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Special feature:
Grassland under threat



Photo: Omkar Sumant

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Checklist of Birds and Mammals of Kolvihire, a Threatened Grassland in Purandar Taluka, Pune District, Maharashtra, India

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Introduction

Kolvihire (18.25N, 74.20E; 711 m ASL) is a village from Purandar Tahsil, Pune District, Maharashtra, India with mean annual temperature of 24.4 °C (from climate data). The average annual rainfall is 515 mm. Kolvihire is situated on the Deccan plateau which is an important bio-geographic zone of India. We conducted the first ever surveys of this region to document bird and mammal diversity over a period of six years (2013 to 2018). The area is recently identified and earmarked for the extension of the industrial area of the Maharashtra state industrial development corporation (MIDC). The present checklist is therefore an important benchmark and baseline data of the bird and mammal diversity of the region. The list is likely to increase in the future because of the dynamic nature of the species, habitat modifications and climatic change. records are a compilation bird and mammal records from January 2013 to December 2018, observing all the 3 seasons, monsoon, winter and summer.

Material and Methods

The study area is centered on Kolvihire with surrounding areas of following villages and towns: Nawali (6 km to South), Jogwadi (7 km to North-East), Murti (10 km to East) and Jejuri (5 km to West). The various types of habitats encountered were predominantly grassland, semi-arid scrubland, hills, seasonal water bodies and adjacent marshes, agricultural, rural and semi urban areas.

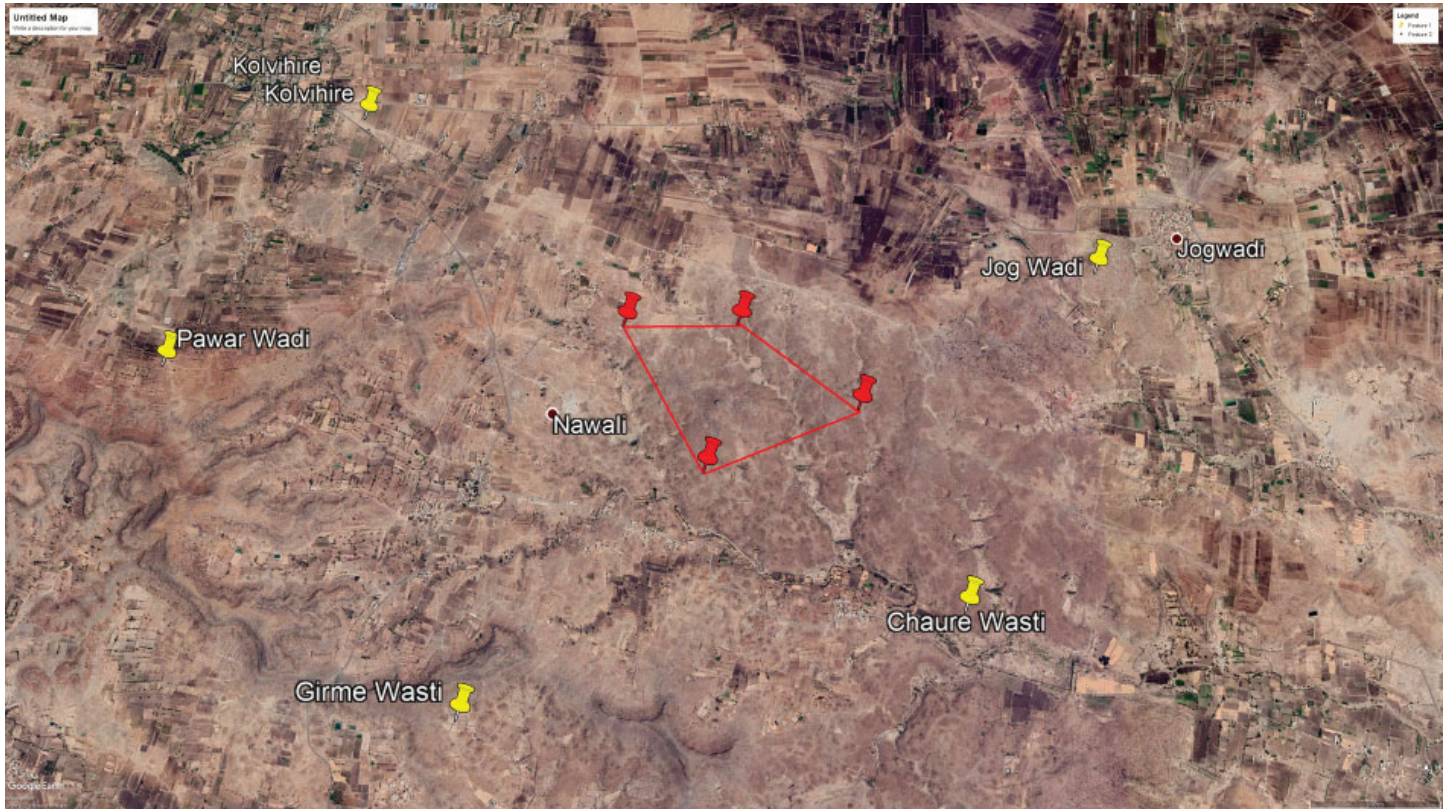
The study was conducted for a period of six years from January 2013 to December 2018. Field observations were taken during all 3 seasons, monsoon, winter and summer. Surveys were conducted twice in a week from morning 0630 to 1000 hours and from evening 1500 to 1800 hours and once a month during night 2000 to 2300 hours for nocturnal birds and mammals. Observations were made by direct sighting with binocular (Olympus 10X50) and photographs were taken with digital



All Photos: Omkar Sumant

Wolf lurking in the Kolvihire grassland





The extent of the Kolvihire grass land is shown in yellow and the proposed area to be protected for conservation is shown in red pins

camera. Some species were recorded in camera trap (Reconyx). The identification of fauna was done using from standard field guides ‘Birds of Maharashtra’ (Pande, Satish et. al. 2011) and ‘Indian Mammals: A Field Guide’ (Menon, Vivek 2014). Different habitats as well as nesting sites were also recorded. Species richness was calculated by recording the number of birds and mammals observed in each habitat of the study area. The birds were classified as Resident (R), Migratory (M) and Local Migrants (LM); the IUCN conservation status and endemism (E) were recorded based on Bird Life International (2013) and Pande et. al. (2016).

Results and Discussions

The present checklist of birds is of 211 species from 18 Orders, 62 Families and 145 genera. There are 2 Endangered and 5 Near Threatened species and 3 Endemic species. Out of the 211 avian species, 131 are resident, 76 are migratory and 9 are local migrants. The study area is a home to grassland birds like Rock Bush-Quail (*Perdicula argoondah*), Indian Courser (*Cursorius coromandelicus*), Chestnut-bellied Sandgrouse (*Pterocles exustus*) and Yellow-wattled Lapwing and an additional 98 species were recorded

to breed in the study area. It is an important roosting site of winter migratory birds like Montagu’s Harrier (*Circus pygarrus*), Pallid Harrier (*Circus macrourus*), Short-eared Owl (*Asio flammeus*) and Greater Short-toed Lark (*Calandrella brachydactyla*).

The present checklist of mammals is of 34 species from 6 Orders, 18 Families and 30 genera. The list includes one vulnerable species, the Rusty Spotted Cat (*Prionailurus rubiginosus*) and one near threatened species, the Striped Hyena (*Hyena hyena*). The presence of apex predator Indian Grey Wolf (*Canis lupus*) indicates good quality of the habitat. Some major threats in the study area recorded during the study are:

1. Habitat Destruction
2. Wire compounds on open grasslands
3. Predation by stray dogs
4. Unauthorized excavation of grassland using earth movers and trenching
5. Conversion of grassland to agricultural cropland
6. Use of insecticides and pesticides in adjacent agricultural habitats
7. Grazing
8. Urbanization
9. Proposed industrialization



The pristine undisturbed Kolvihere grassland threatened by industrial expansion



A male Pallid Harrier perching in the grassland



Indian Eagle Owl on a perch in the grassland at dusk

Recommendations for conservation

The study area is considered as waste land and has been proposed for industrial development by MIDC. If this happens it will completely displace the 245 faunal species inhabiting this area. Development plans for modifying this rich biodiversity area should be carefully drawn. Gross changes in habitats and landscape modification should not be undertaken in an offhand manner. Identification, mapping and prioritization for protection of some prime habitats which should have corridor continuity with adjacent open areas should be undertaken first. These areas should be ear marked for conservation and protection during land use change for incorporating industrialization. In this paper we have included a map that has identified and earmarked such area for permanent protection. This can avoid large scale displacement of fauna. Any random destruction of grassland, digging unwanted trenches, etc. should be avoided. Removal of stray dogs and unchecked conversion of grassland habitat to agricultural and industrial land should be disallowed.

Some birds and mammals of Kolvihire grassland



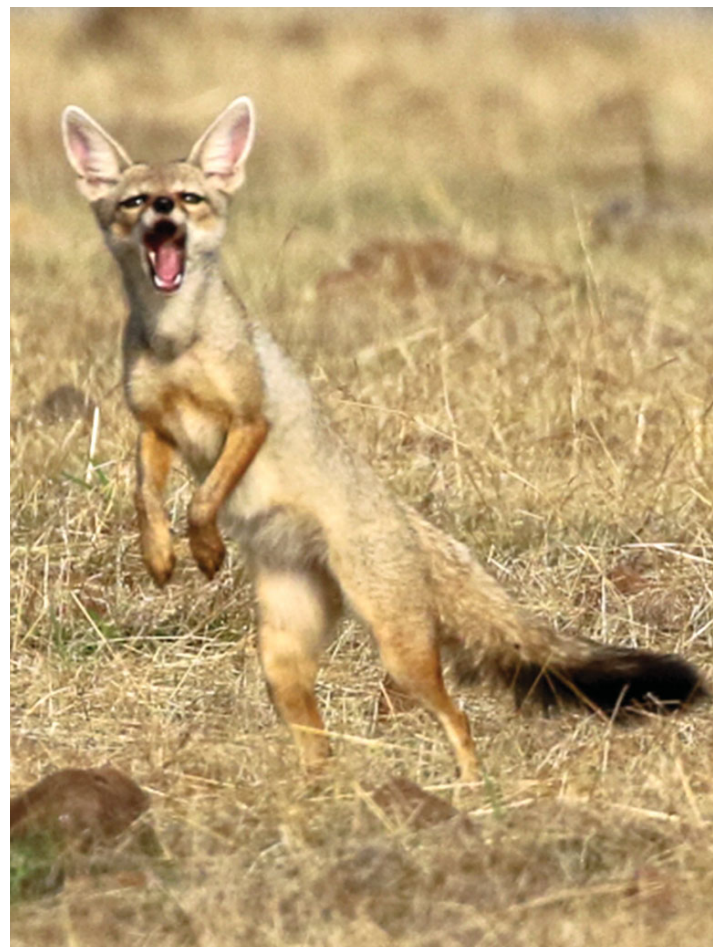
A flock of migratory Steppe Eagles in the grassland



