

Diversity and Conservation Status of Wetland Birds in Nagzira Navegaon Tiger Corridor, Eastern Maharashtra, India

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Abstract— The forest corridor in between Nagzira Wildlife Sanctuary and Navegaon National Park situated in Gondia district of Maharashtra State provides an excellent habitat for birds in the form of water bodies with marshy plant growth, terrestrial platforms having thick as well as scattered trees and bushy vegetation. The wild animals widely use this corridor for their movement between Nagzira and Navegaon. The wetlands situated in the corridor fulfill the water requirement of wild animals during their movement and lean season. The Nagzira Navegaon (NN) corridor has number of wetlands and other pocket of water bodies distributed in the whole study area, but water bodies have been decreasing continuously in the corridor. The study revealed that a total of 87 species of birds belonging to 38 families from Putli (N 21.093127° and E 80.284214°), Naktya (N 21.162392° and E 80.339668°), Umarzari (N 21.171802° and E 80.255765°), Rengepar (N 21.117159° and E 80.209932°) and Chulbandh Lake (N 21.223740° and E 80.214837°) in the NN corridor. The analysis of data on residential status revealed that out of 87 bird species, 69 bird species were resident, 13 bird species were winter migrant, 3 bird species were local migrant and summer migrant with 2 bird species. Majority of the birds i.e. 95.4% of the total number of species were classed as least concern followed by 3.4 % were near threatened and 2.3% vulnerable as per the IUCN red list status. This study documents diversity and conservation status of wetland birds of the most important forest connectivity in Central Indian landscape. The study reveals that, if the present ecological condition of these wetlands degradation continue, it would greatly affect the wetland avian diversity in the region. Awareness programmes regarding the importance of wetland avifauna to the wetland dependent community, management practitioners and amateur birdwatchers will help the conservation of wetland biodiversity in this landscape.

Keywords— Nagzira Wildlife Sanctuary, Navegaon National Park, Corridor, Wetland Avifauna, Diversity, Conservation

I. INTRODUCTION

Minimizing the loss of biodiversity is one of the key objectives in planning for sustainable development (Pramod *et al.*, 1997). Wetlands are vital feeding and nesting grounds for waders, feeding areas for fish eating birds and wintering ground for migratory birds. Wetlands are complex ecosystems that occupy about six percent of the earth surface and considered to be one of the most productive ecosystems on earth. Birds are the most apparent and familiar wildlife in wetlands (Kumaran *et al.*, 2012). Wetlands are known as “biological supermarkets” because of the extensive food chains and rich biodiversity that they support, providing unique habitats for a wide range of flora and fauna (Mitsch and Gosselink, 2000). They also important habitats for water birds, which use them for feeding, roosting,

nesting and rearing young (Weller, 1999 and Stewart, 2001). And also used by water birds for breeding, feeding or shelter during their breeding cycles. In recent years, planning for environmentally sound and biodiversity-friendly development has been a major priority.

The environmental impact assessment procedures currently prevalent in India provide no scope for public participants (Gadgil *et al.*, 1993). For broad – based developmental planning, we need inputs and instruments additional to networks of protected areas and one time environment impact assessment (Pramod *et al.*, 1997). Monitoring of wetlands birds provides valuable information on the ecological health and status of wetlands and can be vital tool for developing awareness regarding the conservation value of the wetlands. The importance of the local landscapes for conservation of avifauna can only be understood by knowing the structure of the bird community of that region (Reginald *et al.*, 2007).

In the Gondia district of Maharashtra State, the corridor between Nagzira Wildlife Sanctuary and Navegaon National Park offers good habitat for avifauna in the form of water bodies with marshy plant growth, terrestrial platforms with thick as well as scattered trees, and bushy vegetation (Bahuguna *et al.*, 2010). Animals in the wild frequently travel between Nagzira and Navegaon via this route. The wetlands located in the corridor provide wild animals throughout their migration during the dry season with the water they need. The corridor has a number of wetlands and other pockets of water bodies distributed throughout the entire study area, but the area covered by wetlands in the corridor has decreased steadily over time. From 182.76 square kilometres in 1990 to 137.62 square kilometres in 1999 to 104.35 square kilometres in 2009 (Yadav *et al.*, 2012). This is one of the region, the present study was carried out to monitor some major wetlands in Nagzira Navegaon corridor. There are 71 non- perennial and 7 perennial lakes in the corridor among which one perennial lake from each block was selected for the study. Lakes viz. Putli, Naktya, Umarzari, Rengepar and Chulbandh Lake ranging from the Mundipar Murdoli to Navegaon block between Nagzira WLS and Navegaon NP were selected for the present investigation. Avian species as an indicator of wetland biodiversity richness are being chosen for the study with an objective to study on diversity, and conservation status of wetland avifauna in the NN corridor. The present study is also being selected due to the importance of the corridor between the two protected area’s especially the globally threatened tiger and the important role

of these wetlands play for the wildlife using the corridor for passage between the protected areas. The objective of the study was to give recent data regarding diversity of wetland avifauna,

aiming to contribute a baseline data for the future study on status of birds in NN corridor.

