



Analysis of wetland Birds as seen in Yamuna river at Okhla (Delhi), Faridabad and Palwal Districts in Haryana, India

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Abstract

The present studies were done during 2008-11 for the observations of wetland birds in River Yamuna at Okhla (Delhi), Faridabad and Palwal districts in Haryana. Visits were made in an irregular manner. In all 2 visits were made at Faridabad; village Chandhat nearby Palwal and at Hodal nearby village Kulena. It is pertinent to mention that few visits were made in winter season at Okhla barrage in New Delhi. In all, 60 species were recorded belonging to 8 orders and 14 families. Out of these 60 species of wetland birds, 35 were winter migratory, 11 local migratory and 11 species of birds were resident. The specific wetland birds specific to Yamuna River between "Delhi-Faridabad-Palwal" segments include Ferruginous Pochard *Aythya nyroca*, Black-headed Gull *Larus ridibundus*, Greater Scaup *Aythya marila*, River Tern *Sterna aurantia* and Pallas Gull *Larus ichthyaetus*. Other popular wetland birds include, amongst others, Mallard *Anas platyrhynchos*, Northern Pintail *Anas acuta*, Northern Shoveller *Anas clypeata*, Red-crested Pochard *Rhodonessa rufina*, Common Pochard *Aythya ferina*, Tufted Pochard *Aythya fuligula*, Bar-headed Goose *Anser indicus*, Greylag Goose *Anser anser*, Brahminy Shelduck *Tadorna ferruginea*, Gadwall *Anas strepera*, Eurasian Wigeon *Anas penelope*, White-tailed Lapwing *Vanellus leucurus*, Ruff *Philomachus pugnax*, Common Greenshank *Tringa nebularia*, Pallas Gull *Larus ichthyaetus*, Painted Stork *Mycteria leucocephala*, Open-billed Stork *Anastomus oscitans*, White-necked Stork *Ciconia episcopus*, Eurasian Spoonbill *Platalea leucorodia*, Black tailed Godwit *Limosa limosa*, Wood Sandpiper *Tringa glareola*, Little Stint *Calidris minuta*, Common Redshank *Tringa totanus*, Spotted Redshank *Tringa erythropus* and Pied Avocet *Recurvirostra avosetta*. Black-headed Gulls were seen in thousands followed by Greylag Goose *Anser anser*, Northern Shoveller, Northern Pintail etc. Minimum number noticed were those of Greater Scaup, Ferruginous Pochards etc. Resident wetland birds include Little Cormorants *Phalacrocorax niger*, Median Cormorants *Phalacrocorax fuscicollis*, Large Cormorants *Phalacrocorax carbo*, Pond Herons *Ardeola grayii*, Night Herons *Nycticorax nycticorax*, Black winged Stilts *Himantopus himantopus*, Common Moorhens *Gallinula chloropus*, Bronze-winged Jacana *Metopidius indicus*, Red-wattled Lapwing *Vanellus indicus*, Grey Herons *Ardea cinerea*, large Egrets *Ardea alba* and Median Egrets *Mesophox intermedia*. However, Grey Herons were seen only in 2-3 numbers. It seems that most of the popular migratory birds, perhaps, prefer Jheels, Lakes, Barrages compared to Yamuna river stream. Birds in Yamuna are not continuous in their availability. Rather birds are encountered at specific spots only in a given segment. Painted Storks were seen in 1 or 2 and that too in the vicinity of Yamuna region rather than its stream of water. However, birds were seen in innumerable numbers at Okhla Barrage in Yamuna River nearby Delhi.

Keywords: Yamuna River, Okhla Barrage, Faridabad, Palwal, Wetland birds

Introduction

The present studies have been carried out in Yamuna River between Delhi, Faridabad and Palwal. Faridabad District in Haryana lies in South Eastern direction touching Noida, Bulandshar, Aligarh and Mathura. The character of Yamuna has undergone tremendous alterations in the last 50 years. One such change is the absence of annual floods in August-September which were

seen in furious dimensions upto 1960s. But now there are no more floods. The second most important change has been the sewerage addition in Delhi. Earlier, workers who have studied birds in Yamuna include Hutson (1954), Ganguli, 1975, Singh (1983), Gopal and Shah (1993), Grewal, 1996, Urfi (1993a; 1993b; 1996; 1997; 2003), Vyas (1996), Harris (2001). Some workers have also studied Yamuna at Okhla Barrage (Urfi, 2003). However, no one has studied Yamuna at Faridabad-Palwal-Hodal section and hence the present study was undertaken. However, wetland birds in rural ponds have been studied by Gupta and Kaushik (2010a-e, 2011.); Gupta *et al.* (2010a-c), Gupta *et*

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al.(2010), Gupta *et al.* (2009) and Gupta *et al.* (2012). At the same time, Gupta *et al.* (2011a-c) have also focused attention on wetland birds found in few prominent sanctuaries in Haryana.

