AVIFAUNAL DIVERSITY IN TELANGANA STATE: A CASE STUDY IN CAMPUS OF PROFESSOR JAYASHANKAR TELANGANA STATE AGRICULTURAL UNIVERSITY,RAJENDRANAGAR, HYDERABAD, INDIA

ABSTRACT

Population Studies on different agricultural and other birdspecies were carried out at Students farm, College farm,Agribiodiversitypark, and Agricultural Research Institute farmareas of Professor Jayashankar Telangana State Agricultural University (PJTSAU)Campus in semiarid region of Telangana state covering an area of about 36 Sq.km. for a period of elevenyears (2012 to 2023). Population diversity of 92 species of different birds, and their distribution within the university campus farm areas were recorded. Important among them are 9 species namely: Bluerock pigeon (*Columba livia),* Spotted dove (*Streptopelia chinensis*),Roseringed parakeet(*Psittacula krameri*),Common myna(*Acridotheres tristis*),House crow(*Corvus splendens*),House sparrow(*Passer domesticus*),Bayaweaver bird(*Ploceus philippinus*) Whitethroated munia(*Lonchura malabarica*), and peafowl (*Pavo cristatus)*which depredate experimental field crops among them only few birds such as: Roseringed parakeets,House crows,House sparrows,Pigeons, Bayaweavers, Peafowls and Muniaswere serious bird pests to major agricultural and horticultural crops. The University farm areas were found to be the most preferred habitats for many of these birds it could be due to availability of food, breeding, roosting and resting sites in abundance because of more agricultural croplandsand agro forestrytrees.

Key words: Agricultural University, Agri biodiversity park, Common birds, Control measures, Depredatory birds, Systematic list.

INTRODUCTION

In the Agricultural University Campus area different species of birds were plays a significant role in agriculture, horticulture, and also form an integral part of agro ecosystems. In India there are nearly 2,060 species of birds representing 20 orders, of them only 10 species depredate the crops and only a few ofthem become serious pests of research crops (Rao *et al.*, 1995). In India, particularly the most common bird pests of crops are Roseringed parakeet (*Psittacula krameri*), Blossom headed parakeet (*Psittacula cyanocephala*), Bayaweaver (*Ploceus philippinus*), Blackheaded munia (*Lonchura malacca*), Spotted munia *(Lonchura punctulata*), Blue rock pigeon (*Columba livia*), Indian ring dove (*Streptopelia decaocta), Peafowl (Pavo cristatus)* and House sparrow (*Passer domesticus*).In addition birds like Indian Myna

(*Acridotheres tristis*), Rosy pastor (*Sturnus roseus*) and Redvented bulbul (*Pycnonotus cafer*) may also sometimes turn into crop depredation at the milky to grain hardening stages (Rao *et al.*, 1995and Reddy, 2011).

Inour study areas in PJTSAU Campus;student's farm,college research farm field's, agricultural research instituteand agro forestry environments usually attracts large number of birds of different species. The distribution and population of these species vary seasonally and that are affected by different ecological factors. In parallel with the increase in bird populations in agricultural crop areas, the grain damage to field crops also increases. This paper presents a systematic list of common birds with their orders, families, local telugu names and reference numbers (Ali., 1996) of different study habitats like student's farm,college farm, agri biodiversity park, agricultural research instituteareas of PJTSAU situated, Rajendranagar, Hyderabad, Telangana, India. Similar type of bird populationsurveystudies have also been reported in India from Paithan, Aurangabad, Maharashtra (Vyawahare and Kulkarni, 1986), Jaipur, Rajasthan (Manohar and Mathur, 1987), Ludhiana, Punjab (Dhindsa *et al.*,1990), Dhule district, Maharashtra (Vyawahare, 1991), Ahmednagar, Maharashtra (Kurhad, 1991 & 1996), Machia Safari Desert Park, Jodhpur, Rajasthan (Bohra and Goyal, 1992), Chamba district, Himachal Pradesh (Anil, 1992), Ahmedabad airport, Gujarat (Bonny pilo *et al*., 1993), Wild ass Sanctuary, Gujarat (Shaha *et al.,* 1995), Siwalik Himalaya of Himachal Pradesh (Anil, 1996),Khatana and Waghai forests of Gujarat (Kumar *et al.*,1998) and State Agricultural University Campus,Rajendranagar,Hyderabad(Reddy, 2011).The present information is based on the regular ornithological observations made during the period of eleven years from 2012 to 2023 at the PJTSAU campus area.

