



TITLE-AVIFAUNAL DIVERSITY AT AND AROUND NALGANGANGA DAM OF BULDANA DISTRICT, MAHARASHTRA, INDIA

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INTRODUCTION

Birds are excellent model organisms for understanding key issues in ecology, animal behavior, evolutionary biology and conservation Unni K S, (2002). Birds, nearly everyone enjoys the beauty of their forms and coloring, the vivacity of their movement, the buoyancy of their flight and sweetness of their songs. Diversity of avifauna is one of the most important ecological indicators to evaluate the quality of habitats. Now a day, avifaunal diversity has been decreasing due to the destruction of natural habitats and human disturbances. Random destruction of natural habitats by cutting nesting trees and foraging plants for commercial use of woods and lands are the main factor responsible for narrow down in avian foraging habitat and their nesting sites. Thus, many species of birds may be forced to inhabit in the urban areas and constrain them to breed there. Birds are among the nature's most beautiful animal and undoubtedly, bird habitat particularly within the lake areas seems to be strongly influenced by climatic changes and immediate human impact. Freshwater lakes one of the important types of wetlands, play a vital role in the economics of their respective regions, especially with reference to agriculture, fishing, livestock maintenance and drinking water facilities of the adjacent areas.

Avifaunal diversity forms an important component of natural ecosystem (Manjunath and Joshi, 2012). Birds are good bio-indicators in terms of potential pollinators and scavengers. Population of birds is a sensitive indicator of pollution in both terrestrial and aquatic ecosystems. In Maharashtra state, Kasambe and Wadkar (2003) recorded 78 species from Pohara- Malkhed forest reservoir of Amravati district. Bhandarkar and Paliwal (2014) recorded 52 species from Shrungarbandh lake in Gondia district. The Nalganga Dam is the principal local freshwater bodies situated east side and the area of this dam is spread over 1500 Km³ and 21 km away from the Malkapur city, located in the Buldana district of Maharashtra state, India. It is situated at 20°43'34"N longitude and 76°10'49"E latitude. Total capacity of Nalganga Dam is 70540 km³. The water of this dam is primarily used for agriculture, water supply and fishing activities.

MATERIALS AND METHODS

The present work was carried out from Oct. 2019 to Sep. 2021. The observation was carried out by using a field binocular (7x25x magnification) during the morning (6 to 10 AM) and in the evening (4 to 7

PM) and Internet Birds database and other relevant literature (Ali 2002; Grimmett et. al. 2011) were used for identification of birds. Identification of species was done with the help of standard literature of Woodcock (1980), Ali & Ripley, (1995); Grimmet et al., (1999). Regular field visits were made throughout this period. Bird specimens were not collected, and the study was based on only photographs, video and audio recordings.

Diversity and density of Birds were recorded by weekly visit for two year to Nalganga dam and an average of 4 weeks was accounted for a month. This dam was demarcated into 2 sites, one is in east and other is in west for getting proper light for observation in morning and evening hours. Water fowl population was enumerated by point count and direct counting methods [Inac S]. Binoculars and cameras were used for bird watching and to photograph them. Waterfowl population was observed and documented every week in the morning and evening hours. The relative abundance of birds was estimated and their monthly fluctuation was recorded and is classified on the basis of “**The Book of Indian birds**” [Colin J].

OBSERVATION

The Habitat or occurrences of the bird is categorized as residential (R), Migrant (M) and Residential Migrant (RM) Abundance of birds i. e. status of birds was categorized as Least Concern (LC), Near Threaten (NT) and Non assessment (NA).

