

## Observation of Birds Species Frequency at Vindhyaal Forest Reserve Khargone, District (M.P.), India

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**Abstract:** The main aim of the present investigation was to observation of birds speciesfrequency atvindhyaal forest reserve at khargone district (M.P.). Study the of birds species were done from all the four sites (Wachoo point at Mandleshwar, Jamghat Temple at main Vindhyaal, Double golai Balwada and Gavalan Pati Charbhuj temple Katkut). Several species were observed on basis of different food in the present study. Total 205 birds species were observed according to their frequency. Out of which 34, 60, 34, 46 and 31 were abundant, common, frequent, occasional and rare respectively.

**Key words:** Bird • Abundant • Common • Frequent • Occasional and Rare

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### INTRODUCTION

Biodiversity now refers to mainly three level of entities; genes (alleles), species and ecosystem. If we conserve allelic heterogeneity completely, we take care of much of diversity below the genotype and individual levels of the two hierarchies. If we conserve all species, we do conserve all entities at higher levels of the taxonomic hierarchy. If we conserve ecosystem we may conserve many communities, through this hard to gauge [1].

Birds are required in the same way as that of soil, plants and animals are required. They can live in different environmental habitat and have been blessed with flying ability and plumage cover. They are nothing but highly developed reptiles. Greenwood and Harvey reported in Present date the birds have been classified into 29 orders spread into 154 families [2].

Anon recently studied that the wetlands are found to be the richest zone by of present avifauna and freshwater biodiversity are the most threatened of all types of diversity [3]. More than 9, 000 birds species present in the world [4]. India has about 1, 300 birds species and contribute over 13% of the world's birds population. Deepa and Ramachandra observed that 20% freshwater wetland support the known range of biodiversity in India [5].

Birds are the good indicators of ecological status of an ecosystem. Bird's guano is an excellent fertilizer. Further the role of bird fauna in pest control as well as their aesthetic value surrounding human habitation is documented. Populations of aquatic birds are dispersed across a network of small tanks and ponds as observed in North and South India [6].

Birds are one of the most adaptive and widely spread organisms on the planet and the adaptation of birds totally depends upon their body mass and feeding habits and because of which they have followed human colonization. Due to a higher degree of adaptability of these few successful species, their density is much higher in the cities as compared to the more natural adjacent habitats [7].

Studies have also found that the birds are usually richer towards the periphery than the center of the city [8]. Urban habitats in the form of parks, gardens, or green spaces have been recognized as important elements in the cities and they support a large population of various life forms including birds [9-10]. Urban landscapes though may be less species diverse, play a crucial role in supporting biodiversity as they are "Species Abundant Zones" [11]. Thus, the present study "observation of birds species frequency atvindhyaal forest reserve at khargone district (M.P.)" was undertaken.

**MATERIALS AND METHODS**

**Study Area:** The Vindhyaachal Forest Reserve area (Khargone District (M.P.), India) was selected for present study. It is a complex, discontinuous chain of mountain ridges, hill ranges, highlands and Forest in west-central India. The Vindhya Range is also known as Vindhyaachal.

**Sampling Sites:** The Four sampling sites were selected in Vindhyaachal Forest Reserve for present study. They were following.

- Wachoo point at Mandleshwar:
- Jamghat Temple at main Vindhyaachal:
- Double golai Balwada:
- Gavalan Pati Charbhujja temple Katkut:

**Methods:** The data of bird counting from intensive studies and surveys have been used to present study and estimate their densities. Diversity and density are very useful indicators for quality [12]. Birds are may be identify by their calls or songs [13]. Many persons are expertise to identify to birds in the field [14]. For birds counting various methods are available [15]. Effort for counting is usually limited and accurate census is very difficult to obtain in various available methods. Good study is depending on what type of data is required in the possible counting methods. A definite bird count method does not exist. In various birds counting methods, we used following three methods for present study, which are suitable for present study.

- Point count
- Direct count (Individual species) method
- Look and see method

**RESULTS**

A total 205 birds species were observed in the above four study areas Wachoo point at Mandleshwar, Jamghat Temple at main Vindhyaachal, Double golai Balwada and Gavalan Pati Charbhujja temple Katkut: which recorded as 48, 53, 44 and 60 species respectively.

In Wachoo point at Mandleshwar, the abundant species, the common species, frequent species, occasional species and rare species recorded were 9(19%), 17(35%), 7(15%), 10(21%) and 5(10%) respectively.

In Jamghat Temple at main Vindhyaachal, the abundant species, the common species, frequent species, occasional species and rare species recorded were 9(17%), 16(30%), 10(19%), 11(21%) and 7(13%) respectively.