Material and Methods

Yamuna River flows into plains at Kalesar nearby Hathini Kund in Yamunanagar district. It flows through Karnal, Panipat, Sonapat to reach Delhi. Soon after it continues Uttar Pradesh and in the east as border between Haryana and Uttar Pradesh flowing to Mathura via Faridabad district in south east Haryana. Present studies attempt to focus attention on wetland birds of Yamuna in a section of 90-100 Kms between Faridabad and Palwal. The methodology followed is Ali (1996) and Gupta and Kaushik (2010a, 2011). The river bed was surveyed nearby in flowing water as well as the sandy area of 200 meters in eastern directions was also surveyed. Major segment of the studies attempts to understand the scenario of wetland birds including migratory as well as resident ones. Identification of birds has been done following Ali (1996); Ali and Ripley (1987); Grimmet *et al.*, (1998) and Kumar *et al.*, (2003, 2005). The nomenclature adopted was that of Manakadan and Pittie (2001). The observations were taken with the help of Camara (Zenith 1986 model with tele-lens and Nikon Coolpix P 500). Enough photographic evidence was generated.

Results and Discussion

The birds observed during 2008-2011 at Okhla (Delhi), Faridabad and Palwal districts in Haryana are computed in the form of table-1. The prominent birds spotted in Yamuna River are depicted in plates 1-2. Analysis thereof in respect of Orders, families and residential status is given in figures 1-3. The total number of 60 wetland birds belonging to 8 orders and 14 families. Further analysis of birds revealed that 35 species of birds were winter migratory, 11 local migratory and 11 species of birds were resident. The most dominant orders are Charadriiformes (18 species), Anseriformes (16 Species) and Ciconiiformes (12 species) (Fig.1) respectively. The minimum diversity of wetland birds is seen in Order Podicipediformes (Little Grebe) and Coraciiformes (Lesser Pied Kingfisher, White-breasted Kingfisher). The maximum avian

diversity is seen in family Anatidae (16 species) followed by Ardeidae (8 species) (Fig.2). The minimum diversity is seen in family Podicipedidae (Little Grebe). Gupta and Kaushik (2011) reported 47 species of wetland birds belonging to 9 orders and 13 families from Hathnikund Barrage in Yamunanagar district in Haryana. Out of these 47 species, 26 species were winter migratory birds which visit the Yamuna barrage every year in winter season (Fig.3). At the same time, Gupta *et al.* (2012) reported 70 species of wetland birds from rural ponds in Panipat district just in the vicinity of Yamuna River. It seems migratory birds coming from far off places to Haryana prefer traditional ponds compared to Yamuna River. According to present studies, the birds specific to River Yamuna are Ferruginous Pochard, Black-headed Gull, Greater Scaup, River Tern, and Pallas Gull. The popular wetland resident's birds include Little Cormorants, Median Cormorants, Pond Herons, Night Herons; Black winged Stilts, Common Moorhens, Bronze-winged Jacana, Red-wattled Lapwing, large Egrets and Median Egrets, Lesser Pied Kingfisher, White-breasted Kingfisher and Large Pied Wagtail. On the other hand, popular winter migratory birds include Mallard, Northern Pintail, Northern Shoveller, Red-crested Pochard, Common Pochard, Tufted Pochard, Bar-headed Goose, Greylag Goose, Brahminy Shelduck, Gadwall, Eurasian Wigeon White-tailed Lapwing, Ruff, Common Greenshank, Pallas Gull, Painted Stork, Open-billed Stork, White-necked Stork, Eurasian Spoonbill, Black tailed Godwit, Wood Sandpiper, Little Stint, Common Redshank, Spotted Redshank and Pied Avocet. Tufted Pochards and Mallards were not seen in the stream. Instead these were seen at Okhla barrage only. Compared to the traditional rural ponds winter migratory birds (Gupta *et al.* (2009); Gupta *et al.*, 2010a-c, Gupta and Kaushik, 2010a) observed that Tufted Pochards, Red-crested Pochard, Pallas Gull, Black headed Gull, Greater Scaup, Ferruginous Pochards, Rudy Shelduck, River Lapwing are seen only in Yamuna stream and its vicinity of merely 100 yards on east and west ward side. Gupta and Kaushik (2010) have reported the absence of these birds from nearby pond to Yamuna in district Karnal (Gagsina and Raipur village ponds) where these birds were absent. These studies, therefore, indicate that there are some birds which are



