

## Ecological Communication

# Avian Diversity Assessment of a Tropical Forest in Central India

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### ABSTRACT

Pandharkawada forest division is located in biodiversity rich landscape vidharbha region of Maharashtra, India. 296 birds distributed in different habitats are recorded from this forest division belongs to 19 orders and 69 families. From the recorded 296 species, 10 species are near threatened, 2 vulnerable and 1 is endangered (IUCN red data book). 74% species are occurred as common, 17% as uncommon, 5% rare and 14% as very rare. 56% species are distributed as resident, 21.28%, are winter visitors 7.50% vagrant, 6.41% are distributed from winter to summer, 6.41% are recorded from monsoon to winter, 4 are monsoon to summer, 2 are monsoon visitor and 1 is summer visitor. Main food habit of recorded species are insectivores and carnivorous followed by frugivores, granivores, terrestrial grazer, nectarivores, folivores, aquatic grazer, and scavengers. Study of their habitat reveals that, 56% are arboreal, 22% as shore birds 10% water birds 8% ground birds and 3% as arial birds. Their nesting type is recorded as, 48% as tree nesters, 17% in ground scrap, 12% built nests floating on water 8% in ground, 8% in tree hole and 7% in rock cleft. In a way they directly impacts human health, economy, food production as well as millions of other species. Therefore, it is important to know about local bird diversity and its ecology. This study establishes that Pandharkawada forest division is rich in avifaunal diversity due to varied habitats like forest, grassy patches, shrubs, perineal waterbodies and seasonal wetlands. Due to this, it attracts varieties of local resident and migratory species and found distributed in these various habitats different seasons of the year.

**KEY WORDS:** BIO-INDICATORS, CONSERVATION, CONSUMER, ECOLOGY, POLLINATOR.

### INTRODUCTION

Avian population has a central role in ecosystem functioning and ecosystem services. Birds are bio-indicators and appraise the health of environment and ecosystems, they are capable of determining environmental integrity using their functions and populations. Birds play pivotal ecological roles both in forest and farmland ecosystems, notably pollination, seed dispersal, and pest control (Whelan et al. 2008; Mulwa et al. 2012). In addition to above, there is positive role of birds in nutrient cycling and soil formation. They also richly contribute to the recolonization and restoration of disturbed ecosystem (Sekercioglu et al. 2004; Sekercioglu 2006). A study inferred that, birds are also act as mobile links that transfer energy both within and among ecosystems that are crucial for maintaining ecosystem function and resilience (Lundberg and Moberg 2003).

In a way it directly impacts human health, economy, food production as well as millions of other species. Therefore, it

is important to know about local bird diversity and its ecology (Ndang'ang'a et al. 2013). In Vidarbha region of Maharashtra 413 species are recorded by various authors. The annotated checklist of Nagpur area represented 284 species of birds. 171 species are studied from Pohara-Malkhed reserve Forest, district Amravati (Wadatkar and Kasambe 2002; Kasambe 2009). 135 species of birds are observed in and around Ambazari Lake Nagpur (Kedar 2012). Total 312 species of birds recorded from the nearby area of Navegaon National Park Gondia 76 species of birds are reported from Chaprala wild life sanctuary, Gadchiroli (Paliwal 2013; Chauhan and Dhamani 2014; Wagh and Tiwari 2020) 92 species of birds are studied from Tamkarada forest near Malegaon tehsil of Washim district (Ingle et al. 2015). 99 species of birds are listed from Junona lake Chandrapur.

Increasing anthropogenic pressure, change in land use patterns, commercial exploitation of waterbodies and seasonal wetlands, forest fire, rampant grazing, overuse of pesticides and herbicides rapidly eats up 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

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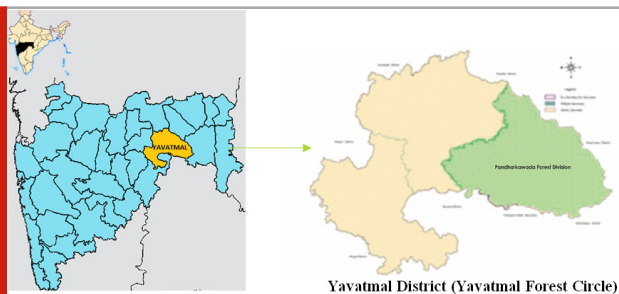
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pressures in the future, largely due to agricultural expansion and increased industrialization (Tilman and Fargione 2001; Dobrovolski et al. 2011; Wagh and Tiwari 2020).

In this context, the conservation of this ecologically important fauna is paramount and, this research exercise of systematic study on bird diversity assessment in different habitat is undertaken from June 2015 to December 2020 to understand and document local diversity, distribution, habit, habitat, nesting type and conservation status of birds of Pandharkawada forest division. This will help to device policies and practice of conservation of birds and their habitats in this forest division.

## MATERIAL AND METHODS

Pandharkawada forest division, located at south-eastern part of Maharashtra and situated in the geographic coordinates of 78° 14' & 79° 13' East and 19° 45' & 20° 20' North, spread over 655.336 square kilometer. It constitutes a compact patches of dense forest cover, open forest, shrubs, grassy belts and associated waterbodies and seasonal wetlands having great value from the point of view of wildlife and bio-diversity conservation. The main portion of forests constitutes the dry Teak bearing forests bearing 60 percent of the total crop composition, so classified as Dry Teak Bearing forests. The bird survey was conducted from June 2015 to December 2020 using standard point count method. Binocular (Nikon 10x40 8.2 0) and camera (Nikon D700, 150-500 Sigma lens) was used for bird watching and to photograph them.



Source: <https://www.veethi.com/places/maharashtra-yavatmal-district-405.htm>

They were identified and classified on the basis of the “The Book of Indian Birds” by Ali (eds.1996) and “Pocket Guide of Birds of the Indian Subcontinent” by Grimmet and Inskipp (eds.2000). Diversity of bird was taxonomically classified and categorized on threaten scale by using latest IUCN Red list (Ali 1996; Grimmet and Inskipp 2000). The data collected from the surveys were used to assess habit, habitat, nesting type, occurrence and distribution. Surveys were conducted four days in a week, from sunrise to 4 hours after sunrise and from 4 hours before sunset until sunset. Morning and evening counts were altered between sites. Each of the sites was surveyed daily depending on weather conditions. Birds seen were identified and recorded along the habitat type and status and checklists were prepared.

## RESULTS AND DISCUSSION

296 species of birds were studied from Pandharkawada forest division from June 2015 to December 2020. Habit, habitat, nesting type, occurrence, distribution and IUCN status of these recorded species were studied.

296 species of birds belonged to 19 orders and 69 family were recorded and photographed from Goplpur Nursery, Shibla Forest Range, Mandar Forest Range, Shindola scrubby forest, Saykheda dam, Wai dam, Mucchi dam, Karanwadi dam, Chilai dam, Bhimnala dam, Navargaon dam, Warud dam, Jam dam Nilgiri ban, Krishna Tekadi of Pandharkawada forest division dominated by order Passeriformes (Table 1 (ABCDEFGH parts), Fig.1). 219 (74%) were common, 49(17%) uncommon, 15(5%) rare and 13(4%) were very rare (fig.4). Locally rare recorded species were White Bellied Minivet, Spotted Creeper, Ultramarine Flycatcher, Greater Flamingo, Pallied Harrier, Pied Harrier, Indian Spotted eagle, Common Black Bird, Stork Billed Kingfisher, Grey Headed Canary Flycatcher, Graylag Goose and Forest Wagtail, Eurasian Curlew, Whimbrel, Broad Billed Sandpiper, Lesser Adjutant, Orange headed Green Pigeon, Gull Billed Tern, Egyptian Vulture, Peregrine Falcon, Amur falcon, Red-necked Falcon, Grey-necked Bunting, Black eagle as very rare.

