



Studies on the Status of the birds Inhabiting Sirpur Lake Indore, MP, with Reference to the Changing Environment

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Abstract

*Environmental changes are now a day's happening regularly day to day- increase in temperature, scarcity of rainfall, drying of lakes etc. have strong implication on biodiversity. Global warming has set in motion and is affecting the timing of migration of birds. Birds are reliable indicator of environment change for centuries and their arrival indicates start of winter and departure of summer in the present study area. There are many examples of the effect of climatic change on birds from all around the world which taken together provide compelling evidence that climatic change is already affecting birds in diverse ways. A status survey of birds from Sirpur Lake was conducted during the 2014. Seventeen species of birds belonging to 7 different families were recorded. Coot (*Fulica atria*, Linnaeus) have been the most common and abundant species of family Rallidae in the reservoir. An attempt of this paper is to provide significant information's about the birds inhabiting Sirpur lake to recognize this site as globally important habitat for the conservation of bird population.*

Keywords: Status, birds Inhabiting, Changing Environment.

Introduction

India is unique in the mega diversity of its flora and fauna. The unmatched variety of flora and fauna that makes it extensively different from the rest of the world. In India fresh water sources support a large diversity of biota representing almost all taxonomic groups. From view of ecological the diversity of species present in the wetlands is an indication of the relative importance of the aquatic biodiversity issue as a whole. Birds are part the natural habitats of the Indian sub-continent. In India there is no off season for birds. Native birds in any particular area are visible. The Indian sub-continent supports more than 1340 species of birds, which contribute more than 15% of the world's bird species^{1,2}.

Birds are among the natures most beautiful animal and undoubtedly, bird habitat particularly within the lake areas seems to be strongly influenced by climatic changes and immediate human impact. When consequent environmental changes exceeded the tolerance limit of species habitat change also become an ultimate cause for long term changes in the bird distribution. Some of the important studies on wetland bird and their habitat were carried out by many researchers³⁻⁹. This study is not only for checklist of birds, while it is for the awareness and conservation of them. Thus the need of the day is conserve the biodiversity of avifauna of sirpur lake.

Material and Methods

Description of Study Site: The Sirpur Lake of Indore situated close to the western periphery of the city along the NH 59 is a

grand water reservoir especially acclaimed for its population of innumerable migratory birds. Bustling all day long with the chirping and tweeting of colourful birds of different varieties alighted here from far away countries, the Sirpur Lake is a paradise for bird watchers, nature lovers and photographers. Spotting the migratory birds happily indulging in their day to day activities in their natural habitat is indeed an intriguing experience. The most noteworthy birds generally encountered at the Sirpur Lake include Egrets, Flamingos, Purple Moorhen, Common Coot, Cotton Pigmy Goose, Red Crested Pochard, Common Kingfisher, Dragonfly, Pond Heron and many others.

Detailed Methodology: Birds were observed during winter, rainy and summer season at most active period in the day that is, morning (6.00 am to 10.00 am) and late afternoon (4.30 pm to 7.) 2014. A direct visual count with binoculars was done and wherever possible an actual count was taken. Some birds sighted occasionally during specific season and which were not residents of the area have been considered as migrant birds (M).

Identification of birds was done using field guides^{10,11} and searching on internet. The study of avifauna was carried out last year. I went to site regularly in a week or two week. I was observed some species of birds dominant in this site, is called migratory birds. Classification of birds was carried out book of Indian birds². Figure and table were prepared by using Microsoft Excel.

Observation-Nikon binocular camera used for birds picks.

