

Status and composition of avifauna in Kurud Dam, Raipur District - Chhattisgarh, India

Chhattisgarh state bears tropical climate with its relevant flora and fauna. This state is amply studded with numerous water bodies, tanks, and ponds, with the major river basin being *Mahanadi* for the central plains, *Hasdeo River* basin for northern hilly range, and Godavari River basin for Dandkaranya hills in south.

The available works had revealed 246 avian species in central region of Chhattisgarh, 429 species in Chhattisgarh (Bharos 2017), Bharos and Sahu (2002), (Bharos 2018), Bharos et al. (2019), Chandra & Singh (2004).

Kurud Dam has been the hunting ground for game lovers in the past, but at present, it is a prime spot for bird watchers and photographers. With commensuration to the type of available habitats, variety of aquatic and grass & arboreal bird species occur in good numbers. Despite this fact, this site and its avian species remains undocumented. To fill this gap, this study was undertaken and is the first attempt to highlight the avifauna of Kurud dam, being an important wetland in the central plains of Chhattisgarh.

Study Area

The particulars of the study area the Kurud Dam are tabulated in Table 2, Fig.1.



Kurud Dam.



Threat.

Methods

The study site was visited for amateur bird watching since 2007, the observed bird species were only listed in our field diaries. We noticed high species composition and congregation of resident as well as migratory species. This prompted us to take up serious studies.

Hence, since October 2015 more intensive study was undertaken to fill up the lacuna of avian documentation from Kurud Dam. Field



Figure 1. Location of Kurud Dam.



Surrounding Habitat.



Adjacent Agri field.

surveys were aptly designed and intensively conducted in all three seasons viz. winter, summer, and monsoon, from October 2015 to December 2019. The study was carried out at different hours of the day invariably between 6–10am and 3–6pm to obtain maximum prudent outcome. We collected observations by *Look and See* method (Bibby et al.1992) at pre-determined points, following Point Count method (Javed & Kaul 2002) by noting direct sightings of the birds, walking along the shoreline to collect bird observations. The study was conducted in a gap of every fortnight invariably, and observations were collected as and when possible.

Binoculars (Olympus 8-16 X 40) and cameras (CANON DSLR 7D & CANON SX60HS) were deployed for observing and obtaining the images of species encountered. The identification was confirmed following Ali & Ripley (1987), Grimmett et.al. (1998, 2014), Rahmani (2008), Rasmussen & Anderton (2012). Difficult species were identified by members of BNHS-ENVIS.

Roosting hours in the evening and early morning hours of congregation of birds were observed to determine the species and their roost, along with utilization of the habitat at and near the dam. We encountered more bird species in the roosting (evening) hours

Table 1. Birds of Kurud Dam, Chhattisgarh.

	Order	Family	English name	Scientific name	Resident Status	IUCN Status	Food Habits	Habitat	
1	Anseriformes	Anatidae	Lesser Whistling Duck	<i>Dendrocygna javanica</i>	R	LC	Omnivorous	A	
2			Bar-headed Goose	<i>Anser indicus</i>	M	LC	Omnivorous	A	
3			Red-crested Pochard	<i>Netta rufina</i>	M	LC	Omnivorous	A	
4			Common Pochard	<i>Aythya ferina</i>	M	VU	Omnivorous	A	
5			Ferruginous Duck	<i>Aythya nyroca</i>	M	NT	Omnivorous	A	
6			Tufted Duck	<i>Aythya fuligula</i>	M	LC	Omnivorous	A	
7				Garganey	<i>Spatula querquedula</i>	M	LC	Omnivorous	A
8				Northern Shoveler	<i>Spatula clypeata</i>	M	LC	Omnivorous	A
9				Gadwall	<i>Mareca strepera</i>	M	LC	Omnivorous	A
10				Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	R	LC	Omnivorous	A
11				Northern Pintail	<i>Anas acuta</i>	M	LC	Omnivorous	A
12				Common Teal	<i>Anas crecca</i>	M	LC	Omnivorous	A
13				Comb Duck	<i>Sarkidiornis melanotos</i>	R	LC	Omnivorous	A
14				Cotton Teal	<i>Nettapus coromandelianus</i>	R	LC	Omnivorous	A
15	Galliformes	Phasianidae	Common Quail	<i>Coturnix coturnix</i>	R	LC	Omnivorous	GA	
16			Rain Quail	<i>Coturnix coromandelica</i>	R	LC	Omnivorous	GA	
17			Grey Francolin	<i>Francolinus pondicerianus</i>	R	LC	Omnivorous	GA	
18	Phoenicopteriformes	Podicipedidae	Little Grebe	<i>Tachybaptus ruficollis</i>	R	LC	Carnivorous	A	
19			Great Crested Grebe	<i>Podiceps cristatus</i>	M	LC	Carnivorous	A	
20	Columbiformes	Columbidae	Rock Pigeon	<i>Columba livia</i>	R	LC	Granivorous	GA	
21			Eurasian Collared Dove	<i>Streptopelia decaocto</i>	R	LC	Granivorous	GA	
22			Laughing Dove	<i>Streptopelia senegalensis</i>	R	LC	Granivorous	GA	
23			Indian Nightjar	<i>Caprimulgus asiaticus</i>	R	LC	Insectivorous	GA	
24	Caprimulgiformes	Apodidae	Asian Palm Swift	<i>Cypsiurus balasensis</i>	R	LC	Insectivorous	GA	
25			Indian House Swift	<i>Apus affinis</i>	R	LC	Insectivorous	GA	
26	Cuculiformes	Cuculidae	Greater Coucal	<i>Centropus sinensis</i>	R	LC	Omnivorous	GA	

