



Avianfaunal diversity and distribution of wetland area of Bahraich district U P, India

Monika, Ashok Kumar

Department of Zoology, BSNVPG College, University of Lucknow, Uttar Pradesh, India

Correspondence Author: Monika

DOI: <https://doi.org/10.66856/ijees.2026.8.3.8082>

Abstract

The study was conducted in three wetland habitats of district Bahraich, Uttar Pradesh (India) from January, 2025 to July, 2025 to record the avian diversity, its abundance and status. A total of 85 species of birds belonging to 50 genera classified into 15 orders and 35 families were recorded during the study period and 16 orders identified during the study, order Passeriformes was reported as most diverse species which constituted 30 per cent of the total documented species. On the basis of percentage encounter rate, the recorded bird species were categorized into four categories, i.e., Abundant (A), Common (C), Uncommon (UC) and Rare (Ra). Analysis of data revealed that out of total 85 recorded species, 12 species were abundant (A), 35 avian species were common (C), 22 species were uncommon (UC) and 16 species were rare (R). In order to assess the seasonal variation in avian species richness, the recorded bird species were categorized as Resident (R), Winter Migratory (WM), Summer Migratory (SM) and Local Migratory (LM). Analysis of data on seasonal migration revealed that of the total 85 avian species encountered 50 were resident species, 20 were winter migrant and 10 species each of summer migrant and 5 local migrant.

Keywords: Wetland, Bahraich, seasonality, avian biodiversity, conservation

Introduction

Wetland avifauna acts as indicators of wetland quality, and parameters for assessing restoration success and regional biodiversity (Kumar and Gupta, 2009) ^[14]. Wetlands in India are under tremendous pressure due to various anthropogenic activities such as reclamation, deforestation and extensive concrete construction (Kler, 2002; Verma *et al*, 2004) ^[13].

Birds are the most conspicuous groups of animals in the modern world., filling a range of ecological niches and ranging in size. They are bipedal, warm blooded vertebrate animals and adapt themselves to varying conditions (Ali & Ripley, 1978). Birds are considered as important health indicators of the ecological conditions and productivity of an ecosystem (Desai and Shanbhag, 2007) ^[8]. They also play important role in wetland ecosystem and use wetlands for breeding, nesting, as a source of drinking water, foraging and resting (Balapure *et al*, 2012) ^[4]. Any change in the physical, chemical and biological factors of wetlands affects the density, diversity and richness of avian fauna. These are one of the best indicators of environment quality of any ecosystem and also integral part of food chain and food web with a vital role in keeping the balance of nature, help in pollination and dispersal of seeds (Goyal *et al*, 2014).. According to Cody (1978) bird community have a direct relation with the structure of habitat and thereby act as indicators of environment changing with the changing habitat. Recent studies have also emphasized the importance of understanding the ecological characteristics of bird species when developing conservation strategies. Stewart *et al*. (2025) ^[17] demonstrated that reducing threats across species' ranges alone may not be sufficient to prevent future losses of avian functional diversity and suggested that targeted recovery programmes for functionally unique threatened species can make an important contribution to conservation. In recent years many workers have done studies related to the avian diversity of wetlands in India

(Harvey, 2003; Urfi, 2003 Sisodia and Moundiotiya, 2005; Gupta and Kumar and Gupta, 2009 Pawar *et al*, 2010; Gupta and Kaushik, 2011; Joshi and Shrivastava, 2012; Chopra *et al*, 2012 Chopra *et al*, 2013; Patil and Hiragond, 2013; Harney, 2015; Kumar *et al*, 2016) ^[6, 9, 10, 14, 15]. Wetlands, the present study was planned with an objective to monitor and document the diversity and conservational status of avifauna of this site.

