

Avifauna of Zambre Reservoir, Chandgad, Dist-Kolhapur (Maharashtra)

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Abstract: *The main objective of this study work was to assess the present status of avian diversity at Zambre dam and forest. Frequent visits were made to dam site and surrounding area of forest and regular observation of biodiversity of avifauna was done from Zambre reservoir Chandgad tahsil. Dist-Kolhapur during October-2020 to February.2021. The observation shows that Birds from Zambre reservoir and forest represents ten orders, like, Anseriformes, Ciconiiformes, Charadriiformes, Falconiformes, Gruiformes, Coraciiformes, Coraciiformes, Piciformes, Galliformes, Ciconiiformes. About 50 species were recorded during study period which could reveal that avian diversity is good. Naturally this can be correlated with physico-chemical properties of water and aquatic vegetation found in Zambre reservoir Chandgad. However, the study area particularly dam site is disturbed due to human activities. More studies are required to make a complete list of available bird species in the study area.*

I. INTRODUCTION

The Avifaunal diversity is the important factor of the biodiversity and ecosystem. Bird population plays an important role in normal functioning of ecosystem. Birds are good bio-indicators in terms of pollinators and scavengers. Avian fauna also play crucial environmental roles in forest, aquatic, grassland and cropland ecosystems. Such as pollination, seed dispersal, and pest control. In addition to above, there is positive role of birds in nutrient cycling and soil formation. Many species are of economic importance, as they are pest of crop, sources of food and provide fertilizer. Birds like vultures, kite, hawks, and crows are of great sanitary value, as they feed up on the dead bodies and decaying organic substances. A large number of birds of diverse families and species are responsible for cross fertilization of flowers. Birds figure prominently in all aspects of human culture from religion to poetry to popular music. About 120–130 species have become extinct as a result of human activity since the 17th century, and hundreds more before then. Currently about 1,200 species of birds are threatened with extinction by human activities, though efforts are underway to protect them. There are several reports on avifauna checklist from Maharashtra. To mention few Prasad (2003) reported 450 birds from Western Maharashtra, Pachlore and Chandrashekar (2011) documented 97 bird species from Amarawati, Narwade and Fartade (2011) recorded 165 bird species from Osmanabad.

About 9000 living species of birds are known at present 25 to 30 avian orders are recognized depending on the taxonomist. According to Wetmore (1960) these 34 orders, 27 orders of living birds of which two have recently become extinct, & 7 orders of fossil birds. These are endothermic vertebrate animals, which lay eggs. There are around 10,000 living species, making them the most numerous tetrapod vertebrates. Birds range in size from the 5 cm Bee Hummingbird to the 2.7 m Ostrich. The fossil record indicates that birds evolved from dinosaurs during the Jurassic period, around 150–200 million years.

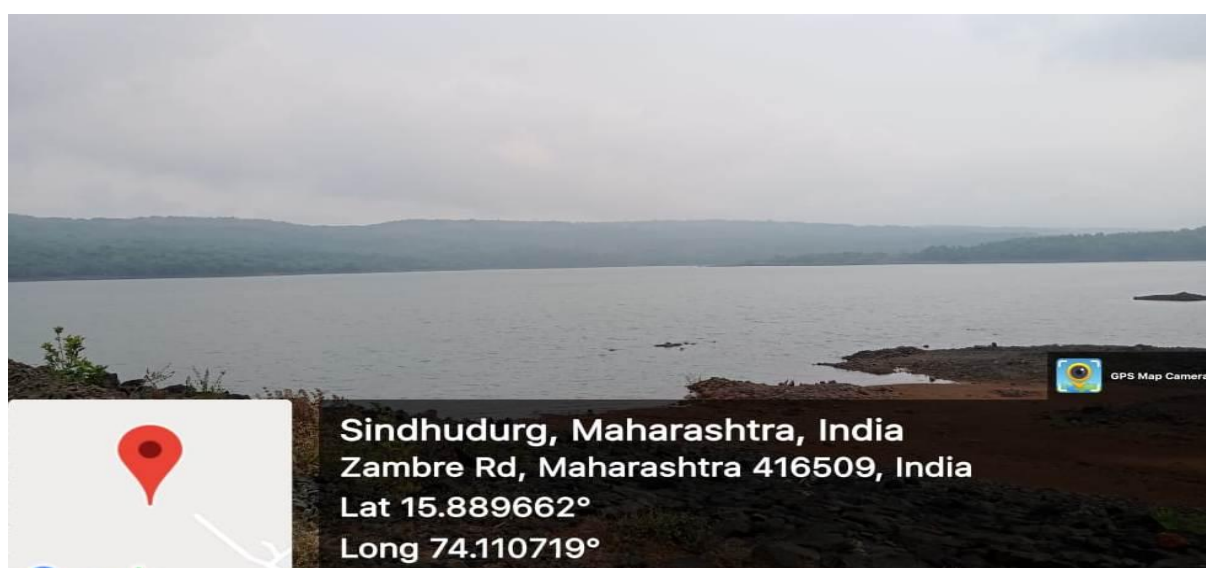
They also richly contribute to the recolonization and restoration of disturbed ecosystem as per (Sekericioglu et al. 2004; Sekericioglu 2006). Birds are involved in nutrient cycling that transfer energy in ecosystems that are crucial for maintaining ecosystem function and resilience. In a way it directly impacts human health, economy, food production as well as millions of other species. Therefore, it is to know about local bird diversity and its ecology (Ndang'ang'a et al. 2013).