A sub-adult male Montague's Harrier in the grassland



Female Chestnut-bellied Sandgrouse, breeds in the grassland



Indian Fox giving a threat display near the den

Some birds and mammals of Kolvihire grassland



A pack of wolves moving to their morning retreat



Indian Fox after a meal



Indian Fox in the adjoining hilly terrain, the site where it rests

Some birds of Kolvihire grassland



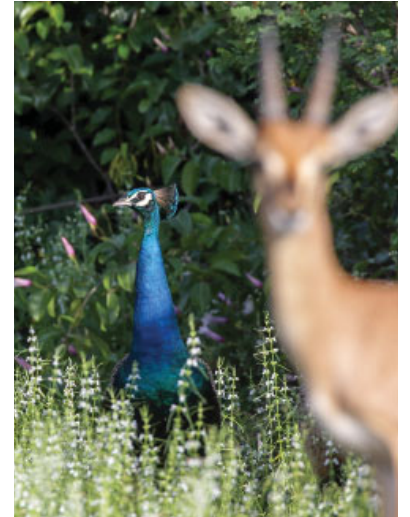
The endemic birds: Rock Bush Quail male (top) and Grey Francolin (bottom) in Kolvihire grassland



A typical grassland bird, Yellow-wattled Lapwing in Kolvihire grassland



Red-necked Falcon, a top predator inhabits the grassland



Indian Gazelle and Indian Peafowl



A pair of Yellow-wattled Lapwings



Two endemics: Sykes' Lark and Rock Bush Quail in Kolvihire grassland in one frame

All Photos: Omkar Sumant

Some birds and mammals of Kolvihire grassland



A pack of wolves roaming in the Kolvihire grassland



Indian Fox



A wolf in a trot



White-bellied Minivet, an indicator of undisturbed grassland



Indian Courser with the chick, after breeding in the grassland



Short-toed Snake-Eagle, a top grassland predator



Juvenile Indian Courser

Checklist of Birds of Kolvihire, Purandar Taluka, Pune District, Maharashtra, India

Sr. No.	Family	Common Name	Scientific Name	Status
1	Podicipedidae	Little Grebe	<i>Tachybaptus ruficollis</i>	LM
2	Phalacrocoracidae	Little Cormorant	<i>Phalacrocorax niger</i>	R
3		Little Egret	<i>Egretta garzetta</i>	R
4		Great Egret	<i>Ardea alba</i>	LM
5		Intermediate Egret	<i>Mesophoyx intermedia</i>	R
6		Cattle Egret	<i>Bubulcus coromandus</i>	R
7		Grey Heron	<i>Ardea cinerea</i>	R
8		Purple Heron	<i>Ardea purpurea</i>	LM
9		Indian Pond Heron	<i>Ardeola grayii</i>	R
10		Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	LM
11		Little Green Heron	<i>Butorides striata</i>	LM
12	Ciconiidea	Asian Openbill	<i>Anastomus oscitanus</i>	R
13		Wooly-necked Stork	<i>Ciconia episcopus</i>	R
14		Painted Stork	<i>Mycteria leucocephala</i>	LM, NT
15		Black Stork	<i>Ciconia nigra</i>	M
16	Threskiornithidae	Red-naped Ibis	<i>Pseudibis papillosa</i>	R
17		Black headed Ibis	<i>Threskiornis melanocephalus</i>	LM, NT
18	Phoenicopteridae	Greater Flamingo	<i>Phoenicopterus roseus</i>	M
19	Anatidae	Bar-headed Goose	<i>Anser indicus</i>	M
20		Lesser Whistling-Duck	<i>Dendrocygna javanica</i>	LM
21		Ruddy Shelduck	<i>Tadorna ferruginea</i>	M
22		Common Teal	<i>Anas crecca</i>	M
23		Garganey	<i>Anas querquedula</i>	M
24		Gadwal	<i>Anas strepera</i>	M
25		Northern Shoveler	<i>Anas clypeata</i>	M
26		Northern Pintail	<i>Anas acuta</i>	M
27		Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	R
28	Accipitridae	Black-shouldered Kite	<i>Elanus caeruleus</i>	R
29		Brahminy Kite	<i>Haliastur indus</i>	R
30		Black Kite	<i>Milvus migrans</i>	R
31		Shikra	<i>Accipiter badius</i>	R
32		Eurasian Sparrow-hawk	<i>Accipiter nisus</i>	M
33		Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	R
34		White-eyed Buzzard	<i>Butastur teesa</i>	R
35		Short-toed Snake-Eagle	<i>Circaetus gallicus</i>	R
36		Booted Eagle	<i>Hieraaetus pennatus</i>	M
37		Bonelli's Eagle	<i>Aquila fasciata</i>	R
38		Greater Spotted Eagle	<i>Clanga clanga</i>	M
39		Steppe Eagle	<i>Aquila nipalensis</i>	M, EN
40		Tawny Eagle	<i>Aquila rapax</i>	R

41		Egyptian Vulture	<i>Neophoron percnopterus</i>	M, EN
42		Montagu's Harrier	<i>Circus pygarrus</i>	M
43		Pallid Harrier	<i>Circus macrourus</i>	M, NT
44		Western Marsh-Harrier	<i>Circus aeruginosus</i>	M
45	Falconidae	Common Kestrel	<i>Falco tinnunculus</i>	M
46		Amur Falcon	<i>Falco amurensis</i>	M
47		Red-necked Falcon	<i>Falco chicquera</i>	R
48		Shaheen Falcon	<i>Falco peregrines peregrinator</i>	LM
49		Laggar Falcon	<i>Falco jugger</i>	R, NT
50	Phasianidae	Grey Francolin	<i>Francolinus pondicerianus</i>	R
51		Painted Francolin	<i>Francolinus pictus</i>	R
52		Common Quail	<i>Coturnix coturnix</i>	M
53		Rain Quail	<i>Coturnix coromandelica</i>	R
54		Rock Bush-Quail	<i>Perdicula argoondah</i>	R,E
55		Indian Peafowl	<i>Pavo cristatus</i>	R
56	Turnicidae	Barred Buttonquail	<i>Turnix suscitator</i>	R
57	Rallidae	White-breasted Waterhen	<i>Amauronis phoenicurus</i>	R
58		Purple Swampphen	<i>Porphyrio porphyrio</i>	R
59		Common Moorhen	<i>Gallinula chloropus</i>	R
60		Eurasian Coot	<i>Fulica atra</i>	R
61	Rostratulidae	Greater Painted-snipe	<i>Rostratula bngalensis</i>	M
62	Recurvirostridae	Black-winged Stilt	<i>Himantopus himantopus</i>	M
63	Glareolidae	Indian Courser	<i>Cursorius coromandelicus</i>	R
64	Burhinidae	Great Thick-knee	<i>Esacus recurvirostris</i>	R, LM
65	Charadriidae	Red-wattled Lapwing	<i>Vanellus indicus</i>	R
66		Yellow-wattled Lapwing	<i>Vanellus malbaricus</i>	R
67		Common Ringed Plover	<i>Charadrius hiaticula</i>	M
68		Little Ringed Plover	<i>Charadrius dubius</i>	R
69		Kentish Plover	<i>Charadrius alexandrinus</i>	R
70	Scolopacidae	Wood Sandpiper	<i>Tringa glareola</i>	M
71		Green Sandpiper	<i>Tringa ochropus</i>	M
72		Common Sandpiper	<i>Actitishypoleucos</i>	M
73		Marsh Sandpiper	<i>Tringa stagnatilis</i>	M
74		Spotted Redshank	<i>Tringa erythropus</i>	M
75		Dunlin	<i>Calidris alpina</i>	M
76		Temminck's Stint	<i>Calidris temminckii</i>	M
77		Little Stint	<i>Calidris minuta</i>	M
78		Common Snipe	<i>Gallinago gallinago</i>	M
79	Sternidae	Little Tern	<i>Sternula albifrons</i>	R
80		River Tern	<i>Sterna aurantia</i>	R, NT
81	Pteroclididae	Chestnut-bellied Sandgrouse	<i>Pterocles exustus</i>	R
82		Painted Sandgrouse	<i>Pterocles indicus</i>	R
83	Columbidae	Blue Rock Pigeon	<i>Columba livia</i>	R