Material and Methods

The present study focuses on Bahraich district located in the northeastern part of Uttar Pradesh. The district lies approximately between 27°–28° North latitude and 81°–82° East longitude and shares an international boundary with Nepal in the north. It is bounded by districts such as Gonda, Shravasti, Sitapur, and Lakhimpur Kheri. The district covers about 5,237 sq. km and consists mainly of fertile alluvial plains formed by rivers like the Ghaghara River and Saryu River. The northern part belongs to the Terai region, characterized by dense forests and fertile soil suitable for agriculture. Periodic weekly visits were conducted in the selected study sites. During each periodic visit, Birds were observed early in the morning till mid Morning and evening till sunset from January 2025 to July 2025 using line transect sales and and point count method (Altman, 1974). Birds were observed with the help of Nikon binoculars and Whenever possible photographs were taken with canon camera. Identification of birds was done using field guides by Ali and Ripley, 1987 ^[2]; Grimmett *et al*, 1998 and checklist was prepared according to Manakadan and Pittie (2001) ^[16]. To observe the Status of different avian species, the later were categorised as Resident (R), local migrants (LM) and Winter migrants (WM), Conservation status of different species was assigned using IUCN Red List.

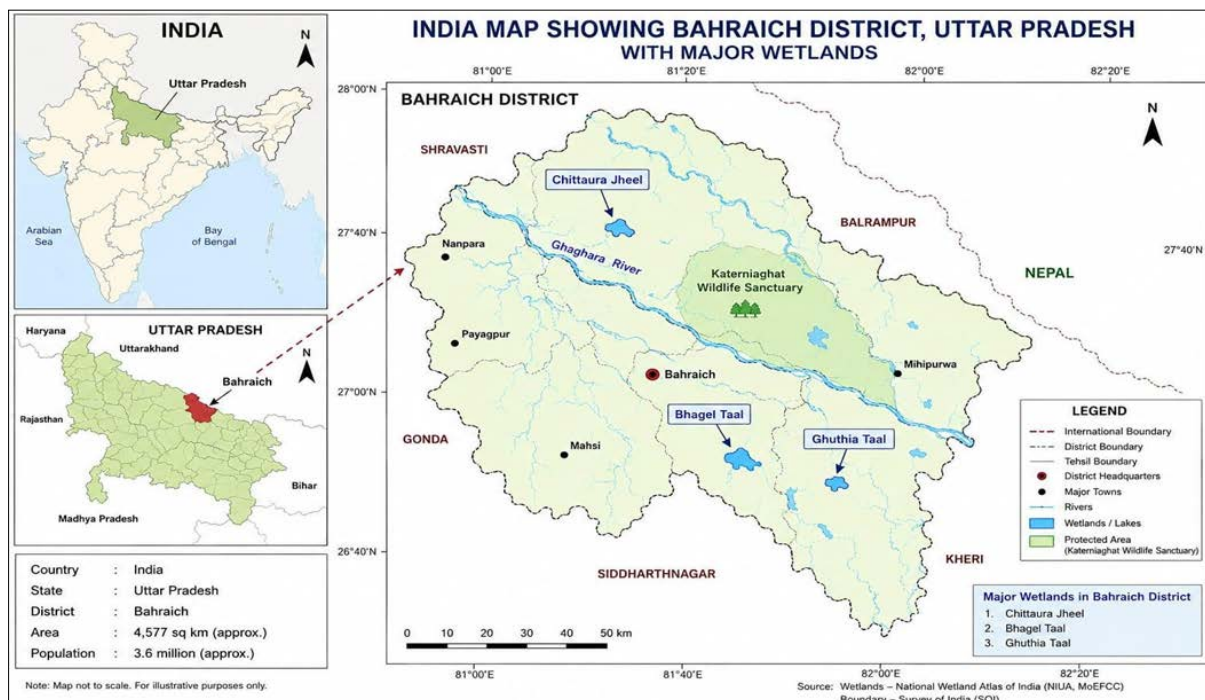


Fig 1: Location and area of wetlands in district Bahraich, Uttar Pradesh.



Fig 2: Showing the various views of wetland habitat in Bahraich district Uttar Pradesh, India.

