



Avifaunal Diversity of Gorja Lake Near Bhadrawati, District Chandrapur (M.S.), India

Zoology

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ABSTRACT

Birds are of great economic importance of the man and they play an important role in controlling population of different pests. Birds are scavengers and pollinating agents and also help's in dispersal of seeds and also birds are provided rich food for mankind and are known to man since ages. Salim Ali, laid the foundation of economic ornithology. Birds are very significant component of biodiversity and are the most important indicators the balanced and living ecosystem. Population of birds in a particular ecosystem is depending on the composition of the ecosystem, environmental condition and seasonal variation. The present investigation was carried out to the Avifaunal and around the Gorja Lake near Bhadrawati town was studied from June 2014 to May 2016 during total 59 species of birds were recorded from 13 different orders and 31 families among which 41 were resident, 9 were resident migrant and 9 were winter visitor.

KEYWORDS:

Gorja lake, Avifaunal diversity.

INTRODUCTION:

Diversity of avifauna is very important ecological indicator to evaluate the quality of habitats. Birds are a diverse group and their bright colour, distinct songs calls and show displays add enjoyment to the lives and birds are very visible, quite common and offer easy opportunities to observe their diverse plumage and behaviours. Because, birds are popular to many who pursue wildlife watching and monitoring activities. Some birds are easily migrate, transport a variety of things through the environment. For example, birds serve to spread seeds of various plants, thereby helping in plant dispersal.

The Gorja Lake is principal fresh water body located in Gorja village of Bhadrawati tahsil in Chandrapur district of Maharashtra state. Bhadrawati is a tahsil place and it is 25 km north side of Chandrapur and 125 km south east side from Nagpur. It is situated at about 211 m above the mean sea level and it is at 20°06'35.67"N is latitude and 79°07'7.33"E longitude. Bhadrawati is a historical place over by the successor of Wakatak Gond raja and Raghuji Raje Bhosale from Nagpur.

Gorja lake is 10 km south side from Bhadrawati tahsil at about 198 m above mean sea level and is at 79°05'48"E longitude and 20°05'59" N latitude. Gorja Lake receives the water from the surrounding catchment areas during the monsoon period. The area of Gorja Lake is spread over 300 acres. The depth of water is 35 feet during the monsoon and 12 feet during the summer season. The water of this lake is primary used for washing, bathing, fishing activities, agriculture and other domestic purpose but now it is at a transitional state with respect to degradation.

The lake harbor a large number of aquatic weeds in the submerged as well as floating state on which the large number of organisms survive in lake. Due to much food availability throughout in year in the form of aquatic insects, crustaceans molluscus, fishes ect. The lake always attracts a large number of birds such as migratory and non migratory birds throughout year. Therefore the present study the avifaunal diversity in around and located Gorja lake near Bhadrawati tahsil, district Chandrapur.

MATERIAL AND METHOD:

Avian fauna including resident and migratory birds were recorded during the period of present study.

The observation were usual undertaken early in the morning between 6 a.m. to 8 a.m. and in the evening between 5 p.m. to 7 p.m. birds were observe with the help of Binocular and photographs using Nikon Camera model No. D – 70.

Identification of avian faun was done according to the keys given by woodcock (1980), Salim Ali (1987).

RESULT AND DISCUSSION :

In the present study 59 species of birds were recorded from 13 different Orders and 31 families among which order Passeriformes was dominant followed by contributing 18 species (sixteen residential species and 2 winter visitor species) followed by order Ciconiformes with 9 species (five are residential migratory, two are residential and two are winter visitor), order Ansiriformes represented by 6 species (five species are winter visitor and one is residential), order Coraciiformes also represents by 6 species (four species are residentially and two are residential migratory), order Charadriiformes represented by 5 species (four species are residential and one is residential migratory), order Psittaciformes represented by three residential species, order Columbiformes represented by two residential species, order Gruiformes represented by 2 species (one is residential other one is residentially migratory) Falconiformes, Galliformes and Peleconiformes represented by two residential species, order Apodiformes, and order Podicipediformes are represented by one residential species.

Among the families recorded species of birds 8 species belongs to Anatidae and 4 species belongs to Ardeidae, 3 species belongs to Ciconiidae, Alcedinidae, Strumidae, Motacillidae, 2 species belongs to Recurvirostridae, Threskiornithidae, Cloumbidae, Phalacrocoracidae, Cuculidae, Necatarinidae, Muscipapidae, Laniidae, Corvidae, Gruidae and one species belong to Apodae, Charadriidae, Scolopacidae, Jacanidae, Coraciidae, Meropidae, Upupidae, Phasinidae, Policipedidae, Psittacidae, Passeridae, Pycnonotidae, Dicruididae, Hirudinidae and Rallidae families out of total 41 were residential , 9 were residential migratory and 9 were winter visitor.

