

BIRDS OF ACHANAKMAR TIGER RESERVE, LORMI, CHHATTISGARH- A STUDY ON THEIR DIVERSITY, DISTRIBUTION AND SEASONALITY

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ABSTRACT

We documented the status of 261 species belonging to 71 families of birds recorded from the Achanakmar Tiger Reserve including one critically endangered, one Endangered, Eight Near threatened and four vulnerable species of the IUCN Red List of Threatened Species (IUCN 2020). Out of 261 bird species documented, 191 are resident, 65 Winter migratory, 4 summer migratory and one Vagrant have been recorded. We also discuss about a few sightings of special interest from the Tiger reserve.

INTRODUCTION

Birds are an important faunal group for their ability as pollinators and pest control and in general they are good indicators of environmental changes such as level of contaminations and environmental impacts (Sutherland, 2000). India's Tiger reserves are home to thousands of faunal species with the Bengal Tiger (*Panthera tigris tigris*) being the flagship species, these Tiger reserves hold a large number of avian species which include both resident and migratory species.

The Achanakmar Tiger Reserve is part of the Achanakmar-Amarkantak Biosphere Reserve the only interstate biosphere reserve in Central India, located in an ecologically diverse landscape representing Tropical Dry and Moist Deciduous forests on Deccan Peninsular biogeographic region of the country, covering the states of Chhattisgarh and Madhya Pradesh (Roychoudhury *et al.*, 2016). The Achanakmar Tiger Reserve is 914.017 Square Kilometres of which Core area is 625.195 square kilometre and total Buffer area is 287.822 square kilometre (Mandal *et al.*, 2017).

The location of the Achanakmar Tiger reserve at the trijunction of major mountain ranges of central India is advantageous information of hilly terrain throughout interspersed with perennial streams, rivulets, and origin of three sacred rivers, the Narmada, Johilla, and Son. The core area of the Achanakmar Tiger Reserve consists of the protected forest land while the buffer zone and the transition area are characterized by forests, agricultural and rehabilitated land, and small suburban clusters. Twenty-seven tribal and non-tribal communities inhabit 418 villages living on agriculture (including the production of medicinal plants) and non-timber products produced in the buffer zone and transition areas. With its core declared as The Achanakmar Tiger reserve is a highly sensitive and protected area but since Tiger sightings are rare than its neighbouring parks, this Tiger reserve is less popular than its counterparts.

Study Area

The Achanakmar Tiger reserve is named after Achanakmar forest village, situated within the tiger reserve. It is situated between 22°24' to 22°35' N latitudes and 80°55' to 81°35' E longitude at the Eastern part of Maikal hills of Satpuda Ranges and North West of Bilaspur and newly constituted Mungeli Districts of Chhattisgarh. It was declared as the Achanakmar Wildlife Sanctuary on 28th June, 1975 with an area encompassing 551.552 sq. km later it was declared as declared a Tiger Reserve under the Project Tiger on 20th February, 2009. (Chandra *et al.*, 2018). Climate here is tropical with distinct winter (November-February), summer (April-mid June) and warm rainy seasons (July- September). Temperature ranges varies from monthly maximum temperature 24.1 - 39.1°C to monthly minimum temperature 6.9 - 25.9 °C in the study area. The average annual rainfall is 1300 mm of which 82% occurs during rainy season. Study area is mostly hilly and undulating. The forest is tropical moist deciduous type. Valleys are dominated mostly with Sal (*Shorea robusta*) but in many areas gregarious association with different tree species like *Diospyros melanoxylon*, *Terminalia tomentosa*, *Adina*

cordifolia, *Pterocarpus marsupium*, *Anogeissus latifolia*, *Tectona grandis*, *Madhuca indica* can be observed. Lower and higher slopes have bamboo (*Dendrocalamus strictus*) with miscellaneous tree species. (Roychoudhury *et al.*, 2016)