MATERIALS AND METHODS

Student's farm,College farm,Agri biodiversity park and Agricultural Research Institute areas were located at PJTSAU, Rajendranagar, Hyderabad about 16 km south of historic city of Hyderabad; the capital city of Telangana (Lat.17^{o} 19` N; Long. 78$^{o}$ 23` E; Altitude 543 m above MSL) (Fig.1). The total campus area is approximately 1500 ha, of which, the Student's farm area covers 53.00 ha, College farm area covers 90.00 haagricultural research institutes covers 50.00 ha and Agri biodiversity park 23.00 ha. In addition some Central Institutes, like ICAR-Indian Institute of Oilseeds Research (IIOR) – 15 ha; National Academy of Agriculture Research and Management (NAARM) – 50.00 ha; National Institute of Agricultural Extension Management (MANAGE) – 15.00 ha are also located in this area. The campus of the University is interspersed with agricultural college buildings, Auditorium, Hostels, Health centre, Farmhouses, Greenhouses, Staff quarters, Agro forestry trees, Sports complex, Temple, Mosque, Krishi high school, water ponds etc, along with barren land all together covering approximately 1500ha. The maximum temperature is 45^{0}to 50^{0}C during peak summer months (April and May) and minimum is approximately 25^{0} to28^{0}C in January every year. The normal rainfall is 786.8mm, receives mainly through southwest monsoon.

Different times bird observationswere made by using the line transect method mainly in the fenced Student's farm, College farm,Agri Biodiversity Parkand Agricultural Research Institute farms areasatmonthly intervals during the period from 2012 to 2023andsimple mean analysis of the birds count was carried out. Minimum of four observations every month were recorded, during morning hours from "06: 00 AM" hours to "09: 00 AM"hours and in the evening hours from "16: 00 PM" hours to "18: 00 PM" hours. Long sighted Birds were identified with the help of field binocular (7 x 50 magnifications). Identification of different species of birds was carried out by noting down the various characters with the help of keynotes from the standard book "The Book of Indian Birds"(Ali, 1996; Grimmett *et al*., 1998). The plant species were identified with the help of regional floras viz. Flora of Telangana state (Pullaiah, 2015; Reddy & Reddy,2016).

RESULTS AND DISCUSSION

PJTSAU, Hyderabad campus has two main research farms with experimental crop fields of cereals, oilseeds, pulses, vegetable crops, horticultural crops and surrounded with variety of forest trees. In addition to this, the agro forestry area is having of Agri biodiversity Parkwith rare species and has many species of forest trees including number of herbs, shrubs, small plants, big trees and also farm pond. The three other ICAR research institute farms (IIOR – 15.00 ha, NAARM – 50.00 ha; MANAGE – 15.00 ha) also have experimental crop fields, orchards; forest plantations well flourished landscape gardens and other small flora. The University campus area is semi-arid; the flora of student farm, college farm,Agri biodiversity park, and Agricultural Research Institute areas appears to be diverse and rich. The campus area also shows a number of Neem, Babul, Eucalyptus, Banyan, Tamarind, Ashoka and Subabul trees at places. These trees in the evening form the roost of hundreds of Crows, Mynas, Baya weavers, House sparrows, Cattle egrets, Paddy birds, Babblers, Parakeets, Peacocks and other small passerine birds.

