



Winter Assemblage of Avifauna at Chawandiya, Bhilwara, Rajasthan, India

Anil Kumar Sharma and Anil Kumar Tripathi

*Aquatic Ecology and Biodiversity Research Lab
M. L.V. Government College Bhilwara-311 001, India
E-mail: anilkumarsharma031995@gmail.com*

Abstract: Winter assemblage of avifauna for migratory birds was observed at Chawandiya pond in the region of Bhilwara, Rajasthan, during the winter season (January 2023). The 102 species of birds from 39 families were identified. Most of the families were represented by less than 10 species except family Anatidae. These include 69 residential and 33 winter visitors species. The 42 species of water dependent birds was observed. Among these bird species, 35 were omnivorous, 34 carnivorous, 25 insectivorous, 05 granivorous, 02 frugivorous and 01 nectivorous respectively. For the conservation of avifauna, creation of buffer zone and strict implementation of regulation is needed.

Keywords: Avifauna, Wetland birds, Winter visitors, Chawandiya

Birds play key role the ecosystem as prospective pollinators and scavengers, and are also referred as bio-indicators. India, a mega-diversity hot-spot, is home to more than 1301 bird species, or 13% of all bird species worldwide (Ali 2012). A checklist of birds of India which included 1263 species of birds out of which 61(4.8%) are endemic to India (Praveen et al 2016). In Rajasthan, checklist of 183 birds have been reported from Sariska Tiger Reserve, Rajasthan, India (Shahabuddin et al 2006). More than 350 species of birds which include 42 species of raptors and 9 species of owls have been reported from Keoladeo Ghana National Park (Mathur et al 2009). The 181 bird species were recorded from Jhalawar forest division (Yadav and Chauhan 2018). The avian diversity was lower during summer (155 bird species) and higher in winter (Yadav and Chauhan 2018). Total 114 bird species belonging to 12 orders and 42 families were recorded from Shahpur Campus of the Central University, Himachal Pradesh and the surrounding area (Kumar 2021). Total 128 bird species belonging to 49 and 15 orders were recorded from Agricultural Fields of Ayodhya district, Uttar Pradesh (Yashmita and Ulman 2022). Wetlands are essential sites for waders to feed and lay their eggs, as well as for fish-eating birds and migrating birds of winter. The relationship between birds and wetlands is dependent on the quantity, quality, and depth of water as well as the availability of food, shelter and predators. The present study is focused on preparing the checklist of birds during winter season.

MATERIAL AND METHODS

Study area: Bhilwara is located at 25.35° N latitude and

74.63°E longitude covering geographical area of 10,455 sq km. It has an average elevation of 421 meters (1381 feet). It falls between the districts of Ajmer (in north) and Chittorgarh, Udaipur (in south). Chawandiya village (25°19'818"N & 74°46'516"E), situated 15 km away from Bhilwara, is selected for the study of avifaunal diversity.

Methodology: For the study of avifauna, direct observation method was applied. Bird Census Techniques (Colin 1993) such as line-transect method, focal method, Ad-libitum method, visual encounter method, scan-sampling method and indirect method etc. were used for survey of different bird species. Regular visits were made in morning hours (6 to 8 am) and evening hours (4 to 8 pm) at Chawandiya. Photographic record was maintained using NIKON D500 camera for further identification. All birds sighted or heard, including those in flight were counted and recorded. The birds inhabiting and visiting the area under study were observed with naked eye or through vanguard binocular (16X50) whenever found necessary to record the data from a long distance in order to avoid any interference.

