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## A rapid checklist of avifaunal diversity in Lakshmipura village, adjoining Cauvery (North) Wildlife Sanctuary, Tamil Nadu

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### Abstract

We present a description of avian faunal diversity collected from a short-term survey conducted between May- June 2023 in Lakshmipura, a park-edge village located in northern Tamil Nadu. The survey aimed to assess the avian diversity in the area using an opportunistic observation approach. During the study period 51 species of birds, representing 33 families, were recorded. Among the observed bird families, the Cuculidae family emerged as the dominant group, with a total of (n=3) species. Diversity studies like these contribute towards assessing and recording patterns of avian biodiversity in the face of rapidly changing environments.

**Keywords:** Avifaunal diversity, Cauvery north wildlife sanctuary, opportunistic sampling

### Introduction

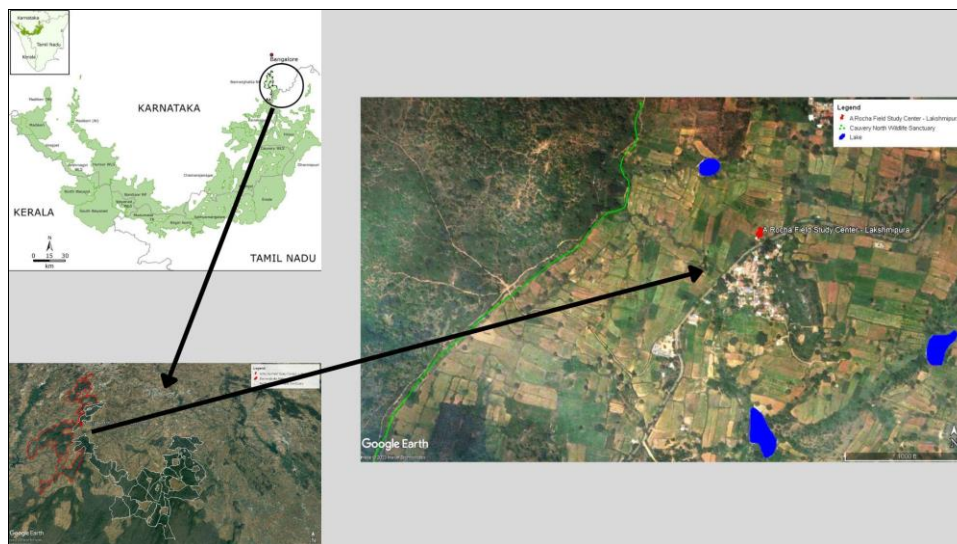
Understanding the range and richness of biodiversity in urban, peri-urban, and rural areas is important due to the large-scale conversion of habitats for anthropogenic requirements and increasing human populations. Birds provide various ecological functions such as pest control, plant reproduction, fertilization of soil, and conservation of biodiversity <sup>[15]</sup>, and occupy a diversity of habitats within a landscape. In India, urbanisation has been increasing at a steady rate which may impact local biodiversity. Urbanization has been found to positively impact bird communities <sup>[8]</sup> as well as negatively impact bird communities, where populations have been extirpated due to human development <sup>[6]</sup>. Thus, in important birding areas, it is important to document avian variety and density which would allow us to understand short and long-term patterns in biodiversity change. The present study was done in the North Cauvery Wildlife Sanctuary in northern Tamil Nadu. The North Cauvery Wildlife Sanctuary has a dry deciduous forest ecosystem. This ecosystem is favorable for birdlife as it accommodates a total of 268 species of birds <sup>[3]</sup>. Lakshmipura village which lies in the Krishnagiri district of Tamil Nadu lies at a confluence with Bannerghatta National Park (Karnataka) to the North and East, and the Cauvery North Wildlife Sanctuary (Tamil Nadu) towards the South, and West. Lakshmipura lies approximately 2 km from the boundary of Bannerghatta National Park and ~190 m from the forests of Cauvery North Wildlife Sanctuary. Thally, the taluk headquarters and a large town is 6km from Lakshmipura, making it an interesting peri-urban landscape. The predominant habitat type in the forests is mixed deciduous and scrub forests. The local communities largely practice pastoralism and agriculture. Thus, with a gradient of urban to rural built-up areas and forested landscapes, Lakshmipura offers a variety of micro-habitats with the potential to support a rich avian diversity. The adjoining protected area, Bannerghatta National Park also been designated as an 'Important Bird Area' <sup>[13]</sup> with approximately 222 species recorded.

### Materials and Methods

The present study was carried out in Lakshmipura, a village adjoining the inter-state elephant corridor of Thalli-Bilikkal (Fig 1) <sup>[4]</sup>. The landscape features a mosaic of habitat types viz. scrublands, aquatic ecosystems, agricultural areas, and built-up areas. fish, especially that of mercury.

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**Fig 1:** Study site

The study was conducted between 21<sup>st</sup> May to 9<sup>th</sup> June 2023 (19 days), during the pre-monsoon season. The observations were made across three intervals during the day- 8:00- 11:00, 15:00 – 17:00, and 18:00-20:00. These timings are found to be compatible with bird movement and ecology <sup>[1]</sup>.

Using a location (A Rocha field study center) as a mid-point the researcher walked in a random straight direction (ranging from 1 km to 2 km). During the random survey visual and auditory observations of birds were recorded. In instances where visual verification of the birds could not be made auditory observations were verified using the 'Merlin Bird ID' app by The Cornell Lab <sup>[2]</sup>.

