

Nest Site Selection, Cavity Characteristics, and Cavity Use of *Dinopium* Flamebacks in Sri Lanka

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Abstract

Ecology of *Dinopium flamebacks* (woodpeckers) in Sri Lanka is not fully comprehended. This study investigates the nest site selection, cavity characteristics, and cavity-use by secondary cavity users of *Dinopium flamebacks* in Sri Lanka. Two square kilometer areas in Kaduwela, Eppawala, and Talaimannar were used as the study sites. Nests were located using the line transect method, while cavities were studied using a USB-android endoscope camera. Coconut, Rain (Maara), and Palmyra (Thal) trees were prominently chosen by these flamebacks for nesting, constituting 64%, 50%, and 75% of nests in Kaduwela (n=33), Eppawala (n=52), and Talaimannar (n=40) respectively. We found a range of heights and tree species utilized by *Dinopium flamebacks* for nesting (n=133), ranging from 6 feet in a betel nut tree to 50 feet in a palmyra tree. Active nest sites (n=7) exhibited 31.49 ± 20.04 % canopy cover, 6.07 ± 0.32 cm nest opening diameter, 61.85 ± 24.50 cm nest hole circumference, 37 ± 9.90 cm nest chamber height, and 4.99 ± 2.73 m nest-to-ground distance, with circular or oval-shaped openings. 57.14% of active nests (4 out of 7 in Kaduwela and Eppawala) were encircled and camouflaged by vines. Nest density varied based on habitat, with higher densities observed in coconut plantations in wet and arid zones and in forest habitats in the dry zone (Two-way ANOVA, $p = 0.02$, $n = 102$). Rose-ringed parakeets (*Psittacula krameri*) were identified as a major invader, accounting for 51% of observed nest takeovers. Studying nest site characteristics is crucial for comprehending nesting behaviour and habitat requirements. This knowledge is useful for designing effective conservation strategies and preserving suitable habitats for cavity-nesting communities.

Keywords: *Dinopium*, *Flamebacks*, *Nest site selection*, *Secondary cavity nesters*, *Sri Lanka*