Main food habit of recorded species were insectivores and carnivorous followed by frugivores, granivores, terrestrial grazer, nectarivores, folivores, aquatic grazer, and scavengers (fig.2). Study of their habitat reveals, 166 (56%) were arboreal, 66 (22%) as shore birds 31(10%) water birds 24 (8%) ground birds and 9 (3%) as arial birds (fig.3). Their nesting type is recorded as, 143 (48%) birds were recorded building their nests on tree, 51(17%) in ground scrap, 37 (12%) built nests floating on water 22 (8%) in ground, 22(8%) in tree hole and 21(7%) in rock cleft.166 (56%) were resident and were found distributed in various habitat (21.28%), 63 were winter visitors and most amongst them were waterbirds, they spent winter at different waterbodies and seasonal wetlands in this division. 22 (7.50%) were Vagrant, 19 (6.41%) were distributed from winter to summer,19 (6.41%) was recorded from monsoon to winter, 4 were monsoon to summer, 2 were monsoon visitor, Greater flamingo was a summer visitor. (fig.5). IUCN red data book conservation status of birds studied from Pandharkawada forest division shown that, Alexandrine Parakeet, Curlew Sandpiper, Great Thick-knee, Painted Stork, Grey Headed Fish Eagle, Black Tailed Godwit, Red-neck Falcon, Pallid Harrier these 10 species were near threatened. 2 species, Lesser adjutant, River tern were vulnerable and Egyptian Vulture is endangered.

This study established that Pandharkawada forest division is rich in avifaunal diversity due to varied habitats like forest, grassy patches, shrubs, perineal waterbodies and seasonal wetlands. This attracts varieties of local resident and migratory species and different species were found distributed in different seasons of the year.

The results showed that in comparison to the avian diversity in the adjoining areas, the diversity in Pandharkawada area

is significantly better. Major support systems for all kind of flora and fauna in general and birds in particular were forests and waterbodies. Waterbodies and seasonal wetlands were among the most productive ecosystems on the earth and attracts varieties of species of bird. These were under

tremendous anthropogenic pressure due to commercial overexploitation and increasing lean period agriculture. Increasing anthropogenic pressure influenced the number of wintering waterbirds, their distribution, foraging behavior and interspecies competition (Chen, et al. 2011; Zhao et al. 2013; Zhou et al. 2010; Alice et al. 2020).

**Table 1 (Part-A). Bird Diversity of Pandharkawada Forest Division**

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
1.	Galliformes	Phasianidae	<i>Francolinus pictus</i>	Painted francolin	GrB	GrNt	Grv, Ins	C	RD	LC
2.			<i>Francolinus pondicerianus</i>	Grey francolin	GrB	GrNt	Grv, Ins	C	RD	LC
3.			<i>Perdicula asiatica</i>	Jungle Bush Quail	GrB	GrNt	Grv, Ins	C	RD	LC
4.			<i>Perdicula argoondah</i>	Rock Bush Quail	GrB	GrNt	Grv, Ins	C	WV	LC
5.			<i>Coturnix coturnix</i>	Common Quail	GrB	GrNt	Grv, Ins	C	WV	LC
6.			<i>Coturnix coromandelica</i>	Rain Quail	GrB	GrNt	Grv, Ins	C	RD	LC
7.			<i>Pavo cristatus</i>	Indian peafowl	GrB	GrNt	Grv, Ins	C	RD	LC
8.	Charadriiformes	Turnicidae	<i>Turnix tanki</i>	Yellow-legged buttonquail	GrB	GrNt	Grv, Ins	UC	M-W	LC
9.			<i>Turnix suscitator</i>	Barred buttonquail	GrB	GrSc	Grv, Ins	C	RD	LC
10.			<i>Turnix sylvaticus</i>	Small buttonquail	GrB	GrSc	Grv, Ins	UC	VG	LC
11.	Anseriformes	Anatidae	<i>Anser anser</i>	Grey-lag goose	WtB	WtFl	Frv, Grz (Gr)	R	WV	LC
12.			<i>Anser indicus</i>	Bar-headed goose	WtB	WtFl	Frv, Grz (Gr)	UC	WV	LC
13.			<i>Dendrocygna javanica</i>	Lesser Whistling Duck	WtB	TrHl	Car (Mn), Grz (Gr)	C	RD	LC
14.			<i>Tadorna ferruginea</i>	Ruddy Shelduck	WtB	RoCl	Car (Mn), Grz (Gr)	C	W-S	LC
15.			<i>Sarkidiornis melanotos</i>	Comb duck	WtB	TrHl	Car (Mn), Grz (Gr)	UC	WV	LC
16.			<i>Nettapus coromandelianus</i>	Cotton pygmy-goose	WtB	TrHl	Car (Mn), Grz (Gr)	C	RD	LC
17.			<i>Anas strepera</i>	Gadwall	WtB	WtFl	Car (Mn), Grz (Gr)	C	WV	LC
18.			<i>Anas Penelope</i>	Eurasian wigeon	WtB	WtFl	Grz (Gr)	C	WV	LC
19.			<i>Anas poecilorhyncha</i>	Spot-billed duck	WtB	WtFl	Car (Mn), Grz (Gr)	C	RD	LC
20.			<i>Anas clypeata</i>	Northern shoveler	WtB	WtFl	Car (Mn)	C	WV	LC
21.			<i>Anas acuta</i>	Northern pintail	WtB	WtFl	Car (Mn)	C	WV	LC
22.			<i>Anas querquedula</i>	Garganey	WtB	WtFl	Car (Mn)	C	WV	LC
23.			<i>Anas crecca</i>	Common teal	WtB	WtFl	Car(Mn), Grz (Gr)	C	WV	LC
24.			<i>Rhodonessa rufina</i>	Red-crested pochard	WtB	WtFl	Car (Mn)	C	WV	LC
25.			<i>Aythya ferina</i>	Common pochard	WtB	WtFl	Car (Mn) & (Mj)	C	WV	LC
26.			<i>Aythya fuligula</i>	Tufted duck	WtB	WtFl	Car (Mn) & (Mj)	R	WV	LC
27.			<i>Aythya nyroca</i>	Ferruginous Pochard	WtB	WtFl	Car (Mn) & (Mj)	R	WV	LC
28.	Piciformes	Picidae	<i>Jynx torquilla</i>	Eurasian wryneck	ArB	TrHl	Ins	C	W-S	LC
29.			<i>Dendrocopos nanus</i>	Brown-capped pygmy woodpecker	ArB	TrNt	Ins	C	RD	LC
30.			<i>Dendrocopos mahrattensis</i>	Yellow-crowned woodpecker	ArB	TrNt	Ins, Nct	C	RD	LC
31.			<i>Dinopium benghalense</i>	Lesser goldenback	ArB	TrNt	Ins, Nct	C	RD	LC
32.		<i>Chrysocolaptes festivus</i>	White-naped woodpecker	ArB	TrHl	Ins, Nct	C	RD	LC	
33.		Ramphastidae	<i>Megalaima haemacephala</i>	Coppersmith barbet	ArB	TrHl	Ins, Frv	C	RD	LC
34.	Bucerotiformes	Bucerotidae	<i>Megalaima virens</i>	Brown headed barbet	ArB	TrHl	Ins, Frv	UC	RD	LC
35.			<i>Ocyrceros birostris</i>	Indian grey hornbill	ArB	TrHl	Ins, Frv	UC	RD	LC
36.			Upupidae	<i>Upupa epops</i>	Common hoopoe	ArB	RoCl	Ins	UC	RD

