

Avian diversity of Rawanwadi lake and reservoir, district Bhandara, Maharashtra, India.

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ABSTRACT

Rawanwadi lake is beautiful lake present in District-Bhandara (M.S.) and surrounded by forests from all side. Ecological landscape seems to be least polluted and hence provide opportunity to study some bioindicator species. In present study, the avian diversity around Rawanwadi lake was studied from September 2022 to February 2023. In this study we observed 70 species of birds belonging to 16 orders and 43 families. Out of 70 species found 66 are local and 4 are migratory birds. A large number of the families (37 families) comprise one or two species, followed by five families (3-4 species) and one family with six species.

Keywords: Rawanwadi, Avifauna Diversity

Introduction

Birds are warm-blooded, bipedal, and vertebrate organisms with feathers. They are one of the most visible creatures on the planet [1]. Birds began their long existence in the Cretaceous Age and have proliferated into a dazzling assortment of species over many millions of years [2]. The first known fossil bird is Archaeopteryx [3]. Avian diversity is a bioindicator of many habitats and addition to being potential pollinators, seed dispersers, and scavengers, birds are valuable to people in agriculture by reducing the number of dangerous pests that negatively impact productivity. The number of migratory birds visiting any area also indicates the health of that particular environment; birds play an important role in any ecosystem. According to BirdLife Data Zone, there are 11,162 bird species worldwide. Indian subcontinent is home to 1,209 different species of birds [4-17].

In Maharashtra State, more than 577 species have been identified. In Vidarbha, 417 species have been identified [18].

The aim of the study is to look at the avian diversity around Rawanwadi lake, Bhandara District, Maharashtra State, India. It is bordered by forested areas, grasslands, and paddy fields, all of which provide an excellent habitat and a variety of food sources for birds, including insects, fish, and amphibians. The major draw for the many bird species in this area is the abundance of food and the natural habitat [19,20].

Methodology

Study Site

Rawanwadi lake and reservoir are located in the Bhandara district of Maharashtra, India. It is about 90 km from Nagpur and 878 km from the state capital, Mumbai. It is located 266 metres above sea level with a latitude of 21° 02' 56" N and a longitude of 79°. The climate, which has a temperature range of 21 to 43 C and an average annual precipitation of 850.2 mm, supports a wide variety of species. The weather of this region has three main seasons: the wet monsoon, the winter, and the hot dry season from April until the commencement of the rains. Verity of trees present in

that area, which provide shelter for different types of birds [3]. The survey was conducted near to the reservoir, which is shelter of diverse species of bird.

Survey and Identification of Birds

For photography we used Canon SX 60-HS, a 16.1 MP high-tech digital camera with 65x optical zoom, bird watching and photography were done at various lakeside locales. Birds were watched twice a day for three to four hours each, in the morning and the evening. Between September 2022 to February 2023, the survey was conducted often, every 6-7 days, and bird images were obtained in their natural habitat for documentation. The manual guides The Book of Indian Birds by Salim Ali and 100 Common Birds in India by Dr. Raju Kasambe are used for identification.

Results and Discussion

Table no. I provide a checklist of the species recorded in the Rawanwadi lake region, along with their residential status, IUCN status, and feeding guild.

Status- R- Resident, M- Migratory

IUCN Categories: LC: Least Concern

Feeding guild: G- Granivorous, F- Frugivorous, N- Nectarivores, I- Insectivores, P- Piscivorous, C: Carnivorous O: Omnivorous.

