

Avian Diversity in and around Shivapur Lake of Umred, District Nagpur, Maharashtra, India

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Abstract

The Shivapur Lake is located at the outskirts of Umred. It is perennial lake, rich in aquatic vegetation and harbors several kinds in all the season. Grassland, rice field, herb, shrub and various type of tree located in the vicinity of lake that also provide food and shelter to these birds. Total number 60 Birds species belonging to 15 order and 30 families were recorded. Passeriforms is the dominating order of birds. But the future of birds in danger due to human activity and industrial and Environmental pollution of the city.

Keywords:- Diversity, Shivapur lake, Birds.

Introduction

India subcontinent, a part of the vast Oriental biogeographic regions, is very rich in biodiversity. Avian population has a central role in ecosystem functioning and ecosystem services. Birds are Bio indicators and appraise the health of environment and ecosystem. In world more than 9,000 birds, in Indian subcontinent about 1,313 species, or over 13% world birds. The recent studies assess freshwater biodiversity as the most threatened of all types of diversity due to some industrial pollution and human activity.

In Vidarbha region of Maharashtra 413 species are recorded by various authors. The annotated checklist of Nagpur area represented 284 species of birds. 135 species of birds are observed around in an around Ambazari lake Nagpur (Kedar 2012). Total 312 species of birds recorded from the nearby Navegaon National park Gondia, 92 bird species of birds are studied from Tamkarada forest near Malegaon Tehsil of Washim district (Ingle et al. 2015) and 76 species of birds are reported from Chaprala Wildlife sanctuary, Gadchiroli (Paliwal 2013; Chauhan and Dhamani 2014; Wagh and Tiwari 2020).

Material and Methods

Shivapur lake is one the small water body located in Umred near Umred Karhandla Wildlife sanctuary its geographic co-ordinates are (20° 48' 37" N & 79° 21' 33" E). It shows great avian diversity which can attract the attention of bird's watcher and wildlife photographers. Around the lake grass lands are available and lake is surrounded by rice fields. Observation are made from November 2018 to

February 2021. The birds were identified with the help of books Ali Salim (1996) and Richard Grimmett, Carol Inskipp, Tim Inskipp (2014).

Photography were done through camera Sony Alpha a 7iii lenses 200-600 G lens And 70-200 Gm lens.

Observation and Results:-

Table 1. Showing order , family, Scientific name , common name and habitat (M) Migratory , (R) Resident , (RM) Residential Migratory and International union For Conservation And Nature (IUCN) , (LC) Least concern, (Vu) Vulnerable , (NT) Near Threatened, (EN) Endangered.

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	IUCN Status
1.	Anseriformes	Anatidae	Anas acuta	Northern Pintail	M	LC
			Spatula clypeata	Nothern shoveler	M	LC
			Tadorna ferruginea	Ruddy shelduck	M	LC
			Netta rufina	Red-crested pochard	M	LC
			Dendrocygna javanica	Lesser whistling-duck	R	LC
			Mareca penelope	Eurasian wigeon	M	LC
			Nettapus coromandelianus	Cotton teal	M	LC
			Anser indicus	Bar-headed goose	M	LC
2.	Accipitriformes	Accipitridae	Pernis ptilorhynchus	Crested honey buzzard	R	LC
			Accipiter badius	Shikra	R	LC
			Elanus axillaris	Black-shoulder kite	R	LC
			Spilornis cheela	Crested serpent eagle	R	LC
			Circaetus gallicus	Short-toed snake eagle	R	LC

