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STUDY OF MIXED-SPECIES FORAGING FLOCKS IN FOREST PATCHES OF NONPAREIL ESTATE, BELIHULOYA

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Mixed-species foraging flocks (MSFFs) represent a key ecological phenomenon that enhances foraging efficiency, predator avoidance and interspecific cooperation, among birds. This study aimed to explore the composition, structure, species roles, and habitat associations of MSFFs within the intermediate zone forest patches and plantations of Nonpareil Estate, Belihuloya, Sri Lanka, between February and April 2025, during 06:00 – 09:00 h. Field observations revealed a total flock richness of 21 – 26 species, with dominant species including the red-vented bulbul (*Pycnonotus cafer*; relative abundance 10.79%, mean 8.62±8.86 individuals, mean participation (85.72±27.14)%), Sri Lanka White-eye [*Zosterops ceylonensis;* relative abundance 9.85%, mean 7.88±3.75 individuals, mean participation (84.29±19.64)%], and pale-billed flowerpecker (*Dicaeum erythrorhynchos;* relative abundance 7.19%, mean 5.75±2.50 individuals, 100% participation). The white-bellied drongo (*Dicrurus caerulescens*) was identified as both a nuclear and sentinel species due to its central position in flocks, high vigilance, and frequent alarm calling, while the orange minivet (*Pericrocotus flammeus*) also served as a nuclear species. The red-vented bulbul acted as a leading species, often initiating flock movement. Regular participants with moderate flocking indices (0.30 – 0.59) were mostly midstory dwellers, whereas occasional participants (0.05 – 0.29) occurred in the understory, canopy, and ground layers. MSFFs were most frequently observed in edge habitats and remnant forest patches near human settlements, whereas monoculture plantations (*Eucalyptus* and *Pinus*) did not support flock formation. One isolated flock was identified in a riparian zone near Hirikatuoya River, characterised by open grassland and scattered canopy. The study contributes baseline ecological data on MSFFs in the intermediate zone of Sri Lanka. It enhances understanding of species-specific roles, habitat preferences, and spatial flocking patterns. These findings are important for conservation planning, especially in fragmented habitats, and serve as a reference for comparative studies across other ecosystems in the Wet Zone and the Central Highlands, particularly in the face of ongoing climate and land-use changes.

Keywords: Flock participation, Habitat preferences, Mixed-species foraging flocks, Species composition, Sri Lanka