

Study on Seasonal Variations and Feeding Guilds in Avifaunal Diversity at Patya Khal, Baran, Rajasthan, India

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ABSTRACT: Birds are used as bioindicators as they are very sensitive to the environmental changes. Bird diversity refers to the variety of birds in the environment. Avifaunal diversity assessment was carried out in Patya Khal region (village Tisaya) of Baran district of Rajasthan, India. Patya Khal region is surveyed between March 2023 to February 2024 to determine the current ecological status of the ecosystem and to establish a bird species list. Direct count method was used to generate data for analysis. A total of 73 species of birds were recorded, belonging to 36 families and 15 orders. Birds of observed species belong to seven major feeding guilds i.e. omnivorous, insectivorous, carnivorous, granivorous, nectarivores, herbivorous and frugivorous. Maximum number of species were of omnivorous guild (34.27%) followed by insectivorous (24.68%), carnivorous (23.29%), granivorous (12.39%), nectarivores' (1.37%), herbivorous (2.74%) and frugivorous (1.37%). The study revealed that 65 species of study area are resident and 8 species are winter movers.

Keyword: - Birds, Avifaunal diversity, Seasonality, Baran, Rajasthan

INTRODUCTION

Rajasthan, a semi-arid region in northwestern India, boasts remarkable avifaunal diversity due to its varied landscapes, ranging from deserts and scrublands to wetlands and forested areas (Ali & Ripley, 1987; Lamba, 1987). This ecological diversity supports over 450 species of birds, making Rajasthan an essential region for avian biodiversity in India (Kushwaha & Saran, 2004). The state's vast deserts, particularly the Thar Desert, host specialized species such as the Indian courser (*Cursorius coromandelicus*) and the desert lark (*Ammomanes deserti*), which have adapted to the harsh, dry conditions (Grimmett, Inskipp, & Inskipp, 2011). The iconic Great Indian Bustard (*Ardeotis nigriceps*), a critically endangered species, also

finds its last strongholds in the semi-arid grasslands of Rajasthan (Rahmani, 1989; Rahmani & Manakadan, 1990; BirdLife International, 2021) .

The wetlands of Rajasthan, including Bharatpur's Keoladeo National Park, are crucial stopovers for migratory birds along the Central Asian Flyway. Each winter, species such as the Siberian crane (*Grus leucogeranus*), bar-headed goose (*Anser indicus*), and a variety of ducks and waders flock to these wetlands, enhancing the seasonal avifaunal diversity (Chandra & Kumar, (1993). These areas support both resident and migratory species, showcasing a high seasonal turnover of bird populations (Hussain & Singh, 2020; Prasad & Rajagopalan, 2000).

Additionally, Rajasthan's diverse habitats, like the Aravalli mountain ranges, contribute to the region's overall bird diversity (Lamba, 1987). Species such as the Indian pitta (*Pitta brachyura*) and the white-bellied drongo (*Dicrurus caerulescens*) inhabit these areas, adding to the richness of avian life (Ali & Ripley, 1987; Grimmett et al., 2011). However, this diversity faces threats from habitat loss, agricultural expansion, and urbanization (Kushwaha & Saran, 2004; Rodgers & Panwar, 1988). The conservation of key habitats, especially grasslands and wetlands, is essential to sustain Rajasthan's avifaunal diversity. Protection of areas like the Desert National Park and the establishment of bird conservation programs are crucial for the preservation of species, particularly those that are endangered or unique to this region (Rodgers & Panwar, 1988; Manakadan & Rahmani, 2002).

Material & Methods

Study area

Baran district is located in the southeastern part of Rajasthan state of India. Baran is located at 25⁰.1' N & 76⁰.52' E. It has an average elevation of 262 meters. Total area of this district is 72.36 km². Tisaya village is 8 km towards north from district headquarters Baran. Near Tisaya village there is some land area not used for agriculture purpose, this area called Patya Khal in the regional language. Patya Khal is situated around 25⁰.08' latitudinal and 76⁰.50' longitudinal.

Temperature of the study area were maximum 50.0 °C and minimum 06.0 °C. Climate of the study area is dry type. There is Patya Khal area with least anthropogenic activities. This area is having rich vegetation so the Patya Khal area is selected for study.

Data collection

During march 2023 to feb 2024 data were collected at 5 different point in the study area. The direct count method is used for bird count. Visits to each point were equality distributed across four periods during the day. Early morning (6.30 – 8.30), Late morning (9.00 to 11.00), early evening (15.00 to 17.00) and (17.30 to 18.30). A binocular of 7*35 resolutions and a field guid book were also used to identify the bird species observed birds were photographed by camera (Nikon Coolpix P1000).