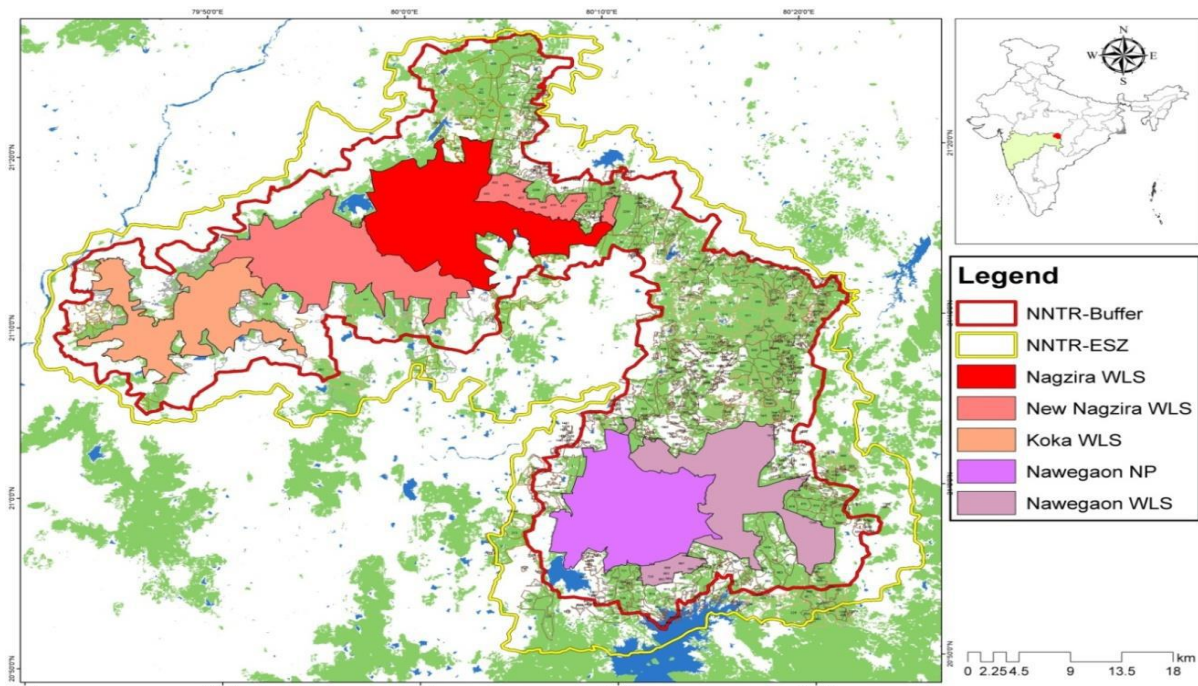


Fig. 1. Protected area map of Nagzira Navegaon Tiger Reserve (Map Source- Forest Department, Govt. of Maharashtra)