	Order	Family	English name	Scientific name	Resident Status	IUCN Status	Food Habits	Habitat
27			Pied Cuckoo	<i>Clamator jacobinus</i>	M	LC	Omnivorous	GA
28	Cuculiformes	Cuculidae	Asian Koel	<i>Eudynamys scolopaceus</i>	R	LC	Omnivorous	GA
29			Common Hawk Cuckoo	<i>Hierococcyx varius</i>	R	LC	Omnivorous	GA
30			Slaty-legged Crane	<i>Rallina eurizonoides</i>	R	LC	Omnivorous	NA
31			Ruddy-breasted Crane	<i>Zapornia fusca</i>	R	LC	Omnivorous	NA
32			Brown Crane	<i>Zapornia akool</i>	M	LC	Omnivorous	NA
33	Gruiformes	Rallidae	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	R	LC	Omnivorous	NA
34			Purple Swamphen	<i>Porphyrio porphyrio</i>	R	LC	Omnivorous	NA
35			Common Coot	<i>Fulica atra</i>	M	LC	Omnivorous	A
36			Painted Stork	<i>Mycteria leucocephala</i>	R	NT	Carnivorous	NA
37			Asian Openbill	<i>Anastomus oscitans</i>	R	LC	Carnivorous	NA
38		Ciconiidae	Black Stork	<i>Ciconia nigra</i>	M	LC	Carnivorous	NA
39			Woolly-necked Stork	<i>Ciconia episcopus</i>	R	LC	Carnivorous	NA
40			Yellow Bittern	<i>Ixobrychus sinensis</i>	R	LC	Carnivorous	NA
41			Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	R	LC	Carnivorous	NA
42			Black Bittern	<i>Ixobrychus flavicollis</i>	R	LC	Carnivorous	NA
43			Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	R	LC	Carnivorous	NA
44			Striated Heron	<i>Butorides striata</i>	R	LC	Carnivorous	NA
45	Pelecaniformes		Indian Pond Heron	<i>Ardeola grayii</i>	R	LC	Carnivorous	NA
46		Ardeidae	Cattle Egret	<i>Bubulcus ibis</i>	R	LC	Carnivorous	NA
47			Grey Heron	<i>Ardea cinerea</i>	R	LC	Carnivorous	NA
48			Purple Heron	<i>Ardea purpurea</i>	R	LC	Carnivorous	NA
49			Great Egret	<i>Ardea alba</i>	R	LC	Carnivorous	NA
50			Intermediate Egret	<i>Ardea intermedia</i>	R	LC	Carnivorous	NA
51			Little Egret	<i>Egretta garzetta</i>	R	LC	Carnivorous	NA
52			Black-headed Ibis	<i>Threskiornis melanocephalus</i>	R	LC	Carnivorous	NA
53		Threskiornithidae	Eurasian Spoonbill	<i>Platalea leucorodia</i>	R	LC	Omnivorous	NA

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54	Threskiornithidae	Indian Black Ibis	<i>Pseudibis papillosa</i>	R	LC	Carnivorous	NA
55	Pelecaniformes	Little Cormorant	<i>Microcarbo niger</i>	R	LC	Carnivorous	NA
56		Great Cormorant	<i>Phalacrocorax carbo</i>	R	LC	Carnivorous	NA
57		Indian Cormorant	<i>Phalacrocorax fuscicollis</i>	R	LC	Carnivorous	NA
58		Anhingidae	Oriental Darter	<i>Anhinga melanogaster</i>	R	NT	Carnivorous
59	Recurvirostridae	Black-winged Stilt	<i>Himantopus himantopus</i>	R	LC	Omnivorous	NA
60	Charadriidae	Grey Plover	<i>Pluvialis squatarola</i>	M	LC	Insectivorous	NA
61		Pacific Golden Plover	<i>Pluvialis fulva</i>	M	LC	Insectivorous	NA
62		Little Ringed Plover	<i>Charadrius dubius</i>	M	LC	Omnivorous	NA
63		Kentish Plover	<i>Charadrius alexandrinus</i>	M	LC	Omnivorous	NA
64		Lesser Sand Plover	<i>Charadrius mongolus</i>	M	LC	Omnivorous	NA
65		Yellow-wattled Lapwing	<i>Vanellus malarbaricus</i>	R	LC	Omnivorous	NA
66		Red-wattled Lapwing	<i>Vanellus indicus</i>	R	LC	Omnivorous	NA
67		Greater Painted-snipe	<i>Rostratula benghalensis</i>	R	LC	Omnivorous	NA
68	Rostratulidae	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	R	LC	Omnivorous	NA
69	Charadriiformes	Bronze-winged Jacana	<i>Metopidius indicus</i>	R	LC	Omnivorous	NA
70		Whimbrel	<i>Numenius phaeopus</i>	M	LC	Insectivorous	NA
71		Eurasian Curlew	<i>Numenius arquata</i>	M	NT	Omnivorous	NA
72		Bar-tailed Godwit	<i>Limosa lapponica</i>	M	LC	Omnivorous	NA
73	Scolopacidae	Black-tailed Godwit	<i>Limosa limosa</i>	M	NT	Omnivorous	NA
74		Ruddy Turnstone	<i>Arenaria interpres</i>	M	LC	Omnivorous	NA
75		Ruff	<i>Calidris pugnax</i>	M	LC	Omnivorous	NA
76		Curlew Sandpiper	<i>Calidris ferruginea</i>	M	LC	Omnivorous	NA
77		Temminck's Stint	<i>Calidris temminckii</i>	M	LC	Omnivorous	NA
78		Sanderling	<i>Calidris alba</i>	M	LC	Omnivorous	NA
79		Dunlin	<i>Calidris alpina</i>	R	LC	Omnivorous	NA
80		Little Stint	<i>Calidris minuta</i>	M	LC	Omnivorous	NA