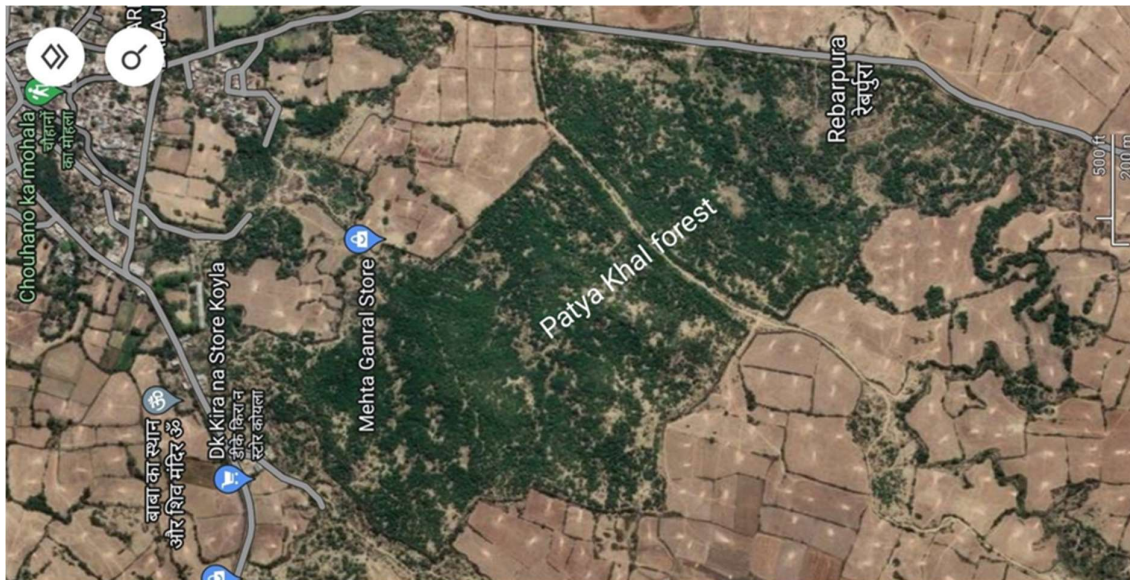


Figure1: Patya Khal a wild type area at Tisaya Village in District Baran, Rajasthan

The data recorded in each survey was analysed for relative abundance on the basis of frequency of sightings, as per Mackinnon &Phillipps (1993), as: Very common (VC) sighted ten times, Common (C) sighted seven to nine times, Uncommon (UC) sighted three to six time, Rare (R) sighted once or twice.

Residential status of the birds has been worked out. Different status categories like Resident, winter visitor and summer visitor has been assigned. Feeding habits of the birds like Insectivorous, Granivorous, Frugivorous, have been assigned to each species.

Study of avifaunal diversity is an essential ecological tool for assessment of a habitat both qualitatively and quantitatively.

Results & Discussion

The present study revealed 73 species of birds belonging to 36 families and 15 orders. The seasonal diversity of avifauna was calculated in three different seasons (summer, winter and monsoon season) from March 2023 to feb.2024.

Diversity of Avifauna in the summer season

The present study revealed the presence of 33 species belonging to 21 families and 10 orders in the summer season. Order Passeriformes was represented by 18 species belonging to 10 families and contributed 54.54% of the total avifaunal species. Whereas order Pelacaniiformes belonging to one family contributed 9.09% of the total avifaunal species in the study area in summer season (table no. 1). Order Suliformes, Accipitriformes, Psittaciformes, Strigiformes was represented by only one species and contributed (3.03% each) of the total avifaunal species in the study site.

Family Muscicapidae showed the highest species richness with dominance index 17.934% (Table no. 2) and family Hirudinidae, Haicyonidae, Centropodidae, Cuculidae, Accipitridae, and Phalacrocoracidae (with dominance index 0.5434 each) were least abundant in this region. European robin was the most abundant species in the study site and Great Egret, Little Cormorant, Black winged Kite, Asian Koel, Greater Coucal, White throated Kingfisher, Jungle Babbler and Brahminy Starling was least abundant species in this region. In the present study out of 33 species, 6 species were Very common, 2 species were Common, 8 species were Uncommon and 17 species were found Rare. Analysis of Residential status reveals that 32 species were Residents, and one species was winter migrant.

