

Water Avifauna in Wetlands of Siwan district of Bihar

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Abstract:

The term "wetland" refers to areas of land that are transitional between terrestrial and aquatic eco-systems and in which the water table is typically at or near the surface or the area is submerged in shallow water (Mitsch and Gosselink, 1986). Wetlands are among the most productive ecosystems on earth and are essential for controlling erosion, flooding, recharging aquifers, and absorbing nutrients. A large variety of animals, including birds, mammals, fish, frogs, insects, and plants, also calls wetlands home (Buckton, 2007). Wetlands maintain the diversity of flora and animals as a result. India has 58.2 million hectares of wetland space (Prasad et al., 2002). Siwan's wetlands span an area of 1184 hectares. 310 of the 1340 bird species that have been identified in India (Ali and Ripley, 1987; Manakandan and Pittie, 2001) are known to be wetlands-dependent (Kumar et al., 2005). Wetlands in India and worldwide are under intense anthropogenic pressures, which can have a significant impact on the composition of the bird community (Prasad et al., 2002). (Kler, 2002; Verma et al., 2004; Reginald et al., 2007). In the present study, aquatic birds have been observed which are visiting open water, mudflats and wetlands having submerged, floating and emergent vegetation. Birds were recorded by direct sightings. The data were recorded during the surveys in different seasons.

Key Words: Wetlands, Avifauna, Freshwater Ecosystem, Conservation, IUCN, water birds

Introduction:

Birds are chordates that belong to the Aves class. The Latin word for warm-blooded, bipedal, feathered, and egg-laying vertebrates is Aves. They live in every ecosystem on the planet. Birds differ widely in size, from bee hummingbirds (5 cm) to ostriches (2.5 m). One of the most well-known and sensitive to environmental change species on the planet are birds. They serve as an important marker for determining the health of the ecosystem. They are a crucial component of the food web and food chain. Birds are essential to maintaining the harmony of nature. They also aid in seed distribution and flower pollination. Ecologists frequently use bird diversity, abundance, and community composition to understand the diversity of species in the wild.

Habitat degradation is the main factor affecting the diversity of birds. Because of this, the majority of bird species accidentally come and live in urban areas. The diversity, abundance, and distribution of birds may all be impacted by the change in vegetation composition because it may affect the quantity and quality of food, water, and cover available to birds.

The American Museum of Natural History's latest research indicates that there are roughly 18,000 different bird species in the world. There are approximately 1,263 bird species present in India, accounting for 12% of all bird species worldwide, according to a check-list of Indian birds prepared by Praveen et al. and published in the Journal of Indian Bird in 2016.

A total of 72 species were recorded, of which 39 were waterbirds from 30 genera and 11 families. Birds from 22 families and 26 genera that were spotted in the marshes of Siwan made up the remaining 33 species that were recorded. It has 46 local migrants or inhabitants as well as 28 winter visitors. 39 species of waterbirds were classified as having 14 migratory, 4 local migratory, and 21 resident species. Although 12 species of the riparian and terrestrial birds examined were migratory and 21 species were resident.

Because of their attractiveness, quantity, visibility, and social behaviour, as well as their usefulness for enjoyment and commerce, water birds have long captured the interest of the general public and scientists. Water birds have recently attracted attention as wetland quality indicators, indications of the efficacy of restoration efforts, and markers of local biodiversity.

Materials and Methods

Site selection

Eight sites were selected for the study of the avian species in the wetlands of siwan.

Sl No.	Longitude	Latitude	Description	Wetland Name	Area (HA)
1	84.427360	26.250090	Natural Waterlogged	Ghorgaiya Chaur	185
2	84.394955	26.141551	Natural Lake	Suraila Chaur	175
3	84.621499	26.103860	Natural Waterlogged		161
4	84.549584	26.290367	Natural Waterlogged		157
5	84.648870	26.238291	Natural Waterlogged		143
6	84.613736	26.159041	Natural Waterlogged		132
7	84.594846	26.171212	Natural Waterlogged		130
8	84.551441	26.061025	Natural Waterlogged		101

Instrument used:

Binoculars made by Olympus measuring 8 x 40 DPS were utilised. Field glasses, sometimes known as binoculars, are two telescopes that are mounted side by side and pointed in the same general direction. The most crucial factor is comfort. They need to be cosy to hold. Each pair of binoculars has two numbers that describe their specs, sometimes followed by a letter code like B or GA. The first numbers represent magnification, which typically ranges from 7X to 10X. The second set of numbers is the objective lens's diameter in millimetres. This second figure determines the binocular's size. The rubber-coated binocular, which offers some defence against damage and wear, can be identified by the letters GA or RA. The lesser magnifications of 7X or 8X are utilised for general bird observation. The image will be brighter and have a wider range of view as the magnification decreases.

Area search

The area search is a quantitative, habitat-specific survey technique that can be used in most habitats. It is useful for measuring diversity in terms of species richness, bird community composition, and relative abundance, as well as for providing basic information about the relationships between avian species and their habitats, their natural histories, and reproductive strategies. The approach is equally appropriate for training and educating the general population.

The procedure entails a time-limited survey of a predetermined area during which the observer notes all birds heard or sighted, distinguishing between those heard inside the search area and

those heard beyond it. An appropriate method is used to survey the vegetation in the search region. From hiding spots, people sat and stood up to watch the birds.

Bird watching Technique.