Table 1 (Part-B) Bird Diversity of Pandharkawada Forest Division

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
37.	Coraciiformes	Coraciidae	<i>Coracias benghalensis</i>	Indian roller	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
38.			<i>Coracias garrulus</i>	European roller	ArB	TrHl	Ins, Car (Mj)	UC	WV	LC
39.		Alcedinidae	<i>Alcedo atthis</i>	Common kingfisher	ArB	TrNt	Car (Mn), & (Mj)	C	RD	LC
40.			<i>Halcyon smyrnensis</i>	White throated kingfisher	ArB	TrNt	Car (Mn), & (Mj)	C	RD	LC
41.			<i>Ceryle rudis</i>	Pied kingfisher	ArB	RoCl	Car (Mn), & (Mj)	C	RD	LC
42.			<i>Pelargopsis capensis</i>	Stork-billed Kingfisher	ArB	TrNt	Car (Mn), & (Mj)	R	VG	LC
43.		Meropidae	<i>Merops orientalis</i>	Green bee-eater	ArB	RoCl	Ins	C	RD	LC
44.			<i>Merops philippinus</i>	Blue-tailed bee-eater	ArB	GrSc	Ins	C	WV	LC
45.			<i>Merops persicus</i>	Blue-cheeked Bee-eater	ArB	RoCl	Ins	UC	WV	LC
46.	Cuculiformes	Cuculidae	<i>Clamator jacobinus</i>	Jacobin cuckoo	ArB	TrNt	Ins, Frv	C	MV	LC
47.			<i>Hierococcyx varius</i>	Common hawk cuckoo	ArB	TrNt	Ins, Frv	C	RD	LC
48.			<i>Cuculus canorus</i>	Eurasian cuckoo	ArB	TrNt	Ins, Frv	C	M-W	LC
49.			<i>Cacomantis passerines</i>	Grey-bellied cuckoo	ArB	TrNt	Ins, Frv	C	RD	LC
50.			<i>Eudynamis scolopaceus</i>	Asian koel	ArB	TrNt	Ins, Frv	C	RD	LC
51.			<i>Taccocua leschenaultia</i>	Sirkeer malkoha	ArB	TrNt	Ins, Frv	C	RD	LC
52.			<i>Centropus (sinensis) parroti</i>	Southern coucal	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
53.	Psittaciformes	Psittaculidae	<i>Psittacula eupatria</i>	Alexandrine parakeet	ArB	TrHl	Frv, Grv	C	RD	NT
54.			<i>Psittacula kramera</i>	Rose ringed parakeet	ArB	TrHl	Frv, Grv	C	RD	LC
55.			<i>Psittacula cyanocephala</i>	Plum-headed parakeet	ArB	TrHl	Frv, Grv	C	RD	LC
56.	Strigiformes	Tytonidae	<i>Tyto alba</i>	Barn owl	ArB	RoCl	Ins, Car (Mj)	C	RD	LC
57.		Strigidae	<i>Otus bakkamoena</i>	Indian scops owl	ArB	RoCl	Ins, Car (Mj)	C	RD	LC
58.			<i>Bubo bengalensis</i>	Indian eagle owl	ArB	RoCl	Ins, Car (Mj)	C	RD	LC
59.			<i>Ketupa zeylonensis</i>	Brown fish owl	ArB	RoCl	Car (Mn), & (Mj)	C	RD	LC
60.			<i>Strix ocellata</i>	Mottled wood owl	ArB	TrHl	Car (Mn), & (Mj)	C	RD	LC
61.			<i>Glaucidium radiatum</i>	Jungle owlet	ArB	TrHl	Ins, Car (Mj)	UC	RD	LC
62.			<i>Athene brama</i>	Spotted owlet	ArB	TrHl	Ins, Car (Mj)	C	RD	LC
63.	Caprimulgiformes	Apodidae	<i>Cypsiurus balasienis</i>	Asian palm swift	AiB	RoCl	Ins,	C	RD	LC
64.			<i>Apus affinis</i>	House swift	AiB	RoCl	Ins,	C	RD	LC
65.			<i>Hemiprocne coronate</i>	Crested treeswift	AiB	TrNt	Ins,	C	RD	LC
66.		Caprimulgidae	<i>Caprimulgus asiaticus</i>	Indian nightjar	ArB	GrSc	Ins	C	RD	LC
67.			<i>Caprimulgus affinis</i>	Savannah nightjar	GrB	GrSc	Ins,	UC	WV	LC
68.			<i>Caprimulgus indicus</i>	Jungle Nightjar	GrB	GrSc	Ins	UC	WV	LC
69.	Columbiformes	Columbidae	<i>Columba livia</i>	Rock pigeon	GrB	RoCl	Grv, Ins	C	RD	LC
70.			<i>Streptopelia orientalis</i>	Oriental turtle dove	ArB	TrNt	Grv, Frv	UC	WV	LC
71.			<i>Streptopelia senegalensis</i>	Laughing dove	ArB	TrNt	Grv, Frv	C	RD	LC
72.			<i>Streptopelia chinensis</i>	Spotted dove	ArB	TrNt	Grv, Frv	C	RD	LC
73.			<i>Streptopelia tranquebarica</i>	Red collard dove	ArB	TrNt	Grv, Frv	C	M-W	LC
74.			<i>Streptopelia decaocto</i>	Eurasian collared dove	ArB	TrNt	Grv, Frv	C	RD	LC
75.			<i>Treron phoenicopterus</i>	Yellow-footed green pigeon	ArB	TrNt	Grv, Frv	C	RD	LC
76.			<i>Treron bicinctus</i>	Orange-breasted Green Pigeon	ArB	TrNt	Grv, Frv	VR	VG	LC

