



FACULTY OF ENGINEERING.

DEPARTMENT OF WATER RESOURCES ENGINEERING.

FINAL YEAR PROJECT REPORT.

ASSESSMENT OF THE FECAL POLLUTION OF A RIVER.

A CASE OF RIVER PAGER KITGUM MUNICIPALITY.

By

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ABSTRACT

Over the past years river pager has been having fecal pollution leading to water quality deterioration. This research aims to assess the fecal contamination of river pager based on the three objectives; identification of different sources of contamination, simulating the temporal variation of fecal contamination and identification of appropriate mitigation measures.

Identification of different sources of pollution was done using questionnaires, assessment of different land uses and carrying out testing of fecal coliform at upstream, midstream and downstream. simulating of temporal variation was done by SWAT2012 version where SWAT was used to model bacterial contamination concentration. The model was calibrated and validated using SWAT-CUP software. the validated model was used to simulate temporal variation for the year 2022. The best management practices were done by scenario analysis in swat.

The different sources of contamination of rive pager were found to be open defecation, open dumping of waste in the river and livestock operation. The swat model shows a satisfactory results with NSE of 0.50 and R^2 0.54 for flow and NSE of 0.52 R^2 0.56 for bacterial model. The best management practice was watershed restoration from the swat scenario analysis and construction of sanitation facilities at the swimming sites from the questionnaires.

DECLARATION

DECLARATION

I OKEMOKOMA ANDREW hereby declare that this proposal was written by me and has not been utilized for any award by any individual in any learning institution.

Signature 

Date... 21/11/2024

APPROVAL

This is to certify that this final year report was written under the guidance of my lecturer mr. Sempijja bagala bryan on the topic "assessment of fecal pollution of a river"

SUPERVISOR

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DATE:.....24/1/2024.....

SIGN:..........

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The mitigation measures are

- Construction of sanitation facilities at the swimming sites and river sites
- Treatment of water before drinking by either boiling or chlorination.

9 Conclusion

-The different sources of pollution in river pager at the stretch of kitgum municipality are open defecation, livestock operation, open dumping in the river, and manure and fertilizer application

-there is a strong positive response between bacterial contamination of the river and the land use management practices.

River pager is fecal polluted and so the river management authority and all the stakeholders should set it a priority to implement this mitigation measures.

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