Diversity of Avifauna in monsoon season

In the Monsson season 40 bird species belonging to 25 families and 11 orders were reported from the study area. Order Passeriformes was represented by 18 species belonging to 11 families, contributed 45% of the total avifaunal species in the study area. Order Pelecaniformes was represented by 6 species belonging to 02 families, contributed 15% of the

total bird species in the Patya Khal area (table no. 3). Order Accipitriformes, Gruiciformes, Charadriiformes and Psittaciformes were reported with only one species. (Each with 2.5% of the total avifauna in the study area). On Analysing the data, it was reported that family Ardeidae of order Pelacaniformes was most abundant with dominance index 16.0194 in the Monsoon season (table no 4). Family Accipitridae, Corvidae and Cuculidae were reported least abundant with dominance index (0.4854).

Out of the 40 species encountered in the Monsoon season 39 species were resident and only one species was winter migrant. On the basis of number of sightings 03 Species were reported Very common, 02 species were found Common, 13 species were Uncommon, and 22 species were reported Rare. Most abundant species of the study site was Cattle Egret and least abundant species was Indian Fowl, Black winged Kite, Asian Koel, House Crow, Barn Swallow and Bank Myna.

Diversity of Avifauna in winter season

In the present study 68 species of birds belonging to 33 families and 14 orders have been recorded in winter season.

The dominant order was Passeriformes, represented by 32 species in the study area, and contributed 47.0588% of the total avifaunal species. Order Pelacaniformes was represented by 09 species and contributed 13.2352% of the total avifaunal in this region (Table no.5). Order Podicipediformes, Suliformes, Psittaciformes, Cuculiformes contributed 1.470% of the total avifaunal species. Family Passeridae is most abundant family with dominance index 36.5435 (Table no.6). Whereas family Sylvidae and Nectarinidae is the least abundant (dominance index 0.1319) in the study area.

Most abundant species of the study area in winter was Old world Sparrow. Birds like Purple Heron, Barn Swallow, Rufous tailed Lark, Ashy crowned Lark, Rufous fronted Prinia, Graceful Prinia, Lesser white Throat and Brown rock Chat were least abundant species in the study area.

Out of the total avifaunal diversity 12 species were Very common, 03 species were Common, 12 species were Uncommon and 41 species were Rare. Further analysis of

Residential status indicates that 58 species were Resident, 08 species were winter migrants and 02 species were Residential migrants. Presence of 68 species of bird's species in the study area indicates that the area is able to provide ecological security to the avifauna.

The study documented that the Avifauna in the Patya Khal region of Baran district exhibits a change in the number of species with respect to seasonal change. Along with this study revealed the highest dominance of order Passeriformes in all the three seasons. The study also pointed out that winter season is the most favourable season for the avifauna in the study area.

So the present study shows that Patya Khal region support a high avifaunal diversity. Presence of large number of avifaunal species in the study area indicates that the birds are getting ample quantity of food and shelter in this area. Seasonal change in species richness was observed which were mainly due to availability of food in three different seasons.

Birds of observed species belong to seven major feeding guilds i.e. Omnivorous, Insectivorous, Carnivorous, Granivorous, Nectarivores, Herbivorous and Frugivorous. Maximum number of species were of omnivorous guild 34.25% followed by Insectivorous (24.66%), Carnivorous (23.29) granivorous (12.39%), Nectarivores' (1.37%), Herbivorous (2.74%) and frugivorous (1.37%).

For future investigation in the study area following steps are suggested-

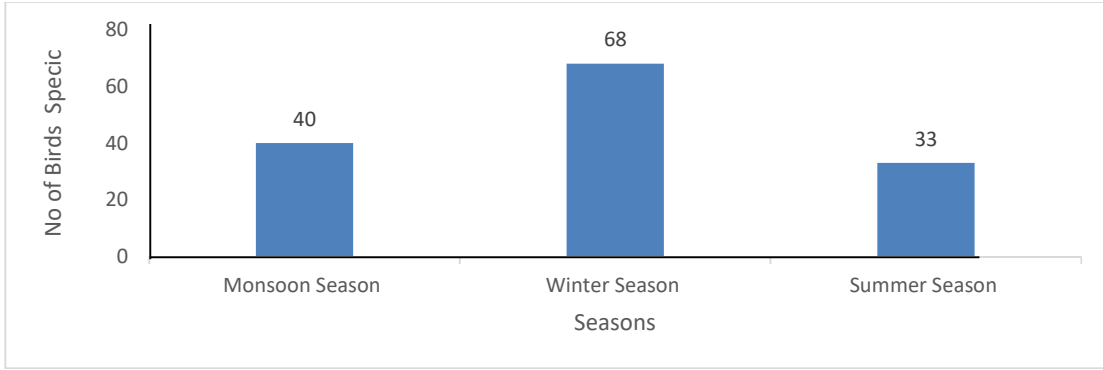
1. Proper documentation of avifauna should be encouraged.
2. As each and every natural area has a threat of degradation due to Rapid urbanization. So such Natural area with abundant avifauna should be protected.
3. Further studies on the nesting mechanism, nesting site selection, feeding behaviours are suggested for future investigations.