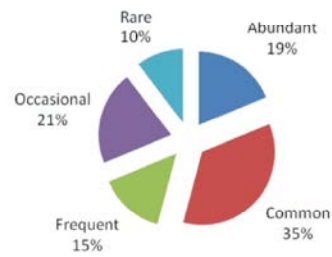
In Double golai Balwada, the abundant species, the common species, frequent species, occasional species and rare species recorded were 7(16%), 10(23%), 6(14%), 12(27%) and 9(20%) respectively.

In Gavalan Pati Charbhujja temple Katkut, the abundant species, the common species, frequent species, occasional species and rare species recorded were 9(15%), 17(28%), 11(18%), 13(22%) and 10(17%) respectively.

Table 1: Total frequency of Species at Wachoo point at Mandleshwar

Row Labels	Count of Frequency
Abundant	9
Common	17
Frequent	7
Occasional	10
Rare	5
Grand Total	48

Percentage composition at Wachoo point at Mandleshwar

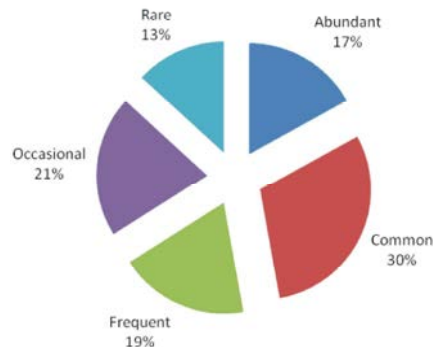


Graph 1: Frequency of Species at Wachoo point at Mandleshwar (in percentage composition)

Table 2: Total frequency of Species at Jamghat Temple at main Vindhyaachal

Row Labels	Count of Frequency
Abundant	9
Common	16
Frequent	10
Occasional	11
Rare	7
Grand Total	53

Percentage composition at Jamghat Temple at main Vindhyaachal

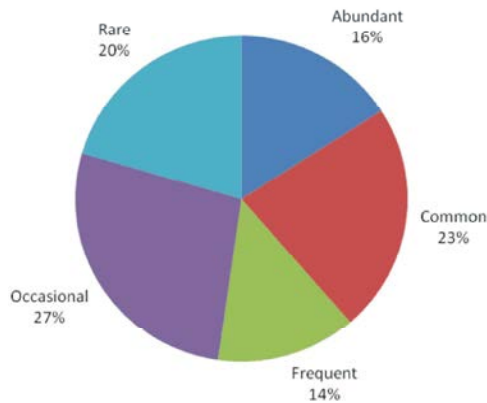


Graph 2: Frequency of Species at Jamghat Temple at main Vindhyaachal (in percentage composition)

Table 3: Total frequency of Species at Double golai Balwada

Row Labels	Count of Frequency
Abundant	7
Common	10
Frequent	6
Occasional	12
Rare	9
Grand Total	44

Percentage composition at Double golai Balwada

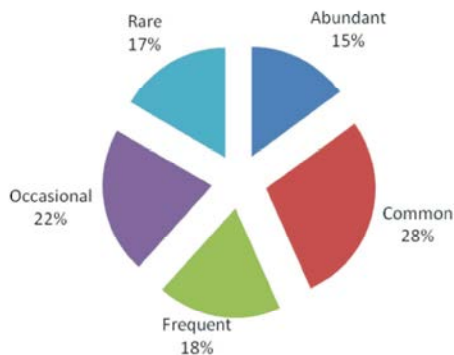


Graph 3: Frequency of Species at Double golai Balwada (in percentage composition)

Table 4: Total frequency of Species at Gavalan Pati Charbhuj temple Katkut

Row Labels	Count of Frequency
Abundant	9
Common	17
Frequent	11
Occasional	13
Rare	10
Grand Total	60

Percentage composition at Gavalan Pati Charbhuj temple Katkut



Graph 4: Frequency of Species at Gavalan Pati Charbhuj temple Katkut (in percentage composition)

### DISCUSSION

**Frequency of Species:** The percent composition at Wachoo point at Mandleshwar was the highest composition was seen in common species that is 35%,

then abundant species were having 19 % composition in the total diversity, frequent species were found having 15% contribution, occasionally species were having 21% and rare species had 10 percent composition in the total 48 species recorded at Wachoo point at Mandleshwar. At Pench Tiger Reserve in Central India that the area is dominated by occasionally found species and they are huge in number [16]. Then the numbers of uncommon species were there and least no. of species was rarely found during the study. They reported 262 bird species in the study area.

The percent composition Jamghat temple at main Vindhyaachal showed that 30 percentage species were commonly found in the area, 21% species were occasionally found, abundantly found species were 17%, frequently found species were 19% in the area and rare species composition was only 13 %. 103 bird species were found and their frequency shows that 17 species were rarely found during the study [17]. 27 bird species were Uncommon, 23 species were commonly and abundantly found and only 36 species were fairly common.

