

Avifauna of Patan Wetland, Murshidabad, West Bengal, India

Santi Ranjan Dey

Assistant Professor, Department of Zoology,
Rammohan College, 102/1, Raja Rammohan Sarani, Kolkata 700009, West Bengal, India

Author's Email: srdey1@rediffmail.com

Abstract

Biodiversity enumeration of ecologically sensitive species is important for estimating the general health as well as development of proper conservation plans for the entire ecosystem. 'Patan beel' an relatively unexplored wetland of North-West Murshidabad is located between latitude 24°2'4" North to 24°3' 20"North and longitude 88°1'18" East to 88°0'15" East. The approximately 500 acres wetland contains forested area, some human habitation, and low but cultivable land. The area is unique in flora and fauna composition. This study has revealed that 'Patan beel' contains 49 species of birds. Some of the birds are totally aquatic. Some are migratory in nature. To conserve and manage wetland resources, it is imperative to have inventory of wetlands and their aqua-resources.

Keywords: Avifauna, biodiversity conservation, Murshidabad, Patan wetland.

Introduction

Sustainability of wetland ecosystem is necessary for various important functions such as food storage, water quality continuation and providing habitat for different species of flora and fauna. India, with its varying topography and climatic regimes, supports diverse and unique wetland habitats (Prasad et al., 2002). Wetlands are the areas 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, the depth of which at low tide does not exceed six meters (IUCN, 1979). An inventory of wetlands of any region is a pre-requisite for their conservation and management.

Only 26 of these numerous wetlands in India have been designated as Ramsar Sites

(Ramsar, 2013). However, many other wetlands which perform potentially valuable functions are continued to be ignored in the policy process. As a result many freshwater wetlands ecosystems are threatened and many are already degraded and lost due to urbanization, population growth, and increased economic activities (Central Pollution Control Board, 2008).

'Patan beel', an relatively unexplored wetland of North-West Murshidabad is located between latitude 24°2'4" North to 24°3'20"North and longitude 88°1'18" East to 88°0'15" East serves as a habitat of large populations of resident and migrant water birds, fish, amphibian, reptiles and mammals and native aquatic plants. But information about the diversity, composition and structure