**Results:** During the study, we were able to observe a total of 51 species of birds belonging to 33 families. The family Cuculidae (n=3) dominated the list with [Greater Coucal, Asian Koel, Common Hawk Cuckoo]. The families Ardeidae, Alcedinidae, Rallidae, Nectariniidae, Cisticolidae, Pycnonotidae, Bucerotidae, Strigidae, Megalaimidae, Columbidae, Corvidae, Accipitridae, Meropidae, Muscicapidae and Motacillidae had 2 species each and families of Sturnidae, Phalacrocoracidae, Psittaculidae, Anatidae, Passeridae, Dicruridae, Charadriidae, Phasianidae, Ploceidae, Coraciidae, Estrildidae, Caprimulgidae, Timaliidae, Campephagidae, Paradoxornithidae, Pellorneidae and Zosteropidae had 1 species each.

**Table 1:** Checklist of the birds found in Lakshimpura

S. No.	Common Name	Scientific Name	Family Name	IUCN
1	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	LC
2	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	LC
3	Cattle Egret	<i>Bubulcus ibis</i>		LC
4	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	LC
5	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	LC
6	White Throated Kingfisher	<i>Halcyon smyrnensis</i>		LC
7	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	LC
8	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>		LC
9	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Psittaculidae	LC
10	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	LC
11	Purple Sunbird	<i>Cinnyris asiaticus</i>		LC
12	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	LC
13	Grey-breasted Prinia	<i>Prinia hodgsonii</i>		LC
14	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	LC
15	White-browed Bulbul	<i>Pycnonotus luteolus</i>		LC
16	Indian Grey Hornbill	<i>Ocyrceros birostris</i>	Bucerotidae	LC
17	Spotted Owlet	<i>Athene brama</i>		LC
18	Indian Scops-Owl	<i>Otus bakkamoena</i>	Strigidae	LC
19	Mottled Wood Owl	<i>Strix ocellata</i>		LC
20	White-cheeked Barbet	<i>Megalaima viridis</i>	Megalaimidae	LC
21	Coppersmith Barbet	<i>Megalaima haemacephala</i>		LC
22	Spotted Dove	<i>Spilopelia chinensis</i>	Columbidae	LC
23	Rock Pigeon	<i>Columba livia</i>		LC
24	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	LC
25	House Crow	<i>Corvus splendens</i>	Corvidae	LC
26	Large-billed Crow	<i>Corvus macrorhynchos</i>		LC
27	Black Kite	<i>Milvus migrans</i>	Accipitridae	LC
28	Shikra	<i>Accipiter badius</i>		LC

29	Brahminy Kite	<i>Haliastur indus</i>		LC
30	Greater Coucal	<i>Centropus sinensis</i>		LC
31	Asian Koel	<i>Eudynamis scolopacea</i>	Cuculidae	LC
32	Common Hawk-Cuckoo	<i>Hierococcyx varius</i>		LC
33	Green Bee-eater	<i>Merops orientalis</i>		LC
34	Blue-tailed Bee-eater	<i>Merops philippinus</i>	Meropidae	LC
35	House Sparrow	<i>Passer domesticus</i>	Passeridae	LC
36	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	LC
37	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	LC
38	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	LC
39	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	LC
40	Oriental Magpie Robin	<i>Copsychus saularis</i>		LC
41	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae	LC
42	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	LC
43	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	LC
44	Indian Nightjar	<i>Caprimulgus asiaticus</i>	Caprimulgidae	LC
45	Indian Scimitar Babbler	<i>Pomatorhinus horsfieldii</i>	Timaliidae	LC
46	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	LC
47	White-browed Wagtail	<i>Motacilla maderaspatensis</i>		LC
48	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Campephagidae	LC
49	Jerdon's Bushlark	<i>Chrysomma altirostre</i>	Paradoxornithidae	LC
50	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	Pellorneidae	LC
51	Indian White-eye	<i>Zosterops palpebrosus</i>	Zosteropidae	LC

LC – Least Concerned

## Discussion

The study site offers a diverse range of ecosystems in the form of agricultural lands, fallow lands, forest habitat and aquatic systems. Habitat complexity has been found to affect richness and habitat selection of birds [14]. Farmlands have been found to affect the presence of frugivorous, insectivorous, and seed-eating bird species *viz.* bee-eaters, sparrows, pipits, and peafowls [10]. Similarly aquatic habitats such as ponds and lakes serve as micro-habitats for aquatic dependent species *viz.* cormorants, kingfishers, and egrets [9]. Waterbodies in urban and semi-urban habitats have also been found to host several aquatic species of birds. In addition, these aquatic ecosystems support a thriving population of insects, acting as a nutrient-rich food source for the avifauna [7] and the locations provide water sources and nesting sites for fledgling birds [16]. Notably, the presence of the invasive *Prosopis juliflora*, was observed in significant numbers in approximately 20 – 30% of the landscape. *Prosopis* has been found to negatively affect avian diversity [11] by altering bird assemblages and providing low-quality habitats for foraging and nesting. Further studies documenting the impact of invasive species on avian diversity need to be conducted over a longer duration.

## Conclusion

Despite the short duration of our study, we documented fifty-one bird species within the vicinity of Lakshmipura, underscoring the area's notable avian diversity and potential. Similarly, a village in northern Bannerghatta [12] recorded seventy-nine species belonging to forty-five families. A similar study in nearby Melagiri hills has recorded 212 bird species [5]. These findings provide a valuable baseline for further investigation into the avian biodiversity and ecological dynamics of Lakshmipura and its surroundings. Given the short-term nature of our investigation, our focus was primarily on conducting a checklist survey during a particular season. However, future studies need to be conducted to understand the spatial-temporal interactions between various avian communities and human activities, as these could help inform ecological patterns and conservation efforts

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## Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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