

Original Research Article

Avifaunal Diversity of Gaddenna Vagu Project and surrounding area of Bhainsa Town, Tq. Mudhole Dist. Adilabad (Telangana State), India

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Abstract	Keywords
Attempts are made to record avifauna diversity of Gaddanna Vagu Project and surrounding areas of Bhainsa town Tq. Mudhole Dist. Adilabad (T.S.) was studied during the period from February, 2012 to March, 2014. A total of 70 bird species were recorded belonging to 41 families. Among these families 7 families viz. Ardeidae, Rallidae, Sturnidae, Threskiornithidae, Cuculidae, Columbidae and Anatidae were found relatively abundant as compare to other families. This project was used for irrigation, water supply to Bhainsa town, fish culture etc. The analysis aims to provide baseline information of bird biodiversity.	Adilabad Avifaunal diversity Bhainsa Gaddena Project

Introduction

Birds are of great economic importance to the human society. They play an important role in controlling population of different insects and pests. They play the role of scavengers and pollinating agents and also help in dispersal of seeds of different vegetations. They are helpful and help to provide rich food for mankind and are known to man since ages (Chitampally, 1993). The ornithological data is used to indicate the effects of environmental change on biodiversity. Bird indicators are likely to form an important component of sets of indicators for biodiversity and habitats. The variety of avian species in ecosystems reflects the well being of its habitat. Birds are the indicators of environment and are being used for conservation and environmental impact assessment (Gregory et al., 2003).

Biodiversity at present is better understood for birds in many respects than any other major group of organisms because they probably inspire more extreme interest in humans, are often spectacular, relatively easily observed and not too cryptic to identify. Diversity of avifauna is one of the most important ecological indicators to evaluate the quality of habitats (Bhadja and Vaghela, 2013). All birds are not aquatic but few of them reside on the bank of reservoir. Birds are important group of aquatic food chain. They feed on vegetation, fishes and other animals of the reservoir. Wetlands are important and are integral ecosystems providing numerous benefits. Wetlands are known to harbor a wide array of flora and fauna species, particularly birds that are endemic and migratory. Wetlands also play an important role in nutrient cycling and ecological balance (Donar et al., 2012).

So far no scientific data was available on the avifauna of Gaddenna Vagu Project and surrounding area of Bhainsa town. This work has therefore undertaken of document the avifaunal diversity of wetland ecosystem of Gaddenna Vagu Project and Bhainsa city which lies in the Adilabad District, Telangana. Results of this study are valuable, as they serve as baseline information for future studies.

Materials and methods

Study area

Gaddenna Vagu Project is situated at Bhainsa, Adilabad district of Telangana State, India it is located at 19°7'11" North latitude and 77°56'34" East longitude. The area is rich in biodiversity, it is having plants with very different morphologies and life forms, trees like, *Acacia Arabica*, *Annona squamosa*, *Albizia lebbek*, *Azadirachta indica*, *Bauhinia recimosa*, *Buchnanania lanzan*, *Butea monosperma*, *Cassia fistula*, *Delonix regia*, *Ficus bengalensis*, *Mangifera indica*, *Pithecolobium dulce*, *Pongamia glabra*, *Strychnos potatorum*, *Tamarindus indica*, *Tectona grandis*, *Terminalia arjuna*, *Terminalia catappa*, *Wrightia tinctoria*, and *Zizyphus jujoba* etc., shrubs, *Cassia auriculata*, *C. occidentalis*, *Capparis zeylanica*, *Dichrostachys cinerea*, *Ipomoea cornia*, *Leonotis nepetifolia*, *Prosopis julifera*, *Ventilago denticulate*, *Woodfordia fruticosa* and *Zizyphus mauritiana* etc. herbs like *Cassia tora*, *Datura stramonium*, *Hyptis suaveolens* and *Tephrosia purpurea* etc. and aquatic species like *Cyperus flavidus*, *C. rotundus*, *C. tenuispica*, *Eichhornia crassipes*, *Eriocaulon truncatum*, *Fimbristylis cymosa*, *Monocharia vaginalis*, *Nelumbo nucifera*, *Schoeplectus articulatus*, *Typha angustata* and *Xyris pauciflora*, etc.

