



Status of waterbirds at Hathnikund Barrage wetland, Yamunanagar District, Haryana, India

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The present study on status of waterbirds of Hathnikund Barrage wetland was undertaken while conducting 'General Faunistic Surveys' of Kalesar National Park and Wildlife Sanctuary under primary objectives of the Zoological Survey of India, Dehra Dun. This wetland is a small area of about 1km² in Yamunanagar District of Haryana. The barrage was constructed from October 1996 to June 1999 and came into being in the year 1999 under the West Jamuna Canal Project to substitute Tajewala water-head (constructed way back in 1873 and has now become non-functional) primarily for irrigation and power generation for Haryana and Uttar Pradesh. It is adjacent to the national park and is practically inseparable. Geographically, the wetland is located at 30°19.290'N & 77°02.579'E at an elevation of c. 310m. Fishing activities are not allowed in the barrage.

Kalsi (1998) was, perhaps, the first to provide a list of 161 species of birds from the Kalesar Sanctuary, while Sharma (2006) made available an updated and an unannotated checklist of 304 species on the internet. To this

checklist, Bahuguna et al. (2008) added five species of waterbirds. The present communication adds another five waterbird species.

However, these studies did not deal with the status of waterbirds of Hathnikund, though a few studies on the status and diversity of waterbirds of two other man-made wetlands (Asan and Bheemgoda barrage wetlands) from the nearby areas are available (Tak et al. 1998; Kumar & Bhatt 2000; Tak & Sati 2003).

Material and Methods

Observations on the waterbird diversity and relative abundance at Hathnikund were carried out for two successive winters between October and March during 2007-08 and 2008-09. Regular surveys at monthly intervals were undertaken. In all, 12 visits were made to the wetlands. Each time the absolute counts were made by two to three observers to minimize errors. Relative abundance was assessed in terms of the following four categories: i) very common (observed in 75-100% of visits); ii) common (50-74%); iii) uncommon (25-49%) and iv) less common (< 25%). The nomenclature and systematic sequence of birds as given by Manakadan & Pittie (2001) was followed.

Results

The observations revealed that this wetland provides habitat for 31 waterbirds species belonging to 22 genera and 10 families, including the five waterbirds species (Bar-headed Goose *Anser indicus*, Gadwall *Anas strepera*, Mallard *Anas platyrhynchos*, Red-crested Pochard *Rhodonessa rufina*, and Common Pochard *Aythya ferina*), which have been added for the first time to the existing checklist on avifauna of the area.

Of these, 14 species are widespread resident (R), one widespread resident whose population augmented by winter visitors (RW), 11 widespread winter visitors (W), and the remaining five species are sparse local winter visitors (w) (Table 1).

The family-wise proportion of species richness of waterbirds of Hathnikund Barrage varied from 35.4 to 3.2 % as follows: family Anatidae with 11 species (35.4%), followed by Ardeidae 6 (19.3%); Scolopacidae three (9.6%), Phalacrocoracidae, Rallidae, Charadriidae, and Laridae with two species each (6.4% each), and Podicipedidae Ciconiidae, and Recurvirostridae by a single species each (3.2% each) (Fig. 1).

While the proportion of avian families as represented by population abundance (average population: 344.7; range: 47-919 individuals) was: Anatidae with 83.9%, followed by Phalacrocoracidae (10.2%), Ardeidae (3.4%), Podicipedidae (0.6%), Charadriidae (0.51%), Rallidae and Recurvirostridae (0.34% each), Laridae (0.19%), Scolopacidae (0.14%), and Ciconiidae (0.1%) (Fig. 2).

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Table 1. Status of waterbirds at Hathnikund Barrage wetland, Yamunanagar District, Haryana, India.