Anthropogenic activity also affects the bird diversity like land use patterns, over exploitation of water bodies and forest resources and forest fire, over grazing, overuse of pesticides and herbicides which disturb the natural habitats of birds. Most deforestation has happened in biodiversity-rich tropical forests (Asner et al. 2009; Hansen et al. 2013; Harney 2015). These areas are expected to face even more pressures in the future, largely due to agricultural expansion and increased industrialization (Tilman and Fargione 2001; Dobrovolski et al. 2011; Wagh and Tiwari 2020). Present study

was undertaken to assess and reports the bird diversity at water reservoir and its surrounding forest area, of Jambre dam of Chandhad tahsil Dist. Kolhapur.

II. STUDY AREA

The study area selected for the observation of birds was medium fresh water body namely Zambre Reservoir and its surrounding forest. Which is located 15 km. south to the Chandgad, Dist. Kolhapur, belongs to southern Maharashtra, India. This area is situated in boundary of Kolhapur and Sindhudurg district, in Western Ghat. The geographical location is $15^{\circ}88'96''$ N Latitude and $74^{\circ}11'7''$ E Longitude.



III. MATERIALS AND METHODS

Several types of birds are found everywhere in the surrounding. Generally, birds are the flying animals. They can't remain at one place for more time. So, for this purpose frequent visits were arranged to the various places where birds may find. Bird observations were carried out during the period of October-2020 to February, 2021. Frequent visits were made to the dam and forest area for observing birds in morning and evening. Close observations are made by using binocular having lens (8 X 40). Line transects & Point transects count methods are applied for documentation of avian fauna. Some photographs, audio video recording is also taken for exact identification in morning and evening period. Immediately characters of birds were noted, like size colour, sound etc. As soon as bird was seen peculiar character was noted down. The identification of birds was done by using book "Indian Birds" by Salim Ali (2001), Birds of Indian subcontinent by Richard Grimmett et al 2011.

IV. RESULT AND DISCUSSION

In lockdown during pandemic of Covid period the positive impact of bird's diversity could be observed. The birds which are strictly observed in forest but in lockdown they come in villages near to human dwelling without any fear.

Birds are warm blooded vertebrates and able to survive in greater climatic variations than the other fauna. Zambre Reservoir is located in place where surrounded by dense forest and also cultivated crop in all seasons. There are variety of floral species, they include naturally occurring herbs, shrubs trees. Many birds are reported associated with different plants for their nesting and for residence.

The total 75 species, including aquatic, terrestrial and arboreal bird species, belonging 10 orders and 15 families were recorded during October-2020 to February, 2021. Dam and surrounding forest area showed good avian diversity. The birds recorded in this area are visitors or permanent dwelling. Majorities are resident and some are winter visitor.

