



A STUDY ON AVIAN FAUNA AT ACHARYA NAGARJUNA UNIVERSITY CAMPUS, GUNTUR

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ABSTRACT

Birds are the most prominent species of the earth's biodiversity and are very sensitive to environmental changes. Birds serve as excellent bio indicators for assessing the impacts of urbanization on biodiversity and play an important ecological role that benefits human populations. The present study was conducted at the Acharya Nagarjuna University campus, situated on nearly 300 acres of land. A total of 42 species of birds belonging to 8 orders and 25 families were recorded during the study period of one year (June 2019 to May 2020) at the Acharya Nagarjuna University campus, Guntur, Andhra Pradesh, India. Of all, the order Passeriformes was dominant (48%). Of all, the family Cuculiform was dominant (10%). The present study suggests that the Acharya Nagarjuna campus is sufficiently rich in avian fauna and species diversity.

Key words : Acharya Nagarjuna University Campus, Avian fauna, Passeriformes, Cuculiform.

INTRODUCTION

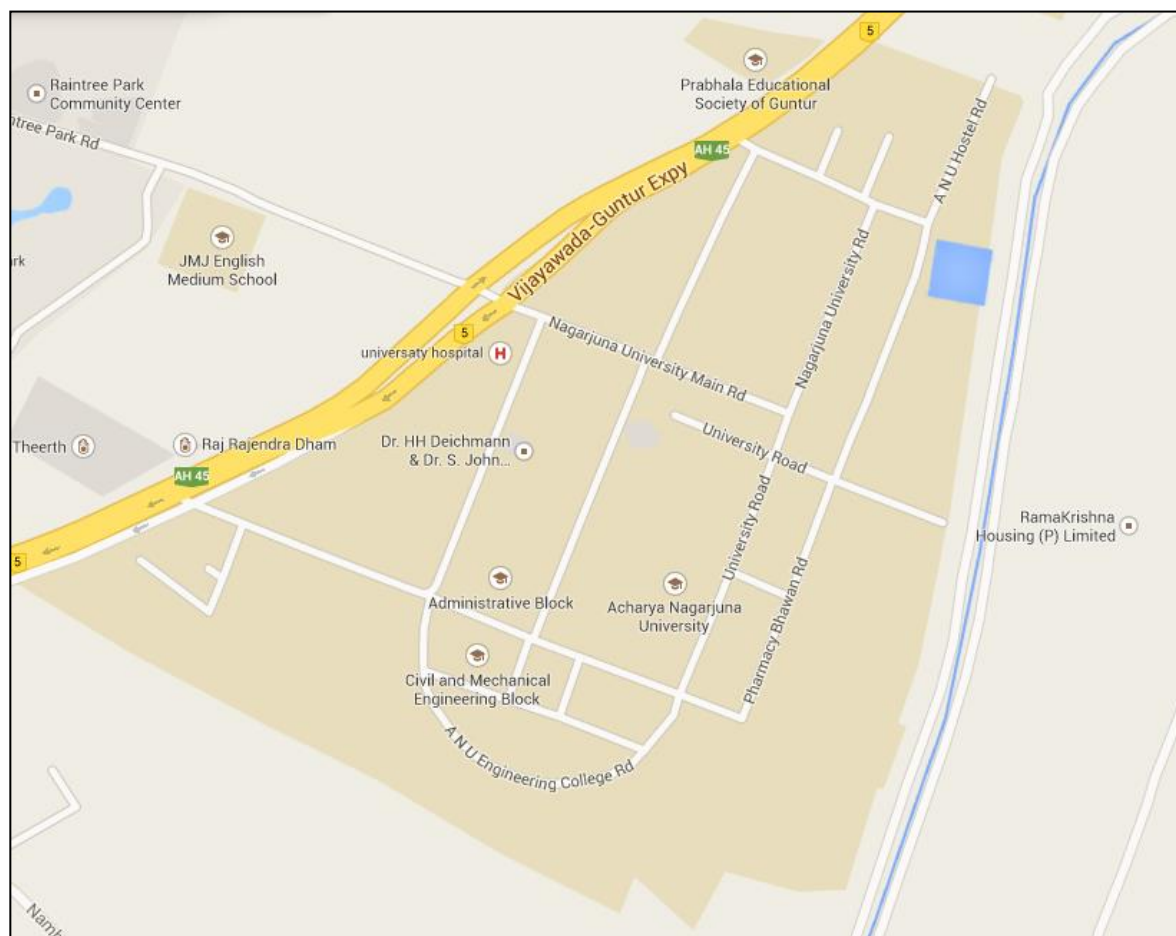
The Indian subcontinent has diverse avian fauna with 1300 bird species (Grimmet *et al.*, 1999). Little research has been done at community level to understand the species diversity. Reserch at community level of birds in the Indian subcontinent is essential as large scale changes are taking place in natural habitats of birds (Khan *et al.*, 1993). There is a need to study the community structure and species diversity of birds of different areas of this country to investigate the impact of changing natural habitats.