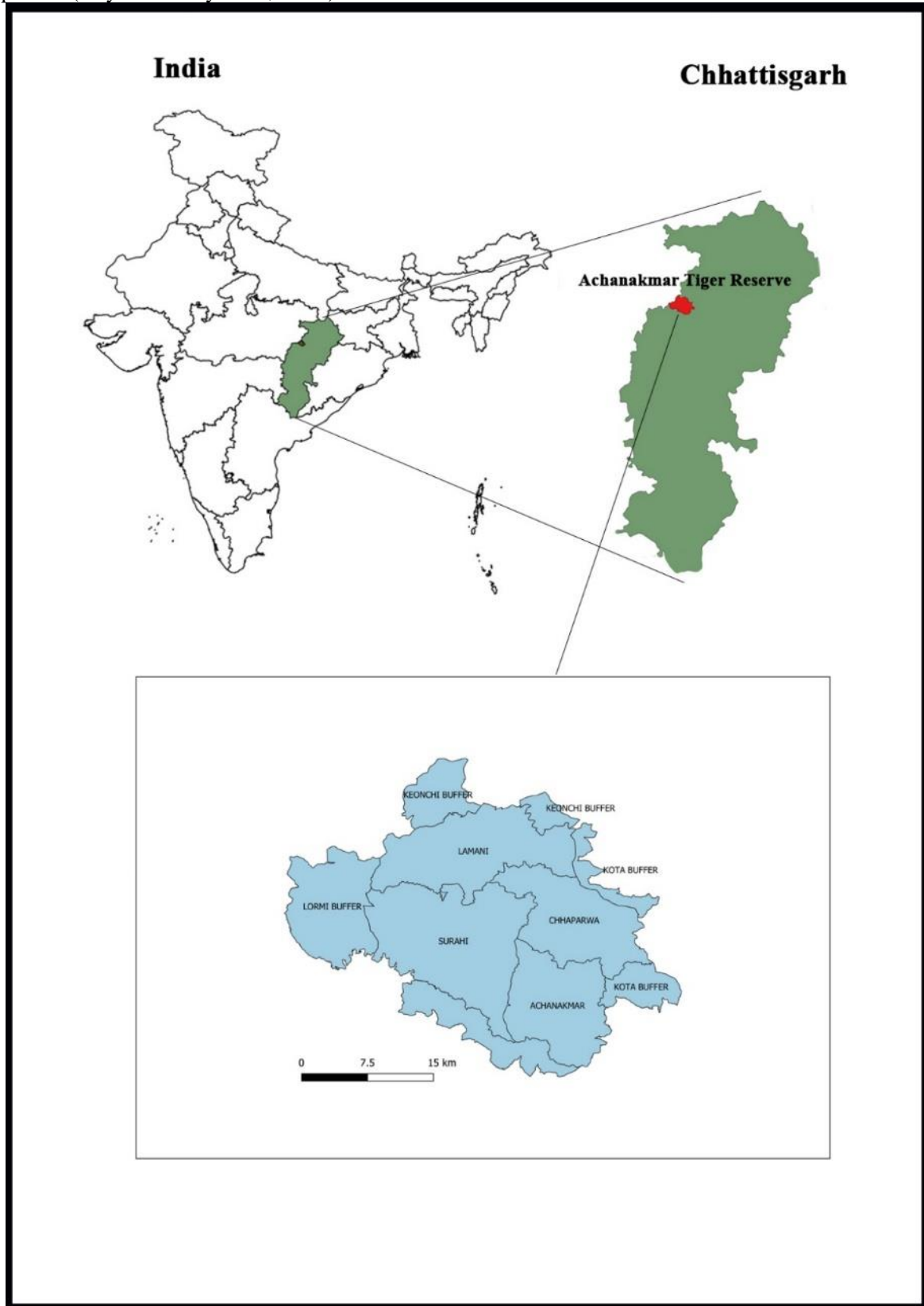


Figure 1: Map showing Achanakmar Tiger Reserve

Habitat types

- 1) **Mixed Forest-** The Mixed Deciduous forest are categorized as Southern Moist Mixed deciduous forest [3b/C2] and Southern dry mixed deciduous forest [5A/C3]. The floristic composition includes Saja (*Terminalia tomentosa*), Haldu (*Haldina cordifolia*), Beeja (*Pterocarpus marsupium*), Jamun (*Syzygium cumini*), Mundi (*Mitragyna parviflora*) (Chandra *et al.*, 2018).
- 2) **Sal Forest-** Sal forest make up a major part of the Tiger reserve. It is categorized as Moist peninsular Sal [3C/C2e] and Dry peninsular Sal forest [5B/C1c] (Chandra *et al.*, 2018).
- 3) **Riparian Forest-** The riparian forest along the Maniyari river flowing through the Tiger reserve is dominated by Arjun (*Terminalia arjuna*). It is brimming with activity during the winter months as the migratory birds arrive (Chandra *et al.*, 2018)
- 4) **Bamboo Forest:** Patches of bamboo are present on the higher and lower slopes in the Tiger reserve. The bamboo forest is mostly dominated by *Dendrocalamus strictus* (Chandra *et al.*, 2018).
- 5) **Teak Plantation:** Teak plantation is mostly seen on the roadsides inside the Tiger reserve. The teak forest is categorized as Dry Teak forest [5A/C1(b)]. During summers these teak patches are used by the Indian pitta (*Pitta brachyura*) which is a summer migratory bird in Central India (Chandra *et al.*, 2018).
- 6) **Wetlands:** Wetlands are an important site for winter migratory birds in the Achanakmar Tiger Reserve. The Rajiv Gandhi reservoir (Khuriya reservoir) lies on the boundary of the Tiger reserve towards the west. It has an area of 1530.81 ha (IWRIS 2005) and it is an important site for migratory water birds and an important nesting site for resident water birds. Apart from this there are many small and medium waterbodies within the tiger reserve that have small populations of water birds.

MATERIALS AND METHODS

The study was carried out in Achanakmar Tiger Reserve from November 2020 to June 2022 spread over two major seasons Summer (March to June) and Winter (November to February). Line Transects (500m x 50m and 1,000 m x 50 m) were used to census all habitat types except wetlands. Avian species were monitored through direct observation to estimate the total number of bird species and their individuals in and around the wetland using point counts (Bayani & Dandekar, 2017). Surveys were carried out in the morning 6:00 hrs to 9:00 hrs and in the evening 16:00 hrs to 18:00 hrs.

All birds seen were identified and recorded along with habitat type and status (resident, winter visitor, local migrant and Vagrant). The birds recorded were categorized into Seven trophic guilds, namely insectivores, omnivores, Herbivores, carnivores, frugivores, granivores, and nectarivores based on Ali and Ripley (1987). We also referred to the previous work on birds of ATR, collected secondary data from Forest department, E-Bird and birdwatchers. Photographs of the avian species sighted were captured using a camera, which were further used for identification of species whichever were not possible to be identified directly in the field. Identification avian species was done using field guide prepared by Grimmett *et al.*, 2016 and Majumdar *et al.*, 2022.

Table 1: Details of Line transects

S.No.	Season	Number of Transects	Hours Observed
1	Winter 2020-2021	38	95
2	Summer 2021-2022	33	83
3	Winter 2021-2022	29	73
4	Summer 2022-2023	20	50

Table 2: Details of point counts

S.No.	Season	Number of Points	Hours Observed
1	Winter 2020-2021	56	28
2	Summer 2021-2022	44	22
3	Winter 2021-2022	42	21
4	Summer 2022-2023	26	13

RESULTS

261 species of birds were recorded during our study in ATR (Appendix 1). We reported an additional 58 species of avifauna which have not been reported by previous studies in ATR. Among the birds sighted, 191 are resident, 65 winter visitors, 4 summer visitors and 1 vagrant / straggler species. Out of all the bird recorded 14 species were listed under the IUCN Red List of Threatened Species *i.e.* 1 Critically endangered, 1 Endangered, 4 Vulnerable and 8 Near threatened species (IUCN 2020).