The important trees that cover the campus, research farm fields and agro forestry areas were*Annona squamosa* (Custard Apple), *Annona reticulata* (Netted Custard Apple), *Azadirachta indica* (Neem), *Acacia nilotica* (Babul), *Ficus benghalensis*(Banyan Tree), *Ficus religiosa*(Peepal), *Delonix regia*(Gulmohar), *Zizyphus jujube* (Jujube), *Terminalia arjuna* (Arjun), *Dalbergia sissoo* (Sissoo), *Mangifera indica*(Mango), *Polyalthia longifolia* (False Ashok), *Tamarindus indica*(Tamarind), *Psidium guava*(Guava), *Ficus racemosa* (Gum Fig), *Peltophorumpterocarpum*(Copperpod), *Prosopis juliflora* (Algaroba), *Albizia lebbeck* (LebbeckTree), *Pongamia pinnata* (Indian Beech Tree), *Sennasiamea* (Siamese Senna), *Butea monosperma* (Flame of the Forest), *Thespesia populnea* (Indian Tulip Tree), *Bombax*

ceiba (Silk Cotton Tree), *Grewia asiatica* (Phalsa), *Aegle marmelos* (Bael Tree), *Citrus aurantifolia* (Lime), *Citrus aurantium* (Sweet Orange), *Murrayakoenigii* (Curry Leaf Plant), *Ailanthus excelsa* (Indian Tree of Heaven),*Sapindusemarginatu*s (Soapnut), *Anacardium occidentale* (Cashew), *Cassia fistula*(Golden Shower Tree), *Acacia leucophloea* (PanicledAcacia), *Leucaena leucocephala*(Subabul), *Pithecellobium dulce* (Manilla Tamarind), *Albizia saman* (Rain tree), *Eucalyptus globules* (BlueGum), *Syzygiumcumini* (Jamun), *Punica granatum* (Pomegranate), *Carica papaya* (Papaya), *Manilkara zapota* (Sapota), *Cocos nucifera* (Coconut), *Phoenix sylvestris* (Wild Date Palm), *Bambusabambos*(Common Bamboo),*Albizia amara*(Krishna Siris), *Bauhinia purpurea* (Butterfly Tree), *Dalbergis latifolia* (Indian Rosewood), *Gliricidiasepium* (Mexican Lilac), *Holoptelea integrifolia*(Indian Elm), *Ficus amplissima* (Indian Bat Tree), *Ficus mollis* (Soft Fig), *Flacourtia indica* (Indian Plum),*Phyllanthus emblica* (Amla),*Terminalia alata* (Indian Laurel), *Terminalia bellirica* (Belliric Myrobalan), *Lagerstroemia parviflora* (Small Flowered Crape Myrtle), *Lanneacoromandelica* (Indian Ash Tree), *Limoniaacidissima* (Wood Apple), *Simarouba gluca* (Paradise Tree), *Melia dubia* (Malabar Neem), *Muntingiacalabura* (Singapore Cherry), *Sterculia foetida* (Wild Indian Almond), *Santalum album*(Sandalwood), *Alangiumsalviifolium* (Sage Leaved Alangium), *Madhuca longifolia* var. *latifolia*(Mahua), *Diospyros chloroxylon* (Ebony Tree), *Ixora pavetta* (Torchwood Tree), *Wrightia tinctoria* (Sweet Indrajao), *Nyctanthesarbor-tristis* (Coral Jasmine), *KigeliaAfricana* (Sausage Tree), *Spathodeacampanulata* (African Tulip Tree), *Tectona grandis* (Teak), other ornamental shrubs and small bushes.

Birds use many of the above-mentioned trees as roosting,feeding,resting and nesting places, as they are tall, leafy and most of the trees are without thorns. Many trees like Neem, Tamarind, Banyan, Eucalyptus and Gulmohar trees are crowned with nests of crows. Whereas, the nests of cattle egrets were recorded on Babul, Prosopis, Neem and Tamarind trees growing near the village vicinities and human settlements. The mixed vegetation dominating garden trees, flowering shrubs, bushes, open grassland, experimental crop lands provide a healthy environment to the birds hence large flocks and variety of birds were observed. The list of Birds observed from the college farm, student farm,Agri Biodiversity Park and Agricultural Research Institute farmareas were listed in the Table 1.

Avifauna composition of Student's farm, College farm areas,Agri biodiversity Park and Agricultural Research Institute farm areasare represented by a total of 92 species belonging to 12 orders and 31 families (Table, 2). Of the total, the most abundant species

recorded belonged to order Passeriformes, and the most common species related to orders Ciconiformes, Columbiformes, Psittaciformes, Cuculiformes, Apodiformes, Coraciiformes and Piciformes. Notably other families viz., Falconiformes, Galliformes, Charadriiformes and Strigiformes were seen rarely. However, the largest order present is Passeriformes with 16 families and 50 species, followed by order Coraciformes with 5 families and 7 species. While the remaining orders were represented by only one family each with varying significant number of species.

