notable increases in both water quality and biodiversity. Continue monitoring and support for ongoing ecological restoration efforts to maintain the benefits observed. Consider integrating citizen science initiatives for broader community engagement. The empirical specification follows  $Y = \beta_{0+\beta}^{-} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Geographical Information Systems, Remote Sensing, Ecological Restoration, Biodiversity Indices, Longitudinal Analysis, Wetland Ecosystems, Indicator Development*

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