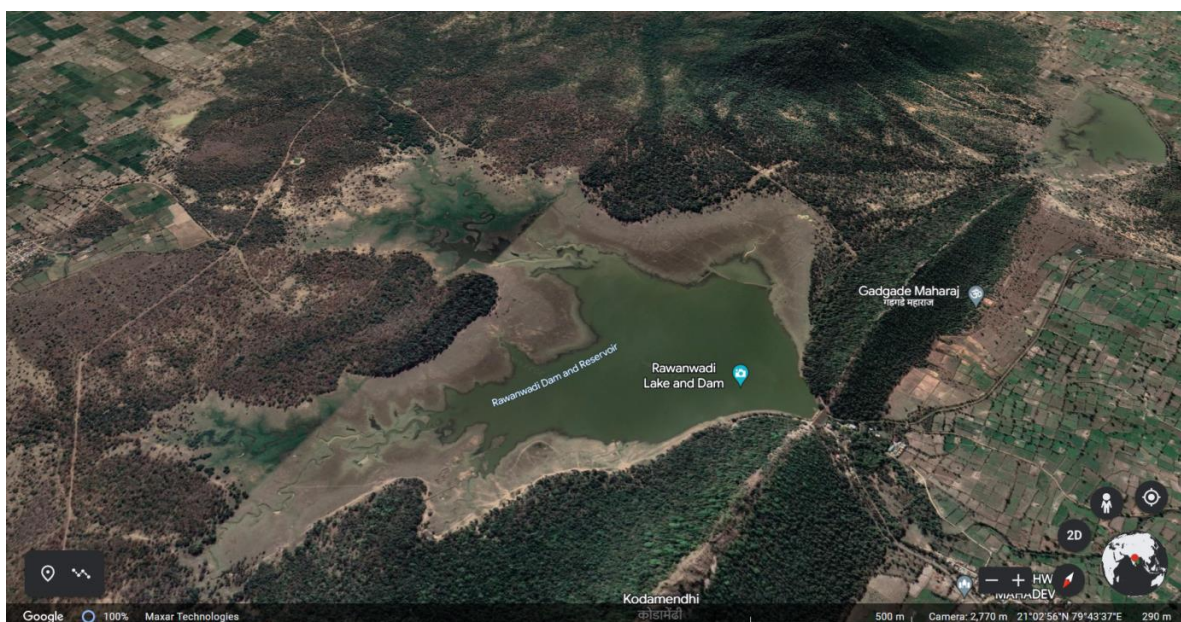


Fig. 1: Rawanwadi lake and reservoir are located in the Bhandara district of Maharashtra, India

