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Avifaunal Diversity of Nizam Sagar Project, Dist. Nizamabad, Telangana State

Jalander, V.[1]*, Balkhande, J. V.[2], and G. Sainath[3]

[1]Department of Botany, Telangana University, Dichpally, Nizamabad (T.S.)

[2]Department of Fishery Science, N.E.S. Science College, Nanded (M.S.)

[3]Department of Zoology Govt. Junior College, Mudhole, (T.S.)

*Corresponding Author E-mail: jalandervaghmare@gmail.com

ABSTRACT

The avian diversity of Nizam Sagar Project, at Nizamabad district of Telangana, was studied during the period from March, 2012 to February, 2014 by adopting the line transect and point count methodology. The total 65 bird species belonging to 38 families were listed in the present study. The habitat i.e. availability of food, water, climatic conditions and surrounding vegetation of all are equally favorable for avian fauna. This study presents a preliminary analysis of the bird survey component of Nizam Sagar Project. The analysis aims to provide baseline information of bird biodiversity. The area is inhibited by 65 species of birds belonging to 38 families.

Keywords: *Avifauna, Nizam Sagar project, Nizamabad.*

INTRODUCTION

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. Now-a-days, avifaunal diversity has been decreasing due to the destruction of natural habitats and human disturbances. Birds are essential animal group of an ecosystem and maintain a tropic level. Therefore, detail study on avifauna and their ecology is important to protect them. Birds play prominent and diverse role in religion, and popular culture. They have their functional role in the ecosystem as potential pollinators and scavengers and are rightly called as bio-indicators. 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[9] 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. The small natural lakes and manmade reservoirs are acting as typical wetland ecosystems and provide the habitat to local and migratory birds and play a key role in maintaining the balance in nature.

However very little information is available about avifauna of newly formed Telangana state. This work has therefore undertaken of document the avifaunal diversity of Nizam Sagar Project. Results of this study are valuable, as they serve as baseline information in the development of measures and strategies that will safeguard the wetland from destruction.

MATERIALS AND METHODS

Study area: The water body selected for the present investigation is a man made reservoir formed due to the construction dam on tributary, Manjeera of Godavari.

Nizam sagar Project is located 60 Kms away from Nizambad city, Telangana State (India). Water spread area of the reservoir MWL: 146.36KM (56.51 Sq. Miles) and FRL: 129.50KM (50.00 ″38′Sq. Miles). Nizam sagar Project is located at 18°40 18.67722°N 78.10306°E. Climate″ E″ 11′N 78°6 is Tropical Wet and Dry with most rainfall from June to October. This reservoir is main source of irrigation and drinking water supply.

Location of Nizam Sagar Project

The area is rich in biodiversity, it is having plants with very different morphologies and life forms**,** trees likes *Acacia Arabica, Annona squamosa, Albizzia lebbek, Azadirachta indica, Bauhinia variagata, B. recimosa, Butea monosperma, Cassia fistula, Casuarina equisetifolia, Ceiba petandra, Delonix regia, Ficus bengalensis, Mangifera indica, Pithecolobium dulce, Polyalthea longifolia, Pongamia glabra, Tamarindus indica, Tectona grandis, Terminalia arjuna, Terminalia catappa, Thevetia neriifolia and Zizyphus jujoba* etc., shrubs like *Bambusa bambos B. vulgarsi, Cassia auriculata, Capparis zeylanica, Dichrostachys cinerea, Ipomoea cornia, Prosopis julifera, Ventilago denticulate, Woodfordia* fructicosa and *Zizyphus mauritiana* etc. herbs like *Cassia tora, Datura stramonium, Hyptis sauvelens and Tephrosia purpurea* etc. and aquatic species like *Cyperus flavidus, C. rotandus, C. tenuispica, C. triceps, Eichhornia crassipes, Eriocaulon truncatum, Fimbristylis cymosa, Monocharia vaginalis, Nelumbo nucifera, Pistia stratioti, Schoeplectus articulates, Typha angustata* and *Xyris pauciflora* etc.

Regular monthly observation was made from March, 2012 to February, 2014 (24 months) by using Line Transect method[7]. Numbers of individuals were counted by using point count method[20] 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[2,3]. The sighted birds were photographed by using Sony Cyber shot Camera Model No. W570 & Model No and DSC-S800. These observations were made early in the morning. Common and scientific names were given as per Manakadan and Pittie[17]. Checklist of bird was prepared as per Abdulali[1].

The status of bird is categorized as Resident Common (RC), Resident Migrant Common (RMC), Resident rare (Rr), - Resident Uncommon (RU), Resident Migrant (RM), Resident Migrant Uncommon (RMU), Winter Migrant Uncommon (WMU) and Winter Migrant (WMr).

