

Study of Migratory Avifauna of Santragachi Jheel

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ABSTRACT

Long-term ecological monitoring of urban environments is vital to determining the composition of faunal communities in the surrounding area. In West Bengal, SantragachiJheel, which is a 12.75-hectare wetland situated beside a railway station on the west bank of the river Hugli in the vicinity of Kolkata city, is an abode of various migratory birds. As it is surrounded by dense human habitations, railway yards, etc., the existing biodiversity of the lake is under various levels of anthropogenic pressure. Considering this scenario, an effort has been made to inventory the avifaunal diversity of this wetland. Transect walks, point transect and direct observation methods were deployed for the avifaunal survey. This paper reported that birds used the lake mostly from November of one year to February–March of the following year, which is their main migratory season. The avifauna included both local and winter migrants. The family Anatidae excels all other families put together, having the highest number of species. It was found that 44% of the species are resident, rest are either resident migratory or migratory. Among the birds, the lesser whistling duck was found to be the dominant one, followed by the Gadwall and Northern Pintail. Birds like the common moorhen, little egret, and cattle egret are the resident birds found there, along with many migratory birds. Rare birds like swinhoe's snipe and ferruginous pochard were also spotted there. Some rare birds, which are nearly threatened, were also spotted. Policymakers and planners are required for effective management actions in this lake ecosystem.

Keywords: *Avifauna; Migratory Birds; SantragachiJheel*

Introduction

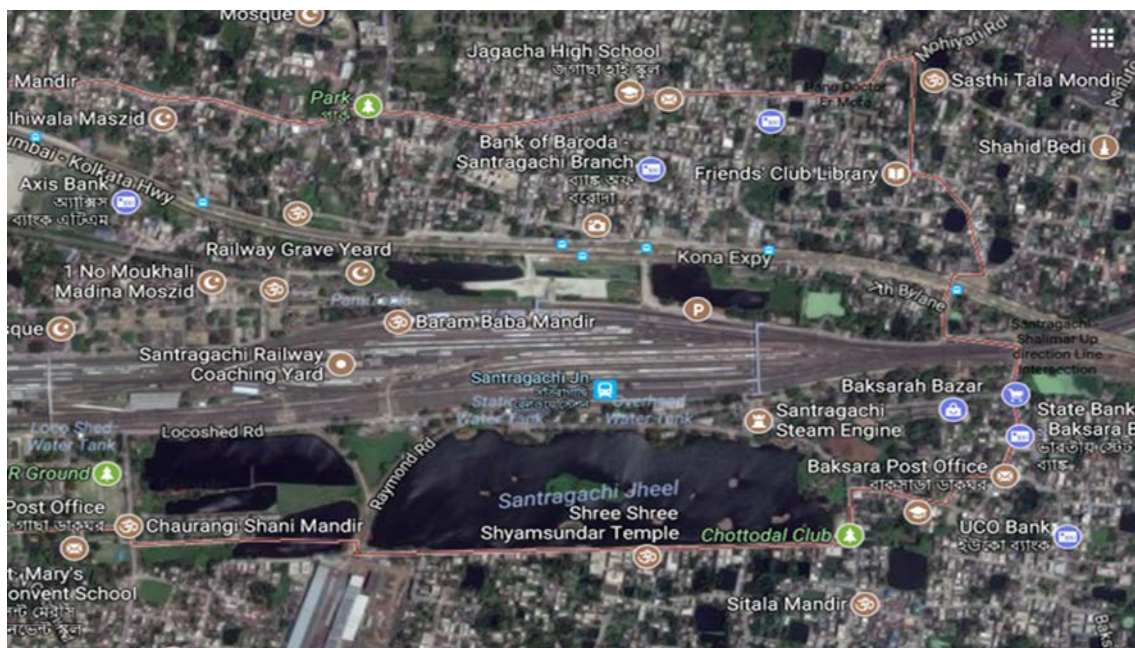
Long-term ecological monitoring of urban environments is vital to determining the composition of faunal communities in the surrounding area. In West Bengal, Santragachi Jheel, which is a 12.75-hectare wetland situated beside a railway station on the west bank of the river Hugli in the vicinity of Kolkata city, is an abode of various migratory birds. Wetlands provide food to birds in various forms, such as invertebrates, vertebrates, plants, etc. Avifauna play important roles in pollination and seed dispersal, as well as being scavengers and predators of many insect pests. Wetlands have been extensively investigated for their diversity, ecology, management and conservation (Fraser & Keddy, 2005; Gupta & Palit, 2014; Erard, 2011; Mazumdar, Ghosh & Saha, 2005; Dubey *et al.*, 2015; Ganguly, 2015). As this lake is surrounded by dense human habitations, railway yards, etc. the existing biodiversity of the lake is under various levels of anthropogenic pressure. The effects of urbanisation, such as habitat destruction, modification of natural

areas, pollution etc., commonly cause threat to biodiversity. Considering this scenario, an effort has been made to inventory the avifaunal diversity of this wetland.

Methodology

Study Site:

The Santragachi Lake or Jheel, is a roughly rectangular area in Howrah district about 8km from Kolkata, India (22° 34'60" N, 88° 17'60" E). The study of avian fauna was conducted in SantragachiJheel, a half an hour's drive from the main city of Kolkata, during the winter months of November–March.



(Source: google map)

Figure 1: Map of the Study Site (SantragachiJheel)

Study Method:

The study was made in the early hours of the morning. The birds were spotted by binoculars, Spotter and telescopes. Care was taken for their proper identification with the help of ornithologists and various books on birds (Ali, 2003; Grimmett *et al.*, 1999).