Results and Discussion

Birds act as crucial ecological indicators of any aquatic ecosystem because of their amazing ability to fly away from unhealthy ecosystems. In the present study, avifaunal diversity of three wetlands, namely, Chittaura Jheel, Bhagel Taal, and Guthia Taal was explored from January 2025 to July 2025. Bird diversity recorded in wetland species from all three study sites has been presented in table 2. Periodically

weekly visits conducted at the three selected wetlands revealed the presence of bird species. Checklist was prepared of the observed avian fauna which includes Common Name, Scientific Name, Family, IUCN status and number of individuals. In the visits, total 85 species were recorded that are belonging to 15 different orders that are Passeriformes, Columbiformes, Psittaciformes, Anseriformes, Accipitriformes, Galliformes, Gruiformes,

Piciformes, Cuculiformes, Charadriiformes, Pelecaniformes, Strigiformes, Bucerotiformes, Galliformes and Coraciiformes respectively and of 35 different families i.e. Anatidae, Burhinidae, Charadriidae, Cuculidae, Alcedinidae, Phasianidae, Strigidae, Ardeidae, Rallidae, Picidae, Megalaimidae, Upupidae, Bucerotidae, Accipitridae, Psittacidae, Columbidae, Leiothrichidae, Nectarinidae, Pycnonotidae, Muscicapidae, Cisticolidae, Ciconiidae, Centropodidae, Lanidae, Dicruridae, Dicaeidae, Zosteropidae, Motacillidae, Jacanidae, Corvidae, Sturnidae, Meropidae, Podicipedidae, Phylloscopidae and Estrildidae. The most abundant species found in every visit includes Common Myna, Jungle Babbler, Rock Dove, Rose-ringed Parakeet, Indian grey Hornbill, Red wattled Lapwing. The rare species found were Spotted Owllet, Western Asian Koel, White breasted Kingfisher. Mostly common resident species of Uttar Pradesh were observed. Population of Red-wattled Lapwing, Black-winged Stilt, Common Moorhen, Great Cormorant and Little Cormorant was found to be high in winter season from January to March, as compared to rest of the year. Kumar and Gupta (2013) also observed the similar findings and reported that Black-winged Stilt and Little Cormorant were found in higher number. Common Sandpiper, Common Coot, White Wagtail, Citrine Wagtail, Little Grebe, Black Stork, Black Kite, Common Redshank, Common Pochard, Spot-billed Duck, Common Teal, Northern Pintail, Northern Shoveler, Common Greenshank and Gadwall were recorded in

small numbers only in the winter season. Kaushik and Gupta (2014) also reported Common Pochard, Common Teal, Northern Pintail, Northern Shoveler, Spot-billed Duck, Common Greenshank and Gadwall and Common Sandpiper as winter visitors. In the present study, Cattle Egrets have been reported in very large numbers on the trees around the water body in the month of March, April, May and June as compared to rest of the Month. Such a large population may be due to onset of breeding season. Analysis of data revealed that out of total 85 recorded species, 12 species were abundant (A), 35 avian species were Common (C), 22 species were Uncommon (UC) and 16 species were Rare (Ra). Similar studies have been carried out in different part of the country to know the abundance status of various avian species (Kumar and Gupta, 2009; Das and Saikia, 2011; Balapure *et al.*, 2012; Bhadja and Vaghela, 2013; Chopra *et al.*, 2012; Chopra and Sharma, 2014; Mistry and Mukherjee, 2015) [4, 6, 14]. Kumar and Gupta (2009) [14] recorded Northern Shoveller (*Anas clypeata*), Northern Pintail (*Anas acuta*), White-Breasted Kingfisher (*Halcyon smyrnensis*), White-Breasted Water Hen (*Amaurornis phoenicurus*), Common Moorhen (*Gallinula chloropus*), Black-Winged Stilt (*Himantopus himantopus*), Red-Wattled Lapwing (*Vanellus indicus*), Cattle Egret (*Bubulcus ibis*) and Indian Pond-Heron (*Ardeola grayii*) as the common species, while, Purple Heron (*Ardea purpurea*) and Lesser Pied Kingfisher (*Ceryle rudis*) as rare species inhabiting the water bodies.

