



Common Avifaunal Diversity of Ramnabagan Wildlife Sanctuary, Bardhaman, West Bengal

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Abstract

Avifauna are found in a difference of habitats and causation various acts. They are extremely sensorial to even small anxiety in the ecosystem. The study was carried out to analyse the diversity and status of avifauna in Ramnabagan Wildlife Sanctuary, Bardhaman, West Bengal, from January 2021 to December 2021. Distance sampling methods were used to collected data when was appropriate. A total of 60 species of birds belong to 29 families. Of these, species 28 were Omnivorous, 11 were Carnivorous and 21 species were Herbivorous. According to the Carnivorous and Herbivorous classification of species, 8 were Insectivorous, 3 species were Nectivorous, 7 species were Granivorous, and 11 species were Frugivores. According to IUCN, 2 were Vulnerable, 2 were Near Threatened, 1 was Critically Endangered and 55 were Least Concern category. Metallic noise, electrical sound, and tree cutting for increasing zoo areas are reported. Its proper management will improve not only its residential species but also attracts more migratory species in future.

Keywords: Birds, Diversity, Ramnabagan Sanctuary, Bardhaman, Residential, Migratory.

Introduction

Status and conservation are related words to each other in World biodiversity. In biodiversity, each and every species are or the other time facing a crisis. Several are crosses this and a few are dilapidated in the World. According to the State of India's Birds Report, 2020, 79 percent are current trends and 50 percent are long-term trends showing a decline out of 867 species and 101 species classified as a high conservation concern. Bird watchers and Ornithologists say that 80% to 90% water bird population has declined in the last two to three decades (Poovanna, 2021). Water birds are a globally distributed, species-rich group of birds that are critically dependent upon wetland habitats (Williamson, 2012). Sanctuary is those places which are safe for birds and animals. The man maid's first sanctuary is a maid in Sri Lanka around 2500 years ago. Despite each small size the protected area supports diverse bird community and 10.89% of total avian species of this state (Mukhopadhyay, 2017).

The vision of the Bardhaman Zoological Park intends to complement the national efforts to develop empathy among visitors for wild animals. It will help to showcase the rich biodiversity of the middle and lower Gangetic plains. The population density of bird's is highly noticed in this place. This study informed the checklist of avifauna in protected areas of Bardhaman.



Figure: Ramanabagan Wildlife Sanctuary in Bardhaman

Material and methods

Study area

Bardhaman Zoological Park erstwhile Ramnabagan Mini Zoo has been developed within the Ramnabagan Wildlife Sanctuary, a natural forest patch that flourished during the feudal reign of Rajas and Maharajas of Bardhaman Taluk. The Ramnabagan Wildlife Sanctuary area is 14.31 ha. located in Burdwan town. Longitude – 87.300 east and Latitude – 23.150 north in this area. Topography is mainly flattened with altitudes sea level from 20 m sea level. There are five seasons- winter, spring, summer, monsoon and autumn. The summer season is rainy more than the winter season. The highest temperature in the summer season is an average of 30°C and in winter 18°C. The average rainfall is 309 mm. Forest has situated 4 km from the Bardhaman Railway Station. The zoo is covered by a wall which is full of wild animal art and a drainage canal which partitioned between the planetarium and zoo area. District Forest office, A Shiv temple, A temple pond, plant nursery in and around the places.

Methods

Detailed surveys were done from January 2021 to December 2021. The site was visited thrice during the study period. The paved road is used to record the bird species of the sanctuary. Some opportunistic sightings of birds were also added to the checklist. Olympus Binoculars (8× 40) DPSI, were used during the survey, and wherever possible, photographs were taken by Canon SX 430 Point and Shoot camera. Forest staffs were interviewed, and bird calls were also noted as an additional aid for the identification of species. The birds are identified in the field guidebook by Ali, 2002 and Grimmett et. al., 2011.

Results

A total of 60 species of birds belonging to 15 orders and 30 families were recorded during the study period (Table-1), out of which order Passeriformes (25 species) dominated the avifauna in this area, followed by order Columbiformes (4 species), Coraciiformes (4 species), Piciformes (4 species), Pelecaniformes (4 species), Psittaciformes (4 species), Cuculiformes (3 species), Galliformes (3 species), Strigiformes (2 species), Accipitriformes (2 species), Gruiformes (1 species), Charadriiformes (1 species), Ciconiiformes (1 species), Casuariiformes (1 species) and Bucerotiformes (1 species).

