

Study on avifauna and species richness in Karanja-Sohol wildlife sanctuary, (MS) India

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ABSTRACT

The present study was carried out during a bird race organized in Karanja-Sohol Wildlife sanctuary Karanja, district Washim Maharashtra, India. The objective of this study was to assess the avifauna of wildlife sanctuaries. Due to the geological and ecological complexity of the area, it has become imperative to conduct research on the region's avian diversity. It is challenging to conduct this assessment, as the wildlife sanctuary is divided into numerous patches by the state highway running through it. Sanctuary is surrounded by numerous villages and agricultural land, which creates human interference and livestock grazing. This checklist will serve as a baseline for further study, as there is no published checklist of this area. In the present investigation, we reported a total of 151 bird species during the exhaustive survey by the authors and accompanied volunteers during the census organized by the wildlife department. The observed species of birds belong to 55 families and 17 orders. They also recorded their residential and IUCN red data status.

Introduction

Birds are environmental indicators, and a slight change in environmental conditions can impact their behavior pattern, population, reproduction and migration. (Harisha and Hosetti, 2009). Ecologically, birds are very important creatures because they help in pollination and perform crucial roles in seed dispersal (Bibi and Ali, 2013). Therefore, it is crucial to comprehend the diversity and structure of birds to describe the local landscape. Species are becoming extinct at an alarming rate, and their conservation has arisen as one of the most significant issues today (Hu *et al.*, 2011). Forests provide a safe habitat and plenty of food for birds, so avifauna are attracted to such

areas. Wildlife sanctuaries, national parks and biosphere reserves, such as protected areas, serve as supporting systems for biodiversity conservation and play crucial roles in maintaining ecological balance and thereby offsetting adverse climate change (De Fries *et al.*, 2007). As one of the super biodiverse nations, 24.62% of India's total territory is covered by forests (India State of Forest Report., 2021), with 1364 extant and extinct bird species (Lepage, Denis, 2021). The third-largest state by geographical size, Maharashtra, has 62952 square kilometers of forest (India, State Forest Report, 2021). The Karanja-Sohol wildlife sanctuary is notified by Govt. of Maharashtra vide notification

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dated 07 December 2000. It covers 1778.40 hectares (17.78 sq km) of forest and grassland (District Survey Report for Washim District, 2019). This Sanctuary is famous for blackbucks, i.e., the Indian Antelopes. According to the Wildlife Protection Act (Anon, 1972), these creatures are listed in Schedule I. The sanctuary is divided into three parts separated by state highways. Two parts are located across the Karanja-Manora highway, and the third part is across the Karanja-Darva state highway (Ingle *et al.*, 2020). Aadan is the main river of the sanctuary. The sanctuary is named after the town Karanja, which is its Tehsil place, and Sohul is the village nearest to it. This sanctuary is also part of the catchment area of the Aadan reservoir, which provides great habitat for water birds. The landscape of the sanctuary is undulating, and it offers an interesting contrast between plateau and plain. The five districts that make up the West Vidarbha area are Akola, Amravati, Buldhana, Washim, and Yavatmal. Dry deciduous woodland is prevalent in this area. According to the 2009 State of Forest Report, the soil is mostly categorized as loamy soil, brown soil, and black cotton soil. The Washim District is home to a wide variety of ecosystems, including wetlands formed by man-made dams, the Karanja-Sohol grassland, and forestland from the Katepurna Wildlife Sanctuary. Grasslands cover approximately 30% of the Earth's terrestrial portion (Blair, 2014). Grasslands provide ecosystem services, including watershed protection and grazing as well as habitat for wildlife, the occurrence of rare species, and inherent ecological aspects of structure, function, and composition (Faber-Langendoen and Josses, 2010). Birds have been regarded as indicator species of settled regions since they are frequently prevalent occupants of such ecosystems. (Blair, 1999). The selected area is rich in avifaunal diversity. Monitoring bird

diversity is planned to undertake a study of this area's bird study.

