

Avian diversity in and around the Shivaji University campus, Kolhapur district, Maharashtra, India

Sunny B. Bhivate^{1*} and Nachiket S. Patil²

¹ Department of Zoology, Shivaji University, Kolhapur-416 004, Maharashtra, India

² Department of Environment Science, Shivaji University, Kolhapur-416 004, Maharashtra, India

Email: bhivatesunny@gmail.com; nachiketpatil143@gmail.com

ABSTRACT

The present study was made to estimate avian fauna in and around the Shivaji University campus, where the survey has been conducted in 2014-2016. The present investigation was carried out to study avian diversity with aspect to ecological condition. Total number of 122 bird species belonging to 18 orders and 54 families were observed. Out of these 122 birds, 74 are residential, 44 are residential migratory and 4 is migratory. Three near threatened species were observed during the survey. Campus is rich in biodiversity and it is conserved by university. Measures should be taken to protect diverse habitat and avifauna of Shivaji University campus.

Key Words: : Shivaji University, Avian fauna, Conservation

INTRODUCTION

Birds are ecological indicators to understand the habitat quality. Bird diversity has been decreasing due to the destruction of natural habitats and anthropogenic activities (Grewal B.2000). Shivaji University was a natural habitat with many small water bodies in and around and gardens where many species of birds, amphibians, reptiles, mollusks and arthropods are lived. The birds population fluctuated among sites in different seasons due to local environmentally dependent factors, local and regional habitat changes and climatic changes (Erica, et al, 2005). The avifauna is important for the

al., 2010) The direct effect of avian population are the presence and abundance of water. According to Pande et.al reported species number from Maharashtra was 568 from 83 families and 20 orders many authors have contributed to avifaunal diversity and distribution records in Maharashtra since few decades. The present study

reports the avian diversity along with their residential and migratory status, and also their IUCN status. This study helps to prepare a baseline data on avifauna diversity with their relative abundance and occurrence in and around the Shivaji university campus.

Materials and Methods

Study Area:

The Shivaji University is situated at South-West of Maharashtra at 16°40'31.81"N and 74°15'12.10"E and is at altitude of 607m above sea level. The total area of the campus is about 853 acre and in this area there are lots of habitats are developed but majorly pond habitat, shrub habitat, forest habitat and some area is of barren land in which in winter the total area is covered with lots of diverse grass flowers so food and shelter is available out here for Fauna. Therefore area is rich in Biodiversity and it is conserved by University and there is low rush of people in campus (Figure-1). The Climate of campus is tropical with three distinct seasons' monsoon (June-October), winter (October-February) and summer (March-Mid June). The temperature ranges between 10°C to 37°C. There is no avian faunal study so far in Shivaji University campus.

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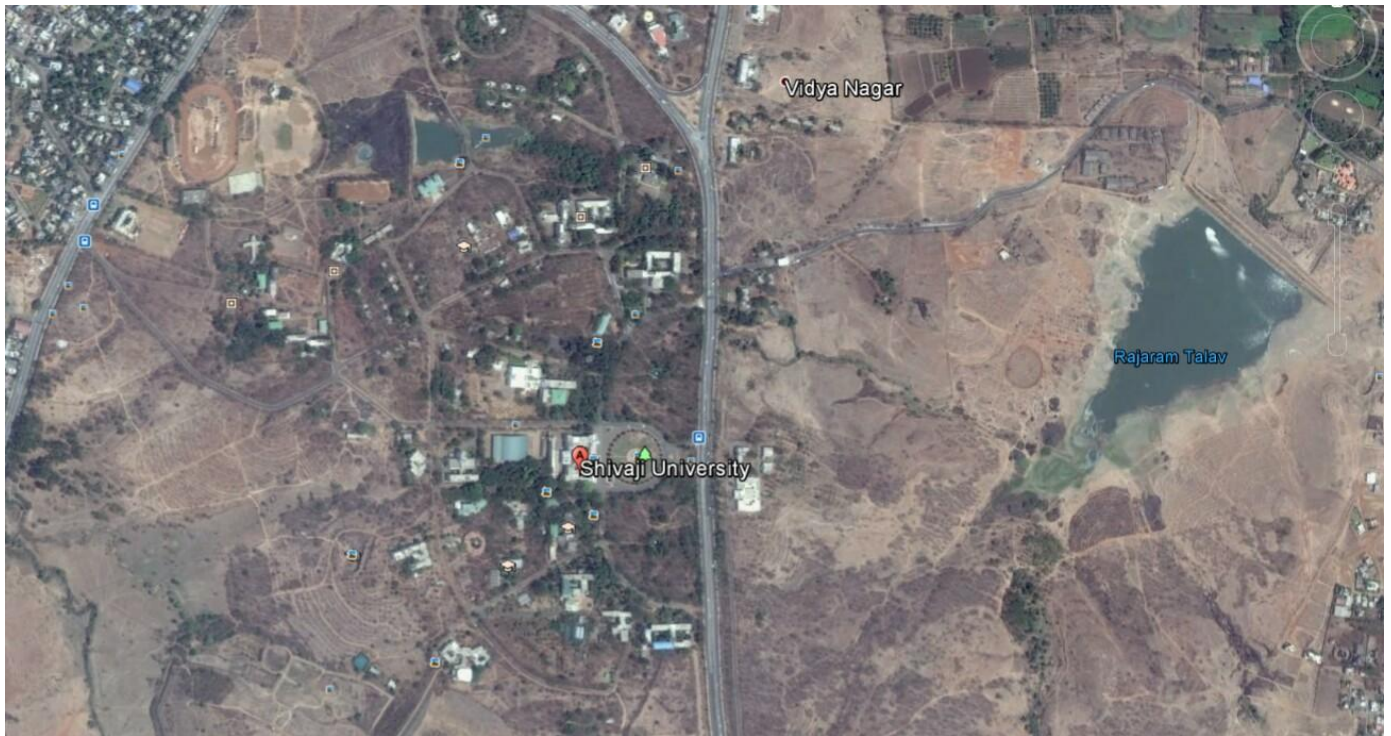
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ecosystem as they play various roles as scavenger, pollinators and predators of insect pest (Padmavati, et