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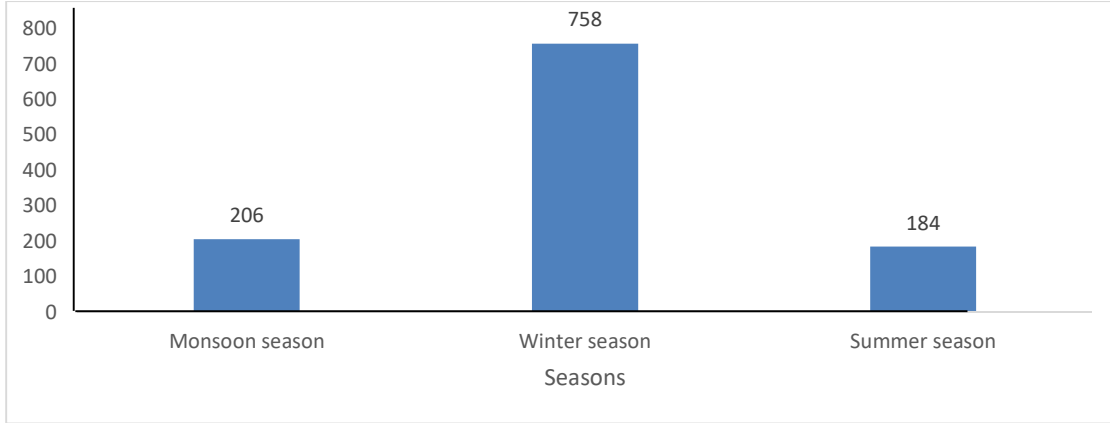
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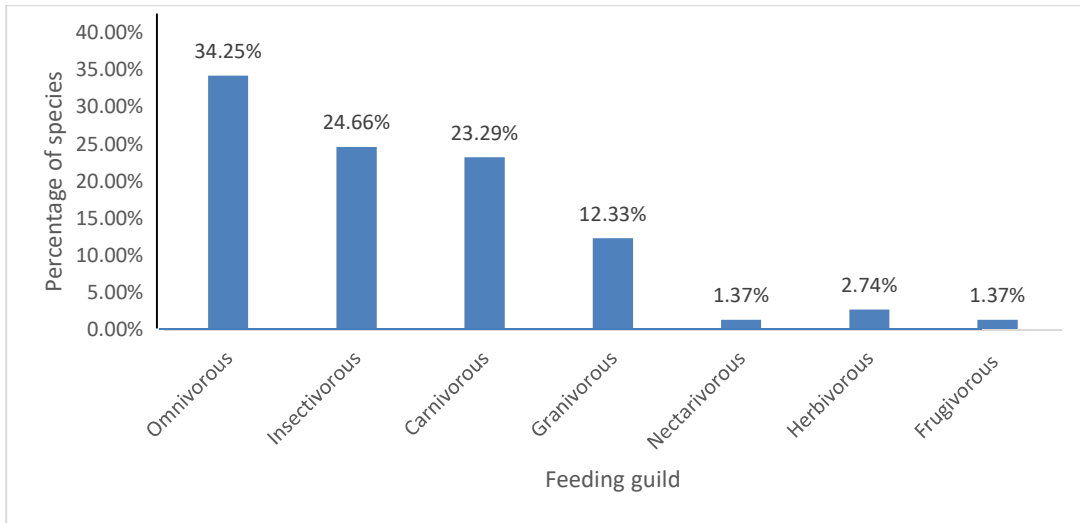
A Comparison of Avian diversity in three Season