84		Little Brown Dove	<i>Streptopelia senegalensis</i>	R
85		Red Collared-Dove	<i>Streptopelia tranquebarica</i>	R
86		Eurasian Collared-Dove	<i>Streptopelia decaocta</i>	R
87		Yellow-footed Green Pigeon	<i>Treron phoenicopterus</i>	R
88	Psittacidae	Vernal Hanging-Parrot	<i>Loricus vernalis</i>	M
89		Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	R
90		Rose-ringed Parakeet	<i>Psittacula krameri</i>	R
91	Cuculidae	Grey-bellied Cuckoo	<i>Cacomantis passerinus</i>	R
92		Jacobin Cuckoo	<i>Clamator jacobinus</i>	M
93		Asian Koel	<i>Eudynamys scolopaceus</i>	R
94		Eurasian Cuckoo	<i>Cuculus canorus</i>	M
95		Common Hawk-Cuckoo	<i>Hierococyx varius</i>	R
96		Blue-faced Malkoha	<i>Phaenicophaeus viridirostris</i>	R
97		Greater Coucal	<i>Centropus sinensis</i>	R
98	Tytonidae	Barn Owl	<i>Tyto alba</i>	R
99	Strigidae	Indian Eagle-Owl	<i>Bubo bengalensis</i>	R
100		Short-eared Owl	<i>Asio flammeus</i>	M
101		Mottled Wood-Owl	<i>Strix ocellata</i>	R, E
102		Spotted Owlet	<i>Athene brama</i>	R
103	Caprimulgidae	Indian Nightjar	<i>Caprimulgus asiaticus</i>	R
104	Apodidae	House Swift	<i>Apus nipalensis</i>	R
105	Coraciidae	European Roller	<i>Coracias garrulus</i>	M
106		Indian Roller	<i>Coracias benghalensis</i>	R
107	Upupidae	Eurasian Hoopoe	<i>Upopa epops</i>	R
108	Dacelonidae	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	R
109	Cerylidae	Pied Kingfisher	<i>Ceryle rudis</i>	R
110	Alcedinidae	Common Kingfisher	<i>Alcedo atthis</i>	R
111	Meropidae	Blue-cheeked Bee-eater	<i>Merops persicus</i>	M
112		Green Bee-eater	<i>Merops orientalis</i>	R
113	Bucerotidae	Indian Grey Hornbill	<i>Ocyrceros birostris</i>	R
114	Megalaimidae	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	R
115	Picidae	Eurasian Wryneck	<i>Jynx torquilla</i>	M
116		Yellow-crowned Woodpecker	<i>Dendrocopos mahrattensis</i>	R
117	Alaudidae	Singing Bushlark	<i>Mirafra cantillans</i>	R
118		Indian Bushlark	<i>Mirafra erythroptera</i>	R
119		Sykes's Lark	<i>Galerida deva</i>	R,E
120		Ashy-crowned Sparrow-Lark	<i>Eremopterix griseus</i>	R
121		Rufous-tailed Lark	<i>Ammomanes phoenicura</i>	R
122		Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	M
123		Lesser Short-toed Lark	<i>Calandrella rufescens</i>	M
124	Hirundinidae	Dusky Crag-Martin	<i>Ptyonoprogne concolor</i>	R
125		Streak-throated Swallow	<i>Petrochelidon fluvicola</i>	R
126		Barn Swallow	<i>Hirundo rustica</i>	M

127		Red-rumped Swallow	<i>Cecropis daurica</i>	R
128		Wire-tailed Swallow	<i>Hirundo smithii</i>	R
129	Motacillidae	Western Yellow Wagtail	<i>Motacilla flava</i>	M
130		Grey Wagtail	<i>Motacilla cinerea</i>	M
131		Citrine Wagtail	<i>Motacilla citreola</i>	M
132		White Wagtail	<i>Motacilla alba</i>	M
133		White-browed Wagtail	<i>Motacilla madaraspatensis</i>	R
134		Olive-backed Pipit	<i>Anthus hodgsoni</i>	M
135		Tree Pipit	<i>Anthus trivialis</i>	M
136		Red-throated Pipit	<i>Anthus cervinus</i>	M
137		Paddyfield Pipit	<i>Anthus rufulus</i>	R
138		Tawny Pipit	<i>Anthus campestris</i>	M
139		Long-billed Pipit	<i>Anthus similis</i>	LM
140	Tephrornithidae	Common Woodshrike	<i>Tephrornis pondicerianus</i>	R
141	Campephagidae	Black-headed Cuckooshrike	<i>Coracina melanoptera</i>	R
142		White-bellied Minivet	<i>Pericrocotus erythropygius</i>	R
143		Small Minivet	<i>Percocotus cinnamomeus</i>	R
144	Pycnonotidae	Red-vented Bulbul	<i>Pycnonotus cafer</i>	R
145		Square-tailed Bulbul	<i>Hypsipetes ganeesa</i>	M
146	Aegithinidae	Common Iora	<i>Aegithina tiphia</i>	R
147	Laniidae	Long-tailed Shrike	<i>Lanius schach</i>	R
148		Southern Grey Shrike	<i>Lanius meridionalis</i>	R
149		Brown Shrike	<i>Lanius cristatus</i>	M
150		Isabelline Shrike	<i>Lanius isabellinus</i>	M
151		Bay-backed Shrike	<i>Lanius vittatus</i>	R
152		Red-backed Shrike	<i>Lanius collurio</i>	M
153	Bombycillidae	Grey Hypocolius	<i>Hypocolius ampelinus</i>	M
154	Monarchidae	Asian Paradise-Flycatcher	<i>Terpsiphone paradisi</i>	M
155	Rhipiduridae	White-browed Fantail	<i>Rhipidura aureola</i>	R
156	Muscicapidae	Blue Rock-Thrush	<i>Monticola solitarius</i>	M
157		Bluethroat	<i>Luscinia svecica</i>	M
158		Oriental Magpie-Robin	<i>Copsychus saularis</i>	R
159		Indian Robin	<i>Saxicoloides fulicatus</i>	R
160		Brown Rock Chat	<i>Cercomela fusca</i>	M
161		Black Redstart	<i>Phoenicurus ochruros</i>	M
162		Isabelline Wheatear	<i>Oenanthe isabellina</i>	M
163		Desert Wheatear	<i>Oenanthe deserti</i>	M
164		Variable Wheatear	<i>Oenanthe picata</i>	M
165		Pied Bushchat	<i>Saxicola caprata</i>	R
166		Common Stonechat	<i>Saxicola maurus</i>	M
167		Red-breasted Flycatcher	<i>Ficedula parva</i>	M
168		Tickell's Blue-Flycatcher	<i>Cyornis tickelliae</i>	R

169	Sylviidae	Yellow-eyed Babbler	<i>Crysmma sinense</i>	R
170		Common Grasshopper-Warbler	<i>Locustella naevia</i>	M
171		Booted Warbler	<i>Hippolais caligata</i>	M
172		Common Tailorbird	<i>Orthotomus sutorius</i>	R
173		Common Chiffchaff	<i>Phylloscopus collybita</i>	M
174		Orphean Warbler	<i>Sylvia hortensis</i>	M
175		Clamorous Reed-Warbler	<i>Acrocephalus stentoreus</i>	M
176		Lesser Whitethroat	<i>Sylvia curruca</i>	M
177	Timaliidae	Common Babbler	<i>Turdoides caudata</i>	R
178		Large Grey Babbler	<i>Turdoides malcolmi</i>	R
179	Cisticolidae	Zitting Cisticola	<i>Cisticola juncidis</i>	R
180		Ashy Prinia	<i>Prinia socialis</i>	R
181		Grey-breasted Prinia	<i>Prinia hodgsonii</i>	R
182		Jungle Prinia	<i>Prinia sylvatica</i>	R
183		Plain Prinia	<i>Prinia inornata</i>	R
184		Rufous-fronted Prinia	<i>Prinia buchanani</i>	R
185	Paridae	Great Tit	<i>Parus cinereus</i>	R
186	Zosteropidae	Oriental White-eye	<i>Zosterops palpebrosus</i>	R
187	Nectariniidae	Purple-rumped Sunbird	<i>Nectarinia zeylonica</i>	R
188		Purple Sunbird	<i>Nectarinia asiatica</i>	R
189	Emberizidae	Crested Bunting	<i>Melophus lathamii</i>	R
190		House Bunting	<i>Emberiza striolata</i>	R
191		Black-headed Bunting	<i>Emberiza melanocephala</i>	M
192		Red-headed Bunting	<i>Emberiza bruniceps</i>	M
193		Grey-necked Bunting	<i>Emberiza buchanani</i>	M
194	Fringillidae	Common Rosefinch	<i>Carpodacus erythrinus</i>	M
195	Estrildidae	Red Avadavat	<i>Amandava amandava</i>	R
196		Tricolored Munia	<i>Lonchura malacca</i>	R
197		Indian Silverbill	<i>Euodice malabarica</i>	R
198		Scaly-breasted Munia	<i>Lonchura punctulata</i>	R
199	Passeridae	House Sparrow	<i>Passer domesticus</i>	R
200		Chestnut-bellied Petronia	<i>Petronia xanthocollis</i>	R
201	Ploceidae	Baya Weaver	<i>Ploceus philippinus</i>	R
202	Oriolidae	Indian Golden Oriole	<i>Oriolus kundoo</i>	R
203	Dicruridae	Black Drongo	<i>Dicrurus macrocercus</i>	R
204	Sturnidae	Brahminy Starling	<i>Sturnus pagodarum</i>	R
205		Rosy Starling	<i>Sturnus roseus</i>	M
206		Chestnut-tailed Starling	<i>Sturnus malbaricus</i>	M
207		Common Myna	<i>Acridotheres ginginianus</i>	R
208		Jungle Myna	<i>Acridotheres fuscus</i>	R
209	Crovidae	Rufous Treepie	<i>Dendrocitta vagabunda</i>	R
210		House Crow	<i>Corvus splendens</i>	R
211		Jungle Crow	<i>Corvus leuillanti</i>	R

R= Resident, M= Migratory, LM=Local Migratory, E = Endemic, Resident, EN= Endangered, NT= Near-threatened.

Checklist of Mammals of Kolvihire, Purandar Taluka, Pune District, Maharashtra, India