RESULTS AND DISCUSSION

Birds are susceptible to the changes in wetlands or ecosystems, some birds are migratory and are responsible for fluctuation in the population. Fluctuation in population helps to know whether the area is normal or polluted. Total absence of birds from any area may be considered as pollution indication[6,21]. The study reveals the occurrence of 65 species of birds belonging to 38 families. Table 1 depicts details about the Scientific and Common Names, Status and Occurrence of birds. Out of 65 species 43 species were of Resident Common (RC), 01 species is Resident Migrant (RM), 02 Species of Residential rare (Rr), 06 Residential Migrant Common (RMC), 01 species was Resident Migrant Uncommon (RMU), 03 species are Resident Uncommon (RU), 03 species are Winter Migrant (WMr) and 06 species were Winter Migrant Uncommon (WMU).

Out of these 24 species namely Indian Pond Heron, Little Egret, Cattle Egret, Eurasian collard-Dove, Spotted Dove, Blue rock Pigeon, Purple Moorhen, White breasted water hen, Common Coot, Little Cormorant, White-breasted Kingfisher, Rose Ringed Parakeet, Asian Koel, Crow Pheasant, Indian Roller, Red-wattled Lapwing, House Crow, Indian Robin, Red Vented Bulbul, Large Gray Babbler, Baya Weaver, Pariah Kite, Purple rumped sun bird and Purple sun bird were common during study period with rich in number. 07 species such as Little Grebe, Painted Stork Near threatened by IUCN[11], House Swift, Little Cormorant, Indian River Tern and Black ibis were recorded during winter season. Common Sand piper, Brown Headed Gull and Black winged Stilt were winter migrant. Flocks of Brown Headed Gull recorded in mid winter i.e. in the month of December- January 2014. Indian peafowl was observed abundantly along with Indian Roller state bird of Andhra Pradesh. Painted Stork Near threatened by IUCN[11] was found in flocks. All Winter Migrant Uncommon species such as Eurasian Spoonbill, Comb Duck, Common Pochard, Northern Pintail, Cotton Teal and Ruddy Shelduck were recorded in winter season only.

Diversity of birds in Nizam Sagar Dist. Nizamabad was compared with the nearby districts in Maharashtra state because there was no study on the biodiversity of birds in Telangana so far. Similar type of studies were carried out by Kulkarni *et al.*[13] recorded 18 Piscivorous bird species in Dongarkheda irrigation tank, Dist. Hingoli, Pawar *et al*[21] recorded 95 bird species from three water reservoirs from Satara Dist., Kulkarni, *et al.,*[13] also recorded 93 species of birds in Shikhachiwadi Wadi, reservoir Dist. Nanded; Balkhande *et al.,*[4] recorded 53 species of birds on river Godavari near Dhangar Takli Tq. Purna Dist. Parbhani; Balkhande, *et. al.,*[4] recorded 50 species of birds near river Purna Dist. Parbhani. Laxmi Narayana, *et al.,*[14] recorded 66 species of birds in Sherpally, Nalgonda District, Andhra Pradesh; Balkhande, *et. al.,*[4] reported 32 bird species in Apparavpeth water tank. Tq. Kinwat. Dist. Nanded (M.S.), Prasad, *et. al.,* recorded 164 bird species in Manjeera Wildlife Sanctuary**,** Medak District, Andhra Pradesh and Balkhande, *et. al.,*[4] recorded 69 bird species in Satapur water body, Renjal Mandal Dist. Nizamabad, Telangana.

This Nizam Sagar Project is very attractive place for migratory birds in winter. All migratory birds which are counted in this project were gathered here in good numbers along with resident common birds in winter. This site has a potential to bird watching. This area is infested with paddy farming and it comprises of more number of sources (food, feeding sites, roosting, nesting sites, etc.). This suggest that the habitat i.e. availability of food, water, climatic conditions and surrounding vegetation are favorable for avian fauna. Hence the present work was carried out to enlist, identify and record various species of birds to have baseline information for future in depth studies.

Table 1: The list of Birds sighted on Nizam Sagar Dist. Nizamabad during March, 2012 to February, 2014 (24 Months) along with their status and occurrence

S.No	Family	Common name	Scientific Name	Status	Occur -rence
1	Podicipitidae	Little Grebe	*Tachybaptus ruflcollis*	RMC	++
2	Ardeidae	Indian Pond Heron	*Ardeola grayii*	RC	++++
3		Grey Heron	*Ardea cinerea*	RMU	++
4		Little Egret	*Egretta gaizetta*	RC	++++
5		Cattle Egret	*Bubuicus ibis*	RC	++++
6		Purple Heron	*Ardea purpurea*	RM	+
7	Ciconiidae	Painted Stork (**Near threatened by IUCN (2011)**	*Mycteria leucocephala*	RMC	+++
8		White-naked Stork	*Ciconia episcopus*	RU	++
9		Asian openbill Stork	*Anastomus oscitans*	RC	+++
10	Apodidae	House Swift	*Apus affinis*	RMC	+++
11	Columbidae	Eurasian collard-Dove	*Streptopelia decaocta*	RC	++++
12		Spotted Dove	*Streptopelia chinensis*	RC	++++
13		Blue rock Pigeon	*Columba livia*	RC	++++
14	Phasianidae	Indian Peafowl	*Pavo cristatus*	RC	+++

