



DIVERSITY AND RESIDENTIAL STATUS OF WADER BIRDS AT HODAL IN PALWAL DISTRICT, IN HARYANA, INDIA.

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ABSTRACT The objective of the present study was the assessment of diversity and residential status of wader birds in Yamuna basin at Hodal in Palwal District. The observations had been made for two consecutive years. The Yamuna basin in this region serves as a wetland for a number of water birds migratory as well as resident species. Most of the species of birds observed here are winter visitors which migrate from Europe and Central Asia. The water of Yamuna supports variety of aquatic weeds and organisms, and thus suitable for birds and attracts many migratory birds during winter. The study area had been visited periodically. During the study a total of 29 wader bird species belonging to 03 orders and 06 families were observed at the study site. Out of 29 species of wader birds, 09 species were resident, 06 species were local migratory and 14 species were winter migratory.

KEYWORDS : Hodal, Avian Fauna, Wader Birds.

INTRODUCTION:

Waders belonging to order Charadriiformes are commonly found along shorelines and mudflats that wade in order to forage for food (such as insects or crustaceans) in the mud or sand. Bogs, marshes, mudflats, shorelines, ponds, and flooded areas are all popular habitats for wading birds. The waders include storks, spoonbills, cranes, herons, egrets and ibises. They have certain physical and behavioural adaptations for living on or near water. Wading birds depend on water as a source of food, shelter, and nesting sites. Wading birds wade into shallow water to obtain food, instead of swimming and diving in water in search of feed that is not found on land. If we study the morphology of wading birds, they have lots of characteristics and adaptations that are useful in a watery habitat. Long legs of the wading birds help them to keep their feathers high and dry when wading into water in search of food. A long neck and a long bill are adaptations that make it possible to strike at prey while walking around on long legs. The benefits of wading bird's long, thin, spread-out toes are three-fold: toes help them to keep their balance and also help them to walk in mud without sinking. While walking in water and mushy mud, thin toes are easier to lift and set down. Spread-out toes also prevent them from sinking into soft mud in the water and at the water's edge, and above all those toes also disperse the weight of these big, tall birds, helping them keep their balance over their long legs. Waders are ecologically dependent on wetlands, as they provide good habitat to them for feeding, roosting, breeding, nesting, pre-migratory requirements, migration and protection from predators. So, wet lands plays an important part in the life cycle of wading birds. Wetlands have got highest capacity and are often extremely rich in bird and animal life. The present study aims at the assessment of diversity and residential status of wading birds in Yamuna basin near Hodal in Palwal District. It is located at

27°53'39"N and 77°22'09"E having an average elevation of 190 meters. Many ornithologists pay lots of their attention on field study of birds during the eighteenth, nineteenth and twentieth century and till today many more are involved in the study of avian diversity near rivers. Avian fauna of Kalesar forests in immediate vicinity of River Yamuna in Yamuna-nagar District has been analysed by Kalsi (1998). Kulkarni *et al.* (2011) reported 151 species of birds from river Godavari; Balapuree *et al.* (2012) reported 63 avian species from river Narmada. Other workers like Bahuguna (2008), Taketal. (2010), Gupta & Kaushik (2011), Gupta *et al.* (2012), Anupma *et al.* (2014), Ankita *et al.* (2019) have studied wetlands birds in various regions along the banks of rivers.

MATERIALS AND METHODS:

The present study aims at investigations on the diversity and residential status of wading birds, visiting and residing in and around Yamuna Basin at Hodal in Palwal District. Periodic surveys were conducted from 5.00 a.m. to 10.00 a.m. in the morning and 4.30 p.m. to 7.30 p.m. in the evening during summer and 7:00 a.m. to 11.00 a.m. in the morning and 3.30 p.m. to 5.00 p.m. in the evening during winter. Study site had been visited periodically, to record the detailed account of the avian fauna. The recordings of birds were carried out by Line Transect Method given by Sale and Berkmueller, (1998) and Point count Method given by Blondel *et al.* (1981). The camera used for taking photographs was Sony Cybershot having 15X zoom and 8.1 mega pixels clarity. Field identifications were carried out with the help of various books like, "Guide to the Birds of the Indian Subcontinent" by Grimmett *et al.* (1996) and "The book of Indian Birds" by Ali (2002). The birds observed at the study site have been categorised on the basis of their residential status, as Resident species, Local migratory species and Winter migratory species.

Table. 1 List of Wader Birds observed at the study site

S.No.	ORDER	FAMILY	COMMON NAME	ZOOLOGICAL NAME	STATUS
1	Ciconiiformes	Ardeidae	Grey Heron	<i>Ardea cinerea</i>	WM
2			Purple Heron	<i>Ardea purpurea</i>	LM
3			Black-crowned night Heron	<i>Nycticorax nycticorax</i>	R
4			Indian Pond Heron	<i>Ardeolagrarii</i>	R
5			Great Egret	<i>Casmerodius albus</i>	LM
6			Little Egret	<i>Egretta garzeta</i>	LM
7			Cattle Egret	<i>Bubulcus ibis</i>	R
8			Intermediate Egret	<i>Mesophoyx intermedia</i>	LM
9		Ciconiidae	Painted Stork	<i>Mycteria leucocephala</i>	R
10			Open-billed Stork	<i>Anastomus oscitans</i>	R
11			White necked Stork	<i>Ciconia episcopus</i>	LM
12	Gruiformes	Rallidae	Common coot	<i>Fulica atra</i>	WM
13			Common Moorhen	<i>Gallinula chloropus</i>	LM
14			White breasted Waterhen	<i>Amaurornis phoenicurus</i>	R
15	Charadriiformes	Charadriidae	Little ringed plover	<i>Charadrius dubius</i>	WM
16			Red-wattled Lapwing	<i>Vanellus indicus</i>	R
17			River Lapwing	<i>Vanellus duvaucelli</i>	R
18			White tailed Lapwing	<i>Vanellus leucurus</i>	WM
19		Scolopocidae	Common redshank	<i>Tringatotanus</i>	WM
20			Spotted redshank	<i>Tringa erythropus</i>	WM
21			Common sandpiper	<i>Actitis hypoleucos</i>	WM