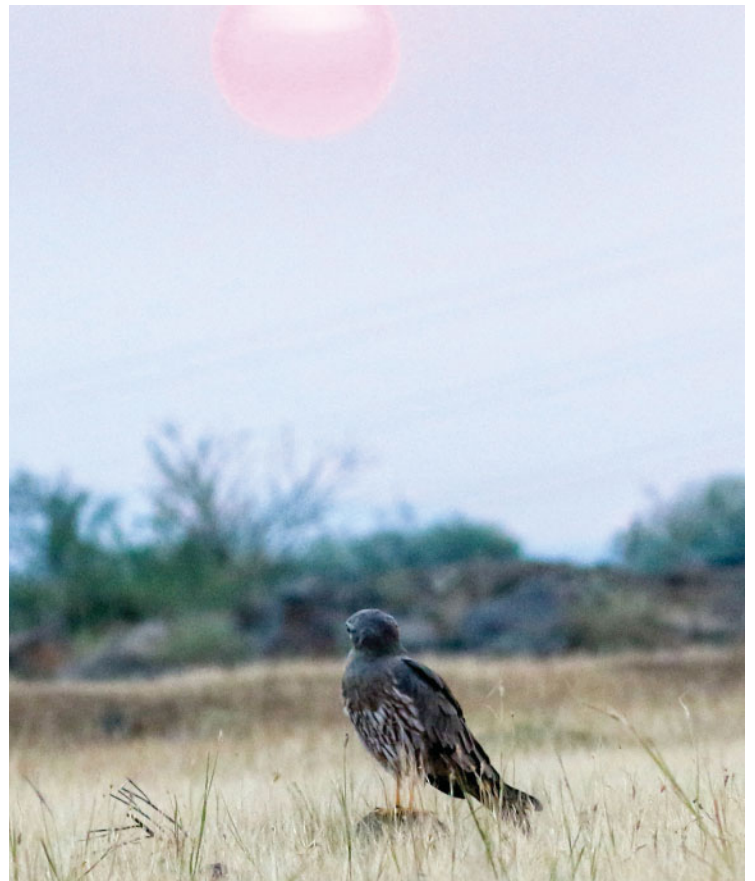
Sr. No.	Family	Common Name	Scientific Name	Status
1	Cercopithecidae	South-Western Langur	<i>Semnopethus hypoleucos</i>	LC
2	Bovidae	Indian Gazelle	<i>Gazella bennettii</i>	LC
3	Suidae	Wild Boar	<i>Sus scrofa</i>	LC
4	Felidae	Rusty Spotted Cat	<i>Prionailurus rubiginosus</i>	V, U
5		Jungle Cat	<i>Felis chaus</i>	LC
6	Viverridae	Common Palm Civet	<i>Paradoxurus hemaphroditus</i>	LR, U
7		Small Indian Civet	<i>Viverricula indica</i>	LC
8	Herpestidae	Grey Mongoose	<i>Herpestes edwardsii</i>	LC
9	Hyaenidae	Striped Hyena	<i>Hyena hyena</i>	NT
10	Canidae	Grey Wolf	<i>Canis lupus</i>	LC
11		Golden Jackal	<i>Canis aureus</i>	LC
12		Indian Fox	<i>Vulpus bengalensis</i>	LC
13	Leporidae	Black-naped Hare	<i>Lepus nigricollis</i>	LC
14	Soricidae	House Shrew	<i>Suncus murinus</i>	LC
15		Pygmy White-Toothed Shrew	<i>Suncus etruscus</i>	LC
16	Hystricidae	Indian Crested Porcupine	<i>Hystrix indica</i>	LC
17	Sciuridae	Five-Striped Palm Squirrel	<i>Funambulus pennanti</i>	LC
18	Muridae	Indian Gerbil	<i>Tatera indica</i>	LC
19		Indian Long-Tailed Tree Mouse	<i>Vandeleuria oleracia</i>	LC
20		House Mouse	<i>Mus musculus</i>	LC
21		Little Indian Field Mouse	<i>Mus booduga</i>	LC
22		Soft-Furred Field Rat	<i>Millardia meltada</i>	LC
23		Indian Bush Rat	<i>Golunda ellioti</i>	LC
24		Large Bandicoot Rat	<i>Bandicota indica</i>	LC
25		Lesser Bandicoot Rat/ Indian Mole Rat	<i>Bandicota bengalensis</i>	LC
26		House Rat/ Black Rat	<i>Rattus rattus</i>	LC
27	Pteropodidae	Indian Flying Fox	<i>Pteropus giganteus</i>	LC
28		Fulvous Fruit Bat	<i>Rousettus leschenaultii</i>	LC
29		Lesser Short-nosed Fruit Bat	<i>Cynopterus brachyotis</i>	LC
30	Emballonuridae	Long-winged Tomb Bat	<i>Tapozous longimanus</i>	LC
31	Megadermatidae	Greater False Vampire	<i>Megaderma lyra</i>	LC
32	Rhinolophidae	Rufous Horseshoe Bat	<i>Rhinolopus rouxii</i>	LC
33	Vespertilionidae	Indian Pipistrelle	<i>Pipistrellus coromandra</i>	LC
34		Javan Pipistrelle	<i>Pipistrellus javanicus</i>	LC



Indian Eagle Owl in the grassland after the monsoon showers amidst lucas flowers

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A Montague's Harrier roosting in the Kolvihiere grassland. Hundreds of harriers visit this grassland in winter

A Checklist of Birds of Kundal Forest Academy

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Purple Sunbird, Yellow-eyed Babblers, Indian Roller and Spotted Owlet

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Acknowledgement

Introduction

Kundal Academy of Development, Administration and Management (Forest) was established by the Government of Maharashtra to serve the training needs of Range Forest officers, forest department staff and other department officers. The Kundal Forest Academy (KFA) provides mandatory training under State Training Policy Evaluation Agency (STPEA), which comprises of Foundation Training, Induction Training, various Refresher courses, Post Promotional Courses and Orientation Courses. The Academy provides consultancy services to various projects like Agroforestry, Medicinal plants, Organic farming, etc. The campus is spread over 29 acres with constructions keeping in view modern architectural designs. Earlier the land of campus construction was barren with grassland and rocky surface but is now modified due to infrastructure development.

The campus of academy has a variety of ornamental and silviculture trees. In the Academy, Sahyadri Biological Park attracts different birds to the campus. Park consists of endemic and threatened plant species, which as useful for the trainees to study various aspects of forestry. This park is divided into 26 small unit,

likes Herbal Garden, Rose garden, Avenue plantation, Aesthetic Groves, Scared Groves, Sahyadri Floral Species, Cactus and Bonsai Collection. The variety of native plants provide the year-round food in the form of seeds, berries, nuts, and nectar. The garden recreates adaptable ecosystem in academy, while evergreen trees and shrubs provide excellent habitat for different birds. The different flowering trees planted in the campus, also provide fruits in various seasons of year and help in attracting birds.

The different birds prefer various habitats for nesting, feeding and breeding. It is surrounded by adjoining areas of crop fields and scrub and thorny forest trees. Nesting material like grass, small twigs, dead branches, leaves, is available. The cavities in dead trees is a nesting site for Woodpeckers, Coppersmith barbets, Parakeets, Common hoopoe, etc. Kingfishers burrow in dug tunnels into the ground near wetlands. Birds find their nesting sites in the artificial vertical cavities of roof tiles, rooftop of academy building, wall holes, eaves, embankment holes of building etc. near human habitation.

Bird migration is the seasonal to and from movement undertaken by many species of birds. Migration is the response of bird due to changes in photoperiod, temperature; availability food, and other weather conditions. Migration of birds is also observed in academy with changes in season. Many bird population migrate long distance along a flyway. Migration of often in the north and south direction. In summer season Brahminy Starling, Red-wattled Lapwing, Yellow-wattled Lapwing, Jungle Crow are attracted towards the campus. The availability of habitat resource is main reason for bird's migration in summer. Winter migrant birds are White Wagtail, Grey Wagtail, Blue Rock Thrush, Isabelline Shrike, etc. Rainy Season attracts Common Hawk Cuckoo, Grey-Bellied Cuckoo, Asian Koel, etc. to the garden sites and Sahyadri Biological park.

1 Body Size And Shape- Each bird has a specific shape and size of body. Stork, Pelican, Flamingos are big sized birds whereas Sunbird, Flowerpecker, White-Eye, Munias are small sized birds. The body length is measured from the tip of bill to the end of the tail. The big birds may be easily identified but for identifying small birds we need binoculars. Wagtails appear slenderer and show wagging of tail. The body shape of Drongo is easily identifiable due to its wide

forked tail. Some birds, with identification clues are kept below.

- 2 COLOURS-** The birds have different colour patterns, some bird are dark in colour while others are lighter in colour. The same species has different colours, and they are differentiated by which colour is present on the body parts. The bird changes its body colour in the breeding period and during transformation with age i.e. juvenile to adult, female and male may be of different colours. Some of the migrant birds change body colour with season. Tricoloured Munia, Red Avadavat, Silverbill and other Munias can be differentiated by their colour patterns.
- 3 HABITAT-** Each bird has specific requirement of a particular type of habitat. suitable habitat -condition is required for nesting, breeding, feeding etc. Bird preference for particular type of habitat is important, eg. Great Indian Bustard requires scrub and open grassland as habitat. The wetland birds like Pelicans, Storks, Flamingo require wetland as a habitat. In Kundal Academy larks are found in only open grasslands or in sparse cultivation.
- 4 DIMORPHISM –** The gender difference in bird can be easily identified in some birds, eg. Peacock, house sparrow, etc.. It is often possible to determine which birds are male or female by either appearance or behaviour. Asian Koel male has glossy back body, greenish yellow bill and red eyes, while female is brown above, with white spots on upper parts.
- 5 NESTING –** Nesting of each bird is different. Nests are of different sizes, shapes, locations and the method of nesting may be different (by male or female). Some bird makes nests on the ground while some birds nest in shrub, bush or tree. The nesting height from the ground level, nesting tree, help in bird identification.
- 6 FLIGHT-** Flight is the main form of locomotion in birds, flight mechanism depends on various factors namely shape of feathers, wings, etc. Many birds fly in flocks, in coordination while turning, spacing, velocity, flight direction etc. Some bird have a unique type of flight eg. Green Bee Eater in aerobatic and zig-zag manner, which helps in identification of bird. Swift, Dusky Crag Martin, Wire-tailed swallow have a swooping, gliding, turning manner of flight.
- 7 BIRDS CALL-** Identification of birds from their calls is a skill. Each Bird has a specific call, while some birds show mimicry. The typical well known call is that of the male Asian Koel. Some Bird have a

sweet call and some have a harsh call. Indian Peacock, Ashy Prinia, Common Iora, Common Tailorbird are identified by their unique calls.

Nesting Sites Of Birds In Kfa

The academy has good nesting suitable sites of birds as it provides abundant food and sources of nesting materials. Nests found in all types of habitat because nesting and habitat are related factor for bird life. Nest is a home for birds, which used for laying eggs, brooding, care and grow of nestling. Nest also help in regulates temperature in summer and winter season, also reduce risk and provides shelter of nestling or offspring from predator. Nest is essential for breeding season but it can also use in non-breeding for roosting. Each bird has a distinctive style of nesting. Some birds not build nest, they directly lays their eggs on the ground or rocky surfaces. Lapwing nests difficult to find because eggs are resemble with the ground cover. The brood parasites birds Asian Koel, Greater Coucal, place their eggs in the nest of other birds. Most of the birds build nest every year but some birds used their old nest.

Nest type can be important clue for proper bird identification like Baya weaver the most skilled unique nest builder, nest help in identification of their habitat. Nest style correlated with the parental care of bird. Some birds build their nest on tree, some birds nesting in digging hole of ground. The whole academy constructed in modern design but there are some places, which act as the birds finding their nesting sites in the artificial vertical cavities of roof tiles, rooftop of academy building, wall holes, eaves, embankment holes of building are the nesting sites of House sparrow, House crow, Large Bill Crow, Blue Rock Pigeon, Common Myna, Brahminy Myna. In Sahyadri Biological Park, Herbal Garden, Rose garden, Avenue plantation, Aesthetic Groves, Sacred Groves, Sahyadri Floral Species, Cactus and Bonsai Collection and planting variety of native plants provide a suitable nesting sit for different birds.