Table-1
Showing families, scientific name, common name and feeding habit of the birds

Name	Common Name	Scientific Name	Family	Feeding Habit
Pond heron	Andhabagla	<i>Ardeagravii</i>	Ardeidae	Insects crabs frog and fishes
Grey heron	Narianjal	<i>ArdeaAnerea</i>	Ardeidae	frog and fishes
Large egret	Bagla	<i>Casmerodiusalbis</i>		fishes
Black winged stilt	Shektya	<i>Himantopus</i>	Charadriidae	Bottommud, worm, Mollusc and aquatic insect
Purple moorhen	JambaliPankombd	<i>GallinulaChloropae</i>	Rallidae	Phytoplankton aquatic weeds insects and mollusc vegetable matter
Eurasian Common coot	Chandwa	<i>Fulica atria</i>	Rallidae	Vegetarian aquatic weeds paddy shoots
Spot bulled duck	Haldi kuku	<i>Anaspoecilorhyncha</i>	Corvidae	Vegetarian aquatic weeds paddy shoots
Rudy shield duck	Chakrawa k	<i>Tadornaferruginia</i>	Corvidae	Vegetarian aquatic weeds paddy shoots
Yellow wattled lapwing	Titwi	<i>VanellisMalabaricus</i>	Corvidae	Bottom mudworm, molluscand Aquatic insects
Brahminy duck	Chakrawa k	<i>Tadornaferruginia</i>	Corvidae	Aquatic weeds insects mollusks snails
Red napped ibis	Temminc k baza	<i>Pseudibispapilbosa</i>	Threskiomithidae	Near bank upon insect and grain
White ibis	Safed baza	<i>ThreskiornisMelanocephalus</i>	Threskiomithidae	Insects, crabs, aquatic weeds fishes
Glossy ibis	Chhotabaza	<i>PlegadisFalcinellus</i>	Threskiomithidae	Crabs and molluscs
Spoon bill	Chamacha	<i>PlataleaLeuorodia</i>	Threskiomithid ae	Mollusc, frog and insect
Painted strok	Rangeetkarkoch	<i>MycteriaLeucocephala</i>	Ciconidae	Feeds on fishes and mollusc
Little Cormorant	Pankavala	<i>PhalacrocoraxNiger</i>	Phalacrocoracidae	Fishes and mollusc
Blue king fisher	Khandya	<i>Alcedoathis</i>	Alcedinidae	Fish ,Tadpole and insect

Results and Discussion

17 Species of Birds were recorded from Sirpur Lake. Among them 3 species were herbivores feeders on phytoplankton 14 species were feeding on Macro invertebrates animals. 9 Families were recorded in both the lakes. Due to aquatic vegetation Large no of residential birds were recorded from sirpur lake due to marshy aquatic weeds. which is hiding place to build nest mostly species like Spot billed duck *Anas poecilorhyncha*, common coot (*Fulica Atria*) Rudy shield duck (*Tadorna Ferruginia*) were recorded from sirpur lake.

During the study period the migratory birds like Painted stork, spot bulled duck were found in large number during late summer. The similar findings were done by Datta T¹². It is observed that the migratory bird population was dominant in the site. The local migratory and resident birds also were used this wetland for breeding during monsoon period. Sirpur reservoir is an ideal habitat for migratory and local migratory birds, especially the winter visitors. Fish and macrophytic resources of the Sirpur reservoir are important sources of food for wetland birds.

Wetlands in India are facing one or multiple of above mentioned factors. The lack of proper management and ignorance of the

importance of healthy wetlands became evident. However, most accepted view is that the crisis of the aquatic environment is basically an economic issue and it is the most decisive factor playing a role in degradation of wetlands. The shallow areas of the reservoir are facing the danger of eutrophication, which in turn may cause anoxic conditions there by destroying the habitats for migratory birds forever. The activities that contribute towards the loss of the resources are: hunting and allied activities, human settlement, drainage of agriculture, disturbance due to recreation, reclamation for urban and industrial development, pollution, catchment degradation, alteration of water, soil erosion and siltation.

Habitat loss and fragmentation, overexploitation, chemical toxins and pollution, as well as introduced diseases, predators, and competitors are some of the threats that need to be addressed to reverse bird declines and maintain healthy populations.

Discussion: The migratory species were winter visitors¹³⁻¹⁵ While species like 2 Spoon Bill (*Platalea leucorodia*) 5 Painted strok (*Mycteria Leucocephala*) etc were recorded and these play important role in the ecosystem.