The procedure of identifying a bird might be difficult. Birds are lively, vivacious creatures. To acquire the most detail possible in a short amount of time, quick eye spotting is necessary. The following methods were employed when viewing birds: Birds were identified by keeping a fixed gaze on them. Their size, singing, feeding behaviour, and movement were all continuously observed. Certain calls and tunes were also recognised at the same time. General dimensions, form, and distinguishing colorations such as head stripes, eye lines, nape colour, eye arcs or rings, and size of the bird's bill were observed. When the bird was stationary or flying, wing bars, colour patches, and markings on the body of the bird were observed. With each observation, the length and colour of the legs were also documented. Observations was confirmed with the help of Avibase bird count (2013).

Results and Discussion

After continuous observation of 181 days that is from September to March, we have identifies 39 bird species which are listed below in Table:

SI No.	Family	Zoological Name	Status	IUCN Status
Cormorants/ Shags				
1	Phalacrocoracidae	<i>Phalacrocorax niger</i>	R	LR-LC
2	Phalacrocoracidae	<i>Phalacrocorax fuscicollis</i>	R	LR-LC
3	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	R/LM	LR-LC
4	Anhingidae	<i>Anhinga melanogaster</i>	R/LM	THR-NT
Heron, Egrets & Bitterns				
	Ardeidae	<i>Ardea cinerea</i>	R/LM	LR-LC
	Ardeidae	<i>Ardea purpurea</i>	R	LR-LC
	Ardeidae	<i>Ardeola grayii</i>	R	LR-LC
	Ardeidae	<i>Bubulcus ibis</i>	R	LR-LC
	Ardeidae	<i>Casmerodius albus</i>	R	LR-LC
	Ardeidae	<i>Mesophoyx intermedia</i>	R	LR-LC
	Ardeidae	<i>Egretta garzetta</i>	R	LR-LC
	Ardeidae	<i>Ixobrychus minutus</i>	R	LR-LC
Storks				
	Ciconidae	<i>Anastomus oscitans</i>	R	LR-LC
	Ciconidae	<i>Leptoptilos javanicus</i>	R	THR-Vu
Ibises & Spoon bill				
	Threskiornithidae	<i>Threskiornis melanocephalus</i>	R	THR-NT
	Threskiornithidae	<i>Pseudibis papillosa</i>	R	LR-LC
	Threskiornithidae	<i>Platelea leucoroidea Major</i>	LM	LR-LC
Swans, Geese & Ducks				
	Anatidae	<i>Dendrocygna javanica</i>	R	LR-LC
	Anatidae	<i>Anas acuta</i>	M	LR-LC
	Anatidae	<i>Netta rufina</i>	M	LR-LC

	Anatidae	<i>Aythya nyroca</i>	M	LR-LC
	Anatidae	<i>Aythya ferina</i>	M	THR-N
	Anatidae	<i>Anas crecca</i>	M	LR-LC
	Anatidae	<i>Anas clypeata</i>	M	LR-LC
	Anatidae	<i>Anas platyrhynchos</i>	M	LR-LC
	Anatidae	<i>Tadorna ferruginea</i>	M	LR-LC
Moorhen, Rail, Coot				
	Rallidae	<i>Gallinula chloropus</i>	R	LR-LC
	Rallidae	<i>Fulica atra</i>	M	LR-LC
Jacana				
	Jacanidae	<i>Hydrophasianus chirurgus</i>	R	LR-LC
	Jacanidae	<i>Metopidius indicus</i>	R	LR-LC
Sandpiper and Snipe				
	Charadriidae	<i>Tringa glareola</i>	M	LR-LC
	Charadriidae	<i>Philomachus pugnax</i>	M	LR-LC
	Charadriidae	<i>Gallinago gallinago</i>	M	LR-LC
	Charadriidae	<i>Gallinago stenura</i>	M	LR-LC
Kingfisher				
	Alcedinidae	<i>Alcedo atthis</i>	R	LR-LC
	Alcedinidae	<i>Halcyon capensis</i>	R	LR-LC
	Alcedinidae	<i>Halcyon smyrnensis</i>	R	LR-LC
	Alcedinidae	<i>Ceryle rudis</i>	R	LR-LC
Curlew				
	Scolopacidae	<i>Numenius arquata</i>	M	THR-NT

M - Migratory, R- Resident, LM- Local Migration, THR-NT - Nearly Threatened, THR-Vu Vulnerable, LR-LC- Lower Risk Least Concern

Conclusion

There were a total of 39 species of water birds, which were divided into 11 groups and 30 genera. 39 species of waterbirds were classified as having 14 migratory, 4 local migratory, and 21 resident species. Although 12 species of the riparian and terrestrial birds examined were migratory and 21 species were resident. With 27 species, the Suraila Chaur region was discovered to have an extremely high diversity of birds. This can be because there is enough food and environment available. January saw the greatest number of winter visitors, followed by February and March.

Four near-threatened species of waterbirds, the Darter (*Ahninga melanogaster*), Black-headed Ibis (*Threskiornis melanocephalus*), White-eyed Pochard (*Aythya nyroca*), and Eurasian Curlew (*Nemenius arquata*), as well as one vulnerable species, the Lesser Adjutant (*Leptoptilos javanicus*), were all observed. The remaining 34 The only bird species judged to be near threatened is the rufous vented Prinia (*Prinia burnesii cinerascens*), while 32 other species of terrestrial birds have the rank of least concern or lower risk.

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