

# Study of Avifaunal Diversity from Shendri Reservoir Gadhinglaj, Dist. Kolhapur (M.S.)

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**Abstract:** A systematic observation of biodiversity of avifauna found in and around Shendri reservoir was done during the year January 2021 to December 2021. Regular visits were arranged to observe the birds from Shendri reservoir over a period of one year. The observation shows that Birds from Shendri reservoir belong to 14 orders, like Anseriformes, Charadriiformes, Coraciiformes, Ciconiiformes, Falconiformes, Galliformes and Piciformes. About 78 species of birds were recorded during the study period which could be the sign of good biodiversity. Naturally this population of birds is directly related with physico-chemical properties of water found in reservoirs as well as aquatic vegetation.

**Keywords:** Birds, Shendri Reservoir, Anseriformes, Ciconiiformes, Falconiformes, etc.

## I. INTRODUCTION

According to the great author Dr. Salim Ali bird has been described as a “feathered biped”. This description cannot be applied to any other animals. These are warm blooded vertebrate animals, which lay eggs. There are about 8,600 living species of birds are known to science as inhabiting the earth today. If subspecies or geographical races are taken in to account the figure would rise to nearly 30,000 (S. Ali, *Revised 13<sup>th</sup> Ed*). India contributes 10% of global avian fauna and has 1,250 bird species (Woodcock 1980), 1,260 (Ali and Ripley 1983). The Indian subcontinent including Sri Lanka, Pakistan, Nepal, Bangladesh, Bhutan and South East Tibet recorded 2094 forms of birds belonging to 1200 species and 400 genera. Among these 417 forms belonging to 318 species and 146 genera were found in the wetlands of India (Ripley 1982). In India there are about 22% birds are completely depending on wetlands (Bhalchandran and Rahmani, 2005). In Maharashtra a checklist of birds was first published by Abdulali (1973) revised in 1981 listing with 540 species and sub-species. Most of the literature on Indian birds including status, distribution, field characteristics and notes on the general ecology were contributed by Baker (1922-1935), Ali, (1969), Ali and Ripley, (1983).

Avian diversity is considered as the one of the most important ecological indicators to evaluate the quality of habitats and any suitable changes in the habitat (Morrison, 1986). As far as birds and humans are considered they co-existed together from thousands of years. Similar to humans, many birds live in urban environments. Though cities only cover 3% of the earth’s land mass, over 50% of humans and 20% of bird species live in cities (Alfano, 2014). The Indian subcontinent represents more than 1350 bird species consisting resident, migratory, rare, native, endangered and endemic birds. These are the key elements of an ecosystem (N Mariappan 2013) and are also called as the bio-indicators of any ecosystem, because they are highly sensitive to any unfavorable environmental change (P. Koskimies 1989). They are considered as indicator for biodiversity and changes in environmental conditions (Furness and Greenwood, 1993). It has been observed that during the breeding season insects is the main food for birds, especially, Lepidopteron larvae (Good bred and Holmes 1996).

The birds of aquatic ecosystem have not only aesthetic role but also having a special position in the food chain. (Kumar *et al.*, 2005) In the ecosystem birds play very important roles such as seed dispersers, pollinators and acts as scavengers. Agricultural avifauna includes all types of birds namely insectivorous, granivorous, piscivorous, carnivorous, and omnivorous. The dual role played by birds in agriculture is very well known (Ali, 1949). Most of the bird species plays a useful role in agriculture by having a potent check on insect and rodents’ pests, whereas granivorous bird species cause economic losses to crops and stored grains. Bird management involves conservation of useful species and control of pests. In addition to this in the agriculture they perform the role of biological pest controller and helps in increasing the productivity (M Dhindsa *et al.*). There are complex food web interactions among



various biotic components of rice ecosystem maintaining a balance in the population of animals through biological control (Schoenly et al. 1998; Catling and Islam, 1999). According to Borad et al. (2000) foraging activity of birds in harvesting rice fields help in reducing the inoculum load of insect pests and weeds by selectively feeding on them. Pande et al. (2003) documented the birds from Western Ghats, Konkan, Goa and Malabar region. It has been observed that the survival and reproductive rate of fish-eating birds like Herons is get reduced due to decrease in population of fishes. (Smith 1990)

Birds are mostly found in the vicinity of fresh water reservoirs. The reservoir provides food, nesting ground and mating ground for the birds. Population of birds is always high where the ecosystem is highly developed. Present study helps to find out the population of birds and productivity of the dam.