Table 1: Check list of Birds in Nalganga Dam

| Sr No | Order | Family | Scientific name | Common name | Habitat | Status |
|-------|------------------|------------------|---------------------------------|--------------------------------|---------|--------|
| 1 | Accipitriformes | Accipitridae | <i>Accipiter badius</i> | Shikara | R | LC |
| 2 | Accipitriformes | Accipitridae | <i>Buteo buteo</i> | Common buzzard | R | LC |
| 3 | Accipitriformes | Accipitridae | <i>Butastur teesa</i> | White eyed buzzard | R | NT |
| 4 | Ansariformes | Anatidae | <i>Nettapus coromandelianus</i> | Cotton Teal | R | LC |
| 5 | Ansariformes | Anatidae | <i>Anas poecilorhyncha</i> | Spot Bill Duck | R | LC |
| 6 | Ansariformes | Anatidae | <i>Anas pundulata</i> | Yellow billed Duck | R | LC |
| 7 | Ansariformes | Anatidae | <i>Anser indicus</i> | Bar headed Goose | RM | LC |
| 8 | Apodiformes | Apodiidae | <i>Apus affinis</i> | House swift | R | LC |
| 9 | Bucerotiformes | Bucerotidae | <i>Ocyrceros birostris</i> | Indian grey hornbill | R | LC |
| 10 | Bucerotiformes | Bucerotidae | <i>Ocyrceros griseus</i> | Malbar Grey Hornbill | M | LC |
| 11 | Bucerotiformes | Upupidae | <i>Upupa epops</i> | Common Hoopoe | R | LC |
| 12 | Caprimulgiformes | Podargidae | <i>Batrachostomus moniliger</i> | Frog mouth Owl | M | LC |
| 13 | Charadriiformes | Jacaniidae | <i>Metopidius indicus</i> | Bronze-winged Jacana | R | LC |
| 14 | Charadriiformes | Scolopacidae | <i>Actitishypoleucos</i> | Common Sandpiper | RM | LC |
| 15 | Charadriiformes | Recurvirostridae | <i>Himantopus himantopus</i> | Black Winged Stilt | R | LC |
| 16 | Charadriiformes | Charadriidae | <i>Vanellus indicus</i> | Red wattled Lapwing | R | LC |
| 17 | Charadriiformes | Glareolidae | <i>Glareola lacteal</i> | Small pratincole (Grey wadars) | R | LC |
| 18 | Ciconiformes | Ardeidae | <i>Ardeola grayii</i> | Indian Pond Heron | R | LC |
| 19 | Ciconiformes | Ardeidae | <i>Ardea cinerea</i> | Grey Heron | R | LC |
| 20 | Ciconiformes | Ardeidae | <i>Casmero diusalbus</i> | Egret | R | LC |
| 21 | Ciconiformes | Ardeidae | <i>Ardea alba</i> | Great Egret | M | LC |
| 22 | Columbiformes | Columbidae | <i>Treron phoenicoptera</i> | Yellow-footed green pigeon | R | LC |
| 23 | Columbiformes | Columbidae | <i>Columba livia</i> | Rock Pigeon | R | LC |
| 24 | Columbiformes | Columbidae | <i>Streptopelia chinensis</i> | Spotted Dove | R | LC |

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|----|------------------|-------------------|----------------------------------|-----------------------------|----|----|
| 25 | Coraciformis | Alcedinidae | <i>Alcido benghanlensis</i> | Common Kingfisher | R | LC |
| 26 | Coraciformis | Halcyonidae | <i>Halcyon smyrnensis</i> | White kingfisher | R | LC |
| 27 | Coraciformes | Coraciidae | <i>Coracias benghalensis</i> | Indian Roller | R | LC |
| 28 | Coraciformes | Meropidae | <i>Meropusapiaster</i> | Bee Eater | R | LC |
| 29 | Coraciformes | Halcyonidae | <i>Halcyon smyrnensis</i> | White kingfisher | R | LC |
| 30 | Cuculiformes | Cuculidae | <i>Cacomantis flabelliformis</i> | Fan tailed Cuckoo | RM | LC |
| 31 | Cuculiformes | Cuculidae | <i>Cuculus canorus</i> | Common Cuckoo | R | LC |
| 32 | Falconiformis | Falconidae | <i>Falco amurensis</i> | Amur Falcon | M | LC |
| 33 | Galliformes | Phasianidae | <i>Ortygornis pandiceiranus</i> | Gray Francolin | R | LC |
| 34 | Galliformes | Phasianidae | <i>Francolinus pictus</i> | Painted Francolin | R | LC |
| 35 | Galliformes | Phasianidae | <i>Francolinus francolinus</i> | Black Flancolin | R | LC |
| 36 | Gruiformes | Rallidae | <i>Amaurornis phoenicurus</i> | White-breasted water hen | R | LC |
| 37 | Gruiformes | Rallidae | <i>Gallinula chloropus</i> | Common Moor Hen | R | LC |
| 38 | Gruiformes | Rallidae | <i>Fulica atra</i> | Common Coot | R | LC |
| 39 | Passeriformes | Monarchidae | <i>Terpsiphone paradise</i> | Indian Paradise Fly catcher | R | NT |
| 40 | Passeriformes | Pycnonotidae | <i>Pycnonotus cafer</i> | Red Vented Bulbul | R | LC |
| 41 | Passeriformes | Corvidae | <i>Corvus splendens</i> | Corvus-Crow | R | NA |
| 42 | Passeriformes | Corvidae | <i>Corvus culminates</i> | Large billed Jungle Crow | R | NA |
| 43 | Passeriformes | Dicrudidae | <i>Dicrurus macrocercus</i> | Black Drango | R | LC |
| 44 | Passeriformes | Passeridae | <i>Passer domesticus</i> | House Sparrow | R | LC |
| 45 | Passeriformes | Motacillidae | <i>Motacilla alba</i> | Wagtail | R | LC |
| 46 | Passeriformes | Leiothrichidae | <i>Argya strita</i> | Jungle Babbler | R | LC |
| 47 | Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax fusicollis</i> | Indian Cormorant | M | LC |
| 48 | Pelecaniformes | Phalacrocoracidae | <i>Microcarbo niger</i> | Little cormorant | RM | LC |
| 49 | Pelecaniformes | Threskiornithidae | <i>Pseudibis papillosa</i> | Red napped Ibis | R | LC |
| 50 | Psittaciformes | Psittaculidae | <i>Psittacula krameri</i> | Rose Ringed Parakeet | R | LC |
| 51 | Psittaciformes | Psittaculidae | <i>Psittacula cyanocephala</i> | Plum headed Parakeet | R | LC |
| 52 | Psittaciformes | Psittaculidae | <i>Psittacula eupatria</i> | Alexandrine Parakeet | R | LC |
| 53 | Psittaciformes | Psittaculidae | <i>Psittacula roseate</i> | Blossom headed Parakeet | R | LC |
| 54 | Podicipediformes | Podicipedidae | <i>Tachybaptus ruficollis</i> | Little Grebe | M | LC |
| 55 | Trogoniformes | Trogonidae | <i>Harpactes fasciatus</i> | Malabar Trogon | M | NT |