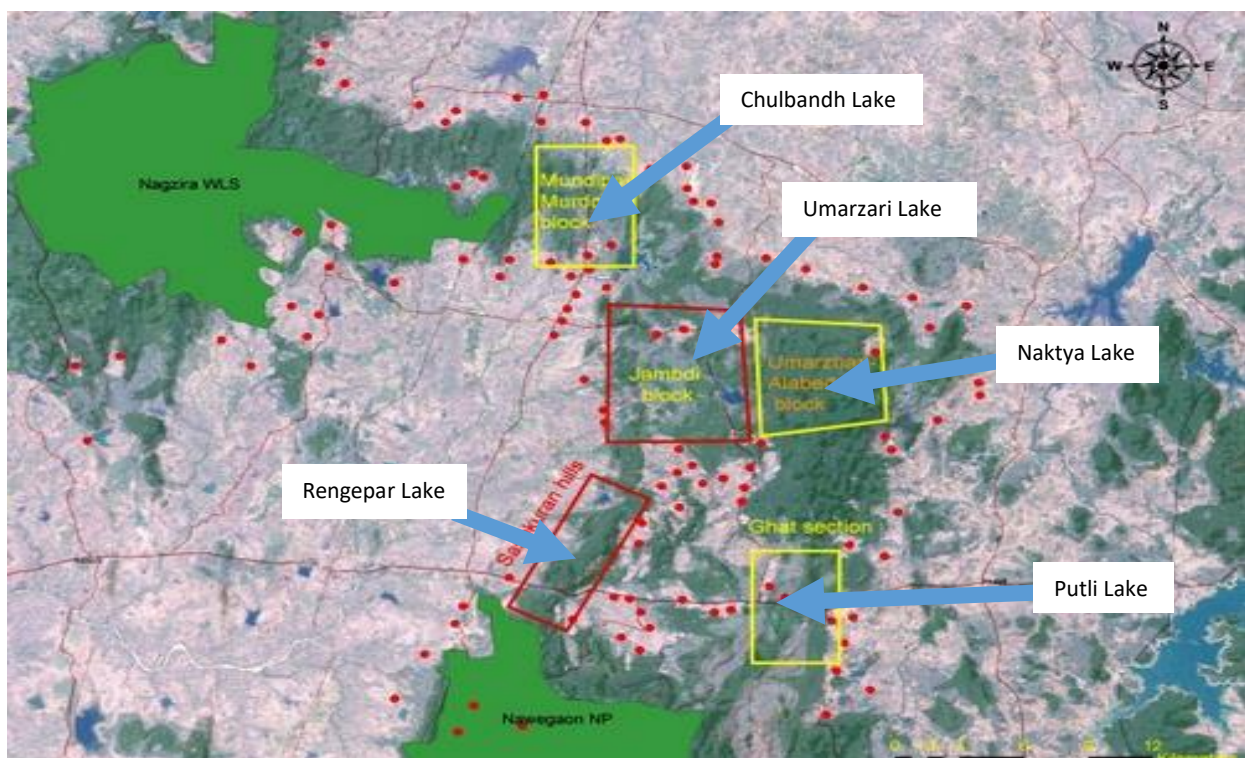


Fig. 2. Study sites map of NN Corridor

II. METHODS

The study of birds was carried out from October 2014 to September 2021. Regular survey was done by point count

method. A total of 15 point counts were selected that covered 3 sites of each lake viz. Putli, Naktya, Umarzari, Rengepar and Chulbandh Lake. The bird watching was done during the peak hour of their activity from 6:00 am to 10:00 am and from 4:00

pm to 5:00 pm with aid of 7 X 35 Nikon and 10 X 50 binoculars. Opportunistic data were nonetheless also gathered at other times of the day. During survey the photographs of birds were taken with the Nikon D 5200 SLR Camera. Identification of birds was done with the help of standard text of Ali and Ripley (2007) and Grimmett *et al.*, (2011). The residential status of the birds was recorded during survey as per Vijay (2014) and Kalpana *et al.*, (2012). The term resident species (R) denoted those species found throughout the year in the study area, winter migrant (WM) – these species migrates from the northern hemisphere and are found in the study area during winter months, summer migrant (SM) – these species migrate from different continents and are found during summer months in the study area. The International Union for the Conservation of Nature (IUCN) status was also used to define global status of birds as least concern (LC), vulnerable (VU) and near threatened (NT). During the survey data were recorded and analyzed the abundance as per MacKinnon and Phillipps (1993) the term very common (VC) denoted were visible more than 10 times, common (C) – sighted from 7 to 9 times, uncommon (UC) – sighted from 3 to 6 times, rare (Ra) – sighted once or twice.

III. OBSERVATION AND RESULTS

A total of 87 species of birds belonging to 38 families were observed during the study period from selected Lake in the NN

corridor. Among the 38 families, Anatidae (13 bird species) dominated over remaining families followed by 6 species of Ardeidae and Accipitridae, 3 species each of Rallidae, Alcedinidae, Charadriidae, Columbidae, Dicruridae, Phasianidae and Phalacrocoracidae, 2 species each of Alaudidae, Ciconiidae, Cisticolidae, Corvidae, Estrilidae, Jacanidae, Psittacidae, Threskiornithidae, Sturnidae and Cuculidae and a single species was reported from Recurvirostridae, Muscicapidae, Passeridae, Pycnonotidae, Aegithinidae, Picidae, Oriolidae, Meropidae, Motacilidae, Upupidae, Bucerotidae, Coraciidae, Timalidae, Hirundinidae, Megalaimidae, Zosteropidae and Podicipedidae. The analysis of data on residential status revealed that out of 87 bird species, 69 bird species were resident, 13 bird species were winter migrant, 3 bird species were local migrant and summer migrant with 2 bird species. Majority of the birds i.e. 95.4% of the total number of species were classed as Least Concern (LC) followed by 3.4 % were near threatened and 2.3% were vulnerable as per the IUCN red list status. In the present investigation, the number of bird species recorded from each wetland were vary from 75 to 41 species such as 54 bird species in Putli Lake, 41 bird species in Naktya Lake, 63 bird species in Umarzari Lake, 79 bird species in Rengepar Lake and 75 bird species in Chulbandh Lake.