Table 1: Checklist of Birds observed during study period

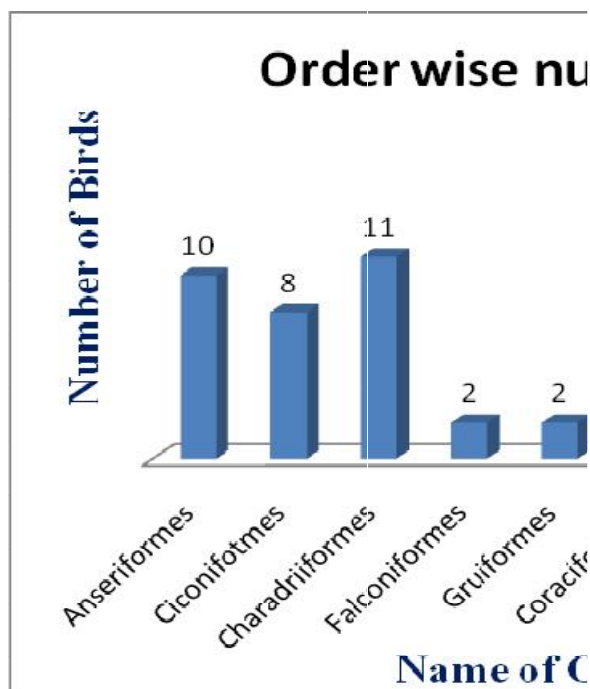
Sr. No.	Order	Family	Scientific name	Common Name
1.	Anseriformes	Anatidae	1) <i>Tadorna ferruginea</i> 2) <i>Sarkidiornis melanotos</i> 3) <i>Dendrocygna javanica</i> 4) <i>Anas acuta</i> 5) <i>Anas crecca</i> 6) <i>Anas poecilorhyncha</i> 7) <i>Anas strepera</i> 8) <i>Anas Penelope</i> 9) <i>Anas clypeata</i> 10) <i>Anas querquedula</i> 11) <i>Aythya Nettapus</i> 12) <i>Coromandelianusya ferina</i>	Ruddy Shelduck Knob-billed Duck Lesser Whistling-Duck Northern Pintail Eurasian Teal Spot-billed Duck Gadwall Eurasian Wigeon Northern Shoveler Garganey Common Pochard Cotton Pygmy-goose
2.	Ciconiiformes	Ardeidae	1) <i>Ardea insignis</i> 2) <i>Ardea goliath</i> 3) <i>Ardea cinerea</i> 4) <i>Ardea alba</i> 5) <i>Ardea purpurea</i> 6) <i>Egretta intermedia</i> 7) <i>Egretta garzetta</i> 8) <i>Bubulcus ibis</i> 9) <i>Nycticorax nycticorax</i> 10) <i>Ardeola grayii</i>	White-bellied Heron Goliath Heron Grey Heron Great Egret Purple Heron Intermediate Egret Little Egret Cattle Egret Black-crowned Night-Heron Indian Pond-Heron
3.	Charadriiformes	Charadriidae Scolopacidae	1) <i>Vanellus indicus</i> 2) <i>Vanellus malabaricus</i> 3) <i>Charadrius dubius</i> 1) <i>Calidris minuta</i> 2) <i>Limosa limosa</i> 3) <i>Gallinago gallinago</i> 4) <i>Actitis hypoleucos</i>	Red-wattled Lapwing Yellow-wattled Lapwing Little Ringed Plover Little Stint Black-tailed Godwit Common Snipe Common Sandpiper
4.	Falconiformes	Accipitridae Rallidae	1) <i>Haliastur Indus</i> 2) <i>Circus aeruginosus</i>	Brahminy Kite Western Marsh Harrier
5.	Gruiformes	Gruidae	1) <i>Amaurornis phoenicurus</i> 2) <i>Grus grus</i>	White breasted Waterhen Common Crane
6.	Coraciiformes	Alcedinidae	1) <i>Alcedo atthis</i> 2) <i>Ceryle lugubris</i> 3) <i>Halcyon smyrnensis</i>	Common Kingfisher Crested Kingfisher White-throated Kingfisher
7.	Coraciiformes	Bucerotidae	1) <i>Ocyrceros birostris</i> 2) <i>Anorrhinus austeni</i>	Indian Grey Hornbill Brown Hornbill
8.	Piciformes	Capitonidae Picidae Meropidae	1) <i>Megalaima virens</i> 2) <i>Megalaima asiatica</i> 1) <i>Dendrocopos nanus</i> 2) <i>Dendrocopos mahrattensis</i> 1) <i>Merops orientalis</i> 2) <i>Merops philippinus</i>	Great Barbet Blue-throated Barbet Brown-capped Woodpecker Yellow-crowned Woodpecker Green Bee-eater Blue-tailed Bee-eater
9.	Galliformes	Phasianidae	1) <i>Pavo cristatus</i>	Indian Peafowl