Status wise, 40 species (43.5%) were residents, 41 species (44.6%) residents with local migratory movements within the areas, 5 species were (5.4%) local migrants from surrounding areas, and 6 species (6.5%) were purely winter migrants.

Habitat utilization by birds in study area:

In this study a total of 92 species of birds were recorded and majority of the birds are residents, few species of birds are as farmer's friends as they feed on harmful insects (Ali, 1996). Only few species form serious bird pests, while some species have a dual role in agricultural ecosystem (Rao *et al*., 1995). The number of species present in the farm fields' area is related to the sharing of resources among the species. Similar types of population studies were conducted in other parts of India, where Manohar and Mathur (1987) reported 92 species of common birds in Jaipur city in Rajasthan. Kurhade (1991) recorded 51 species of birds in Ahmednagar in Maharashtra. Devarshi and Trigunayat (1989) recorded 72 bird species at Aravalli hill ranges of Mount Abu, Rajasthan. Bohra and Goyal (1992) reported 123 species of birds belonging to 38 different families at Machia safari Desert Park at Jodhpur in Rajasthan. Kumar *et al.*, (1998) reported a total of 69 species of birds belonging to 13 orders, 34 families and 49 genera in Khatana and Waghai forests of Gujarat.

The distribution of bird species and their status showed that the birds use agricultural croplands, agro forestry areas and surrounding areas for feeding, resting,roosting and nesting activities. Their preference for the different purposes varies among thedifferent herbivorous and depredatory bird species. The present study reveals that the Crows, Sparrows, Mynas, Parakeets, Bayas, Munias, Pigeons, Doves, Babblers, Cattle egrets, Peacocks and Bulbuls use the student's farm, college farm fields,agri biodiversity park and Agricultural Research Institute farm areas as their permanent residence. A large number of these birds are always seen within the crop fields; they roost on electric, telephone wires and border trees etc. The birds like pigeons and doves forage on the nearby areas, crop fields for feeding on weeds and seeds. Many other non-soaring birds such as lapwings are found to be seasonal and recorded

plenty during monsoon season. Small passerine birds also use the farm field areas for temporary roosting and feeding purposes. The bird numbers increases in the fields during the period from 0600 to 0900 hours and 1600 to 1800 hrs, particularly as that period is suitable for feeding of grains in the crop fields.

Conclusion

The present study has generated important information on the avifaunal composition in various study areassituated at Professor Jayashankar Telangana State Agricultural University, Rajendranagar, and Hyderabad campus. This information may be useful in planning and management of depredatory birds problem in field and Horticultural crops and other Agricultural Research Stations of (PJTSAU and ICAR institutions) throughout the Telangana state.