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common to Yamuna and nearby ponds like Yamuna only like River Lapwing, Pallas Gull, Northern Shoveller, Northern Pintail, Common Black-headed Gull, Tufted Pochard, Rudy Shelduck Teal, Gadwall, Garganey, Bar-headed Goose, and and Red-crested Pochards. Common Pochard. Some birds are specific to

Table.1. Checklist of wetland birds of Yamuna River at Okhla (Delhi), Faridabad and Palwal districts in Haryana state during 2008-11.

S. No.	Common Name	Res. Status	Scientific Name
Podicipediformes		Podicipedidae	
1	Little Grebe	R	<i>Tachybaptus rufficollis</i> (Pallas, 1764)
Pelecaniformes		Phalacrocoracidae	
2	Little Cormorant	R	<i>Phalacrocorax niger</i> (Vieillot, 1817)
3	Indian Shag	LM	<i>Phalacrocorax fuscicollis</i> Stephens, 1826
4	Great Cormorant	LM	<i>Phalacrocorax carbo</i> (Linnaeus, 1758)
Ciconiiformes		Ardeidae	
5	Little Egret	LM	<i>Egretta garzetta</i> (Linnaeus, 1766)
6	Grey Heron	WM	<i>Ardea cinerea</i> Linnaeus, 1758
7	Purple Heron	LM	<i>Ardea purpurea</i> Linnaeus, 1766
8	Large Egret	LM	<i>Casmerodius albus</i> (Linnaeus 1758)
9	Median Egret	LM	<i>Mesophoyx intermedia</i> (Wagler, 1829)
10	Cattle Egret	R	<i>Bubulcus ibis</i> (Linnaeus, 1758)
11	Indian Pond-Heron	R	<i>Ardeola grayii</i> (Sykes, 1832)
12	Black-crowned Night Heron	LM	<i>Nycticorax nycticorax</i> (Linnaeus, 1758)
		Ciconiidae	
13	Painted stork	LM	<i>Mycteria leucocephala</i> (Pennant, 1769)
14	White-necked Stork	LM	<i>Ciconia episcopus</i> (Boddaert, 1783)
15	Asian Openbill Stork	LM	<i>Anastomus oscitans</i> (Boddaert, 1783)
		Threskiornithidae	
16	Eurasian Spoonbill	WM	<i>Platalea leucorodia</i> Linnaeus, 1758
Anseriformes		Anatidae	
17	Greylag Goose	WM	<i>Anser anser</i> (Linnaeus, 1758)
18	Bar-headed Goose	WM	<i>Anser indicus</i> (Latham, 1790)
19	Brahminy Shelduck	WM	<i>Tadorna ferruginea</i> (Pallas 1764)
20	Mallard	WM	<i>Anas platyrhynchos</i> Linnaeus, 1758
21	Gadwall	WM	<i>Anas strepera</i> Linnaeus, 1758
22	Eurasian Wigeon	WM	<i>Anas penelope</i> Linnaeus, 1758
23	Spot-billed Duck	WM	<i>Anas poecilorhyncha</i> J.R. Forester, 1781
24	Northern Shoveller	WM	<i>Anas clypeata</i> Linnaeus, 1758
25	Northern Pintail	WM	<i>Anas acuta</i> Linnaeus, 1758
26	Garganey	WM	<i>Anas querquedula</i> Linnaeus, 1758
27	Common Teal	WM	<i>Anas crecca</i> Linnaeus, 1758
28	Common Pochard	WM	<i>Aythya ferina</i> (Linnaeus, 1758)
29	Red-crested Pochard	WM	<i>Rhodonessa rufina</i> (Pallas, 1773)
30	Ferruginous Pochard	WM	<i>Aythya nyroca</i> (Güldenstädt, 1770)
31	Greater Scaup	WM	<i>Aythya marila</i> (Linnaeus, 1761)
32	Tufted Pochard	WM	<i>Aythya fuligula</i> (Linnaeus, 1758)
Gruiformes		Rallidae	
33	White-breasted Waterhen	R	<i>Amaurornis phoenicurus</i> (Pennant, 1769)
34	Purple Moorhen	R	<i>Porphyrio porphyrio</i> (Linnaeus, 1758)



