

Diversity, Abundance, And Distribution of Birds in And Around Nohar with Respect to Types of Habitats

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Abstract—The present study documents the avifaunal diversity of Nohar, Hanumangarh district, Rajasthan, based on systematic surveys conducted during the 2024 session. A total of 89 bird species belonging to 39 families were recorded across various habitat types, including water bodies and their surrounding landscapes. Among these, 65 species were identified as resident and 24 species as migratory (summer and winter). The analysis revealed that 16 families were represented by a single species, whereas others varied as follows: 8 families with 2 species, 5 families with 3 species, 2 families with 4 species, and 2 family with 5 species.

A significant variation in bird abundance and species richness was observed across different habitat types, although no significant difference was noted among habitats concerning feeding guilds. The findings underscore the ecological significance of habitat diversity in sustaining avian populations. The study recommends continuous monitoring to evaluate the impact of anthropogenic disturbances on local avifauna and highlights the urgent need for habitat-specific conservation strategies.

Index Terms—Habitat, Birds, Migration, Avifaunal Diversity, Resident Birds, Winter Migratory, Relative Diversity Index, Conservation.

I. INTRODUCTION

Birds are among the most adaptable vertebrates on Earth, thriving across a wide range of habitats from arid deserts and dense rainforests to alpine regions and tropical islands. Their survival and evolutionary success are attributed to remarkable morphological and behavioural adaptations, such as variations in beak structure, plumage coloration for display or camouflage, migratory behaviour, and nesting strategies.

Birdwatching the practice of observing birds visually or aurally using binoculars or telescopes has evolved into a globally popular form of ecotourism. The term “bird watching” first appeared as the title of a book by Edmund Selous (1901). While ornithologists study birds using formal scientific methods, birdwatchers contribute indirectly to conservation awareness and environmental education. This activity promotes habitat preservation, supports eco-economies, and enhances local awareness regarding avian conservation.

Avian diversity encompasses variations in morphology, ecology, and behavior. Birds perform essential ecological functions as pollinators, seed dispersers, predators, and prey, maintaining ecological balance. However, their populations are increasingly threatened by habitat loss, pollution, and climate change. Understanding and documenting bird diversity is therefore critical for effective conservation planning and for maintaining ecosystem integrity.

II. MATERIALS AND METHODS

The avifaunal survey was conducted throughout January–December 2024, covering all major seasons to assess temporal variations in species richness and abundance.

Field observations were performed during early morning and late afternoon hours, coinciding with peak avian activity. The direct observation method was adopted, using binoculars for distant identification to avoid disturbing natural behaviour.

Species identification was based on “The Book of Indian Birds” (Salim Ali, 2002) and standardized according to “Nomenclature of Birds of the Indian

Subcontinent” (Pittie & Robertson, 1993). Data were analyzed to determine species richness, family-wise diversity, and residential status (resident vs. migratory).

III. RESULTS

The study documented a total of 89 bird species representing 51 families in and around Nohar. Of these, 65 were resident species and 24 were migratory

(both summer and winter visitors).

Bird’s species were recorded from various habitats including agricultural fields, wetlands, village environments, and open scrublands. Local residents and community leaders actively participated in bird conservation by placing food and water pots, planting shrubs, and creating safe nesting spaces around homes and temples.