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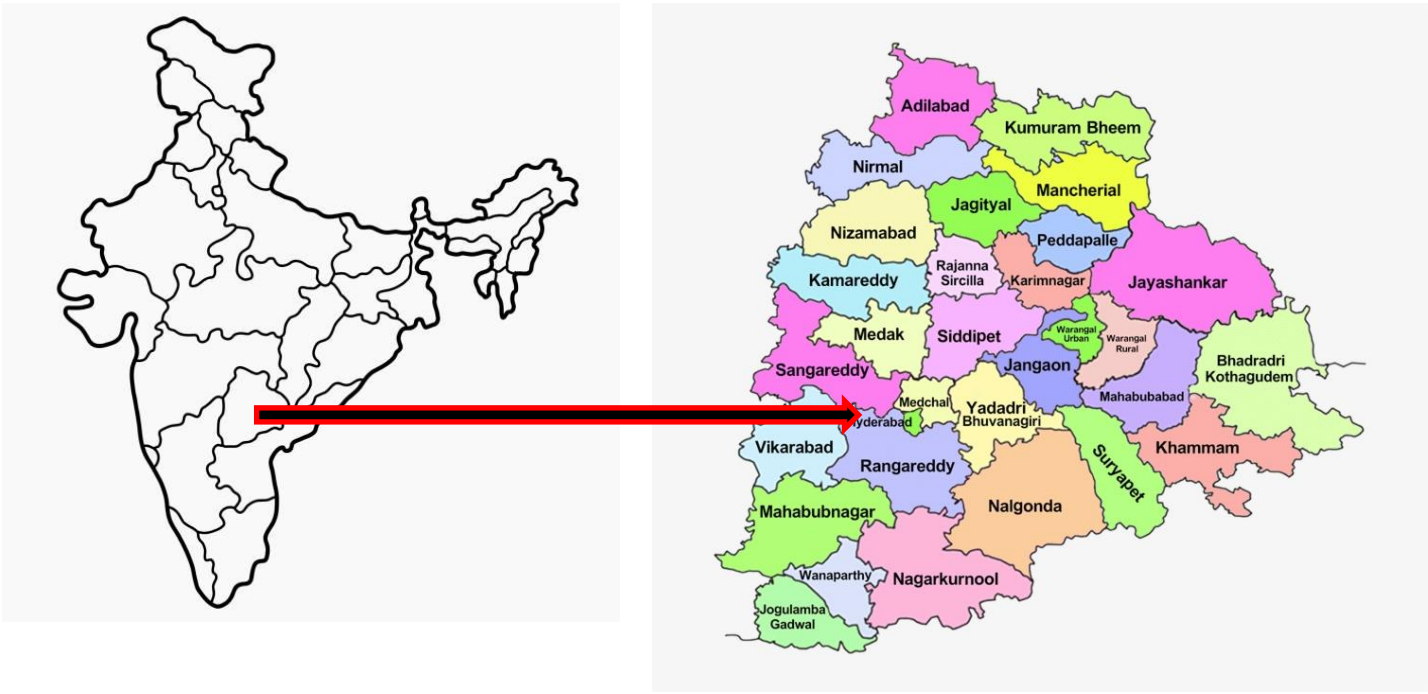

Fig.1. Map showing study area

Table – 1: Systematic list of birds with their status and abundance at the Students farm, College farm, and Biodiversity park and research institutes located in PJTSAU campus, Rajendranagar, Hyderabad

S.No.	Family/Common name	Scientific name	Status	Abundance
Ardeidae				
1	Pond Heron	*Ardeola grayii (Sykes)*	R/LM	++
2	Cattle Egret	*Bubulcus ibis (Linnaeus)*	R/LM	+++
3	Median Egret	*Egretta intermedia (Wagler)*	R/LM	++
4	Little Egret	*Egretta garzetta (Linnaeus)*	R/LM	+
Accipitridae				
5	Pariah kite	*Milvus migrans govinda (Boddaert)*	R	++
6	Brahminy kite	*Haliastur indus (Boddaert)*	R	+
7	Pale Harrier	*Circus macrourus (S.G.Gmelin)*	WM	+
Phasianidae				
8	Grey Partridge	*Francolinus pondicerianus (Gmelin)*	R	+
9	Common Peafowl	*Pavo cristatus (Linnaeus)*	R	+
Charadriidae				
10	Redwattled Lapwing	*Vanellus indicus (Boddaert)*	R/LM	++
11	Yellow-wattled Lapwing	*Vanellus malabaricus (Boddaert)*	R/LM	++
Columbidae				
12	Green Pigeon	*Treron bicincta (Jerdon)*	R	+
13	Blue Rock Pigeon	*Columba livia (Gmelin)*	R	++
14	Ring Dove	*Streptopelia decaocto (Frivaldszky)*	R	++
15	Red Turtle Dove	*Streptopelia tranquebarica (Hermann)*	R	+
16	Spotted Dove	*Streptopelia chinensis (Scopoli)*	R	+
17	Little brown Dove	*S.Senegalensis (Linnaeus)*	R	+
18	Bronze winged Dove	*Chalcophaps indica (Linnaeus)*	R	+
Psittacidae				
19	Roseringed Parakeet	*Psittacula krameri (Scopoli)*	R	+++
20	Blossomheaded Parakeet	*Psittacula cyanocephala (Linnaeus)*	R	+++