RESULTS AND DISCUSSION

The checklist of birds, sighted at the Chawandiya during the winter season, includes 102 species from 39 families. Members of Ardeidae, Rallidae and Sturnidae families contributes maximum avifauna of the pond throughout year. Most of the families were represented by less than 10 species except Anatidae (Fig. 1). Almost members of Anatidae, Scolopacidae, Motacillidae and Pelecanidae families are winter visitors. Based on their preferred foods, the birds in the

Table 1. List of bird sighted

Name	Zoological name	Food habit	Residential status	IUCN status	No.
Family: Phasianidae					
Grey Francolin	<i>Francolinus pondicerianus</i>	Omnivorous	R	LC	2
Indian Peafowl	<i>Pavo cristatus</i>	Omnivorous	R	LC	4
Family: Anatidae					
Northern Pintail	<i>Anas acuta</i>	Omnivorous	WV	LC	15
Northern Shoveler	<i>Anas clypeata</i>	Omnivorous	WV	LC	58
Common Teal	<i>Anas crecca</i>	Omnivorous	WV	LC	56
Eurasian Wigeon	<i>Anas penelope</i>	Omnivorous	WV	LC	8
Spot-billed Duck	<i>Anas poecilorhyncha</i>	Omnivorous	R	LC	45
Garganey	<i>Anas querquedula</i>	Omnivorous	WV	LC	5
Gadwall	<i>Anas strepera</i>	Omnivorous	WV	LC	57
Common Pochard	<i>Aythya ferina</i>	Omnivorous	WV	VU	158
Red-crested Pochard	<i>Netta rufina</i>	Omnivorous	WV	LC	5
Tufted Duck	<i>Aythya fuligula</i>	Omnivorous	WV	LC	5
Ferruginous Pochard	<i>Aythya nyroca</i>	Omnivorous	WV	NT	4
Comb duck	<i>Sarkidiornis melanotos</i>	Omnivorous	R	LC	8
Ruddy Shelduck	<i>Tadorna ferruginea</i>	Omnivorous	WV	LC	10
Family: Podicipedidae					
Little Grebe	<i>Tachybaptus ruficollis</i>	Carnivorous	R	LC	54
Family: Ciconiidae					
Painted Stork	<i>Mycteria leucocephala</i>	Carnivorous	R	NT	560
Family: Threskiornithidae					
Eurasian Spoonbill	<i>Platalea leucorodia</i>	Carnivorous	R	LC	14
Glossy Ibis	<i>Plegadis falcinellus</i>	Carnivorous	WV	LC	1
Red-naped Ibis	<i>Pseudibis papillosa</i>	Carnivorous	R	LC	1
Family: Ardeidae					
Grey Heron	<i>Ardea cinerea</i>	Carnivorous	WV	LC	3
Purple Heron	<i>Ardea purpurea</i>	Carnivorous	R	LC	1
Indian Pond-Heron	<i>Ardeo lagrayii</i>	Carnivorous	R	LC	22
Cattle Egret	<i>Bubulcus ibis</i>	Carnivorous	R	LC	14
Great Egret	<i>Casmerodius albus</i>	Carnivorous	R	LC	15
Little Egret	<i>Egretta garzetta</i>	Carnivorous	R	LC	13
Intermediate Egret	<i>Mesophoyx interment</i>	Carnivorous	R	LC	2
Black-crowned Night- Heron	<i>Nycticorax</i>	Carnivorous	R	LC	8
Family: Pelecanidae					
Great White Pelican	<i>Pelecanus onocrotalus</i>	Carnivorous	WV	LC	32
Dalmatian Pelican	<i>Pelecanus crispus</i>	Carnivorous	WV	VU	8
Family: Phalacrocoracidae					
Great Cormorant	<i>Phalacrocorax carbo</i>	Carnivorous	WV	LC	1
Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Carnivorous	R	LC	357
Little Cormorant	<i>Phalacrocorax niger</i>	Carnivorous	R	LC	28
Family: Accipitridae					
Black-winged Kite	<i>Elanus caeruleus</i>	Carnivorous	R	LC	1

Cont...