Table 1: Residential Birds of Hanumangarh, Rajasthan

S.No.	Common Name	Zoological Name	Family
1	Peacock	<i>Pavo cristatus</i>	Phasianidae
2	Common Quail	<i>Coturnix coturnix</i>	Phasianidae
3	Black Francolin	<i>Francolinus francolinus</i>	Phasianidae
4	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae
5	Blue Rock Pigeon	<i>Columba livia</i>	Columbidae
6	Collared Dove	<i>Streptopelia decaoto</i>	Columbidae
7	Spotted dove	<i>Spilopelia chinensis</i>	Columbidae
8	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae
9	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae
10	1. White- throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae
11	Woodpecker	<i>Dinopium Picidae</i>	Picidae
12	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae
13	Little Egret	<i>Egretta garzetta</i>	Ardeidae
14	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae
15	Oriental White Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae
16	Glossy Ibis	<i>Plegadis falcinellus</i>	Threskiornithidae
17	Common Myna	<i>Acridotheres tristis</i>	Sturnidae
18	Bank Myna	<i>Acridotheres ginginiamus</i>	Sturnidae
19	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotida
20	Lesser Whistling duck	<i>Dendrocygna javanica</i>	Anceriformes
21	White headed duck	<i>Oxyura leucocephala</i>	Anceriformes
22	Bar-headed Goose	<i>Anser indicus</i>	Anceriformes
23	Greylag Goose	<i>Anser anser</i>	Anceriformes
24	Common Sheldduck	<i>Tadorna tadorna</i>	Anceriformes
25	Laughing Dove	<i>Spilopelia senegalensis</i>	Anceriformes
26	Eurasian Scops Owl	<i>Otus scops</i>	Strigidae
27	Spotted Owlet	<i>Athene brama</i>	Strigidae
28	Dusky Eagle Owl	<i>Bubo coromandus</i>	Strigidae
29	Indian Grey Hornbill	<i>Ocyrceros birostris</i>	Bucerotidae
30	Common Tailor Bird	<i>Orthotomus sutorius</i>	Cisticolidae
31	River Tern	<i>Sterna aurantia</i>	Laridae
32	Asian Koel	<i>Eudynamys scolopacea</i>	Corvidae
33	2. Piled Cuckoo	<i>Clamator jacobinus</i>	Corvidae
34	House Crow	<i>Corvus splendens</i>	Corvidae
35	Small Green Billed Malkoha	<i>Phaenicophaeus viridirostris</i>	Corvidae
36	Water cock	<i>Gallixrex cinerea</i>	Rallidae
37	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae
38	Indian Bush Lark	<i>Mirafr erythroptera</i>	Alaudidae
39	Black Kite	<i>Milvus migrans</i>	Accipitridae

40	Western Marsh Harrier	Circus aeruginosus	Accipitridae
41	Shikra	Accipiter badius	Accipitridae
42	House sparrow	Passer domesticus	Passeridae
43	Oriental Magpie-Robin	Copsychus saularis	Passeridae
44	Purple Sunbird	Cinnyris asiaticus	Nectariniidae
45	Common Babbler	Argya caudata	Silvidae
46	Jungle babbler	Argya striata	Silvidae
47	Indian Robin	Szxicoloides fulicata	Muscicapidae
48	Brown Rock Chat	Oenanthe fusca	Muscicapidae
49	Paddy Field Pipit	Anthus rufulus	Motacillidae
50	White Wagtail	Motacillia alba	Motacillidae
51	White necked Stork	Ciconia episcopus	Ciconidae
52	Rose Ringed Parakeet	Psittacula krameri	Psittacidae
53	Indian White eyed	Zosteropus palaebrous	Zosteropus
54	Jungle Prinia	Prinia sylvatica	Cisticolidae
55	Ashy Prinia	Prinia Socialis	Cisticolidae
56	Plain Prinia	Prinia inornata	Cisticolidae
57	Common Tailorbird	Orthotomus sutorius	Cisticolidae
58	Common Hoopoe	Upupa epops	Cisticolidae
59	Asian Green Bee eater	Merops orientalis	Meropidae
60	Indian Roller	Coracias benghalensis	Coraciidae
61	Black Drongo	Dicrurus macrocercus	Dicruridae
62	Common Sandpiper	Actitis hypoleucos	Scolopacidae
63	Greater Coucal	Centropus sinensis	Cuculiformis
64	Lesser whistling duck	Dendrocygna javanica	Anatidae
65	Alexandrine Parakeet	Psittacula eupatria	Psittaculidae

IV. MIGRATORY BIRDS

Migratory birds are species that travel from one region to another in response to seasonal changes in climate, food availability, and breeding conditions. These migrations are often long-distance journeys that cover

thousands of kilometres between breeding and wintering grounds. Migration is one of the most fascinating natural phenomena in the animal kingdom, showcasing remarkable endurance, navigation, and adaptability.