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81	Scolopacidae	Common Snipe	<i>Gallinago gallinago</i>	M	LC	Omnivorous	NA
82		Terek Sandpiper	<i>Xenus cinereus</i>	M	LC	Omnivorous	NA
83		Common Sandpiper	<i>Actitis hypoleucos</i>	M	LC	Omnivorous	NA
84		Green Sandpiper	<i>Tringa ochropus</i>	M	LC	Omnivorous	NA
85		Spotted Redshank	<i>Tringa erythropus</i>	M	LC	Omnivorous	NA
86		Common Greenshank	<i>Tringa nebularia</i>	M	LC	Omnivorous	NA
87		Common Redshank	<i>Tringa totanus</i>	M	LC	Omnivorous	NA
88		Wood Sandpiper	<i>Tringa glareola</i>	M	LC	Omnivorous	NA
89		Marsh Sandpiper	<i>Tringa stagnatilis</i>	M	LC	Omnivorous	NA
90		Charadriiformes	Barred Buttonquail	<i>Turnix suscitator</i>	R	LC	Omnivorous
91	Glareolidae	Indian Courser	<i>Cursorius coromandelicus</i>	R	LC	Insectivorous	NA
92		Little Pratincole	<i>Glareola lactea</i>	R	LC	Insectivorous	NA
93	Laridae	Brown-headed Gull	<i>Chroicocephalus brunnicephalus</i>	M	LC	Carnivorous/ Piscivorous	NA
94		Gull-billed Tern	<i>Gelocheilidon nilotica</i>	M	LC	Carnivorous/ Piscivorous	NA
95		Whiskered Tern	<i>Chlidonias hybrida</i>	M	LC	Carnivorous/ Piscivorous	NA
96	Pandionidae	River Tern	<i>Sterna aurantia</i>	M	NT	Carnivorous	NA
97		Indian Skimmer	<i>Rynchops albicollis</i>	M	VU	Carnivorous	NA
98	Accipitriformes	Osprey	<i>Pandion haliaetus</i>	M	LC	Carnivorous	NA
99		Black-winged Kite	<i>Elanus caeruleus</i>	R	LC	Carnivorous	GA
100		Indian Spotted Eagle	<i>Clanga hastata</i>	M	VU	Carnivorous	GA
101		Eastern Marsh Harrier	<i>Circus spilonotus</i>	M	LC	Carnivorous	GA
102		Pallid Harrier	<i>Circus macrourus</i>	M	NT	Carnivorous	GA
103		Pied Harrier	<i>Circus melanoleucos</i>	M	LC	Carnivorous	GA
104		Montagu's Harrier	<i>Circus pygargus</i>	M	LC	Carnivorous	GA
105		Shikra	<i>Accipiter badius</i>	R	LC	Carnivorous	GA

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106	Accipitriformes	Accipitridae	Black Kite	<i>Milvus migrans</i>	R	LC	Omnivorous	GA
107			White-eyed Buzzard	<i>Buteo teesa</i>	R	LC	Carnivorous	GA
108	Strigiformes	Tytonidae	Common Barn Owl	<i>Tyto alba</i>	R	LC	Carnivorous	GA
109		Strigidae	Spotted Owllet	<i>Athene brama</i>	R	LC	Carnivorous	GA
110	Bucerotiformes	Bucerotidae	Indian Grey Hornbill	<i>Ocyzeros birostris</i>	R	LC	Omnivorous	GA
111		Upupidae	Common Hoopoe	<i>Upupa epops</i>	R	LC	Insectivorous	GA
112		Picidae	Northern Wryneck	<i>Jynx torquilla</i>	M	LC	Insectivorous	GA
113	Piciformes	Ramphastidae	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	R	LC	Frugivorous	GA
114		Meropidae	Green Bee-eater	<i>Merops orientalis</i>	R	LC	Insectivorous	GA
115	Coraciiformes	Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	R	LC	Carnivorous	GA
116			Common Kingfisher	<i>Alcedo atthis</i>	R	LC	Carnivorous	NA
117		Alcedinidae	Pied Kingfisher	<i>Ceryle rudis</i>	R	LC	Carnivorous	NA
118	Falconiformes	Falconidae	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	R	LC	Carnivorous	NA
119			Common Kestrel	<i>Falco tinnunculus</i>	M	LC	Carnivorous	GA
120			Alexandrine Parakeet	<i>Psittacula eupatria</i>	R	LC	Frugivorous	GA
121	Psittaculidae	Psittaculidae	Rose-ringed Parakeet	<i>Psittacula krameri</i>	R	LC	Frugivorous	GA
122			Large Cuckooshrike	<i>Coracina javensis</i>	R	LC	Insectivorous	GA
123			Eurasian Golden Oriole	<i>Oriolus oriolus</i>	R	LC	Omnivorous	GA
124	Psittaciformes	Vangidae	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	R	LC	Carnivorous	GA
125		Aegithinidae	Common Iora	<i>Aegithina tiphia</i>	R	LC	Insectivorous	GA
126		Dicruridae	Black Drongo	<i>Dicrurus macrocerus</i>	R	LC	Insectivorous	GA
127	Laniidae	Laniidae	Brown Shrike	<i>Lanius cristatus</i>	M	LC	Carnivorous	GA
128			Isabelline Shrike	<i>Lanius isabellinus</i>	M	LC	Carnivorous	GA
129			Bay-backed Shrike	<i>Lanius vittatus</i>	R	LC	Carnivorous	GA
130	Corvidae	Corvidae	Long-tailed Shrike	<i>Lanius schach</i>	R	LC	Carnivorous	GA
131			Great Grey Shrike	<i>Lanius excubitor</i>	R	LC	Carnivorous	GA
132			House Crow	<i>Corvus splendens</i>	R	LC	Omnivorous	GA