Table 1: Avian biodiversity of Selected wetland habitats of study area Bahraich, Uttar Pradesh (India)

S. No	Family	Common Name	Scientific Name	IUCN Status	Residential Status
1.	Accipitridae	Blank-winged Kite	<i>Elanus caeruleus</i>	LC	Resident
		Bonellis Eagle	<i>Aquila fasciata</i>	NT	Resident
		Crested Serpent Eagle	<i>Spilomis cheela</i>	LC	Resident
		Egyptian vulture	<i>Neophron percnopterus</i>	CR	Resident
		Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	LC	Summer migrant
		Shikra	<i>Accipiter badius</i>	LC	Resident
2.	Acrocephalidae	Blyths Reed Warbler	<i>Acrocephalus dumetorum</i>	LC	Winter migrant
3.	Alaudidae	Bengal Bushlark	<i>Mirafra assamica</i>	LC	Resident
4.	Alcedinidae	Common Kingfisher	<i>Alcedo atthis</i>	LC	Resident
		White- Throated Kingfisher	<i>Halcyon smyrnensis</i>	LC	Resident
5.	Ardeidae	Cattle egret	<i>Bubulcus ibis</i>	LC	Resident
		Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	LC	Resident
		Grey Heron	<i>Ardea Cinerea</i>	LC	Resident
		Purple Heron	<i>Ardea Purpurea</i>	LC	Resident
6.	Bucerotidae	Indian grey Hornbill	<i>Ocyerous Birostris</i>	LC	Resident
7.	Cerylidae	Pied kingfisher	<i>Ceryle rudis</i>	LC	Resident
8.	Charadriidae	Red-watled Lapwing	<i>Vanellus indicus</i>	LC	Resident
		Yellow -watled Lapwing	<i>Vanellus Malabaricus</i>	LC	Resident
9.	Cisticolidae	Ashy Prinia	<i>Prinia socialis</i>	LC	Resident
		Plain Prinia	<i>Prinia inornata</i>	LC	Resident
10.	Ciconiidae	Painted Stork	<i>Mycteria leucocephala</i>	NT	Resident
		White-necked Stork	<i>Ciconia episcopus</i>	VU	Resident
		Black -necked Stork	<i>Ephippiorhynchus asiati</i>	NT	Resident
11.	Columbidae	Laughing Dove	<i>Spilopelia Senegalensis</i>	LC	Resident
		Spotted Dove	<i>Spilopelia Chinensis</i>	LC	Resident
12.	Coraciidae	Indian Roller	<i>Coracias Benghalensis</i>	LC	Resident
13.	Corvidae	House Crow	<i>Corvus Splendens</i>	LC	Resident
		Rufous Treepie	<i>Dendrocitta Vagabunda</i>	LC	Resident
14.	Cuculidae	Asian Koel	<i>Eudynamis Scolopaceus</i>	LC	Resident
		Greater Coucal	<i>Centropus sinensis</i>	LC	Resident
15.	Dicaeidae	Pale-Billed Flowerpecker	<i>Dicaeum erythrorhynchus</i>	LC	Resident
16.	Dicruridae	Ashy Drongo	<i>Dicrurus leucophaeus</i>	LC	Resident
		Spangled Drongo	<i>Dicrurus bracteatus</i>	LC	Resident
		Hair-crested Drongo	<i>Dicrurus Hottentottus</i>	LC	Resident
17.	Estrildidae	Indian sliverbill	<i>Euodice malabarica</i>	LC	Resident