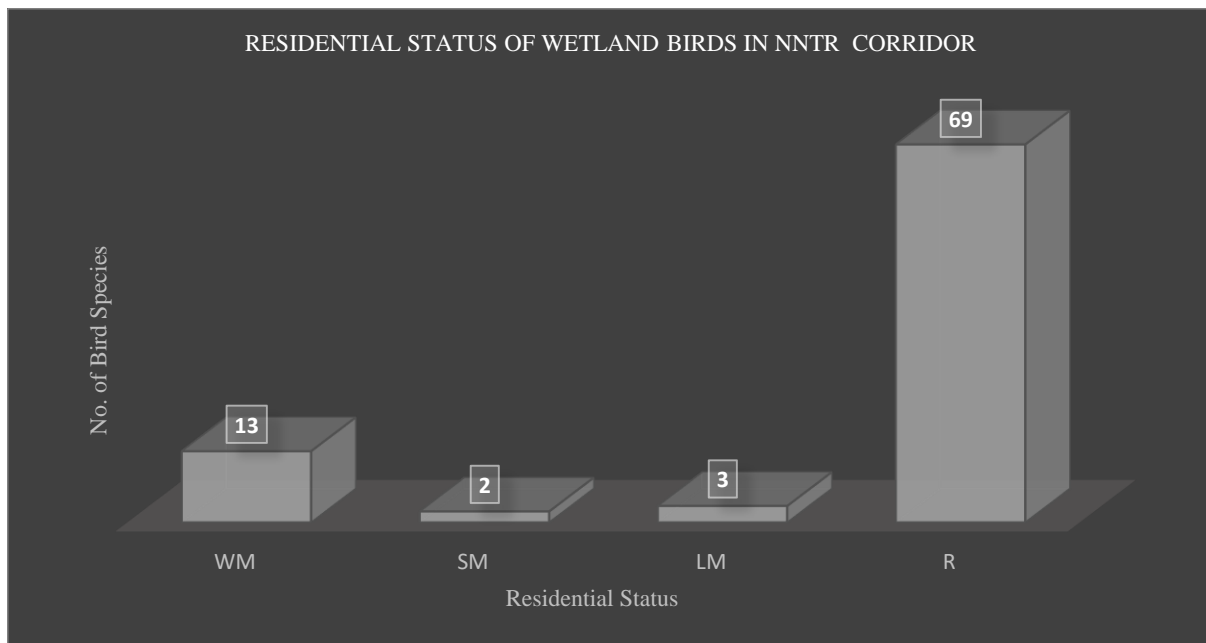
TABLE I. Diversity and status of wetland birds in NNTR corridor