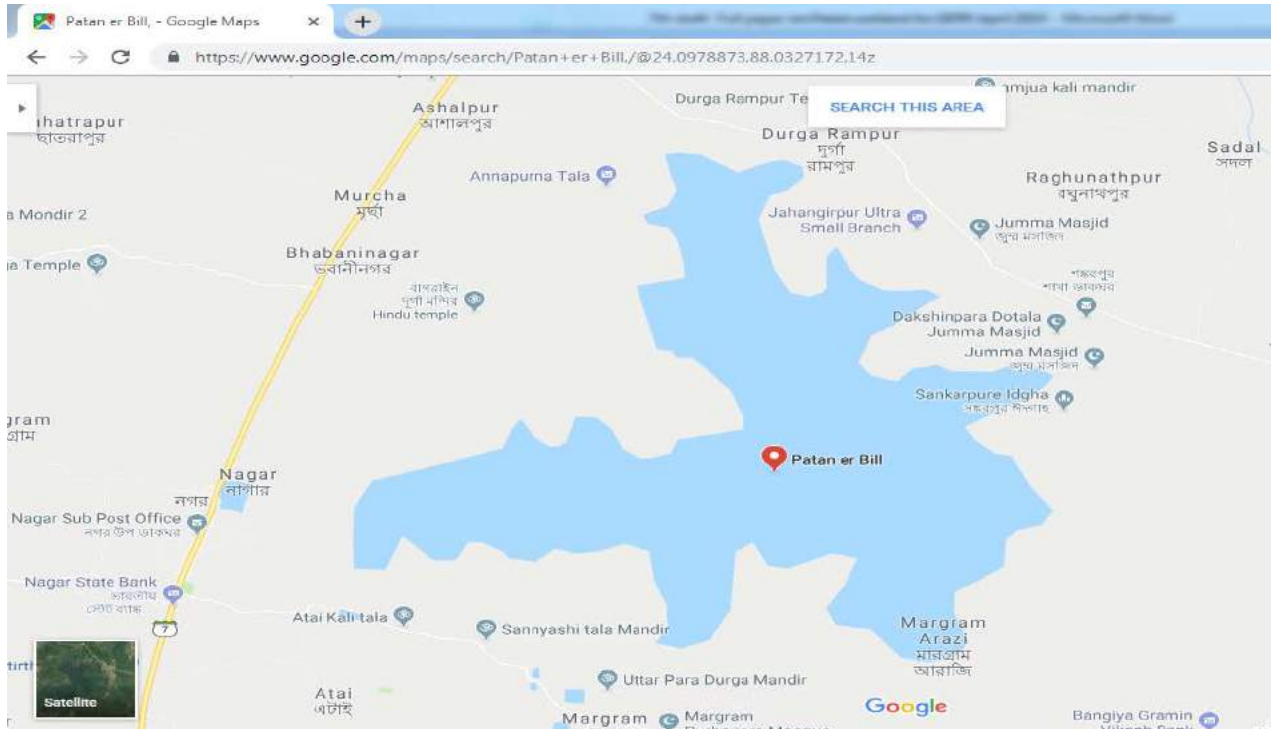


Fig. 1. The map of the study site 'Patan er Bill.'

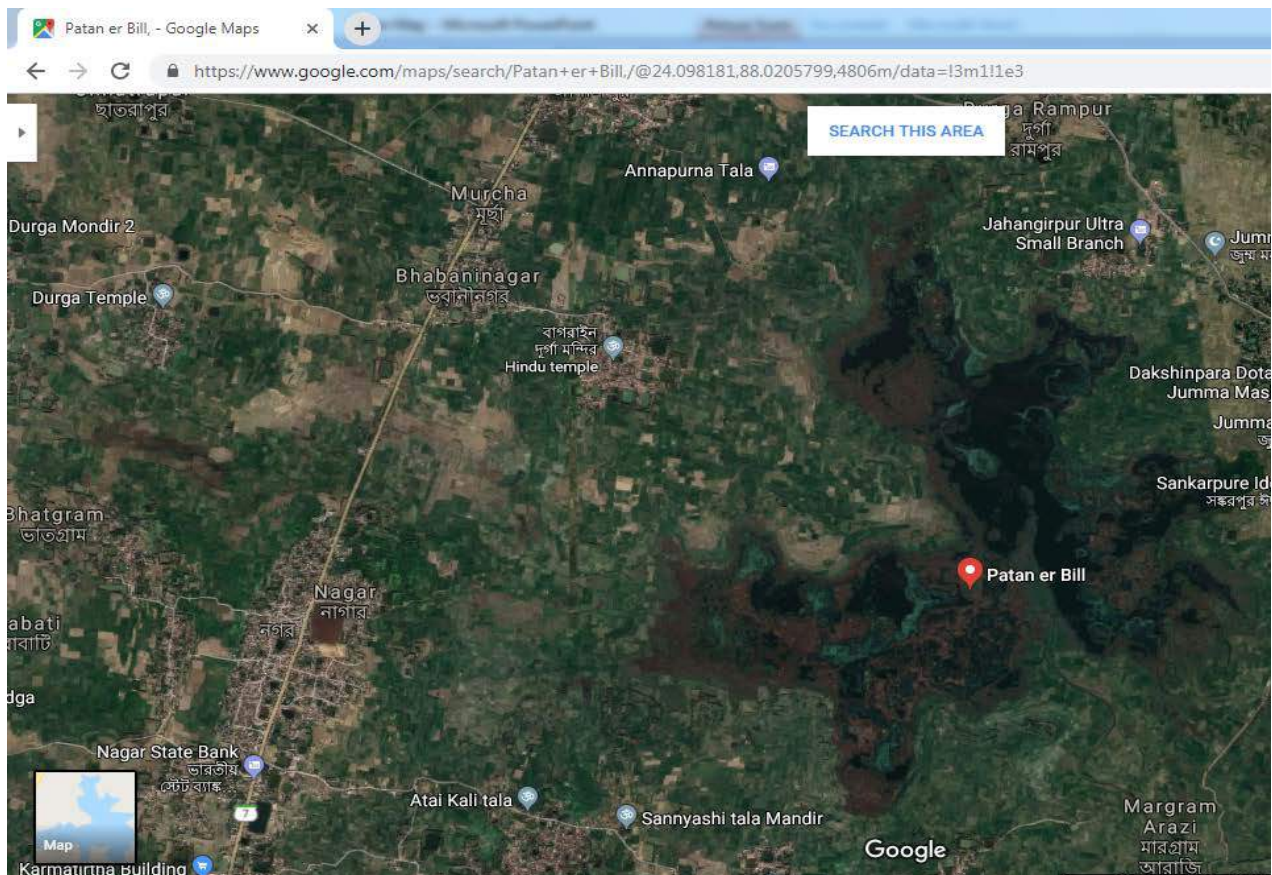


Fig. 2. The satellite image of the wetland study site: 'Patan er Bill.'