		Scaly-breasted munia	<i>Lonchura punctulata</i>	LC	Resident
18.	Falconidae	Common Kestrel	<i>Falco Tinnunculus</i>	LC	Resident
19.	Hirundinidae	Wire-Tailed Swallow	<i>Hirundo Smithii</i>	LC	Resident
20.	Jacanidae	Bronze-Winged Jacana	<i>Metopidius indicus</i>	LC	Resident
21.	Laniidae	Brown shrike	<i>Lanius cristatus</i>	LC	Resident
		Long-Tailed Shrike	<i>Lanius Schach</i>	LC	Resident
22.	Leiothrichidae	Jungle Babbler	<i>Argya Striata</i>	LC	Resident
		Tawny-bellied Babbler	<i>Dumetia hypertyra</i>	LC	Resident
23.	Megalaimidae	Brown-headed barbet	<i>Psilopogon Zeylanicus</i>	LC	Resident
		Coppersmith Barbet	<i>Psilopogon Haemacephalus</i>	LC	Resident
24.	Meropidae	Asian Green Bee-eater	<i>Meropis orientalis</i>	LC	Resident
		Blue-tailed Bee eater	<i>Meropis philippinus</i>	LC	Resident
25.	Motacillidae	Western yellow wagtail	<i>Motacilla flava</i>	LC	Winter migrant
26.	Muscicapidae	Black Redstart	<i>Phoenicurus ochruros</i>	LC	Winter migrant
		Blue Throat	<i>Luscinia Svecica</i>	LC	Winter migrant
		Common Stonechat	<i>Saxicola torquatus</i>	LC	Resident
		Siberian Rubythroat	<i>Calliope Calliope</i>	LC	Resident
		Indian Robin	<i>Copsychus fulicatus</i>	LC	Resident
27.	Nectariniidae	Purple Sunbird	<i>Cinnyris Asiaticus</i>	LC	Resident
		Crimson sunbird	<i>Aethopyga siparaja</i>	LC	Resident
28.	Oriolidae	Black-hooded Oriole	<i>Oriolus xanthornus</i>	LC	Resident
29.	Paridae	Cinereous Tit	<i>Parus Cinereus</i>	LC	Resident
30.	Phasianidae	Black Francolin	<i>Francolinus francolinus</i>	LC	Resident
		Grey Francolin	<i>Ortygornis pondicerianus</i>	LC	Resident
31.	Podicipedae	Little Grebe	<i>Tachybaptus ruficollis</i>	LC	Resident
		Great Crested Grebe	<i>Podiceps cristatus</i>	LC	Winter Migrant
32.	Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax niger</i>	LC	Resident
		Darter	<i>Anhinga melanogaster</i>	LC	Resident
33.	Scolopacidae	Wood Sandpiper	<i>Tringa glareola</i>	LC	Winter migrant
		Green Sandpiper	<i>Tringa ochropus</i>	LC	Winter migrant
		Marsh Sandpiper	<i>Tringa stagnatilis</i>	LC	Winter migrant
		Common Greenshank	<i>Tringa nebularia</i>	LC	Winter migrant
		Common Sandpiper	<i>Actitis Hypoleucos</i>	LC	Winter migrant
		Dunlin	<i>Calidris alpina</i>	LC	Winter migrant
		Sanderling	<i>Calidris alba</i>	LC	Winter migrant
		Temmincks Stint	<i>Calidris temminckii</i>	LC	Winter migrant
		Common snipe	<i>Gallinago Gallinago</i>	LC	Winter migrant
34.	Passeridae	House sparrow	<i>Passer domesticus</i>	LC	Resident
		Pale Rock finch	<i>Carpodacus brachydactyla</i>	LC	Winter Migrant
		Chestnut sparrow	<i>Passer melanurus</i>		resident
		Sind sparrow	<i>Passer pyrrhonotus</i>	LC	Resident
		Eurasian Tree Sparrow	<i>Passer Montanus</i>	LC	Resident
35.	Rallidae	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	LC	Resident
		Water Rail	<i>Rallus Aquaticus</i>	LC	Resident
		Purple Gallinule	<i>Porphyrio Martinica</i>	LC	Resident
		Slaty-breasted Rail	<i>Lewinia Striata</i>	LC	Resident
		Dusky moorhen	<i>Gallinula tenebrosa</i>	LC	Resident
		Purple Swampphen	<i>Porphyrio -Porphyrio</i>	LC	Resident
		Eurasian Coot	<i>Fulica atra</i>	LC	Winter Migrant
		Common Moorhen	<i>Gallinula Chloropus</i>	LC	Winter migrant

Table 2: Order wise and Family wise distribution of number of bird species in different sites of study area.