Family Columbidae, Alcedinidae, Ardeidae and Psittaculidae are richest family which have 4 species, followed by Megalaimidae (3 species), Cuculidae (3 species), Corvidae (3 species), Sturnidae (3 species), Muscipidae (3 species), Pycnonotidae (3 species), Phasianidae (3 species), Nectariniidae (2 species), Oriolidae (2 species), Accipitridae (2 species), Estrididae (2 species), Dicroidae (1 species), Passeridae (1 species), Dicaeidae (1 species), Cisticolidae (1 species), Aegithinidae (1 species), Leiothrichidae (1 species), Rallidae (1 species), Jacanidae (1 species), Motacillidae (1 species), Tytonidae (1 species), Strigidae (1 species), Picidae (1 species), Upupidae (1 species), Ciconiidae (1 species) and Casuariidae (1 species). Common domestic hens are also present in zoo cage.

Analysis of their local abundance indicates that 4 species are very common, 55 species were common, and 8 species are rare. Analysis of feeding type data revealed that 25% are insectivores, 25 % are frugivores, 3 % are nectivores, 5 % are granivores, 2% are carnivores, and 40% are omnivores (Figure-2). Of this, IUCN according, 2 species are Vulnerable, 2 species are Near Threatened, 1 species are Critically Endangered and 55 are Least Concern category.

Discussion

Birds are conspicuous, ubiquitous and arguably a group of vertebrates on the planet (Sekercioglu and Wenny, 2016). Birds are important to continuing ecological circle, feeding, communicating, pollinating plants, decorating home and are a good pest controlling agent (Tabur and Ayvaz, 2010). According to TOI report West Bengal is the second place of different bird species with 284 variations which after Uttarakhand (294). 15 Wildlife Sanctuaries and 10 National Park are present in West Bengal. Mukhopadhyay and Mazumdar (2017) noticed 102 species of 46 families in Bhibhutibhushan Wildlife Sanctuary, Roy et. al., (2011) counted 73 bird species belonging to 25 families in Neora Valley National Park and Pramanik et. al., (2010) reported 29 species out of 20 families in Kulik Bird Sanctuary.

During the study period noticeable that the availability of food and suitable habitat attract residential and migratory birds. However, species are not much more varied seasonally. Forest and zoos area is patched up with each other thus resulting that food given to deer and bear the rest food are intake frugivorous and granivorous birds. The vegetative forest structure is supported largely by the number of Insectivores, Carnivores and Nectivores birds. A large number of birds overall diet, however, must include significant amounts of both animal and plant materials (Mayntz, 2019). In this forest system, omnivore, herbivore and insectivore birds are more supportive than nectivore, granivore birds. The critically endangered species, vulnerable and near-threatened species are special care through zoo authority.

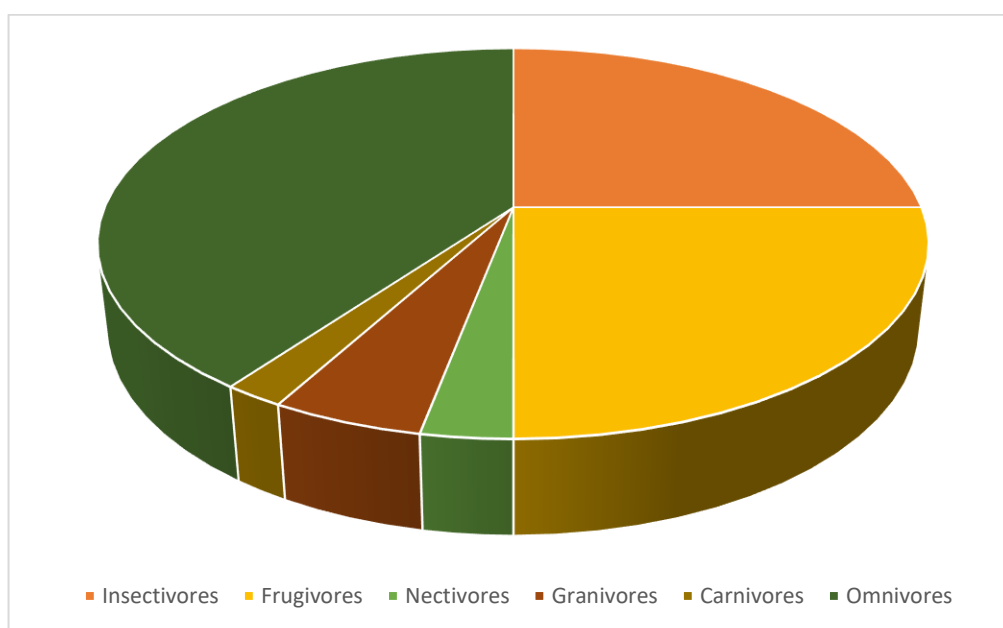
Day by day zoos improves, and natural storm is caused the loss of many trees. The surrounded places of zoo area are too noisy. Proper improvement and management can positively change the status and diversity of residential and migratory birds.

