

LENGTH-WEIGHT RELATIONSHIP AND CONDITION FACTOR OF *Anguilla bicolor bicolor* AND *Anguilla nebulosa nebulosa* IN SELECTED PERENNIAL RESERVOIRS OF ANURADHAPURA DISTRICT, SRI LANKA

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Catadromous freshwater eels migrate between freshwater and offshore spawning grounds to complete their life cycle. Globally, 19 species belong to the genus *Anguilla*. Two Sri Lankan species, *Anguilla nebulosa nebulosa* and *Anguilla bicolor bicolor*, were collected from the landing sites of eight perennial reservoirs in the North Central Province, namely Kalawewa, Rajanganaya, Nachcaduwa, Nuwarawewa, Mahakanadarawa, Mahavilachchiya, Padaviya, and Huruluwewa. A total of 138 eels were collected to ascertain the length-weight relationship and condition factor from July 2019 to January 2021. All statistical analyses were assessed at a 5% level using Microsoft Excel (2013). The total length and weight of the eels were measured to the nearest 0.01 g and 0.1 mm, respectively. Morphological identification was based on previously published body colouration and anodorsal parameters studies. Among the eels collected, most (111) of them was *A. nebulosa nebulosa* while the rest ($n = 27$) was *A. bicolor bicolor*. The mean total length and body weight of *A. nebulosa nebulosa* were 71.1 ± 13.3 cm and 824.5 ± 519.8 g, respectively, whereas those of *A. bicolor bicolor* were 66.0 ± 11.8 cm and 663.4 ± 362.8 g, respectively. The length-weight relationship of *A. nebulosa nebulosa* was $TW = 0.0052 \times TL^{2.7803}$ and that of in *A. bicolor bicolor* was $TW = 0.0181 \times TL^{2.4894}$. Estimated r^2 and p values of *A. nebulosa nebulosa* and *A. bicolor bicolor* were 0.7719, >0.05 and 0.8683, <0.05, respectively. Estimated "b" values (regression slope) of *A. nebulosa nebulosa* and *A. bicolor bicolor* were 2.7803 and 2.4894, respectively. The present results indicate an isometric growth in *A. nebulosa nebulosa* and negative allometric growth in *A. bicolor bicolor*. The relative condition factor (K_n) for *A. nebulosa nebulosa* and *A. bicolor bicolor* were 1.0559 ± 0.7002 and 1.0140 ± 0.1895 , respectively. Results of the present study show that K_n values of both species lie between 1 and 1.5, indicating fatness and good growth conditions in the two species.

Keywords: Anguillid eels, Condition factor, Fisheries management, Length-weight relationship, Stock assessment