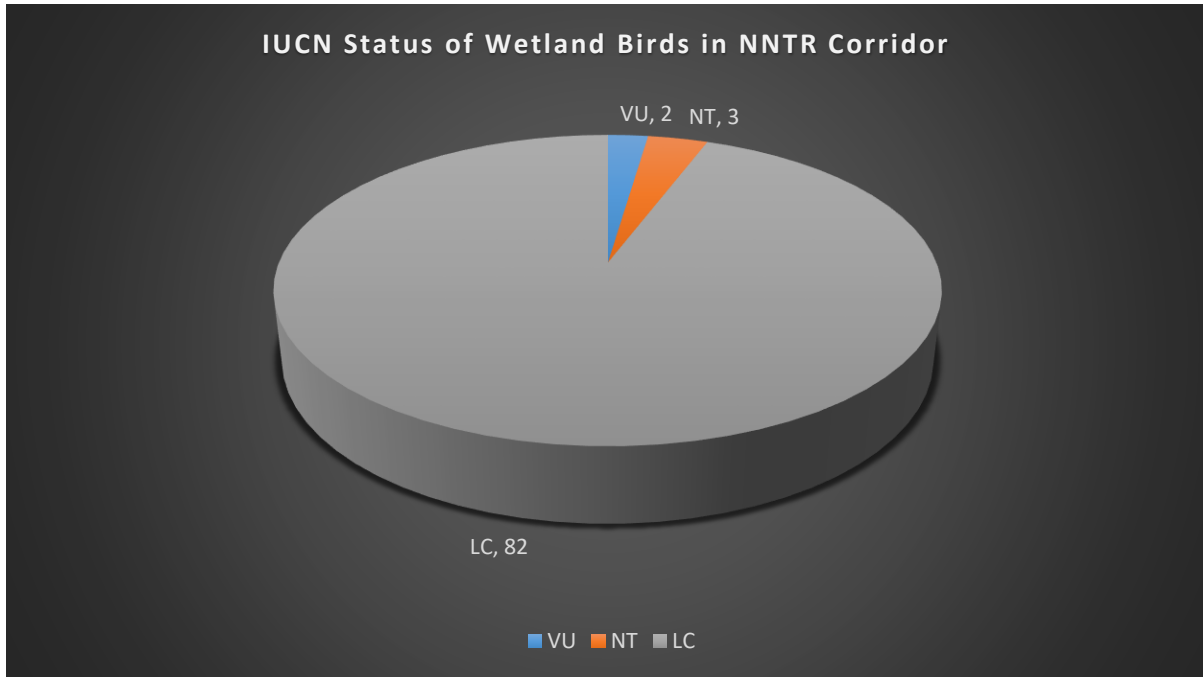
| Sr. No. | Family | Common Name | Scientific Name | Residential Status | IUCN Status | Abundance | | | | |
|---------|--------------|---------------------------|---------------------------------|--------------------|-------------|------------|-------------|---------------|---------------|----------------|
| | | | | | | Putli Lake | Naktya Lake | Umarzari Lake | Rengepar Lake | Chulbandh Lake |
| 1 | Accipitridae | Black-winged Kite | <i>Elanus caeruleus</i> | R | LC | C | Ra | C | Ra | C |
| 2 | Accipitridae | Brahminy Kite | <i>Haliastur indus</i> | R | LC | Ab | Ab | Ab | Ra | Ab |
| 3 | Accipitridae | Oriental Honey-buzzard | <i>Pernis ptilorhynchus</i> | R | LC | Ab | Ab | Ab | Ra | C |
| 4 | Accipitridae | Shikra | <i>Accipiter badius</i> | R | LC | Ra | Ra | Ra | Ra | Ra |
| 5 | Accipitridae | White-eyed Buzzard | <i>Butastur teesa</i> | R | LC | Ab | Ab | Ra | Ab | Ra |
| 6 | Accipitridae | Crested Hawk Eagle | <i>Nisaetus cirrhatus</i> | R | LC | Ab | Ra | Ab | Ra | Ab |
| 7 | Aegithinidae | Common Iora | <i>Aegithina tiphia</i> | R | LC | Ab | Ab | Ra | Ab | Ab |
| 8 | Alaudidae | Rufous-tailed Lark | <i>Ammomanes phoenicura</i> | R | LC | Ab | Ab | Ab | Ra | Ab |
| 9 | Alaudidae | Ashy-crowned Sprorow Lark | <i>Eremopterix griseus</i> | R | LC | Ab | Ab | Ab | Ra | Ab |
| 10 | Alcedinidae | Common Kingfisher | <i>Alcedo atthis</i> | R | LC | VC | C | VC | VC | VC |
| 11 | Alcedinidae | Pied Kingfisher | <i>Ceryle rudis</i> | R | LC | Ab | Ab | C | C | VC |
| 12 | Alcedinidae | White-throated Kingfisher | <i>Halcyon smymensis</i> | R | LC | VC | UC | C | VC | VC |
| 13 | Anatidae | Bar-headed Goose | <i>Anser indicus</i> | WM | LC | Ab | Ab | Ab | Ra | Ab |
| 14 | Anatidae | Common Pochard | <i>Aythya ferina</i> | WM | VU | Ab | Ab | Ab | UC | Ab |
| 15 | Anatidae | Common Teal | <i>Anas crecca</i> | WM | LC | Ra | Ab | Ra | UC | UC |
| 16 | Anatidae | Cotton Pygmy-goose | <i>Nettapus coromandelianus</i> | WM | LC | Ra | Ra | UC | UC | UC |
| 17 | Anatidae | Eurasian Wigeon | <i>Anas penelope</i> | WM | LC | Ab | Ab | Ab | Ra | Ab |
| 18 | Anatidae | Gadwall | <i>Anas strepera</i> | WM | LC | Ab | Ab | Ab | UC | UC |
| 19 | Anatidae | Garganey | <i>Anas querquedula</i> | WM | LC | Ab | Ab | Ab | Ab | UC |
| 20 | Anatidae | Grey Lag Goose | <i>Anser anser</i> | WM | LC | Ab | Ab | Ab | Ra | Ab |
| 21 | Anatidae | Lesser Whistling Duck | <i>Dendrocygna javanica</i> | WM | LC | Ab | Ab | Ab | UC | UC |