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133		Corvidae	Large-billed Crow	<i>Corvus macrorhynchos</i>	R	LC	Omnivorous	GA
134		Monarchidae	Indian Paradise-flycatcher	<i>Terpsiphone paradisi</i>	R	LC	Insectivorous	GA
135		Nectariniidae	Purple Sunbird	<i>Cinnyris asiaticus</i>	R	LC	Nectarivorous	GA
136		Ploceidae	Baya Weaver	<i>Ploceus philippinus</i>	R	LC	Omnivorous	GA
137			Red Munia	<i>Amandava amandava</i>	R	LC	Omnivorous	GA
138			Indian Silverbill	<i>Euodice malabarica</i>	R	LC	Omnivorous	GA
139		Estrilidae	Scaly-breasted Munia	<i>Lonchura punctulata</i>	R	LC	Omnivorous	GA
140			Black-headed Munia	<i>Lonchura malacca</i>	R	LC	Omnivorous	GA
141		Passeridae	House Sparrow	<i>Passer domesticus</i>	R	LC	Granivorous	GA
142			Richard's Pipit	<i>Anthus richardi</i>	M	LC	Insectivorous	GA
143			Paddyfield Pipit	<i>Anthus rufulus</i>	M	LC	Insectivorous	GA
144			Tawny Pipit	<i>Anthus campestris</i>	M	LC	Insectivorous	GA
145			Western Yellow Wagtail	<i>Motacilla flava</i>	M	LC	Insectivorous	NA
146	Psittaciformes	Motacillidae	Grey Wagtail	<i>Motacilla cinerea</i>	M	LC	Insectivorous	NA
147			Citrine Wagtail	<i>Motacilla citreola</i>	M	LC	Insectivorous	NA
148			White-browed Wagtail	<i>Motacilla maderaspatensis</i>	R	LC	Insectivorous	NA
149			White Wagtail	<i>Motacilla alba</i>	M	LC	Insectivorous	NA
150		Fringillidae	Common Rosefinch	<i>Erythrura erythrina</i>	M	LC	Granivorous	GA
151			Red-headed Bunting	<i>Granativora bruniceps</i>	M	LC	Granivorous	GA
152		Emberizidae	Black-headed Bunting	<i>Granativora melanocephala</i>	M	LC	Granivorous	GA
153			Grey-necked Bunting	<i>Emberiza buchanani</i>	M	LC	Granivorous	GA
154			Rufous-tailed Lark	<i>Ammomanes phoenicura</i>	R	LC	Omnivorous	GA
155			Ashy-crowned Sparrow Lark	<i>Eremopterix griseus</i>	R	LC	Omnivorous	GA
156		Alaudidae	Singing Bushlark	<i>Mirafra cantillans</i>	R	LC	Omnivorous	GA
157			Indian Bushlark	<i>Mirafra erythroptera</i>	R	LC	Omnivorous	GA
158			Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	M	LC	Omnivorous	GA