3.	Charadriiformes	Scolopaciidae	Limosa limosa	Black-tailed godwit	M	NT
			Tringa glareola	Wood sandpiper	RM	LC
			Calidris pusilla	Semiplamated sandpiper	M	NT
		Charadriidae	Vanellus indicus	Red-wattled lawping	R	LC
			Charadrius hiaticula	Common ringed plover	R	LC
		Jacanidae	Hydrophasianus chirurgus	Pheasant-tailed jacana	R	LC
			Metopididus indicus	Bronze winged jacana	R	LC
		Recurvirostridae	Himantopus	Black-winged stilt	R	LC
4.	Ciconiiformes	Ciconiidae	Mycteria leucocephala	Painted stork	RM	NT
			Anastomus oscitans	Asian openbill stork	R	LC
			Ciconia episcopus	Woolly-necked stork	RM	NT
5.	Passeriformes	Dicuridae	Dicrurus macrocercus	Black drongo	R	LC
			Dicrurus paradiseus	Greater racket-tailed drongo	R	LC
		Corvidae	Corvus macrorhynchos	Large-billed crow	R	LC
		Monarchidae	Terpsiphone paradisi	Indian paradise flycatcher	RM	LC
		Motacillidae	Motacilla flava	Western yellow wagtail	R	LC
			Motacilla alba	White wagtail	R	LC
			Motacilla citreola	Citrine wagtail	M	LC
			Anthus rufulus	Paddyfield pipit	R	LC
		Estrildidae	Amandava amandava	Red munia	R	LC
		Ploceidae	Ploceus megarhynchus	Baya weaver	R	VU
		Leiothrichidae	Argya striata	Jungle babbler	R	LC
		Muscicapidae	Copsychus	Indian robin	R	LC

			fulicatus			
			Saxicola caprata	Pied bush chat	R	LC
		Laniidae	Lanius schach	Rufous-backed shirke	R	LC
			Lanius excubitor	Great grey shirke	RM	LC
		Strunidae	Gracupica contra	Asian- Pied starling	R	LC
			Sturnia pagodarum	Brahminy starling	R	LC
			Pastor roseus	Rosy starling	M	LC
		Oriolidae	Orious larvatus	Black-headed oriole	R	LC
			Orious oriolus	Eurasian golden oriole	RM	LC
6.	Coraciformes	Alcedinidae	Ceryle rudis	Pied kingfisher	R	LC
			Alcedo atthis	Small Blue kingfisher	R	LC
			Halycon smyrnensis	White-throated kingfisher	R	LC
7.	Columbiformes	Columbidae	Streptopelia chinesis	Spotted dove	R	LC
			Strptopelia tranquebarica	Red-collared dove	R	LC
			Spilopelia senegalensis	Laughing dove	R	LC
			Treron phoenicopteus	Yellow-footed Green pigeon	R	LC
8.	Gruiformes	Rallidae	Pophyrio porphyrio	Western swamphen	R	LC
			Fulica atra	Common coot	RM	LC
			Gallinula chloropus	Common moorhen	RM	LC
			Amaurornis phoenicurus	White-breasted waterhen	RM	LC
9.	Psittaciformes	Psittaculidae	Psittacula krameri	Rose-ringed parakeet	R	LC
			Psittacula cyanocephala	Plum-headed parakeet	R	LC
10.	Cuculiformes	Cuculidae	Eudynamys scolopaceus	Asian koel	R	LC

			Centropus sinensis	Greater coucal	R	LC
			Cuculus canorus	Common cuckoo	R	LC
			Cacomantis passerinus	Grey-bellied cuckoo	R	LC
11.	Pelecaniformes	Threskiornithidae	Pseudibis papillosa	Red-naped ibis	RM	LC
			Threskiornis melanocephalus	Black-headed ibis	M	NT
		Ardeidae	Egretta garzetta	Little egret	R	LC
			Bubulcus ibis	Cattle egret	R	LC
			Ardea intermedia	Intermediate egret	RM	LC
			Casmerodius albus	Large egret	RM	LC
			Ardeola grayii	Indian pond heron	R	LC
			Nycticorax	Black-crowned night heron	R	LC
			Ardea cinerea	Grey heron	RM	LC
			Ardea purpurea	Purple heron	RM	LC
12.	Suliformes	Phalacrocoracidae	Phalacrocorax carbo	Great cormorant	RM	LC
			Microcarbo niger	Little cormorant	RM	LC
			Phalacrocorax fuscicollis	Indian shag	RM	LC
		Anhingidae	Anhinga melanogaster	Oriental darter	RM	NT
13.	Piciformes	Megalaimidae	Psilopogon haemacephalus	Coppersmith barbet	R	LC
			Megalaima rubricapilla	Crimson throated barbet	R	LC
14.	Bucerotiformes	Bucerotidae	Ocyrceros birostris	Indian grey hornbill	R	LC
15.	Strigiformes	Strigidae	Athene blewitti	Forest owlet	R	EN
			Otus bakkamoena	Indian scope owl	R	LC