Cuculidae				
21	Redwinged Crested Cuckoo	*Clamator coramandus (Linnaeus)*	WM	+
22	Pied Crested Cuckoo	*Clamator jacobinus (Boddaert)*	R	+
23	Common Hawk-Cuckoo	*Cuculus varius (Vahl)*	L/M	+
24	Indian Baybanded Cuckoo	*Cacomantis sonneratii (Latham)*	R/LM	+
25	Plaintive Cuckoo	*Cacomantis passerinus (Vahl)*	R	+
26	Koel	*Eudynamys scolopacea (Linnaeus)*	R	++
27	Small Greenbilled Malkoha	*Rhopodytes viridirostris (Jerdon)*	R	+
28	Sirkeer Cuckoo	*Taccocua leschenaultii (lesson)*	R	+
29	Crow-Pheasant or Coucal	*Centropus sinensis (Stephens)*	R	+
Strigidae				
30	Collared Scops Owl	*Otus bakkamoena (Pennant)*	R	+
31	Spotted Owlet	*Athene brama (Temminck)*	R	++
Apodidae				
32	House Swift	*Apus affinis (J.E. Gray)*	R/LM	++
Alcedinidae				
33	Small Blue kingfisher	*Alcedo atthis (linnaeus)*	R/LM	++
34	Whitebreasted kingfisher	*Halcyon smyrnensis (Linnaeus)*	R/LM	+
Meropidae				
35	Bluetailed Bee-eater	*Merops philippinus (Linnaeus)*	R/LM	++
36	Small Green Bee-eater	*Merops orientalis (Latham)*	R/LM	+++
Coraciidae				
37	Blue Jay	*Coracias benghalensis (Linnaeus)*	R/LM	+++
Upupidae				
38	Hoopoe	*Upupa epops (Linnaeus)*	R/LM	+

Bucerotidae				
39	Common Grey Hornbill	*Tockus birostris (Scopoli)*	R/LM	+
Picidae				
40	Lesser Goldenbacked Wood pecker	*Dinopium benghalense (Linnaeus)*	R	+
41	Yellowfronted Pied Woodpecker	*Picoides mahrattensis (Latham)*	R	+
42	Pigmy Woodpecker	*Picoides nanus (Vigors)*	R/LM	++
Pittidae				
43	Indian Pitta	*Pitta brachyura (Linnaeus)*	R/LM	+
Alaudidae				
44	Singing Bush Lark	*Mirafra javanica (Horsfield)*	R/LM	+
45	Crested Lark	*Galerida deva (Sykes)*	R/LM	+
Hirundinidae				
46	Common Swallow	*Hirundo rustica (Linnaeus)*	WM	++
47	Wiretailed Swallow	*Hirundo smithii (Leach)*	L/M	+++
Daniidae				
48	Grey Shrike	*Lanius excubitor (Linnaeus)*	R/LM	++
49	Baybacked Shrike	*Lanius vittatus (Valenciennes)*	R/LM	+
50	Rufousbacked Shrike	*Lanius schach (Linnaeus)*	R/LM	++
51	Brown Shrike	*Lanius cristatus (Linnaeus)*	WM	+
Oriolidae				
52	Golden Oriole	*Oriolus oriolus (Linnaeus)*	R/LM	+
53	Blacknaped Oriole	*Oriolus chinensis (Linnaeus)*	R/LM	+
Dicruridae				
54	Black Drongo	*Dicrurus adsimilis (Bechstein)*	R/LM	+++
55	Whitebellied Drongo	*Dicrurus caerulescens (Linnaeus)*	R/LM	+
56	Racket-tailed Drongo	*Dicrurus paradiseus (Linnaeus)*	R/LM	+
Sturnidae				