The academy surrounded by adjoining areas of cultivation field, planting of scrub and thorny forest is getting good chance of nesting. Nest composed with organic material such as grass, small twigs, dead branches, leaf while some birds used inorganic materials like cloths, paper, plastic, and string. The dead tree cavities is a nesting site for Woodpecker, Coppersmith barbet, Parakeet, Common hoopoe. In

Kingfisher nesting burrow in dug into the ground and shallow cave in nesting chamber. House Sparrow nesting in telephone poles or even nestled and brooding in gaps in houses as cavities for nesting. Baya weaver pendant nests are elaborately woven sacks that hanging on branches. Red Vented bulbul a simple cup-shaped nest is most common type, cup placed along branches, in tree forks or in any unique places.

Bird Migration In Kfa

Bird migration is a regular seasonal journey undertaken by many species of birds. The migration of bird done to finding the best habitat for breeding, feeding and raising their young ones. Adverse condition of one place then bird fly to the new place where the condition more favourable and better than previous place. Migration is a two-way movement i.e. they move from the adverse condition place to another favourable condition for getting the advantages of the new ecological changes.

Migration marked by its annual seasonality. Migration is a more or less regular, they migrates on schedule and fallow their route in a regular fashion. Some of the bird not native of academic reason but they are seen in academy during seasonal variation. The campus provides host to attracting different migratory birds in summer as well as winters. The campus serve best feeding and breeding ground for migrant. Birds are local migrant, which move locally over short distances, they are usually the resident of that area. The ecological changes in from plains to high mountains hills during winter and summer months is main factor of migration. Besides the resident birds, some of the birds migrates from long distance. The academy campus getting effective solution to overcome the problem of native region such as harsh climatic condition, scarcity of food and non-availability of suitable breeding grounds. Grey Wagtail, Yellow Wagtail, White Wagtail, Blue Rock Thrush, etc. Species are winter migrants.

Habitats Of Birds In Academy

Garden And Planting Site- Spread on 27 acres area of the academy is the Sahyadri Biological Park. This park divided into 26 different small unit, likes Herbal Garden, Rose garden, Avenue plantation, Aesthetic Groves, Sacred Groves, Sahyadri Floral Species, Cactus and Bonsai Collection. This provides an excellent habitat for different birds. Flowerpecker, Plaintive Cukoo, Magpie-Robin, Asian Koel, Common Iora, Greater



Nesting Site of Spotted Owllet, House Sparrow, Blue Rock Pigeon, and nest of Ashy Prinia



Nesting Site of House Sparrow, Red-vented Bulbul and Brahminy Starling

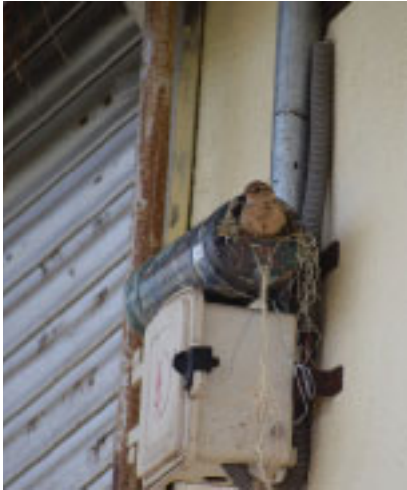
Coucal, Coppersmith Barbet, are the birds often seen in this area. The spotted owllet is the main nocturnal bird, which is sighted on the trees like *ficus* spp.

Agriculture cropland- The academy campus is surrounded by agriculture fields. In this area Sugarcane, Jawari, Bajari, Groundnut, are main cultivated crop that attract various kind of birds for finding food like grains, nectar, and insects and for nesting. The fruits of Fig, Mango, Gauva, Ber, attract Roseringed Parakeet, Redvented Bulbul, Laughing Dove.

Scrub, Thorn Forest And Grassland - Kundal comes in rain shadow zone and the area consists of natural scrub and thorn type forest. *Acacia senegal*, *Acacia nilotica*, *Acacia catechu*, *Ziziphus mauritiana*, cactus spp., are seen here. The grassland is also a good bird

habitat which is ideal for birds like Ashy-crowned Sparrow Lark, Rufoustailed Lark, Black Kite, Red-wattled Lapwing, Yellow-wattled Lapwing.

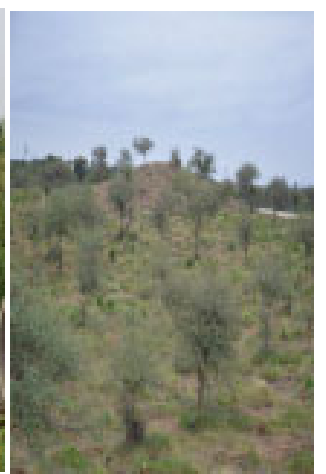
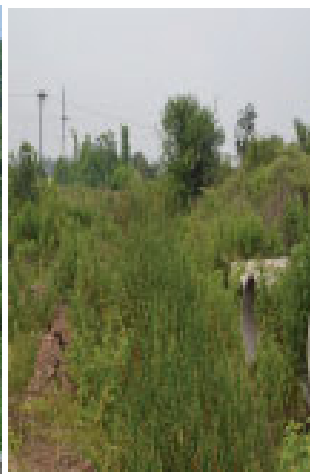
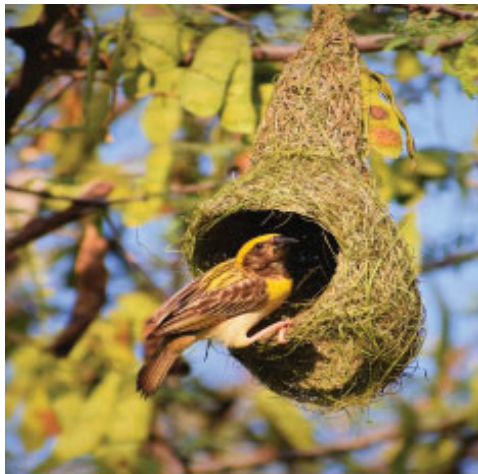
Sewage And Garbage Dump Area- The sewage water and waste foods material of canteen are dumped in this area. As the sewage swamp has tall grass, which is important for the Tricoloured Munia, Red Avadavat, Indian Silverbill.



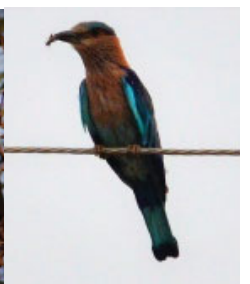
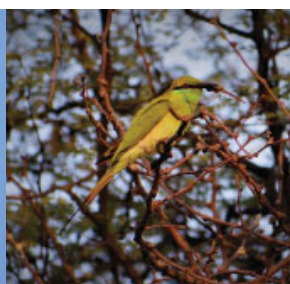
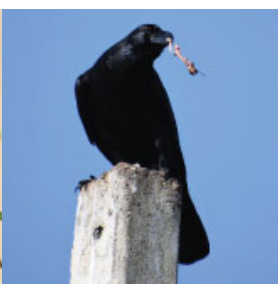
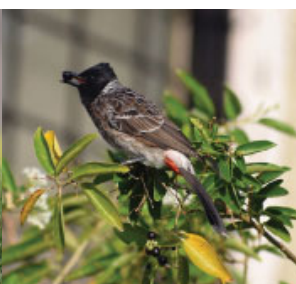
Some bird nests

Nest and eggs of **Ashy Prinia** (*Prinia socialis*)

Nest and eggs of Red-vented bulbul (*Pycnonotus cafer*)



Nest of Baya Weaver with male on the beak-crafted nest; campus photos of the academy



Feeding behaviour of starling, bulbul, crow, bee-eater and roller

IMPORTANT BIRDS ATTRACTING TREE SPECIES IN ACADEMY

Sr. No	English Name	Botanical Name	Marathi Name	Plant Parts Used	Birds Generally Seen
1	Banyan Tree	Ficus benghalensis	Vad	Fruits, Dry Branches for making nest, Nesting sites.	Common Myna, Coppersmith Barbet, Spotted Owlet, Jungle Crow, Crow, Asian Koel, Redvented bulbul
2	Peepal	Ficus religiosa	Pimpal	Fruits, Dry Branches for making nest, Nesting sites .	Little Egret, Coppersmith Barbet, Spotted Owlet, Jungle Crow, Crow, Asian Koel, Red vented bulbul
3	Palas	Butea monosperma	palas	Flower nectar, Feed Insect on leaves.	Green bee-eater, Babbler, Red vented Bulbul, Sunbird.
4	Coral Tree	Erythrina indica	Pangara	Flower nectar,	Sunbird, Whiteeye, Commom Iora.
5	Silk Cotton Tree	Bombax Ceiba	katesawar	Flower nectar, Feed Insect on leaves.	Coppersmith Barbet, Green Bee-eater, Babbler, Red-vented Bulbul, Sunbird.
6	Indian catechu	Acacia catechu	Khair	Dry Branches for making nest,	Laughing Dove, Shrike, Crow, Jungle Crow.
7	Karanj	Pongamia pinnata	Karanj	Dry Branches for making nest,	Common Myna, Ashy Prinia, Crow
8	Amla	Emblica officinalis	Aonla	Dry Branches for making nest,	Indian Robin, Ashy Prinia, Crow, Jungle Crow. Brahminy Myna
9	Jarulul	Lagerstroemia speciosa	Jarulul	Flower nectar,	Sunbird, White Eye, Commom Iora
10	Mango	Mangifera indica	Amba	Flower nectar, Feed Insect on leaves , Dry Branches for making nest	Indian Tailor Bird, Sunbird, White Eye, Commom Iora, House Crow, Jungle Crow
11	Champa	Michelia champaca	Sonchafa	Flower nectar,	Sunbird, White Eye, Commom Iora
12	Bakul	Mimusops elengi	Bakul	Flower nectar, Fruits	Sunbird, White Eye, Commom Iora, Red-vented Bulbul
13	White-barked acacia	Acacia leucophloea	Hiwar	Nesting site,Feed Insect on leaves , Dry Branches for making nest	Common Myna, Coppersmith Barbet, Spotted Owlet, Jungle Crow, Crow, Asian Koel, Red-Vented Bulbul
14	Hirda	Terminalia chebula	Hirda	Dry Branches for making nest	Common Myna, Spotted Owlet, Jungle Crow, Crow, Asian Koel
15	Sandalwood	Santalum album	Chandan	Fruit	Red Vented Bulbul, Asian Koel, Common Myna
16	Wild Cherry	Prunus avium	Rancheri	Flower,Fruit	Pale-Billed Flowerpecker, Red Vented Bulbul, Asian Koel, Common Myna
17	Almond	Prunus amygdalus	Badam	Flower,Fruit	Red Vented Bulbul, Asian Koel, Common Myna, Common Iora