Table 1. List of bird sighted

Name	Zoological name	Food habit	Residential status	IUCN status	No.
Shikra	<i>Accipiter badius</i>	Carnivorous	R	LC	1
Crested Serpent-Eagle	<i>Spilornis cheela</i>	Carnivorous	R	LC	1
Family: Rallidae					
Common Coot	<i>Fulica atra</i>	Omnivorous	R	LC	84
White-breasted Water hen	<i>Amaurornis phoenicurus</i>	Omnivorous	R	LC	9
Common Moorhen	<i>Gallinula chloropus</i>	Omnivorous	R	LC	8
Grey headed Swamp hen	<i>Porphyrio</i>	Omnivorous	R	LC	14
Family: Burhinidae					
Great Thick-knee	<i>Burhinus recurvirostris</i>	Carnivorous	R	NT	2
Family: Charadriidae					
Little Ringed Plover	<i>Charadrius dubius</i>	Carnivorous	R	LC	6
Red-wattled Lapwing	<i>Vanellus indicus</i>	Omnivorous	R	LC	12
Family:Recurvirostridae					
Black-winged Stilt	<i>Himantopus</i>	Omnivorous	R	LC	20
Family: Scolopacidae					
Little Stint	<i>Calidris minuta</i>	Insectivorous	WV	LC	22
Temminck's Stint	<i>Calidris temminckii</i>	Insectivorous	WV	LC	1
Common Snipe	<i>Gallinago</i>	Insectivorous	WV	LC	3
Black -tailed Godwit	<i>Limosa</i>	Omnivorous	R	NT	5
Wood Sandpiper	<i>Tringa glareola</i>	Insectivorous	WV	LC	10
Green Sandpiper	<i>Tringa ochropus</i>	Insectivorous	WV	LC	12
Marsh Sandpiper	<i>Tringa stagnatilis</i>	Insectivorous	WV	LC	4
Common Sandpiper	<i>Tringa hypoleucos</i>	Insectivorous	WV	LC	15
Common Redshank	<i>Tringa totanus</i>	Insectivorous	WV	LC	6
Family: Laridae					
Whiskered Tern	<i>Chlidonias hybridus</i>	Carnivorous	WV	LC	6
River Tern	<i>Sterna aurantia</i>	Carnivorous	R	NT	16
Family: Columbidae					
Rock Pigeon	<i>Columba livia</i>	Granivorous	R	LC	50
Spotted Dove	<i>Streptopelia chinensis</i>	Granivorous	R	LC	2
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Granivorous	R	LC	25
Laughing Dove	<i>Streptopelia senegalensis</i>	Granivorous	R	LC	26
Red Collared Dove	<i>Streptopelia tranquebarica</i>	Granivorous	R	LC	1
Family: Psittacidae					
Rose-ringed Parakeet	<i>Psittacula krameri</i>	Frugivorous	R	LC	33
Family: Cuculidae					
Asian Koel	<i>Eudynamys scolopaceus</i>	Omnivorous	R	LC	1
Southern Coucal	<i>Centropus sinensis</i>	Omnivorous	R	LC	1
Family: Strigidae					
Spotted Owlet	<i>Athene brama</i>	Carnivorous	R	LC	3
Family: Upupidae					
Eurasian Hoopoe	<i>Upupa epops</i>	Insectivorous	R	LC	4
Family: Coraciidae					
Indian Roller	<i>Coracias benghalensis</i>	Carnivorous	R	LC	5
Family: Alcedinidae					
Common Kingfisher	<i>Alcedo atthis</i>	Carnivorous	R	LC	3
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Carnivorous	R	LC	6
Pied Kingfisher	<i>Ceryl erudis</i>	Carnivorous	R	LC	1

Cont...

