

Title: Changes in the physico-chemical parameters of the university dams

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Abstract

Located in Embu County, at the southern side of Mount Kenya, there are four water reservoirs in the University all of which are connected to each other in a series. These dams have received little scientific attention to describe the changes in the physico-chemical properties as a result of increased human activities. This study examined variation of physico-chemical properties within a period of three months from November 2018 to February 2019 on a weekly basis that covered both the wet and dry period. Conductivity mean values ranged from 137.03 to 177.23 $\mu\text{S}/\text{cm}$ during different sampling dates and ranged from 155.3 to 179.8 $\mu\text{S}/\text{cm}$ in different dams. Temperature mean values ranged from 24.3 $^{\circ}\text{C}$ to 27.5 $^{\circ}\text{C}$ during different sampling dates and ranged from 24.4 $^{\circ}\text{C}$ to 27.2 $^{\circ}\text{C}$ in different dams. PH mean values ranged from 6.9 to 9.3 during different sampling dates and ranged from 7.6 to 8.2 in different dams. Secchi depth mean values ranged from 20.3 cm to 33.3 cm during different sampling dates and ranged from 19.9 cm to 36.2 cm in different dams. Salinity mean values ranged from 0.06 ppt to 0.08 ppt during different sampling dates and ranged from 0.07 ppt to 0.08 ppt in different dams. TDS mean values ranged from 14.04 mg/L to 18.83 mg/L during different sampling dates and ranged from 15.7 mg/L to 22.8 mg/L in different dams. Chlorophyll-a mean values ranged from 3.01 mg/L to 3.70 mg/L during different sampling dates and ranged from 3.00 mg/L to 3.70 mg/L in different dams. Physico-chemical properties and aquatic community structure strongly influence the quality of water and therefore its importance as a resource to the people living around the reservoirs.