

Aspects of the Reproductive Biology of the Reticulate Knife Fish, *Papyrocranus afer* (Gunther, 1868) In Lekki Lagoon, Nigeria

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Abstract : Sizes at maturity (L_{m50}), fecundity, sex ratio, and gonadosomatic indices (GSI) of the reticulate knife fish, *Papyrocranus afer*, collected from Lekki Lagoon, were investigated. A Total of 1154 specimens with standard lengths of 5.2-75.9 cm (mean = 34.86 ± 17.2 cm) and body weight of 7.9-1, 958.8g (mean = 249.12 ± 28.56 g) were collected by means of artisanal passive and active gears (traps, long lines, and nets) and examined. Sexes of fish specimens were determined macroscopically and microscopically after dissection. The length at which 50% of the fish population reached sexual maturity (L_{m50}) was considered as length at sexual maturity. Fecundity was determined by total counts of eggs; sex ratio by the proportion of males to females, while GSI was determined as gonad weight expressed as a percentage of total body weight. Results showed that the most frequently caught fish was 34.5cm long, while the sizes at maturity were 49.1cm (males) and 53.4cm (females). Matured specimens had characteristic urinogenital papillae prominent in males but vestigial in females. Sex ratio (1: 0.6; Male: female) was significantly different ($X^2(1) = 32.21, p < 0.0001$). Fecundity was low (mean 49 ± 17 eggs for a fish of 52.86 ± 7.53 cm); it increased with fish size ($r = 0.71$). Higher GSI during the rainy season with a peak in July (female: 0.44 ± 0.14 %; male: 0.22 ± 0.01 %) indicated seasonal/annual spawning. Low fecundity and annual spawning underlined the need for sustainable management of this species in Lekki Lagoon.

Keywords : breeding season, fecundity, gonad maturity, Lekki lagoon, *Papyrocranus afer*, sex ratio

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