Table 1. List of bird sighted

Name	Zoological name	Food habit	Residential status	IUCN status	No.
Family: Meropidae					
Little Green Bee-eater	<i>Merops orientalis</i>	Insectivorous	R	LC	54
Family: Bucerotidae					
Indian Grey-Hornbill	<i>Ocyrceros birostris</i>	Omnivorous	R	LC	2
Family: Ramphastidae or Megalaimidae					
Coppersmith Barbet	<i>Megalaima haemacephala</i>	Omnivorous	R	LC	2
Family: Picidae					
Black-rumped Flameback	<i>Dinopium benghalense</i>	Insectivorous	R	LC	1
Family: Laniidae					
Long-tailed Shrike	<i>Lanius schach</i>	Carnivorous	R	LC	4
Isabelline shrike or Daurian shrike	<i>Lanius isabellinus</i>	Carnivorous	WV	LC	2
Family: Dicruridae					
Black Drongo	<i>Dicrurus macrocercus</i>	Insectivorous	R	LC	8
Family: Corvidae					
Jungle Crow	<i>Corvus culminatus</i>	Carnivorous	R	LC	1
House Crow	<i>Corvus splendens</i>	Carnivorous	R	LC	6
Rufous Treepie	<i>Dendrocitta vagabunda</i>	Omnivorous	R	LC	2
Hirundinidae					
Dusky Crag-Martin	<i>Hirundo concolor</i>	Insectivorous	R	LC	2
Wire-tailed Swallow	<i>Hirundo smithii</i>	Insectivorous	R	LC	16
Family: Pycnonotidae					
Red-Vented Bulbul	<i>Pycnonotus cafer</i>	Frugivorous	R	LC	20
Family: Cisticolidae					
Plain Prinia	<i>Prinia inornata</i>	Insectivorous	R	LC	2
Ashy Prinia	<i>Prinia socialis</i>	Insectivorous	R	LC	2
Family: Sylviidae					
Lesser White throat	<i>Sylvia curruca</i>	Insectivorous	WV	LC	1
Family: Timaliidae					
Large Grey Babbler	<i>Turdoides malcolmi</i>	Omnivorous	R	LC	14
Jungle Babbler	<i>Turdoides striatus</i>	Omnivorous	R	LC	22
Family: Sturnidae					
Bank Myna	<i>Acridotheres ginginianus</i>	Omnivorous	R	LC	25
Common Myna	<i>Acridotheres tristis</i>	Omnivorous	R	LC	30
Asian Pied Starling	<i>Sturnus contra</i>	Omnivorous	R	LC	8
Brahminy Starling	<i>Sturnus pagodarum</i>	Omnivorous	R	LC	15
Family: Muscicapidae					
Indian Robin	<i>Saxicoloides fulicata</i>	Insectivorous	R	LC	8
Oriental Magpie-Robin	<i>Copsychus saularis</i>	Insectivorous	R	LC	6
Red-breasted Flycatcher	<i>Ficedula parva</i>	Insectivorous	WV	LC	1
Family: Nectarinidae					
Purple Sunbird	<i>Nectarinia asiatica</i>	Nectivorous	R	LC	8
Family: Passeridae					
Chestnut-shouldered Petronia	<i>Petronia xanthocollis</i>	Omnivorous	R	LC	6
Family: Motacillidae					
Tree Pipit	<i>Anthus trivialis</i>	Insectivorous	WV	LC	2
White Wagtail	<i>Motacilla alba</i>	Insectivorous	WV	LC	32
Grey Wagtail	<i>Motacilla cinerea</i>	Insectivorous	WV	LC	1
Citrine Wagtail	<i>Motacilla citreola</i>	Insectivorous	WV	LC	6
Yellow Wagtail	<i>Motacilla flava</i>	Insectivorous	WV	LC	8
White-browed Wagtail	<i>Motacilla maderaspatensis</i>	Omnivorous	R	LC	5
Total					2315

