

(113)

**Habitat Utilization and Behavioral Patterns of the Endemic Sri Lankan Green Pit Viper
(*Craspedocephalus trigonocephalus*) in the Wet Zone of Sri Lanka**

Dhananjani D.M.T., Mahaulpatha W.A.D.*

Department of Zoology, University of Sri Jayewardenepura, Nugegoda, Sri Lanka

**mahaulpatha@sjp.ac.lk*

Abstract

Behavioral patterns and habitat utilization of the endemic Green Pit Viper (GPV) *Craspedocephalus trigonocephalus* were studied in the wet zone of Sri Lanka. The region, which is covered by the wet zone, has no significant dry periods and a moderately high mean annual rainfall of over 2,500 mm. Data collection occurred between April 2021 and March 2022 with a total of 260 hours of standardized sampling effort distributed throughout the collection period. The method used was an active search which consists of a visual search of up to six meters from the central line along each side of the quadrat. Quadrats were placed in habitats, taking each GPV sighting as the center of a quadrat. At each GPV-occupied quadrat, ambient temperature, body surface temperature, prey availability, perch position and perch light level were recorded. The day was divided into six-time periods as; early morning, morning, mid-day, evening, late evening, and night. Activity level was determined considering the number of GPV that could be visually observed. A total of 49 GPV were examined during the study. Focal animal sampling was conducted, and an ethogram was developed. A strong positive relationship was observed between ambient temperature (T_a) and body surface temperature (T_s) of GPVs (Pearson correlation $r=0.936$). The highest number of individuals preferred filtered sun light (57.14%). *C. trigonocephalus* mostly preferred distal position on the branches followed by middle and apical. There was a significant difference in the percentage of individuals with different behaviors [ANOVA, $F=3.64$, $p<0.05$]. Behavioral pattern of GPV varied in the temporal scale during the day. During the morning time slot, *C. trigonocephalus* spent most of the time ambushing (16.12%) and basking (6.42%) respectively. During the mid-day they spent most of their time basking (10.57%), followed by resting (7.15%). The evening, late evening, night, and early morning slots were spent mostly on ambushing. The highest average time of 239 min was spent on ambushing behavior. Feeding behavior (9.8 min) had relatively short time on average. Results of this study indicate that *C. trigonocephalus* is well adapted for the utilization of its preferred habitat in the wet zone, and that, it displayed behavioral patterns that vary within temporal scales, which results in more efficient and effective utilization of resources. Therefore, this study provides important insights for conservation and management of *C. trigonocephalus* by critically evaluating the requirements of this species.

Keywords: *Craspedocephalus trigonocephalus*, Behavior, Endemic pit viper, Wet zone