II. STUDY AREA

The present investigation was done for a period of one year January 2021 to December 2021. The selected water body is a shallow water dam named as “Shendri Talav” which is about 6 km away from Gadhinglaj city.



The selected dam for the proposed research is named Shendri reservoir which was constructed in the year 1982. The total expenditure spent on this construction was Rs. 41, 44,950=00 at that time.

Table 1: Salient Features of the Shendri Reservoir

SR. NO.	DETAILS OF SHENDRI RESERVOIR	
1	Latitudinal	16 <sup>0</sup> 16'0"
2	Longitudinal	74 <sup>0</sup> 21'0"
3	Catchments area	2.56Sq.km.
4	Annual Rainfalls	933 mm.
5	Total Length of dam	575 meters.
6	Total height of the dam	22.3meter
7	Maximum height of dam	22.3 meter.
8	Command area for irrigation	255 hect.
9	Nature of Lake	Shallow.
10	Full Capacity at F.S.L.	66.5million Cubic Ft.
11	Out flow	40 meters
12	Type of dam	Small earthen dam



**III. MATERIAL AND METHODS**

Birds are flying animals so they cannot live in one place. For the observation of birds, observers have to arrange frequent visits to the study area. With slight disturbance birds can fly away, so for bird observation we must require a good quality of a binocular and a camera. Observer must have patience in his work.

For the study of bird's frequent visits were arranged to the Shendri reservoir during January 2021 to December 2021. The birds were observed periodically between 6.00 to 10.00 in the morning and 4.00 to 7.00 in the evening. The bird species were observed with a field binocular (8\*40). Photographs were taken with the help of Canon EOS 1300 D with 55-250 mm zoom lens. Bird identification is done by Ali and Ripley (1983), Coomber (1991), Ali and Ripley (1996), Ali (1996) and Grimmett et al (1999). The birds were classified on the basis of standard field guides by, Ali (2002). Birds were spotted, counted, and identified by using direct count methods from walking within the study area. As soon as the bird is seen the general characteristics of the bird are noted and birds are identified on the spot with the help of book "The book of Indian birds" By Salim Ali 13<sup>th</sup> edition 2003.

**IV. RESULT AND DISCUSSION**

Following is the checklist of Birds observed during the study period.