Graph – 1- A Comparison of no of Birds species and varies season



Graph - 2 A Comparison of no of Birds and varies season



Graph -3 A Comparison of varies feeding guild and percentage of species

Table 1 summer season: Percentage of order wise avifauna in study area

S.No	Common Name	Order	Percentage of avifauna
1	Cattle Egret	Pelecaniformes	9.0909%
2	Great Egret		
3	Little Egret		
4	Little Cormorant	Suliformes	3.0393%
5	Black-winged Kite (Black shouldered Kite)	Accipitriformes	3.0393%
6	Black-Winged Stilt	Charadriiformes	6.0606%
7	Red-wattled Lapwing		
8	Eurasian collared Dove	Columbiformes	6.0606%
9	Laughing Dove		
10	Rose ringed Parakeet	Psittaciformes	3.0393%
11	Asian Koel (Male)	Cuculiformes	6.0606%
12	Greater Coucal		
13	Spotted Owlet	Strigiformes	3.0393%
14	Common Hoopoe	Coraciiformes	6.0606%
15	White throated Kingfisher		
16	Black Drongo	Passeriformes	54.545%
17	House Crow		
18	Barn Swallow		
19	Rufous fronted Prinia		
20	Ashy Prinia		
21	Plain Prinia		
22	White eared Bulbul		
23	Red vented Bulbul		
24	Striated Babbler		
25	Common Babbler		
26	Jungle Babbler		
27	Asian pied Starling		
28	Brahminy Starling		
29	Oriented magpai Robin		
30	European Robin		
31	Purple Sunbird		
32	House Sparrow		
33	Eurasian tree Sparrow		
	Total	184(10)	

Table -2 summer season – Bird species recorded in study area

S.No	Common Name	Family	Dominance index
1	Cattle Egret	Ardeidae	9.0909%
2	Great Egret		
3	Little Egret		
4	Little Cormorant	Phalacrocoracidae	3.0303%
5	Black-winged Kite (Black shouldered Kite)	Accipitridae	3.0303%
6	Black-Winged Stilt	Charadriidae	6.0606%
7	Red-wattled Lapwing		
8	Eurasian collared Dove	Columbidae	6.0606%
9	Laughing Dove		
10	Rose ringed Parakeet	Psittacidae	3.0303%
11	Asian Koel (Male)	Cuculidae	3.0303%
12	Greater Coucal	Centropodidae	3.0303%
13	Spotted Owlet	Strigidae	3.0303%
14	Common Hoopoe	Upupidae	3.0303%
15	White throated Kingfisher	Haicyonidae	3.0303%
16	Black Drongo	Dicruridae	3.0303%
17	House Crow	Corvidae	3.0303%
18	Barn Swallow	Hirundinidae	3.0303%
19	Rufous fronted Prinia	Cisticolidae	9.0909%
20	Ashy Prinia		
21	Plain Prinia		
22	White eared Bulbul	Campephagidae/	6.0606%
23	Red vented Bulbul	Pycnonotidae	
24	Striated Babbler	Leiothrichidae (Timaliidae)	9.0909%
25	Common Babbler		
26	Jungle Babbler		
27	Asian pied Starling	Sturnidae	6.0606%
28	Brahminy Starling		
29	Oriented magpie Robin	Muscicapidae	6.0606%
30	European Robin		
31	Purple Sunbird	Nectariniidae	3.0303%
32	House Sparrow	Passeridae	6.0606%
33	Eurasian tree Sparrow		
	Total	184(21)	

Table 3 Monsoon season: Percentage of orderwise avifauna in study area

S.No	Common Name	Order	Percentage of avifauna
1	Grey Francolin	Galliformes	5.00%
2	Indian Peafowl		
3	Painted Stork	Ciconiiformes	5.00%
4	Woolly-necked Stork		
5	Black headed Ibis	Pelecaniformes	15.00%
6	Red naped Ibis		
7	Indian pond Heron		
8	Cattle Egret		
9	Great Egret		
10	Little Egret		
11	Black-winged Kite (Black shouldered Kite)	Accipitriformes	2.50%
12	White-breasted Waterhen	Gruiformes	2.50%
13	Red-wattled Lapwing	Charadriiformes	2.50%
14	Rock Pigeon	Columbiformes	7.50%
15	Eurasian colored Dove		
16	Laughing Dove		
17	Rose ringed Parakeet	Psittaciformes	2.50%
18	Asian Koel (Male)	Cuculiformes	5.00%
19	Greater Coucal		
20	Common Hoopoe	Coraciiformes	7.50%
21	White throated Kingfisher		
22	Green be Eater		
23	Long tailed Shrike	Passeriformes	45.00%
24	Black Drongo		
25	House Crow		
26	Barn Swallow		
27	Striated Swallow		
28	Rufous fronted Prinia		
29	Plain Prinia		
30	White eared Bulbul		
31	Red vented Bulbul		
32	Striated Babbler		
33	Common Babbler		
34	Jungle Babbler		

35	Bank Myna		
36	Asian pied Starling		
37	Brahminy Starling		
38	European Robin		
39	Purple Sunbird		
40	Baya Weaver		
	Total	206 (10)	

