

AVAILABILITY OF TREE CAVITIES FOR AVIAN CAVITY NESTERS IN TROPICAL MONTANE CLOUD FORESTS AT HORTON PLAINS

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ABSTRACT

Tree cavities play a critical role in the life history of cavity-using species and thus are an important structural feature of forests. This is the first study to address cavity resources in tropical montane cloud forests in Sri Lanka. Therefore, nest-site availability of cavity nesting bird species was studied at the Montane Cloud Forests of Horton Plains, situated in the highland plateau of the Nuwara Eliya district. Study was conducted from September 2016 to May 2018 in three consecutive days per month. Two habitats were selected as Cloud Forest (CF) and Cloud Forest Die-back (CFD). Line transect method was used. All cavities were recorded and locations were marked using GPS device. Cavity nests were located by searching the vegetation along transects. Tree species, nest cavity height, diameter at breast height (DBH) were measured. Greater flameback (*Chrysocolaptes iucidus*) and Red-backed wood pecker (*Dinopium benghalense psarodes*), Lesser yellownape (*Celeus brachyurus jerdonii*), provided different sizes of nest cavities for a suite of non-excavator species like Dull-blue flycatcher (*Eumyias sordidus*), Velvet-fronted nuthatch (*Sitta frontalis*), Sri Lanka yellow-fronted barbet (*Megalaima flavifrons*). Total of 354 tree cavities were located. Live trees and snags with DBH >45cm were favored as nest sites by all species. This study indicates that cavities are an uncommon feature even in pristine habitats with only 4.5% of the trees harboring cavities in both habitat types. Even more uncommon are potentially usable cavities for avian cavity nesters. Only 2.98% of the trees have a potentially usable cavity in the CF and only 1.42% in the CFD. In CFD there is a significantly lower density of potentially usable cavities (2.98 vs. 2.8 cavities/ha in CF and 1.42 vs. 1.1 cavities/ha in CFD). More specifically, in the CFD, large, decaying *Rhododendron arboreum* have a relatively greater probability of having potentially usable cavities, while in the cloud forest potentially usable cavities are disproportionately found in large, decaying *Cinnamomum ovalifolium*. *Neolitsea fuscata*, *Glochidion pycnocarpum* were the other possible species with cavities. In both habitats, snags are also very likely to harbor a potentially usable cavity. In order for habitats of the montane regain and some of their ecological value, it is necessary to protect the trees with highest probability of becoming usable cavity trees. CFD habitats were much more extensive than CF habitats, but birds strongly preferred CF as nesting habitats, presumably due to the availability of nesting sites. Since the cloud forests of Sri Lanka are under various threats and specifically since the cloud forest of the Horton Plains are susceptible to forest die back every action should be taken to preserve the cloud forests as they present the last habitat for most montane avifauna throughout the island.

Key words: Tropical Montane Cloud Forests; cavity nesters; nest site availability; Horton Plains; Sri Lanka