Table 2: Migratory Birds of Hanumangarh, Rajasthan

S.No.	Common Name	Zoological Name	Family
1	Flamingoes	Phoenicooterus roseus	Phoenicopteridae
2	Common Coot	Fulica atra	Rallidae
3	Red-naped Ibis	Pseudibis papillosa	Threskiornithidae
4	White Tailed Lapwing	Vanellus indicus	Charadriforme
5	Black Winged Stilt	Himantopus himantopus	Recurvirostridae
6	Little Cormorant	Microcarbo niger	Phalacrocoracidae
7	Little Grebe	Phalacrocoracidae Tachybaptus ruficollis	Podicipedidae
8	Black headed gull	Chroicocephalus ridibundus	Laridae
9	Pelicans	Palecanus erythrorhychos	Palecanidae
10	Northan Shoveler	Spatula clypeata	Anatidae
11	Northern pintail	Anas acuta	Anatidae
12	Painted stork	Mycteria leucocephali	Ciconiidae
13	Black Headed Ibis	Threskiornis melanocephalus	Threskornithidae
14	Common Teal	Anas Creac	Anatidae
15	Common Pochard	Aythya ferina	Anatidae

16	Black-winged stilt	Himantopus himantopus	Recurvirostridae
17	Ruffs	Calidris pugnax	Scolopacidae
18	Gaidwall	Mareca strepera	Anatidae
19	Swan Goose	Anser cygnoides	Anatidae
20	Common Moorhen	Gallinula chloropus	Rallidae
21	Black Crowned Night Heron	Nycticorax nycticorax	Ardeidae
22	Purple Heron	Ardea purpurea	Ardeidae
23	Grey Heron	Ardea cinerea	Ardeidae
24	Tree pipit	Anthus trivialis	Motacillidae
25	Eurasian hoopoe	Upupa epops	Upupidae

Among all the recorded families, Ardeidae and Anatidae showed the highest representation followed by Anseriformes, Cisticolidae, Phasianidae and Corvidae. The current study showed dominance of Ardeidae and Anatidae, whereas previous findings by Sankar et al. (2006), Sharma (1998), Chhangani (2002a, b), and Yaseen et al. (2011) reported dominance of Muscipidae but similar patterns in other regions of Rajasthan.

V. DISCUSSION

Rajasthan supports remarkable avian diversity, with approximately 473 bird species recorded across the state (Vyas & Rahmani, 2015). Local studies such as those in Udaipur (Koli et al., 2019; Agoramoorth & Mohnot, 1986) further confirm regional richness in avifaunal composition. However, urban expansion, deforestation, and agricultural intensification are gradually displacing bird populations from urban areas to surrounding rural landscapes (Dookia & Paudey, 2004; Chhangani, 2002; Palei et al., 2012). The present findings from Nohar highlight the potential of semi-urban and rural habitats as important refuges for both resident and migratory birds.

Active community participation in providing water and food resources significantly contributes to local avian conservation. Such practices, coupled with habitat restoration and awareness programs, can serve as models for community-based conservation initiatives in other semi-arid regions.

VI. CONCLUSION

The present study provides an updated checklist and ecological assessment of avian diversity in Nohar, Hanumangarh district. A total of 89 species belonging to 39 families were recorded, demonstrating the rich

avifaunal composition of the region.

The results emphasize the ecological importance of maintaining diverse habitats, particularly wetlands and vegetated areas, for sustaining bird populations. Further long-term monitoring is recommended to evaluate population trends, habitat preferences, and the effects of anthropogenic disturbances on avian diversity.

REFERENCES

- [1] Agoramoorth, G. & Mohnot, S.M. (1986). Avian fauna of Udaipur, Rajasthan.
- [2] Ali, S. (2002). The Book of Indian Birds. Bombay Natural History Society, Mumbai.
- [3] Chhangani, A.K. (2002a, b). Avifaunal diversity in protected areas of Rajasthan.
- [4] Dookia, S. & Paudey, S. (2004). Impact of urbanization on avifauna.
- [5] Koli, V.K., et al. (2019). Avifaunal studies of Udaipur region.
- [6] Manakadan, R. & Pittie, A. (2001). Standardized common and scientific names of the birds of the Indian subcontinent.
- [7] Pittie, A. & Robertson, I. (1993). Nomenclature of Birds of the Indian Subcontinent.
- [8] Sankar, K., et al. (2006). Avian diversity in Indian arid zones.
- [9] Vyas, R. & Rahmani, A.R. (2015). Checklist of birds of Rajasthan.
- [10] Yaseen, M., et al. (2011). Avifauna in protected habitats of western India.
- [11] Palei, N.C., et al. (2012). Urban expansion and its effects on avian communities.