Table 1: Checklist of the species recorded in the Rawanwadi lake region

Sr No	Order	Family	Scientific Name	Common Name	Status	IUCN status	Feeding Guild
1	Passeriformes	Sturnidae	1. <i>Acridotheres tristis</i>	Myna	R	LC	O
			2. <i>Sturniapagodarum</i>	Brahminy starling	R	LC	F
		Chloropseidae	3. <i>Chloropsisaurifrons</i>	Golden fronted leafbird	R	LC	O
		Motacillidae	4. <i>Anthusrufulus</i>	Paddyfield pipit	R	LC	C
			5. <i>Motacilla alba</i>	White wagtail	R	LC	I
			6. <i>Motacilla flava</i>	Yellow wagtail	R	LC	I
		Leiothrichidae	7. <i>Argyacaudata</i>	Common babbler	R	LC	O
			8. <i>Argya striata</i>	Jungle babbler	R	LC	O
		Nectariniidae	9. <i>Cinnyris asiaticus</i>	Purple sunbird	R	LC	N
			10. <i>Leptocomazeylonica</i>	Purple rumped sunbird	R	LC	N
		Aegithinidae	11. <i>Aegithina tiphia</i>	Common lora	R	LC	O
		Muscicapidae	12. <i>Copsychusfulvicatus</i>	Indian robin	R	LC	I
			13. <i>Copsychussaularis</i>	Oriental magpie robin	R	LC	I
			14. <i>Eumyasthalassinus</i>	Verditer flycatcher	R	LC	O
			15. <i>Oenanthe fusca</i>	Brown rock chat	R	LC	I
		Corvidae	16. <i>Corvus splendens</i>	House crow	R	LC	O
			17. <i>Dendrocittavagabunda</i>	Rufous treepie	R	LC	C
		Sylviidae	18. <i>Currucacurruca</i>	Lesser whitethroat	M	LC	I
		Dicruridae	19. <i>Dicrurusleucophaeus</i>	Ashy drongo	R	LC	C
			20. <i>Dicrurusmacroceru</i>	Black drongo	R	LC	C
		Estrildidae	21. <i>Euodice malabaric</i>	Indian silverbill	R	LC	G
			22. <i>Lonchurapunctulat</i>	Scaly breasted munia	R	LC	G
		Acrocephalidae	23. <i>Idunaram</i>	Sykes's warbler	M	LC	I
		Laniidae	24. <i>Laniuschac</i>	Long tailed shrike	R	LC	I
		Oriolidae	25. <i>Orioluskundo</i>	Indian golden oriol	R	LC	I
			26. <i>Oriolusxanthornus</i>	Black hooded oriole	R	LC	I
		Passeridae	27. <i>Passer domesticus</i>	House sparrow	R	LC	G
		Phylloscopidae	28. <i>Phylloscopusfuscatus</i>	Dusky warbler,	M	LC	O
		Ploceidae	29. <i>Ploceusphilippinus</i>	Indian baya waever	R	LC	O
		Pycnonotidae	30. <i>Pycnonotuscafer</i>	Red vented bulbul	R	LC	F
		Rhipiduridae	31. <i>Rhipiduraaureola</i>	White browed fantail	R	LC	I
		Vangidae	32. <i>Tephrodornispondicerianus</i>	Common woodshrike	R	LC	I
		Monarchidae	33. <i>Terpsiphone paradisi</i>	Indianparadise flycatcher	R	LC	I
		Zosteropidae	34. <i>Zosterops japonicus</i>	Warbling white eye	R	LC	I
			35. <i>Zosteropsalpebrusu</i>	Indian white eye	R	LC	I
2	Anseriformes	Anatidae	36. <i>Anas poecilorhynch</i>	Indian spot-billed duck	R	LC	O
3	Ciconiiformes	Ciconiidae	37. <i>Anastomusoscitan</i>	Asian openbill	R	LC	C
4	Gruiformes	Rallidae	38. <i>Amaurornisphoenicuru</i>	White breasted waterhen	R	LC	O
5	Pelecaniformes	Ardeidae	39. <i>Ardea alba</i>	Great egret	R	LC	C
			40. <i>Ardeolagravii</i>	Indian pond heron	R	LC	C
			41. <i>Bubulcus ibis</i>	Cattle egret	R	LC	C
			42. <i>Butorides striata</i>	Striated heron	R	LC	C