Table 1 (Part-C) Bird Diversity of Pandharkawada Forest Division

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
77.	Gruiformes	Rallidae	<i>Amaurornis akool</i>	Brown crane	ShB	TrNt	Grv, Car (Mn)	C	RD	LC
78.			<i>Zapornia pusilla</i>	Baillon's Crake	ShB	WtFl	Ins, Car (Mn)	UC	WV	LC
79.			<i>Porzana porzana</i>	Spotted crane	ShB	WtFl	Ins, Car (Mn)	UC	WV	LC
80.			<i>Amaurornis phoenicurus</i>	White breasted waterhen	ShB	WtFl	Ins, Car (Mj)	C	RD	LC
81.			<i>Porphyrio porphyrio</i>	Purple swamphen	ShB	WtFl	Ins, Frv	C	RD	LC
82.			<i>Gallinule chloropus</i>	Common moorhen	ShB	WtFl	Car(Mn), Frv	C	RD	LC
83.			<i>Fulica atra</i>	Common coot	ShB	WtFl	Omni, Grv	C	RD	LC
84.	Pteroclitiformes	Pteroclitidae	<i>Pterocles indicus</i>	Painted sandgrouse	GrB	GrSc	Ins, Grv	C	RD	LC
85.			<i>Pterocles excustus</i>	Chestnut-bellied sandgrouse	GrB	GrSc	Grv, Grz (Gr)	UC	WV	LC
86.	Charadriiformes	Scolopacidae	<i>Gallinago gallinago</i>	Common snipe	ShB	GrSc	Car (Mn), Ins	C	RD	LC
87.			<i>Gallinago stenura</i>	Pintail Snipe	ShB	GrSc	Car (Mn), Ins	C	WV	LC
88.			<i>Limosa limosa</i>	Black tailed godwit	ShB	GrSc	Car (Mn), Ins	C	W-S	NT
89.			<i>Tringa erythropus</i>	Spotted redshank	ShB	GrSc	Car (Mn), Ins	C	W-S	LC
90.			<i>Tringa totanus</i>	Common redshank	ShB	WtFl	Car (Mn), Ins	C	W-S	LC
91.			<i>Tringa stagnatilis</i>	Marsh sandpiper	ShB	WtFl	Car (Mn), Ins	C	WV	LC
92.			<i>Tringa nebularia</i>	Common greenshank	ShB	GrSc	Car (Mn), Ins	C	W-S	LC
93.			<i>Tringa ochropus</i>	Green sandpiper	ShB	GrSc	Car (Mn), Ins	UC	WV	LC
94.			<i>Tringa glareola</i>	Wood sandpiper	ShB	GrSc	Car (Mn), Ins	C	M-W	LC
95.			<i>Actitis hypoleucos</i>	Common sandpiper	ShB	GrSc	Car (Mn), Ins	C	M-W	LC
96.			<i>Limicola falcinellus</i>	Broad billed sandpiper	ShB	GrNt	Car (Mn), Ins	VR	VG	LC
97.			<i>Calidris minuta</i>	Little stint	ShB	GrSc	Car (Mn), Ins	C	W-S	LC
98.			<i>Calidris temminckii</i>	Temminck's stint	ShB	GrSc	Car (Mn), Ins	C	WV	LC
99.			<i>Calidris alpina</i>	Dunlin	ShB	GrSc	Car (Mn), Ins	UC	WV	LC
100.			<i>Calidris ferruginea</i>	Curlew sandpiper	ShB	GrSc	Car (Mn), Ins	C	W-S	NT
101.			<i>Philomachus pugnax</i>	Ruff	ShB	GrSc	Car (Mn), Ins	UC	W-S	LC
102.			<i>Numenius arquata</i>	Eurasian curlew	ShB	GrSc	Ins, Car (Mn)	VR	VG	NT
103.			<i>Numenius phaeopus</i>	Whimbrel	ShB	GrSc	Car (Mn), Ins	VR	VG	LC
104.		Rostratulidae	<i>Rostratula benghalensis</i>	Greater painted snipe	ShB	GrSc	Ins, Car (Mn)	C	RD	LC
105.		Jacaniidae	<i>Hydrophasianus chirurgus</i>	Pheasant tailed jacana	ShB	WtFl	Grz (Wt), Car (Mn)	C	RD	LC
106.			<i>Metopidius indicus</i>	Bronze winged jacana	ShB	WtFl	Grz (Wt), Car (Mn)	C	RD	LC
107.		Burhinidae	<i>Burhinus indicus</i>	Indian thick-knee	GrB	GrSc	Ins, Car (Mn)	C	RD	LC
108.			<i>Esacus recurvirostris</i>	Great thick-knee	ShB	GrSc	Car (Mn), Ins	C	RD	NT
109.		Recurvirostridae	<i>Himantopus Himantopus</i>	Black-winged stilt	ShB	GrSc	Ins, Car (Mn)	C	M-S	LC
110.		Charadriidae	<i>Charadrius dubius</i>	Little ringed plover	ShB	GrSc	Ins, Car (Mn)	C	RD	LC
111.			<i>Charadriushiatia ulla</i>	Common Ringed Plover	ShB	GrSc	Ins, Car (Mn)	UC	VG	LC
112.			<i>Pluvialis fulva</i>	Pacific golden plover	ShB	GrSc	Ins, Car (Mn)	UC	WV	LC
113.			<i>Pluvialis squatarola</i>	Grey plover	ShB	GrSc	Ins, Car (Mn)	UC	WV	LC

Table 1 (Part-D) Bird Diversity of Pandharkawada Forest Division

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
114.		Charadriidae	<i>Charadrius mongolus</i>	Lesser sand plover	ShB	GrSc	Ins, Car (Mn)	UC	WV	LC
115.			<i>Chadrius alexandrinus</i>	Kentish plover	ShB	GrSc	Ins, Car (Mn)	C	M-W	LC
116.			<i>Vanellus malabaricus</i>	Yellow wattled lapwing	ShB	GrSc	Ins, Car (Mn)	C	RD	LC
117.			<i>Vanellus cinereus</i>	Grey headed lapwing	ShB	GrSc	Ins, Car (Mn)	R	WV	LC
118.			<i>Vanellus indicus</i>	Red wattled lapwing	GrB	GrSc	Ins, Car (Mn)	C	RD	LC
119.		Glareolidae	<i>Glareola pratincole</i>	Collared pratincole	ShB	GrSc	Car (Mn), Ins	C	WV, MV	LC
120.			<i>Glareola maldivarum</i>	Oriental pratincole	ShB	GrSc	Car (Mn), Ins	C	VG	LC
121.			<i>Glareola lactea</i>	Small pratincole	ShB	GrSc	Ins, Car (Mn),	C	RD	LC
122.			<i>Cursorius coromendalicus</i>	Indian Cursor	GrB	GrSc	Ins, Car (Mn)	C	RD	LC
123.		Laridae	<i>Larus brunicephalus</i>	Brown-headed gull	ShB	GrSc	Car (Mn), Ins	UC	WV	LC
124.			<i>Larus ridibundus</i>	Black headed gull	ShB	GrSc	Car (Mn), Ins	C	WV	LC
125.			<i>Sterna aurantia</i>	River tern	ShB	GrSc	Car (Mn), Ins	C	RD	VU
126.			<i>Sterna albifrons</i>	Little tern	ShB	GrSc	Car (Mn), Ins	C	RD	LC
127.			<i>Childonia hybridia</i>	Whiskered tern	ShB	GrSc	Car (Mn), Ins	C	W-S	LC
128.			<i>Gelochelidon nilotica</i>	Gull-billed Tern	ShB	GrSc	Car (Mn), Ins	VR	VG	LC
129.	Accipitriformes	Accipitridae	<i>Neophron percnopterus</i>	Egyptian Vulture	ArB	TrNt	Scv	VR	VG	EN
130.			<i>Pernis ptilorhynchus</i>	Oriental honey buzzard	ArB	TrNt	Car (Mj)	C	RD	LC
131.			<i>Butastur teesa</i>	White-eyed buzzard	ArB	TrNt	Car (Mj)	C	RD	LC
132.			<i>Accipiter nisus</i>	Eurasian sparrowhawk	ArB	TrNt	Car (Mj)	UC	VG	LC
133.			<i>Accipiter badius</i>	Shikra	ArB	TrNt	Car (Mn), & (Mj)	C	RD	LC
134.			<i>Elanus caeruleus</i>	Black-winged kite	ArB	TrNt	Car (Mj)	C	RD	LC
135.			<i>Milvus migrans</i>	Black kite	ArB	TrNt	Car (Mj)	C	RD	LC
136.			<i>Pandion haliaetus</i>	Osprey	ArB	TrNt	Car (Mj)	C	W-S	LC
137.			<i>Aquila rapax</i>	Towny eagle	ArB	TrNt	Car (Mj)	C	VG	LC
138.			<i>Aquila fasciata</i>	Bonelles eagle	ArB	TrNt	Car (Mj)	C	RD	LC
139.			<i>Ichthyophaga ichthyaetus</i>	Grey headed fish eagle	ArB	TrNt	Car (Mj)	UC	RD	NT
140.			<i>Circaetus gallicus</i>	Short toed snake eagle	ArB	TrNt	Car (Mj)	C	RD	LC
141.			<i>Spilornis cheela</i>	Crested serpent eagle	ArB	TrNt	Car (Mj)	C	RD	LC
142.			<i>Circus aeruginosus</i>	Western marsh harrier	ArB	TrNt	Car (Mn), & (Mj)	UC	W-S	LC
143.			<i>Circus macrourus</i>	Pallid harrier	ArB	GrNt	Car (Mj)	R	WV	NT
144.			<i>Circus melanoleucos</i>	Pied Harrier	ArB	GrNt	Car (Mj)	R	WV	LC
145.			<i>Circus pygargus</i>	Montagu's harrier	ArB	GrNt	Car (Mj)	UC	WV	LC
146.			<i>Ictinaetus malayensis</i>	Black eagle	ArB	TrNt	Car (Mj)	VR	VG	LC
147.			<i>Aquila hastata</i>	Indian-spotted Eagle	ArB	TrNt	Car (Mj)	R	VG	LC
148.			<i>Hieraaetus pennatus</i>	Booted eagle	ArB	TrNt	Car (Mj)	UC	WV	LC
149.			<i>Spizaetus cirrhatus</i>	Changeable hawk eagle	ArB	TrNt	Car (Mj)	C	RD	LC