	Systematic list		Residential status	Average (range)	% sighting	Relative abundance
	Podicipedidae					
1	Little Grebe (5)	<i>Tachybaptus ruficollis</i> (Pallas, 1764)	R	2.3 (0-6)	50	C
	Phalacrocoracidae					
2	Little Cormorant (28)	<i>Phalacrocorax niger</i> (Vieillot, 1817)	R	15 (0-50)	83.3	VC
3	Great Cormorant (26)	<i>Phalacrocorax carbo</i> (Linnaeus, 1758)	RW	20.5 (0-60)	91.6	VC
	Ardeidae					
4	Little Egret (49)	<i>Egretta garzetta</i> (Linnaeus, 1766)	R	9.7 (0-30)	75	VC
5	Grey Heron (35-36)	<i>Ardea cinerea</i> Linnaeus, 1758	W	0.2 (0-2)	16.6	LC
6	Large Egret (45-46)	<i>Casmerodius albus</i> (Linnaeus, 1758)	R	0.5 (0-2)	50	C
7	Median Egret (47, 48)	<i>Mesophoyx intermedia</i> (Wagler, 1829)	R	0.08 (0-1)	8.3	LC
8	Cattle Egret (44)	<i>Bubulcus ibis</i> (Linnaeus, 1758)	R	1.7 (0-7)	41.6	UC
9	Indian Pond-Heron (42-42a)	<i>Ardeola grayii</i> (Sykes, 1832)	R	0.2 (0-1)	25	UC
	Ciconiidae					
10	Black Stork (65)	<i>Ciconia nigra</i> (Linnaeus, 1758)	w	0.4 (0-5)	8.3	LC
	Anatidae					
11	*Bar-headed Goose (82)	<i>Anser indicus</i> (Latham, 1790)	w	0.3 (0-4)	8.3	LC
12	Brahminy Shelduck (90)	<i>Tadorna ferruginea</i> (Pallas, 1764)	W	160 (21-350)	91.6	VC
13	*Gadwall (101)	<i>Anas strepera</i> Linnaeus, 1758	W	47 (0-120)	66.6	C
14	Eurasian Wigeon (103)	<i>Anas penelope</i> Linnaeus, 1758	W	8.3 (0-100)	8.3	LC
15	*Mallard (100)	<i>Anas platyrhynchos</i> Linnaeus, 1758	W	3.5 (0-36)	25	UC
16	Spot-billed Duck (97-99)	<i>Anas poecilorhyncha</i> J.R. Forester, 1781	R	11.3 (0-20)	75	VC
17	Northern Shoveller (105)	<i>Anas clypeata</i> Linnaeus, 1758	W	0.1 (0-2)	8.3	LC
18	Northern Pintail (93)	<i>Anas acuta</i> Linnaeus, 1758	W	17.5 (0-150)	16.6	LC
19	*Red-crested Pochard (107)	<i>Rhodonessa rufina</i> (Pallas, 1773)	w	15.2 (0-60)	58.3	C
20	*Common Pochard (108)	<i>Aythya ferina</i> (Linnaeus, 1758)	W	21.1 (0-90)	50	C
21	Tufted Pochard (111)	<i>Aythya fuligula</i> (Linnaeus, 1758)	W	3.3 (0-40)	8.3	LC
	Rallidae					
22	Common Moorhen (347-347a)	<i>Gallinula chloropus</i> (Linnaeus, 1758)	R	0.3 (0-2)	16.6	LC

	Systematic list		Residential status	Average (range)	% sighting	Relative abundance
23	Common Coot (350)	<i>Fulica atra</i> Linnaeus, 1758	R	0.8 (0-10)	8.3	LC
	Charadriidae					
24	River Lapwing (369)	<i>Vanellus duvaucelii</i> (Lesson, 1826)	R	0.8 (0-7)	25	UC
25	Red-wattled Lapwing (366-368)	<i>Vanellus indicus</i> (Boddaert, 1783)	R	0.9 (0-3)	50	C
	Scolopacidae					
26	Common Greenshank (396)	<i>Tringa nebularia</i> (Gunner, 1767)	W	0.08 (0-1)	8.3	LC
27	Green Sandpiper (397)	<i>Tringa ochropus</i> Linnaeus, 1758	W	0.2 (0-1)	25	UC
28	Common Sandpiper (401)	<i>Actitis hypoleucos</i> Linnaeus, 1758	w	0.1 (0-1)	16.6	LC
	Recurvirostridae					
29	Black-winged Stilt (430-431)	<i>Himantopus himantopus</i> (Linnaeus, 1758)	R	0.1 (0-4)	41.6	UC
	Laridae					
30	Brown-headed Gull (454)	<i>Larus brunnicephalus</i> Jerdon, 1840	w	0.7 (0-5)	16.6	LC
31	River Tern (463)	<i>Sterna aurantia</i> J.E. Gray, 1831	R	0.08 (0-1)	8.3	LC

* - species added for the first time to the existing avifaunal checklist of Kalesar area; VC - very common; C - common; UC - uncommon; LC - less common; R - widespread resident; RW - widespread resident as well as widespread winter migrant; W - widespread winter migrant; w - sparse local winter migrant. Numbers within brackets after the common names are the numbers given to species in Ripley's (1982) Synopsis, which was also followed in Ali & Ripley's Handbook.