**Table 2:** Checklist of Birds of Shendri Reservoir

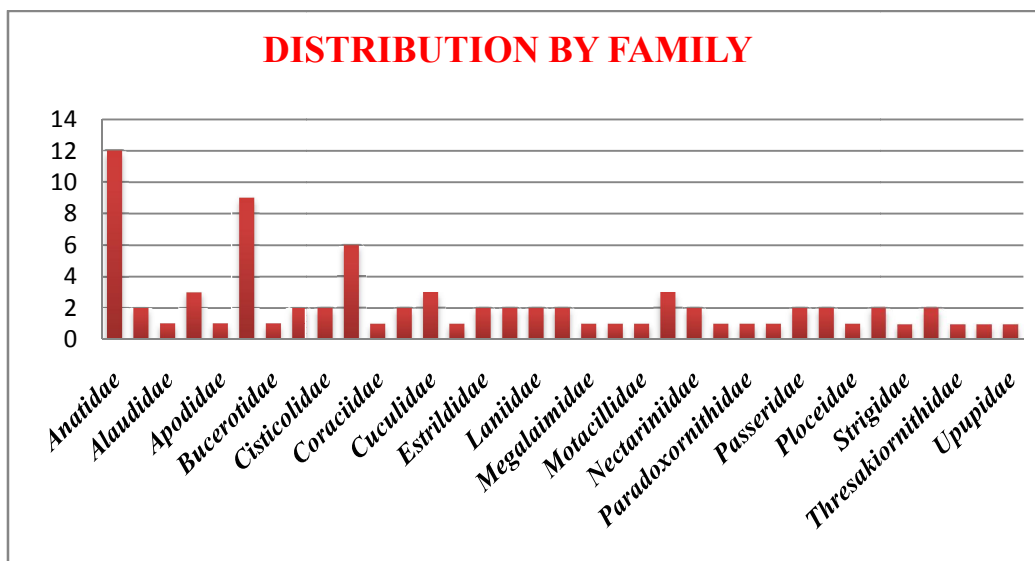
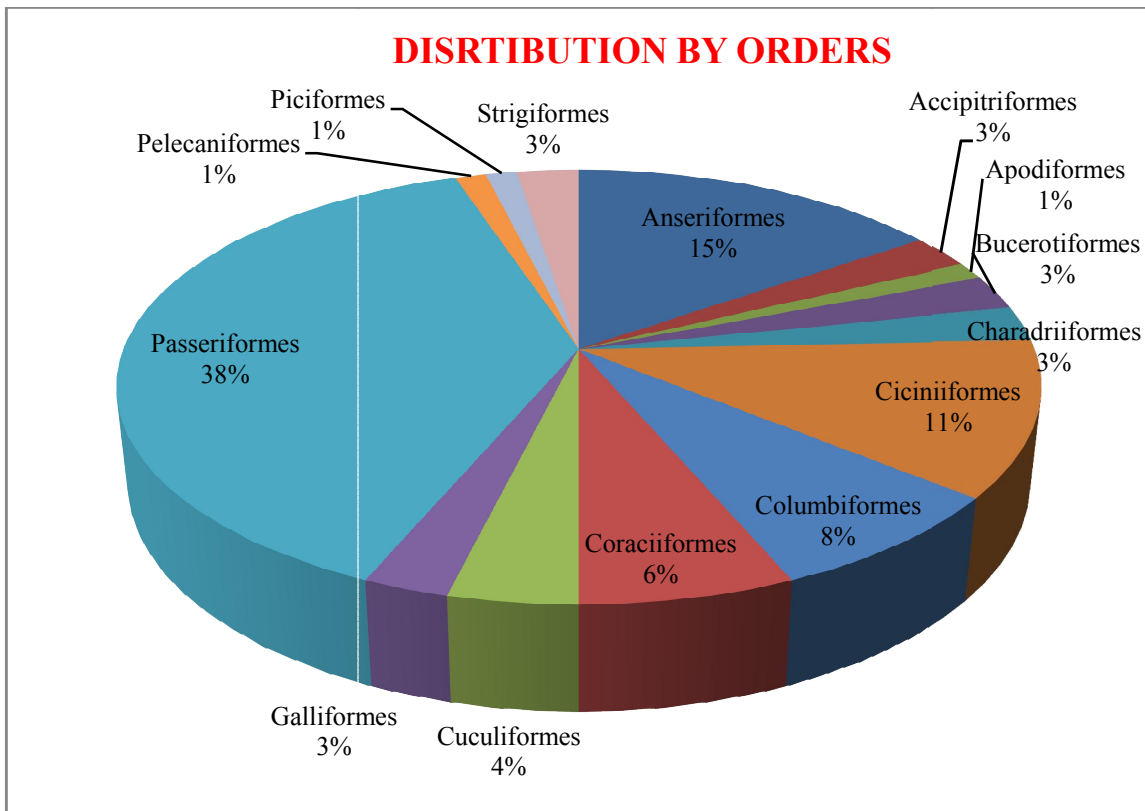
SR.NO.	COMMON NAME	SCIENTIFIC NAME	ORDER	FAMILY
1	Black Kite	<i>Milvus migrans</i>	Accipitriformes	Accipitridae
2	Black-shouldered Kite	<i>Elanus caeruleus</i>	Accipitriformes	Accipitridae
3	Common Pochard	<i>Aythya nettapus</i>	Anseriformes	Anatidae
4	Cotton Pygmy-goose	<i>Coromandelianusyaferina</i>	Anseriformes	Anatidae
5	Eurasian Teal	<i>Anas crecca</i>	Anseriformes	Anatidae
6	Eurasian wigeon	<i>Anas Penelope</i>	Anseriformes	Anatidae
7	Gadwall	<i>Anas strepera</i>	Anseriformes	Anatidae
8	Garganey	<i>Anas querquedula</i>	Anseriformes	Anatidae
9	Knob billed duck	<i>Sarkidiornis melanotos</i>	Anseriformes	Anatidae
10	Lesser whistling duck	<i>Dendrocygna javanica</i>	Anseriformes	Anatidae
11	Northern pintail	<i>Anas acuta</i>	Anseriformes	Anatidae
12	Northern Shoveler	<i>Anas clypeata</i>	Anseriformes	Anatidae
13	Ruddy Shelduck	<i>Tadorna ferruginea</i>	Anseriformes	Anatidae
14	Spot-billed Duck	<i>Anas poecilorhyncha</i>	Anseriformes	Anatidae
15	Little Swift	<i>Apus affinis</i>	Apodiformes	Apodidae
16	Common Hoopoe	<i>Upupa epops</i>	Bucerotiformes	Upupidae
17	Indian gray hornbill	<i>Ocyroceros birostris</i>	Bucerotiformes	Bucerotidae
18	Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriiformes	Charadriidae
19	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>	Charadriiformes	Charadriidae
20	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	Ciconiiformes	Ardeidae
21	Cattle Egret	<i>Bubulcus ibis</i>	Ciconiiformes	Ardeidae
22	Goliath Heron	<i>Ardea goliath</i>	Ciconiiformes	Ardeidae
23	Great egret	<i>Ardea alba</i>	Ciconiiformes	Ardeidae
24	Gray heron	<i>Ardea cinerea</i>	Ciconiiformes	Ardeidae
25	Intermediate heron	<i>Egretta intermedia</i>	Ciconiiformes	Ardeidae
26	Little egret	<i>Egretta garzetta</i>	Ciconiiformes	Ardeidae
27	Purple heron	<i>Ardea purpurea</i>	Ciconiiformes	Ardeidae



