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Status of Santragachi wetland birds with special reference to their conservation strategies

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Abstract
Various anthropogenic activities have influenced the structure and function of various wetlands of our country. So it is very important for us to make a check list or inventory of faunal diversity of wetlands (avifauna in this case) in order to conserve them. In West Bengal, Santragachi jheel is an abode of various migratory as well as resident birds. Considering this scenario, an effort has been made to study and to inventorise the avifaunal diversity of this wetland. This paper reports a total of twenty five species of birds classified as abundant, moderate or rare occurrence. A management strategy has also been put forward as a conservatory effort.

Keywords: avifauna, migratory birds, santragachi jheel, management strategy

Introduction
West Bengal has several large and small water bodies having diverse aquatic flora and fauna. These wetlands also provide suitable habitat for resident and migratory water birds and contribute much to the biodiversity of India.

One such abode of migratory birds is Santragachi Jheel, a 30 minutes drive from the main city of Kolkata. During winter (Nov to Feb) about 4000-5000 birds come over here. Wetlands have been extensively investigated for their diversity, ecology, management and conservation (Fraser and Keddy, 2005, Gupta and Palit, 2014, Keddy, 2000, Majumdar, *et. al*., 2005) [1-4]. This study was conducted mainly to enlist the varieties of birds coming over here and the reason behind the decline of these bird population. Attempts are being made to throw a light on the conservation strategies/management plan of these birds.

Materials and methods
Study Site
The Santragachi Lake or jheel is a roughly rectangular area in Howrah district about 8km from Kolkata, India (22^0 34'60"N, $88^0$17'60" E). The study of avian fauna was conducted in Santragachi jheel, a half an hour drive from the main city of Kolkata, during the winter months of Nov-March.

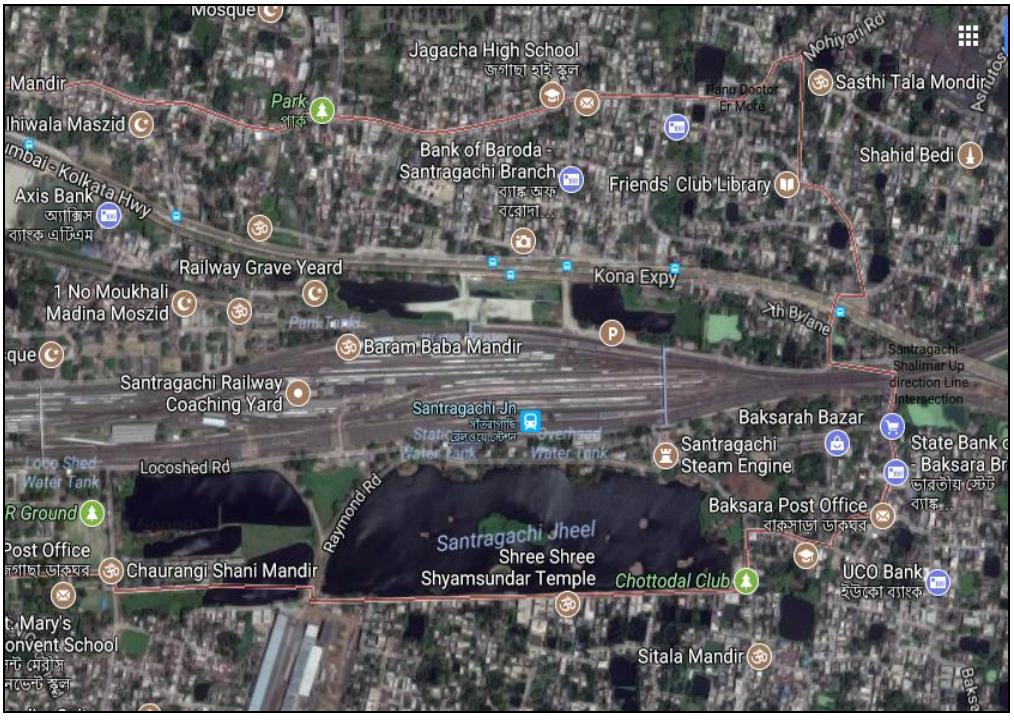

Fig 1

Study method

The study was undertaken for three consecutive years from 2013-2015, during early hours in the morning. The birds were spotted by binoculars, Spotter and telescopes. Care was taken for their proper identification by Fig: map of the study site (satragachi jheel). Source: google map. The help of ornithologists and various books on birds (Ali S. 1996, Grimmett, *et al*. 1999) [5, 6].

To determine the local status of different species of birds, they were placed into 3 categories according to their availability as A=abundant, M=Moderate and R=rare. Each of the four sides of the lake was traversed during each survey time. Shannon Weiner species diversity index (H') was also worked out for the four months from (November to February). We surveyed each side by walking along a transect and counted all the birds seen. A thorough survey was conducted is the lake area to know the threats to this lake as well as its bird population so that a proper conservation/management plan can be suggested.

Results and Discussion

Species of birds identified are presented in Table-1. Altogether 25 species of birds were identified. Among the birds - lesser whistling duck was found to be the dominant ones followed by Gadwall and Northern Pintail. In our study we found the threatened duck species – Ferruginous pochard and Dwindling combduck. The availability of Baikal teal - a famous bird species from Siberia is noteworthy (Deuti, K. 2000) [7]. The Swinhoe's snipe is a major attraction of bird watchers. The local breeding birds of lake are the Bitterns and jacanas. The easily spotted birds include Garganey, shoveller, combduck, common moor hen, cotton pygmy goose, little cormorant, Pond heron and Bronze winged jacana.