35	Common Moorhen	LM	<i>Gallinula chloropus</i> (Linnaeus, 1758)
36	Common Coot	WM	<i>Fulica atra</i> Linnaeus, 1758
Charadriiformes		Jacanidae	
37	Bronze-winged Jacana	R	<i>Metopidius indicus</i> (Latham, 1790)
Charadriidae			
38	Little Ringed Plover	WM	<i>Charadrius dubius</i> Scopoli, 1786
39	Red-wattled Lapwing	R	<i>Vanellus indicus</i> (Boddaert, 1783)
40	White-tailed Lapwing	WM	<i>Vanellus leucurus</i> (Lichtenstein, 1823)
41	River Lapwing	R	<i>Vanellus duvaucelii</i> (Lesson, 1826)
Scolopacidae			
42	Spotted Redshank	WM	<i>Tringa erythropus</i> (Pallas, 1764)
43	Common Redshank	WM	<i>Tringa totanus</i> (Linnaeus, 1758)
44	Ruff	WM	<i>Philomachus pugnax</i> (Linnaeus, 1758)
45	Little Stint	WM	<i>Calidris minuta</i> Leisler, 1812
46	Black tailed Godwit	WM	<i>Limosa limosa</i> (Linnaeus, 1758)
47	Common Sandpiper	WM	<i>Actitis hypoleucos</i> Linnaeus, 1758
48	Common Greenshank	WM	<i>Tringa nebularia</i> (Gunner, 1767)
49	Wood Sandpiper	WM	<i>Tringa glareola</i> Linnaeus, 1758
Recurvirostridae			
50	Black-winged Stilt	R	<i>Himantopus himantopus</i> (Linnaeus, 1758)
51	Pied Avocet	WM	<i>Recurvirostra avosetta</i> Linnaeus, 1758
Laridae			
52	River Tern	R	<i>Sterna aurantia</i> J.E.Gray, 1831
53	Black-headed Gull	WM	<i>Larus ridibundus</i> (Linnaeus, 1766)
54	Pallas's Gull	WM	<i>Larus ichthyaetus</i> (Pallas 1773)
Coraciiformes		Alcedinidae	
55	Lesser Pied Kingfisher	R	<i>Ceryle rudis</i> (Linnaeus, 1758)
56	White-breasted Kingfisher	R	<i>Halcyon smyenensis</i> (Linnaeus, 1758)
Passeriformes		Motacilidae	
57	White Wagtail	WM	<i>Motacilla alba</i> Linnaeus, 1758
58	Large Pied Wagtail	R	<i>Motacilla maderaspatensis</i> Gmelin, 1789
59	Citrine Wagtail	WM	<i>Motacilla citreola</i> Pallas, 1776
60	Yellow Wagtail	WM	<i>Motacilla flava</i> Linnaeus, 1758

Abbreviation:-R-Resident; WM-Winter Migratory; LM-Local Migratory; SM-Summer Migratory

However, workers like Urfi (2003) have reported huge 302 species of birds from Okhla Barrage which is an altered segment of Yamuna River in NCR region. Urfi (2003) reported two critically endangered species (White rumped vulture and Indian Vulture) and nine vulnerable species like Baikal Teal, Baer's Pochard, Saras Crane, Sociable Lapwing, Indian skimmer, Pallas's Fish Eagle, Lesser Adjutant Stork, Bristled Grassbird and Finn's weaver from Okhla Bird Sanctuary. But these birds could not be observed in the present

study. At the same time, Urfi (2003) observed seven species of nearly threatened species like Ferruginous Pochard, Black bellied Tern, Grey-headed Fish Eagle, Darter, Black-headed Ibis, Painted Stork and Black necked stork from Okhla Bird Sanctuary. Only two species of Birds like Ferruginous Pochard and Painted Stork were observed in the present study. As such more birds are attracted to broader sheet of water compared to the narrow stream of slow flowing water in a populated river like Yamuna.



