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**Habitat Requirements of The Endemic Sri Lankan Green Pit Viper
(*Peltopelorus trigonocephalus*) in Sri Lanka**

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Abstract

Habitat use of *Peltopelorus trigonocephalus* was studied in the main three climatic zones of Sri Lanka from April 2021 to October 2024. *P. trigonocephalus* is an endemic viper, locally known as “Palapolaga”. This species shows wide distribution in the island, except in the higher hills and arid zones. Three macro-habitat types were considered during sampling; forest, riparian, and open habitat. Visual encounter surveys were conducted to observe *P. trigonocephalus* along a 200 m transect searching up to 2 m on either side and up to a height of 6m. The first sighting of *P. trigonocephalus* was recorded, and the perches used by this species were categorized based on their structural characteristics. The height of the perch was measured. The position of *P. trigonocephalus* on the branch was categorized into three distinct sections: apical, proximal, and middle. Data on 68 individuals of *P. trigonocephalus* were recorded. Majority of these individuals (71.42%) were observed in riparian habitats. Most preferred perch height for *P. trigonocephalus* during the diurnal was within the mid-story range of 3-6 m, making up 42.85% of total encounters. The majority of *P. trigonocephalus* individuals (60.78%) were found in the apical region of the branches, with 36.4% occupying the middle region. A very strong positive linear relationship was observed between snout-to-vent length (SVL) and branch circumference, with a Pearson correlation coefficient of 0.969. The correlation is statistically significant ($p=0.00$), suggesting that *P. trigonocephalus* select branches based on their size. For ambush behavior, trees were the most frequently utilized substrate, with 80% of individuals observed using them for this purpose. This study provides important insights into the conservation and management of *P. trigonocephalus* by critically evaluating its differing habitat requirements. Preservation of its natural habitats and enrichment of ex situ habitats can be achieved through these findings.

Keywords: *Climatic zones, Macro-habitat, Perch selection, Peltopelorus trigonocephalus*