Table 1 (Part-E) Bird Diversity of Pandharkawada Forest Division

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
150.	Falconiformes	Falconidae	<i>Falco tinnunculus</i>	Common kestrel	ArB	TrNt	Car (Mj), Ins	C	WV	LC
151.			<i>Falco amurensis</i>	Amur Falcon	ArB	TrNt	Car (Mj), Ins	VR	VG	LC
152.			<i>Falco peregrinus</i>	Peregrine Falcon	ArB	TrNt	Car (Mj), Ins	VR	WV	LC
153.			<i>Falco chicquera</i>	Red-necked Falcon	ArB	TrNt	Car (Mj), Ins	VR	VG	NT
154.	Phoenicopteriformes	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little grebe	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
155.	Pelecaniformes	Anhingidae	<i>Anhinga melanogaster</i>	Darter	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
156.		Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little cormorant	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
157.			<i>Phalacrocorax fuscicollis</i>	Indian cormorant	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
158.			<i>Phalacrocorax carbo</i>	Greater cormorant	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
159.		Ardeidae	<i>Egretta garzetta</i>	Little egret	ShB	WtFl	Ins, Car (Mn)	C	RD	LC
160.			<i>Ardea cinerea</i>	Grey heron	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
161.			<i>Ardea purpurea</i>	Purple heron	WtB	WtFl	Car (Mn), & (Mj)	C	RD	LC
162.			<i>Casmerodius albus</i>	Great egret	ShB	TrNt	Ins, Car (Mn)	C	RD	LC
163.			<i>Mesophoyx intermedia</i>	Intermediate egret	ShB	TrNt	Ins, Car (Mn)	C	RD	LC
164.			<i>Bubulcus ibis</i>	Cattle egret	ShB	TrNt	Ins, Car (Mn)	C	RD	LC
165.			<i>Ardeola grayii</i>	Indian pond heron	WtB	TrNt	Ins, Car (Mn)	C	RD	LC
166.			<i>Butorides striata</i>	Striated heron	WtB	TrNt	Car (Mn), & (Mj)	C	RD	LC
167.			<i>Nycticorax nycticorax</i>	Black crowned night heron	WtB	TrNt	Car (Mn), & (Mj)	C	RD	LC
168.			<i>Ixobrychus sinensis</i>	Yellow bittern	WtB	TrNt	Car (Mn), & (Mj)	C	RD	LC
169.			<i>Ixobrychus cinnamomeus</i>	Cinnamon bittern	WtB	WtFl	Car (Mn), Ins	C	RD	LC
170.			<i>Dupetor flavicollis</i>	Black bittern	WtB	WtFl	Ins, Car (Mn)	C	RD	LC
171.		Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy ibis	ShB	TrNt	Car (Mj), (Min)	C	RD	LC
172.			<i>Threskiornis melanocephalus</i>	Black-headed ibis	ShB	TrNt	Car (Mj), (Min)	C	RD	LC
173.			<i>Pseudibis papillosa</i>	Black ibis	ShB	WtFl	Car (Mj), (Min)	C	RD	LC
174.			<i>Platalea leucorodia</i>	Eurasian spoonbill	ShB	WtFl	Car (Mj), (Min)	C	RD	LC
175.		Ciconiidae	<i>Mycteria leucocephala</i>	Painted stork	ShB	TrNt	Car (Mj), (Min)	C	RD	NT
176.			<i>Anastomus oscitans</i>	Asian openbill	ShB	WtFl	Car (Mj), (Min)	C	RD	LC
177.			<i>Ciconia episcopus</i>	Woolly necked stork	ShB	TrNt	Car (Mj), (Min)	C	RD	NT
178.			<i>Ciconia nigra</i>	Black Stork	ShB	TrNt	Car(Mj), (Min)	C	WV	LC
179.			<i>Leptoptilos javanicus</i>	Lesser adjutant	ShB	TrNt	Car (Mj), (Min)	VR	VG	VU
180.		Phoenicopteridae	<i>Phoenicopterus ruber</i>	Greater flamingo	WtB	WtFl	Car (Mn) & (Mj)	R	SV	LC
181.	Passeriformes	Pittidae	<i>Pitta brachyura</i>	Indian pitta	GrB	TrNt	Ins	UC	S-M	LC
182.		Laniidae	<i>Lanius isabellinus</i>	Isabelline shrike	ArB	TrNt	Ins, Car (Mj)	UC	WV	LC
183.			<i>Lanius cristatus</i>	Brown shrike	ArB	TrNt	Ins, Car (Mj)	C	WV	LC
184.			<i>Lanius vittatus</i>	Bay backed shrike	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
185.			<i>Lanius schach</i>	Long tailed shrike	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
186.			<i>Lanius tephronotus</i>	Grey-backed Shrike	ArB	TrNt	Ins, Car (Mj)	C	VG	LC
187.			<i>Lanius meridionalis</i>	Southern grey shrike	ArB	TrNt	Ins, Car (Mj)	UC	RD	LC