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Fig.1.Greater Scaup



Fig.2.Greylag Goose



Fig.3.Greater Scaup



Fig.4.Bar-headed
Goose



Fig.5. River Lapwing



Fig.6 Pallas's Gull



Fig.7.Ferruginous
Pochard



Fig.8. Black-headed
Gull



Fig.9. White-tailed
Lapwing

Plate-1: Figs. 1-9 Few prominent winter visiting wetland birds spotted in River Yamuna-bed at Okhla (Delhi), Faridabad and Palwal districts during 2008-2011





Fig.1.Red-crested Pochard



Fig.2.Painted Stork



Fig.3. Northern Shoveller



Fig.4.Rudy Shelduck



Fig.5. Openbill Stork



Fig.6.Common Pochard



Fig.7. Mallard



Fig.8. White-necked Stork



Fig.9 Common Teal

Plate-2: Figs. 1-9 Few prominent winter visiting wetland birds spotted in River Yamuna-bed at Okhla (Delhi), Faridabad and Palwal districts during 2008-2011

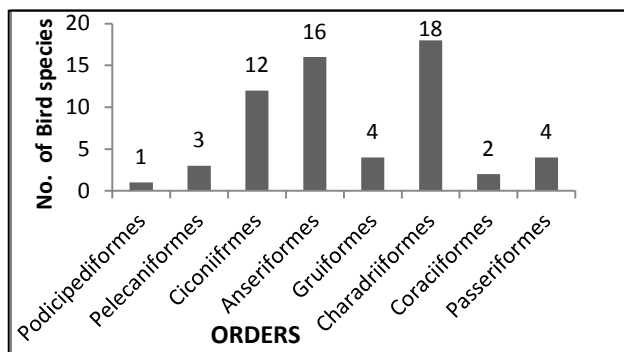


Fig.1. Showing incidence of avian biodiversity spotted in Yamuna River at Okhla (Delhi), Faridabad and Palwal districts in Haryana in order-wise manner during 2008-11.

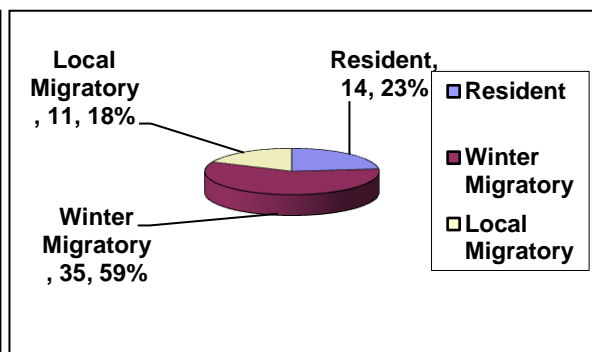


Fig.3 Showing the Residential status of avian biodiversity spotted in Yamuna River at Okhla (Delhi), Faridabad and Palwal districts in Haryana during 2008-11.

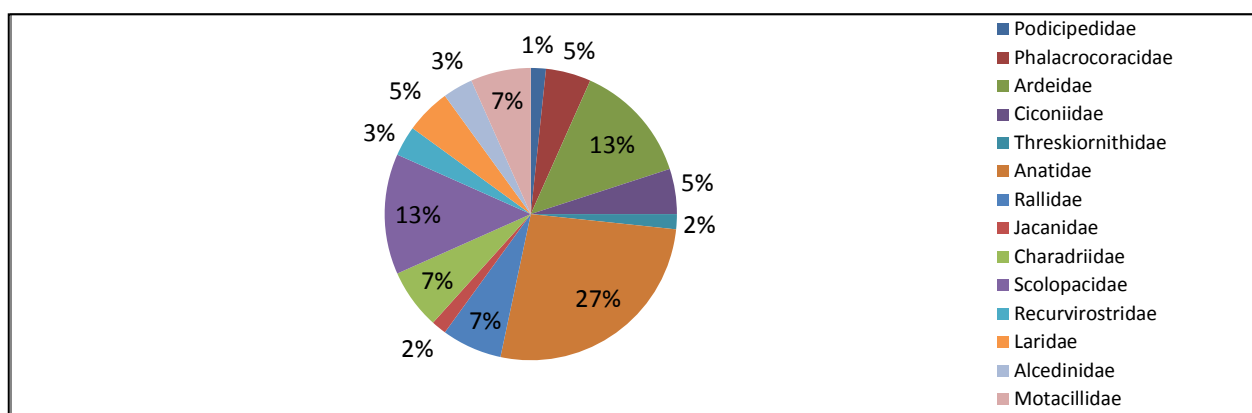


Fig.2. Showing incidence of avian biodiversity spotted in Yamuna River at Okhla (Delhi), Faridabad and Palwal districts in Haryana in family-wise manner during 2008-11.

Present studies also indicate that migratory birds like Painted Stork, Ferruginous Pochards are globally threatened (Birdlife International, 2001). At the same time, most of the birds seen in Yamuna river fall in Schedule IV of Wildlife (Protection) Act, 1972 of India. In view of these observations, the present studies also recommend that substantial steps be undertaken to safeguard these birds.

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