Birds are depending on scientific classification over 9000 birds species and more than 1250 in India, with almost 150 having become extinct after the arrival of Humans. Ali, (1939) has published a list of 278 species of birds from central India. Newton, *et al.*, (1986) reported the listed birds of Kanha Tiger Reserve (M.P.), Ghosal, (1995) they noted the birds of Kanha Tiger Reserve (M.P.). Wadatkarn and Kasambe, (2002) observed 171 species of birds at Pohara Malkhed forest reservoir of Amravati district (M.S.). Kedar and Patil, (2005) founded 60 bird species from Rishi lake, Karanja Lad, (M.S.). Kulkarni, *et al.*, (2006) observed and recorded 93 species of birds from Shikhachi wadi reservoir of Nanded District (M.S.). Kulkarni and Kanwate, (2006) also noted 18 species of birds 10 as resident, 2 migratory and 6 as residential migratory from Dongarkhed irrigation tank of District Hingoli (M.S.).

Kurhade, (2010) founded 208 species of birds in Jaikwadi reservoirs near Ahmadnagar (M.S.). Narwade and Fartade, (2011) observed and recorded 165 species of birds of Osmanabad district (M.S.). Rasal and Chavan, (2011) founded 61 species of birds in local ecosystem of

Aurangabad (M.S.). Kukade, *et al.*, (2011) reported 68 birds species of Chhatri lake of Amravati district (M.S.). Harney, *et al.*, (2012) observed 37 species of birds from Kanhala pond of Bhadrawati of District Chandrapur (M.S.). Joshi and Shrivastava, (2012) observed 64 species of birds in Tawa reservoir of Hoshangabad District (M.P.). Harney, *et al.*, (2013) founded 37 species of birds from Kanhala pond with preference to feeding habits of Bhadrawati of District Chandrapur (M.S.) and Natarajan Mariappan, *et al.*, (2013) observed 92 species of birds from different Habitats of Agricultural Ecosystem of Pollachi (Tamilnadu). Harney and Bhute, (2014) reported 65 birds species belonging to 15 different orders and 40 families were recorded from the Chalbari (Rai) lake near Bhadrawati, District Chandrapur (M.S.), India. Manjunath, *et al.*, (2014) observed the occurrence of 26 species of birds belonging to 8 orders of 13 families in Shri Sharanabasaveshwara lake of Gulbarga District, Karnataka. Patil Alaka, (2015) reported 13 species at Bhambarde Sangli, (M.S.) and Jayanta Mistry, (2015) observed 64 species of birds belonging to 34 families were reported and around Berhampore town, Murshidabad District, West Bengal. Mahajan and Harney, (2016) observed 56 species of birds belonging to 11 different orders and 27 families in Mohabala lake of Bhadrawati, District Chandrapur (M.S.), India.

The birds in and around the Gorja lake are affected by many factors such as organic pollutant, various human activities and lack of maintenance of lake. But still avifauna of Gorja lake is diverse. So keeping in view the varied avifauna reported, steps should be taken to do proper maintenance and must not be more polluted in future.