of the community in this wetland is scarce. In the present investigation documentation and assessment of the bird diversity of Patan Bill is conducted. Patan beel in Khargram block of Kandi subdivision under Murshidabad district covering an area of 3000 bigha, provides a unique habitat to aquatic flora and fauna. Local old timers have mentioned about numerous local birds in this wetland. There is a common legend that migratory bird species from cold areas of China, Russia, Central Asia, Tibet migrate to this wetland in winter. In Murshidabad, this Patan beel is also important fishing ground. Once this beel had abundant of native fish species, prawn, snail, crabs and turtles. Due to over exploitation, indiscriminate destructive fishing practices, soil erosion, pollution from domestic and agrochemical wastes, some species of fish have become rare (Dey, 2017).

During monsoon, the wetland get inundated or over flooded and become part of seasonal flood plain resources with abundant aquatic vegetation. However through gradual sedimentation, the basin is becoming shallower leading to the formation of reeds and sedges. This vegetation in turn resulted in provides enough food and shelter for fish and other aquatic fauna. Fertilizers are used in the agricultural crop field around the beel, which are drained into the wetland by rain that promoted rich growth of macrophytes thus contributing to the process of eutrophication. In the past century most of the rim lands of the beel remained as wasteland which was mainly used for extensive grazing in the dry season.

Materials and Methods

Study site

Murshidabad is a district of West Bengal in Eastern India. The district is divided into two parts by the river Bhagirathi, namely 'rarrh' and

'bagri'. 'Patan beel' an relatively unexplored wetland of North-West Murshidabad is located between latitude 24°2'4" North to 24°3'20"North and longitude 88°1' 18" East to 88°0'15" East. The approximately 500 acres wetland contains forested area, some human habitation, and low but cultivable land. The area is unique in flora and fauna composition. Patan beel in Khargram block of Kandi subdivision under Murshidabad district covering an area of 3000 bigha.

Fig. 1 and 2. are the map and the satellite image of the wetland popularly known as 'Paten er Bill.' This perennial wetland is a habitat of large populations of resident and migrant water birds, fish, amphibian, reptiles and mammals and native aquatic plants.

15 consecutive surveys were executed from November 2012–March 2015. Bird species were observed visually using binoculars of different ranges and their photographs were taken using a Sony DSC HX 100 V camera for identification. Surveys started during the peak hours of their activity, in the morning, from 0500–1100hr and in the evening, from 1600–1800hr on a regular basis in different groups. To prepare the recorded bird list a total of 25 transects of 1km stretches were established in the study areas.

Result

This study revealed 49 species of birds which are frequently found at Patan wetland. The name of the bird species are listed in Table 1.

Discussion

To conserve and manage wetland resources, it is imperative to have inventory of wetlands and their aqua-resources. Patan is a comparatively unexplored wetland of Murshidabad district with huge bio-resource. The total no of birds recorded during this

Table 1. List of birds observed during this investigation.