and around the campus it also has great variety of fauna

Figure-1. Location of Shivaji University Kolhapur



Methodology:

Binocular Olympus 10*50 X, was used for close observation of birds and for photography Cannon-EOS 700 D camera, with Lens 55-250 mm. Book of Indian Birds by Salim Ali and Birds of the Indian Subcontinent by Grimmet; C.Inskipp; T.Inskipp were used as field guides and for preparing check list. Also bird survey was conducted according to a standard point count method. The data collected from the surveys were used to estimate diversity and status of bird species. The survey was conducted during March 2014 to May 2016. Survey was conducted for 3 days in a week in morning (7.00 am to 10.00am) and in evening (5.00 pm to 7.00pm).

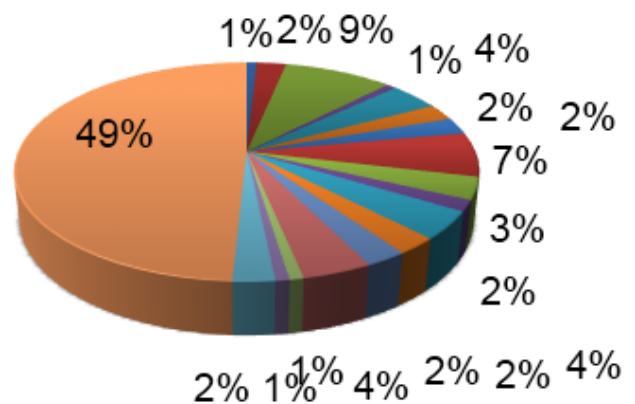
diversity so birds were attracted towards the campus area. In campus there is low rush of the people, plenty of food is available, sheltered, etc are good for the conservation of avian fauna.

Cattle egret, little egret, Indian pond heron, little cormorant are easily spotted in study area. Some rare species like Grey heron, Purple heron were also spotted in the study area (Figure-2).

RESULTS AND DISCUSSION

In present survey 122 species of birds from 18 orders with 54 families was observed. Out of which 74 were residential 44 are residential migratory and 4 birds were migratory. In total study we observed there are 3 species are near threatened as per *IUCN Red List of Threatened Species Version 2011.1* <http://www.iucnredlist.org>. A seasonal variation is seen during the survey. Some are winter migratory while few are summer but in winter the occurrence and number are somewhat more than other months of the year because in winter the campus of university fully covered with grass, plenty of food is available and availability of water. Shivaji University has many small water bodies in

Figure-2. Percentage representation of birds species in SUK as per order



■ Podicipediformes ■ Pelecaniformes ■ Ciconiiformes ■ Anseriformes
 ■ Falconiformes ■ Galliformes ■ Gruiformes ■ Charadriiformes
 ■ Columbiformes ■ Psittacidae ■ Cuculiformes ■ Strigiformes
 ■ Apodiformes ■ Coraciiformes ■ Upupiformes ■ Bucerotiformes
 ■ Piciformes ■ Passeriformes

