



Assessment of Faunal Diversity in the College Campus of S. T. Hindu College, Nagercoil, Tamil Nadu, India

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KEYWORDS

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ABSTRACT:

Introduction: Biodiversity assessment in semi-urban educational campuses is essential for understanding local ecological health, species richness, and the conservation value of managed green spaces.

Objectives: The present study aimed to document the faunal diversity of a College Campus in Tamil Nadu using the Visual Encounter Survey (VES) method from September 2024 to December 2024.

Results: A total of 62 species belonging to three phyla—Arthropoda, Mollusca, and Chordata—across six classes and multiple orders were recorded, with Arthropoda being the most dominant phylum (58 species). Insecta exhibited the highest species richness (54 species), followed by Arachnida (3 species), Gastropoda (1 species), Aves (2 species), and Reptilia (2 species). These findings underscore the ecological significance of semi-urban green spaces and highlight the need for conservation strategies such as habitat enrichment, pollution control, and biodiversity awareness initiatives.

Conclusion: The study provides baseline data that can support long-term ecological monitoring and conservation planning.

1. Introduction

Biodiversity plays a crucial role in maintaining ecological balance and supporting ecosystem services essential for human well-being [1, 2]. Urban and peri-urban landscapes, though often fragmented, contribute significantly to regional biodiversity by harboring diverse faunal communities [3]. Educational institutions, with relatively undisturbed vegetation and microhabitats, offer ideal refuges for various taxa including insects, birds, reptiles, and mollusks [4].

In India, rapid urbanization has led to the loss of natural habitats, making campus ecosystems increasingly important for biodiversity conservation [5]. Studies conducted in academic campuses across the country have documented high diversity of insects and birds, highlighting their ecological value and conservation potential [6, 7].

The present study aims to assess and document the faunal diversity within the S.T.Hindu College Campus, providing baseline data for long-term ecological monitoring and campus biodiversity management.

2. Materials and Methods

Study Area

The study was carried out in the S.T.Hindu College Campus located in Knniyakumari District, Tamil Nadu. The campus consists of mixed vegetation such as trees, shrubs, grasses, and human-modified habitats including buildings, gardens, and aquatic microhabitats.

Sampling period

Sampling was conducted from September 2024 to December 2024, covering post-monsoon and early winter seasons.



Survey method

The Visual Encounter Survey (VES) method was adopted, a widely used approach for inventory and monitoring of fauna (Crump and Scott 1994). Observers systematically walked pre-defined transects for a fixed duration, scanning vegetation, walls, leaf litter, water bodies, and buildings.

Observations were made primarily between 6:00 am and 8:00 am, the peak activity period for most fauna.

Identification

Species were identified using:

- Morphological characteristics
- Field guides (Daniels 2005; Kunte 2000)
- India Biodiversity Portal
- Teacher assistance and peer-reviewed taxonomic literature

The study intentionally focused only on *presence* and not population estimation.

3. Results

A total of 62 faunal species were documented (Table 1), belonging to:

Arthropods constituted 93.5% of all species, with insects forming the majority. Lepidoptera was the richest order (14 species), followed by Coleoptera (6), Orthoptera (5), Hemiptera (5), and Hymenoptera (5), Odonata (4), Diptera (4), Araneae (4), Mantodea (3), Blattodea (1) and Zgentoma (1). Followed by, five class, such as Diplopoda, Arachnida, Gastropoda, Reptilia and Aves.

4. Discussion

The study revealed high arthropod dominance, which is consistent with previous biodiversity surveys conducted in semi-urban educational campuses [6, 7]. Insects thrive in a wide variety of microhabitats and respond quickly to environmental changes [8]. The dominance of Lepidoptera and Orthoptera suggests the presence of diverse host plants and adequate vegetation cover, similar to findings reported by Kunte [9] and Singh et al. [4].

The presence of predators such as spiders, praying mantis, and weaver ants indicates a balanced trophic structure within the campus ecosystem [10]. The detection of Red Palm Weevil (*Rhynchophorus ferrugineus*) also highlights the need for monitoring horticultural plants [11].

The low number of reptiles and birds may reflect habitat fragmentation due to buildings and human disturbance, a trend documented in other urban green spaces [3]. However, species such as *Hemidactylus frenatus* and *Centropus sinensis* demonstrate adaptability to human-dominated landscapes.

The presence of only one mollusk species (*Melolontha flavescens*) may be attributed to the dry climatic conditions, consistent with observations by Ramakrishna and Mitra [12].

Overall, the faunal richness recorded aligns with patterns reported in earlier campus biodiversity studies in India [4, 5].

Conclusion

The study documented 62 faunal species within the campus, with clear dominance of insects. The findings indicate that even small urban green spaces hold significant biodiversity value and can serve as micro-refugia for numerous taxa. These results provide baseline information for future ecological assessments.

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