Table No. 1 Distribution of birds forms of Gorja lake during 2014-2016

Sr. No.	Order/Family	Common Name	Scientific Name	Habit
1	Ansiriformes Anatidae	Spot Bill Duck	<i>Anas poecilorhyncha</i>	WV
2	Ansiriformes Anatidae	Brahminy Shelduck	<i>Tadorna ferruginea</i>	WV
3	Ansiriformes Anatidae	Northern Pintail	<i>Anas clypeata</i>	WV
4	Ansiriformes Anatidae	Northern Shoveller	<i>Anas clypeata</i>	WV
5	Ansiriformes Anatidae	Domestic Duck	<i>Anas platyrhynchos</i>	WV
6	Ansiriformes Anatidae	Cotton Teal	<i>Nettapus coromandelianus</i>	R
7	Apodiformes Apodiidae	House swift	<i>Apus affinis</i>	R
8	Charadriiformes Charadriidae	Red wattled Lapwing	<i>Vanellus indicus</i>	R
9	Charadriiformes Recurvirostridae	Black Winged Stilt	<i>Himantopus himantopus</i>	R
10	Charadriiformes Scolopacidae	Common Sandpiper	<i>Actitis hypoleucos</i>	RM
11	Charadriiformes Jacanidae	Bronze-Winged Jacana	<i>Metopidius indicus</i>	R
12	Charadriiformes Recurvirostridae	River Lapwing	<i>Vanellus duvaucelli</i>	R
13	Ciconiiformes Ardeidae	Cattle Egret	<i>Bubulcus ibis</i>	RM
14	Ciconiiformes Ardeidae	Median Egret	<i>Mesophosyx intermedia</i>	RM
15	Ciconiiformes Ciconiidae	Black Naked Stork	<i>Ephippiorhynchus asiaticus</i>	WV
16	Ciconiiformes Ardeidae	Large Egret	<i>Casmerodius albus</i>	RM
17	Ciconiiformes Ciconiidae	Asian Open Bill Stork	<i>Anastomus osciatus</i>	R
18	Ciconiiformes Ciconiidae	Painted Stork	<i>Mycteria leucocephala</i>	WV
19	Ciconiiformes Threskiornithidae	Black Ibis	<i>Pseudibis papillosa</i>	RM
20	Ciconiiformes Threskiornithidae	Black headed Ibis	<i>Pseudibis papillosa</i>	RM

21	Ciconiiformes Ardeidae	Indian Pond Heron	<i>Aredeola grayii</i>	R
22	Columbiformes Columbidae	Little Brown Dove	<i>Stigmatopelia senegalensis</i>	R
23	Columbiformes Columbidae	Spotted Dove	<i>Streptopelia chinensis</i>	R
24	Coraciiformes Alcedinidae	White Breasted Kingfisher	<i>Halycon smyrnensis</i>	R
25	Coraciiformes Alcedinidae	Small Blue Kingfisher	<i>Alcedo atthis</i>	RM
26	Coraciiformes Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	RM
27	Coraciiformes Meropidae	Small Green Bee Eater	<i>Merops orientalis</i>	R
28	Coraciiformes Upupidae	Common Hoopoe	<i>Upupa epops</i>	R
29	Coraciiformes Alcedinidae	Lasser pied Kingfisher	<i>Ceryle rudis</i>	R
30	Falconiformes Anatidae	Black Kite	<i>Milvus migrans</i>	R
31	Falconiformes Anatidae	Black Winged Kite	<i>Elanus caeruleus</i>	R
32	Galliformes Phasinidae	Grey Francolin	<i>Fraocolinus pondicerianus</i>	R
33	Gruiformes Rallidae	White - Breasted Water Hen	<i>Amauornis phoenicurus</i>	R
34	Galliformes Gruidae	Purple Swampheae	<i>Porphyrio porphyrio</i>	R
35	Gruiformes Gruidae	Common Coot	<i>Fulica atrica</i>	RM
36	Passeriformes Nectarinidae	Purple Sunbird	<i>Cinnyris asiaticus</i>	R
37	Passeriformes Muscicapidae	Jungal Babbler	<i>Turdoides striat</i>	R
38	Passeriformes Passeridae	Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>	R
39	Passeriformes Muscicapidae	Indian Robin	<i>Saxicolodius fulicatus</i>	R
40	Passeriformes Lainidae	Rufousbacked Shrike	<i>Lanius schach</i>	R
41	Passeriformes Sturnidae	Common Myna	<i>Acridotheres tristis</i>	R
42	Passeriformes Pycnonotidae	Red Vented Bulbul	<i>Pycnonotus cafer</i>	R
43	Passeriformes Dicruidae	Balck Drongo	<i>Dicrurus macrocercus</i>	R
44	Passeriformes Sturnidae	Brahminy Starling	<i>Sturnia pagodarum</i>	R
45	Passeriformes Hirudinidae	Common Swallow	<i>Hirundo rustica</i>	R
46	Passeriformes Nectarinidae	Purple Rumped Sunbird	<i>Nectarinia zeylonica</i>	R
47	Passeriformes Laniidae	Bay Backed Shrike	<i>Lanius vittatus</i>	R
48	Passeriformes Corvidae	Jungal Crow	<i>Corvus macrorhynchus</i>	R
49	Passeriformes Motacillinae	White Wagtail	<i>Motacilla alba</i>	WV
50	Passeriformes Motacillinae	Grey Wagtail	<i>Motacilla cinerea</i>	WV
51	Passeriformes Motacillidae	White Browed Wagtail	<i>Motacilla maderaspatensis</i>	R
52	Passeriformes Sturnidae	Pied Myna	<i>Sturnus contra</i>	R
53	Passeriformes	House Crow	<i>Corvus splendens</i>	R
54	Pelecaniformes Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax niger</i>	R