Material and Methods

Observations for avifaunal diversity of the Karanja-Sohol wildlife sanctuary with coordinates 20.40076936503589 N, 77.49977354742815 E were carried out in two sessions, i.e., morning from 6.00 am to 01.00 pm and evening from 04.00 pm to 07.30 pm when birds were found to be most active, on 7th and 8th November 2020 on the occasion of a bird week. This survey was organized by the Akola wildlife division in collaboration with two NGOs, namely, Nisargakatta Akola and Watsagulma Biodiversity Conservation Society, Washim. Approximately 32 volunteers were present during the census program. All volunteers were divided into four groups led by at least one of the authors. One of the members from each group was equipped with an e-Bird android application developed by Cornell Lab of ornithology (<https://www.birds.cornell.edu/home/>), and after the survey, the checklist was submitted to the database successfully. <https://ebird.org/tripreport/52507>. Each track's and team's data were recorded independently and then combined to generate a comprehensive sanctuary checklist. During the study, birds were ascertained by direct sighting and by their calls (for very few species). Bird surveys on both days during their active hours were carried out by adopting the line-transect method (Burnham *et al.*, 1980). Birds were observed with Nikon A211 10 X 50 binoculars, Comet, and Zeiss 10x42, and field guides were used for identification. (Ali, 2009; and Grimmett *et al.*, 2010). Other details, such as species richness and hazards to the conservation of birds, were also highlighted throughout the surveys. Their residential status and The International Union for the Conservation of Nature (IUCN) status findings were also noted with the help of Kazmierczak *et al.* (2000).

Table 1: Checklist of Bird Species of Karanja Sohul Wildlife Sanctuary

SN	Common Name	Scientific name	Family	Order	R/M	Status
1	Oriental Honey Buzzard	<i>Pernis ptilorhynchus</i>	Accipitridae	Accipitriformes	R	LC
2	Pallid Harrier	<i>Circus macrourus</i>	Accipitridae	Accipitriformes	W	NT
3	Bar Headed Goose	<i>Anser indicus</i>	Anatidae	Anseriformes	W	LC
4	Ruddy Shelduck	<i>Tadorna ferruginea</i>	Anatidae	Anseriformes	W	LC
5	Comb Duck	<i>Sarkidiornis sylviola</i>	Anatidae	Anseriformes	R	LC
6	Indian Spot-Billed Duck	<i>Anas poecilorhyncha</i>	Anatidae	Anseriformes	R	LC
7	Green-Winged Teal	<i>Anas crecca</i>	Anatidae	Anseriformes	W	LC