| | | | | | | | | | | |
|----|--------------|------------------------------|-------------------------------------|----|----|----|----|----|----|----|
| 22 | Anatidae | Northern Pintail | <i>Anas acuta</i> | WM | LC | Ab | Ab | Ab | UC | UC |
| 23 | Anatidae | Northern Shoveller | <i>Anas clypeata</i> | WM | LC | Ab | Ab | Ab | Ra | Ab |
| 24 | Anatidae | Red Crested Pochard | <i>Netta rufina</i> | WM | LC | Ra | Ab | UC | UC | UC |
| 25 | Anatidae | Tufted Duck | <i>Aythya fuligula</i> | WM | LC | Ra | Ab | Ra | UC | UC |
| 26 | Ardeidae | Cattle Egret | <i>Bubulcus ibis</i> | R | LC | VC | VC | VC | VC | VC |
| 27 | Ardeidae | Indian Pond Heron | <i>Ardeola grayii</i> | R | LC | VC | C | VC | VC | VC |
| 28 | Ardeidae | Large Egret | <i>Egretta alba</i> | R | LC | Ab | Ab | VC | VC | VC |
| 29 | Ardeidae | Little Egret | <i>Egretta garzetta</i> | R | LC | VC | VC | VC | VC | VC |
| 30 | Ardeidae | Median Egret | <i>Egretta intermedia</i> | R | LC | VC | VC | VC | VC | VC |
| 31 | Ardeidae | Purple Heron | <i>Ardea purpurea</i> | R | LC | Ab | Ab | Ab | C | C |
| 32 | Bucerotidae | Indian Grey Hornbill | <i>Ocyrceros birostris</i> | R | LC | UC | UC | UC | UC | UC |
| 33 | Charadriidae | Red Wattled Lapwing | <i>Vanellus indicus</i> | R | LC | VC | VC | VC | VC | VC |
| 34 | Charadriidae | Yellow-wattled Lapwing | <i>Vanellus malabaricus</i> | R | LC | Ra | Ra | Ra | c | Ra |
| 35 | Charadriidae | Little Ringed Plover | <i>Charadrius dubius</i> | R | LC | C | Ra | C | C | C |
| 36 | Ciconiidae | Asian Openbill | <i>Anastomus oscitans</i> | R | LC | C | C | VC | VC | VC |
| 37 | Ciconiidae | Woolly Necked Stork | <i>Ciconia episcopus</i> | SM | VU | Ab | Ab | Ab | Ab | Ra |
| 38 | Cisticolidae | Jungle Prinia | <i>Prinia sylvatica</i> | R | LC | Ab | Ab | Ab | Ra | Ra |
| 39 | Cisticolidae | Common Tailorbird | <i>Orthotomus sutorius</i> | R | LC | Ra | Ab | Ra | Ra | Ra |
| 40 | Columbidae | Spotted Dove | <i>Stigmatopelia chinensis</i> | R | LC | VC | C | VC | VC | VC |
| 41 | Columbidae | Common Pigeon | <i>Columba livia</i> | R | LC | C | Ab | Ra | C | C |
| 42 | Columbidae | Yellow-footed Green Pigeon | <i>Treron phoenicopterus</i> | R | LC | Ra | Ra | C | Ra | Ra |
| 43 | Coraciidae | Indian Roller | <i>Coracias benghalensis</i> | R | LC | C | C | C | VC | VC |
| 44 | Corvidae | House Crow | <i>Corvus splendens</i> | R | LC | Ab | Ab | Ab | C | VC |
| 45 | Corvidae | Rufous Treepie | <i>Dendrocitta vagabunda</i> | R | LC | Ra | Ra | Ra | Ra | Ra |
| 46 | Cuculidae | Asian Koel | <i>Eudynamis scolopaceus</i> | R | LC | UC | UC | UC | UC | UC |
| 47 | Cuculidae | Southern Coucal | <i>Centropus (sinensis) parroti</i> | R | LC | VC | C | VC | VC | VC |
| 48 | Dicruridae | Black Drongo | <i>Dicrurus macrocercus</i> | R | LC | VC | VC | VC | VC | VC |
| 49 | Dicruridae | Greater Racket-tailed Drongo | <i>Dicrurus paradiseus</i> | R | LC | C | Ab | Ab | Ab | UC |
| 50 | Dicruridae | White-bellied Drongo | <i>Dicrurus caerulescens</i> | R | LC | Ra | Ra | Ra | C | Ra |
| 51 | Estrildidae | Red Avadavat | <i>Amandava amandava</i> | R | LC | C | UC | C | C | C |
| 52 | Estrildidae | Black-headed Munia | <i>Lonchura malacca</i> | R | LC | Ra | Ra | Ra | C | Ra |
| 53 | Hirundinidae | Wire-tailed Swallow | <i>Hirundo smithii</i> | R | LC | Ab | Ab | Ra | Ra | Ra |
| 54 | Jacaniidae | Bronzed Winged Jacana | <i>Metopidius indicus</i> | R | LC | Ab | Ab | Ab | VC | Ab |
| 55 | Jacaniidae | Pheasant Tailed Jacana | <i>Hydrophasianus chirurgus</i> | R | LC | Ab | Ab | Ab | VC | Ab |
| 56 | Megalaimidae | Coppersmith Barbet | <i>Megalaima haemacephala</i> | R | LC | C | Ra | C | C | Ra |
| 57 | Meropidae | Little Green Bee-eater | <i>Merops orientalis</i> | R | LC | VC | VC | VC | VC | VC |
| 58 | Monarchidae | Asian Paradise-flycatcher | <i>Terpsiphone paradisi</i> | R | LC | Ra | Ab | Ra | Ra | Ra |
| 59 | Monarchidae | Black-naped Monarch | <i>Hypothymis azurea</i> | R | LC | Ab | Ab | Ra | Ab | Ab |
| 60 | Motacillidae | Paddy-field Pipit | <i>Anthus rufulus</i> | R | LC | C | C | C | C | C |
| 61 | Muscicapidae | Oriental Magpie Robin | <i>Copsychus saularis</i> | R | LC | C | Ab | UC | C | C |
| 62 | Oriolidae | Eurasian Golden Oriole | <i>Oriolus oriolus</i> | R | LC | Ab | Ab | Ra | C | C |
| 63 | Passeridae | House Sparrow | <i>Passer domesticus</i> | R | LC | C | Ab | Ab | C | C |