Family	Common Name	Scientific Name
Anseriformes	Common Pochard (Migratory)	<i>Anas ferrina</i>
	Northern Pintail (Migratory)	<i>Anas acuta</i>
	Lesser Whistling Duck	<i>Dendrocygna javanica</i>
Columbiformes	Spotted Dove	<i>Streptopelia chinensis</i>
	Laughing dove	<i>Streptopelia senegalensis</i>
Ciconiformes	Black necked stork (Migratory)	<i>Ephippiorhynchus asiaticus</i>
	Black Stork	<i>Ciconus nigra</i>
	Little egret	<i>Egretta garzetta</i>
	Cattle egret	<i>Bubulcus ibis</i>
	Intermediate egret	<i>Mesophoyx intermedia</i>
	Black-headed Ibis	<i>Threskiornis melanocephalus</i>
	Grey Heron	<i>Ardea cinerea</i>
	Purple heron	<i>Ardea purpurea</i>
	Little Grebe	<i>Tachybaptus ruficollis</i>
	Little Cormorant	<i>Phalacrocorax niger</i>
	Great Cormorant	<i>Phalacrocorax carbo</i>
	Pheasant-tailed jacana	<i>Hydrophasianus chirurgus</i>
	Bronze-winged jacana	<i>Metopidius indicus</i>
	Indian Silver bill	<i>Lonchura malabarica</i>
	Wood Sandpiper	<i>Tringa glareola</i>
Coraciformes	Common kingfisher	<i>Alcedo atthis</i>
	White-throated kingfisher	<i>Halcyon smyrnensis</i>
	Pied Kingfisher	<i>Ceryle rudis</i>
	Green bee-eater	<i>Merops orientalis</i>
Cuculiformes	Asain Koel	<i>Eudynamys scolopacea</i>
	Pied cuckoo	<i>Clamator jacobinus</i>
Gruiformes	Purple Swamp hen	<i>Porphyrio porphyrio</i>
	White-breasted waterhen	<i>Amaurornis phoenicurus</i>
	Common Coot	<i>Fulica atra</i>
Passeriformes	Wire-tailed swallow	<i>Hirundo smithii</i>
	Blue-winged leaf bird	<i>Chloropsis cochinchinensis</i>
	Chestnut-tailed Starling	<i>Sturnus malabaricus</i>
	Rosy Starling	<i>Sturnus roseus</i>
	Black drongo	<i>Dicrurus macrocercus</i>
	Red-vented bulbul	<i>Pycnonotus cafer</i>
	Brahminy Starling	<i>Sturnus pagodarum</i>
	House Crow	<i>Corvus splendens</i>
	Indian Robin	<i>Saxicoloides fulicata</i>

	Oriental Magpie Robin	<i>Copsychus saularis</i>
	Jungle Babbler	<i>Turdoides striatus</i>
	Asian Pied starling	<i>Sturnus contra</i>
	Common mynah	<i>Acridotheres tristis</i>
	Black-rumped flameback	<i>Dinopium benghalense</i>
	White-browed Bulbul	<i>Pycnonotus luteolus</i>
	Eurasian Golden Oriole	<i>Oriolus oriolus</i>
	Paddy field pipit	<i>Anthus novacseelanduiae</i>
	Duscy leaf Warbler	<i>Phylloscopas fuscatus</i>
Psittaciformes	Rose-ringed Parakeet	<i>Psittacula krameri</i>
Upupiformes	Hoopiee	<i>Upupa epops</i>