Table 1 (Part-F) Bird Diversity of Pandharkawada Forest Division

Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
188.		Corvidae	<i>Dendrocitta vagabunda</i>	Rufous treepie	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
189.			<i>Corvus splendens</i>	House crow	ArB	TrNt	Scv, Car (Mn)	C	RD	LC
190.			<i>Corvus culminatus</i>	Indian Jungle crow	ArB	TrNt	Scv, Car (Mn)	C	RD	LC
191.		Oriolidae	<i>Oriolus (oriolus)kundoo</i>	Indian golden oriole	ArB	TrNt	Ins, Frv	C	RD	LC
192.			<i>Oriolus xanthornus</i>	Black hooded oriole	ArB	TrNt	Ins, Frv	UC	RD	LC
193.		Campephagidae	<i>Coracina macei</i>	Large cuckooshrike	ArB	TrNt	Ins, Car (Mn)	UC	RD	LC
194.			<i>Coracina melanoptera</i>	Black headed cuckooshrike	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
195.			<i>Pericrocotus cinnamomeus</i>	Small minivet	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
196.			<i>Pericrocotus erythropygus</i>	White bellied minivet	ArB	TrNt	Ins, Car (Mn)	R	VG	LC
197.		Rhipiduridae	<i>Rhipidura aureola</i>	White-browed fantail	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
198.			<i>Rhipidura albicollis</i>	White-throated fantail	ArB	TrNt	Ins, Frv	C	RD	LC
199.		Dicruridae	<i>Dicrurus macrocercus</i>	Black drongo	ArB	TrNt	Ins	C	RD	LC
200.			<i>Dicrurus caerulescens</i>	White bellied drongo	ArB	TrNt	Ins, Frv	C	RD	LC
201.			<i>Dicrurus leucophaeus</i>	Ashy drongo	ArB	TrNt	Ins	C	WV	LC
202.		Monarchidae	<i>Hypothymis azurea</i>	Black naped monarch	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
203.			<i>Terpsiphone paradisi</i>	Asian paradise flycatcher	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
204.		Cloropseidae	<i>Cloropsis jerdoni</i>	Jerdon's leafbird	ArB	TrNt	Ins, Frv	UC	W-S	LC
205.		Aegithinidae	<i>Aegithina tiphia</i>	Common iora	ArB	TrNt	Ins, Frv	C	RD	LC
206.		Vangidae	<i>Tephrodornis pondicerianus</i>	Common woodshrike	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
207.		Turdidae	<i>Turdus merula</i>	Common blackbird	ArB	TrNt	Ins, Car (Mj)	R	VG	LC
208.			<i>Zoothera citrina</i>	Orange headed thrush	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
209.			<i>Monticola solitarius</i>	Blue rock thrush	ArB	RoCl	Ins, Car (Mj)	C	M-S	LC
210.		Muscicapidae	<i>Muscicapa dauurica</i>	Asian brown flycatcher	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
211.			<i>Ficedula parva</i>	Red-breasted flycatcher	ArB	TrHl	Ins, Car (Mn)	C	WV	LC
212.			<i>Ficedula albicilla</i>	Red-throated Flycatcher	ArB	TrHl	Ins, Car (Mn)	UC	WV	LC
213.			<i>Ficedula superciliaris</i>	Ultramarine flycatcher	ArB	TrNt	Ins, Car (Mn)	R	WV	LC
214.			<i>Eumyias thalassinus</i>	Verditer flycatcher	ArB	TrNt	Ins, Car (Mn)	UC	RD	LC
215.			<i>Cyornis tickelliae</i>	Tickell's blue flycatcher	ArB	TrHl	Ins, Car (Mn)	C	RD	LC
216.			<i>Luscinia svecica</i>	Bluethroat	ShB	GrNt	Ins, Car (Mn)	C	WV	LC
217.			<i>Copsychus saularis</i>	Oriental magpie robin	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
218.			<i>Saxicoloides fulicatus</i>	Indian robin	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
219.			<i>Phoenicurus ochruros</i>	Black redstart	ArB	TrNt	Ins, Car (Mn)	C	M-W	LC
220.			<i>Saxicola torquatus</i>	Common stonechat	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
221.			<i>Saxicola caprata</i>	Pied bushchat	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
222.			<i>Cercomela fusca</i>	Brown rock chat	ArB	TrNt	Ins, Car (Mn)	C	RD	LC
223.			<i>Oenanthe isabellina</i>	Isabelline Wheatear	ArB	RoCl	Ins, Car (Mn)	UC	WV	LC
224.		Stenostiridae	<i>Culicicapa ceylonensis</i>	Grey headed canary flycatcher	ArB	TrNt	Ins	R	WV	LC



Table 1 (Part-G) Bird Diversity of Pandharkawada Forest Division

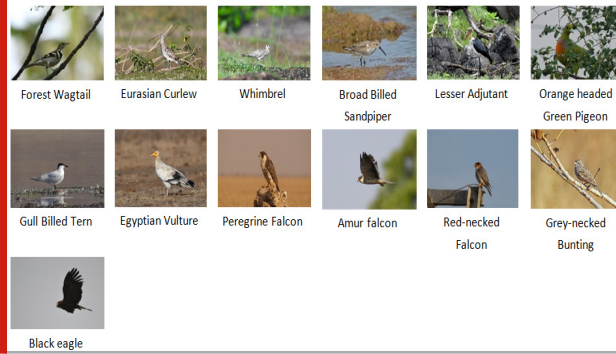
Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
225.		Sturnidae	<i>Pastor roseus</i>	Rosy starling	ArB	TrNt	Ins, Frv	C	W-S	LC
226.			<i>Sturnia pagodarum</i>	Brahminy starling	ArB	TrNt	Ins, Frv	C	RD	LC
227.			<i>Sturnia malabarica</i>	Chestnut-tailed starling	ArB	TrHl	Ins, Frv	C	W-S	LC
228.			<i>Gracupica contra</i>	Asian pied starling	ArB	TrNt	Ins, Frv	C	RD	LC
229.			<i>Acridotheres tristis</i>	Common myna	ArB	TrNt	Ins, Frv	C	RD	LC
230.			<i>Acridotheres albocinctus</i>	Bank Myna	ArB	RoCl	Ins, Frv	R	VG	LC
231.		Paridae	<i>Parus major</i>	Great tit	ArB	TrHl	Ins, Frv	C	RD	LC
232.			<i>Parus xanthogenys</i>	Black-lored tit	ArB	TrNt	Ins, Frv	C	RD	LC
233.		Sittidae	<i>Sitta cinnamoventris</i>	Chestnut-bellied nuthatch	ArB	TrHl	Ins, Frv	UC	RD	LC
234.		Certhiidae	<i>Salpormis spilonotus</i>	Spotted Creeper	ArB	TrNt	Ins	R	W-S	LC
235.		Hirundinidae	<i>Riparia paludicola</i>	Plain martin	AiB	RoCl	Ins	C	RD	LC
236.			<i>Ptyonoprogne concolor</i>	Dusky Crag Martin	AiB	RoCl	Ins	C	RD	LC
237.			<i>Hirundo rustica</i>	Barn swallow	AiB	RoCl	Ins	C	WV	LC
238.			<i>Hirundo smithii</i>	Wire tailed swallow	AiB	RoCl	Ins	C	RD	LC
239.			<i>Cecropis daurica</i>	Red rumped swallow	AiB	RoCl	Ins	C	RD	LC
240.			<i>Petrochelidon fluvicola</i>	Streak throated swallow	AiB	RoCl	Ins	UC	M-W	LC
241.		Pycnonotidae	<i>Pycnonotus cafer</i>	Red vented bulbul	ArB	TrNt	Frv, Ins	C	RD	LC
242.			<i>Pycnonotus luteolus</i>	White browed bulbul	ArB	TrNt	Frv, Ins	C	RD	LC
243.		Cisticolidae	<i>Cisticola juncidis</i>	Zitting cisticola	ArB	TrNt	Ins	C	RD	LC
244.			<i>Prinia hodgsonii</i>	Grey breasted prinia	ArB	TrNt	Ins	C	W-S	LC
245.			<i>Prinia socialis</i>	Ashy prinia	ArB	TrNt	Ins	C	RD	LC
246.			<i>Prinia inornata</i>	Plain prinia	ArB	TrNt	Ins	C	RD	LC
247.			<i>Prinia sylvatica</i>	Jungle prinia	ArB	TrNt	Ins	C	RD	LC
248.			<i>Orthotomus sutorius</i>	Common tailorbird	ArB	TrNt	Ins	C	RD	LC
249.		Zosteropidae	<i>Zosterops palpebrosus</i>	Oriental white eye	ArB	TrNt	Ins, Frv	C	RD	LC
250.		Acrocephalidae	<i>Acrocephalus dumetorum</i>	Blyth's reed warbler	ArB	TrNt	Ins	C	WV	LC
251.			<i>Acrocephalus Agricola</i>	Paddy field Warbler	ArB	TrNt	Ins	C	RD	LC
252.			<i>Iduna caligata</i>	Booted Warbler	ArB	TrNt	Ins	UC	WV	LC
253.			<i>Acrocephalus stentoreus</i>	Clamorous reed warbler	ArB	TrNt	Ins	C	WV	LC
254.		Phylloscopidae	<i>Phylloscopus collybita</i>	Common chiffchaff	ArB	TrNt	Ins	C	W-S	LC
255.			<i>Phylloscopus griseolus</i>	Sulphur bellied warbler	ArB	TrNt	Ins	UC	WV	LC
256.			<i>Phylloscopus trochiloides</i>	Greenish warbler	ArB	TrNt	Ins	UC	WV	LC
257.		Sylviidae	<i>Sylvia hortensis</i>	Orphean warbler	ArB	TrNt	Ins, Car (Mj)	UC	WV	LC
258.			<i>Chrysomma sinense</i>	Yellow eyed babbler	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
259.			<i>Turdoides caudata</i>	Common babbler	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
260.			<i>Turdoides malcolmi</i>	Large grey babbler	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
261.			<i>Turdoides striatus</i>	Jungle babbler	ArB	TrNt	Ins, Car (Mj)	C	RD	LC
262.			<i>Dumetia hypertyraea</i>	Tawny-bellied Babbler	ArB	TrNt	Ins	C	RD	LC
263.			<i>Sylvia curruca</i>	Lesser Whitethroat	ArB	TrNt	Ins	C	W-S	LC
264.			<i>Mirafra cantillans</i>	Singing bushlark	ArB	TrNt	Ins	C	RD	LC