During the preliminary survey of the study period, six stations were chosen, the stations were as follows:

1. Gaddana Vagu Project: It is 3 km from Bhainsa town.
2. Babulgaon water tank: It is 5 km from Bhainsa town
3. Sirala water tank: It is 5 km from Bhainsa town.
4. Degaon Village River: It is 5 km from Bhainsa

5. Wanalpahad Village River: It is 5 km from Bhainsa
6. Old water tank: Bhainsa town.

Regular monthly observation was made from February, 2012 to March, 2014 by using Line Transect method (Gaston, 1973). Numbers of individuals were counted by using point count method (Ralf et al., 1993) to work out the abundance and species richness. Birds were sighted by using binoculars of 7X and 8X magnification and spot identification was done as per Ali & Ripley (1983); Ali (1996). The sighted birds were photographed by using Sony Cyber Shot Camera Model No. W570 and Model No DSC-S800. These observations were made early in the morning. Common and scientific names of identified bird species were given as per Manakadan and Pittie (2001) and checklist of bird species was prepared as per Abdullali (1981). The status of bird is categorized as Resident Common (RC), Migrant (Mr), Resident Migrant Common (RMC), Winter Migrant Common (WMC), Resident rare (Rr), Resident Uncommon (RU), Resident Migrant (RMr), Resident Migrant Uncommon (RMU).

Results and discussion

During the study, total 70 bird species belonging to 41 families were identified and recorded. Table 1 depicts details about the Scientific and Common Names, Status and Occurrence of bird species. Among 41 families, 7 families viz. Ardeidae, Rallidae, Sturnidae, Threskiornithidae, Cuculidae, Columbidae and Anatidae were found relatively abundant as compare to other families as shown in Fig.1. Among 70 bird species, 42 are Resident Common (RC), 5 Species are Resident Uncommon (RU), 2 birds are Resident Migrant (RMr), 3 birds are Winter Migrant Common (WMC), 06 species belonging to Resident Migrant Common (RMC) and Winter Migrant Uncommon (WMU) respectively. 04 species were recorded as Resident rare (Rr) whereas Resident Migrant Uncommon (RMU) and Resident Migrant (RM) recorded as a single species each. Out of these 20 species namely White-breasted Kingfisher, Rose Ringed Parakeet, Crow Pheasant, Indian Roller, House Crow, Indian Robin, Red Vented Bulbul, Large Gray Babbler, Baya Weaver, Pariah Kite, Little Cormorant, Asian Koel, Red-wattled Lapwing, Indian Pond Heron, Little Egret, Cattle Egret, Spotted Dove, Blue rock Pigeon, Purple Moorhen and White breasted water hen were found in common during study period.

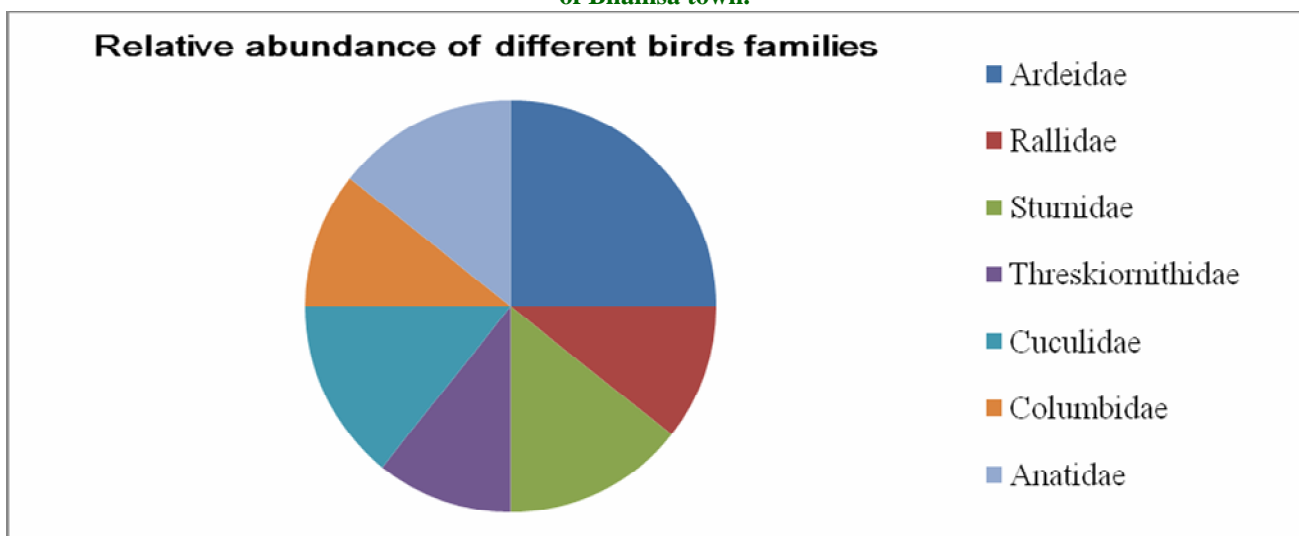
Table 1. List of Birds sighted on Gaddena Vagu Project and surrounding area of Bhainsa town during February, 2012 to March, 2014 along with their status and occurrence.