55	Pelecaniformes Phalacrocoracidae	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	R
56	Psittaciformes Psittacidae	Rose Ringed Parakeet	<i>Psittacula krameri</i>	R
57	Psittaciformes Cuculidae	Asian Koel	<i>Eudynamis scolopaceus</i>	R
58	Psittaciformes Cuculidae	Greater Concul	<i>Centropus sinensis</i>	R
59	Podicipediformes podicipedidae	Little grebe	<i>Tachybaptus ruficollis</i>	R

R = Residential (41), WV = Winter Visitor (9), RM = Residential Migratory (9)

CONCLUSION:

In the present investigation during visits it was noticed that the few birds like Spot Bill Duck and Grey Francolin, rarely seen and really, it will be hunted by man. The traditional norms and the fear of forest which previously prevented people due to exploiting and general Jungle degradation.

The above observations indicate that the lake supports large varieties and all the status of avian diversity. We help to enhance lake, forest birds diversity and protect the habitats.

REFERENCES :

- Ali, Salim (1987) Birds of India and Pakistan, 2nd Edition. Ali, S. (1936) the birds of central India, part-1. J. Bom. Nat. Hist. Soc. Vol. 41 (1): 82-106.
- Ali, S. (1932) Flowers birds and birds flower in India. J. Bom. Nat. Hist. Soc. Vol. (35): 573-605.
- Ali, S. (1939) the birds of central India, Part-1. J. Bom. Nat. Hist. Soc. Vol. 4 (1): 82-106.
- Ali, S. and Ripley, S. D. (1995) A pictorial guide to the birds of the Indian subcontinent. Bombay Natural history society, Mumbai. pp. 1-354.
- Bhongade, S. S. (2016) Study of Avifaunal Diversity in and Around Mohgavhan lake, Karanja Lad, District. Washim, Maharashtra, India. Vidyabharti International Interdisciplinary Research Journal (Special Proceeding Issue): pp.252-255.
- Davidar, P. (1985) Ecological interactions between the mistletoes and their avian pollinators in south India. J. Bom. Nat. Hist. Soc. Vol. 82: 45-60.
- Ghazi, H. K. (1962) Piscivorous birds of Madras, Madras. J. of fisheries. Vol. 1 (1): 106-107.
- Ghosal, D. N. (1995) Avifauna of conservation areas, No. 7, Fauna of Kanha Tiger Reserve. Zoological survey of India (ZSI), pp. 63-91.
- Harney, N. V. and Bhute, K. B. (2014) Diversity of avifauna in and around Chalbardi (rai) lake near Bhadrawati, District Chandrapur (M.S.), India. Journal of Global Biosciences. Vol. 3 (2): 399-405.
- Harney, N. V., A. A. Dhamani and R. J. Andrew, (2012) Avifaunal diversity in and around Kanhala lake near Bhadrawati, Dist-Chandrapur (M.S.), India. Bionano Frontier. Vol. 5 (2-1): 30-33.
- Harney, N. V., A. A. Dhamani and R. J. Andrew, (2013) Avifaunal diversity of Kanhala lake near Bhadrawati, Dist-Chandrapur (M.S.), with reference to food preference and feeding habits. India. International Journal of Scientific Research. Special Issue. pp.57-59.
- Hippargi, R. V., P. M. Bolde, S. V. Manthen and S. R. Aland, (2012) Population and breeding status of avifauna in a highly fragmented grassland patch near Solapur, Maharashtra. Avishkar Solapur University Research Journal. Vol. (2): 22-30.
- Jayanta Mistry, (2015) Avifaunal diversity in and around Berhampore, Murshidabad district, West Bengal. India International Journal of Fauna and Biological Studies. Vol. 2 (4): 06-10.
- Joshi, Pragati and Vinoy K. Shrivastava, (2012) Avifaunal diversity of Tawa reservoir and its surrounding area of Hoshangabad district (M.P.). International Journal of Plant, Animal and Environmental Sciences. Vol. 2 (1): 46-51.
- Joshi, P (2016) Avian Diversity in and Around Durge lake and their Surrounding Forest of Kalamb, District – Yavatmal, Maharashtra, India. Vidyabharti International Interdisciplinary Research Journal (Special Proceeding Issue) : pp. 126 - 130.
- Kannan, P. (1980) Nector feeding adaptation of flower birds. J. Bom. Nat. Hist. Soc. Vol. (75): 1036-1050.
- Kedar, G. T. and Patil, G. P. (2005) Avifaunal diversity of Rishi lake, Karanja (Lad), Maharashtra with reference to food preference and feeding habits. J. Aqua. Biol. Vol. 20 (1): 35-38.
- Kukade, R. J., Warhekar, S. R., Tippat, S. K. and Dudhey, N. S. (2011) Avifaunal diversity of Chatri lake, Amravati, Maharashtra. Proceedings of UGC sponsored National level conference on "Environmental Biology and Biodiversity" NCEBB, 2011.
- Kulkarni, A. N. and Kanwate, V. S. (2006) Avifauna of forest Jaladhara, Kinwat, District Nanded, Maharashtra, J. Aqua. Biol. Vol. 21 (1): 46-51.
- Kulkarni, A. K., Kanwate, V. S. and Deshpande, V. D. (2006) Check list of birds of Shikhachi wadi, Reservoir, Dist. Nanded, Maharashtra. J. Aqua. Biol. Vol. 21 (1): 80 - 85.
- Kulkarni, A. N. and Kanwate, V. S. (2006) Piscivorous birds of Dongarkhedha irrigation tank, Dist. Hingoli, Maharashtra, J. Aqua. Biol. Vol. 21 (1): 86-87.
- Kurhade, Sudhakar, (2010) Status and diversity of avifauna in Jaikwadi reservoirs, Maharashtra. J. Aqua. Biol. Vol. 25 (1): 32-40.
- Mahajan, V. S. and Harney, N. V. (2016) Avifaunal diversity of Mohabala lake near Bhadrawati, District-Chandrapur (M.S.), India. Online International Interdisciplinary Research Journal. Vol. 6 (Special Issue) : 75-83.
- Manjunath Pratima Mathad, Pavitra, B., Sundar, M. and Ziyayoddin, M. (2014) Aquatic avifauna of Shri Sharanabasaveshwara lake, Gulbarga District, Karnataka. International Journal of Research in Applied. Vol. 2 (1): 183-188.
- Mujumdar, N. (1984) On a collection of birds from Bastar district, M.P. Record Zoological survey of India, Occasional. pp. 59-54.
- Narwade, Sujit and Fartade, M. M. (2011) Birds of Osmanabad District of Maharashtra, India. Journal of Threatened Taxa. Vol. 3 (2): 1567-1576.
- Natarajan Mariappan, B. K. Ahamed Kalfan and Srinivasagam Krishnakumar, (2013) Assessment of bird population in different habitats of agricultural ecosystem. International Journal of Scientific Research in Environmental Sciences. Vol. 1 (11): 306-316.