Table 1 (Part-H) Bird Diversity of Pandharkawada Forest Division

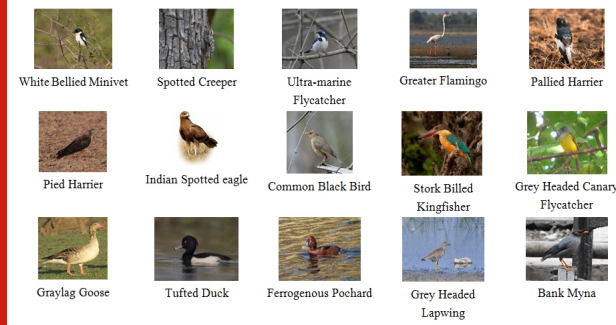
Sr. No.	Order	Family	Scientific Name	Common Name	Habitat	Nest	Food	Occurrence	Distribution	IUCN Status
265.		Alaudidae	<i>Mirafra erythroptera</i>	Indian bushlark	ArB	TrNt	Ins, Grv	C	RD	LC
266.			<i>Eremopterix griseus</i>	Ashy crowned sparrow lark	ArB	TrNt	Ins, Grv	C	RD	LC
267.			<i>Ammomanes phoenicurus</i>	Rufous tailed lark	GrB	TrNt	Ins, Grv	C	RD	LC
268.			<i>Calandrella brachydactyla</i>	Greater short toed lark	GrB	TrNt	Ins, Grv	C	M-W	LC
269.			<i>Galerida cristata</i>	Crested lark	GrB	GrNt	Ins, Grv	UC	M-W	LC
270.			<i>Galerida deva</i>	Sykes's lark	GrB	GrNt	Ins, Grv	C	M-W	LC
271.			<i>Alauda gulgula</i>	Oriental skylark	GrB	GrNt	Grv	UC	M-W	LC
272.		Nectariniidae	<i>Leptocoma zeylonica</i>	Purple rumped sunbird	ArB	TrNt	Nct, Ins	C	RD	LC
273.			<i>Cimyris asiaticus</i>	Purple sunbird	ArB	TrNt	Nct, Ins	C	RD	LC
274.		Passeridae	<i>Passer domesticus</i>	House sparrow	ArB	TrNt	Grv, Ins	C	RD	LC
275.			<i>Gymnoris xanthocollis</i>	Chestnut shouldered petronia	ArB	TrHl	Ins, Grv	C	RD	LC
276.		Motacillidae	<i>Motacilla alba</i>	White wagtail	ShB	GrNt	Ins, Car (Mn)	C	M-W	LC
277.			<i>Motacilla maderaspatensis</i>	White browed wagtail	ShB	GrNt	Ins, Car (Mn)	C	M-S	LC
278.			<i>Motacilla citreola</i>	Citrine wagtail	ShB	GrNt	Ins, Car (Mn)	C	M-W	LC
279.			<i>Motacilla flava</i>	Yellow wagtail	ShB	GrNt	Ins, Car (Mn)	C	M-S	LC
280.			<i>Motacilla cinerea</i>	Grey wagtail	ShB	GrNt	Ins, Car (Mn)	C	M-W	LC
281.			<i>Dendronanthus indicus</i>	Forest wagtail	ArB	TrNt	Ins	VR	VG	LC
282.			<i>Anthus rufulus</i>	Paddyfield pipit	ArB	GrSc	Ins, Fol	C	RD	LC
283.			<i>Anthus godlewskii</i>	Blyth's pipit	ArB	GrSc	Ins, Fol	C	WV	LC
284.			<i>Anthus hodgsoni</i>	Olive-backed Pipit	ArB	TrNt	Ins	UC	WV	LC
285.			<i>Anthus richardi</i>	Rechar'd's Pipit	ArB	GrSc	Ins, Fol	UC	M-W	LC
286.			<i>Anthus compestris</i>	Tawny Pipit	ArB	GrSc	Ins	C	M-W	LC
287.		Ploceidae	<i>Ploceus philippinus</i>	Baya weaver	ArB	TrNt	Ins, Frv	C	RD	LC
288.		Estrildidae	<i>Amandava amandava</i>	Red avadavat	ArB	TrNt	Frv, Grz (Gr)	C	RD	LC
289.			<i>Euodice malabarica</i>	Indian silverbill	ArB	TrNt	Grv, Frv	C	RD	LC
290.			<i>Lonchura punctulata</i>	Scaly breasted munia	ArB	TrNt	Grv, Frv	C	RD	LC
291.			<i>Lonchura malacca</i>	Black headed munia	ArB	TrNt	Grv, Ins	C	RD	LC
292.		Fringillidae	<i>Carpodacus erythrinus</i>	Common rosefinch	ArB	TrNt	Grv, Nct	C	M-W	LC
293.		Emberizidae	<i>Melophus lathamii</i>	Crested bunting	ArB	GrNt	Grv, Ins	UC	RD	LC
294.			<i>Emberiza buehanani</i>	Grey necked bunting	ArB	TrNt	Ins	VR	WV	LC
295.			<i>Emberiza melanocephala</i>	Black headed bunting	ArB	TrNt	Grv, Ins	C	M-W	LC
296.			<i>Emberiza bruniceps</i>	Red headed bunting	ArB	TrNt	Grv, Ins	C	WV	LC

- Habitat: Water Birds - WtB; Shore Birds - ShB; Ground Birds – RrB; Arboreal bird – ArB; Aerial bird – AiB
- Nesting: Groud Scrap - GrSc; Ground Nest - GrNt; Tree Nest – TrNt; Tree Hole – TrHl; Rock Cleft – RoCl; Water Floating – WtF
- Food: Granivores - Grv; Frugivores – Frv; Nctariorres – Nct; Foliores - Fol; Grazer (Terrestrial)- Grz (Gr); Grazer (Aquatic) - Grz (Wt); Insectiores- Ins; Omnivores – Omn; Carniores (Minor) - Car (Mn); Carniores (Major) - Car (Mj); Scavenger - Scv
- Occurrence: Common - C; Uncommon -UC; Rare - R; Very rare - VR
- Distribution: Resident –RD; Winter Visitor – WV; Monsoon Visitor – MV; Summer Visitor – SV; Vagrant – VG; Winter to summer W-S, Winter to monsoon W-M; Summer to monsoon - S-M; Summer to winter - S-W; Monsoon to winter - M- W, Monsoon to summer –M-S.
- IUCN Status: List concerned - LC; Near threatened – NT; Vulnerable – VU; Endangered – EN; Critically endangered – CR

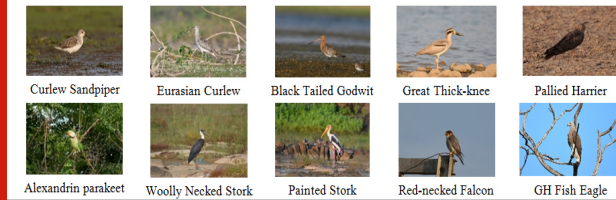
Very Rare Species Recorded in Pandharkawada Forest Division