Such studies will provide information on the species diversity of birds of an area. There is a dearth of information in literature on the avian diversity of the Acharya Nagarjuna University campus, Guntur. In view of this, the present work was undertaken to study the species diversity of birds on the campus.

MATERIALS AND METHODS

Acharya Nagarjuna University (15°⁰²⁶'N and 74°49'E) is located in the Guntur district of Andhra Pradesh. It is spread over an area of nearly 370 acres. It covers the herb garden, post-graduate departments, hostels, staff quarters, two stadiums, and three play fields. It is endowed with about 160 families of plants (Anonymous, 1972). It was divided into four observation zones of different habitats (Fig. 1). A regular survey was carried out once a week, during the early morning hours between 6:30 and 10:00 a.m. on clear days for a period of one year (June 2018 to May 2019). Observation was always done from zone number one, followed by observation zones numbers four, three, and two. Birds have been observed using a binocular (10 x 30X) and photographs were taken using a DSC-S750 Sony Digital camera (7.2 mega pixel, 2.5" LCD monitor, ISO 1250, optical zoom 3X). Collected photographs were identified up to the lowest possible taxonomic level (often species) with the help of field guides (Ali and Ripley, 1983, 1987; Woodcock, 1980; Sonobe and Usui, 1993; Ali, 1996). The following formula was used for calculating the percentage occurrence:

$$\text{Percentage occurrence} = \frac{\text{No. of species of each order/family} \times 100}{\text{Total no. of different species seen}}$$