- Newton, P. N., Brudin, S. and Guy, J. (1986) The birds of Kanha Tiger Reserve Madhya Pradesh, India. J. Bom. Nat. Hist. Society. Vol. 83 (3): 977-998.
- Patel, K. B., S. B. Patel and Nikunj Bhatt, (2012) Avian diversity of Mahi canal site of Nadiad, Gujrat. Life Science Leaflets. Vol. 4: 12-19.
- Patil Alaka, A. (2015) Biodiversity of Bhambarde reservoir of Sangli, Maharashtra, India. Research Journal of Recent Sciences Vol. 4 (ISC-2014): 209-215.
- Rasal, G. B. and Chavan, B. L. (2011) Diversity of birds in local ecosystem Aurangabad, Maharashtra, India. Journal of Economic and Sustainable Development. Vol. 2 (2): 68-71.
- Shirbhate, M. V. and Vyas, A. (2016) Avifaunal Diversity Near Morna Dam of Akola, Maharashtra, India. Vidyabharti International Interdisciplinary Research Journal (Special Proceeding Issue) : pp. 11-14.
- Singh, T. C. N. (1929) A note of the pollination of Erythring Indica by birds. J. Bom. Nat. Hist. Soc. Vol. 33: 960-462.
- Wadkatkar, J. S. and Kasambe, R. (2002) Checklist of birds from Pohara-Malkhed reserve forest, Dist. Amravati, Maharashtra. Zoot. Print Journal. Vol. 17 (66): 807-811.
- Woodcock, M. (1980) Collins Handguide to the Birds of Indian subcontinent. 2nd Edn. Collins, London.
- Woodcock, M. W. (1980) Birds of India, Nepal, Pakistan, Bangladesh and Shrilanka. Cambridge Univ. Press, U. K.