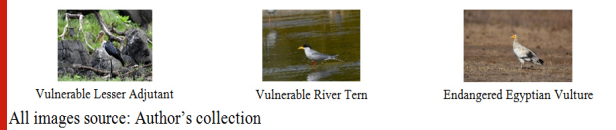
Rare Species of Birds Recorded from Pandharkawada Forest Division



Near Threatened Species Recorded from Pandharkawada Forest Division



Vulnerable and Endangered Species Recorded from Pandharkawada Forest Division



All images source: Author's collection

Changes in tropical wetlands leads to the change in structure and function of the wetland ecosystems, which affect the delivery of important ecosystem services, this loss of ecosystem services impacts human welfare (Alice et al. 2020). After enactment of forest right act 2006, there is tremendous increase in encroachments for individual and community forest rights. More recently, conversion of tropical forests to farmland is a main threat to extinction of bird species from a region, especially intact old-growth forest to agricultural and pastoral lands is among the greatest threats to biodiversity including birds (Gibbs et al. 2010; Tilman et al. 2001; Laurance et al. 2014; Hughes et al.2020; Rurangwa et al. 2021).

Increasing anthropogenic pressure, change in land use patterns, commercial exploitation of waterbodies and seasonal wetlands, forest fire, rampant grazing, overuse of pesticides and herbicides rapidly eating up natural habitats of birds in this forest division. To conserve the diversity in

Figure 1: Family wise species Diversity of Pandharkawada Forest Division

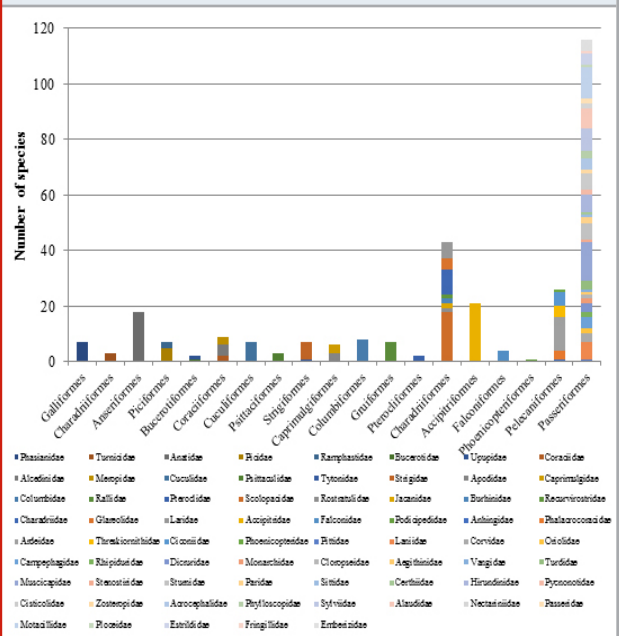


Figure 2: Food Habit

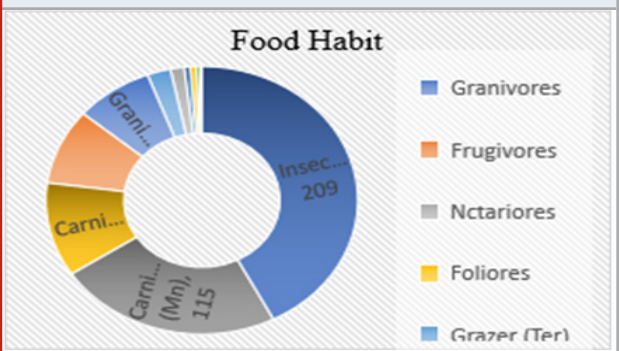
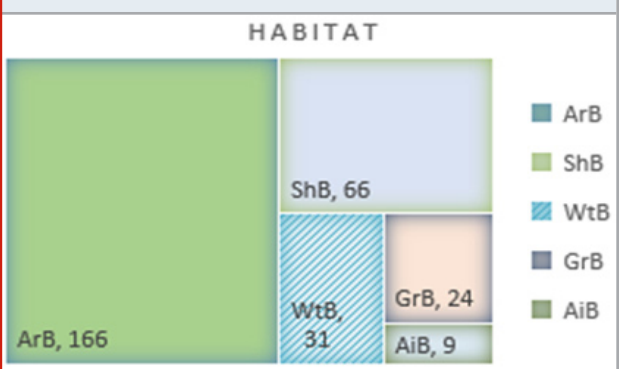


Figure 3: Habitat



general and highly sensitive avifauna in particular, habitat conservation on landscape level is an essential instrument (Socolar and Wilcove 2019; Sayer et al. 2017; Hughes et al. 2020).

Figure 4: Occurrence

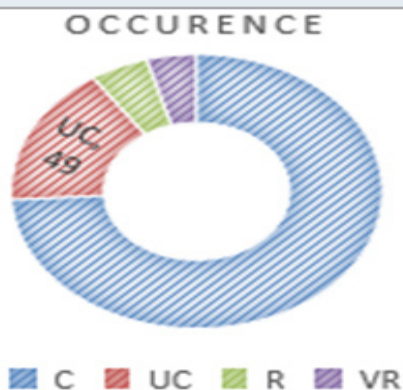


Figure 5: Distribution

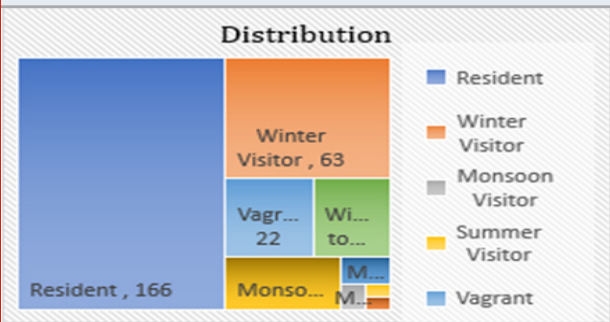


Figure 6: Nesting type

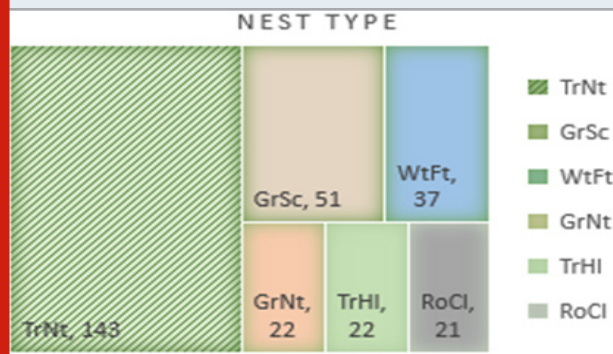
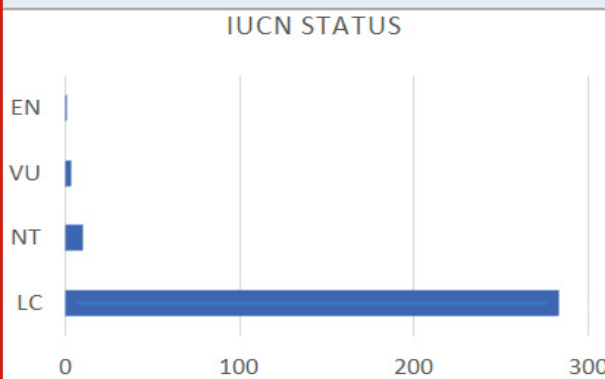


Figure 7: IUCN Status



## CONCLUSION

The findings of the present study will help in understanding local diversity, distribution, and conservation status of birds in this landscape which, will help in drawing sustainable conservation strategies by balancing human demand and ecological services provided by these flying denizens.

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