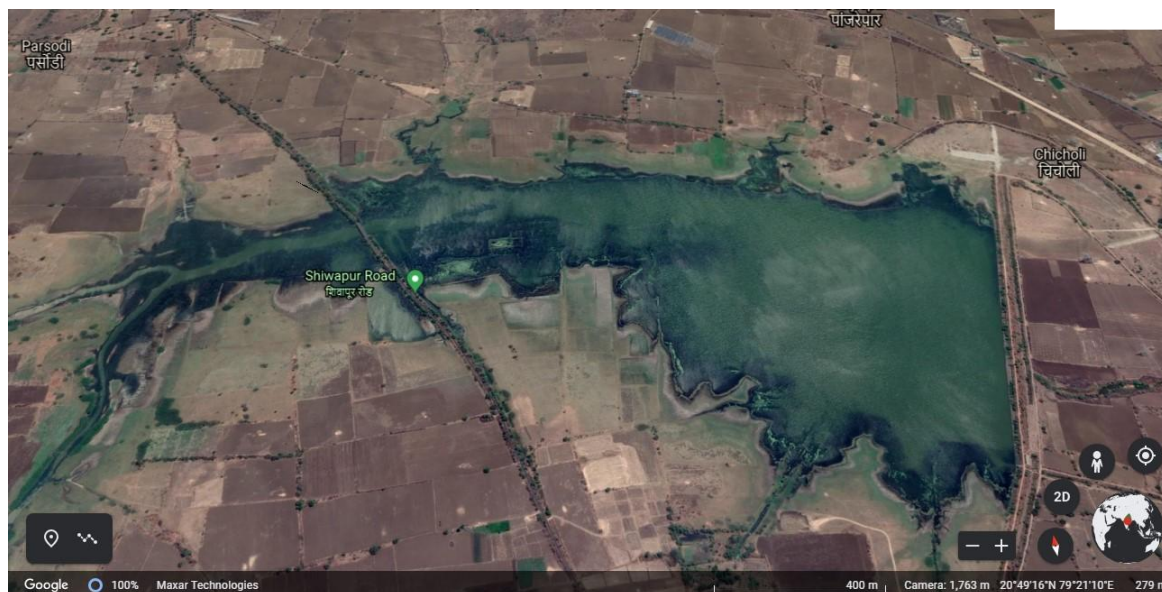


Fig.1 Showing the location of Shivapur Lake (Photograph taken from www.googleearth.com).

Plate :-



Indian robin



Black-winged stilt



purple heron



Yellow footed green pigeon



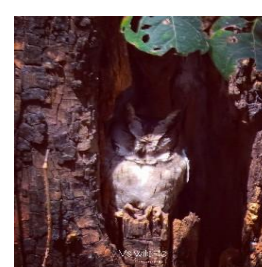
River tern



Rose-ringed parakeet



Indian roller



Indian scops owl



Spotted dove Western swamphen Black-tailed godwit Wood sandpiper



Cattle egret Asian pied starling Woolly-necked stork Great cormorant



Bar-headed goose

Northern shoveler

Ruddy shelduck

Northern pintail



Asian openbill stork

White-throated kingfisher

Black shoulder kite

Crested honey buzzard

All Image source:- Author's collection

Discussion

The total 80 species of birds belonging to 15 orders were recorded from Shivapur lake and its surrounded area. This is the first record in Nagpur district of Maharashtra state which shows quite good avian diversity in lake and surrounded area. This may be due to presence of ample amount of avian food material. Lake exhibits severe qualitative variation in avifauna. Among 15 Orders.

