

ABSTRACT

Water quality has been documented to affect the biology and well-being of fish. This study therefore investigated some aspects of *Oreochromis niloticus baringoensis* (Trewavas, 1983) fishery assessment and the influence of selected water quality parameters in two hot springs draining into Lorwai Swamp; Lake Bogoria Spa spring and Chelaba spring between the months of July and August, 2018. A total of 445 fish were collected; 244 from Lake Bogoria Spa spring and 201 from Chelaba spring using a seine net. Length Weight Relationship (LWR) was determined using Le Cren's equation; $W=aTL^b$ and Fulton's condition factor (k) determined using Ricker's equation; $100W/L^3$. LWR results indicated an isometric growth for fish from both springs. The mean (\pm SD) k values for fish in Lake Bogoria Spa spring were 2.02 ± 0.25 for the males, 2.02 ± 0.27 for the females and 2.00 ± 0.26 for both sexes. In Chelaba spring, the mean k values were 2.03 ± 0.21 for the males, 1.97 ± 0.25 for the females and 2.00 ± 0.23 for both sexes. These values indicated that the fish in these hot springs are in a very good condition and healthy status with k values above 1. Some of the selected water quality parameters indicated a positive correlation with the length, weight and Fulton's condition factor of *O. n. baringoensis* in the two hot springs.

Keywords:

Condition factor, Hot springs, Length-weight relationship, Lorwai Swamp, *Oreochromis niloticus baringoensis*, Water Quality