			43. <i>Egretta garzetta</i>	Little egret	R	LC	C
			44. <i>Ardea intermedia</i>	Intermediate egret	R	LC	C
		Threskiornithidae	45. <i>Pseudibis papilio</i>	Red naped ibis	R	LC	O
6	Strigiformes	Strigidae	46. <i>Athene bra</i>	Spotted owl	R	LC	C
7	Psittaciformes	Psittaculidae	47. <i>Psittacula kramera</i>	Rose ringed parakeet	R	LC	G
8	Cuculiformes	Cuculidae	48. <i>Centropus sinensis</i>	Greater coucal	R	LC	O
			49. <i>Eudynamis scolopacea</i>	Asian koel	R	LC	F,I
9	Charadriiformes	Charadriidae	50. <i>Charadrius dubius</i>	Little ringed plover	R	LC	I
			51. <i>Vanellus indicus</i>	Red wattled lapwing	R	LC	I
			52. <i>Vanellus malabaricus</i>	Yellow wattled lapwing	R	LC	I
		Jacaniidae	53. <i>Hydrophasianus chirurgus</i>	Pheasant tailed jacana	R	LC	C
		Scolopacidae	54. <i>Trianga ochropus</i>	Green sandpiper	M	LC	I
10	Columbiformes	Columbidae	55. <i>Columba livia domestica</i>	Feral pigeon	R	LC	G
			56. <i>Spilopelia senegalensis</i>	Laughing dove	R	LC	G
			57. <i>Streptopelia chinensis</i>	Spotted dove	R	LC	G
11	Coraciiformes	Coraciidae	58. <i>Coracias benghalensis</i>	Indian roller	R	LC	C
		Alcedinidae	59. <i>Halcyon smyrnensis</i>	White throated kingfisher	R	LC	O
		Meropidae	60. <i>Merops orientalis</i>	Asian green bee eater	R	LC	I
12	Piciformes	Picidae	61. <i>Dinopium benghalensis</i>	Black rumped flameback	R	LC	I
			62. <i>Leiopicus mahrattensis</i>	Yellow crowned woodpecker	R	LC	I
		Megalaimidae	63. <i>Psilopogon haemacephalus</i>	Coppersmith barbet	R	LC	F
13	Accipitriformes	Accipitridae	64. <i>Elanus caeruleus</i>	Black winged kite	R	LC	O
			65. <i>Milvus migrans</i>	Black kite	R	LC	C
			66. <i>Spilornis cheela</i>	Crested serpent eagle	R	LC	C
			67. <i>Accipiter badius</i>	Shikra	R	LC	C
14	Suliformes	Phalacrocoracidae	68. <i>Microcarbo pygmaeus</i>	Pygmy cormorant	R	LC	P
15	Bucerotiformes	Bucerotidae	69. <i>Ocyropsus birostri</i>	Indian grey hornbill	R	LC	F