At Double Golai Balwada the highest species recorded were 27%, commonly found species word 23%, species which were found abundantly was 16% and frequently found species were 14%. Rare species which were found were only 20% of the total bird diversity. 24.5 percent species as common species, 23.81 percent species as fairly common birds, 31.5 percent species as uncommon bird species and only 19.05 percent species are rare species [18].

26 bird species were common, 20 were commonly recorded and 22 species of birds were fairly common in the study area [19]. Gavalan Pati Charbhuj temple Katkut was the highest among all the four sites in diversity. Around 28% species were of common composition and occasional bird species composition was 22% followed by frequently observed and recorded species that is 18%. Abundant species contribute to 15% percent composition of birds' diversity in this area. Rare species recorded were only 17% in the study area GavalanPatiCharbhuj temple Katkut.

### REFERENCES

1. Sarkar, S. and C.R. Margules, 2002. Operationalizing biodiversity for conservation planning. *Journal Biosciences*, 27: 299-308.
2. Greenwood, P.J. and P.H. Harvey, 1976. The adaptive significance of variation in breeding area fidelity in Black Bird (*Turdus merula* L.). *J. Anim. Ecol.*, 45: 887-898.

3. Anon, 2000. Wetland values and functions. The Ramsar Bureau. Gland, Switzerland, pp: 20-25.
4. Grimmett, R., C. Inskipp and T. Inskipp, 1998. Birds of the Indian Subcontinent. 1st ed. London: Christopher Helm, A & C Black.
5. Deepa, R.S. and T.V. Ramachandra, 1999. Impact of urbanization in the interconnectivity of wetlands. Paper presented at the National Symposium on Remote Sensing Applications for Natural Resources: Retrospective and Perspective (XICXXI, 1999), Indian Society of Remote Sensing, Bangalore.
6. Uttangi, J.C., 2001. Conservation and management strategy for the water fowls of minor irrigation tank habitats and their importance as stopover site in the Dharwad District, pp: 179-221. In: B. B. Hosetti and M. Venkateshwaralu, (Eds.) Trends in wildlife and management. Daya Publishing house, New Delhi, India.
7. Seress, G. and A. Liker, 2015. Habitat Urbanization and its Effects on Birds. *Acta Zoologica Academiae Scientiarum Hungaricae*, 61(4): 373-408.
8. Sandström, U.G., P. Angelstam and G. Mikusinski, 2006. Ecological diversity of birds in relation to the structure of urban green space. *Landsc Urban Plan*, 77: 39-53.
9. Fuller, R.A., P.H. Warren and K.J. Gaston, 2007. Day time noise predicts nocturnal singing in urban robins. *Biology Letters*, 3: 368-370.
10. Davies, R.G., O. Barbosa, R.A. Fuller, J. Tratalos, N. Burke, D. Lewis, P.H. Warren and K.J. Gaston, 2008. City-wide relationships between green spaces, urban land use and topography. *Urban Ecosyst*, 11: 269-287.
11. Menon, M., P. Devi and J.R. Mohanra, 2012. Functional Assemblages of Birds in Heterogeneous Landscapes along an Urban-Rural Gradient in Tiruchirappalli, India. *Journal of the Bombay Natural History Society*, 109(1&2): 23-29.
12. Javed, S. and A.R. Rahmani, 1993. Conservation of the avifauna of Dudhwa national park, India. *Forktail*, 14: 57-66.
13. Gibbons, N.J. and P. Andrew, 1993. Birds to Watch. IBH Publishing Company, New Delhi.
14. Bibby, C.J. and M. Jones, 1998. Marsden S. Expedition Field Techniques. Bird Surveys. Royal Geographical Society, London.
15. Colin, J., C.J. Bibby, D. Burgess and A. David, 1993. Text Book of Birds Census Techniques. Academic Press Ltd., London, pp: 24-28.
16. Pasha, M.K.S., R. Jaypal, G. Areendran, Q. Qureshi and K. Sankar, 2004. Birds of Pench Tiger Reserve, Madhya Pradesh, Central India. *Newsletter for Ornithologists*, 1(1-2): 2-3.
17. Kumar, Parmesh and Sahu Sharmila, 2019. Guild, Status and Diversity of Avianfauna in Agricultural Landscapes of District Panipat, Haryana, India. *International Journal of Ecology and Environment Sciences*, 45(4): 345-356.
18. Balapure, S., S. Dutta and V. Vyas, 2012. Avian diversity in Barna wetland in Narmada Basin in Central India. *Journal of Research in Biology*, 2(5): 460-468.
19. Arya, M., R.J. Rao and A.K. Mishra, 2014. Avifaunal occurrence and distribution of wetland birds in Sakhya Sagar and Madhav lakes in Madhav National Park, Shivpuri, India. *Journal of Environmental Biology*, 35: 703-708.