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Water Bird Diversity at Lapkaman Village Pond, Ahmedabad District, Gujarat, India

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ABSTRACT

Lapkaman Village Pond is a place of Ahamedabad District in state Gujarat in India and is dotted with a large pond. Its located near to Thol Birds sanctuary and lots of ponds near to this lack like a Vadsar village pond, Sarkhej open big drainage water canal, Vastrapur village pond,, Chharodi village pond. This wetland supports a rich avian diversity and serve as winter sojourn. A total of 44 species of wetland birds belonging to 14 families distributed in 7 orders have been recorded around lapkaman lack.This wetland is under pressure from diverse anthropogenic activities. This paper provides an overview of status of wetland birds and threats to them in the study area.

Keyword: Wetland Bird, Diversity, Abundance, Lapkaman

I. INTRODUCTION

Birds are the most significant and component of fresh water wetland ecosystem. Wetlands are among the most productive ecosystems in the world and play vital role in flood control, aquifer recharge, nutrient absorption and erosion control. . In addition, wetlands provide home for a huge diversity of wildlife such as birds, mammals, fish, frogs, insects and plants (Buckton, 2007).Thus wetlands help in maintaining biodiversity of flora and fauna.Wetlands in India cover an area of 58.2 million hectares (Prasad *et al.*, 2002). Of 1340 bird species found in India (Ali and Ripley, 1987; Manakandan and Pittie, 2001), Wetlands in India, as elsewhere, are facing tremendous anthropogenic pressures (Prasad *et al.*, 2002), which can greatly influence the structure of bird community (Kler, 2002; Verma *et al.*, 2004; Reginald *et al.*, 2007). Water birds have long attracted the attention of the public and scientists because of their beauty, abundance, visibility and social behavior, as well as for their recreational and economic importance. Recently, water birds have become of interest as indicators of wetland quality and as parameters of restoration success and regional biodiversity . lapkaman Village Pond is near to thol bird senctuary is very rich area of trees, grass, lawns and plants in Ahamedabad in Gujarat. The area of thol bird senctuary serve as roosting and nesting site for birds. The area of Lapkaman Village Pond provides a good habitat for avifauna in the form of water body with marshy plant growth, terrestrial platforms and a central earth mound having scattered trees and bushy vegetation.

II. MATERIALS AND METHODS

The study was carried out in area around Lapkaman Village Pond ground of thol bird senctuary and area around a Vadsar village pond, Sarkhej open big drainage water canal, Vastrapur village pond,, Chharodi village pond. Observations were made over period of over 5 years i.e. during Juily 2012 to June 2017. Regular surveys were done by systematically walking on fixed routes through the study area. Birds were mostly observed during the most active period of the day, i.e., from 800 to 1200

hr and from 1200 to 1600 hrs. Observations were carried out with the aid of 7×35 and 10×50 Nikon binoculars. Birds seen were recorded along with habitat type, season and frequency of occurrence. Identification of birds was done using field guides (Ali and Ripley, 1987; Grimmet *et al.*, 1999) and only those species with confirmed identity are reported in this paper. The checklist was prepared using standardized common and scientific names of the birds following Manakadan and Pittie (2001). Abundance of the recorded bird was established upon the following criteria: Common- recorded 8-9 times out of 14 visits, fairly common- recorded 5-6 times out of 10 visits, uncommon- recorded 4-5 times out of 14 visits, rare- recorded 0 -2 times out of 14 visits.

Figure1. locatation of Lapkaman Village Pond in Ahamedabad District in state Gujarat in India

III. RESULTS AND DISCUSSION

A total of 44 species of wetland birds belonging to 14 families distributed in 7 orders 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 Anatidae dominated the list with 9 species along with Ardeidae. They represented 20% of the total number of water bird species surviving under wetland conditions of lapkaman (Table 2). Out of total 44 species, 26 were resident and 18 were migrant species.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. Paddy fields with stray trees and scattered vegetation cover might have extended comfortable shelter and suitable foraging grounds for the wetland birds. 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)

IV. THREATS AND CONSERVATION

The wetland avian diversity of Lapakaman could be due to the presence of a mosaic of different types of wetland habitats .But this increased human interference, direct and indirect, resulting in habitat destruction and fragmentation. Study has also revealed that anthropogenic activities like mass bathing in ponds, cutting of emergent and fringed vegetation, draining of water, release of sewage, throwing of domestic garbage, weeds, developmental activities like construction of roads and retaining walls are some major threats to the bird diversities of these aquatic habitats. Water Hyacinth (Eichhornia crassipes) has rapidly covered the water surface in village ponds. Local community has periodically removed the water hyacinth manually from these water bodies. But the extracted Water Hyacinth has been deposited

at the banks of these water bodies and it again flows back to the water bodies in the rainy season resulting in choking of these wetlands. Thus proper scientific methodology is required for upkeep of these water bodies.

Water birds require a cluster of platforms within the water bodies in order to sit there for basking during the winters. There are no platforms available within the village pond observed during present study. Hence the suitable measures should be taken, to ensure that artificial platforms are made available within the ponds with thick cover of vegetation. It is also recommended that profuse green belt to be created in and around each and every pond to facilitate easy means of roosting and perching.