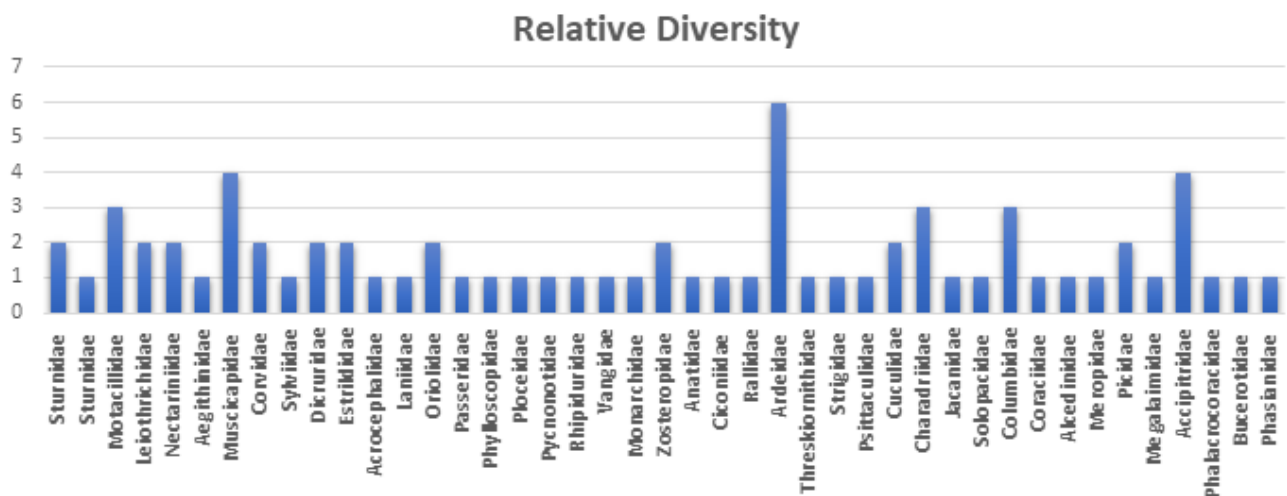


Fig. 2 : Graphical representation of no of species belonging to the family

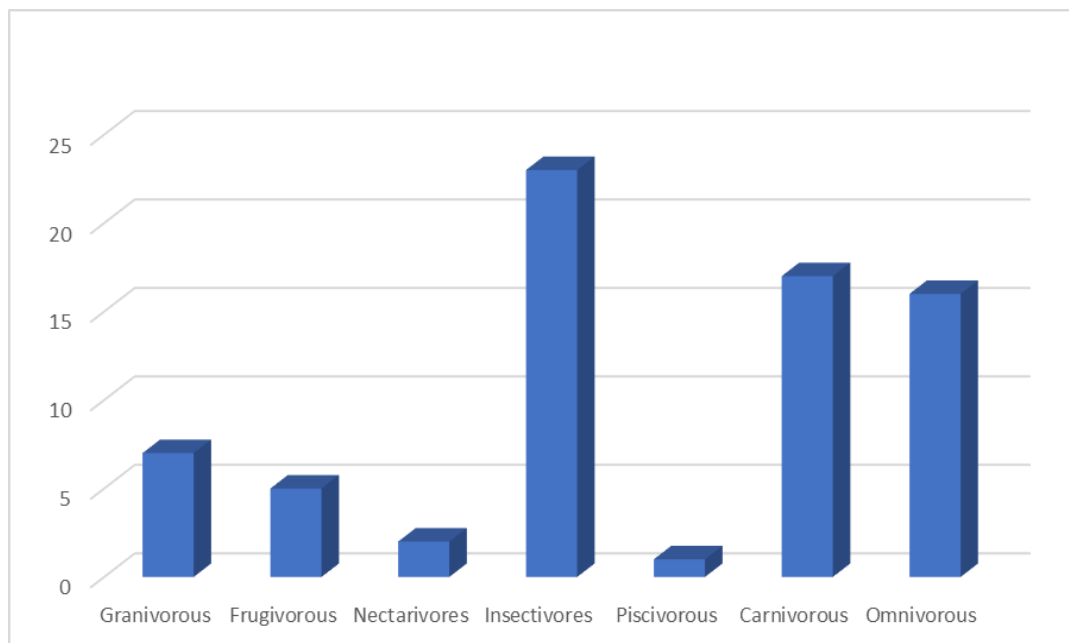


Fig. 3 : Feeding Guild of Birds

In the current study, the area around the Rawanwadi Dam and reservoir, in Bhandara, Maharashtra, was home to 70 species of birds, divided into 16 orders and 43 families. A majority of the families (37 families) are represented by one or two species followed by 5 families (3-4 species), and 1 family with 6 species. The Ardeidae family has the most species in the area (6 species), followed by Muscicapidae and Accipitridae, which each have four. The order Passeriformes, which is predominant in this area, is discovered to comprise 35 species in a total of about 22 families. All of the species found in the records are IUCN-listed as being of least concern. According to Fig. 3, which depicts the feeding guild of birds, nearly 23 species are entirely insectivorous, followed by carnivorous (17 species) and omnivorous (17 species) species. (16 species). Despite the reservoir's existence, only one species is entirely piscivorous. Out of the 70 species, 66 are local residents and the remaining 4 are migratory. The four migratory species, which include the *Currucacurruca* (lesser whitethroat), *Idunarama* (Sykes's warbler), *Triangaorchropus* (green sandpiper), and *Phylloscopusfuscatus* (dusty warbler), are all winter migrants from south Asia, as well as Sri Lanka and Africa.

Conflicts of interest: The authors stated that no conflicts of interest.