Red Vented bulbul was the most commonly spotted bird. Some other species of bulbul viz. red whiskered bulbul were also spotted. Red wattled lapwing and

Table 1:- Checklist of Birds species in Shivaji University, Kolhapur

S.No	Common Name	Scientific Name	Family	status	IUCN Status
Order- Podicipediformes					
1	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipitidae	RM	LC
Order-Pelecaniformes					
2	Large cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae	RM	LC
3	Little cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	RM	LC
4	Indian shag/ Darter	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	RM	LC
Order- Ciconiiformes					
5	Large egret	<i>Ardea alba</i>	Ardeidae	RM	LC
6	Little Heron	<i>Butorides striatus</i>	Ardeidae	R	LC
7	Cattle egret	<i>Bubulcus ibis</i>	Ardeidae	RM	LC
8	Little egret	<i>Egretta garzetta</i>	Ardeidae	R	LC
9	Grey heron	<i>Ardea cinerea</i>	Ardeidae	RM	LC
10	Purple heron	<i>Ardea purpuria</i>	Ardeidae	RM	LC
11	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	RM	NT
12	Asian open billed stork	<i>Anastomus oscitans</i>	Threskiornithidae	R	LC
13	Oriental White Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	RM	NT
14	Black Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae	RM	LC
Order- Anseriformes					
15	Spot-billed Duck	<i>Anus poecilorhyncha</i>	Anatidae	R	LC
Order-Falconiformes					
16	Black-Shouldered Kite	<i>Elanus caeruleus</i>	Accipitridae	RM	LC
17	Shikra	<i>Accipiter badius</i>	Accipitridae	R	LC
18	Brahminy kite	<i>Haliastur indus</i>	Accipitridae	R	LC
19	Black eagle	<i>Ictinaetus malayensis</i>	Accipitridae	R	LC
20	Common Kestrel	<i>Falco tinnunculus</i>	Falconidae	R	LC
Order- Galliformes					
21	Painted Francolin	<i>Francolinus pictus</i>	Phasianide	R	LC
22	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianide	R	LC
23	Indian Peafowl	<i>Pavo cristatus</i>	Phasianide	R	LC
Order-Gruiformes					
24	White-Breasted WaterHen	<i>Amaurornis akool</i>	Rallidae	R	LC

25	Purple Moorhen	<i>Porphyrio porphyrio</i>	Rallidae	R	LC
26	Common Coot	<i>Fulica atra</i>	Rallidae	R	LC
Order-Charadriiformes					
27	Pheasant tailed jacana	<i>Hydrophasianus chirurgus</i>	Jacanidae	RM	LC
28	Bronzed-Winged Jacana	<i>Metopidius indicus</i>	Jacanidae	RM	LC
29	Common sandpiper	<i>Tringa hypoleucos</i>	Scolopacidae	R	LC
30	River tern	<i>Sterna aurantia</i>	Laridae	R	NT
31	Black winged stilt	<i>Himantopus himantopus</i>	Recurvirostridae	M	LC
32	Yellow wattled lapwing	<i>Vanellus malabaricus</i>	Charadriidae	R	LC
33	Red wattled lapwing	<i>Vanellus indicus</i>	Charadriidae	R	LC
34	Little ringed plover	<i>Charadrius dabius</i>	Charadriidae	RM	LC
Order- Columbiformes					
35	Blue rock pigeon	<i>Columba livia</i>	Columbidae	R	LC
36	Spotted dove	<i>Streptopelia chinensis</i>	Columbidae	R	LC
37	Laughing dove	<i>Streptopelia senegalensis</i>	Columbidae	R	LC
38	Rufous turtle dove	<i>Streptopelia orientalis</i>	Columbidae	RM	LC
Order-Psittacidae					
39	Rose ringed parakeet	<i>Psittacula krameri</i>	Psittacidae	R	LC
40	Vernal Hanging Parrot	<i>Loriculus vernalis</i>	Psittacidae	RM	LC
Order-Cuculiformes					
41	Common Hawk Cuckoo	<i>Hierococyx varius</i>	Cuculida	R	LC
42	Pied crested cuckoo	<i>Clamator jacobinus</i>	Cuculida	RM	LC
43	Indian banded bay cuckoo	<i>Cacomantis sonneratii</i>	Cuculida	RM	LC
44	Koel	<i>Eudynamys scolopacea</i>	Cuculida	R	LC
45	Southern Coucal	<i>Centropus sinensis</i>	Cuculida	R	LC
Order-Strigiformes					
46	Barn owl	<i>Tyto alba</i>	Strigidae	R	LC
47	Spotted Owlet	<i>Athene brama</i>	Strigidae	R	LC
48	Jungle owlet	<i>Glaucidium radiatum</i>	Strigidae	RM	LC
Order- Apodiformes					
49	Alpine swift	<i>Apus malba</i>	Apodidae	R	LC
50	House swift	<i>Apus affinis</i>	Apodidae	R	LC
51	Common Indian nightjar	<i>Caprimulgus asiaticus</i>	Caprimulgiformes	R	LC
Order- Coraciiformes					
52	Common kingfisher	<i>Alcedo atthis</i>	Alcedinidae	R	LC
53	Pied kingfisher	<i>Ceryl rudis</i>	Alcedinidae	R	LC