28	White billed heron	<i>Ardea insignis</i>	Ciconiiformes	Ardeidae
29	Blue Rock Pigeon	<i>Columba livia.</i>	Columbiformes	Columbidae
30	Laughing Dove	<i>Streptopeliasenegalensis.</i>	Columbiformes	Columbidae
31	Ring Dove	<i>Streptopeliadecaecto</i>	Columbiformes	Columbidae
32	Spotted Dove	<i>Streptopeliasinensis.</i>	Columbiformes	Columbidae
33	White Dove	<i>Streptopelia risoria</i>	Columbiformes	Columbidae
34	Yellow-footedGreen-Pigeon	<i>Treronphoenicopterus</i>	Columbiformes	Columbidae
35	Common Kingfisher	<i>Alcedoatthis</i>	Coraciiformes	Alcedinidae
36	Green Bee-eater	<i>Meropsorientalis</i>	Coraciiformes	Meropidae
37	Indian Roller.	<i>Coraciasbenghalensis.</i>	Coraciiformes	Coraciidae
38	Pied Kingfisher	<i>Cerylerudis</i>	Coraciiformes	Alcedinidae
39	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Coraciiformes	Alcedinidae
40	Asian Koel	<i>Eudynamysscolopacea</i>	Cuculiformes	Cuculidae
41	Common Hawk-cuckoo	<i>Hierococcyxvarius</i>	Cuculiformes	Cuculidae
42	Greater Coucal	<i>Centropussinensis</i>	Cuculiformes	Cuculidae
43	Common Quail	<i>Coturnixcoturnix.</i>	Galliformes	Phasianidae
44	Indian Peafowl	<i>Pavocristatus</i>	Galliformes	Phasianidae
45	'Indian' Baya Weaver	<i>Ploceusphilippinus</i>	Passeriformes	Ploceidae
46	Ashy Prinia	<i>Priniasocialis</i>	Passeriformes	Cisticolidae
47	Ashy-crowned Sparrow-lark	<i>Eremopteryxgriseus.</i>	Passeriformes	Alaudidae
48	Barn Swallow	<i>Hirundorustica.</i>	Passeriformes	Hirundinidae
49	Bay-backed Shrike	<i>Laniusvittatus</i>	Passeriformes	Laniidae
50	Black Drongo	<i>Dicrurusmacrocercus</i>	Passeriformes	Dicuridae
51	Brahminy Starling	<i>Sturnuspagodarum</i>	Passeriformes	Sturnidae
52	Chestnut-shouldered Petronia	<i>Petroniaaxanthocollis</i>	Passeriformes	Passeridae
53	Common Myna	<i>Acridotherestrictis</i>	Passeriformes	Sturnidae
54	Common Tailorbird	<i>Orthotomussutorius</i>	Passeriformes	Cisticolidae
55	Great Tit	<i>Paruscinereus</i>	Passeriformes	Paridae
56	House Crow	<i>Corvussplendens.</i>	Passeriformes	Corvidae
57	House Sparrow	<i>Passer domesticus</i>	Passeriformes	Passeridae
58	Indian Chat	<i>Ceromellafusca</i>	Passeriformes	Muscicapidae
59	Indian Golden Oriole	<i>Oriolusoriolus</i>	Passeriformes	Oriolidae
60	Indian Robin.	<i>Saxicoloidesfulvicatus</i>	Passeriformes	Muscicapidae
61	Jungle Babbler	<i>Turdoidesstriata</i>	Passeriformes	Leiothrichidae
62	Large Grey Babbler	<i>Turdoidesmalcolmi</i>	Passeriformes	Leiothrichidae
63	Large-billed Crow	<i>Corvusculminatus</i>	Passeriformes	Corvidae
64	Long-tailed Shrike	<i>Laniusschach</i>	Passeriformes	Laniidae
65	Oriental Magpie-Robin	<i>Cospsychussauraris</i>	Passeriformes	Muscicapidae
66	Purple Sunbird	<i>Cinnyrisasiaticus</i>	Passeriformes	Nectariniidae
67	Purple-rumped Sunbird	<i>Leptocomazeylonica</i>	Passeriformes	Nectariniidae
68	Red Avadavat	<i>Amandavaamandava</i>	Passeriformes	Estrildidae
69	Red-vented Bulbul.	<i>Pycnonotuscafer</i>	Passeriformes	Pycnonotidae
70	Red-whiskered Bulbul	<i>Pycnonotusjocosus</i>	Passeriformes	Pycnonotidae
71	Scaly-breasted Munia	<i>Lonchurapunctulata</i>	Passeriformes	Estrildidae