15	Rallidae	Purple Moorhen	*Porphyrio porphyrio*	RC	++++
16		White breasted Water Hen	*Amaurornis phoenicurus*	RC	++++
17		Common Coot	*Fulica atra*	RC	++++
18	Phalacrocoracidae	Little Cormorant	*Phalocrocorax niger*	RMC	++++
19	Sturnidae	Common Myna	*Acridotheres tristis*	RC	+++
20		Brahminy Starling	*Sturnus pagodarum*	RC	+++
21	Scolopacidae	Common Sand piper	*Actitis hypoleucos*	WMr	++
22	Laridae	Indian River Tern	*Sterna aurantia*	RMC	+++
23		Brown Headed Gull	*Chroicocephalus brunnicephalus*	WMr	++
24	Alcedinidae	White-breasted Kingfisher	*Hylcyaon smyrmensis*	RC	++++
25		Pied Kingfisher	*Ceryle rudis*	RC	+++
26	Psittacidae	Rose Ringed Parakeet	*Psittacula krameri*	RC	++++
27	Cuculidae	Asian Koel	*Eudynamys scolopacea*	RC	++++
28		Crow Pheasant	*Centropus sinensis*	RC	++++
29		Brain fever bird	*Hierococcyx varius*	RC	+++
30	Hirundinidae	Wire-tailed Swallow	*Hirundo smithil*	RU	++
31		Common Swallow	*Hirundo rustica*	RC	+++
32	Coraciidae	Indian Roller	*Coracias benghalensis*	RC	++++
33	Meropidae	Small bee Eater	*Merops orientalis*	RC	++++
34	Charadriidae	Red-wattled Lapwing	*vanellus indicus*	RC	++++
35		Yellow –wattled Lapwing	*Vanellus malabaricus*	RC	++++
36	Corvidae	House Crow	*Corvus corax*	RC	++++
37	Muscicapidae	Indian Robin	*Saxicoloides fulicata*	RC	+++
38		Oriental Magpie Robin	*Copsychus saulari*	RC	++++
39	Dicruridae	Black Drongo	*Dicrurus macrocer*	RC	++++
40	Pycononotidae	Red Vented Bulbul	*Pycnonotus cafer*	RC	++++
41	Passeridae	House Sparrow	*Passer domsticus*	RC	+++
42	Leiothrichidae	Large Gray Babbler	*Turboides malcolmi*	RC	++++
43	Recurvirostridae	Black Winged Stilt	*Himantopus himantopus*	Wmr	++++
44	Upupidae	Common Hoopoe	*Upupa epops*	RC	+++
45	Ploceidae	Baya Weaver	*Ploceus philippinus*	RC	++++
46	Threskiornithidae	Eurasian Spoonbill	*Platalea leucorodia*	WMU	++
47		Black ibis	*Pseudibis papillosa*	RMC	++
48	Accipitridae	Black-shouldered Kite	*Elanus axillaris*	Rr	++
49		Pariah Kite	*Milvus migrans*	RC	++++
50		Shikra	*Accipiter badius*	RU	++
51	Aegithinidae	Common iora	*Aegithina tiphia*	RC	++
52	Estrildidae	Red Munia	*Amandava amandava*	RC	++
53	Motacillidae	White Wagtail	*Motacilla alba*	RC	+++
54		Grey Wagtail	*Motacilla cinerea*	RC	+++
55	Cisticolidae	Ashy wren Warbler	*Prinia socialis*	RC	+++
56	Bucerotidae	Indian Grey Hornbill	*Ocyceros birostrix*	Rr	+
57	Nectariniidae	Purple rumped sun bird	*Nectarinia zeylonica*	RC	++++
58		Purple sun bird	*Nectarinia asiatica*	RC	++++
59	Cisticolidae	Tailor Bird	*Orthotomus sutorius*	RC	+++
60	Oriolidae	Indian Oriole	*Oriolus kundoo*	RC	+++
61	Anatidae	Comb Duck	*Sarkidiornis melanotos*	WMU	+
62		Common Pochard	*Aythya ferina*	WMU	++
63		Northern Pintail	*Anas acuta*	WMU	++
64		Cotton Teal	*Nettapus coromandelianus*	WMU	+++
65		Ruddy Shelduck	*Todorna ferruginea*	WMU	+++

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

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