Figure-1
Different species of birds in Sirpur Lake

Conclusion

I have worked one year. I went to site regularly in a week or two week. I observed that migratory birds dominant local one. When I compared my data with last year data of migratory birds. Then

I observed number of migratory birds are somehow decreasing. Main reason behind this changing of environment.

Random change in environment is caused by human civilization, pollution, deforestation and so on. These change in

environment lead to climatic change. These climatic changes reduce the population of migratory birds. Conservation of all ideal habitats for birds is essential; it's a prime need for conservation of nature and natural treasures like birds. Birds play an important role in all types of ecosystem in pollination, seed dispersal, predation, pest control, scavenging and also recycling of nutrients

The present study provides some important information on the migratory birds of the Sirpur Lake, their population, habitat preferences and status. This information will be useful in formulation of conservation policies for water birds in this lake. The lake is the breeding ground for many local migrants and feeding ground for long distance migrants that winter in southern India. There are breeding colonies of Gray herons, and other local migrants' cormorants, large egrets and etc. The regular observation shows that there was a decline in the populations of certain species over the ten year. The lake seems to be highly suitable for migrants. Due to the biannual agriculture trend in the region, water is entered through canal in the paddy field and ultimately to the lake therefore the water level is found to be stable throughout the year. The productivity of lake is increases in winter, the presence of water, availability of food source and the water properties may be suitable for water birds.

References

1. Ali S and Ripley SD, Compact handbook of birds of India and Pakistan, New Delhi, Oxford University Press, (1987)
2. Ali S., The Book of Indian Birds, 13th revised edition. Bombay Natural History Society, Bombay, 326 (2002)
3. Czech HA and Parsons KC, Agricultural wetlands and water birds: A Review, *Water birds*, **25**, 56-65 (2002)
4. Grimmet R, Inskipp C and Inskipp T, Pocket Guide to the Birds of Indian Subcontinent. Oxford University Press, New York, 384 (2001)
5. Kazmierczak K and Perlo BV, [http://printablebirdchecklists.homestead.com/FieldGuide Lists/FieldGuide PDFs/IndianSub-Kazmierczak.pdf](http://printablebirdchecklists.homestead.com/FieldGuide%20Lists/FieldGuidePDFs/IndianSub-Kazmierczak.pdf) (2010)
6. Rahmani A, Asian Water bird census: Final report, India. Bombay Natural History Society, Bombay (2002)
7. Vijayan VS, Prasad SN, Vijayan L and Muralidharan S, Inland Wetlands of India: conservation Priorities. Salim Ali Centre for Ornithology and Natural History, Coimbatore (2004)
8. Bhandarkar SV, Observation on the avifaunal diversity in and around Shringarbandh Lake, Bondgaon (Surban), district Gondia, Maharashtra, *J. curr. Sci.*, **12(2)**, 573-576 (2008)
9. Paliwal GT, Bhandarkar SV and Bhandarkar WR, Insecticides Killing the threatened Sarus Crane in Eastern Vidarbha, Maharashtra: A case study, *Indian Stream Research Journal. Special issue*: 15-18 (2013)
10. Grimmett R, C Inskipp and Inskipp T, Birds of the Indian Subcontinent. Bombay Natural History Society, *Oxford University Press*, 784 (1998)
11. Ali S and Ripley SD, Handbook of Birds of India and Pakistan (Vol:1and2), *Oxford University Press, New Delhi* (2001)
12. Datta T, Human interference and avifaunal diversity of two wetlands of Jalpaiguri, West Bengal, India, *Journal of Threatened Taxa*, **3(2)**, 2253-2262 (2011)
13. Pandey S, Changes in water birds diversity due to construction of prong dam reservoir H.P India, *Biol Conservation* 125136, (1993)
14. Manmohan P and Saxena, Population dynamic of water fowl at Kishnapura Talav Indore India *J. Life science* **2(122)**, 45-48 (2005)
15. Kulkarni A.N., Kanwate V.S. and Deshpande V.D., Checklist of Birds of ShikhachiWadi reservoir, Dist. Nanded, Maharashtra, *J. Aqua. Biol.*, **21(1)**, 80 – 85. 27 (2006)