RESULT & DISCUSSION

In Present study gives information about 55 Birds belonging to 18 different orders. Out of 55 birds 45 birds are residential birds and 10 birds are migratory visited this Dam during winter season and from these migratory birds 04 birds becomes residential due to abundant availability of food, shelter and other environment such as *Anser indicus*(Bar headed Goose), *Actitis hypoleucos* (Common Sandpiper), *Cacomantisfla belliformis* (Fan tailed Cuckoo) and *Microcarbo niger*, (*Cormorant*). Results of this study are valuable, as they serve as baseline information in the development of measures and strategies that will safeguard the wetland from destruction. Likewise, results of this study will also enable us to be aware of the

ecological condition of our environment, as birds are important ecological indicators responsive to changes in the environment.

Open billed Stork and Black-tailed Godwit were seen during May 2000 when most of the wetlands shrink excessively due to loss water and expose snails. These birds preferred molluscs for food and were found particularly on the Sawanga Reservoir of this region. Thus the availability of ample food of choice might have made passage migrants like Black-tailed Godwit and Whiskered Tern to stay for some time on this reservoir while migrating from north to south or back, Kasambe and Wadatar (2007). Kurhade(2010) reported 208 species of Birds in Jaikwadi reservoirs near Ahmadnagar(M S), Narwade and Farkade(2011) recorded 165 species of Birds of Osmanabad District(M S), Rasal and Chavan (2011) reported 61 species of birds in local ecosystem of Aurangabad (M S), Kukade et al.(2011) recorded 68 birds species of Chhatri Lake of Amravati district(M S),Harney, et al,(2013) recorded 37 species of birds from Kanhala pond of Bhadravati, District Chandrapur(M S), Joshi and Shrivastava (2012) reported 64 species of Birds in Tawa reservoir of Hoshangabad district (M P).During the investigation 55 Birds species belonging to 13 different orders and 37 families were recorded from Ghotnimbhalake by Harney N V (2014).Avifaunal diversity of the Khairbandhalake confirm that the site is suitable habitat for the residential and migratory birds Puri S D and Virani (2016).Shelke A D (2019a, 2019b) studied Bird Diversity in and around the Hatale Dam, TalukaChaligaon, District of Jalgaon, as well as, local and peripheral ecosystems of Chaligaon in Jalgaon Maharashtra, He reported total 45 and 73 bird species respectively from these two localities. Total 75 species, including water and land bird species, belonging to 11 orders and 31 families were recorded during November 2018 to February 2019, Shelke A D (2020).Rohankar and Kothare (2020) reported 17 species of birds of 16 families and observed that out of those 17species 16 are least concern and 1 is near threatenedbelongs to the family threskiornithidae i.e. *Threskiornis melanocephalus* (White Ibis).

CONCLUSION

There were 55 Species including aquatic and terrestrial birds belonging to 18 orders & 34 families.Among the recorded species of birds,8 species belongs to order Passeriformes, 5 species belongs to Charadriiformes & Coraciiformes 4 species belongs to Ciconiiformes, Psittaciformes, Columbiformes & Ansariiformes 3 species belongs to Acipitriiformes, Pelecaniformes, Gruiformes and Galliformes, 2 species belongs to Cuculiformes & Buceriformes and one species belongs to Podicipediformes, Apodiformes, Falconiformes, Capriformes and Trogoniformes each. Out of 55 Birds investigated in the present study 51 are Least Concern, 02 are Near Threaten and 02 are Non assessment Birds.

The birds present at and around the Nalganga Dam are affected by many factors such as organicpollution, distribution by human activities and lack of maintenance of dam, yet the avifauna of Nalganga Dam is diverse. Keeping in view the varied avifauna recorded, steps should be taken to do proper maintenance and beautification of the Dam. In this field work attempt has been made to record avian diversity at and around Nalganga Dam during Oct 2019 to Sep 2021.

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