57	Rosy Pastor	*Sturnus roseus (Linnaeus)*	R	+
58	Indian Myna	*Acridotheres tristis (Linnaeus)*	R	+++
59	Jungle Myna	*Acridotheres fuscus (Wagler)*	R/LM	+
Corvidae				
60	Indian Tree Pie	*Dendrocitta Vagabunda (Latham)*	R	+
61	House Crow	*Corvus splendens (Vieillot)*	R	+++
62	Jungle Crow	*Corvus macrorhynchos (Wagler)*	R/LM	+
63	Common Wood Shrike	*Tephrodornis pondicerianus (Gmelin)*	R	+
Campephagidae				
64	Small Minivet	*Pericrocotus cinnamomeus (Linnaeus)*	R/LM	+
Irenidae				
65	Common Iora	*Aegithina tiphia (Linnaeus)*	R/LM	++
66	Goldmantled Chloropsis	*Chloropsis cochinchinensis (Gmelin)*	R/LM	++
Pycnonotidae				
67	Redvented Bulbul	*Pycnonotus cafer (Linnaeus)*	R	+++
68	Yellowthroated Bulbul	*Pycnonotus xantholaemus (Jerdon)*	R/LM	+
69	Whitebrowed Bulbul	*Pycnonotus luteolus (Lesson)*	R/LM	+
Muscicapidae				
70	Common Babbler	*Turdoides caudatus (Dumont)*	R	+++
71	Large Grey Babbler	*Turdoides malcolmi (Sykes)*	R	++
72	Jungle Babbler	*Turdoides striatus (Dumont)*	R	+
73	Whiteheaded Babbler	*Turdoides affinis (Jerdon)*	R	+
74	Brownbreasted Flycatcher	*Muscicapa muttui (Layard)*	WM	+
75	Streaked Fantail Warbler	*Cisticola juncidis (Rafinesque)*	LM	+
76	Plain Wren –	*Prinia subflava (Gmelin)*	LM	+

	Warbler			
77	Tailor Bird	*Orthotomus sutorius (Pennant)*	R	++
78	Magpie-Robin	*Copsychus saularis (Linnaeus)*	R	+++
79	Indian Robin	*Saxicoloides fulicata (Linnaeus)*	R	++
Paridae				
80	Grey Tit	*Parus major (Linnaeus)*	R	+
81	Whitewinged Black Tit	*Parus nuchalis (Jerdon)*	R	+
Motacillidae				
82	Indian Tree Pipit	*Anthus hodgsoni (Richmond)*	LM	+
83	Paddyfield Pipit	*Anthus novaeseelandiae(Gmelin)*	R/LM	+
84	Grey Wagtail	*Motacilla cinerea (Tunstall)*	WM	+
Nectarinidae				
85	Thickbilled Flowerpecker	*Dicaeum agile (Tickell)*	R	+
86	Purple Sunbird	*Nectarinia asiatica (Latham)*	R	++
Ploceidae				
87	House Sparrow	*Passer domesticus (Linnaeus)*	R/LM	+++
88	Yellowthroated Sparrow	*Petronia xanthocollis (Burton)*	R/LM	+
89	Baya Weaver Bird	*Ploceus philippinus (Linnaeus)*	R/LM	+++
90	Whitethroated Munia	*Lonchura malabarica (Linnaeus)*	R/LM	++
91	Spotted munia	*Lonchura punctulata (Linnaeus)*	R/LM	++
92	Blackheaded Munia	*Lonchura malacca (Linnaeus)*	R/LM	++

Abbreviations used:
R = Resident; LM = Local Migrant; R/LM = Resident with Local Migratory Movements; WM = Winter Migrant;
+ = Rare; ++ Common; +++ = Abundant; Ref. no. Synon. As per Salim Ali (1996).

Table 2: Status of birds recorded in different study areas of PJTSAU campus, Rajendranagar, Hyderabad.

S.No.	Order	No.of Families	No.of Species	Status			
				R	R / LM	LM	WM
1.	Ciconiformes	1	4	-	4	-	-
2.	Falconiformes	1	3	2	-	-	1
3.	Galliformes	1	2	2	-	-	-
4.	Charadriiformes	1	2	-	2	-	-
5.	Columbiformes	1	7	7	-	-	-
6.	Psittaciformes	1	2	2	-	-	-
7.	Cuculiformes	1	9	6	1	1	1
8.	Strigiformes	1	2	2	-	-	-
9.	Apodiformes	1	1	-	1	-	-
10.	Coraciiformes	5	7	-	7	-	-
11.	Piciformes	1	3	2	1	-	-
12.	Passeriformes	16	50	17	25	4	4
	Total	**31**	**92**	**40**	**41**	**5**	**6**

R = Resident; LM = Local Migrant; R/LM = Resident with Local Migratory Movements; WM = Winter Migrant;