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Habitat Preference of Gunther's Rough-Sided Snake (*Aspidura guentheri*) in Horagolla National Park, Sri Lanka

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Abstract

Habitat preference of endemic Guenther's rough sided snake (*Aspidura guentheri*) in Sandy Soil Forest Habitat (SSFH), Muddy Soil Forest Habitat (MSFH), Stream Adjacent Forest Habitat (SAFH) & Grasslands (G) in Horagolla National Park was studied from January 2015 to December 2015. The head scalation and general habitus easily distinguish the small *A. guentheri* from all other *Aspidura* sp. in Sri Lanka. This relict burrowing species is extremely sub-fossorial. Patch sampling and quadrat sampling methods were used for the survey. Ten, 5m ×5m quadrats were marked across each of the selected habitat types and the snakes were observed within the marked quadrats. *A. guentheri* census was carried out in three consecutive days per month throughout the year and all snakes observed were hand captured, measured and categorized as adults, sub-adults and juveniles. During the survey, 71 individuals were recorded. Habitats selected by snakes in the four areas were significantly different in the national park, all individuals occupied areas with SSFH (85.66±4.33% of the total) and MSFH (14.33±3.2%). There was no individuals recorded in SAFH and Grassland. At the microhabitat level, snakes' probability of occurrence was positively correlated with percentage canopy cover, relative humidity and leaf litter moisture content. Significantly higher relative humidity level existed in SSFH when compared to the other habitat types [ANOVA, F=5.65, P<0.05]. SSFH has the preferred humidity for *A. guentheri* during all seasons. Relatively high substrate moisture contents were recorded in second inter monsoon season in SSFH (n=16, 80.00±9.20%). There was a significant difference in canopy cover among forest habitats and grassland. Grassland had the minimum canopy cover and SSFH had the maximum canopy cover in all four seasons (ANOVA, p<0.05). The high amount of leaf litter and minimum solar radiation at this site may have created a suitable environment towards the preferability of *A. guentheri* population. So, the marked preference for above habitats, and the response to particular microhabitat features, emphasizes the importance of a mosaic of habitats for the conservation of this snake population.

Keywords: *Aspidura guentheri*, Relict, Sub-fossorial, Relative humidity, Leaf litter moisture content, Conservation, Sri Lanka