

# Microhabitat preference of endemic, endangered Black-cheek lizard (*Calotes nigrilabris*) in the grasslands of Horton Plains National Park in Sri Lanka

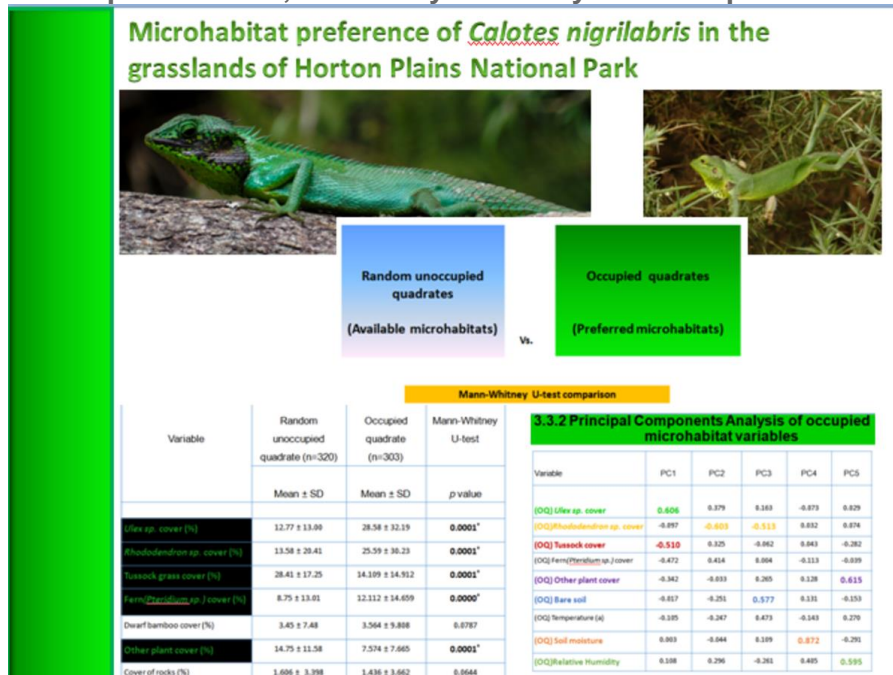
Presented by

**Jayasekara E.G.D.P.**

University of Sri Jayewardenepura - Sri Lanka

Co-authors

**Mahaulpatha W.A.D;** University of Sri Jayewardenepura - Sri Lanka



**Keywords:** *Calotes nigrilabris*; Endemic lizard; Horton Plains National park; Grasslands; Microhabitat preference

**Introduction:** *Calotes nigrilabris* is an endemic, endangered lizard species, restricted to a few localities in the central highlands of Sri Lanka and is the only agamid species found in montane high altitude grasslands of the island. This study was focused on the microhabitat preference of this species to help conservation and management of its small populations. Association of endangered *C. nigrilabris* with the “wet patana” grasslands of Horton Plains National Park has long been observed and it was interesting to study how this species utilize this unique grasslands habitat which was subjected to human interferences from time to time.

**Methods/ Materials/Methodology:** What were the main research methods you used? Microhabitat preference of *Calotes nigrilabris* inhabiting the “wet patana” grasslands of Horton Plains National Park was studied utilizing visual encounter surveys along 3 fixed length line-transects of 200m each from January to December of 2016. When

the lizards were observed, microhabitat parameters in which they were seen were recorded by placing 1 x 1 m quadrates (occupied quadrates, 303) taking the perching site of the lizard as the center. Availability of different microhabitat conditions were studied using random 1 x 1 m quadrates (unoccupied quadrates, 320) along the transects. Variables of random unoccupied and occupied quadrates were compared using Mann-Whitney U-test and significantly different variables of occupied quadrates were further analyzed using Principal Components Analysis (PCA).

**Results/ Findings/Argument Development: What are the main results/findings of your study?** There was a significant difference between available habitat variables and occupied microhabitat variables (Mann-Whitney U-test,  $p < 0.05$ ) indicating that *C. nigrilabris* was selective in its microhabitat utilization. Amount and type of vegetation was the main determining factor of microhabitat preference of this species. Microhabitats with high percentage cover of *Ulex europaeus* (PC1, 0.606) and *Rhododendron arboretum* (PC2,-0.603; PC3, -0.513) were preferred by *C. nigrilabris*. Bare soil percentage, ambient temperature, relative humidity and soil moisture percentage were also significantly different in occupied quadrates.

**Discussion/Synthesis and conservation relevance: Discuss and synthesise your results and the relevance of your findings for conservation practice/science.** The results of this study indicate that *C. nigrilabris* is selective and well adapted for the utilization of grassland microhabitats of Horton Plains National Park. Furthermore microhabitats with rich vegetative cover of *Ulex europaeus* and *Rhododendron arboretum* were providing these lizards protection from their predators and also serve as rich sources of prey species. Interestingly *Ulex europaeus* is considered an invasive species. Therefore this study provides important insights with respect to microhabitat preference of endangered *C. nigrilabris* for the conservation and management of the species as well as its natural habitat as a whole.