



Diversity and Abundance of wetland Birds at Gota Lake of Ahmedabad, Gujarat

Patel Haresh G

Dept. of Zoology, M.G.Science institute, Navrangpura, Ahmedabad-09

Dr.Chirag A. Acharya

Dept. of Zoology, Shri U.P. Arts, Smt. M.G. Panchal Science and Shri V.L. Shah Commerce College, Pilvai

ABSTRACT

Gota Lake is located to the western side of Ahmedabad city. It is basically natural Lake. It covers an area of 2, 51,709 m² and its latitude and longitudes are 23000'15.53" N and 72036'11.46" E respectively. Total number of 30 birds species belonging 5 orders and 11 families were recorded. Cicconiformes is the dominating order of birds. But the future of this avian fauna is in danger due to industrial progress of the city.

KEYWORDS : : Biodiversity, Gota, Wetland, Abundance

INTRODUCTION

Wetland birds provide us with some of nature's most wonderful sights, from vast flocks wheeling overhead to newly hatched chicks drying in the sun. Apart from their beauty and recreational and economic importance, these birds are excellent indicators of water quality and measures of biodiversity. Wetlands are extremely important areas throughout the world for wildlife protection, recreation, sediment control, flood prevention. Wetlands are important bird's habitats and birds use them for feeding, roosting, nesting and rearing their young. "Wetlands" have been defined as swamps and other damp areas of land but in common parlance the word is used interchangeably with "Lakes" which denotes a large body of water surrounded by land. However, internationally accepted term of wetlands describes them as "Area of Marsh, Fen, Peat land or water whether natural or artificial, permanent or temporary with water, that is static or flowing, fresh, brackish or salt including areas of marine water.

STUDY AREA

Ahmedabad city is the heart of Gujarat state and is also rises as the commercial capital. It is located between 22.58°N Latitude and 72.35°E Longitude. Gota Lake is one of the water-body located in Ahmedabad, Gujarat. It shows great avian biodiversity which can attract the attention of bird's watcher and ornithologist. The Lake is rich in aquatic vegetation. Around this Lake trees, herbs and shrubs are located with some stretch of grassland area. However the lake itself fits in the definition of wetland ecosystem. Ecologically it is an important wetland providing habitat to migratory and local bird species.

MATERIALS AND METHODS

Observations were made during January 2013 to December 2013. Regular surveys were done by systematically walking on fixed routes through the study area. The birds were observed during the peak hours of their activity from 0600–1000 hr and from 1600– 1800 hr with the aid of 20X50 Olympus binocular. However, opportunistic records were also collected during other time periods of the day. Birds seen were recorded along with habitat type, season and frequency of sightings of a particular species. Photographs were taken whenever possible using Nikon high zoom camera. Identification of birds was done using field guides (Ali & Ripley 1987; Grimmett et al. 1999), and only those species with confirmed identity are reported in this paper. The checklist was prepared using standard common and scientific names of the birds following Manakadan & Pittie (2001). Residential status of the birds as resident, winter migrant and summer migrant has been assigned strictly with reference to the study area on the basis of presence or absence method. The status of the recorded bird species was established on the basis of frequency of sightings following Kumar & Gupta (2009) as common recorded 9–10 times out of 10 visits, fairly common recorded 6–8 times out of 10 visits, uncom-

mon recorded 3–5 times out of 10 visits, and rare recorded 0–2 times out of 10 visits.