Sr. No.	Family	Common Name	Scientific Name	Status	Occurrence
1	Megalaimidae	Coppersmith Barbet	<i>Megalaima haemacephala</i>	RC	++
2	Ardeidae	Large Egret	<i>Ardea alba</i>	RU	++
3	Ardeidae	Indian Pond Heron	<i>Ardeola grayii</i>	RC	++++
4	Ardeidae	Cattle Egret	<i>Bubulcus ibis</i>	RC	++++
5	Ardeidae	Little Egret	<i>Egretta garzetta</i>	RC	++++
6	Ardeidae	Purple Heron	<i>Ardea purpurea</i>	RMr	+++
7	Ardeidae	Grey Heron	<i>Ardea cinerea</i>	RMr	+++
8	Ardeidae	Intermediate Egret	<i>Mesophoyx intermedia</i>	RC	+++
9	Alcedinidae	White breasted kingfisher	<i>Halcyon smyrnensis</i>	RC	+++
10	Alcedinidae	Pied kingfisher	<i>Ceryle rudis</i>	RC	+++
11	Recurvirostridae	Black winged stilt	<i>Himantopus himantopus</i>	WMC	++++
12	Laridae	Indian river tern	<i>Sterna aurantia</i>	RMC	++
13	Laridae	Ruddy Shelduck	<i>Todorna ferruginea</i>	WMU	+++
14	Rallidae	Common Coot	<i>Fulica atra</i>	WMC	++
15	Rallidae	Indian moorhen	<i>Gallinula Chloropus</i>	RC	++++
16	Rallidae	White breasted water hen	<i>Amaurornis phoenicurus</i>	RC	++++
17	Sturnidae	Common Myna	<i>Acridotheres tristis</i>	RC	++++
18	Sturnidae	Brahminy Myna	<i>Sturnus pagodarum</i>	RC	+++
19	Sturnidae	Asian pied Starling	<i>Sturnus contra</i>	Rr	++
20	Sturnidae	Rosy Starling	<i>Pastor roseus</i>	RMU	++
21	Cisticolidae	Ashy wren warbler	<i>Prinia socialis</i>	RC	+++
22	Oriolidae	Indian Oriole	<i>Oriolus kundoo</i>	RC	+++
23	Ploceidae	Baya Weaver	<i>Ploceus philippinus</i>	RC	++++
24	Laniidae	Bay backed shrike	<i>Lanius vittatus</i>	RC	+++
25	Aegithinidae	Common iora	<i>Aegithina tiphia</i>	RC	++
26	Podicipedidae	Little Greb	<i>Tachybaptus ruficollis</i>	RMC	++
27	Pyconotidae	Red vented Bulbul	<i>Pycnonotus</i>	RC	++++
28	Meropidae	Small Bee Eater	<i>Merops orientalis</i>	RC	++++
29	Charadriidae	Red- wattled Lapwing	<i>Vanellus indicus</i>	RC	++++
30	Charadriidae	Yellow-wattles Lapwing	<i>Vanellus malabaricus</i>	RC	++
31	Threskiornithidae	Eurasian Spoonbill	<i>Platalea leucorodia</i>	WMU	+++
32	Threskiornithidae	Black ibis	<i>Pseudibis papillosa</i>	RU	++
33	Threskiornithidae	Oriental White ibis	<i>Threskiornis melanocephalus</i>	RU	++
34	Cuculidae	Indian Cuckoo	<i>Cuculus micropterus</i>	RM	++
35	Cuculidae	Shikra	<i>Accipiter badius</i>	RC	+++
36	Cuculidae	Black winged Kite	<i>Elanus caeruleus</i>	RC	+++
37	Cuculidae	Asian Koel	<i>Eudynamys Scolopacea</i>	RC	++++
38	Accipitridae	Pariah Kite	<i>Milvus migrans</i>	RC	+++
39	Cisticolidae	Tailor Bird	<i>Orthotomus sutorius</i>	RC	+++
40	Corvidae	House Crow	<i>Corvus corax</i>	RC	+++
41	Estrildidae	Scaly breasted munia	<i>Lonchura punctulata</i>	RC	+++
42	Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	RC	++++
43	Nectariniidae	Purple rumped sun bird	<i>Nectarinia zeylonica</i>	RU	++++
44	Nectariniidae	Purple sun bird	<i>Nectarinia asiatica</i>	Rr	+++
45	Muscicapidae	Indian Robin	<i>Saxicoloides fulicata</i>	RC	++++
46	Muscicapidae	Oriental Magpie Robin	<i>Copsychus saularis</i>	RC	++++
47	Passerinae	House Sparrow	<i>Passer domesticus</i>	RC	+++
48	Hirundinidae	Common Swallow	<i>Hirundo rustica</i>	RMC	++
49	Hirundinidae	Wire-tailed Swallow	<i>Hirundo smithii</i>	RMC	++
50	Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax niger</i>	RMC	+++