Taxon	Order/Family wise distribution of Sighted avian species	Number of bird Species Sighted in each site		
		CJ	BT	GT
Order: Passeriformes	22	22	6	17
Family: Laniidae	1	1	1	1
Family: Motacillidae	3	3	2	2
Family: Cettiidae	1	1	-	1
Family: Sturnidae	4	4	2	1
Family: Nectariniidae	2	2	-	4
Family: Pyronotidae	2	2	-	-
Family: Dicruridae	2	2	-	1
Family: Muscicapidae	4	4	-	4
Family: Cisticolidae	1	1	-	-
Family: Corvidae	1	1	-	1
Family: Passeridae	1	1	-	1

Order:Podicipediformes	1	1	-	-
Family:Podicipedidae	1	1	-	-
Order:Charadriiformes	5	5	4	2
Family:Recurvirostridae	1	1	1	1
Family:Scolopacidae	2	2	1	1
Family:Burhinidae	1	1	1	1
Family:Charadriidae	2	1	2	1
Order:Ciconiiformes	10	10	6	5
Family:Ardeidae	8	5	4	3
Family:Ciconiidae	2	2	-	-
Order:Pelecaniiformes	2	2	2	2
Family:Phalacrocoracidae	2	2	2	2
Order:Columbiformes	4	4	2	4
Family:Columbidae	4	4	2	4
Order:Coraciiformes	6	5	2	5
Family:Alcedinidae	2	2	1	-
Family:Meropidae	2	2	-	2
Family:Coraciidae	1	1	-	1
Family:Halcyonidae	1	1	1	-
Order:Gruiformes	4	4	4	4
Family:Rallidae	4	4	4	4
Order:Bucerotiformes	1	1	1	1
Family:Bucerotidae	1	1	1	1
Order:Piciformes	1	1	-	1
Family:Picidae	1	1	-	-
Order:Cuculiformes	4	2	1	2
Family:Cuculidae	3	2	1	2
Family:Centropodidae	1	1	-	1
Order:Psittaciformes	2	2	1	2
Family:Psittacidae	2	2	1	2
Order:Galliformes	1	1	-	1
Family:Phasianidae	1	1	-	1
Order:Accipitriformes	2	2	2	-
Family:Accipitridae	2	2	2	-
Order:Anseriformes	6	6	1	6
Family:Anatidae	6	6	1	6
Order:Strigiformes	3	2	2	1
Family:Strigidae	2	2	2	1
Family:Tytonidae	1	1	-	1