54	White breasted kingfisher	<i>Halcyon smyrensis</i>	Alcedinidae	R	LC
55	Indian roller	<i>Coracias benghalensis</i>	Coracidae	RM	LC
56	Small green bee-eater.	<i>Merops orientalis</i>	Meropidae	R	LC
Order- Upupiformes					
57	Hoopoe	<i>Upua epops</i>	Upupidae	RM	LC
Order- Bucerotiformes					
58	Common grey hornbill	<i>Tockus birostris</i>	Bucerotidae	R	LC
Order- Piciformes					
59	Coppersmith Barbet	<i>Megalaima haemacephala</i>	Megalaimidae	R	LC
60	Lesser golden backed	<i>Dinopium benghalensis</i>	Picidae	R	LC
61	Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>	Picidae	R	LC
Order- Passeriformes					
62	Malabar crested lark	<i>Galerida malabarica</i>	Alaudidae	R	LC
63	Ashy-Crowned Sparrow Lark	<i>Eremopterix grisea</i>	Alaudidae	R	LC
64	Rufous-Tailed Finch Lark	<i>Ammomanes phoenicurus</i>	Alaudidae	R	LC
65	Wire-tailed Swallow	<i>Hirundo smithii</i>	Hirundinidae	RM	LC
66	Red rumped swallow	<i>Hirundo daurica</i>	Hirundinidae	RM	LC
67	Rufous-Backed Shrike	<i>Lanius schach</i>	Laniidae	RM	LC
68	Golden oriole	<i>Oriolus oriolus</i>	Oriolidae	RM	LC
69	Black-Headed Oriole	<i>Oriolus xanthornus</i>	Oriolidae	RM	LC
70	Black drongo	<i>Dicrurus adsimilis</i>	Dicruridae	M	LC
71	Ashy drongo	<i>Dicrurus leucophaeus</i>	Dicruridae	M	LC
72	Brahminy Starling	<i>Sturnus pagodarum</i>	Sturnidae	R	LC
73	Grey-Headed Starling	<i>Sturnus malabaricus</i>	Sturnidae	M	LC
74	Common myna	<i>Acridotheris tristis</i>	Sturnidae	R	LC
75	Jungle myna	<i>Acridotheris fuscus</i>	Sturnidae	R	LC
76	Treepie	<i>Dendrocitta vegabunda</i>	Corvidae	RM	LC
77	Jungle crow	<i>Corvus macrorhynchus</i>	Corvidae	R	LC
78	House crow	<i>Corvus spendense</i>	Corvidae	R	LC
79	Scarlet minivet	<i>Pericrocotus flammeus</i>	Campephagidae	R	LC
80	Little minivet	<i>Pericrocotus cinnamomeus</i>	Campephagidae	R	LC
81	Common iora	<i>Aegithina tiphia</i>	Irenidae	R	LC
82	Golden fronted chloropsis	<i>Chloropsis aurifrons</i>	Chloropseidae	RM	LC
83	Red whiskered bulbul	<i>Pycnonotus jocosus</i>	Pycnonotidae	RM	LC
84	Red vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	R	LC
85	Yellow browed bulbul	<i>Hypsipetes indicus</i>	Pycnonotidae	RM	LC

