

ABSTRACT

The study sought to analyse longitudinal and seasonal variations in physico-chemical properties of water quality in Sosiani River in Eldoret town, Kenya. An experimental design was used to collect water samples upstream midstream and downstream of Eldoret town for a period of one year during the dry and wet seasons. Samples were collected from effluent discharge points in accordance with APHA, 2012 water sampling procedures. Sosiani River exhibited significant variation in physico-chemical water parameters along the river and during rainy seasons. TSS varied significantly across the river at $F= 185.52$ $P < 0.001$ and during the wet season ($P < 0.045$). TDS varied significantly along the river ($F= 59.0129$ at $p < 0.001$) with a significant positive correlation at $P < 0.001$ during wet season. Turbidity varied significantly along the sampling points $F= 32.41$ $P < 0,001$ and varied significantly $p < 0.028$ during the rainy season. BOD varied significantly along the river ($F= 78.95$ & $P < 0.001$) with a significant positive correlation $P < 0.038$ during the rainy season. COD varied significantly along the river ($F=77.64$ & $P < 0.001$) and during wet season. Water temperature varied significantly along the river ($F=185.52$, $p < 0.001$) and with the onset of the rainy season ($P < 0.013$). Water pH varied significantly along the sampling points ($F= 159.85$ & $P < 0.001$). However, pH did not vary significantly during the wet season ($P < 0.616$). This river is polluted, turbid with low dissolved oxygen and high BOD hence not suitable for aquatic life. However the water quality improves downstream perhaps due to self cleansing ability of the river. Hence the water is not suitable for human consumption and or recreation purposes. The water should be treated and municipal effluent channelled into effluent treatment works for pre-treatment.

Keywords

National Environment Management Authority