To determine the seasonal status of different species of birds, they were placed into 3 categories – resident = R, migratory = M and resident migratory = RM. According to the availability, also avifauna was classified as A=abundant, 1997 M = Moderate and R = rare. Each of the four sides of the lake was traversed during each survey time. Shannon Weiner's species diversity index(H') was also worked out for the four months from November to February. Survey was done from each side by walking along a transect and counting all the birds seen. Transect walks, point transects, and direct observation methods were deployed for the avifaunal survey.

Results and Discussion

This paper reports that birds use the lake mostly from November of one year to the months of February and March of the following year, which is their main migratory season. The avifauna included both local and winter migrants (Table 1). The family Anatidae excels all other families put together, having the highest number of species, as also found in the study of Gayen *et al.* (2022) in a man-made reservoir in West Bengal. It was found that 44% of the species are resident, rest are either resident migratory or migratory. Among the birds – lesser whistling duck was found to be the dominant one, followed by Gadwall and Northern Pintail. Birds like the common moorhen, little egret, and cattle egret are the resident birds found there, along with many migratory birds. Rare birds like Swinhoe's snipe, ferruginous pochard were also spotted there. The Baikal teal, a famous bird species from Siberia, was only spotted once in the last few years. The Swinhoe's snipe is a major attraction for bird watchers. Some rare birds, which are nearly threatened, were also spotted.

Avifaunal diversity acts as an important indicator to evaluate different habitats (Samanta, Das & Mandal, 2022). In the present study, it was also found that the jheel could act as an abode for so many migratory birds (Patode, Salve & Pawar, 2021; Arya *et al.*, 2021; Bhagyasree, Rathod & Selvam, 2020)

Table 1: Avifauna at SantragachiJheel

Sl. No.	Name of Birds	Scientific Name	Occurrence	Seasonal status
1.	Lesser Whistling duck	<i>Dendrocygnajavanica</i>	A	R
2.	Common Moorhen	<i>Gallinula chloropus</i>	M	R
3.	Bronze Winged jacana	<i>Metopidius indicus</i>	M	R
4.	Little Cormorant	<i>Phalacrocorax niger</i>	M	R
5.	Pond heron	<i>Ardeolagrayii</i>	A	R
6.	White breasted kingfisher	<i>Halcyon smyrnensis</i>	M	R
7.	Northern Pintail	<i>Anas acuta</i>	A	M
8.	Baikal teal	<i>Anas formosa</i>	R	M
9.	Gadwall	<i>Anas strepera</i>	A	M
10.	Drongo	<i>Dicrurusmacrocerus</i>	M	R
11.	Garganey	<i>Anas querquedula</i>	A	M
12.	Swinhoe's snipe	<i>Gallinagomegala</i>	R	M
13.	Cotton Pygmy goose	<i>Nettapuscoromandelianus</i>	A	M
14.	Great cormorant	<i>Phalacrocorax carbo</i>	M	R
15.	Little cormorant	<i>Phalacrocorax niger</i>	M	R
16.	Purple heron	<i>Ardea purpurea</i>	M	R
17.	Median Egret	<i>Mesophoyx intermedia</i>	M	R
18.	Ferruginous Pochard	<i>Aythya nyroca</i>	R	M
19.	White breasted water hen	<i>Amauornisphoenicurus</i>	M	R
20.	Common kingfisher	<i>Alcedoatthis</i>	M	R
21.	Yellow Bittern	<i>Ixobrychus sinensis</i>	M	R
22.	Sandpiper	<i>Tringastagnalis</i>	M	RM
23.	Common Pochard	<i>Aythya ferina</i>	M	R
24.	Common coot	<i>Fulicaatra</i>	M	M
25.	Darter or snake bird	<i>Anhinga melanogaster</i>	A	RM

The Shannon –Weiner diversity index for the months of November, December, January and February are reflected below graphically. The values indicated that maximum diversity occurred during the months of December –January.

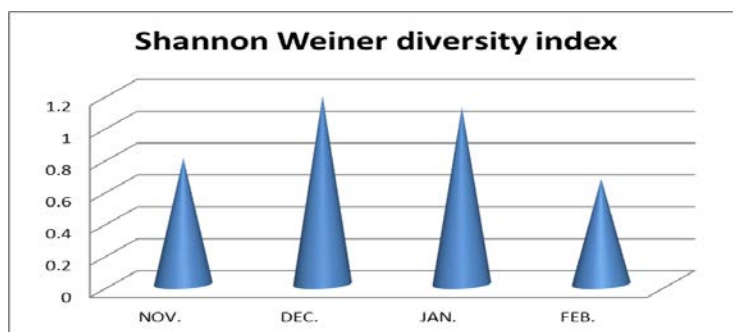


Figure 2: Shannon Weiner Diversity Index During the Period of Major Bird Aggregation

The lake is under the management of the South Eastern Railway and forest Department of West Bengal. But for better management involvement of local people particularly wetland users, people living around the wetlands, are essential to protect the water body. Policy makers and planners are required for effective management actions of this lake ecosystem.

Conclusion

The Santragchi Jheel is the abode of so many migratory birds, including rare species. As the area is jeopardized by threats such as habitat destruction, unscientific cleaning of the lake area, sounds arising from the railway tracks nearby, construction activities, etc., public awareness is also required so that the breeding and feeding grounds of the avifauna are not harmed in order to restore their diversity.

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