

## **Biological assessment of *Oreochromis niloticus* (Pisces: Cichlidae; Linne, 1958) in a tropical floodplain river**

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### **ABSTRACT**

Biological assessment of *Oreochromis niloticus* was conducted monthly between January, 2004 and December, 2006 in 3 zones [(Zone I: upper Cross River (savanna wetlands) Zone II: middle Cross River (savanna/forest wetlands) and Zone III: lower Cross River (forest wetlands)] along 200 km length of the inland wetlands of Cross River, Nigeria. Major items in the diet of *O. niloticus* were algae and plant 38 and 20.4% (Zone I), 21.7 and 18.0% (Zone II), 20.2 and 26.9% (Zone III), respectively. Diet breadth ranged from 0.820 - 0.913. Food richness and Gut Repletion Index were 12 and 100%, respectively. Sex ratio was 1: 1 (Zone I), 1:0.78 (Zone II) and 1: 0.89 (Zone III). Mean allometric coefficients (b) of the lengthweight relationship were  $2.194 \pm 0.215$  (Zone I),  $2.935 \pm 0.333$  (Zone II) and  $3.03 \pm 0.202$  (Zone III).

Fecundity varied from 70 eggs for fish (total length (TL) = 11.00cm and weight (W) = 37.9 g) to 502 eggs (TL = 25.8cm and W = 198.8g) in Zone I, 60 eggs (TL = 13.3cm and W = 19.8g) to 709 egg (TL = 26.5, W=317.0) in Zone II and 110 eggs (TL = 13.7cm, W = 24.0g) to 811 eggs (TL = 22.8cm, W = 278.8g) in Zone III. Relationship exists between fecundity and body size. Mean condition index ranged from  $0.770 \pm 0.128$  minimum for males at Zone I to  $1.188 \pm 0.157$  maximum also for males at Zone III. Therefore, male *O. niloticus* were in better condition than females and the forest wetlands of Cross River (Zone III) offered more favourable living conditions for the species than the savanna wetlands (Zone I and II).

### **Key words:**

Biological assessment, Cross River, inland wetlands, *Oreochromis niloticus*