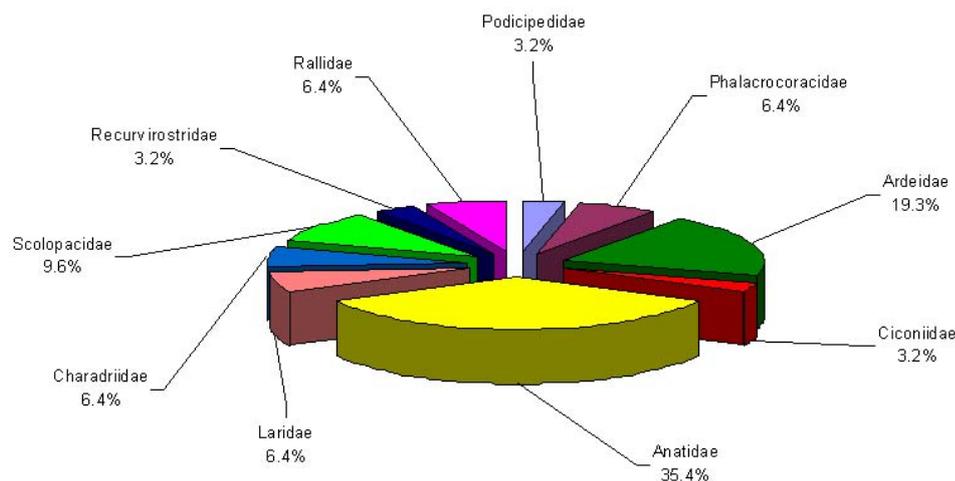


Figure 1. Proportion of avian families as represented by species richness of waterbirds of Hathnikund Barrage

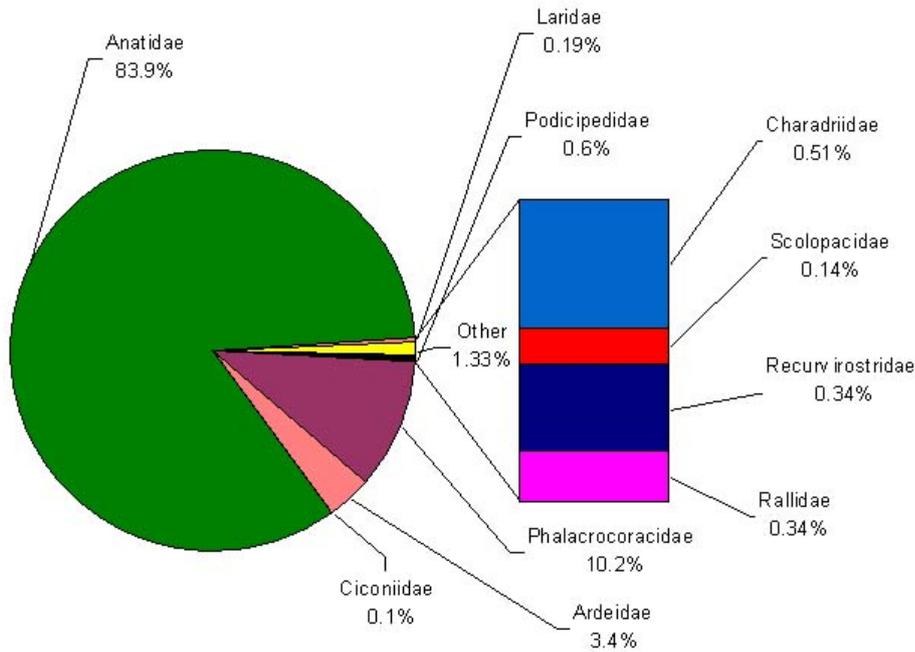


Figure 2. Proportion of avian families as represented by population abundance of waterbirds of Hathnikund Barrage

The species-wise average population and range have also been provided in Table 1.

The observations on the relative abundance of 31 waterbird species revealed that five species were very common (Great Cormorant & Brahminy Shelduck with 91.6%; Little Cormorant 83.3%; Little Egret & Spot-billed Duck 75%) and six species were common (Gadwall with 66.6%, Red-crested Pochard 58%, Little Grebe, Large Egret, Common Pochard & Red-wattled Lapwing 50%), while another six species were uncommon and the remaining 14 species were less common

Remarks

The occurrence of an average population of c. 350 individuals of 31 waterbird species during the study period is, perhaps, an indication of the fact that in near future the Hathnikund barrage wetlands may not only become a favourable habitat for waterbirds but may also develop into an ideal place for birdwatchers, naturalists, tourists, and researchers, since the waterbirds are of great importance for their esthetic, sporting, and economic values.

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