8	Northern Pintail	<i>Anas acuta</i>	Anatidae	Anseriformes	W	LC
9	Northern Shoveler	<i>Spatula clypeata</i>	Anatidae	Anseriformes	W	LC
10	Common Pochard	<i>Aythya ferina</i>	Anatidae	Anseriformes	W	LC
11	Common Pochard	<i>Aythya fuligula</i>	Anatidae	Anseriformes	W	LC
12	Gadwall	<i>Mareca strepera</i>	Anatidae	Anseriformes	W	LC
13	Eurasian Wigeon	<i>Mareca penelope</i>	Anatidae	Anseriformes	W	LC
14	Indian Night Jar	<i>Caprimulgus asiaticus</i>	Caprimulgidae	Caprimulgiformes	R	LC
15	Little Ring Plover	<i>Charadrius dubius</i>	Charadriidae	Charadriiformes	R	LC
16	Yellow-Wattled Lapwing	<i>Vanellus malabaricus</i>	Charadriidae	Charadriiformes	R	LC
17	Red-Wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Charadriiformes	R	LC
18	Black Tailed Godwit	<i>Limosa limosa</i>	Scolopacidae	Charadriiformes	W	NT
19	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae	Charadriiformes	W	LC
20	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	Charadriiformes	W	LC
21	Common Red Shank	<i>Tringa totanus</i>	Scolopacidae	Charadriiformes	W	LC
22	Little Stint	<i>Calidris minuta</i>	Scolopacidae	Charadriiformes	W	LC
23	Black Winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	Charadriiformes	R	LC
24	Eurasian Thick-Knee	<i>Burhinus oedicnemus</i>	Burhinidae	Charadriiformes	R	LC
25	Great Thick-Knee	<i>Esacus recurvirostris</i>	Burhinidae	Charadriiformes	R	LC
26	Small Pratincole	<i>Glareola lactea</i>	Glareolidae	Charadriiformes	R	LC
27	River Tern	<i>Sterna aurantia</i>	Laridae	Charadriiformes	R	NT (U)
28	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	Charadriiformes	W	LC
29	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	Charadriiformes	W	LC
30	Barred Buttonquail	<i>Turnix suscitator</i>	Turnicidae	Charadriiformes	R	LC
31	Black Headed Gull	<i>Chroicocephalus ridibundus</i>	Laridae	Charadriiformes	W	LC
32	Brown Headed Gull	<i>C. brunnicephalus</i>	Laridae	Charadriiformes	W	LC
33	Little Egret	<i>Egretta garzetta</i>	Ardeidae	Ciconiiformes	R	LC
34	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	Ciconiiformes	R	LC
35	Gray Heron	<i>Ardea cinerea</i>	Ardeidae	Ciconiiformes	W	LC
36	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	Ciconiiformes	R	LC
37	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	Ciconiiformes	R	LC
38	Painted Stork	<i>Mycteria leucocephala</i>	Ciconiidae	Ciconiiformes	R	NT
39	Asian Open Bill	<i>Anastomus oscitans</i>	Ciconiidae	Ciconiiformes	R	LC
40	Asian Woolly Necked Stork	<i>Ciconia episcopus</i>	Ciconiidae	Ciconiiformes	R	LC
41	Black Headed Ibis	<i>Threskiornis melanoleucus</i>	Threskiornithidae	Ciconiiformes	R	NT
42	Red-Naped Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae	Ciconiiformes	R	LC
43	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Threskiornithidae	Ciconiiformes	R	LC
44	Great Egret	<i>Ardea alba</i>	Ardeidae	Ciconiiformes	R	LC
45	Intermediate Egret	<i>Ardea intermedia</i>	Ardeidae	Ciconiiformes	R	LC
46	Yellow Footed Green Pigeon	<i>Treron phoenicoptera</i>	Columbidae	Columbiformes	R	LC
47	Rock Pigeon	<i>Columba livia</i>	Columbidae	Columbiformes	R	LC
48	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	Columbiformes	R	LC
49	Spotted Dove	<i>Spilopelia chinensis</i>	Columbidae	Columbiformes	R	LC
50	Laughing Dove	<i>Spilopelia senegalensis</i>	Columbidae	Columbiformes	R	LC
51	Red Collared Dove	<i>Streptopelia tranquebarica</i>	Columbidae	Columbiformes	R	LC
52	White-Throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	Coraciiformes	R	LC
53	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	Coraciiformes	R	LC
54	Asian Green Bee-Eater	<i>Merops orientalis</i>	Meropidae	Coraciiformes	R	LC
55	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	Coraciiformes	R	LC
56	Eurasian Hoopoe	<i>Upupa epops</i>	Upupidae	Coraciiformes	R	LC
57	Indian Gray Hornbill	<i>Ocyroceros birostris</i>	Bucerotidae	Coraciiformes	R	LC
58	Greater Coucal	<i>Centropus sinensis</i>	Cuculidae	Cuculiformes	R	LC
59	Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	Cuculiformes	M	LC
60	Asian Koel	<i>Eudynamis scolopacea</i>	Cuculidae	Cuculiformes	R	LC
61	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Cuculidae	Cuculiformes	M	LC
62	Sirkeer Malkoha	<i>Taccocua leschenaultii</i>	Cuculidae	Cuculiformes	R	LC
63	Black-Winged Kite	<i>Elanus caeruleus</i>	Accipitridae	Falconiformes	R	LC
64	Black Kite	<i>Milvus migrans</i>	Accipitridae	Falconiformes	R	LC
65	Brahminy Kite	<i>Haliastur indus</i>	Accipitridae	Falconiformes	R	LC
66	Shikra	<i>Accipiter badius</i>	Accipitridae	Falconiformes	R	LC
67	Eurasian Marsh-Harrier	<i>Circus aeruginosus</i>	Accipitridae	Falconiformes	W	LC
68	White Eye Buzzard	<i>Butastur teesa</i>	Accipitridae	Falconiformes	R	LC
69	Eurasian Kestrel	<i>Falco tinnunculus</i>	Falconidae	Falconiformes	W	LC
70	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	Galliformes	R	LC
71	Rock Bush Quail	<i>Perdica argoondah</i>	Phasianidae	Galliformes	R	LC
72	Gray Francolin	<i>Ortygornis pondicerianus</i>	Phasianidae	Galliformes	R	LC