22			Wood sandpiper	<i>Tringaglareola</i>	WM
23			Green sandpiper	<i>Tringaochropus</i>	WM
24			Marsh sandpiper	<i>Tringastagnatilis</i>	WM
25			Ruff	<i>Philomachus pugnax</i>	WM
26			Little Stint	<i>Calidris minuta</i>	WM
27			Black tailed Godwit	<i>Limosalimosa</i>	WM
28		Recurvirostridae	Pied avocet	<i>Recurvirostra avocetta</i>	WM
29			Black winged Stilt	<i>Himanotopushimanotopus</i>	R



Anastomus oscitans (Open-billed Stork) *Ciconia episcopus* (White-necked Stork)



Ardea purpurea (Purple Heron) *Recurvirostra avocetta* (Pied avocet)



Charadrius dubius (Little ringed plover) *Himanotopus himanotopus* (Black-winged Stilt)
Some of the Wader Birds observed at the Study Site



Philomachus pugnax (Ruff) *Tringa ochropus* (Green sandpiper)



A Flock of *Fulicaatra* (Common Coot) at the study site



A Flock of *Recurvirostra avocetta* (Pied avocet) at the study site

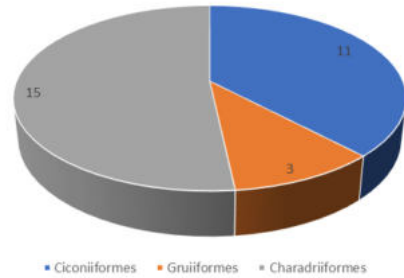


Fig. 1: Order-wise Depiction of Avian Species at Study Site

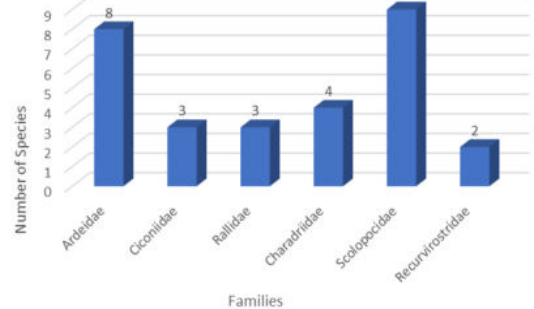


Fig. 2: Depiction of Avian Fauna in Family-wise Manner at Study Site

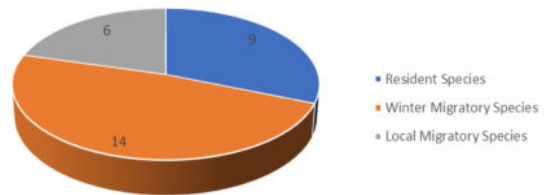


Fig. 3: Residential Status of Avian Species at Study Site

RESULTS AND DISCUSSION:

The avifauna observed at the study site, has been depicted in Table 1, in Order-wise and family-wise manner. A total of 29 avian species of wading birds belonging to 03 orders (Ciconiiformes, Gruiformes and Charadriiformes) and 06 families (Ardeidae, Ciconiidae, Rallidae, Charadriidae, Scolopocidae and Recurvirostridae) were observed at the study site. Avian Fauna observed at the study site has been depicted in the form of pie diagram and histogram in order-wise and family-wise manner in Fig.1 and Fig.2 respectively. Residential status of the avifauna shows that, 09 species were resident, 14 species were winter migratory and 06 species were local migratory at the study site. Residential status of wader birds at study site has been depicted in Fig. 3. Of the 02 orders, maximum abundance was noted from order Charadriiformes with 15 species followed by Ciconiiformes with 11 species and Gruiformes with 03 species. Most abundant species were found in family, Scolopocidae having 09 species followed by Ardeidae with 08 species, Charadriidae with 04 species, Ciconiidae and Rallidae with 03 species each and Recurvirostridae with 02 species. Very few

workers worked upon the avian diversity of Palwal region. Among them were Gupta *et. al* (2012) reported 60 species of wetland birds from Okhla, Faridabad and Palwal. Kaushik *et. al*(2015) studied the depletion trends in Saras Cranes in Palwal District. The winter visitor and resident species of wading birds were recorded in large numbers at the study site. Among the various species of winter migratory birds observed at the study site, Common Coot and different species of Sandpipers dominates the most. Apart from winter migratory species, the most familiar resident birds observed were Black-winged Stilt and Red-wattled Lapwing. In the present study maximum richness of avian species was recorded during winter. It is concluded from the study that this area can be considered for conservation and research programmes in future.

CONCLUSION:

The above study reveals that this region provides a rich habitat for wader birds. It acts as a hub for a number of migratory as well as residential wading birds. So each and every habitat in this region is need to be protected. This study highlights the importance of wetlands and green vegetation for the maintainance of ecological balance.

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