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159		Alaudidae	Eurasian Skylark	<i>Alauda arvensis</i>	R	LC	Omnivorous	GA
160			Zitting Cisticola	<i>Cisticola juncidis</i>	R	LC	Omnivorous	GA
161		Cisticolidae	Ashy Prinia	<i>Prinia socialis</i>	R	LC	Insectivorous	GA
162			Plain Prinia	<i>Prinia inornata</i>	R	LC	Insectivorous	GA
163			Common Tailorbird	<i>Orthotomus sutorius</i>	R	LC	Insectivorous	GA
164		Locustellidae	Bristled Grass Warbler	<i>Chaetornis striata</i>	M	VU	Insectivorous	GA
165			Booted Warbler	<i>Iduna caligata</i>	M	LC	Insectivorous	GA
166		Acrocephalidae	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	M	LC	Insectivorous	GA
167			Paddyfield Warbler	<i>Acrocephalus agricola</i>	R	LC	Insectivorous	GA
168			Glamorous Reed Warbler	<i>Acrocephalus stentoreus</i>	M	LC	Omnivorous	GA
169			Streak-throated Swallow	<i>Petrochelidon fluvicola</i>	M	LC	Insectivorous	GA
170			Red-rumped Swallow	<i>Cecropis daurica</i>	M	LC	Insectivorous	GA
171		Hirundinidae	Wire-tailed Swallow	<i>Hirundo smithii</i>	R	LC	Insectivorous	GA
172	Psittaciformes		Barn Swallow	<i>Hirundo rustica</i>	M	LC	Insectivorous	GA
173		Pycnonotidae	Red-vented Bulbul	<i>Pycnonotus cafer</i>	R	LC	Frugivorous	GA
174		Phylloscopidae	Common Chiffchaff	<i>Phylloscopus collybita</i>	M	LC	Insectivorous	GA
175		Sylviidae	Yellow-eyed Babbler	<i>Chrysomma sinense</i>	R	LC	Omnivorous	GA
176		Timaliidae	Tawny-bellied Babbler	<i>Dumetia hyperythra</i>	R	LC	Omnivorous	GA
177		Leiothrichidae	Large Grey Babbler	<i>Argya malcolmi</i>	R	LC	Omnivorous	GA
178			Common Babbler	<i>Argya caudata</i>	R	LC	Omnivorous	GA
179			Rosy Starling	<i>Pastor roseus</i>	M	LC	Omnivorous	GA
180		Sturnidae	Asian Pied Starling	<i>Gracupica contra</i>	R	LC	Omnivorous	GA
181			Brahminy Starling	<i>Sturnia pagodarum</i>	R	LC	Omnivorous	GA
182			Common Myna	<i>Acridotheres tristis</i>	R	LC	Omnivorous	GA
183			Indian Robin	<i>Saxicoloides fulicatus</i>	R	LC	Insectivorous	GA
184		Muscicapidae	Oriental Magpie Robin	<i>Copsychus saularis</i>	R	LC	Insectivorous	GA
185			Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	M	LC	Insectivorous	GA

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186	Psittaciformes	Muscicapidae	Bluethroat	<i>Luscinia svecica</i>	M	LC	Insectivorous	GA
187			Red-breasted Flycatcher	<i>Ficedula parva</i>	M	LC	Insectivorous	GA
188			Black Redstart	<i>Phoenicurus ochruros</i>	M	LC	Insectivorous	GA
189			Siberian Stonechat	<i>Saxicola maurus</i>	M	LC	Insectivorous	GA
190			Pied Bushchat	<i>Saxicola caprata</i>	R	LC	Insectivorous	GA
191			Brown Rock Chat	<i>Oenanthe fusca</i>	R	LC	Insectivorous	GA

Resident Status: R - Resident, M - Migratory. IUCN Categories: VU - Vulnerable, NT - Near Threatened, LC - Least Concern. Habitat: A - Aquatic, NA - Near Aquatic, GA - Grass and Arbooreal.



Red Avadavat.



Migratory Birds.



Montagu's Harrier.



Blue Throat.

Table 2. Description of the study area.

	Particulars	Details	Remarks
1	Location	In Arang Tehsil of Raipur dist., 20 Km east from Raipur (21.26472222°N & 81.785000° E), 304m amsl, on Kolhan nalah, a subsidiary drainage pattern of river Mahanadi.	
2	Surface area	About 200 Ha, Maximum depth 5m.	Source of water mainly rainfall
3	Weather	Summer temp. 43°-45°C, winter 8°-10°C.	
4	Purpose	Mainly irrigation but also commercial use.	
5	Environment	Open plains in south, cultivation in the east, Human settlement in west and north, Dairy farm, poultry farm and minor industrial, commercial establishments and domestic use.	
6	Attraction for birds	Effluent from dairy farm flows into shallow water area, a favourite particularly for waders, old ruins for owls. Small groove and plantation for arboreal species and open plains for ground and grass species.	Attract variety of avian species

Table 3. The IUCN categories of the species recorded at the study area (IUCN Red data list).

Category	Species recorded
Vulnerable (VU)	4 species Common Pochard <i>Aythya ferina</i> , Indian Skimmer <i>Rynchops albigollis</i> , Indian Spotted Eagle <i>Clanga hastate</i> , Bristled Grass Warbler <i>Chaetornis striata</i> .
Near Threatened (NT)	7 species namely Ferruginous Duck <i>Aythya nyroca</i> , Painted Stork <i>Mycteria leucocephala</i> , Oriental Darter <i>Anhinga melanogaster</i> , Eurasian Curlew <i>Numenius arquata</i> , Black-tailed Godwit <i>Limosa limosa</i> , River Tern <i>Sterna aurantia</i> , Pallid Harrier <i>Circus macrourus</i> .
Least Concern	180 species as in Table 1.

Table 4. List of the passerby species recorded at the study area.

