Reproductive biology and feeding ecology of a predatory siluroid catfish; Bagrus docmac Forsk al (Pisces: Bagridae) in Winam Gulf of Lake Victoria, East Africa.
ABSTRACT

Studies on the breeding ecology of *Bagrus docmac* (Forsk) in the Winam Gulf of Lake Victoria have revealed that a single breeding period extends from October/November to January/February. These periods are characterized by the presence of a high percentage of 'spent' fish in the gulf. Females are slightly heavier than males in size and the sex ratio is 1:1 with a slight female preponderance. Males mature at a minimum length of 16 - 20 cm while females mature between 21 and 25 cm although fifty percent of males and females are mature at 25 - 30 cm and 30 - 35 cm respectively.

Fecundity varies from 25,000 - 100,000 and correlates positively with adult and ovarian sizes, but negatively with egg size (Adult wt: r = 0.91; Adult length, r = 0.50; ovary weight r = 0.88; Egg diameter, r = -0.81).

Onset of rainfall, which effects a rise in lake water level, seems to induce spawning and there is a correlation between lake water level and adult female gonadosomatic index (r = -0.83).
There was poor correlation between rising water level and $K$ - factor of adult individuals ($r = -0.31$ for males and $-0.55$ for females).

Studies on feeding have revealed that adults feed mostly on fish - *Haplochromis* spp. and *Engraulicypris argenteus*, whereas juveniles show obvious preference for benthic aquatic insects such as *Povilla* sp., *Chaoborus* sp., *Chironomus* sp., caenid and libellulid nymphs. *Bagrus docmac* shows a marked crepuscular feeding tendency, a feature characteristic of most visually-dependent predators which take advantage of the twilight environment for any successful feeding mission. There is a diel vertical migration of adult *Bagrus docmac*, rising to mid waters at night. The feeding migrations coincide with peak feeding time as well as the vertical ascent of their prey, *Engraulicypris argenteus* and *Haplochromis* spp. The former prey species rise to the surface water in pursuit of the migrating zooplankton which form the bulk of their food.

Although *Bagrus docmac* is reported to have a wide bathymetric distribution, present studies implicate water temperature and water depth as additional factors affecting
Catch composition analyses have not revealed any existence of a spatial competition between *Lates niloticus* and *B. docmac* - the two potential piscivores in the gulf. The two species have different tolerance capacity for various water depth. Conductivity is considered a negligible factor in distribution.

Gill parasites (mainly *Dolops ranarum*) were found in 34.6% of all adult cases, while only 14.5% of the juveniles were infested by the fish lice. The incidence of infestation increased with the size of fish. \((r = 0.75)\).

About 28% of adult *B. docmac* had mesenteric tissues infested with larval cysts of the nematode, *Eustrongylides* sp. Similarly, the incidence of infestation increased with age \((r = 0.92)\).

The adult cestode, *Polyonchobothrium* sp. infested the stomach of both adult and juvenile *Bagrus* sp. However, the tape worm infestation rate was not significant since only 6 out of 800 stomachs examined were found to contain this parasite. Leeches infested about 5% of this catfish.