References

1. Bhonsle O, Shrivastava CS, Jain R & Gaherwal S. A Preliminary Study on Avian Fauna at Govt. (Model, Autonomous) Holkar Science College, Indore, (M. P.). *International Journal of Scientific Research in Biological Science*, 2018; 5, 18-27.
2. Bird Diversity (no date) RSS. (Accessed: April, 7, 2023)
3. Rath S, &Parida SP. Studies on the Avian Diversity of Balikuda, Jagatsinghpur. *Journal of Emerging Technologies and Innovative Research*, 2020; 7, 1136-1141.
4. Explore the species Dashboard (no date) Birdlife Data Zone. (Accessed: April, 11, 2023)
5. Gaur, Pichhode PM, Dudwe J, Shrivastava, CS Gaherwal S Residential, IUCN and WPA Status of the Avian Fauna Observed in Indore City (M.P.), India. *Nature Environment and Pollution Technology*, 2021; 20, 113-121.
6. Datta, Madhuban. Status, Guild and Diversity of Avian Fauna Frana Wetland Site and Surroundings in Krishnagar, A City Beside Tropic of Cancer, West Bengal, India. *International Journal of Fauna and Biological Studies*, 2016; 3, 68-75.
7. Aggarwal A, Tiwari GP & Harsh S. Avian Diversity and Density Estimation of Birds of The Indian Institute of Forest Management Campus, Bhopal, India. *Journal of Threatened Taxa*, 2015; 7,6891-6902.
8. Gaur Shrivastava CS & Gaherwal S. Spatial Variation In Avifaunal Diversity from Various Green Spaces of

Indore City, Madhya Pradesh. *International Journal of Current Research and Review*, 2019; 11, 06-15.

9. Joshi KK, Bhatt, D & Arya AK. Avian Diversity in Forest, Agriculture and Water Stream Habitats of Dehradun Valley, Uttarakhand, India. *Biodiversity Data Journal*, 2021; 9.
10. Sen Supatra. A Comparative Study of Avian Biodiversity in Two Sites viz. Urban and Suburban and in Two Seasons viz. Winter and Spring. *Harvest*, 2019; 4,70-110.
11. Gaur P *et al.* A Study of Avian Diversity and Its Temporal Variation in Various Green Spaces of Indore City. *International Journal of Recent Scientific Research*, 2019; 10(07).
12. Singh R, Jaiswal A, Singh J, Singh N, Bhaskar SK et al. Study of Bird Diversity in Gorakhpur University Campus. *Journal of Biodiversity & Endangered Species*, 2018; 6: 002.
13. Gaur Pichhode PM, Dudwe J, Shrivastava CS & Gaherwal S. Residential, IUCN and WPA Status of the Avian Fauna Observed in Indore City (M.P.), India. *Nature Environment and Pollution Technology*, 2021, 20, 113-121.
14. Datta, Madhuban. Status, Guild and Diversity of Avian Fauna Frana Wetland Site and Surroundings in Krishnagar, A City Beside Tropic of Cancer, West Bengal, India. *International Journal of Fauna and Biological Studies*, 2016; 3, 68-75.
15. Aggarwal A, Tiwari GP & Harsh S. Avian Diversity and Density Estimation of Birds of The Indian Institute of Forest Management Campus, Bhopal, India. *Journal of Threatened Taxa*, 2015; 7,6891-6902.
16. Gaur, Shrivastava CS & Gaherwal S. Spatial Variation In Avifaunal Diversity from Various Green Spaces of Indore City, Madhya Pradesh. *International Journal of Current Research and Review*, 2019; 11, 06-15.
17. Joshi, K. K., Bhatt, D.,& Arya, A. K. (2021). Avian Diversity in Forest, Agriculture and Water Stream Habitats of Dehradun Valley, Uttarakhand, India. *Biodiversity Data Journal*,9.
18. Rawankar A Wagh GA. Surveillance of Avian Mortality on the Road Passing Through Pohra-Malkhed Reserve Forest District Amaravati, Maharashtra. *International Journal of Zoology Studies*, 2018; 3, 135-139.
19. Patil KG Dabrase D & Shende VA. Birds of Rawanwadi Region, Bhandara, Central India. *Malaysian Journal of Medical and Biological Research*, 2018; 5, 109-16.
20. Patil Kishor, Bobade Sumedh, Shende Virendra A, Pawar Santosh, Chavhan Arvind. Aves of Ajanti reservoir region of Wena River, Hinganghat (Wardha) Central India. *Int. Res. Journal of Science & Engineering*, 2018, 6 (2): 55-76.

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