Category	Species
Waders	Grey Plover (Black-bellied Plover) <i>Pluvialis squatarola</i> , Lesser Sand Plover <i>Charadrius mongolus</i> , Ruff <i>Philomachus pugnax</i> , Black-tailed Godwit <i>Limosa limosa</i> , Whimbrel <i>Numenius phaeopus</i> , Eurasian Curlew <i>Numenius arquata</i> , Pacific Golden Plover <i>Pluvialis fulva</i> , Terek Sandpiper <i>Xenus cinereus</i> , Ruddy Turnstone <i>Arenaria interpres</i> , Sanderling <i>Calidris alba</i> , Curlew Sandpiper <i>Erolia ferrugines</i> , Dunlin <i>Ereunetes alpines</i> .
Gulls and Terns	Gull-billed Tern <i>Gelochelidon nilotica</i> , Caspian Gull <i>Hydroprogne caspia</i> , River Tern <i>Sterna aurantia</i> , Whiskered Tern <i>Chlidonias hybrida</i> , Heuglin's Gull <i>Larus fuscus heuglini</i> , Brown-headed Gull <i>Chroicocephalus brunnicapalus</i> , Black-headed Gull <i>Chroicocephalus ridibundus</i> .

than in the morning hours. The birds would leave their roost at dawn in a more or less similar sequence suggested by Bharos (2018). Our aim was to determine the birds' roost and nests at and around the dam, which revealed the roosting of Greater Short-toed Lark, Green Bee-eaters, certain Harrier

species, variety of waders, kites, starlings, egrets, ducks, etc.

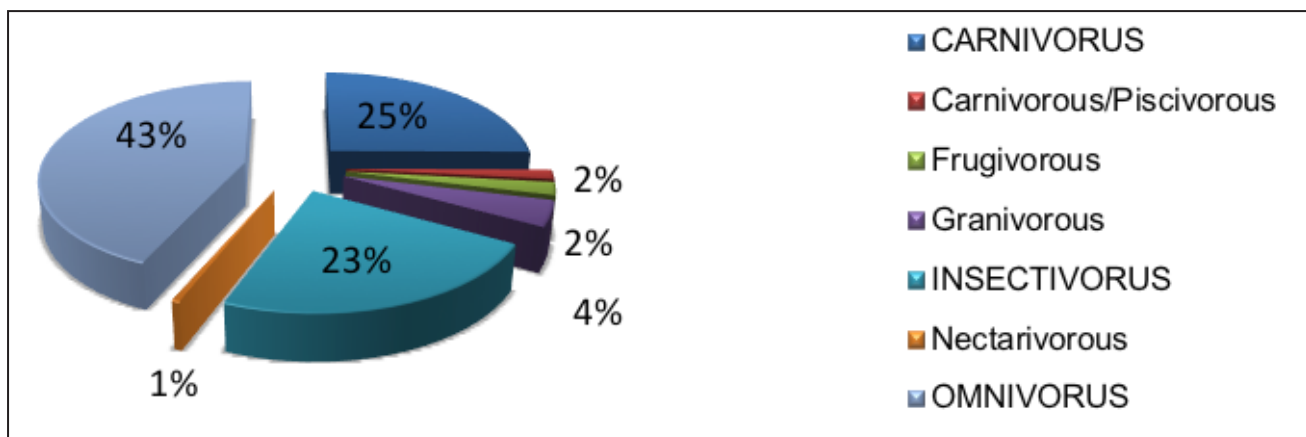
The recorded birds were grouped into Resident (R) and Migratory (M) categories. IUCN Global conservation status was worked out in the following categories only: (VU)

Table 5. The roosting species recorded at the study area.

Category	Species
Wintering ducks and waders, Aquatic	Red-crested Pochard <i>Netta rufina</i> , Common Pochard <i>Aythyaferina</i> , Garganey <i>Spatula querquedula</i> , Northern Pintail <i>Anas acuta</i> , Wood Sandpiper <i>Tringa glareola</i> , Marsh Sandpiper <i>Tringa stagnatilis</i> , Green Sandpiper <i>Tringa ochropus</i> , Common Sandpiper <i>Actitis hypoleucos</i> .
Wintering, Near Aquatic	Pallid harrier <i>Circus macrourus</i> , Marsh Harrier <i>Circus spilonotus</i> , Pied Harrier <i>Circus melanoleucos</i> , Montagau's Harrier <i>Accipiter badius</i> , Greater Short-toed Lark <i>Calandrella brachydactyla</i> .
Arboreal	Green Bee-eater <i>Merops orientalis</i> , Black Kite <i>Milvus migrans</i> .

Table 6. Species recorded nesting in the study area.

Place of nesting	Species
In plains, trees, bushes surrounding the dam	Eurasian Collared Dove <i>Streptopelia decaocto</i> , Laughing Dove <i>Streptopelia senegalensis</i> , Little ringed Plover <i>Charadrius dubius</i> (Bharos et al. 2019) being the first nesting report from Chhattisgarh), Yellow-wattled Lapwing <i>Vanellus malarbaricus</i> , Red-wattled Lapwing <i>Vanellus indicus</i> . The Indian Courser <i>Cursorius coromandelicus</i> has also been recorded nesting in winter from Chhattisgarh (Bharos & Sahu 2002), which was found nesting in January at Kurud Dam, House Crows <i>Corvus splendens</i> , Baya Weaver <i>Ploceus philippinus</i> , Red Avadavat <i>Amandava amandava</i> , Indian Silverbill <i>Euodice malabarica</i> , Scaly-breasted Munia <i>Lonchura punctulata</i> Ashy crowned Sparrow-Lark <i>Eremopterix griseus</i> in April, Ashy Prinia <i>Prinia socialis</i> , Plain Prinia <i>Prinia inornata</i> .
Old ruins	Spotted Owlet <i>Athene brama</i>



Feeding Guild of the Birds.