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73	Painted Francolin	<i>Francolinus pictus</i>	Phasianidae	Galliformes	R	LC
74	Jungle Bush Quail	<i>Perdica asiatica</i>	Phasianidae	Galliformes	R	LC
75	Western Swampphen	<i>Porphyrio porphyrio</i>	Rallidae	Gruiformes	R	LC
76	Eurasian Coot	<i>Fulica atra</i>	Rallidae	Gruiformes	R	LC
77	Eurasian Moorhen	<i>Gallinula chloropus</i>	Rallidae	Gruiformes	R	LC
78	Crested Lark	<i>Galerida cristata</i>	Alaudidae	Passeriformes	R	LC
79	Wire Tailed Swallow	<i>Hirundo smithii</i>	Hirundinidae	Passeriformes	R	LC
80	Red Rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	Passeriformes	R	LC
81	Gray Wagtail	<i>Motacilla cinerea</i>	Motacillidae	Passeriformes	W	LC
82	Western Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	Passeriformes	W	LC
83	White Wagtail	<i>Motacilla alba</i>	Motacillidae	Passeriformes	W	LC
84	White-Browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	Passeriformes	R	LC
85	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Campephagidae	Passeriformes	R	LC
86	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	Passeriformes	R	LC
87	Common Iora	<i>Aegithina tiphia</i>	Irenidae	Passeriformes	R	LC
88	Bay Backed Shrike	<i>Lanius vittatus</i>	Laniidae	Passeriformes	R	LC
89	Rufous-Backed Shrike	<i>Lanius schach</i>	Laniidae	Passeriformes	R	LC
90	Black Drongo	<i>Dicrurus macrocerus</i>	Dicruridae	Passeriformes	R	LC
91	White Bellied Drongo	<i>Dicrurus caerulescens</i>	Dicruridae	Passeriformes	R	LC
92	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	Passeriformes	R	LC
93	House Crow	<i>Corvus splendens</i>	Corvidae	Passeriformes	R	LC
94	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae	Passeriformes	R	LC
95	Brahminy Starling	<i>Sturnus pagodarum</i>	Sturnidae	Passeriformes	R	LC
96	Rosy Starling	<i>Sturnus roseus</i>	Sturnidae	Passeriformes	R	LC
97	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	Passeriformes	R	LC
98	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	Passeriformes	R	LC
99	Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae	Passeriformes	R	LC
100	Brown Rock Chat	<i>Oenanthe fusca</i>	Muscicapidae	Passeriformes	R	LC
101	African Stone Chat	<i>Saxicola torquata</i>	Muscicapidae	Passeriformes	R	LC
102	Black Redstart	<i>Phoenicurus ochruros</i>	Muscicapidae	Passeriformes	W	LC
103	Common Babbler	<i>Argya caudata</i>	Leiothrichidae	Passeriformes	R	LC
104	Common Tailorbird	<i>Orthotomus sutorius</i>	Muscicapidae	Passeriformes	R	LC
105	Ashy Prinia	<i>Prinia socialis</i>	Muscicapidae	Passeriformes	R	LC
106	Great Tit	<i>Parus major</i>	Paridae	Passeriformes	R	LC
107	Purple Sunbird	<i>Cinnyris asiatica</i>	Nectarinidae	Passeriformes	R	LC
108	Purple-Rumped Sunbird	<i>Leptocoma zeylonica</i>	Nectarinidae	Passeriformes	R	LC
109	Indian White-Eye	<i>Zosterops palpebrosus</i>	Zosteropidae	Passeriformes	R	LC
110	Creasted Bunting	<i>Emberiza lathamii</i>	Emberizidae	Passeriformes	R	LC
111	Red Avadavat	<i>Amandava amandava</i>	Estrildidae	Passeriformes	R	LC
112	Indian Silverbill	<i>Euodice malabarica</i>	Estrildidae	Passeriformes	R	LC
113	Scaly Breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	Passeriformes	R	LC
114	Paddy Field Pipit	<i>Anthus rufulus</i>	Estrildidae	Passeriformes	R	LC
115	House Sparrow	<i>Passer domesticus</i>	Passeridae	Passeriformes	R	LC
116	Baya Weaver	<i>Ploceus philippinus</i>	Passeridae	Passeriformes	R	LC
117	White – Bellied Minivet	<i>Pericrocotus erythropygus</i>	Campephagidae	Passeriformes	R	LC
118	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Vangidae	Passeriformes	R	LC
119	Brown Shrike	<i>Lanius cristatus</i>	Laniidae	Passeriformes	W	LC
120	Indian Bushlark	<i>Mirafra erythroptera</i>	Alaudidae	Passeriformes	R	LC
121	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae	Passeriformes	R	LC
122	Gray-Breasted Prinia	<i>Prinia hodgsonii</i>	Cisticolidae	Passeriformes	R	LC
123	Zitting Cisticola	<i>Cisticola juncidis</i>	Cisticolidae	Passeriformes	R	LC
124	Booted Warbler	<i>Iduna caligata</i>	Acrocephalidae	Passeriformes	W	LC
125	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	Passeriformes	W	LC
126	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	Passeriformes	W	LC
127	Wire-Tailed Swallow	<i>Hirundo smithii</i>	Hirundinidae	Passeriformes	R	LC
128	Red-Rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	Passeriformes	R	LC
129	Streak-Throated Swallow	<i>Petrochelidon fluvicola</i>	Hirundinidae	Passeriformes	R	LC
130	Sulphur-Bellied Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	Passeriformes	W	LC
131	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	Passeriformes	W	LC
132	Lesser Whitethroat	<i>Curruca curruca</i>	Sylviidae	Passeriformes	W	LC
133	Jungle Babbler	<i>Turdoides striata</i>	Leothrichidae	Passeriformes	R	LC
134	Large Gray Babbler	<i>Turdoides malcolmi</i>	Leothrichidae	Passeriformes	R	LC
135	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>	Muscicapidae	Passeriformes	R	LC
136	Siberian Stonechat	<i>Saxicola maurus</i>	Muscicapidae	Passeriformes	R	LC