Sr. No.	Family	Common Name	Scientific Name	Status	Occurrence
51	Psittacidae	Rose ringed parakeet	<i>Psittacula krameri</i>	RC	+++
52	Bucerotidae	Indian grey Hornbill	<i>Ocyrceros birostris</i>	Rr	+
53	Columbidae	Blue rock Pigeon	<i>Columba livia</i>	RC	++++
54	Columbidae	Spotted Dove	<i>Streptopelia chinensis</i>	RC	++++
55	Columbidae	Ring Dove	<i>Streptopelia capicola</i>	RC	++++
56	Motacillidae	White Wagtail	<i>Motacilla alba</i>	RC	+++
57	Motacillidae	Grey Wagtail	<i>Motacilla cinerea</i>	RC	+++
58	Phasianidae	Indian Peafowl	<i>Pava Cristatus</i>	RC	++++
59	Dicruridae	Black Drongo	<i>Dicrurus macrocer</i>	RC	++++
60	Estrildidae	Red Munia	<i>Amandava amandava</i>	RC	++
61	Upupidae	Common Hoopoe	<i>Upupa epops</i>	Rr	++
62	Leiothrichidae	Large Grey babbler	<i>Turdoides malcolmi</i>	RC	++++
63	Scolopacidae	Common Sandpiper	<i>Actitis hypoleucos</i>	WMC	+++
64	Cuculidae	Crow Pheasant	<i>Centropus sinensis</i>	RC	++++
65	Anatidae	Comb Duck	<i>Sarkidiornis melanotos</i>	WMU	+
66	Anatidae	Common Pochard	<i>Aythya ferina</i>	WMU	++
67	Anatidae	Northern Pintail	<i>Anas acuta</i>	WMU	++
68	Anatidae	Cotton Teal	<i>Nettapus coromandelianus</i>	WMU	+++
69	Ciconiidae	Painted stork, (Near threatened by IUCN, 2011)	<i>Mycteria leucocephala</i>	RMC	++++
70	Ciconiidae	White-necked stork	<i>Ciconia episcopus</i>	RU	++

Abundance (++++), Few (+++), Very few (++), Rare (+)

Fig. 1: Relative abundance of different bird’s families sighted on Gaddena Vagu Project and surrounding area of Bhainsa town.



Seven species such as Ruddy Shelduck, Comb Duck, Common Pochard, Northern Pintail, Cotton Teal, Black winged stilt and Eurasian Spoonbill were recorded only in winter season. Painted Stork Near threatened by IUCN (2011) was found in flocks with good numbers.

Similar type of studies were carried out by Laxmi Narayana et al. (2013), they have been recorded 66 bird species at Sherpally, Nalgonda District, Andhra Pradesh;

Kante et al., (2014) recorded 164 bird species in Manjeera Wildlife Sanctuary, Medak District, Andhra Pradesh; Balkhande et al., (2014) recorded 69 bird species in Satapur water body, Renjal Mandal Dist. Nizamabad, Telangana State. Jalander et al., (2015) reported 65 bird species of from Nizam Sagar Project, Dist. Nizamabad, Telangana State. Kulkarni et al. (2006a) recorded 18 piscivorous bird species in Dongarkheda irrigation tank, Hingoli district. Kulkarni

et al. (2006b) also recorded 93 species of birds in Shikhachiwadi Reservoir Dist. Nanded; Pawar et al. (2010) recorded 95 bird species from three water reservoirs from Satara Dist; Balkhande et al., (2012) recorded 53 bird species on river Godavari, near Dhangar Takli, Tq. Purna, Dist. Parbhani; Balkhande et al., (2012) recorded 50 different bird species near Purna river, Dist. Parbhani. Balkhande et al., (2014) reported 32 bird species at Apparavpeth water tank. Tq. Kinwat, Dist. Nanded (M.S.).

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