Table 3: IUCN Red listed species recorded from ATR

S. No.	Common Name	Scientific Name	IUCN Status
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>	NT
2	Bar tailed Godwit	<i>Limosa lapponica</i>	NT
3	Black headed Ibis	<i>Threskiornis melanocephalus</i>	NT
4	Black legged kittiwake	<i>Rissa tridactyla</i>	VU
5	Black Tailed Godwit	<i>Limosa limosa</i>	NT
6	Common Pochard	<i>Aythya farina</i>	VU
7	Egyptian Vulture	<i>Neophron percnopterus</i>	EN
8	Ferruginous duck	<i>Aythya nyroca</i>	NT
9	Grey headed fish eagle	<i>Ichthyophaga ichthyaetus</i>	NT
10	Indian Vulture	<i>Gyps indicus</i>	CR
11	Lesser adjutant	<i>Leptoptilos javanicus</i>	VU
12	Malabar Pied Hornbill	<i>Anthracoceros coronatus</i>	NT
13	River Tern	<i>Sterna aurantia</i>	NT
14	Woolly Necked Stork	<i>Ciconia episcopus</i>	VU

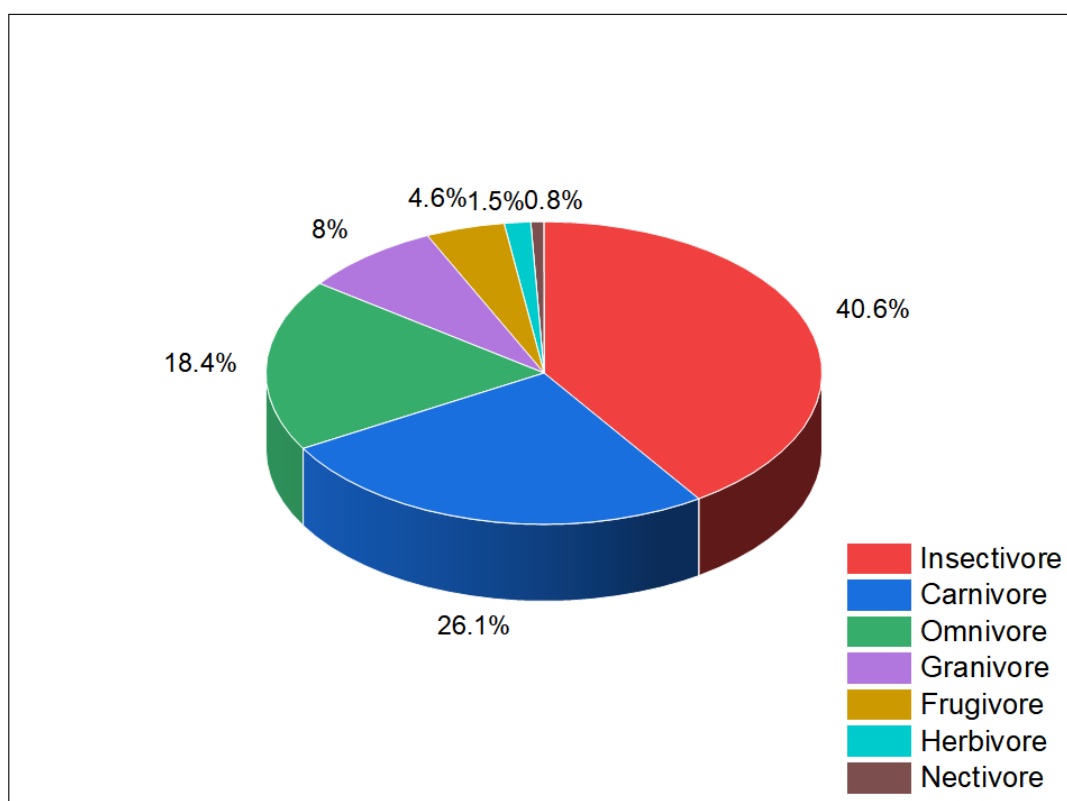


Figure 2: Pie chart showing the proportions of different feeding guilds recorded

Table 4: Feeding guilds

S.No	Feeding Guilds	Number of species
1	Insectivore	107
2	Carnivore	68
3	Omnivore	47
4	Granivore	21
5	Frugivore	12
6	Herbivore	4
7	Nectivore	2

Table 5: Migratory/Residential status of avian species recorded

S. No.	Migratory/Resident status	Code	No of Species	Details
1	Resident	R	191	Recorded throughout the year
2	Winter migratory	W	65	Migrate in winter
3	Summer migratory	S	4	Migrate in summer
4	Vagrant	V	1	A vagrant bird is a species that is currently outside their wintering and breeding area