137	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	Passeriformes	R	LC
138	Yellow-Throated Sparrow	<i>Gymnoris xanthocollis</i>	Passiridae	Passeriformes	R	LC
139	Tawny Pipit	<i>Anthus campestris</i>	Estrildidae	Passeriformes	R	LC
140	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	Pelecaniformes	R	LC
141	Great Cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae	Pelecaniformes	R	LC
142	Oriental Darter	<i>Anhinga melanogaster</i>	Anhingidae	Pelecaniformes	R	NT
143	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	Pelecaniformes	W	LC
144	Coppersmith Barbet	<i>Psilopogon hemacephalus</i>	Megalaimidae	Piciformes	R	LC
145	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	Podicipediformes	R	LC
146	Rose Ring Parakeet	<i>Psittacula krameri</i>	Psittacidae	Psittaciformes	R	LC
147	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	Psittacidae	Psittaciformes	R	LC
148	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Psittacidae	Psittaciformes	R	NT (U)
149	Barn Owl	<i>Tyto alba</i>	Tytonidae	Strigiformes	R	LC
150	Spotted Owlet	<i>Athene brama</i>	Strigidae	Strigiformes	R	LC
151	Eurasian Eagle Owl	<i>Bubo bubo</i>	Strigidae	Strigiformes	R	LC