Vulnerable (NT) Near Threatened (LC) Least Concerned, according to the IUCN Red Data Book (Birdlife International 2014-2015), Rahmani (2012), Rahmani et al. (2018). The nomenclature of the avifauna was done following Praveen et al. (2016).

To determine the feeding guild behavior we keenly and closely observed the birds with the aid of binoculars and camera, documented observed details, identified the probable food resource at and around the feeding / foraging site of respective

Table 7. The feeding guild categorization of the birds according to the foraging behaviour.

Guild Type	Description	Remarks
Carnivorous	The birds of this category mostly feed on fishes, reptiles, frog, lizards, small rodents (Patten 1906; Ali & Ripley 1987). The birds included in this category were also found/observed feeding on mollusc, fishes, crabs, rodents, amphibians, reptiles etc. were considered in this category.	Asian Openbill <i>Anastomus oscitans</i> was observed feeding on <i>Pila globosa</i> and <i>Lamellidens marginalis</i> . We observed certain Raptors viz. Osprey feeding on fishes, Marsh Harrier preying on smaller aquatic birds, and Common Kestrel was found predated over frogs & lizards, and considered them in this category.
Frugivorous	Birds that prominently feed on fruits were considered in this category.	Which includes Yellow-footed Green Pigeon, Rose-ringed Parakeets etc. recorded at Kurud Dam. Their prime feeding selection was <i>Ficus</i> species.
Granivorous	Birds that primarily feed on grains, were considered in this category.	This includes Scaly-breasted Munia, Indian Silverbill, Red Avadavat, House Sparrows, Baya Weave were also recorded at Kurud Dam area.
Insectivorous	Birds found feeding on insects, larvae of insects, weevils, minor crabs, mollusc, etc.	Birds like Green Bee-eaters were found/observed feeding on Odonata. Flycatchers, Larks, Pipits, were observed feeding on Diptera, Hemiptera, Stoneflies, Odonata at Kurud Dam area.
Nectarivorous	Birds that fed on nectar of the flower.	Sunbirds were most commonly found feeding on the nectar of the flower.
Omnivorous	We handled the omnivorous guild behavior in a broad range the birds (including ducks) that feed on Aquatic plants / parts of plants; inclusively (some of them) also feed on shrimps, mollusc, certain aquatic insects and other aquatic minor animals.	Ducks and Geese were seen diving, dabbling, and foraging on these food resources.
Piscivorous	Birds that primarily feed on fishes.	Cormorants, Skimmer, Kingfishers, etc.

individual species, these sample specimens were compared and identified with standard literatures—Patten (1906), Mukherjee (1969-71) Ali & Ripley (1987), Perrow (1997), and Jha (2013).

Observations

This study recorded a total of 191 bird species belonging to 16 orders and 61 families (Table 1). Out of these 191 species, 111 species were Resident (R), 80 species were Migratory (M) observed mostly in winter. The total 191 species were also categorized according to their habit into—Aquatic (A) 17 species, Near aquatic (NA) 76 Species, and

Grassland & Arboreal (GA) 98 species.

Here is a breakup of the species recorded from each of the 61 families from this study: Anatidae 14 (7.33%), Phasianidae 3 (1.57%), Podicipedidae 2 (1.05%), Columbidae 3 (1.57%), Caprimulgidae 1 (0.52%), Apodidae 2 (1.05%), Cuculidae 4 (2.09%), Rallidae 6 (3.14%), Ciconiidae 4 (2.09%), Ardeidae 12 (6.28%), Threskiornithidae 3 (1.57%), Phalacrocoracidae 3 (1.57%), Anhingidae 1 (0.52%), Recurvirostridae 1 (0.52%), Charadriidae 7 (3.66%), Rostratulidae 1 (0.52%), Jacanidae 3 (1.57%), Scolopacidae 19 (9.95%), Turnicidae 1 (0.52%), Glareolidae 2 (1.05%), Laridae 5 (2.62%), Pandionidae 1 (0.52%), Accipitridae 9 (4.71%), Tytonidae 1

Table 8. Available food and habitat resources of the birds at study area.

Aquatic Plants
<i>Aponogeton natans</i>
<i>Hydrilla verticellata</i>
<i>Marselia minuta</i>
<i>Najas marina</i>
<i>Nymphaea rubra</i>
<i>Vallisneria spiralis</i>
Shrubs / stands ^
<i>Ipomoea carnea</i>
<i>Prosopis juliflora</i>
<i>Typha latifolia</i>
Trees *
<i>Aegele marmelos</i>
<i>Azadirachta indica</i>
<i>Bombax ceiba</i>
<i>Ficus benghalensis</i>
<i>Ficus religiosa</i>
<i>Mangifera indica</i>
<i>Phoenix sylvestris</i>
<i>Psidium gujava</i>
<i>Tamarindus indicus</i>
<i>Vachellia nilotica</i>
<i>Zizhyphus mauritiana</i>
Grasses ^^
<i>Cynodon dactylon</i>
<i>Cyperus iria</i>
<i>Digitaria sanguinalis</i>
Cultivation^^
Maize
Paddy
Reptiles
Chequered Keelback
Common Skink
Garden Lizard
House Gecko
Mollusc
<i>Pila globosa</i>
<i>Lamellidens marginalis</i>
<i>Bellamaya bengalensis</i>

Insects
Pond skater
Water nymph
Water beetle
Fishes
Rohu
Katla
Loaches
Amphibians
Bullfrog
Common Toad

^ Served as hide-out nesting and roosting sites for few birds.
 * These trees served for perching, roosting, nesting, and also as food resource.
 ^^ Served as good abode for grass birds.