It was found that the initial congregation period was in late November while during late February to early March, most of the avifauna leaves the place. The densities of birds reached a peak during Dec-Jan months. Total no. of birds fluctuated from 4000-5000 in number.

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.

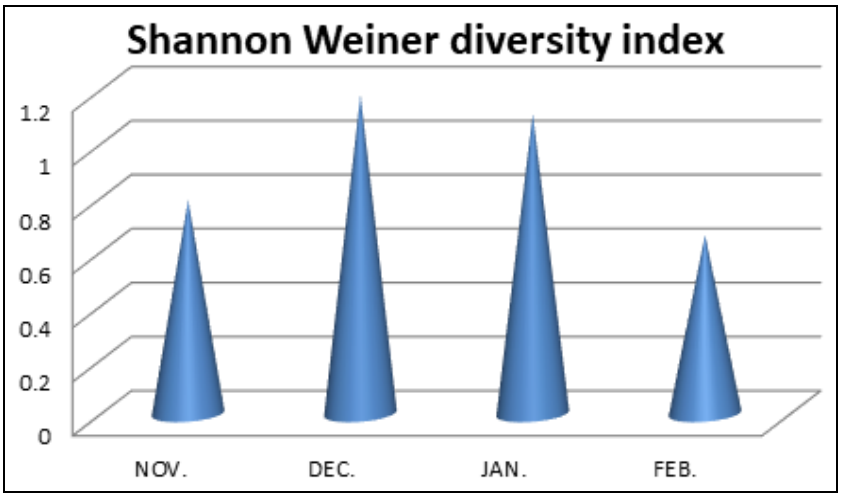

Fig 1: Shannon Weiner diversity index during the period of major bird aggregation.

Table 1: Birds Observed at Santragachi Jheel

Sl. No.	Name of birds	Scientific name	Status
1	Lesser Whistling duck	Dendrocygna javanica	A
2	Common Moorhen	Gallinula chloropus	M
3	Bronze Winged Jacana	Metopidius indicus	M
4	Little Cormorant	Phalacrocorax niger	M
5	Pond heron	Ardeola grayii	A
6	White breasted Kingfisher	Halcyon smyrnensis	M
7	Northern Pintal	Anas acuta	A
8	Baikal teal	Anas formosa	R
9	Gadwall	Anas strepera	A
10	Drongo	Dicrurus macrocercus	M
11	Garganey	Anas querquedula	A
12	Swinhoe's Snipe	Gallinago megala	R
13	Cotton Pygmy Goose	Nettapus coromandelianus	A
14	Great cormorant	Phalacrocorax carbo	M
15	Little cormorant	Phalacrocorax niger	M
16	Purple heron	Ardea purpurea	M
17	Median Egret	Mesophoyx intermedia	M
18	Ferruginous Pochard	Aythya nyroca	R

19	White breasted Water hen	Amaurorni sphoenicurus	M
20	Common kingfisher	Alcedo atthis	M
21	Yellow Bittern	Ixobrychussinensis	M
22	Sandpiper	Tringa stagnalis	M
23	Common Pochard	Aythya ferina	M
24	Common coot	Fulica atra	M
25	Darter or snake bird	Anhinga melanogaster	A

Threats to avian population

- Increasing human population and urbanization.
- Decreasing green cover.
- Pollution of water.
- Disturbing railway tracks.
- Cutting of trees surrounding the lake.
- Dumping of plastics and other disposal products in and around the lake.
- Lack of scientific management.

Management Strategies

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. To facilitate this, the following guidelines may be useful. However various guidelines have also been put forward by various workers (Gopal B. 1995, Maltby and Barter, 2009) [8, 9].

- To educate the people about why they should safeguard wetlands.
- Developing a planning term.
- Mapping of wetlands.
- Preparation of inventory of wetland species.
- Division of the area into management zones.
- Developing of expertise through capacity building and training programmes.
- Identifying of specific goals of wetland management as well as infrastructure development.
- Development of planning decisions based on full understanding of the socio-economic values of wetlands.
- Promoting wetland research.
- General policy guideline should be formulated for effective conservation and management.

Conclusion

In order to conserve the avian diversity of the lake, an inventory of birds should be made with thorough investigation every year. Limnological studies should also be done in order to know the aquatic condition of the lake which supports so many resident and migratory birds. The avian diversity recorded at Santragachi jheel showed a good variety of species and proper management plans should be made to save them.

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References

1. Fraser LH, Keddy PA. The world's largest wetlands: Ecology and conservation, Cambridge: Cambridge University press, 2005.
2. Gupta S, Palit D. Biosurvilance of wetlands in eastern India Birbhum, West Bengal for wide use, Journal of Science, environment and Technology. 2014; 3(6):2136-214.
3. Keddy PA, Wetland ecology: Principles and conservation, Cambridge: Cambridge University press, 2000.
4. Mazumdar S, Ghosh P, Saha GK. Diversity and behaviour of water fowl in Santragachijheel, West Bengal, India during winter season, Indian birds. 2005; 1(3):68-69.
5. Ali S. The book of Indian birds, Oxford University press, New Delhi, 12th revised edition, 1996.
6. Grimmett R, Inskipp C, Inskipp T. Pocket guide to the birds of Indian subcontinent. Oxford University press, New Delhi, 1999.
7. Grimmett R, Inskipp C, Inskipp T. Pocket guide to the birds of Indian subcontinent. Oxford University press, New Delhi, 1999.
8. Gopal B. WWF handbook of wetland management, WWF publication, 1995, 1-395.
9. Maltby E, Barker T. The wetlands handbook, Oxford: Blackwell Publishing, 2009.