18	Guava	Psidium guajava	Peru	Flower,Fruit	Red Vented Bulbul, Asian Koel, Common Myna, Common Iora
19	Gum Arabic tree	Acacia nilotica	Babhul	Nesting site, Dry Branches for making nest	Common Myna, Coppersmith Barbet, Spotted Owlet, Jungle Crow, Crow, Asian Koel, Red Vented Bulbul
20	Bottle Brush	Callistemon lanceolatus	Lalkunchala	Flower Nectar	Sunbird, Rose-ringed Parakeet, Ashy Prinia
21	Fig	Ficus carica	Anjir	Fruit	Red-vented Bulbul, Rose-ringed Parakeet, Asian Koel, Myna
22	Tamarind	Tamarindus indica	Chinch	Resting site, Dry Branches for making nest	Common Myna, Spotted Owlet, Jungle Crow, Crow, Asian Koel, Red-vented Bulbul
23	Peacock Flower	Caesalpinia pulcherrima	Sankhasur	Resting site, Branches for making nest	Flowerpecker, Sunbird, Parakeet, Ashy Prinia
24	Rain Tree	Samanea saman	Vilayati Shirish	Flower Nectar, Branches for making nest	Pigeon, Sunbird, Parakeet, Ashy Prinia

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Checklist of birds, with Family Common Name and status of the Kundal Forest Academy (70 species in 38 families)

Sr. No.	Family / Species	Status	WPA
Ardeidae			
1	<i>Bubulcus coromandus</i>	R	IV
2	<i>Ardeola grayii</i>	R	IV
3	<i>Egretta garzetta</i>	R	IV
Accipitridae			
4	<i>Milvus migrans</i>	R	I
5	<i>Haliastur indus</i>	R	I
6	<i>Accipiter badius</i>	R	I
Aegithinidae			
7	<i>Aegithina tiphia</i>	R	IV
Alaudidae			
8	<i>Eremopterix griseus</i>	R	IV
9	<i>Ammomanes phoenicura</i>	R	IV
Alcedinidae			
10	<i>Alcedo atthis</i>	R	IV
Apodidae			
11	<i>Apus affinis</i>	R	IV
Charadriidae			
12	<i>Vanellus indicus</i>	R	IV
13	<i>Vanellus malbaricus</i>	R	IV
Cisticolidae			
14	<i>Prinia socialis</i>	R	IV
Coraciidae			
15	<i>Coracias benghalensis</i>	R	IV
Corvidae			
16	<i>Corvus splendens</i>	R	IV
17	<i>Corvus levaillantii</i>	R	IV
Columbidae			
18	<i>Columba livia</i>	R	IV
19	<i>Streptopelia senegalensis</i>	R	IV

Cuculidae			
20	<i>Asian Koel</i>	R	IV
Sr. No.	Family / Species	Status	WPA
21	<i>Hierococyx varius</i>	M	IV
22	<i>Cacomantis passerinus</i>	R	IV
23	<i>Centropus sinensis</i>	R	IV
Dacelonidae			
24	<i>Halcyon smyrnensis</i>	R	IV
Dicaeidae			
25	<i>Dicaeum erythrorhynchos</i>	R	IV
Dicuridae			
26	<i>Dicrurus macrocercus</i>	R	IV
Estrildidae			
27	<i>Lonchura punctulata</i>	R	IV
28	<i>Lonchura malacca</i>	R	IV
29	<i>Euodice malabarica</i>	R	IV
30	<i>Amandava amandava</i>	R	IV
Hirundinidae			
31	<i>Ptyonoprogne concolor</i>	R	IV
32	<i>Hirundo rustica</i>	R	IV
33	<i>Hirundo smithii</i>	R	IV
Laniidae			
34	<i>Lanius schach</i>	R	IV
35	<i>Lanius vittatus</i>	R	IV
36	<i>Lanius isabellinus</i>	R	IV
Megalaimidae			

Checklist of birds, with Family Common Name and status of the Kundal Forest Academy (70 species in 38 families)

37	<i>Psilopogon haemacephalus</i>	R	IV
Meropidae			
38	<i>Merops orientalis</i>	R	IV
39	<i>Monticola solitarius</i>	M	IV
40	<i>Cercomela fusca</i>	M	IV
Sr. No.	Family / Species	Status	WPA
41	<i>Saxicola maurus</i>	M	IV
42	<i>Saxicola caprata</i>	R	IV
43	<i>Saxicoloides fulicatus</i>	R	IV
44	<i>Copsychus saularis</i>	R	IV
Motacillidae			
45	<i>Motacilla cinerea</i>	M	IV
46	<i>Motacilla alba</i>	M	IV
47	<i>Motacilla madaraspatensis</i>	R	IV
48	<i>Anthus trivialis</i>	M	IV
Nectraniidae			
49	<i>Nectarinia zeylonica</i>	R	IV
50	<i>Nectarinia asiatica</i>	R	IV
Paridae			
51	<i>Parus cinereus</i>	R	IV
Passeridae			
52	<i>Passer domesticus</i>	R	IV
Phasianidae			
53	<i>Francolinus pondicerianus</i>	R	IV
54	<i>Pavo cristatus</i>	R	I
Picidae			
55	<i>Dendrocopos mahrattensis</i>	R	IV
Ploceidae			
56	<i>Ploceus philippinus</i>	R	IV

Psittacidae			
57	<i>Psittacula cyanocephala</i>		R
58	<i>Psittacula krameri</i>	R	IV
59	<i>Pycnonotus cafer</i>	R	IV
Sr. No.	Family / Species	Status	WPA
Rallidae			
60	<i>Amaurionis phoenicurus</i>	R	IV
Rhipiduridae			
61	<i>Rhipidura aureola</i>	R	IV
Sturnidae			
62	<i>Sturnus pagodarum</i>	R	IV
63	<i>Acridotheres ginginianus</i>	R	IV
Strigidae			
64	<i>Athene brama</i>	R	IV
Sylviidae			
65	<i>Crysomma sinense</i>	R	IV
66	<i>Phylloscopus collybita</i>	M	IV
67	<i>Orthotomus sutorius</i>	R	IV
Timaliidae			
68	<i>Turdoides malcolmi</i>	R	IV
Upupidae			
69	<i>Upopa epops</i>	R	IV
Zosteropidae			
70	<i>Zosterops palpebrosus</i>	R	IV

Abbreviations:- R- Resident; M- Migrant; WildLife Protection Act (WPA) Schedule-I, IV

Updated Avifaunal list of Ansupa Lake and its adjoining areas, Cuttack, Odisha, India, with notes on the record of Grey-necked Bunting (*Emberiza buchanani*)

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Abstract:

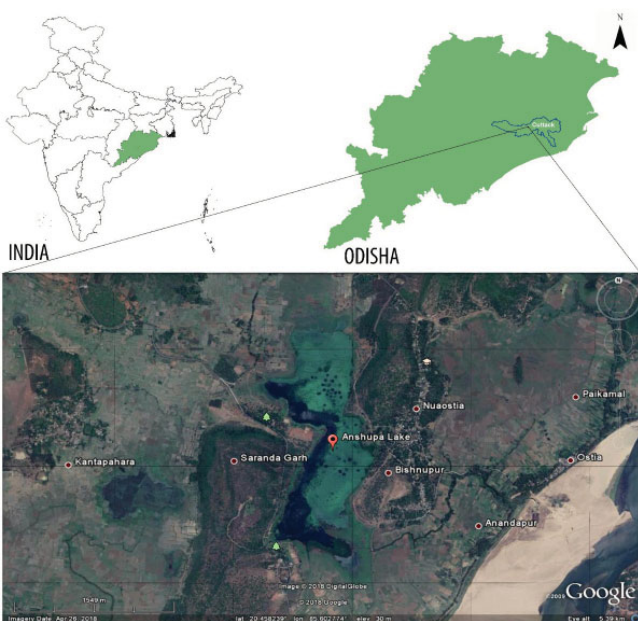
A total of 136 species belongs to 58 families and 17 orders were recorded during January 2015 to September 2015 from Ansupa and its surrounding areas. With the addition of 86 species of birds, the known number of Avifauna in Ansupa and its surrounding areas increased to 147. Passeriformes was the richest with 50 species under 26 families. There were five Near threatened Birds viz, River Lapwing (*Vanellus duvaucelii*); Oriental Darter (*Anhinga melanogaster*); Black-tailed Godwit (*Limosa limosa*); River Tern (*Sterna aurantia*); Alexandrine Parakeet (*Psittacula eupatria*) and one Endangered Bird Black-bellied Tern (*Sterna acuticauda*) observed during the survey. Present study also reports the first decisive record of Grey-necked Bunting (*Emberiza buchanani*) from Odisha, with Photographic evidence.

Key Words:

Check list, Ansupa Lake, Bird, Grey-necked Bunting (*Emberiza buchanani*)

Introduction:

Ansupa, being the largest fresh water lake of Odisha, exist as significant natural resource pool for diverse flora and fauna. The lake is situated at the left bank of Mahanadi River, in Banki block of Cuttack district and spreading over an area of 383 acrs. It is surrounded by undulating plain and isolated hill ranges. The length of the lake is about 3km and width varies between 250 m to 500 m, with respect to seasonal changes. The climate of this area experience with three distinct seasons: monsoon (July to September), winter (October to February) and summer (March-June). The area receives an average annual rainfall of about 1400 mm



Photos: A Payra

Map showing the Ansupa lake and its adjoining areas where present study was carried out.