CJ: Chittaura Jheel; BT: Baghel Taal; GT: Guthia Taal

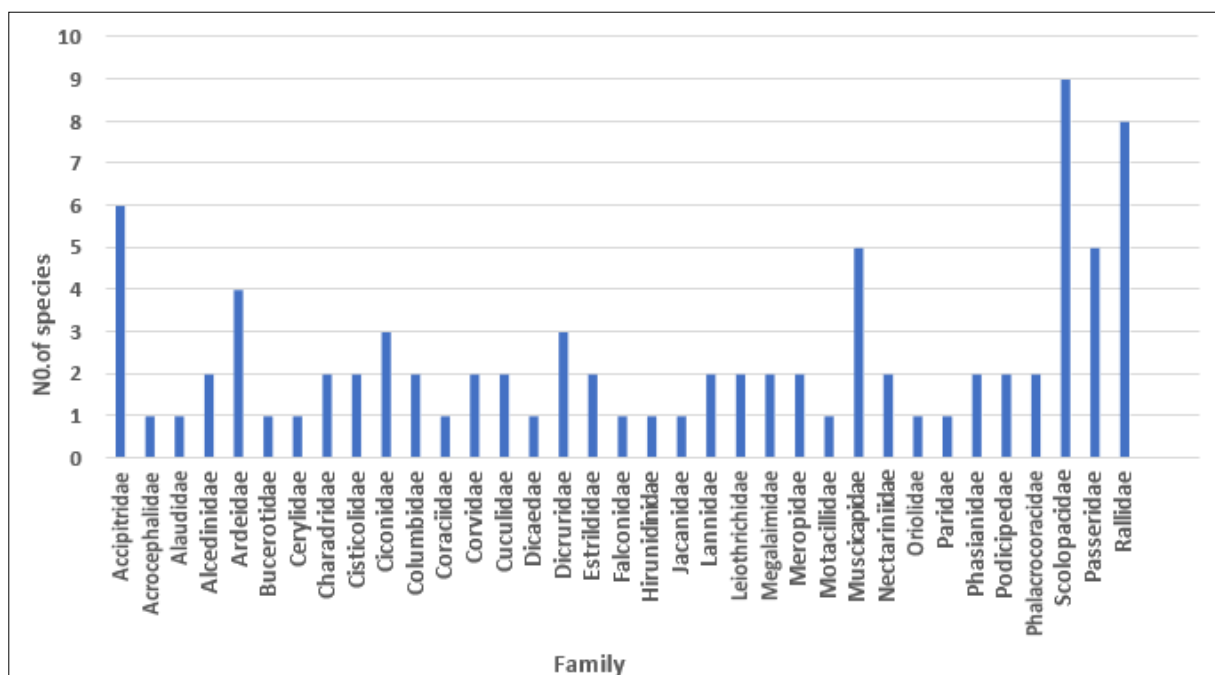


Fig 3: Number of species belonging to different families in the study area

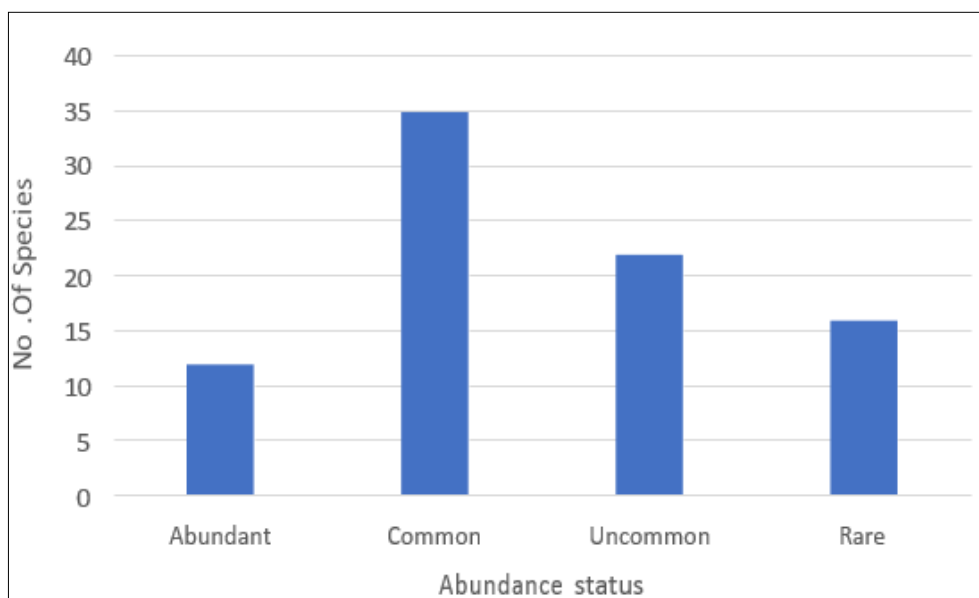


Fig 4: Status of avian fauna reported in the study area

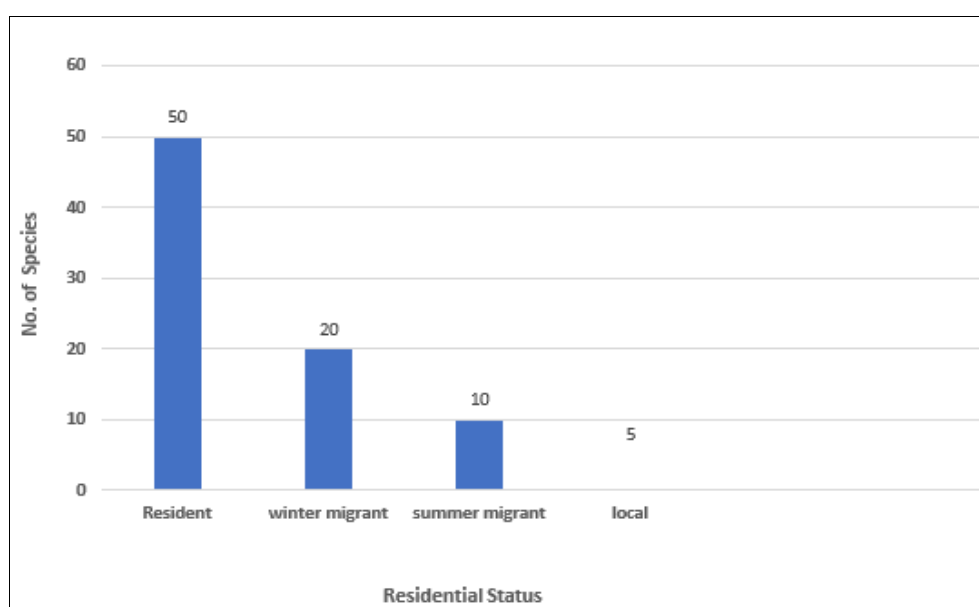


Fig 5: Residential status of avian fauna in the study area

References

1. Ali S, Ripley SD. Handbook of the birds of India and Pakistan. Oxford University Press, 1983.
2. Ali S, Ripley SD. Compact handbook of the birds of India and Pakistan. Oxford University Press, 1987.
3. Altmann J. Observational study of behavior: Sampling methods. Behaviour, 1974;49:227-267.
4. Balapure S, Dutta S, Vyas V. Avian diversity in Barna wetland of Narmada basin in Central India. J Res Biol, 2012;2(5):460-468.
5. BirdLife International. Threatened birds of Asia: The BirdLife International Red Data Book. BirdLife International, 2001.
6. Chopra G, Sharma SK. Avian biodiversity in and around major wetlands of "Lower Shivalik Foothills" (India). Nat Sci, 2012;10(7):86-93.
7. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Checklist of CITES species. CITES, 2012.