Fig. 1: Layout the map of Acharya Nagarajuna University campus

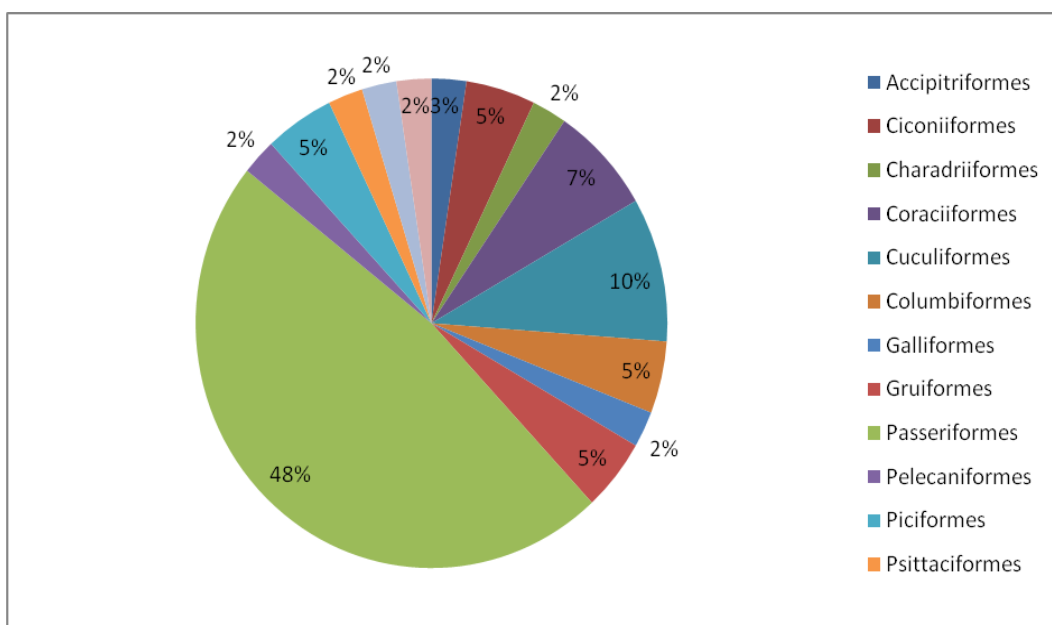
RESULTS

42 Species belonging to 8 orders and 25 families were recorded in the study area. (Table 1). Out of 8 orders, order Passeriformes was dominant. It represented 48% of the total number of birds. Out of 25 families, the family Corvidae was dominant. It represented 14% of the total number of birds (Fig. 2 and 3).

Table 1. Bird species observed and recorded in the study area.

S.No	Order	Family	Common Name	Scientific Name
1.	Accipitriformes	Accipitridae	Shikra	Accipiter badius
2.	Ciconiiformes	Ardeidae	Cattle Egret	Bubulcus ibis
4.	Ciconiiformes	Ardeidae	Night heron	Nycticorax nycticorax
3.	Charadriiformes	Charadriidae	Red watted lapwing	Vanellus indicus
5.	Coraciiformes	Cerylidae	Pied kingfisher	Ceryle rudis
6.	Coraciiformes	Coraciidae	Indian roller	Coracias benghalensis
7.	Coraciiformes	Halcyonidae	White breasted kingfisher	Halcyon smyrnensis
8.	Cuculiformes	Cuculidae	Greater coucal	Centropus sinensis

9.	Cuculiformes	Cuculidae	Indian cuckoo	Cuculus micropterus gould
10.	Cuculiformes	Cuculidae	Koel	Eudanamys scolopacea
11.	Cuculiformes	Cuculidae	Pied crested cuckoo	Clamator jacobinus
12.	Columbiformes	Columbidae	Spotted dove	Streptopelia chinesis
13.	Columbiformes	Columbidae	Rock pigeon	Columba livia gmelin
14.	Galliformes	Phasianidae	Common quail	Coturnix coturnix
15.	Gruiformes	Rallidae	Common coot	Fulica atra
16.	Gruiformes	Rallidae	White breasted water hen	Amauornis Phoenicurus
17.	Passeriformes	Motacillidae	Grey wagtail	Motallica cineria tunstall
18.	Passeriformes	Corvidae	House crow	Corvus splendens vieillot
19.	Passeriformes	Muscicapidae	Indian chat	Cercomela fusca
20.	Passeriformes	Corvidae	Indian treepie	Dendrocitta vagabunda
21.	Passeriformes	Muscicapidae	Indian robin	Saxicolodes fulicata
22.	Passeriformes	Leiothrichidae	Jungle babbler	Turdoides striatus
23.	Passeriformes	Campephagidae	Large cuckoo shrike	Coracina macei
24.	Passeriformes	Muscicapidae	Pied bushchat	Saxiola caprata
25.	Passeriformes	Nectariniidae	Purple rumped Sunbird	Nectarinia zeylonica
26.	Passeriformes	Nectariniidae	Purple sunbird	Nectarinia asiatica
27.	Passeriformes	Corvidae	Raven	Corvus corax Linnaeus
28.	Passeriformes	Pycnonotidae	Red vented Bulbul	Pycnonotus cafer
29.	Passeriformes	Pycnonotidae	Red whiskered Bulbul	Pycnnotus jocosus
30.	Passeriformes	Motacillidae	White wagtail	Motallica alba Linnaeus
31.	Passeriformes	Timaliidae	Yellow breasted babbler	Macronous gularis
32.	Passeriformes	Dicruridae	Black Drongo	Dicrurus macrocercus
33.	Passeriformes	Sturnidae	Common myna	Acridotheres tristis
34.	Passeriformes	Tephrodornithidae	Common wood shrike	Tephrodornis pondiceranius
35.	Passeriformes	Oriolidae	Eurasian golden oriole	Oriolus Oriolus
36.	Passeriformes	Sturnidae	European Starling	Sturnus Vulgaris
37.	Pelecaniformes	Ardeidae	Pond heron	Ardeola grayii
38.	Piciformes	Picidae	Golden backed wood pecker	Dinopium javanense
39.	Piciformes	Picidae	Lesser golden backed woodpecker	Dinopium benghalense
40.	Psittaciformes	Psittaculidae	Rose ringed parakeet	Psittacula krameri
41.	Suliformes	Phalacrocoracidae	Little cormorant	Phalacrocorax Niger
42.	Strigiformes	Strigidae	Spotted owl	Athene brama