RESULTS AND DISCUSSION

A total of 30 species of wetland birds belonging to 5 orders and 11 families have been recorded from the study area. Details such as common and scientific names, status and abundance of the wetland birds are presented in Table 1. Cicconiformes appeared to be the most crowded order represented by 7 families. Of all, family Ardeidae dominated the list with 8 species. It represented 26.67% of the total number of bird species surviving under wetland conditions of Gota (Table 2). Out of total 30 species, 20 were resident and 10 were migrant species. Most of the migratory species were winter visitors except Lesser Whistling-Duck and Pheasant-Tailed Jacana which were summer visitors. Based on the frequency of sightings, Red-Wattled Lapwing (*Vanellus indicus*), Black headed Ibis (*Threskiornis melanocephalus*), Black Ibis (*Pseudibis papillosa*), Glossy Ibis (*Plegadis falcinellus*), Cattle Egret (*Bubulcus ibis*), Little Egret (*Egretta garzetta*), Large Egret (*Casmerodius albus*), Median Egret (*Mesophox intermedia*), Indian Pond Heron (*Ardeola grayii*), Little Cormorant (*Phalacrocorax niger*), Common Moorhen (*Gallinula chloropus*) and White-breasted Water Hen (*Amaurornis phoenicurus*) were the common species inhabiting this Lake, while Yellow-Wagtail (*Motacilla flava*), White-Wagtail (*Motacilla alba*), Pheasant-Tailed Jacana (*Hydrophasianus chirurgus*), Darter or Snake Bird (*Anhinga melanogaster*), Lesser Pied Kingfisher (*Ceryle rudis*) and Small Blue Kingfisher (*Alcedo atthis*) were rarely sighted.

These water birds were found to utilize different wetland habitats extensively for foraging, nesting and roosting on the emergent and fringed vegetation. Water birds, being generally at or near the top of most wetland food chains are highly susceptible to habitat disturbances and are therefore good indicators of general condition of aquatic habitats (Kushlan, 1992; Jayson and Mathew, 2002; Kler, 2002). The rich diversity of the wetland birds documented during the present study may be because of availability of varied sources of feed as well as foraging. The wetland birds are in general being heterogeneous in their feeding habits (Ali and Ripley, 1987). Thus wetland birds exploit a variety of habitats and depend upon a mosaic of microhabitats for their survival. This habitat by supporting different food sources like fish, crustaceans, invertebrates, water plants and planktons further add to the diversity of wetland birds (Basavarajappa, 2004).

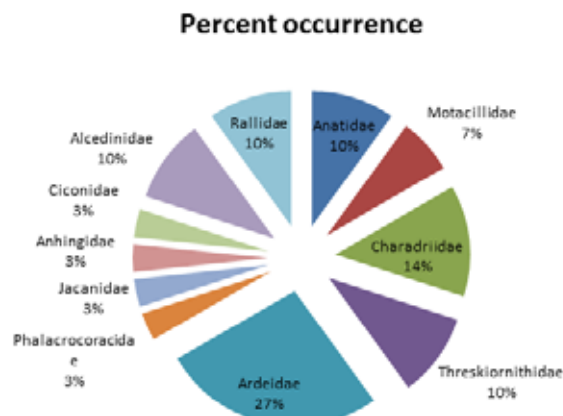
Table: 1 Wetland birds recorded at Gota Lake, Gujarat.