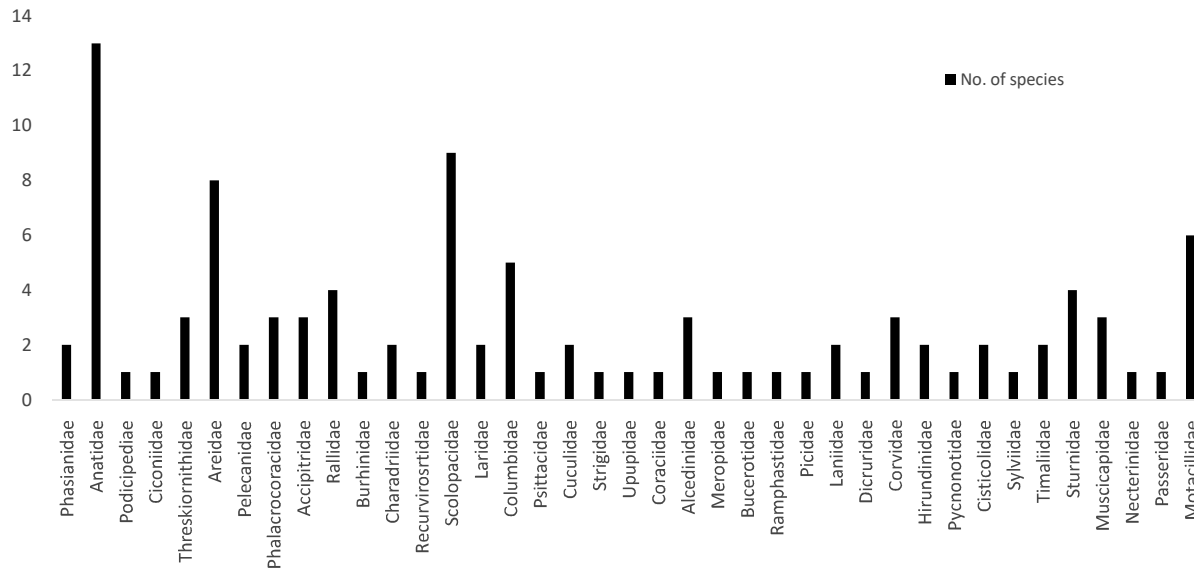


Fig. 1. Number of species in each family

current study were divided into seven categories. Among these bird species 35 were omnivorous, 34 Carnivorous, 25 Insectivorous, 05 Granivorous, 02 Frugivorous, 01 Nectivorous respectively (Table 1).

CONCLUSION

During the winter, migratory species used the pond for foraging. Chawandiya pond (also known as mataji pond) is an important wintering area for diving ducks and fish-eating birds. The best level of protection from predators is also offered by the trees and partially submerged shrubs. This pond has many trees of *Acacia nilotica* stand in and near water which is excellent site for perching and nesting. During the surveys, threats to birds diversity were noted such as habitat destruction, urbanization, human disturbance, cutting of trees, fishing and availability of water. The dense forest surrounding the wetland should be protected by the villagers. For irrigation, there should be limited use of water from this wetland.

REFERENCES

Ali S and Ripley SD 1983. *Handbook of birds of India and Pakistan*,

Oxford University Press, Delhi, p 110-112.
 Ali S and Ripley SD 1987. *Compact Handbook of the Birds of India and Pakistan (Second Edition)*, Oxford University Press, Delhi.
 Ali S 1996. *The book of Indian birds, (12th edition)*, Bombay Natural History Society, Bombay, p 354.
 Boukrouma N, Khedir H and Zemouli S 2018. Water Bird Diversity of Madjen Djedj Marsh, Northeastern Algeria. *Indian Journal of Ecology* **45**(1): 117-121.
 Colin J and Bibby J 1993. *Text book of birds census techniques*, Academic Press Ltd., London, p 24-28.
 Kumar P 2021. Avifaunal diversity from Shahpur campus of the Central University, Himachal Pradesh, India. *Indian Journal of Ecology* **48**(1): 138-146.
 Mathur VB, Sivakumar K, Singh B and Anoop KR 2009. A bibliographical review for identifying research gap areas: Keoladeo Ghana National Park-A World Heritage site. *Wildlife Institute of India*, Dehradun 54.
 Shahabuddin G, Kumar and Verma A 2006. Annotated checklist of the birds of Sariska Tiger Reserve, Rajasthan, India. *Indian Birds* **2**(3): 71-76.
 Yadav VK and Chauhan PS 2018. Avifaunal diversity and status of Jhalawar Forest Division, South-Eastern Rajasthan, India. *Indian Journal of Ecology* **45**(1): 107-116.
 Yashmita and Ulman 2022. Bird diversity in Riverscapes of Ayodhya District, Uttar Pradesh. *Indian Journal of Ecology* **49**(1): 281-288.
 Yashmita and Ulman 2022. Birds in agricultural fields of Ayodhya district, Uttar Pradesh. *Indian Journal of Ecology* **49**(5): 1647-1653.