| | | | | | | | | | | |
|----|-------------------|-------------------------------|------------------------------------|----|----|----|----|----|----|----|
| 64 | Phalacrocoracidae | Great Cormorant | <i>Phalacrocorax carbo</i> | R | LC | C | VC | VC | VC | VC |
| 65 | Phalacrocoracidae | Indian Shag | <i>Phalacrocorax fuscicollis</i> | R | LC | Ab | Ab | VC | Ab | VC |
| 66 | Phalacrocoracidae | Little Cormorant | <i>Phalacrocorax niger</i> | R | LC | C | C | VC | VC | VC |
| 67 | Phasianidae | Grey Junglefowl | <i>Gallus sonneratii</i> | R | LC | Ab | Ab | Ra | Ra | C |
| 68 | Phasianidae | Red Junglefowl | <i>Gallus gallus</i> | R | LC | Ab | Ab | C | Ra | Ra |
| 69 | Phasianidae | Indian Peafowl | <i>Pavo cristatus</i> | R | LC | Ab | Ab | Ra | Ab | Ra |
| 70 | Picidae | Lesser Goldenback | <i>Dinopium benghalense</i> | R | LC | UC | UC | C | C | C |
| 71 | Picidae | Brown-capped Pygmy Woodpecker | <i>Dendrocopos nanus</i> | R | LC | Ra | Ab | Ra | Ra | Ra |
| 72 | Podicipedidae | Little Grebe | <i>Tachybaptus ruficollis</i> | R | LC | Ab | Ab | UC | UC | C |
| 73 | Psittacidae | Rose Ringed Parakeet | <i>Psittacula krameri</i> | R | LC | C | C | C | UC | C |
| 74 | Psittacidae | Alexandrine Parakeet | <i>Psittacula eupatria</i> | R | NT | Ra | Ra | Ra | Ra | Ra |
| 75 | Psittacidae | Plum-headed Parakeet | <i>Psittacula cyanocephala</i> | R | LC | C | Ab | C | C | C |
| 76 | Pycnonotidae | Red Vented Bulbul | <i>Pycnonotus cafer</i> | R | LC | C | C | VC | C | VC |
| 77 | Rallidae | Eurasian Coot | <i>Fulica atra</i> | LM | LC | Ra | UC | C | C | VC |
| 78 | Rallidae | Purple Swampphen | <i>Porphyrio porphyrio</i> | R | LC | Ab | Ab | Ab | C | C |
| 79 | Rallidae | White Breasted Waterhen | <i>Amauromis phoenicurus</i> | R | LC | C | UC | Ab | VC | VC |
| 80 | Recurvirostridae | Black Winged Stilt | <i>Himantopus himantopus</i> | R | LC | UC | UC | UC | Ra | Ra |
| 81 | Sturnidae | Common Myna | <i>Acridotheres tristis</i> | R | LC | C | C | C | VC | C |
| 82 | Sturnidae | Rosy Starling | <i>Pastor roseus</i> | SM | LC | Ra | Ra | Ra | Ra | Ra |
| 83 | Threskiornithidae | Black Headed Ibis | <i>Threskiornis melanocephalus</i> | LM | NT | VC | Ab | VC | VC | VC |
| 84 | Threskiornithidae | Red-naped Ibis | <i>Pseudibis papillosa</i> | LM | NT | VC | Ab | VC | VC | VC |
| 85 | Timalidae | Jungle Babbler | <i>Turdoides striata</i> | R | LC | VC | C | VC | VC | VC |
| 86 | Upupidae | Common Hoopoe | <i>Upupa epops</i> | R | LC | UC | UC | C | Ab | C |
| 87 | Zosteropidae | Oriental White Eye | <i>Zosterops palpebrosus</i> | R | LC | Ra | Ab | Ra | Ra | Ra |

The sequence of families follows: : Birds of the South Asia – The Ripley Guide (2005); Residential status: R- Resident, LM- Local Migrant, WM- Winter Migrant, SM- Summer Migrant; IUCN status: LC- Least Concern, VU- Vulnerable and NT- Near Threatened; Abundance: VC- Very Common, C- Common, UC- Uncommon, Ra- Rare, Ab-Absent.





