

“Population Growth Has Detrimental Impact on Water Quality of River Ruvingaci, Embu County, Kenya”

Harriet Osinya Okubala

A105/10680/2013

March, 2017

Abstract

Embu town has undergone unprecedented growth in population through rural urban migration and the institutions in the area. The increasing population and rapid urbanization has aggravated huge demands for clean water, but at the same time lead to encroachment of freshwater resources around them in search of settling land and agriculture. The objective of the study was to determine the effects of population growth on water quality parameters that indicate or determine the water quality of river Ruvingaci. Baseline water quality data from the year 2011 to 2016 was used to show water quality changes in the river. Sampling was done from 28th Feb 2017 to 1st March 2017, it was done from three points of the river; Mwiria upstream where there is a lot of farming activities, Ndunda middle of the stream and at Nairobi Embu bridge the downstream. A total of nine samples were analyzed at EWASCO's Mukangu treatment plant laboratory. The parameters that were selected include; turbidity, conductivity, phosphorous, temperature, nitrate, fecal coliform and total coliforms. The data was subjected to analysis of variance(ANOVA) using statistical analysis software(SAS) version 9.2. In the year 2011, turbidity of water in river Ruvingazi was 4.12, in this was much lower than that of 2016 and 2017 which were found to be 7.61 and 9.5 respectively. Conductivity increased from 2011 to 2014 but dropped in 2015 and 2016 Nitrates and Phosphates containing detergents. Fecal and total coliforms were found to increase consistently due to increased settlements along river and hence leachate from latrines or animal wastes led to increase in number of coliforms.