86	Jungle babbler	<i>Turdoides striatus</i>	Muscicapidae	R	LC
87	Yellow eyed babbler	<i>Chrysomma sinense</i>	Muscicapidae	R	LC
88	Large Grey Babbler	<i>Turdoides malcolmi</i>	Muscicapidae	RM	LC
89	Tickell's blue flycatcher	<i>Muscicapa tickelliae</i>	Muscicapidae	RM	LC
90	White-bellied Blue Flycatcher	<i>Cyornis pallipes</i>	Muscicapidae	RM	LC
92	Magpie robin	<i>Copsychus saularis</i>	Muscicapidae	R	LC
93	Stone chat	<i>Saxicola torquata</i>	Muscicapidae	R	LC
94	Pied bush chat	<i>Saxicola caprata</i>	Muscicapidae	R	LC
95	Indian robin	<i>Saxicoloides fulicata</i>	Muscicapidae	R	LC
96	White-spotted fantail	<i>Rhipidura albogularis</i>	Rhipiduridae	R	LC
97	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae	R	LC
98	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	R	LC
99	Jungle Prinia	<i>Prinia sylvatica</i>	Cisticolidae	R	LC
100	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	R	LC
101	Blyth's reed warbler	<i>Acrocephalus dumetorum</i>	Sylviidae	RM	LC
102	Clamorous reed Warbler	<i>Acrocephalus stentoreus</i>	Sylviidae	RM	LC
103	Common Chiff Chaf	<i>Phylloscopus collybita</i>	<u>Phylloscopidae</u>	R	LC
104	Great tit	<i>Parus major</i>	Paridae	R	LC
105	Paddy field pipit	<i>Anthus novaeseelandiae</i>	Motacillidae	R	LC
106	Forest wagtail	<i>Motacilla indica</i>	Motacillidae	RM	LC
107	Yellow wagtail	<i>Motacilla flava</i>	Motacillidae	RM	LC
108	Large pied wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	RM	LC
109	White Wagtail	<i>Motacilla alba</i>	Motacillidae	RM	LC
110	Thick bellied flower pecker	<i>Dicaeum concolor</i>	Dicaeidae	R	LC
111	Tickell's flowerpecker	<i>Dicaeum agile</i>	Dicaeidae	R	LC
112	Plaincoloured flowerpecker	<i>Dicaeum erythrorhynchos</i>	Dicaeidae	R	LC
113	Purple rumped sunbird	<i>Nectarinia zeylonica</i>	Nectarinidae	R	LC
114	Puple sunbird	<i>Nectarinia asiatica</i>	Nectarinidae	R	LC
115	White eye	<i>Zosterops palpebrosa</i>	Zosteropidae	R	LC
116	House sparrow	<i>Passer domesticus</i>	passerinae	R	LC
117	Yellow throated sparrow	<i>Petronia xanthocollis</i>	passerinae	R	LC
118	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae	R	LC
119	Spotted munia	<i>Lonchura punctualata</i>	Estrildinae	R	LC
120	Red munia	<i>Esterilda amandava</i>	Estrildinae	RM	LC
121	Black headed munia	<i>Lonchura malacca</i>	Estrildinae	RM	LC
122	Indian Silverbill	<i>Lonchura malabarica</i>	Estrildinae	R	LC

Blue rock pigeon, spotted dove, rose ringed parakeet are very common throughout the year. Barn owl and spotted owl are spotted during night. White breasted



Ashy Prinia (*Prinia socialis*)



Purple Rumped Sunbird (*Nectarinia zeylonica*)



Grey hornbill (*Ocyrocus birostris*)



Tailor bird (*Orthotomus sutorius*)



Indian hanging parrot (*Loriculus vernalis*)



Baya weaver (*Ploceus philippinus*)



Pied crested cuckoo (*Clamator jacobinus*)



Malabar starling (*Sturnus malabaricus*)



Paddyfield pipit (*Anthus rufulus*)



Indian peafowl (*Pavo cristatus*)



Grey heron (*Ardea cinerea*)



White breasted kingfisher (*Halcyon smyrnensis*)

kingfisher, pied kingfisher, green bee eaters are very common birds in and around the campus. Minivets, babblers, mynas, robins, and sunbirds are more in number in university campus area. Birds such as lapwings and larks were found using wetland habitat extensively for nesting in their breeding season (Narwade et.al.in press).

CONCLUSION

The presence of resident and migrant birds in and around the campus indicates that the habitat is rich enough to attract birds and make them spend their life. Wetlands are relatively safe areas which provide the birds with abundance of food and safe place for roosting, nesting and moulting (Imran Dar et.al.in 2009). Campus of Shivaji University shows wetlands, grasslands, aquatic habitats which are provide rich flora and fauna. The results of the survey and observations highlight the fact that avifauna here is abundant which indicates healthy status of the campus area. Occurrence of number of birds in the study area, every year is excellent indicator of the state of favorable environment. Considering above facts there is need to aware the people about richness of the place and to take the steps towards conservation of such diversified avifauna.

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Conflict of Interests

Authors declare that there is no conflict of interests regarding the publication of this paper.

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