Table 4 - Monsson season – Bird species recorded in study area

S.No	Common Name	Family	Dominance index
1	Grey Francolin	Phasianidae	5.00%
2	Indian Peafowl		
3	Painted Stork	Ciconidae	5.00%
4	Woolly-necked Stork		
5	Black headed Ibis	Threskiornithidae	5.00%
6	Red naped Ibis		
7	Indian pond Heron	Ardeidae	10.00%
8	Cattle Egret		
9	Great Egret		
10	Little Egret		
11	Black-winged Kite (Black shouldered Kite)	Accipitridae	2.50%
12	White-breasted Waterhen	Rallidae	2.50%
13	Red-wattled Lapwing	Charadriidae	2.50%
14	Rock Pigeon	Columbidae	7.00%
15	Eurasian collored Dove		
16	Laughing Dove		
17	Rose ringed Parakeet	Psittacidae	2.50%
18	Asian Koel (Male)	Cuculidae	5.00%
19	Greater Coucal	Centropodidae	2.50%
20	Common Hoopoe	Upupidae	2.50%
21	White throated Kingfisher	Haicyonidae	2.50%
22	Green be Eater	Meropidae	2.50%
23	Long tailed Shrike	Laniidae	2.50%
24	Black Drongo	Dicruridae	2.50%
25	House Crow	Corvidae	2.50%
26	Barn Swallow	Hirundinidae	5.00%
27	Striated Swallow		
28	Rufous fronted Prinia	Cisticolidae	5.00%

29	Plain Prinia		
30	White eared Bulbul	Pycnonotidae	5.00%
31	Red vented Bulbul		
32	Striated Babbler	Leiothrichidae (Timaliidae)	7.50%
33	Common Babbler		
34	Jungle Babbler		
35	Bank Myna	Sturnidae	7.50%
36	Asian pied Starling		
37	Brahminy Starling		
38	European Robin	Muscicapidae	2.50%
39	Purple Sunbird	Nectariniidae	2.50%
40	Baya Weaver	Ploceidae	2.50%
	Total	206 (25)	

Table 5 Winter season Percentage of order wise avifauna in study area

S.No	Common Name	Order	Percentage of avifauna
1	Grey Francolin	Galliformes	2.941%
2	Indian Peafowl		
3	Knob-billed Duck	Anseriformes	4.411%
4	Gadwall		
5	Indian Spot-billed Duck		
6	Little Grebe	Podicipediformes	1.470%
7	Painted Stork	Ciconiiformes	2.941%
8	Woolly-necked Stork		
9	Black headed Ibis	Pelecaniformes	13.235%
10	Red napped Ibis		
11	Glossy Ibis		
12	Yellow billed Spoonbill		
13	Indian pond Heron		
14	Purple Heron		
15	Cattle Egret		
16	Great Egret		
17	Little Egret		
18	Little Cormorant	Suliformes	1.470%
19	Black-winged Kite (Black shouldered Kite)	Accipitriformes	2.941%
20	Greater spotted Eagle		
21	White-breasted Waterhen	Gruiformes	5,882%
22	Grey headed Swamphen		
23	Common Coot		
24	Common Moorhen		

25	Indian Stone Curlew (Indian thick knee)	Charadriiformes	4.411%
26	Black-winged Stilt		
27	Red-wattled Lapwing		
28	Eurasian colored Dove	Columbiformes	4.411%
29	Laughing Dove		
30	Yellow-footed green Pigeon		
31	Rose ringed Parakeet	Psittaciformes	1.470%
32	Greater Coucal	Cuculiformes	1.470%
33	Indian Roller	Coraciiformes	5.882%
34	Common Hoopoe		
35	White throated Kingfisher		
36	Green be eater		
37	Long tailed Shrike	Passeriformes	47.058%
38	Black Drongo		
39	House Crow		
40	Barn Swallow		
41	Wire tailed Swallow		
42	Rufous-tailed Lark		
43	Ashy crowned sparrow Lark		
44	Striated Prinia		
45	Rufous fronted Prinia		
46	Plain Prinia		
47	Graceful Prinia		
48	White eared Bulbul		
49	Red vented Bulbul		
50	Lesser Whitethroat		
51	Striated Babbler		
52	Common Babbler		
53	Large grey Babbler		
54	Jungle Babbler		
55	Bank Myna		
56	Asian pied Starling		
57	Brahminy Starling		
58	Oriented magpie Robin		
59	European Robin		
60	Common Stonechat		
61	Brown rock Chat		
62	Purple Sunbird		
63	House Sparrow		
64	Sind Sparrow		
65	Eurasian tree Sparrow		
66	Old world Sparrow		
67	Ruddy breasted Seedeater		
68	Indian Silverbill (White		