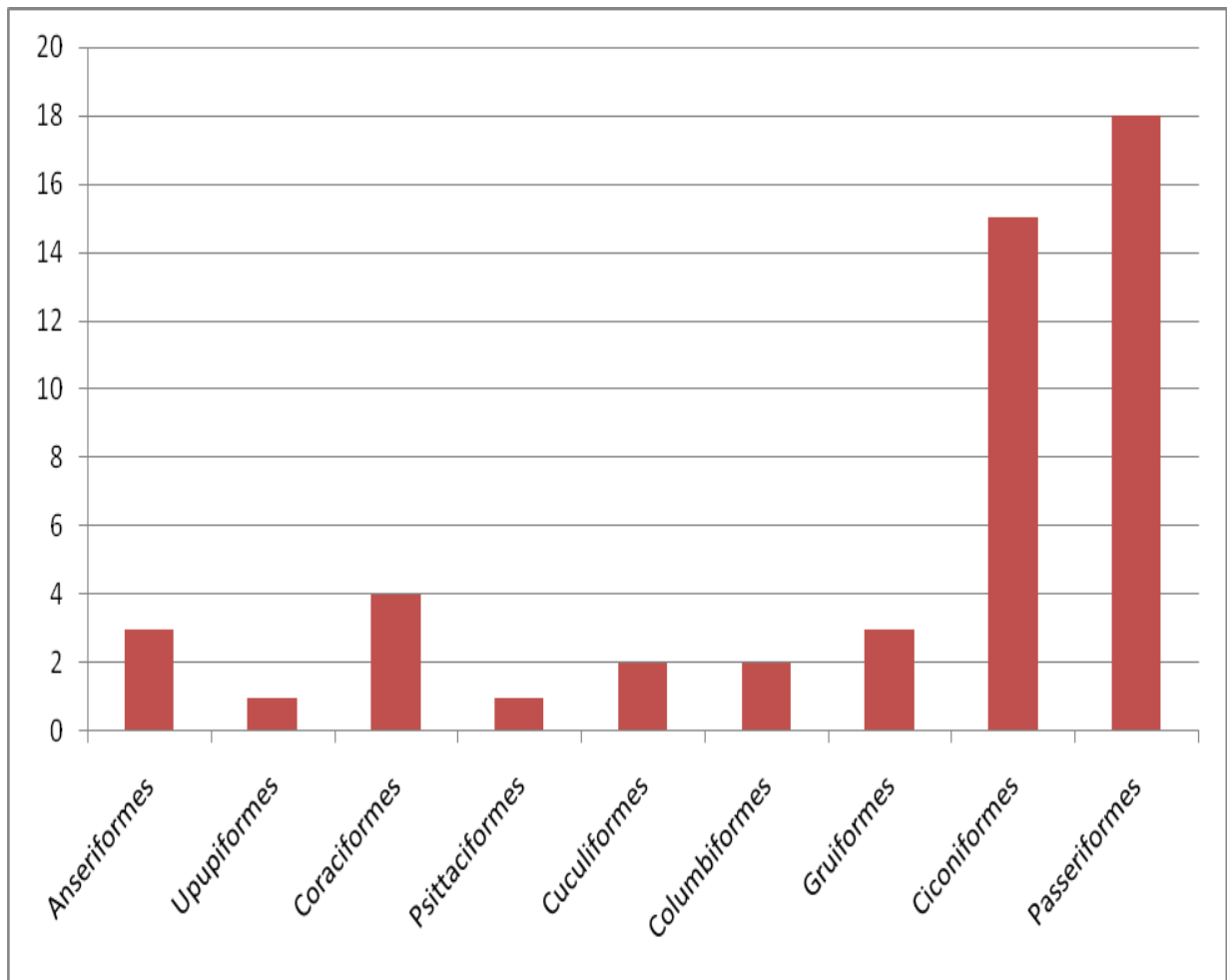


Fig. 3. Comparative Species abundance of different Families of birds of Patan.



Alcedo atthis



Ceryle rudis



Phalacrocorax niger



Threskiornis melanocephalus

Fig. 4. Some birds of 'Patan er Bill.'

investigation is 49 species. The Passeriformes are the most abundant family followed by Ciconiformes as depicted in Fig. 3. However this ecosystem and its components are declining due several factors. The most important factor is anthropogenic pressure on this area. Similar research studies on the wetlands of Murshidabad it has been observed that anthropogenic pressure has a negative effect on the bird population (De et

al., 2016). A few pictures of birds of this wetland are given in Fig. 4.

Conclusion

The migratory birds come to this wetland or 'beel' seasonally. Both the local as well as the migratory birds faced several anthropogenic threats that affected their feeding and breeding habitat directly. Livestock grazing and cleaning of cattle, using fishing net and small boat for fishing by fishermen are also

important threats to water birds. The birds are also victims of poaching. Local people also used nets, traps and hunting guns to kill the birds. Water hyacinth (*Eichhornia crassipes*) has covered the water surface of the beel, so the migratory birds faces problem of their feeding areas. The local people have started the cultivation of various crops (mainly boro rice) in the lake by filling up the shallow part of the lake. As a result the habitat area for the biotic fauna and flora is being reduced. Pataner Bill this wetland must be protected if the aqua-resources are to be conserved for posterity.

Acknowledgement

The author is thankful to West Bengal Biodiversity Board for funding and Principal, Rammohan College for her cordial support.

References

- Central Pollution Control Board. (2008). Status of Water Quality in India 2007. Central Pollution Control Board, Ministry of Environment and Forests, Government of India, New Delhi.
- De, Mitu., Panigrahi, A. K., Roy, A. and Dey, S. R. (2016). A comparative account of the impact of the urban development on plant and wetland dependent bird population along the two arms of an oxbow lake, Motijheel in Murshidabad district. *Indian Journal of Biology*. 3 (1): 41 – 47.
- Dey, S. R. (2017). Checklist of Fish diversity of Patan Wetland, Murshidabad, West Bengal. *Harvest- Online Journal*. (Spl. Environmental Issue). 1: 50-59.
- IUCN (World Conservation Union) Water and Nature Initiative. (2004). Conservation International and Nature Serve.
- Prasad, S. N., Ramachandra, T. V., Ahalya, N., Sengupta, T., Kumar, A., Tiwari, A. K., Vijayan, V. S. and Vijayan, L. (2002). Conservation of wetlands of India – a review. *Trop. Ecol.* 43 (1): 173-186.
- Ramsar Secretariat. (2013). The List of Wetlands of International Importance. The Secretariat of the Convention on Wetlands, Gland, Switzerland.