Table1. Wetland birds recorded around lapkaman Villege Pond, India.

Order	Family	Common Nam	Scientific Name	Status	Abundance
Podicipediformes	Podicipedidae	Little Grebe	*Tachybaptus ruficollis*	R	FC
Anseriformes	Anatidae	Lesser Whistling-Duck	Dendrocygna javanica	SM	UC
		Gadwall	*Anas strepera*	WM	FC
		Eurasian Wigeon	*Anas penelope*	WM	FC
		Cotton Teal	*Nettapus coromandelianus*	SM	UC
		Mallard	*Anas platyrhynchos*	WM	UC
Spot- Billed Duck	*Anas poecilorhyncha*	R	FC		
Northern Shoveller	*Anas clypeata*	WM	C		
		Northern Pintail	*Anas acuta*	WM	C
		Common Pochard	*Aythya ferina*	WM	UC
Coraciiformes	Alcedinidae	White-Breasted Kingfisher	*Halcyon smyrnensis*	R	C
		Lesser Pied Kingfisher	*Ceryle rudis*	R	RA
Appodiformes	Apodidae	House Swift	*Apus affinis*	R	FC
Gruiformes	Rallidae	White-Breasted Water Hen	*Amaurornis phoenicurus*	R	C
		Purple Moorhen	*Porphyrio porphyrio*	R	UC
		Common Moorhen	*Gallinula chloropus*	R	C
Common Coot	*Fulica atra*	WM	FC		
Ciconiiformes	Scolopacidae	Common Snipe	*Gallinago gallinag*	WM	UC
		Common Greenshank	*Tringa nebularia*	WM	FC
Wood Sandpiper	*Tringa glareola*	WM	UC		
Common Sandpiper	*Actitis hypoleucos*	WM	UC		
		Little Stint	*Calidris minuta*	WM	FC
		Curlew Sandpiper	*Calidris ferruginea*	WM	UC
	Jacanidae	Pheasant-Tailed Jacana	*Hydrophasianus chirurgus*	R	UC
		Bronze-Winged Jacana	*Metopidius indicus*	R	UC
	Recurvirostrid	Black-Winged Stilt	*Himantopus himantopus*	R	C
	Charadriidae	Little Ringed Plover	*Charadrius dubius*	WM	FC
		Red-Wattled Lapwing	*Vanellus indicus*	R	C
	Accipitridae	Brahminy Kite	*Haliastur Indus*	WM	FC
	Phalacrocoraci				
		Little Cormorant	*Phalacrocorax niger*	R	FC
		Indian Shag	*Phalacrocorax fuscicollis*	R	FC
		Great Cormorant	*Phalacrocorax carbo*	R	UC
Ardeidae	Little Egret	*Egretta garzetta*	R	FC	
		Grey Heron	*Ardea cinerea*	R	FC
		Purple Heron	*Ardea purpurea*	R	RA
		Large Egret	*Casmerodius albus*	R	UC

		Median Egret	*Mesophoyx intermedia*	R	UC	
		Cattle Egret	*Bubulcus ibis*	R	C	
		Indian Pond- Heron	*Ardeola grayii*	R	C	
		Little Green Heron	*Butorides striatus*	R	UC	Black-Crowned Night
		Heron	*Nycticorax nycticorax*	R	UC	
Passeriformes	Hirundinidae	Plain Martin	*Riparia paludicola*	R	FC	
		Common Swallow	*Hirundo rustica*	R	FC	
	Motacillidae	White Wagtail	*Motacilla alba*	WM	FC	

R= Resident, SM= Summer migrant, WM= Winter migrant, C= Common, FC= Fairly common, UN= Un common, Ra= Rare.

Table 2. Status of bird families recorded in wetlands around Chharodi

Sr.No.	Family	No. of species	Percent occurrence
1	Podicipedidae	1	2.3%
2	Anatidae	9	20.4%
3	Alcedinidae	2	4.5%
4	*Apodidae*	1	2.3%
5	Rallidae	4	9.1%
6	Scolopacidae	6	13.6%
7	Jacanidae	2	4.5%
8	Recurvirostridae	1	2.3%
9	Charadriidae	2	4.5%
10	Accipitridae	1	2.3%
11	Phalacrocoracidae	3	6.8%
12	Ardeidae	9	20.4%
13	Hirundinidae	2	4.5%
14	*Motacillidae*	1	2.2%

number of people for the dip. This mass bathing not only disturbs the natural activities of water birds but also leads to deterioration of water quality affecting the flora and fauna. The large number of people and cattle visiting the fringes of wetlands increases the risk of eggs and chicks being trampled. Wetland need to be patrolled to minimize disturbance in the more sensitive areas, particularly during the breeding season. For sustainable upkeep of the water bodies it is important to involve local people and sensitize them about the role of these wetlands in the welfare of humans. Regular surveys related to diversity and awareness of the people should be conducted for real assessment of environmental conditions prevailing in the area.

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