	Throated Munia)		
	Total	759 (14)	

Table -6 winter season – Bird species recorded in study area

S.No	Common Name	Family	Dominance index
1	Grey Francolin	Phasianidae	2.941%
2	Indian Peafowl		
3	Knob-billed Duck	Antidae	4.411%
4	Gadwall		
5	Indian Spot-billed Duck		
6	Little Grebe	Podicipedidae	1.470%
7	Painted Stork	Ciconidae	2.941%
8	Woolly-necked Stork		
9	Black headed Ibis	Threskiornithidae	5.882%
10	Red naped Ibis		
11	Glossy Ibis		
12	Yellow billed Spoonbill		
13	Indian pond Heron	Ardeidae	7.352%
14	Purple Heron		
15	Cattle Egret		
16	Great Egret		
17	Little Egret		
18	Little Cormorant	Phalacrocoracidae	1.470%
19	Black-winged Kite (Black shouldered Kite)	Accipitridae	2.941%
20	Greater spotted Eagle		
21	White-breasted Waterhen	Rallidae	5.882%
22	Grey headed Swamphen		
23	Common Coot		
24	Common Moorhen		
25	Indian Stone Curlew (Indian thick knee)	Burhinidae	1.470%
26	Black-winged Stilt	Charadriidae	2.941%
27	Red-wattled Lapwing		
28	Eurasian collored Dove	Columbidae	4.411%
29	Laughing Dove		
30	Yellow-footed green Pigeon		
31	Rose ringed Parakeet	Psittacidae	1.470%
32	Greater Coucal	Centropodidae	1.470%
33	Indian Roller	Coraciidae	1.470%
34	Common Hoopoe	Upupidae	1.470%
35	White throated Kingfisher	Haicyonidae	1.470%
36	Green be Eater	Meropidae	1.470%

37	Long tailed Shrike	Laniidae	1.470%
38	Black Drongo	Dicruridae	1.470%
39	House Crow	Corvidae	1.470%
40	Barn Swallow	Hirundinidae	2.941%
41	Wire tailed Swallow		
42	Rufous-tailed Lark	Alaudidae	2.941%
43	Ashy crowned sparrow Lark		
44	Striated Prinia	Cisticolidae	5.882%
45	Rufous fronted Prinia		
46	Plain Prinia		
47	Graceful Prinia		
48	White eared Bulbul	Campephagidae/ Pycnonotidae	2.941%
49	Red vented Bulbul		
50	Lesser Whitethroat	Sylviidae	1.470%
51	Striated Babbler	Leiothrichidae (Timaliidae)	5.882%
52	Common Babbler		
53	Large grey Babbler		
54	Jungle Babbler		
55	Bank Myna	Sturnidae	4.411%
56	Asian pied Starling		
57	Brahminy Starling		
58	Oriented magpai Robin	Muscicapidae	5.882%
59	European Robin		
60	Common Stonechat		
61	Brown rock Chat		
62	Purple Sunbird	Nectariniidae	1.470%
63	House Sparrow	Passeridae	5.882%
64	Sind Sparrow		
65	Eurasian tree Sparrow		
66	Old world Sparrow		
67	Ruddy breasted Seedeater	Thraupidae	1.470%
68	Indian Silverbill (White Throated Munia)	Estrildidae	1.470%
	Total	759 (33)	

Table 7 Residential & Food status of Birds in study area

S. No	Common Name	Family	Order	Residential status	Food status
1	Grey Francolin	Phasianidae	Galliformes	R	O
2	Indian Peafowl	Phasianidae	Galliformes	R	O
3	Knob-billed Duck	Antidae	Anseriformes	R	O
4	Gadwall	Antidae	Anseriformes	WM	H
5	Indian Spot-billed Duck	Antidae	Anseriformes	WM	H