(0.52%), Strigidae 1 (0.52%), Bucerotidae 1 (0.52%), Upupidae 1 (0.52%), Picidae 1 (0.52%), Ramphastidae 1 (0.52%), Meropidae 1 (0.52%), Coraciidae 1 (0.52%), Alcedinidae 3 (1.57%), Falconidae 1 (0.52%), Psittaculidae 2 (1.05%), Campephagidae 1 (0.52%), Oriolidae 1 (0.52%), Vangidae 1 (0.52%), Aegithinidae 1 (0.52%), Dicruridae 1 (0.52%), Laniidae 5 (2.62%), Corvidae 2 (1.05%), Monarchidae 1 (0.52%), Nectariniidae 1 (0.52%), Ploceidae 1 (0.52%), Estrildidae 4 (2.09%), Passeridae

1(0.52%), Motacillidae 8 (4.19%), Fringillidae 1 (0.52%), Emberizidae 3 (1.57%), Alaudidae 6 (3.14%), Cisticolidae 4 (2.09%), Locustellidae 1 (0.52%), Acrocephalidae 4 (2.09%), Hirundinidae 1 (2.09%), Pycnonotidae 1 (0.52%), Phylloscopidae 1 (0.52%), Sylviidae 1 (0.52%), Timaliidae 1 (0.52%), Leiothrichidae 2 (1.05%), Sturnidae 4 (2.09%), Muscicapidae 9 (4.71%).
 Out of the 61 families following 10 families found dominant were, Scolopacidae 19 species (9.95%), Anatidae 14 (7.33%), Ardeidae 12 (6.28%), Accipitridae 9 (4.71%), Muscicapidae 9 (4.71%), Motacillidae 8 (4.19%), Rallidae 6 (3.14%), Alaudidae 6 (3.14%), Laridae 5 (2.62%), Laniidae 5 (2.62%).

Threatened Species: Out of the 191 species 11 Species were found under different threatened categories of IUCN Red List, (Table 3) Rahmani (2012), Rahmani et al. (2018).

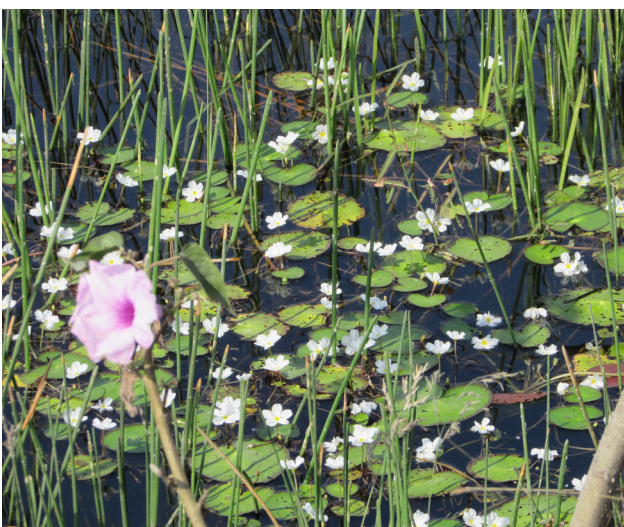
Passerby species
 Some of the passerby species observed at arrival



Wader Congregation.



Migratory Tufted Ducks.



Aquatic vegetation.

during September–November and departure in April and May were as per Table 4.

Roosting

Some of the roosting species at and around the dam as found are mentioned in Table 5.

Nesting

The species found nesting were as per Table 6.

Food base

Working with the food resource available at and around Kurud Dam utilized by 191 species, were categorized according to their feeding guild as follows:

48 carnivorous species, four frugivorous species, eight granivorous species, 44 insectivorous species, one nectarivorous species, 83 omnivorous species, 03 carnivorous / pisivorous species were recorded, following Patten (1906), Mukherji (1969–71) Subramanyam (1962), Ali & Ripley (1987), Perrow (1997), Jha (2013), Bux and Acharya (2017).

The feeding guild according to foraging behavior found:

We did see the feeding bird(s) but did not examine their gut, but presumably on later examination of their feeding grounds we concluded the guild behavior (Table 7), and the available food and habitat resource (Table 8).

Result and Discussion

The study site was visited since 2007 but more intensively from 2015 to 2019. The observed 191 bird species belonging to 16

order and 61 families were categorized into resident and migratory; and according to their habit aquatic, near aquatic, grassland & arboreal; and according to the feeding guild behavior into carnivorous, insectivorous, nectarivorous, omnivorous, piscivorous, granivorous, and frugivorous. Eleven species fall within the categories of threatened species of IUCN Red list viz. vulnerable four species, and seven near threatened. Our study documents the size and structure of the Kurud Dam avian community, which affords ample food resource. The studies on passerby, roosting, and nesting species were also undertaken to ascertain a better picture of the wetland's status and the birds it carries.

Through this study we have tried to fill the gap and expect that it will serve as the baseline data for Kurud Dam. Being a prime and potential wetland of central Chhattisgarh, this study shall also support ornithological studies and conservation issues in the near future.

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