			2) <i>Gallus gallus</i>	Red Junglefowl
10.	Ciconiiformes	Threskiornithidae	1) <i>Pseudibis papillosa</i>	Black Ibis
		Ciconiidae	1) <i>Ephippiorhynchus asiaticus</i>	Black-necked Stork
			2) <i>Mycteria leucocephala</i> 3) <i>Ciconia ciconia</i>	Painted Stork White Stork

Table 2: Order wise List

Sr.No.	Name of order	Number
1	Anseriformes	10
2	Ciconiiformes	8
3	Charadriiformes	11
4	Falconiformes	2
5	Gruiformes	2
6	Coraciiformes	5
7	Piciformes	6
8	Galliformes	2
9	Passeriformes	2
10	Columbiformes	2
	Total	50



Graph 1: Showing Order-wise Number of Birds Recorded

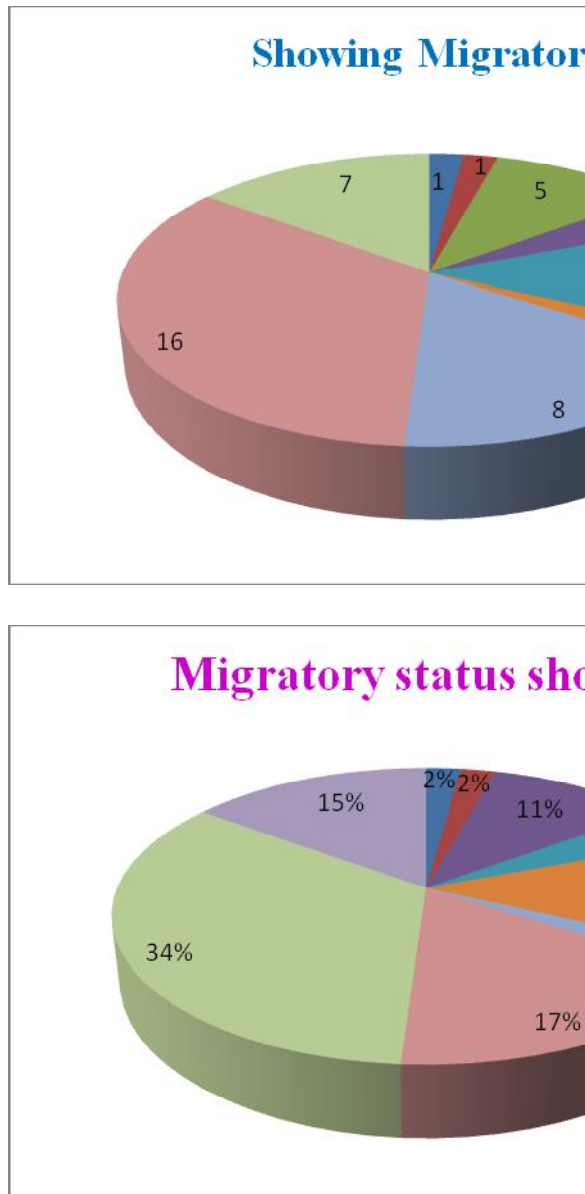


Figure1: Showing Migratory Status

Here,

- MW = Migrant within subcontinent & winter visitor-1
- RMW = Resident, Migrant within subcontinent & winter visitor-1
- RW = Resident winter visitor-5
- RA = Resident & winter visitor -2
- RM = Resident, Migrant within subcontinent -6
- BW = Breeder winter visitor-1
- W = winter visitor-8
- R = Resident -16
- E = Endemic to Indian subcontinent-7

V. CONCLUSION

After going through the check list and observations, it is evident that birds from Zambre Reservoir of Chandgad tahsil belongs to the ten orders, fifteen families and fifty species which could be treated as a good state of biodiversity. It is correlated with physicochemical properties of water from Zambre Reservoir Chandgad. It is also correlated with aquatic vegetation and surrounding forest which provides abundant food for the birds. However, the results indicate that there are some anthropogenic activities and mining and its associated activities have some impacts on the diversity and distribution of birds in Zambre Reservoir of Chandgad tahsil. Deforestation is due to the increase agricultural land shifting cultivation which also affect avifaunal diversity and habitat destruction

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