Sr. No.	Order	Family	Scientific Name	Common Name	Resident status	Abundance
1	Anseriformes	Anatidae	Dendrocygna javanica	Lesser Whistling-Duck	SM	UC
			Anas poecilorhyncha	Spot- Billed Duck	WM	UC
			Sarkidiornis melanotos	Comb duck	WM	UC
2	Passeriformes	Motacillidae	Motacilla flava	Yellow-Wagtail	WM	RA
			Motacilla alba	White-Wagtail	WM	RA
3	Ciconiiformes	Charadriidae	Vanellus indicus	Red-Wattled Lapwing	R	C
			Tringa glareola	Wood Sandpiper	WM	UC
			Tringa stagnatilis	Marsh sandpiper	WM	UC
			Himantopus himantopus	Black Winged Stilt	WM	FC
		Threskiornithidae	Threskiornis melanocephalus	Black headed Ibis	R	C
			Pseudibis papillosa	Black Ibis	R	C
			Plegadis falcinellus	Glossy Ibis	R	C
		Ardeidae	Bubulcus ibis	Cattle Egret	R	C
			Egretta garzetta	Little Egret	R	C
			Casmerodius albus	Large Egret	R	C
			Mesophoyx intermedia	Median Egret	R	C
			Ardeola grayii	Indian Pond Heron	R	C
			Ardea cinerea	Grey Heron	R	UC
			Ardea purpurea	Purple Heron	R	UC
			Nycticorax nycticorax	Black-crowned Night Heron	R	UC
Phalacrocoracidae	Phalacrocorax niger	Little Cormorant	R	C		
Jacaniidae	Hydrophasianus chirurgus	Pheasant-Tailed Jacana	SM	RA		
Anhingidae	Anhinga melanogaster	Darter or Snake Bird	R	RA		
Ciconidae	Mycteria leucocephala	Painted stork	R	FC		
4	Coraciiformes	Alcedinidae	Ceryle rudis	Lesser Pied Kingfisher	R	RA
			Alcedo atthis	Small Blue Kingfisher	R	RA
			Halcyon smyrnensis	White-Breasted Kingfisher	R	UC
5	Gruiformes	Rallidae	Gallinula chloropus	Common Moorhen	R	C
			Porphyrio porphyrio	Purple Swampphen	WM	FC
			Amaurornis phoenicurus	White-breasted Water Hen	R	C

Table: 2 Status of wetland bird families recorded at Gota Lake, Gujarat.

Sr.No.	Family	No. of species	Percent occurrence
1	Anatidae	3	10.0%
2	Motacillidae	2	6.67%
3	Charadriidae	4	13.33%
4	Threskiornithidae	3	10.0%
5	Ardeidae	8	26.67%
6	Phalacrocoracidae	1	3.33%
7	Jacaniidae	1	3.33%
8	Anhingidae	1	3.33%
9	Ciconidae	1	3.33%
10	Alcedinidae	3	10.0%
11	Rallidae	3	10.0%

Fig.: 1 Status of wetland bird families recorded at Gota Lake, Gujarat.



REFERENCES

- Ali, S. and S.D. Ripley 1987. Compact handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. Oxford University Press, Delhi. | Basavarajappa, S. 2004. Avifauna of agro-ecosystems of Maidan area of Karnataka. *Zoos' Print J.* 21(4): 2217-2219. | Buckton, S. 2007. Managing wetlands for sustainable livelihoods at Koshi Tappu. *Danphe.* 16(1): 12-13. | Grimmett, R., C. Inskipp and T. Inskipp 1999. Pocket guide to the birds of the Indian subcontinent. Oxford University Press, Delhi. | Jayson, E.A. and D.N. Mathew 2002. Structure and composition of two bird communities in the southern Western Ghats. *J. Bombay Nat. Hist. Soc.* 99(1): 8-25. | Kler, T.K. 2002. Bird species in Kanjali wetland. *Tiger Paper* 39(1): 29-32. | Kumar, A., J.P. Sati, P.C. Tak and J.R.B. Alfred 2005. Handbook on Indian wetland birds and their conservation. Zoological Survey of India. 472p. | Kushlan, J.A. 1992. Population biology and conservation of colonial water birds. *Colonial Water Birds* 15: 1-7 | Manakadan, R. and A. Pittie 2001. Standardised common and scientific names of the birds of the Indian subcontinent. *Buceros.* 6(1): 1-37. | Prasad, S.N., T.V. Ramachandra, N. Ahalya, T. Sengupta, A. Kumar, A.K. Tiwari, V.S. Vijayan and L. Vijayan 2002. Conservation of wetlands of India- A review. *Tropical Ecology* 43(1): 173-186. | Reginald, L.J., C. Mahendran, S.S. Kumar and P. Pramod 2007. Birds of Singanallur Lake, Coimbatore, Tamilnadu. *Zoos' Print J.* 22(12): 2944-2948. | Verma, A., S. Balachandran, N. Chaturvedi and V. Patil 2004. A preliminary survey on the biodiversity of Mahul Creek, Mumbai, India. *Zoos' Print J.* 19(9): 1599-1605. |