Table-1. The common bird species observed in Ramnabagan Wildlife Sanctuary, Bardhaman, West Bengal, along with Order, Family, Common name, their Scientific name, and status of IUCN.

Order-Psittaciformes			
Family	Name	IUCN	Scientific name
Psittaculidae	Rose-ringed parakeet	LC	<i>Psittaculakrameri</i>
	Plum-headed parakeet	LC	<i>Psittaculacyanocephala</i>
	Red-breasted parakeet	NT	<i>Psittaculaalexandri</i>
	Budgerigar	LC	<i>Melopsittacus undulatus</i>
Order-Piciformes			
Megalaimidae	Lineated barbet	LC	<i>Psilopogon lineatus</i>
	Blue-throated barbet	LC	<i>Psilopogon asiaticus</i>
	Coppersmith barbet	LC	<i>Psilopogon haemacephalus</i>
Picidae	Black-rumped flame back	LC	<i>Dinopium benghalense</i>
Order-Columbiformes			
Columbidae	Blue rock pigeon	LC	<i>Columba livia</i>
	Spotted dove	LC	<i>Spilopelia chinensis</i>
	Indian ring dove	LC	<i>Streptopelia decaocto</i>
	Mountain imperial pigeon	LC	<i>Duculabada</i>
Order- Cuculiformes			
Cuculidae	Common hawk-cuckoo	LC	<i>Hierococcyx varius</i>
	Asian koel	LC	<i>Eudynamis scolopacea</i>
	Greater coucal	LC	<i>Centropus sinensis</i>
Order-Passeriformes			
Corvidae	Jungle crow	LC	<i>Corvus macrorhynchos</i>
	House crow	LC	<i>Corvus splendens</i>
	Tree pie	LC	<i>Dendrocitta vagabunda</i>
Dicruridae	Black drongo	LC	<i>Dicrurus macrocercus</i>
Passeridae	House sparrow	LC	<i>Passer domesticus</i>
Estrildidae	Red munia	LC	<i>Amandava amandava</i>
	Scaly breasted munia	LC	<i>Lonchurapunctulata</i>
	Pied myna	LC	<i>Gracupica contra</i>
Sturnidae	Indian myna	LC	<i>Acridotheres tristis</i>
	Indian hill myna	LC	<i>Gracula religiosa</i>
Dicaeidae	Ticked billed flowerpecker	LC	<i>Dicaeum agile</i>
Nectariniidae	Purple sunbird	LC	<i>Cinnyris asiaticus</i>
	Olive backed sunbird	LC	<i>Cinnyris jugularis</i>
Cisticolidae	Common tailorbird	LC	<i>Orthotomus sutorius</i>
Muscicapidae	Magpie robin	LC	<i>Copsychus saularis</i>
	Indian robin	LC	<i>Copsychus fulvicatus</i>
	White-rumped shama	LC	<i>Copsychus malabaricus</i>
Motacillidae	Western yellow wagtail	LC	<i>Motacilla flava</i>
Aegithinidae	Common iora	LC	<i>Aegithina tiphia</i>
Leiothrichidae	Jungle babbler	LC	<i>Argya striata</i>
Pycnonotidae	Red vented bulbul	LC	<i>Pycnonotus cafer</i>
	Red whiskered bulbul	LC	<i>P. jocosus</i>
	Black-capped bulbul	LC	<i>Rubigulamelanicterus</i>
Oriolidae	Black-hooded oriole	LC	<i>Oriolus xanthornus</i>
	Eurasian golden oriole	LC	<i>O. oriolus</i>
Order-Coraciiformes			
Alcedinidae	Stork billed kingfisher	LC	<i>Pelargopsis capensis</i>
	White-throated kingfisher	LC	<i>Halcyon smyrnensis</i>
	Common kingfisher	LC	<i>Alcedo atthis</i>
	Lesser pied kingfisher	LC	<i>Ceryle rudis</i>
Order- Pelecaniformes			
Ardeidae	Cattle egret	LC	<i>Bubulcus ibis</i>
	Smaller egret	LC	<i>Egretta garzetta</i>
	Yellow bittern	LC	<i>Ixobrychus sinensis</i>
	Night heron	LC	<i>Nycticorax nycticorax</i>
Order- Gruiformes			
Rallidae	White-breasted waterhen	LC	<i>Amaurornis phoenicurus</i>
Order-Charadriiformes			
Jacaniidae	Bronze winged jacana	LC	<i>Metopidius indicus</i>
Order-Strigiformes			
Tytonidae	Burn owl	LC	<i>Tyto alba</i>
Strigidae	Spotted owl	NT	<i>Strix occidentalis</i>