Results and Discussion

During the avifaunal assessment of Karanja-Sohal Wildlife Sanctuary, a total of 151 bird species (Table 1) from 55 different families (Table 2) and 17 different orders were recorded. Figure 1 shows that the order Passeriformes, known as “perching birds”, comprises a maximum of 41% of birds with 62 species, while Charadriiformes shares 12% with 18 bird species. In India, Muscicapidae is the largest family of birds, with 370 species (Manakadan and Pittie, 2001), but in the present investigation, Anatidae (11 species) showed dominance over Muscicapidae (10 species), followed by Accipitridae (08 species), Ardeidae and Scolopacidae (07 species each), Columbidae and Hirundinidae (06 species each), Cuculidae, Estrildidae and Phasianidae (05 species each), Motacillidae (04 species), Charadriidae, Ciconiidae, Cisticolidae, Laniidae, Laridae, Passeridae, Phalacrocoracidae, Psittacidae, Rallidae, Sturnidae and Threskiornithidae (03 species each), and Acrocephalidae, Alaudidae, Alcedinidae, Burhinidae, Campephagidae, Corvidae, Dicruridae, Leothrichidae, Nectarinidae, Phylloscopidae and Strigidae (02 species each). Moreover, Oriolidae, Anhingidae, Bucerotidae, Caprimulgidae, Coraciidae, Emberizidae, Pycnonotidae, Falconidae, Glareolidae, Leiothrichidae, Irenidae, Megalaimidae, Meropidae, Paridae, Podicipedidae, Recurvirostridae, Turnicidae, Sylviidae, Tytonidae, Upupidae, Vangidae & Zosteropidae were poorly represented in the study area containing only one species each (Table 2). The reason behind the maximum number of species occurrence could be the forest type, as it contains grassland, water body and mixed tree forest. On the northern side of

Maharashtra, the largest protected area, i.e., Melghat Tiger Reserve (MTR), has 276 bird species (Wadatkar, & *et al.*, 2021). When comparing the two areas, the Karanja-Sohal wildlife sanctuary has a higher density of avifauna than the MTR. In Maharashtra, the Vidarbha Region receives 24% more rainfall, the sanctuary area falls under Assured Rain Fall Zone-7 (ARZ-7), and water is available throughout the year (Awatade, *et al.*, 2018). It is challenging to conduct this assessment, as the wildlife sanctuary is divided into numerous patches by the state highway running through it. Sanctuary is surrounded by numerous villages and agricultural land, which creates human interference. Overgrazing can result in disturbance and habitat loss and may lead to species extinction (Koli, 2014). According to IUCN red data (IUCN, 2020), 144 birds have the least concern (LC) status, and 05 are in the near threat (NT) category, i.e., Pallid Harrier (*Circus macrourus*), Black Tailed Godwit (*Limosa limosa*), Painted Stork (*Mycteria leucocephala*), Black Headed Ibis (*Threskiornis melanocephalus*) and Oriental Darter (*Anhinga melanogaster*). 02 birds, viz. River terns (*Stema aurantia*) and Alexandrian parakeets (*Psittacula eupatria*) were in the Near Threaten Vulnerable (NT (U)) category, and birds sighted during the survey were categorized based on their migratory status as resident (R), migratory (M) and winter migratory (W). It was observed that the 115 birds were residents, 34 birds were found to be winter migratory and 2 birds viz. Pied crested cuckoo (*Clamator jacobinus*) and common hawk cuckoo (*Hierococcyx varius*) were recorded as migratory. Similar studies were also reported by Kumar (2015), Singh (2013) and Thakur (2012).

Table 2: Reported families of avifaunal diversity of Karanja-Sohol Wildlife Sanctuary

SN	Family	Number of Species	SN	Family	Number of species
1.	Accipitridae	8	29	Leothrichidae	2
2.	Acrocephalidae	2	30	Megalaimidae	1
3.	Alaudidae	2	31	Meropidae	1
4.	Alcedinidae	2	32	Motacillidae	4
5.	Anatidae	11	33	Muscicapidae	10
6.	Anhingidae	1	34	Nectarinidae	2
7.	Ardeidae	7	35	Oriolidae	1
8.	Bucerotidae	1	36	Paridae	1
9.	Burhinidae	2	37	Passeridae	3
10.	Campephagidae	2	38	Phalacrocoracidae	3
11.	Caprimulgidae	1	39	Phasianidae	5
12.	Charadriidae	3	40	Phylloscopidae	2
13.	Ciconiidae	3	41	Podicipedidae	1
14.	Cisticolidae	3	42	Psittacidae	3
15.	Columbidae	6	43	Pycnonotidae	1
16.	Coraciidae	1	44	Rallidae	3
17.	Corvidae	2	45	Recurvirostridae	1
18.	Cuculidae	5	46	Scolopacidae	7
19.	Dicruridae	2	47	Strigidae	2
20.	Emberizidae	1	48	Stumidae	3
21.	Estrildidae	5	49	Sylviidae	1
22.	Falconidae	1	50	Threskiornithidae	3
23.	Glareolidae	1	51	Turnicidae	1
24.	Hirundinidae	6	52	Tytonidae	1
25.	Irenidae	1	53	Upupidae	1
26.	Laniidae	3	54	Vangidae	1
27.	Laridae	3	55	Zosteropidae	1
28.	Leiothrichidae	1			