Kulkarni et al., (2006) reported occurrence of 93 species of birds, belonging to 39 families and 16 orders from Shikhachi Wadi, Reservoir, Dist. Nanded, Maharashtra. Kumar and Bohara (2002) recorded 103 species of birds belonging to 43 families and 13 orders Udhwa Lake (Jharkhand). Osmantson (1992) studied on Birds of Pachmari. Similarly, Telkhadde (2008) recorded total 43 species of birds from TATR Chandrapur. The birds observed in habitat were segregated and documented as 11 residential birds, one resident migratory, 2 occasional and 14 Common birds of the area. Chilke Arun (2012) reported avian fauna of Bamanwada lake of Rajura district Chandrapur Maharashtra and found among 9 orders Passeriforms consist of 34.48% of total families our 29 and it includes Alaudidae, Corvidae, Passeridae, Sylviidae, Muscicapidae, Laniidae, Pycnonotidae, Nectariniidae, Saxicolidae and Sturnidae. Birds belonging orders like Anseriformes, Cuculiformes, Psittaciformes and Charadriiformes constitute 3.45% of families each. Passeriformes consist of 36.2% and Anseriformes, Psittaciformes and Charadriiformes consist of 1.12% each of total bird's species. Avifauna belonging to families Passeridae, Ardeidae and Charadriidae constitute the 8.62% each of the total bird species. Anatidae, Sylviidae, Phalacrocoracidae, Anhingidae, Accipitridae, Ciconiidae, Coraciidae, Jacanidae, Otididae, Accipitridae, Psittacidae constitute 1.72% each of the total bird species.

The results show that in comparison to the avian diversity in the adjoining areas, the diversity in Shivapur lake area is significantly better. Major support system for all kind of flora and fauna in general and birds in particular were forests and waterbodies. Waterbodies and seasonal wetlands were among the most productive ecosystem in the Vidarbha and attracts varieties of species and bird. These were under tremendous anthropogenic pressure due to commercial overexploitation and increasing lean period agriculture. Increasing anthropogenic pressure influenced the number of wintering waterbirds, their distribution, foraging behavior and interspecies competition (Chen, et al. 2011; Zhao et al. 2013; Zhou et al. 2010; Alice et al. 2020).

Changes in tropical wetland led to the change in structure and function of the wetland ecosystem which affect the delivery of important ecosystem services, this loss of ecosystem services impacts human welfare (Alice et al. 2020). After enactment of forest right act 2006, there is tremendous increase in encroachments for individual and community forest rights, More recently, conversion of tropical forest to farmland is a main threat to extinction of a bird species from region, especially intact old-growth forest to agricultural and pastoral lands is among the greatest threats to biodiversity including birds (Gibbs et al. 2010; Tilman et al. 2001; Laurance et al. 2014 Hughes et al. 2014 Hughes et al. 2020; Runrangwa et al, 2021).

The findings of present study will help in understanding Shivapur Lake avian diversity and conservation status of lake. Which will help in conservation strategies of Lake.

Conclusion

The findings of the present study will help in understanding local diversity, distribution, conservation status of birds in this landscape which will help in decreasing sustainable conservation strategies by balancing human demand and ecological services provided by the flying denizens.