6	Little Grebe	Podicipedidae	Podicipediformes	WM	C
7	Painted Stork	Ciconidae	Ciconiiformes	R	C
8	Woolly-necked Stork	Ciconidae	Ciconiiformes	R	C
9	Black Headed Ibis	Threskiornithidae	Pelecaniformes	R	C
10	Red Naped Ibis	Threskiornithidae	Pelecaniformes	R	O
11	Glossy Ibis	Threskiornithidae	Pelecaniformes	WM	C
12	Yellow billed Spoonbill	Threskiornithidae	Pelecaniformes	WM	C
13	Indian Pond Heron	Ardeidae	Pelecaniformes	R	C
14	Purple Heron	Ardeidae	Pelecaniformes	R	C
15	Cattle Egret	Ardeidae	Pelecaniformes	R	C
16	Great Egret	Ardeidae	Pelecaniformes	R	C
17	Little Egret	Ardeidae	Pelecaniformes	R	C
18	Little Cormorant	Phalacrocoracidae	Suliformes	R	C
19	Black-winged Kite (Black shouldered Kite)	Accipitridae	Accipitriformes	R	C
20	Greater Spotted Eagle	Accipitridae	Accipitriformes	RM	C
21	White-breasted Waterhen	Rallidae	Gruiformes	R	O
22	Grey Headed Swamphen	Rallidae	Gruiformes	R	O
23	Common Coot	Rallidae	Gruiformes	RM	O
24	Common Moorhen	Rallidae	Gruiformes	R	O
25	Indian Stone Curlew (Indian thick knee)	Burhinidae	Charadriiformes	R	O
26	Black-Winged Stilt	Charadriidae	Charadriiformes	R	I
27	Red-wattled Lapwing	Charadriidae	Charadriiformes	R	I
28	Rock Pigeon	Columbidae	Columbiformes	R	G
29	Eurasian collared Dove	Columbidae	Columbiformes	R	G
30	Laughing Dove	Columbidae	Columbiformes	R	G
31	Yellow-footed green Pigeon	Columbidae	Columbiformes	R	G
32	Rose ringed Parakeet	Psittacidae	Psittaciformes	R	F
33	Asian Koel (Male)	Cuculidae	Cuculiformes	R	O
34	Greater Coucal	Centropodidae	Cuculiformes	R	O
35	Spotted Owlet	Strigidae	Strigiformes	R	C
36	Indian Roller	Coraciidae	Coraciiformes	R	C
37	Common Hoopoe	Upupidae	Coraciiformes	R	O
38	White Throated Kingfisher	Haicyonidae	Coraciiformes	R	C
39	Green be Eater	Meropidae	Coraciiformes	R	I
40	Long tailed Shrike	Laniidae	Passeriformes	R	I
41	Black Drongo	Dicruridae	Passeriformes	R	I

42	House Crow	Corvidae	Passeriformes	R	O
43	Barn Swallow	Hirundinidae	Passeriformes	WM	I
44	Wire tailed Swallow	Hirundinidae	Passeriformes	R	I
45	Rufous-Tailed Lark	Alaudidae	Passeriformes	R	O
46	Ashy crowned sparrow Lark	Alaudidae	Passeriformes	R	O
47	Striated Prinia	Cisticolidae	Passeriformes	WM	I
48	Rufous fronted Prinia	Cisticolidae	Passeriformes	R	I
49	Ashy Prinia	Cisticolidae	Passeriformes	R	I
50	Plain Prinia	Cisticolidae	Passeriformes	R	I
51	Graceful Prinia	Cisticolidae	Passeriformes	R	I
52	White eared Bulbul	Pycnonotidae	Passeriformes	R	O
53	Red vented Bulbul	Pycnonotidae	Passeriformes	R	O
54	Lesser Whitethroat	Sylviidae	Passeriformes	WM	I
55	Striated Babbler	Timaliidae	Passeriformes	R	O
56	Common Babbler	Leiothrichidae	Passeriformes	R	O
57	Large Grey Babbler	Leiothrichidae	Passeriformes	R	O
58	Jungle Babbler	Leiothrichidae	Passeriformes	R	O
59	Bank Myna	Sturnidae	Passeriformes	R	I
60	Asian pied Starling	Sturnidae	Passeriformes	R	O
61	Brahminy Starling	Sturnidae	Passeriformes	R	O
62	Oriented magpie Robin	Muscicapidae	Passeriformes	R	I
63	European Robin	Muscicapidae	Passeriformes	R	I
64	Common Stonechat	Muscicapidae	Passeriformes	R	I
65	Brown Rock-Chat	Muscicapidae	Passeriformes	R	I
66	Purple Sunbird	Nectariniidae	Passeriformes	R	N
67	House Sparrow	Passeridae	Passeriformes	R	G
68	Sind Sparrow	Passeridae	Passeriformes	R	G
69	Eurasian Tree Sparrow	Passeridae	Passeriformes	R	G
70	Old world Sparrow	Passeridae	Passeriformes	R	G
71	Baya Weaver	Ploceidae	Passeriformes	R	O
72	Ruddy breasted Seed eater	Thraupidae	Passeriformes	R	G
73	Indian Silverbill	Estrildidae	Passeriformes	R	O