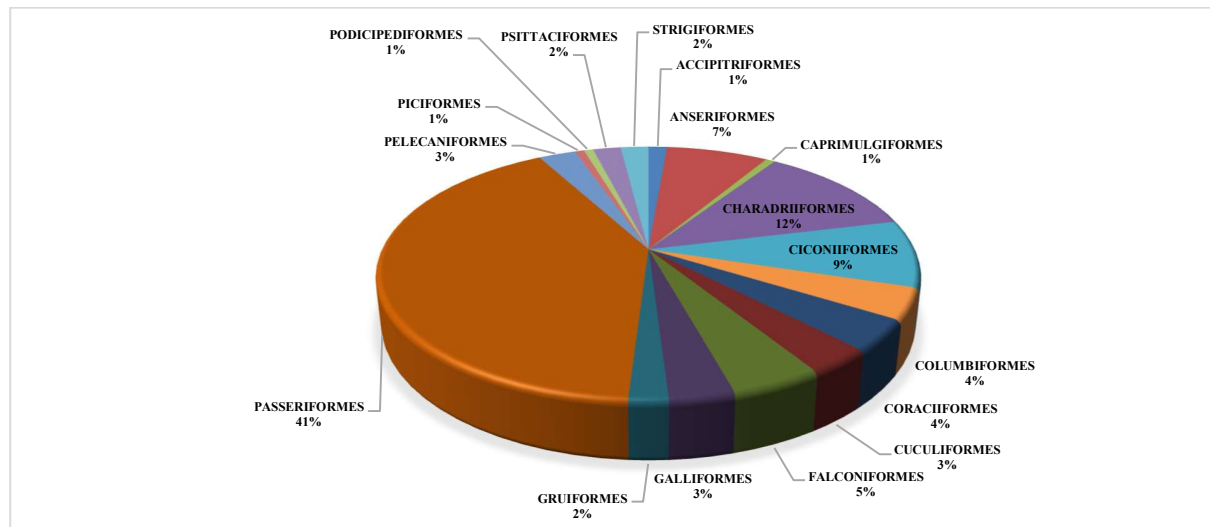


Figure 1: Graphical representation of different orders of avifauna observed in Karanja-Sohol Wildlife Sanctuary

Conclusion

According to the aforementioned study, the Karanja Sohool Wildlife Sanctuary has a rich variety of birds. It is essential to study the region's bird variety because of the region's diverse geology and

ecology. The existing checklist will act as the starting point for further study, as there is not a published checklist in this area. The area of the sanctuary makes it an ideal habitat for both water birds and grassland birds. Lesser Foloric

(*Sypheotides indicus*), an IUCN Red List species, has been reported in the Akola, Washim, and Yavatmal areas. One of the goals of the current study was to confirm the presence of lesser florican in the study area. The Karanja-Sohol wildlife sanctuary is the only suitable habitat for lesser floricans in the Vidharbha region of Maharashtra. However, it was concluded that this bird was not observed during the survey in the study area. The number 151 could be higher if human interference and livestock grazing were restricted in this area. It is crucial to document biodiversity in addition to concentrating on the hazards to it. Knowing what actually exists is necessary before conservation planning can be carried out. The preservation of avian biodiversity is crucial for sustainable agriculture.

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- Conflict of interest**
The authors declare that they have no conflict of interest.
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