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Reference

- Ali, S. (1996). The Book of Indian Birds (11th Ed). Bombay Natural History Society, Bombay, 197.
- Alice, N., Icely, J and Christina, S. (2020) Anthropogenic, direct pressures on Coastal Wetlands. *Frontiers in ecology and Evolution*, 8 (144): 1-29.
- Arun, M. Chilke (2012) Avian Diversity and around Bamanwada lake of Rajura, District Chandrapur (Maharashtra) *Annals of Biological Research*, 2012, 3 (4): 2014-2018.
- Chen, J.Y., Zhou, L.Z and Zhou, B. (2011) Seasonal dynamics of wintering waterbirds in two shallow lakes along Yangtze river Anhui Province *Zoo. Res.* 32:549-548.
- Chavhan, P.R. and Dhamani, A.A (2014) Avian Diversity in and around Chaprala wild life sanctuary), dist. Gadchiroli, Maharashtra, India. *International journal of Fauna and Biological Studies*, 1(6):90-95.
- Gibbs, H.K., Ruesch, A.S and Achard, F. (2010) tropical forests were the primary sources of new agricultural land in the 1980 and 1990s. *Proceedings of the national academy of Sciences of the United States of America*, 107(38): 16732-16737.
- Hughes, E.C., Edwards, D.P., Sayer, C.A., et al. (2020) the effects of tropical secondary forest regeneration on avian phylogenetic diversity. *Journal of applied ecology*, 57(7): 13531-13632.
- Ingle, P., Sawdekar, M and Bal, S. (2015) Avifaunal Diversity of Tamkarada Forest, Near Malegaon Tehsil of Washim District, *International journal of Science and Research (IJSR)*, 4(6) : 643-436.
- Kedar, G.T. (2012). Ambazari Lake- A potential stopover point of winter migrant in Central India. *Indian Streams Research Journal*, 2(6) :1-8.
- Kulkarni, A. K., Kanwate V.S. and Deshpande V.D. (2006): Check list of birds of Shikhanchi Wadi, Reservoir, dist. Nanded, Maharashtra. *J. Aqua.Biol.* 21 (1): 80- 85.
- Kumar, A. and Bohra C.J. (2002): Faunistic composition communities structure population dynamics and ethnology of the birds of Udhuwa lake (Sarital pargana) and the strategies for the conservation in new millennium. In: *Ecology and conservation of Lakes, Reservoirs and River* vol. II. (E.D. A Kumar) ABD Publisher, Jaipur: 411-434.

Laurance, W.F. Sayer, J and Cassman, K.J. (2014) Agricultural expansion and its impacts on tropical nature. *Trends in ecology and evolution*, 29(2): 107-116.

Osmatson, B.B (1922): *Birds of Pachmari*. J. Bombay Natural History Society (BNHS), Mumbai. 28: Pp. 453-459.

Paliwal, G.T. (2013). *Observationan aquatic and Terrestrial Biodiversity at Navegaon National Park. District Gondia, Maharashtra*. PhD thesis, R.T.M. Nagpur University.

Richard Grimmett. Carol Inskipp. Tim Inskipp (2014). *Birds of the Indian Subcontinent Second Edition*.

Rurangwa, M.L., Aguirre-gutierrez, J., Matthews, T.J., et al. (2021) Effects of lands-use change on avian taxonomic, functional and phylogenetic diversity in a tropical montane rainforest. *Diversity and Distributions*.

Telkhade P.M. (2008) *Hydrobiology and Biodiversity of Tadoba Lake Chandrapur* Ph. D. thesis submitted to RTM Nagpur University, Nagpur.

Tilman, D., Fargione, J and Wolff, B. (2001) Forecasting agriculturally driven global environmental change. *Science*, 292(5515):281-284.

Wagh, G and Tiwari, P. (2020) on the Diversity and Abundance of Avian Species from Grassland and Wetland Areas of an Industrial Area of Tropical Maharashtra. *Bioscience Biotechnology Research Communication*, 13(2)

Zhao, F.T Zhou, L.Z., and Xu, W.B. (2013) Habitat utilization and resource partitioning of wintering hooded cranes and three goose species at Shengjin Lake. *Chin Birds*, 4:281-290.

Zhou,B., Zhou, L.Z., and Chen, J.Y. (2010) Diurnal time-activity budgets of wintering hooded cranes (*Grus monacha*) in Shengjin Lake, China. *Waterbirds*, 33:110-115