8. Desai M, Shanbhag A. Birds breeding in unmanaged monoculture plantations in Goa, India. Indian For, 2007;133:1367-1372.
9. Grimmett R, Inskipp T. Birds of Northern India. Oxford University Press, 2003.
10. Gupta RC, Kaushik TK. Description of avian biodiversity of Damdama Jheel in Gurgaon District in Haryana, India. J Trop Life Sci, 2012;2(3):119-125.
11. International Union for Conservation of Nature (IUCN). The IUCN Red List of threatened species (Version 2022-2). IUCN, 2023.
12. International Wetlands Programme Association. Wetlands International database, 1972.

13. Kler TK. Bird species in Kanjali wetland. Tiger Paper,2004:39(1):20-23.
14. Kumar P, Gupta SK. Diversity and abundance of wetland birds around Kurukshetra, India. Our Nat,2009:7:187-192.
15. Kumar P, Rai D, Gupta SK. Wetland bird assemblage in rural ponds of Kurukshetra, India. Waterbirds,2016:39(1):86-98.
16. Manakadan R, Pittie A. Standardized common and scientific names of the birds of the Indian subcontinent. Buceros,2001:6(1):1-37.
17. Stewart K, Venditti C, Carmona CP, Baker J, Clements C, Tobias JA, *et al.* Threat reduction must be coupled with targeted recovery programmes to conserve global bird diversity. Nat Ecol Evol,2025:9(8):1499-1511.