Figure 1: a- White-eyed Buzzard (*Butastur teesa*); b- Black Kite (*Milvus migrans*); c-Black winged Kite (*Elanus caeruleus*); d- Osprey (*Pandion haliaetus*); e- Common Kestrel (*Falco tinnunculus*); f- Oriental Honey Buzzard (*Pernis ptilorhynchus*); g- Common Redshank (*Tringa totanus*); h- Common greenshank (*Tringa nebularia*); i- Marsh Sandpiper (*Tringa stagnatilis*); j- Long-toed stint (*Calidris subminuta*); k- Greater Paintedsnipe (*Rostratula benghalensis*); l- Black-tailed Godwit (*Limosa limosa*); m- River Lapwing (*Vanellus duvaucelii*); n- Black-bellied Tern (*Sterna acuticauda*); o- River Tern (*Sterna aurantia*). (Photo- A Payra & S K Dash)

and the temperature ranged from 9°C in winter to 42°C in summer. Knowledge on Avifaunal diversity in and around Lake Ansupa is very insubstantial, only the previously published checklist of Pradhan et al. (2013) is available, who listed 61 species of birds belonging to 27 families from Ansupa and its adjoining areas. Hence, the survey was carried out to updated and to represent present scenario of Avifaunal diversity in and around Ansupa Lake.

Materials and Methods:

To obtain a general picture of Avifauna in Ansupa lake and its surrounding areas, we have carried out the survey between January 2015 to September 2015. Surveys were carried out at Ansupa lake, Mahanadi River, Saranda Hill, Kantapahara Wetland and in surrounding villages (Fig 4). These areas were characterized by different types of habitats, such as Agricultural land, thorny scrub forest, village woodlands, Perennial and temporary wetlands, cashew plantation, River bed, etc. Observations were made through direct sightings and photographs were taken with the help of Digital camera (Nikon D3200 with 70-300 Tele-Macro lens). Identification of Birds was done with the help of (Grimmett et al. 2011; Arlott 2015).

Result and Discussion:

A total of 136 species belongs to 58 families and 17 orders were recorded during the survey. Passeriformes was the richest with 50 species under 26 families (See table 1). With the additions of 86 species of birds, the number of known Avifauna in Ansupa and its surrounding areas increase to 147.

There were five Near threatened Birds observed during the survey, viz., River Lapwing (*Vanellus duvaucelii*); Oriental Darter (*Anhinga melanogaster*); Black-tailed Godwit (*Limosa limosa*); River Tern (*Sterna aurantia*); Alexandrine Parakeet (*Psittacula eupatria*) and only one Endangered Bird, i.e., Black-bellied Tern (*Sterna acuticauda*). River lapwings were frequently observed near the Mahanadi River bed. Single individual of Oriental Darter (*Anhinga melanogaster*) was recorded from Kantapahara wetland on 11th March. A large flock of about 70 species Black-tailed Godwit were observed in Ansupa lake on 12th April and since then never been observed during the study period. River Tern is frequently observed from Kantapahara wetland, Ansupa and Mahanadi River. Alexandrine Parakeet also frequently observed from the

surrounding village woodland areas of Ansupa. Black-bellied Tern is sighted only once on 11th March, after then never been recorded during study time. Among the raptors, Osprey (*Pandion haliaetus*); White-eyed Buzzard (*Butastur teesa*) and Common Kestrel (*Falco tinnunculus*) were also recorded only once during March 2015. Some species which are recorded in previous study, were not observed during our present investigation. These are, Northern shoveller (*Anas clypeata*); Common quail (*Coturnix coturnix*); Painted stork (*Mycteria leucocephala*); Black bittern (*Dupetor flavicollis*); Black-crowned night heron (*Nycticorax nycticorax*); Grey heron (*Ardea cinereal*); Western marsh harrier (*Circus aeruginosus*); Chestnut headed bee-eater (*Merops leschenaulti*); Red-headed falcon (*Falco chicquera*) and White rumped munia (*Lonchura striata*).

Record of Grey-necked bunting (*Emberiza buchanani*) is very significant. As, only few published information's are available on the records of this birds from India. Grey-necked bunting known to distributed in Afghanistan, Armenia, Azerbaijan, China, Georgia, India, Iran, Iraq, Kazakhstan, Mongolia, Pakistan, Russia, Tajikistan, Turkey, Turkmenistan, Uzbekistan and Bhutan (BirdLife International 2017, Madge 2019). It is a winter visitor to Central and Western India, and often recorded from Gujrat between September to March (Siva and Neelanarayanan 2017). Recently these birds were recorded during winter from Uttarakhand, Punjab, Haryana, Rajasthan, Tamil Nadu, Goa, Maharashtra, Karnataka, Kerala, Andhra Pradesh, Telangana, West Bengal (Siva and Neelanarayanan 2017; Sharma 2018; <https://ebird.org/india/species/gyhbun1>). From Odisha except the record from Koraput University campus (Khamari et al.2018), no decisive records are available. On 9th march, 2015 a single individual was observed and photographed at 03.50 p.m. from Saranda hill. When we spotted it for the first time, it was foraging on the ground, after a few minutes later, it was sitting on a small rock and starts to calling. With the characteristics of Short pinkish-orange bill, White eye ring, Black moustachial stripe, greyish head and rusty breast the bird identified as Grey-necked bunting (Fig 3 a-d).

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Photos- A Payra & S K Dash

Figure 2: a- Clamorous Reed Warbler (*Acrocephalus stentoreus*); b- Red Avadavat (*Amandava amandava*); c- Black winged Stilt (*Himantopus himantopus*); d- Wood Sandpiper (*Tringa glareola*); e- Little Ringed Plover (*Charadrius dubius*); f- Plaintive Cuckoo (*Cacomantis merulinus*); g- Ruddy Shelduck (*Tadorna ferruginea*); h- Asian Pygmy Goose (*Nettapus coromandelianus*); i- Grey Francolin (*Francolinus pondicerianus*); j- Richard's Pipit (*Anthus richardi*); k- Little Pratincole (*Glareola lacteal*); l- Jerdon's Leafbird (*Chloropsis jerdoni*); m- Rosy Starling (*Pastor roseus*); n- Longtailed Shrike (*Lanius schach*); o- Bluetailed Beeeater (*Merops philippinus*)

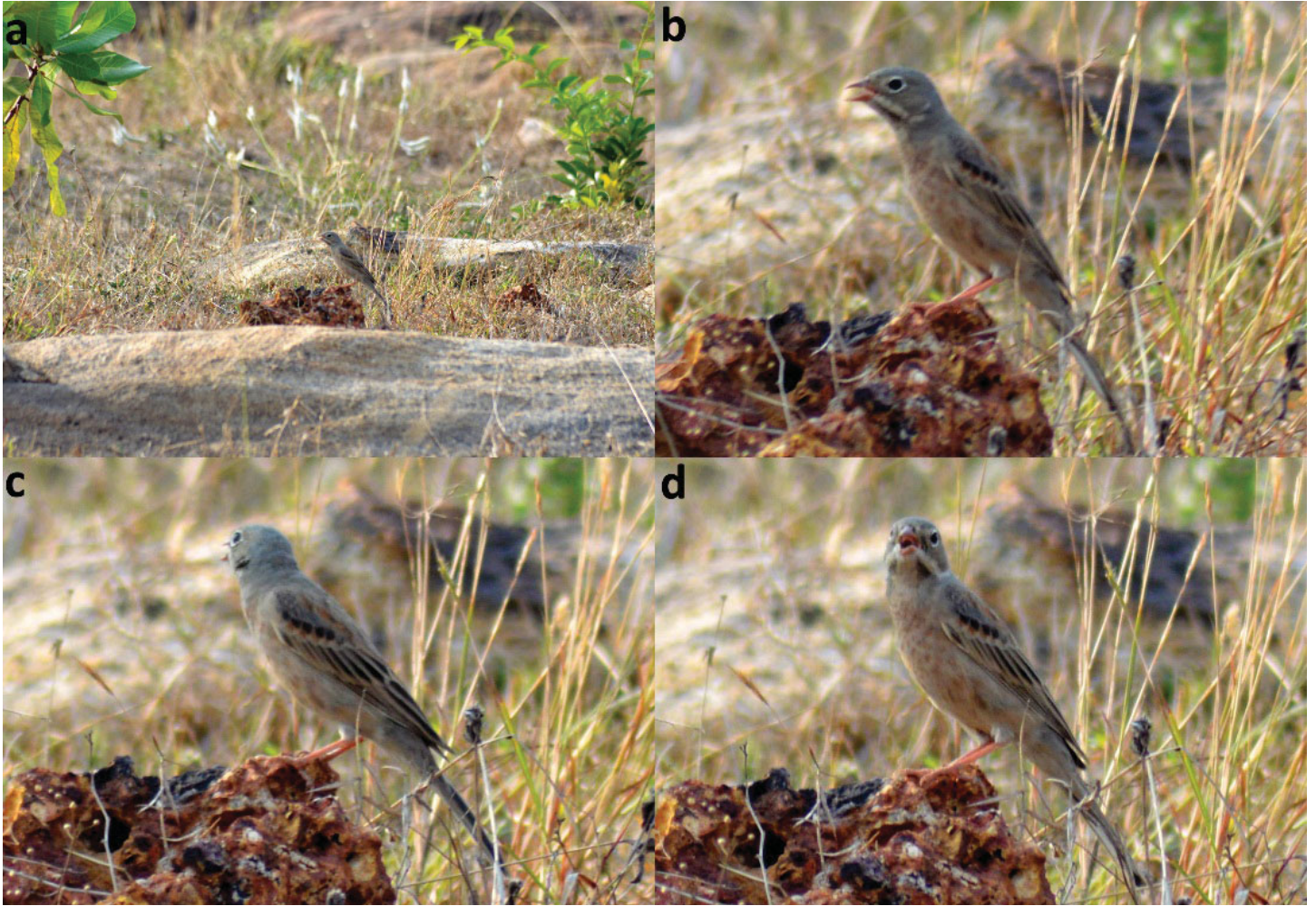


Figure 3: (a-d) Grey-necked Bunting (*Emberiza buchanani*)

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Table 1: Compiled checklist of Avifauna in and around Ansupa lake, Cuttack, Odisha, India