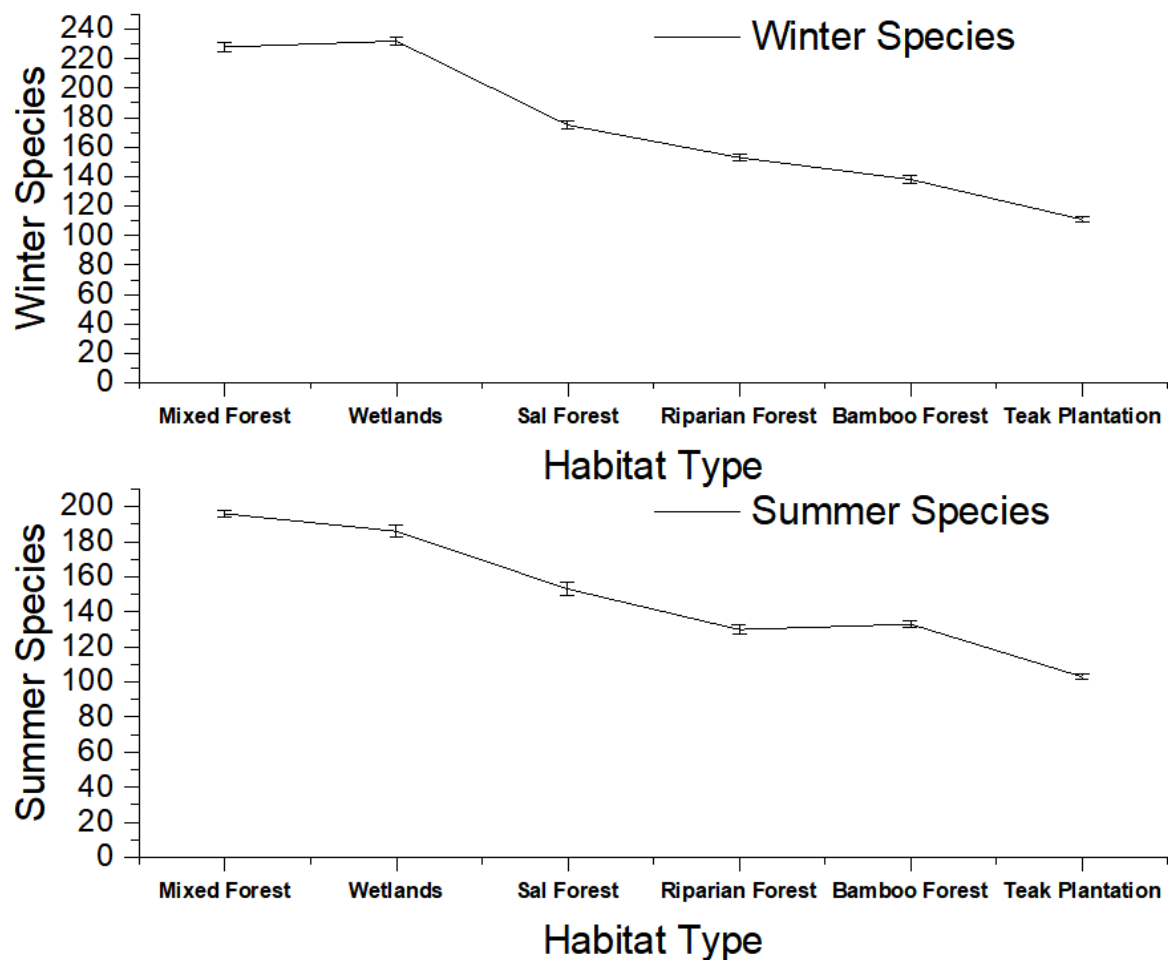


Figure 3: Graph showing spatial and seasonal variation in species richness in study area with standard deviation values.

DISCUSSION

The Achanakmar Tiger Reserve is part of the Important Bird and Biodiversity Areas in India (Rahmani *et al.*, 2016) which is a priority site for conservation. We recorded 261 species of birds from ATR during our study. Chandra *et al.*, 2018 in their book *Fauna of Achanakmar Tiger reserve, Chhattisgarh* have provided a comprehensive checklist of 246 bird species out of which we were able to record 203 species. The remaining 43 avian species were not recorded during our study. Additionally, we have recorded 58 bird species which were not reported from ATR during the previous studies. It is imperative to consider that we did not record species like Sarus crane (*Antigone antigone*), White rumped vulture (*Gyps bengalensis*), Red headed Vulture (*Sarcogyps calvus*), Lesser spotted eagle (*Clanga pomarina*), Oriental Darter (*Anhinga melanogaster*) which have been recorded earlier from ATR and are all threatened species (IUCN 2020).

The composition of birds in different guilds in ATR showed that the insectivorous guild was the most abundant (40.6%) of the total species and nectivore guild was the least abundant guild with only (1%). The Carnivore population (26%) which includes mostly raptors was the second most abundant feeding guild in ATR. The omnivore guild was 18.4%, Granivore 8%, Frugivore 4.6% and Herbivore 1.5%. During summer (March to July) the species richness was relatively low across all habitat types, this can be co-related with the absence of winter migratory species. A total of 191 resident birds were recorded during the study which make up the summer bird population along with 4 summer migratory bird species. A sudden increase in species richness is observed during the winters (October to February) due to the arrival of the winter migratory birds. A total of 65 winter migratory bird species were recorded during the study and 1 Vagrant species was recorded.

The mixed forests support the highest overall avian richness across all habitats. During the summer the mixed forests supported the highest avian richness (Fig 3). The Insectivorous, Carnivorous, Frugivorous and Nectivorous birds were recorded in high numbers in the mixed forest, this shows that the mixed forest provides a wide variety of food for birds.

The riparian forests also supported a good overall species richness ($N=153\pm 1.9$) which shows that the riparian forests are important bird habitats in the forests. The riparian habitat has the characteristics of both forests and wetlands which attracts both forest birds and water birds. A mix population of insectivores and omnivores was recorded from the riparian habitat.

In winters the highest species richness was recorded from the wetlands. This was mainly due to the arrival of winter migratory birds in the wetlands. Large flocks of Red crested pochard (*Netta rufina*), Common coot (*Fulica atra*), Ruddy shelduck (*Tadorna ferruginea*) are recorded every year from the Khuriya Reservoir spread over 1530.81 ha (IWRIS 2005). It is a major attraction to the migratory birds during the winter season. It is also a nesting site for Asian openbill (*Anastomus oscitans*), Indian Pond heron (*Ardeola grayii*), Black crowned night heron (*Nycticorax nycticorax*), Cattle egret (*Bubulcus ibis*). Sihawal sagar is another important wetland in the Tiger reserve where a breeding pair along with a juvenile of Grey headed fish eagle (*Haliaeetus ichthyaeetus*) has been recorded. Apart from this a very few birds were recorded in the smaller wetlands in ATR.