72	White-browed Wagtail	<i>Motacillamaderaspatensis</i>	Passeriformes	Motacillidae
73	Wire-tailed Swallow	<i>Hirundosmithii</i>	Passeriformes	Hirundinidae
74	Yellow-eyed Babbler	<i>Chrysommasinensis</i>	Passeriformes	Paradoxornithidae
75	Black Ibis	<i>Pseudibispapillosa</i>	Pelecaniformes	Thresakiornithidae
76	Coppersmith Barbet	<i>Megalaimahaemacephala</i>	Piciformes	Megalaimidae
77	Common Barn Owl	<i>Tyto alba</i>	Strigiformes	Tytonidae
78	Spotted Owlet	<i>Athenebrama</i>	Strigiformes	Strigidae







### V. CONCLUSION

After going through the check list and observations, it is evident that birds from Shendri reservoir belong to the 14 orders, 35 families and 78 species which could be treated as a good state of biodiversity. It is correlated with physicochemical properties of water from Shendri reservoir. It is also correlated with aquatic vegetation and surrounding forest which provides abundant food for the birds. It indicates a good sign of avian biodiversity. It is possible that as time passes there will be an increase in aquatic vegetation in this reservoir which will provide a good opportunity for the migratory birds. One of the interesting observations is seen during the study is that the number of birds seen in the summer season is more as compare to the rainy and winter season. This is because in summer season water level decreases and it becomes shallower and opens more food opportunities to the birds.