Relative Abundance

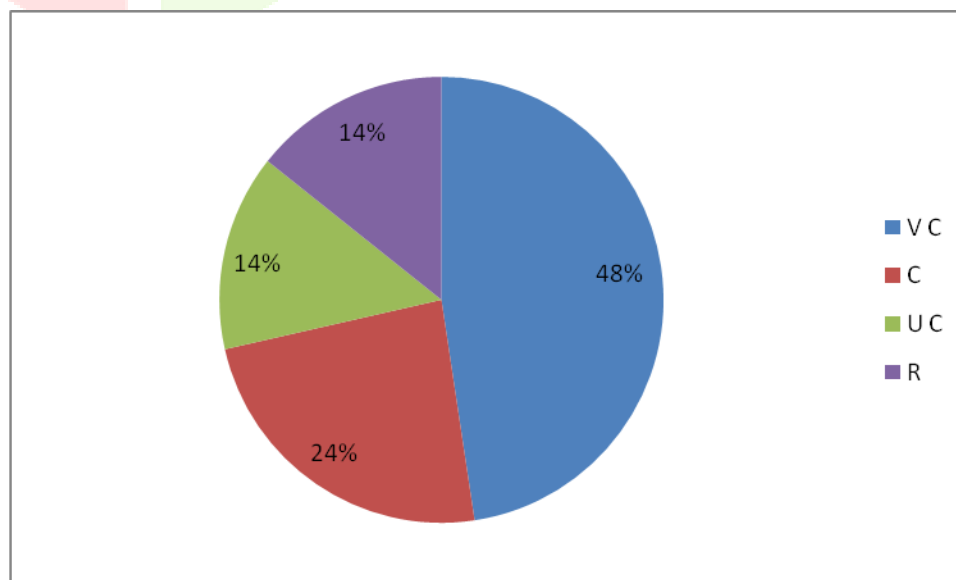
During the present study, the relative abundance has been calculated based on the number of times each species occurred during the study period. Out of 42 species observed, 20 species (48%) found Very Common, 10 species (24%) found to be common, 6 species (14%) were uncommonly sighted and 6 species (14%) were rarely found (Table 2 & 3 and Fig 2).

Table 2: Relative Abundance status of birds found in ANU Campus.

S.No	Common Name	Scientific Name	Ecological Status
1.	Shikra	<i>Accipiter badius</i>	C
2	Cattle Egret	<i>Bubulcus ibis</i>	VC
3	Night Heron	<i>Nycticorax nycticorax</i>	UC
4	Red wattled lapwing	<i>Vanellus indicus</i>	C
5	Spotted owlet		C
6	Pied Kingfisher	<i>Ceryle rudis</i>	VC
7	Indian roller	<i>Coracias benghalensis</i>	VC
8	White breasted kingfisher	<i>Halcyon smyrnensis</i>	VC
9	Greater coucal	<i>Centropus sinensis</i>	VC
10	Indian cuckoo	<i>Cuculus micropterus gould</i>	C
11	Koel	<i>Eudynamis scolopacea</i>	VC
12	Pied crested cuckoo	<i>Clamator jacobinus</i>	C
13	Spotted dove	<i>Streptopelia chinensis</i>	VC
14	Rock pigeon	<i>Columba livia gmelin</i>	VC
15	Common quail	<i>Coturnix coturnix</i>	C
16	Common coot	<i>Fulica atra</i>	UC