Sightings of special interest

Indian vulture: A small breeding colony of Indian vultures is present in the Khuriya Range on the outskirts of ATR. The vultures have been recorded soaring in the vicinity of the Tiger reserve during the morning and evening as they move out of the nests in search of Food.

Lesser adjutant: A single Individual was sighted on 03/04/2022 by Birdwatcher Nayan Sapia. The bird was perched on a dry tree in the middle of a waterbody. It is an uncommon visitor in this region.

Grey headed fish eagle: A breeding pair is present in ATR. They are mostly sighted in the Sihawal sagar wetland situated in the Tiger reserve. A juvenile has also been recorded which is an indication that it is a breeding pair.

Egyptian Vulture: Egyptian vultures are regularly recorded in the vicinity of the Tiger reserve feeding on carcasses and waste dumps. They are mostly seen around human habitation around forest villages.

Malabar Pied Hornbill: A small population of around 4-6 individuals have been recorded in the Patparha beat of the Khuriya Range. They can be seen roosting in the early mornings or late evenings.

Indian Pitta: A common summer visitor to Central India. The India Pitta is a common sight in the Tiger reserve during the summer months mostly in the teak plantation areas within the Tiger reserve.

They arrive in large number during the summers and can be easily spotted during the mornings and evenings.

Black legged Kittiwake: A single individual was rescued from the Khuriya reservoir by the forest staff. It was treated and released in the reservoir (Kasambe *et al.*, 2020).

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Appendix 1: Checklist of Birds of ATR

S.No	Common Name	Scientific Name	Family	Status
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>	Psittaculidae	R
2	Ashy crowned sparrowlark	<i>Eremopterix griseus</i>	Alaudidae	R
3	Ashy Drongo	<i>Dicrurus leucophaeus</i>	Dicruridae	R
4	Ashy prinia	<i>Prinia socialis</i>	Cisticolidae	R
5	Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	Muscicapidae	S
6	Asian Koel	<i>Eudynamys scolopaceus</i>	Cuculidae	R
7	Asian Palm Swift	<i>Cypsiurus balasiensis</i>	Apodidae	R
8	Asian pied starling	<i>Gracupica contra</i>	Sturnidae	R
9	Baillions Crake	<i>Zapornia pusilla</i>	Rallidae	R
10	Bank Myna	<i>Acridotheres ginginianus</i>	Sturnidae	R
11	Bar Headed Goose	<i>Anser indicus</i>	Anatidae	W
12	Bar tailed Godwit	<i>Limosa lapponica</i>	Scolopacidae	W
13	Barn Owl	<i>Tyto alba</i>	Tytonidae	R
14	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	R
15	Barred Buttonquail	<i>Turnix suscitator</i>	Turnicidae	R
16	Bay Backed Shrike	<i>Lanius vittatus</i>	Hirundinidae	R
17	Baya Weaver	<i>Ploceus philippinus</i>	Ploceidae	R
18	Black Bittern	<i>Ixobrychus flavicollis</i>	Ardeidae	R
19	Black Crowned Night Heron	<i>Nycticorax nycticorax</i>	Ardeidae	R
20	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	R
21	Black Eagle	<i>Ictinaetus malaiensis</i>	Accipitridae	R
22	Black eared Kite	<i>Milvus migrans lineatus</i>	Accipitridae	W
23	Black headed Cuckooshrike	<i>Lalage melanoptera</i>	Campephagidae	R
24	Black headed Ibis	<i>Threskiornis melanocephalus</i>	Threskiornithidae	R
25	Black Kite	<i>Milvus migrans</i>	Accipitridae	R
26	Black legged kittiwake	<i>Rissa tridactyla</i>	Laridae	V
27	Black redstart	<i>Phoenicurus ochuuros</i>	Muscicapidae	W
28	Black Stork	<i>Ciconia nigra</i>	Ciconiidae	W
29	Black Tailed Godwit	<i>Limosa limosa</i>	Scolopacidae	W
30	Black winged Cuckooshrike	<i>Lalage melaschistos</i>	Campephagidae	R
31	Black winged kite	<i>Elanus caeruleus</i>	Accipitridae	R
32	Black-hooded Oriole	<i>Oriolus xanthornus</i>	Oriolidae	R
33	Black-naped Monarch	<i>Hypothymis azurea</i>	Monarchidae	W
34	Black-rumped Flameback	<i>Dinopium benghalense</i>	Picidae	R
35	Black-winged Stilt	<i>Himantopus himantopus</i>	Recurvirostridae	W
36	Blue Bearded Bee Eater	<i>Nyctornis athertoni</i>	Meropidae	R
37	Blue Rock Thrush	<i>Monticola solitarius</i>	Muscicapidae	R
38	Blue-capped Rock Thrush	<i>Monticola cinclorhyncha</i>	Muscicapidae	R
39	Bluethroat	<i>Luscinia svecica</i>	Muscicapidae	W
40	Blyth's reed Warbler	<i>Acrocephalus dumetorum</i>	Acrocephalidae	W
41	Booted Eagle	<i>Hieraaetus pennatus</i>	Accipitridae	W
42	Booted Warbler	<i>Iduna caligata</i>	Acrocephalidae	W
43	Brahminy Starling	<i>Sturnia pagodarum</i>	Sturnidae	R
44	Bronze Winged Jacana	<i>Metopidius indicus</i>	Jacanidae	R
45	Brown capped Pygmy Woodpecker	<i>Yungipicus nanus</i>	Picidae	R