Order- Galliformes			
Phasianidae	Indian peacock	LC	<i>Pavocristatus</i>
	Golden pheasant	LC	<i>Chrysolophus pictus</i>
	Silver pheasant	LC	<i>Lophuranycthemera</i>
Order Ciconiiformes			
Ciconiidae	Lesser adjutant	VU	<i>Leptoptilosjavanicus</i>
Order-Bucerotiformes			
Upupidae	Hoopoe	LC	<i>Upupa epops</i>
Order - Accipitriformes			
Accipitridae	Indian vulture	CR	<i>Gyps indicus</i>
	Indian spotted eagle	VU	<i>Clangahastata</i>
Order - Casuariiformes			
Casuariidae	Emu	LC	<i>Dromaiusnovaehollandiae</i>

Figure-2: Pie chat of birds' food habitat





Pictures: The common bird species observed in Ramnabagan Wildlife Sanctuary, Bardhaman, West Bengal

Reference

1. Ali, S., (2002). The book of Indian Birds. (13th edition).
2. Annual Report for the year 2017-18, Bardhaman Zoological Park Ramnabagan, Burdwan. <https://cza.nic.in/uploads/documents/reports/english/Annual%20reportof%20Bardhaman%20Zoologica%20Park%202017-18.pdf>.
3. Azad, Shivani, (2022). Uttarakhand has most bird species in India, West Bengal at 2nd spot. <https://timesofindia.indiatimes.com/india/Uttarakhand-has-most-bird-species-in-india-west-bengal-at-2nd-spot/articleshow/91606251.cms>.
4. Dubey, S. K., Chakraborty, D. C., Gupta, S., Mitra, M., Bhattacharya, R., and Neogy, A. B., (2015). Avian diversity in the Jaldapara National Park, West Bengal, India with a note on their habitat association and feeding guild. *Indian Forester*, 141(10), pp: 1092-1101.
5. Grimmett, R., Inskipp, C. and Inskipp, T. (2011). *Birds of the Indian Subcontinent* Oxford, 2nd Ed.
6. Mayntz, M., (2019). Omnivorous birds. <https://www.thespruce.com/omnivorous-bird-diet-386847>.
7. Mukhopadhyay, S. and Mazumdar, S., (2017). Avifaunal diversity of Bibhutibhushan Wildlife Sanctuary, West Bengal, India. *Conference of Biodiversity: Exploration, Exploitation, Conservation and Management-version and Mission*. Volume, 71.
8. Poovanna, Sharan, (2021). *India News*, 16 April.
9. Pramanik, A. K., Santra, K. B., and Manna, C. K., (2010). Abundance and diversity of plants and animals in the Kulik Bird Sanctuary, Raiganj, West Bengal, India. *J. Biodiversity*, 1(1), pp: 13-17.
10. Roy, U. S., Pal, A., Banerjee, P., and Mukhopadhyay, S. K., (2011). Comparison of avifaunal diversity in and around Neora Valley National Park, West Bengal, India. *Journal of Threatened Taxa*, 3(10), pp: 2136-2142.
11. Sekercioglu, C. H. and Wenny, D., (2016). *Why birds matter. Avian ecological functions and ecosystem service*. University of Chicago Press.
12. State of India's Birds Report, 2020, 13th Conference of Parties, Convention on Conservation of Migratory Species of Wild Animals (CMS COP 13).
13. Tabur, M. A. and Ayvaz, Yusuf, (2010). Ecological importance of birds. *Conference of Second International Symposium on Sustainable Development*. Volume, 560-565.
14. Williamson, Laura, Hudson, Michael, O'Connell, Davidson, Nicholas, Young, Richard, Amano, Tatsuya, and Szekely, Tamas, (2013). Areas of high diversity for the world's inland-breeding water birds. *Biodiversity and Conservation*, 22 (6-7).