17	White breasted water hen	<i>Amaurornis Phoenicurus</i>	C
18	Grey wagtail	<i>Motallica cineria tunstall</i>	C
19	House crow	<i>Corvus splendens vieillot</i>	VC
20	Indian chat	<i>Cercomela fusca</i>	C
21	Indian treepie	<i>Dendrocitta vagabunda</i>	R
22	Indian robin	<i>Saxicolodes fulicata</i>	VC
23	Jungle babbler	<i>Turdoides striatus</i>	VC
24	Large cuckoo shrike	<i>Coracina macei</i>	UC
25	Pied bushchat	<i>Saxiola caprata</i>	VC
26	Purple rumped sunbird	<i>Nectarinia zeylonica</i>	VC
27	Purple sunbird	<i>Nectarinia asiatica</i>	VC
28	Raven	<i>Corvus corax Linnaeus</i>	UC
29	Red vented bulbul	<i>Pycnonotus cafer</i>	VC
30	Red whiskered bulbul	<i>Pycnnotus jocosus</i>	R
31	White wagtail	<i>Motallica alba Linnaeus</i>	C
32	Yellow breasted babbler	<i>Macronous gularis</i>	UC
33	Black Drongo	<i>Dicrurus macrocercus</i>	VC
34	Common myna	<i>Acridotheres tristis</i>	VC
35	Common wood shrike	<i>Tephrodornis pondiceranius</i>	R
36	Eurasian golden oriole	<i>Oriolus oriolus</i>	R
37	European Starling	<i>Sturnus Vulgaris</i>	UC
38	Pond heron	<i>Ardeola grayii</i>	VC
39	Golden backed wood pecker	<i>Dinopium javanense</i>	R
40	Lesser golden backed woodpecker	<i>Dinopium benghalense</i>	R
41	Rose ringed parakeet	<i>Psittacula krameri</i>	VC
42	Little cormorant	<i>Phalacrocorax Niger</i>	C

Note: VC – Very Common; C – Common; UC - Uncommon; R - Rare



DISCUSSION

The results obtained from the present study showed 42 species of birds belonging to eight orders and 25 families. Tryjanowski (1995) speculated that feeding conditions and the structure of the land surface are two main factors which determine the distribution and number of birds. The flora of Acharya Nagarjuna University campus consists of about 160 families of plants. Hence, it is presumed that the diversified flora in four observation zones provides comfortable shelter, suitable foraging grounds, and protection from predation and hostile atmospheric conditions for these birds. The presence of insects, insect eggs, larvae, and pupae, spiders, frogs, lizards, snakes, rats, and flowers, flower nectar, tender buds, leaves, and fruit buds, among other things, on campus meets the food requirements. Thus, it is assumed that the diversified flora and fauna of the campus make it rich in avian faunal diversity. However, in accordance with the present survey, in recent years, so many trees, dense bushy vegetation, and wetland patches have been cleared for unknown reasons. As a result, many birds associated with the campus have migrated to other areas. This requires thorough scientific monitoring and documentation of habitats to restore the population of birds as they are a proven indicator of environmental quality change and are ecologically and economically important (Chakravarthy and Tejaswi, 1992). The present study limits its scope to species diversity of birds. An attempt should be made to find out the dynamics of the recorded bird community in correlation with that of environmental conditions.

CONCLUSION

A study on the avian diversity of Acharya Nagarjuna University was conducted from June, 2019 to May, 2020. A total of 42 species of birds belonging 8 orders and 25 families were observed. The present study reveals that the avian fauna at ANU campus is sufficiently rich in species diversity. Being the first survey in the area 42 bird species was identified. , the present study data provides baseline information for future studies. Further long term studies are suggested to explore more birds and ensure their conservation.

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