46	Brown Fish Owl	<i>Ketupa zeylonensis</i>	Strigidae	R
47	Brown Headed Gull	<i>Chroicocephalus brunnicephalus</i>	Laridae	W
48	Brown rock Chat	<i>Cercomela fusca</i>	Muscicapidae	R
49	Brown shrike	<i>Lanius cristatus</i>	Laniidae	W
50	Brown-headed Barbet	<i>Psilopogon zeylanicus</i>	Megalaimidae	R
51	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	R
52	Changeable Hawk Eagle	<i>Nisaetus cirrhatus</i>	Accipitridae	R
53	Chestnut Bellied Sandgrouse	<i>Pterocles exustus</i>	Pteroclididae	R
54	Chestnut shouldered Petronia	<i>Gymnoris xanthocollis</i>	Passeridae	R
55	Chestnut tailed starling	<i>Sturnia malabarica</i>	Sturnidae	R
56	Cinereous tit	<i>Parus cinereus</i>	Paridae	R
57	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	Ardeidae	R
58	Citrine wagtail	<i>Motacilla citreola</i>	Motacillidae	W
59	Clamorous Reed Warbler	<i>Acrocephalus stentoreus</i>	Acrocephalidae	R
60	Common Babbler	<i>Argya caudata</i>	Leiothrichidae	R
61	Common Chifchaff	<i>Phylloscopus collybita</i>	Phylloscopidae	R
62	Common Greenshank	<i>Tringa nebularia</i>	Scolopacidae	W
63	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Cuculidae	R
64	Common Hoopoe	<i>Upupa epops</i>	Upupidae	R
65	Common Iora	<i>Aegithina tiphia</i>	Aegithinidae	R
66	Common Kestrel	<i>Falco tinnunculus</i>	Falconidae	W
67	Common Kingfisher	<i>Alcedo atthis</i>	Alcedinidae	R
68	Common Moorhen	<i>Gallinula chloropus</i>	Rallidae	R
69	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	R
70	Common Pochard	<i>Aythya ferina</i>	Anatidae	W
71	Common Redshank	<i>Tringa totanus</i>	Scolopacidae	W
72	Common Sandpiper	<i>Actitis hypoleucos</i>	Scolopacidae	W
73	Common Snipe	<i>Gallinago gallinago</i>	Scolopacidae	R
74	Common Tailor Bird	<i>Orthotomus sutorius</i>	Cisticolidae	R
75	Common Teal	<i>Anas crecca</i>	Anatidae	W
76	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	Vangidae	R
77	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	Ramphastidae	R
78	Cotton teal	<i>Nettapus coromandelianus</i>	Anatidae	R
79	Crested Bunting	<i>Emberiza lathami</i>	Emberizidae	R
80	Crested Serpent Eagle	<i>Spilornis cheela</i>	Accipitridae	R
81	Crested Tree Swift	<i>Hemiprocne coronata</i>	Hemiprocnidae	R
82	Dusky Crag Martin	<i>Ptyonoprogne concolor</i>	Hirundinidae	R
83	Egyptian Vulture	<i>Neophron percnopterus</i>	Accipitridae	R
84	Emerald Dove	<i>Chalcophaps indica</i>	Columbidae	R
85	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	R
86	Eurasian coot	<i>Fulica atra</i>	Rallidae	R
87	Eurasian Marsh Harrier	<i>Circus aeruginosus</i>	Accipitridae	W
88	Eurasian Wigeon	<i>Mareca penelope</i>	Anatidae	W
89	Eurasian Wryneck	<i>Jynx torquilla</i>	Picidae	W
90	Ferruginous duck	<i>Aythya nyroca</i>	Anatidae	W
91	Forest Wagtail	<i>Dendronanthus indicus</i>	Motacillidae	R

92	Gadwall	<i>Mareca strepera</i>	Anatidae	W
93	Garganey	<i>Spatula querquedula</i>	Anatidae	W
94	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	Chloropseidae	R
95	Great Cormorant	<i>Phalacrocorax carbo</i>	Phalacrocoracidae	W
96	Great crested Grebe	<i>Podiceps cristatus</i>	Podicipedidae	W
97	Great Egret	<i>Ardea alba</i>	Ardeidae	R
98	Greater Coucal	<i>Centropus sinensis</i>	Cuculidae	R
99	Greater Painted Snipe	<i>Rostratula benghalensis</i>	Rostratulidae	R
100	Greater racket tailed drongo	<i>Dicrurus paradiseus</i>	Dicruridae	R
101	Green bee eater	<i>Merops orientalis</i>	Meropidae	R
102	Green Sandpiper	<i>Tringa ochropus</i>	Scolopacidae	W
103	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	W
104	Grey bellied cuckoo	<i>Cacomantis passerinus</i>	Cuculidae	R
105	Grey breasted Prinia	<i>Prinia hodgsonii</i>	Cisticolidae	R
106	Grey Francolin	<i>Francolinus pondicerianus</i>	Phasianidae	R
107	Grey Headed Canary Flycatcher	<i>Culicicapa ceylonensis</i>	Stenostiridae	R
108	Grey headed fish eagle	<i>Icthyophaga ichthyaetus</i>	Accipitridae	R
109	Grey headed Lapwing	<i>Vanellus cinereus</i>	Charadriidae	W
110	Grey Headed Swamphen	<i>Porphyrio porphyrio</i>	Rallidae	R
111	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	W
112	Grey necked Bunting	<i>Emberiza buchanani</i>	Emberizidae	W
113	Grey Wagtail	<i>Motacilla cinerea</i>	Motacillidae	W
114	House Crow	<i>Corvus splendens</i>	Corvidae	R
115	House Sparrow	<i>Passer domesticus</i>	Passeridae	R
116	Indian black-Lored Tit	<i>Machlolophus xanthogenys</i>	Paridae	R
117	Indian Bush Lark	<i>Mirafra erythroptera</i>	Alaudidae	R
118	Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	Phalacrocoracidae	R
119	Indian Courser	<i>Cursorius coromandelicus</i>	Glareolidae	R
120	Indian Cuckoo	<i>Cuculus micropterus</i>	Cuculidae	R
121	Indian Eagle Owl	<i>Bubo bengalensis</i>	Strigidae	R
122	Indian Golden Oriole	<i>Oriolus kundoo</i>	Oriolidae	R
123	Indian Grey Hornbill	<i>Ocyrceros birostris</i>	Bucerotidae	R
124	Indian Nightjar	<i>Caprimulgus asiaticus</i>	Caprimulgidae	R
125	Indian Nuthatch	<i>Sitta castanea</i>	Sittidae	R
126	Indian Paradise Flycatcher	<i>Terpsiphone paradisi</i>	Monarchidae	S
127	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	R
128	Indian Pitta	<i>Pitta brachyura</i>	Pittidae	S
129	Indian Pond Heron	<i>Ardeola grayii</i>	Ardeidae	R
130	Indian robin	<i>Saxicoloides fulicatus</i>	Muscicapidae	R
131	Indian roller	<i>Coracias benghalensis</i>	Coraciidae	R
132	Indian scops Owl	<i>Otus bakkamoena</i>	Strigidae	R
133	Indian silverbill	<i>Euodice malabarica</i>	Estrildidae	R
134	Indian Spotbilled Duck	<i>Anas poecilorhyncha</i>	Anatidae	R
135	Indian Thicknee	<i>Burhinus indicus</i>	Burhinidae	R
136	Indian Vulture	<i>Gyps indicus</i>	Accipitridae	R
137	Indian White Eye	<i>Zosterops palpebrosus</i>	Zosteropidae	R
138	Intermediate Egret	<i>Ardea intermedia</i>	Ardeidae	R