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### REFERENCES

- [1] Abdulali, (1973). Checklist of birds of Maharashtra with notes on their status around Bombay (revised in 1981). Publ. Bombay Natural History Society, Mumbai.
- [2] Alfano, Andrea. "Not Just Sparrows and Pigeons: Cities Harbour 20 Percent of World's Bird Species." The Cornell Lab of Ornithology's All About Birds. April 29, 2014.
- [3] Ali S. (2002). The book of Indian birds, 13th edition. Oxford University Press
- [4] Ali, S. (1949): Indian Hill Birds. Oxford University Press, Bombay
- [5] Ali, S. (1969): The Birds of Kerala. Oxford University Press, Bombay.
- [6] Ali, S. and S.D. Ripley. (1983): Handbook of the birds in India and Pakistan. Compact Ed., Oxford University Press, New Delhi.
- [7] Ali, S. and S.D. Ripley. (1983): Handbook of the birds in India and Pakistan. Compact Ed., Oxford University Press, New Delhi.
- [8] Baker, E.C.S. (1922-1935): Fauna of British India. Birds. (8Vols). Taylor and Francis: London.
- [9] Balchandran, S and Rahmani, A (2005) Habitat evolution of Chilka Lake with special reference to birds as bioindicators. Final report (2001-2005). Bombay Natural History Society, Mumbai
- [10] Borad, C.K, Mukherjee, A and B.M. Parasharya. (2000): Conservation of the avian biodiversity in paddy (*Oryza sativa*) crop agro ecosystem. Indian J. Agri.Sci. 70(6):378-381.
- [11] Furness, R.W and Greenwood J.J.D (1993) Birds as monitors of environmental change champan and Hall. London
- [12] Good Bred C.O and R.T Holmes (1996). Factors affecting food providing of nesting black throated blue warblers. The Wilson Journal of Ornithology. 108 (3):467-479.
- [13] Kumar, A., Sati J.P., Tak P.C. and Alfred, J.R.B. (2005). Hand book of Indian wetland birds and their conservation Kolkata, Zoological Survey of India. 472.
- [14] M Dhindsa, H K Saini, "Agricultural Ornithology: an Indian Perspective", Journal of Biosciences, Vol. 19, No.4, pp.391-402, 1994.
- [15] Morrison, M. L. (1986): Bird populations as indicators of environmental change. In Current Ornithology, Vol. 3 (Eds.) R. J. Johnston, Plenum Publishing Corporation, London.
- [16] N Mariappan, B K Ahamed Kalfan, S Krishnakumar, "Assessment of Bird Population in Different Habitats of Agricultural Ecosystem", International Journal of Scientific eSearch in Environmental Sciences (IJSRES), Vol. 1, Issue.11, pp.306-316, 2013.
- [17] P Koskimies, "Birds as a tool in environmental monitoring", Annales Zoologici Fennici, Vol. 26, pp.153-166, 1989.
- [18] Pande, S. A., Tambe, S., Francis, M. C. and Sant, N. 2003. Birds of Western Ghats, Kokan and Malabar (Including Birds of Goa). 1st edn. Mumbai: Bombay Natural History Society, Oxford University Press.



- [19] Ripley, S.D. (1982): A synopsis of the birds of India and Pakistan. Bombay Natural History Society. Oxford University Press, Bombay.
- [20] Schoenly, K; T.W. New; Rei Chardt; W. Dowling; N.G. Green field S.M. and K.S. Fischer. (1998): Biological diversity of rice landscapes. In: Sustainability of rice in the global food system. IRRI Manila. Philippines 255 – 299.
- [21] Smith, R.L. (1990): Ecology and field biology. 4th edition. Harper Collins College Publishers, New York.
- [22] Woodcock, M. (1980) Collins Hand guide to the Birds of Indian subcontinent. 2nd edition. Collins. London.