Porphyrio porphyrio



Fulica atra



Amauornis phoenicurus



Hydrophasianus chirurgus



Metopidius indicus

Vanellus indicus

Flock of Anser anser



Anser indicus

Bird Observation underway at Putli

IV. DISCUSSION

The NN corridor is situated in central Indian landscape support a good number of bird diversity with maximum at Rengepar Lake (32.9 ha. area) with 79 bird species and minimum at Naktya Lake (34.6 ha. in size) with 41 bird species variations although the size of lakes were almost same. Every organism maintains specific relation with the environment in which it lives (Kalpana *et al.*, 2012). These relations entail different environmental parameters like temperature, diet requirements etc. (Bologna, 1979). High number of species at Rengepar Lake shows that this ecosystem fulfills most of these requirements and is therefore an important refuge for birds. Differences in bird species composition between wetlands may be related to the level of disturbance, the availability of resources, such as food, and particular bird breeding behaviours. Changes in the condition of the habitat, disturbance, and resource access determine the makeup of the bird species in a particular environment (Lee *et al.*, 2005). Bird survival is endangered by the destruction of plant coverings, nesting and breeding habitats, and feeding grounds (Mengesha *et al.*, 2011). In cases of severe wetland degradation and losses, wetland specific bird species can become extinct locally (Tariku *et al.*, 2011). In the present study total 87 different bird species were recorded in 5 Lakes viz. Putli, Naktya, Umarzari, Rengepar and Chulbandh Lakes of NN corridor. According to Chitampalli (1976), there are 209 bird species at Navegaon Lake, compared to 412 species throughout Vidarbha (Pimpalpure, 2009). Kalpana *et al.*, (2012) reported 59 bird

species at Sringar Lake, near Navegaon National Park, Maharashtra. Pandotra *et al.*, (2014) reported 57 bird species at Gharana wetland reserve, Jammu and Kashmir. Nilesh *et al.*, (2015) recorded 52 bird species in Khajri Lake, district Gondia, Maharashtra. Joseph *et al.*, (2007) reported 116 bird species at Singanallur Lake, Coimbatore, Tamilnadu. Among the 38 families, Anatidae (13 bird species) dominated over remaining families followed by 6 species of Ardeidae and Accipitridae, 3 species each of Rallidae, Alcedinidae, Charadriidae, Columbidae, Dicruridae, Phasianidae and Phalacrocoracidae, 2 species each of Alaudidae, Ciconiidae, Cisticolidae, Corvidae, Estrilidae, Jacanidae, Psittacidae, Threskiornithidae, Sturnidae and Cuculidae and a single species was reported from Recurvirostridae, Muscicapidae, Passeridae, Pycnonotidae, Aegithinidae, Picidae, Oriolidae, Meropidae, Motacilidae, Upupidae, Bucerotidae, Coraciidae, Timalidae, Hirundinidae, Megalaimidae, Zosteropidae and Podicipedidae.

The analysis of data on residential status revealed that out of 87 bird species, 69 bird species were resident, 13 bird species were winter migrant, 3 bird species were local migrant and summer migrant with 2 bird species. Out of all the birds living on earth, approximately one fifth make the annual trip called 'migration' (Dmitriyev, Y. 1984). The regular wintering of several migratory birds such as flocks of Greylag goose (*Anser anser*), Lesser Whistling Duck (*Dendrocygna javanica*), Pintail (*Anas acuta*), Garganey (*Anas querquedula*), Gadwall (*Anas strepera*), Red Crested Pochard (*Netta rufina*) is very significant to the Chulbandh and Rengepar Lake. It was found that there were certain species of birds in the study area that

were classified under different threatened categories by the IUCN. Majority of the birds i.e. 95.4% of the total number of species were classed as Least Concern (LC) followed by 3.4 % were near threatened and 2.3% were vulnerable as per the IUCN red list status. Of these, *Ciconia episcopus* (Woolly Necked Stork), *Aythya ferina* (Common Pochard) were placed in the vulnerable category. *Pseudibis papillosa* (Red-naped Ibis) and *Threskiornis melanocephalus* (Oriental White Ibis) were classified under the near threatened category. Nagzira Navegaon corridor area was not affected by industrial development but those species that were considered to be threatened was affected largely due to degradation of floating and submerged aquatic plants from the lakes and alien species of fish and vegetation in lakes.

V. CONCLUSION

The Nagzira Navegaon corridor connects two most globally important protected area's Kanha and Tadoba which is an important tiger (*Panthera tigris*) connectivity linkages between Central India Tiger Conservation Landscape. This corridor inhabited with several villages, dependent on the forest and wetland resources for subsistence and supplementary income. Over-extraction of the wetland resources results into degradation of wetlands which also affects the wildlife movement between protected areas. Much of the emphasis on threatened birds and high value habitat is understandable, and also justified on account of their conservation significance, waterfowl census of the commonly found birds has generally been ignored. The improved techniques of waterfowl census of common avifauna would be helpful in understanding biases inherent in sampling bird populations in the central India context. A popular Government and Non- Government organizations have a major role to play in educating fishermen, farmers, children, amateur birdwatchers and all those who are interested in ornithology. The study reveals that, if the present ecological condition of this wetland continue, it would greatly affect the avian diversity in the region. Awareness programmes regarding the importance of wetland avifauna among the people will help the conservation of wetland avifauna in this landscape.

ACKNOWLEDGEMENT

We wish to express our sincere gratitude to Forest Department, Govt. of Maharashtra and the Wildlife Trust of India for granting permission to undertake research on wetland avifauna in NN corridor. We are grateful to local youths and members of Biodiversity Management Committees (BMC's) for their help during the entire field survey.

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