139	Jacobin Cuckoo	<i>Clamator jacobinus</i>	Cuculidae	S
140	Jerdon's Leafbird	<i>Chloropsis jerdoni</i>	Chloropseidae	R
141	Jungle Babbler	<i>Turdoides striata</i>	Leiothrichidae	R
142	Jungle bush quail	<i>Perdica asiatica</i>	Phasianidae	R
143	Jungle Crow	<i>Corvus macrorhynchos culminatus</i>	Corvidae	R
144	Jungle Myna	<i>Acridotheres fuscus</i>	Sturnidae	R
145	Jungle Nightjar	<i>Caprimulgus indicus</i>	Caprimulgidae	R
146	Jungle Owlet	<i>Glaucidium radiatum</i>	Strigidae	R
147	Jungle Prinia	<i>Prinia sylvatica</i>	Cisticolidae	R
148	Kentish Plover	<i>Charadrius alexandrinus</i>	Charadriidae	R
149	Knob billed Duck	<i>Sarkidiornis melanotos</i>	Anatidae	W
150	Large Cuckooshrike	<i>Coracina javensis</i>	Campephagidae	R
151	Large grey babbler	<i>Turdoides malcolmi</i>	Leiothrichidae	R
152	Laughing dove	<i>Streptopelia senegalensis</i>	Columbidae	R
153	Lesser adjutant	<i>Leptoptilos javanicus</i>	Ciconiidae	R
154	Lesser whistling Duck	<i>Dendrocygna javanica</i>	Anatidae	R
155	Lesser Whitethroat	<i>Sylvia curruca</i>	Sylviidae	W
156	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	R
157	Little Egret	<i>Egretta garzetta</i>	Ardeidae	R
158	Little Grebe	<i>Tachybaptus ruficollis</i>	Podicipedidae	R
159	Little Pratincol	<i>Glareola lactea</i>	Glareolidae	R
160	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	R
161	Little Stint	<i>Calidris minuta</i>	Scolopacidae	W
162	Little Swift	<i>Apus affinis</i>	Apodidae	R
163	Little Tern	<i>Sternula albifrons</i>	Laridae	W
164	Long tailed Shrike	<i>Lanius schach</i>	Laniidae	R
165	Malabar Pied Hornbill	<i>Anthraceros coronatus</i>	Bucerotidae	R
166	Mottled wood owl	<i>Strix ocellata</i>	Strigidae	R
167	Northern Pintail	<i>Anas acuta</i>	Anatidae	W
168	Northern shoveler	<i>Spatula clypeata</i>	Anatidae	W
169	Olive backed Pipit	<i>Anthus hodgsoni</i>	Motacillidae	W
170	Open Billed Stork	<i>Anastomus oscitans</i>	Ciconiidae	R
171	Orange-headed Thrush	<i>Geokichla citrina</i>	Turdidae	R
172	Oriental Honey Buzzard	<i>Pernis apivorus</i>	Accipitridae	R
173	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	R
174	Oriental Pratincol	<i>Glareola maldivarum</i>	Glareolidae	W
175	Oriental Skylark	<i>Alauda gulgula</i>	Alaudidae	R
176	Oriental Turtle Dove	<i>Streptopelia orientalis</i>	Columbidae	R
177	Osprey	<i>Pandion haliaetus</i>	Pandionidae	W
178	Paddyfield Pipit	<i>Anthus rufulus</i>	Motacillidae	R
179	Painted francolin	<i>Francolinus pictus</i>	Phasianidae	R
180	Painted Spurfowl	<i>Galloperdix lunulata</i>	Phasianidae	R
181	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>	Dicaeidae	R
182	Pallied Harrier	<i>Circus macrourus</i>	Accipitridae	W
183	Peregrine Falcon	<i>Falco peregrinus</i>	Falconidae	W
184	Pheasant Tailed Jacana	<i>Hydrophasianus chirurgus</i>	Jacaniidae	R

185	Pied Bushchat	<i>Saxicola caprata</i>	Muscicapidae	R
186	Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	R
187	Plain prinia	<i>Prinia inornata</i>	Cisticolidae	R
188	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	Psittaculidae	R
189	Purple Heron	<i>Ardea purpurea</i>	Ardeidae	R
190	Purple rumped sunbird	<i>Leptocoma zeylonica</i>	Nectariniidae	R
191	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	R
192	Red Avadavat	<i>Amandava amandava</i>	Estrildidae	R
193	Red Breasted Flycatcher	<i>Ficedula parva</i>	Muscicapidae	W
194	Red collared dove	<i>Streptopelia tranquebarica</i>	Columbidae	R
195	Red crested Pochard	<i>Netta rufins</i>	Anatidae	W
196	Red headed Bunting	<i>Emberiza bruniceps</i>	Emberizidae	W
197	Red Junglefowl	<i>Gallus gallus</i>	Phasianidae	R
198	Red Naped Ibis	<i>Pseudibis papillosa</i>	Threskiornithidae	R
199	Red vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	R
200	Red Wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	R
201	Red Whiskered Bulbul	<i>Pycnonotus jocosus</i>	Pycnonotidae	R
202	Red-rumped Swallow	<i>Cecropis daurica</i>	Hirundinidae	R
203	River Tern	<i>Sterna aurantia</i>	Laridae	W
204	Rock Pigeon	<i>Columba livia</i>	Columbidae	R
205	Rose-ringed Parakeet	<i>Psittacula krameri</i>	Psittaculidae	R
206	Rosy Pipit	<i>Anthus roseatus</i>	Motacillidae	W
207	Rosy Starling	<i>Pastor roseus</i>	Sturnidae	W
208	Ruddy shelduck	<i>Tadorna ferruginea</i>	Anatidae	W
209	Rufous tailed lark	<i>Ammomanes phoenicura</i>	Alaudidae	R
210	Rufous Treepie	<i>Dendrocitta vagabunda</i>	Corvidae	R
211	Rufous Woodpecker	<i>Micropternus brachyurus</i>	Picidae	R
212	Sand Martin	<i>Riparia riparia</i>	Hirundinidae	R
213	Savanna Nightjar	<i>Caprimulgus affinis</i>	Caprimulgidae	R
214	Scaly breasted munia	<i>Lonchura punctulata</i>	Estrildidae	R
215	Scarlet Minivet	<i>Pericrocotus flammeus</i>	Campephagidae	R
216	Shaheen Falcon	<i>Falco peregrinus peregrinator</i>	Falconidae	R
217	Shikra	<i>Accipiter badius</i>	Accipitridae	R
218	Short toed Snake Eagle	<i>Circaetus gallicus</i>	Accipitridae	R
219	Siberian Stonechat	<i>Saxicola maurus</i>	Muscicapidae	W
220	Singing Bushlark	<i>Mirafra cantillans</i>	Alaudidae	R
221	Small Minivet	<i>Pericrocotus cinnamomeus</i>	Campephagidae	R
222	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae	R
223	Spotted Owlet	<i>Athene brama</i>	Strigidae	R
224	Streak Throated Swallow	<i>Petrochelidon fluvicola</i>	Hirundinidae	R
225	Streak Throated Woodpecker	<i>Picus xanthopygaeus</i>	Picidae	R
226	Sulphur Bellied Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	W
227	Taiga Flycatcher	<i>Ficedula albicilla</i>	Muscicapidae	W
228	Tawny bellied Babbler	<i>Dumetia hyperythra</i>	Timaliidae	R
229	Tawny Pipit	<i>Anthus campestris</i>	Motacillidae	W
230	Temmincks stint	<i>Calidris temminckii</i>	Scolopacidae	W
231	Thick-billed Flowerpecker	<i>Dicaeum agile</i>	Dicaeidae	R

232	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>	Muscicapidae	R
233	Tickells Thrush	<i>Turdus unicolor</i>	Turdidae	R
234	Tree Pipit	<i>Anthus trivialis</i>	Motacillidae	R
235	Tricoloured Munia	<i>Lonchura malacca</i>	Estrildidae	R
236	Tufted Duck	<i>Aythya fuligula</i>	Anatidae	W
237	Ultramarine Flycatcher	<i>Ficedula supercilialis</i>	Muscicapidae	W
238	Verditer flycatcher	<i>Eumyias thalassinus</i>	Muscicapidae	W
239	Watercock	<i>Gallix rex cinerea</i>	Rallidae	R
240	Whiskered Tern	<i>Chlidonias hybrida</i>	Laridae	W
241	White Bellied Drongo	<i>Dicrurus caerulescens</i>	Dicruridae	R
242	White Breasted Waterhen	<i>Amaurornis phoenicurus</i>	Rallidae	R
243	White Browed Bulbul	<i>Pycnonotus luteolus</i>	Pycnonotidae	R
244	White Browed Fantail	<i>Rhipidura aureola</i>	Rhipiduridae	R
245	White Browed Wagtail	<i>Motacilla maderaspatensis</i>	Motacillidae	R
246	White Eyed Buzzard	<i>Butastur teesa</i>	Accipitridae	R
247	White naped Woodpecker	<i>Chrysocolaptes festivus</i>	Picidae	R
248	White rumped Munia	<i>Lonchura striata</i>	Estrildidae	R
249	White rumped Shama	<i>Kittacincla malabarica</i>	Muscicapidae	R
250	White wagtail	<i>Motacilla alba</i>	Motacillidae	W
251	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	R
252	Wire Tailed swallow	<i>Hirundo smithii</i>	Hirundinidae	R
253	Wood Sandpiper	<i>Tringa glareola</i>	Scolopacidae	W
254	Wooly Necked Stork	<i>Ciconia episcopus</i>	Ciconiidae	W
255	Yellow bittern	<i>Ixobrychus sinensis</i>	Ardeidae	R
256	Yellow crowned Woodpecker	<i>Leiopicus mahrattensis</i>	Picidae	R
257	Yellow eyed Babbler	<i>Chrysomma sinense</i>	Sylviidae	R
258	Yellow Wagtail	<i>Motacilla flava</i>	Motacillidae	W
259	Yellow wattled lapwing	<i>Vanellus malarbaricus</i>	Charadriidae	R
260	Yellow-footed Green Pigeon	<i>Treron phoenicoptera</i>	Columbidae	R
261	Zitting Cisticola	<i>Cisticola juncidis</i>	Cisticolidae	R

Status: R= Resident, W= Winter Migratory, S= Summer migratory, V= Vagrant