Sl. No.	Order, Family, Common and Scientific Name	Present study (January 2015 to September 2015)	Pradhan et al.2013
ANSERIFORMES: Anatidae			
1	Lesser Whistling Duck (<i>Dendrocygna javanica</i>)	+	+
2	Ruddy Shelduck (<i>Tadorna ferruginea</i>)	+	+
3	Red-crested Pochard (<i>Netta rufina</i>)	+	+
4	Gadwall (<i>Mareca strepera</i>)	+	
5	Indian Spot-billed Duck (<i>Anas poecilorhyncha</i>)	+	
6	Asian Pygmy Goose (<i>Nettapus coromandelianus</i>)	+	+
7	Northern shoveller (<i>Anas clypeata</i>)		+
GALLIFORMES: Phasianidae			
8	Grey Francolin (<i>Francolinus pondicerianus</i>)	+	
9	Common quail (<i>Coturnix coturnix</i>)		+
PHOENICOPTERIFORMES: Podicipedidae			
10	Little Grebe (<i>Tachybaptus ruficollis</i>)	+	
COLUMBIFORMES: Columbidae			
11	Oriental Turtle Dove (<i>Streptopelia orientalis</i>)	+	
12	Rock Dove (<i>Columba livia</i>)	+	
13	Spotted-necked Dove (<i>Streptopelia chinensis</i>)	+	+
14	Eurasian Collared Dove (<i>Streptopelia decaocto</i>)	+	
15	Laughing Dove (<i>Streptopelia senegalensis</i>)	+	+
16	Yellow-legged Green Pigeon (<i>Treron Phoenicopterus</i>)	+	
CAPRIMULGIFORMES: Caprimulgidae			
17	Indian nightjar (<i>Caprimulgus asiaticus</i>)	+	
CAPRIMULGIFORMES: Apodidae			
18	Asian Palm Swift (<i>Cypsiurus balasiensis</i>)	+	
CUCULIFORMES: Cuculidae			
19	Greater Coucal (<i>Centropus sinensis</i>)	+	
20	Common Koel (<i>Eudynamys scolopaceus</i>)	+	
21	Plaintive Cuckoo (<i>Cacomantis merulinus</i>)	+	
22	Common Hawk Cuckoo (<i>Hierococcyx varius</i>)	+	
GRUIFORMES: Rallidae			
23	White-breasted Waterhen (<i>Amaurornis phoenicurus</i>)	+	+
24	Purple Swamphen (<i>Porphyrio porphyrio</i>)	+	+
25	Common Coot (<i>Fulica atra</i>)	+	+
26	Common Moorhen (<i>Gallinula chloropus</i>)	+	+

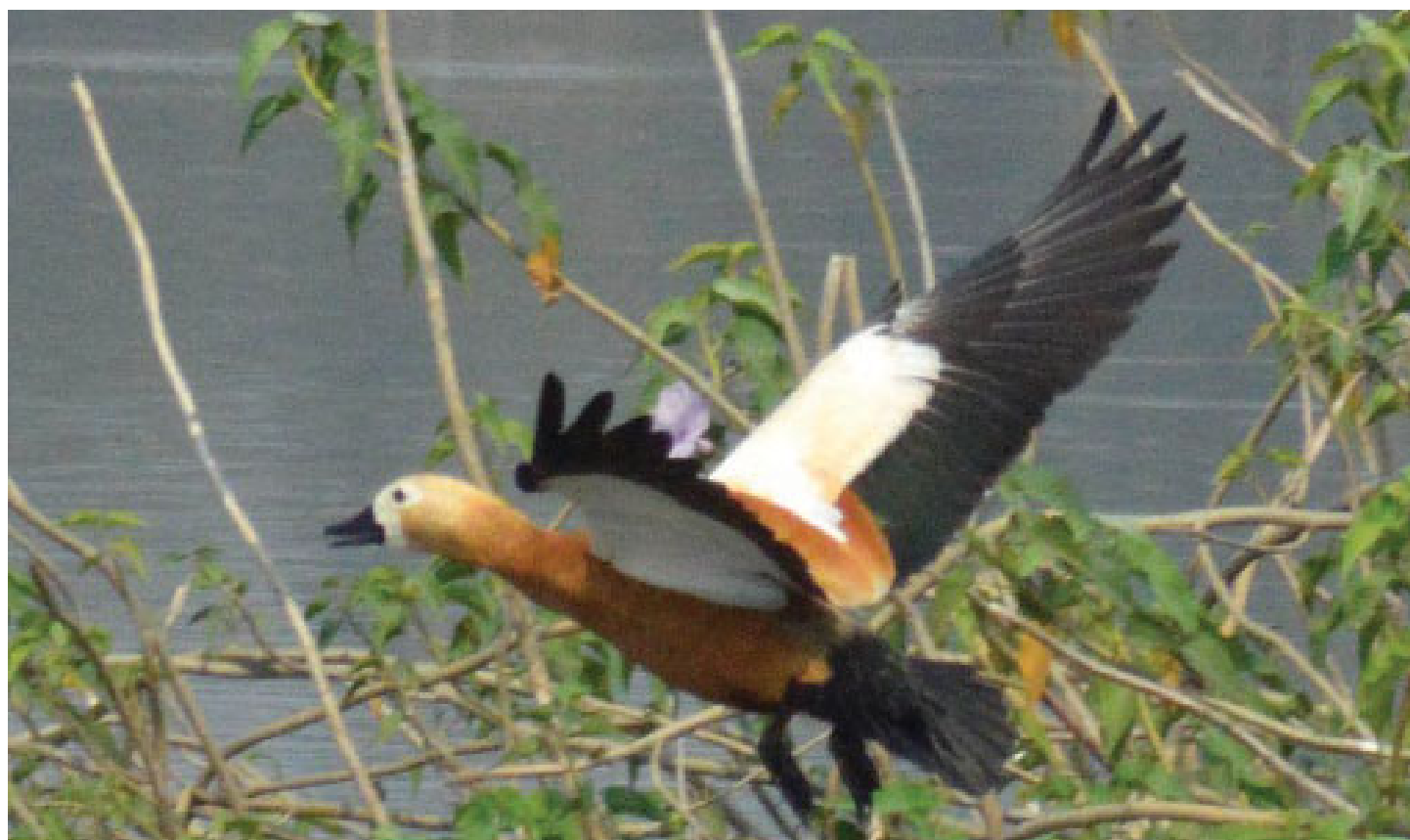
PELECANIFORMES: Ciconiidae			
27	Asian Openbill (<i>Anastomus oscitans</i>)	+	+
28	Painted stork (<i>Mycteria leucocephala</i>)		+
PELECANIFORMES: Ardeidae			
29	Yellow Bittern (<i>Ixobrychus sinensis</i>)	+	
30	Black bittern (<i>Dupetor flavicollis</i>)		+
31	Black-crowned night heron (<i>Nycticorax nycticorax</i>)		+
32	Cinnamon Bittern (<i>Ixobrychus cinnamomeus</i>)	+	+
33	Indian Pond Heron (<i>Ardeola grayii</i>)	+	+
34	Cattle Egret (<i>Bubulcus ibis</i>)	+	+
35	Purple Heron (<i>Ardea purpurea</i>)	+	+
36	Grey heron (<i>Ardea cinerea</i>)		+
37	Intermediate Egret (<i>Ardea intermedia</i>)	+	+
38	Little Egret (<i>Egretta garzetta</i>)	+	+
PELECANIFORMES: Phalacrocoracidae			
39	Little Cormorant (<i>Microcarbo niger</i>)	+	+
40	Indian Cormorant (<i>Phalacrocorax fuscicollis</i>)	+	+
41	Great cormorant (<i>Phalacrocorax carbo</i>)		+
PELECANIFORMES: Anhingidae			
42	Oriental Darter (<i>Anhinga melanogaster</i>)	+	
CHARADRIIFORMES: Recurvirostridae			
43	Black winged Stilt (<i>Himantopus himantopus</i>)	+	+
CHARADRIIFORMES: Charadriidae			
44	Pacific Golden Plover (<i>Pluvialis fulva</i>)	+	
45	Little Ringed Plover (<i>Charadrius dubius</i>)	+	+
46	Lesser Sand Plover (<i>Charadrius mongolus</i>)	+	
47	River Lapwing (<i>Vanellus duvaucelii</i>)	+	
48	Red wattled Lapwing (<i>Vanellus indicus</i>)	+	+
CHARADRIIFORMES: Rostratulidae			
49	Greater Painted snipe (<i>Rostratula benghalensis</i>)	+	
CHARADRIIFORMES: Jacanidae			
50	Pheasant tailed Jacana (<i>Hydrophasianus chirurgus</i>)	+	+
51	Bronze winged Jacana (<i>Metopidius indicus</i>)	+	+
CHARADRIIFORMES: Scolopacidae			
52	Black tailed Godwit (<i>Limosa limosa</i>)	+	
53	Little Stint (<i>Calidris minuta</i>)	+	
54	Temminck's Stint (<i>Calidris temminckii</i>)	+	
55	Long-toed stint (<i>Calidris subminuta</i>)	+	
56	Common Sandpiper (<i>Actitis hypoleucos</i>)	+	+
57	Common Redshank (<i>Tringa tetanus</i>)	+	

58	Common greenshank (<i>Tringa nebularia</i>)	+	
59	Wood Sandpiper (<i>Tringa glareola</i>)	+	
60	Green Sandpiper (<i>Tringa ochropus</i>)	+	
61	Marsh Sandpiper (<i>Tringa stagnatilis</i>)	+	
CHARADRIIFORMES: Turnicidae			
62	Yellow legged Buttonquail (<i>Turnix tanki</i>)	+	
CHARADRIIFORMES: Glareolidae			
63	Little Pratincole (<i>Glareola lacteal</i>)	+	
CHARADRIIFORMES: Laridae			
64	Whiskered Tern (<i>Chlidonias hybrida</i>)	+	
65	River Tern (<i>Sterna aurantia</i>)	+	+
66	Black bellied Tern (<i>Sterna acuticauda</i>)	+	
ACCIPITRIFORMES: Pandionidae			
67	Osprey (<i>Pandion haliaetus</i>)	+	
ACCIPITRIFORMES: Accipitridae			
68	Black winged Kite (<i>Elanus caeruleus</i>)	+	+
69	Oriental Honey Buzzard (<i>Pernis ptilorhynchus</i>)	+	
70	Crested Serpent Eagle (<i>Spilornis cheela</i>)	+	
71	Shikra (<i>Accipiter badius</i>)	+	
72	Black Kite (<i>Milvus migrans</i>)	+	+
73	Whiteeyed Buzzard (<i>Butastur teesa</i>)	+	
74	Western marsh harrier (<i>Circus aeruginosus</i>)		+
STRIGIFORMES: Tytonidae			
75	Common Barn Owl (<i>Tyto alba</i>)	+	
STRIGIFORMES: Strigidae			
76	Spotted Owlet (<i>Athene brama</i>)	+	+
77	Collared Scops Owl (<i>Otus bakkamoena</i>)	+	
BUCEROTIFORMES: Upupidae			
78	Common Hoopoe (<i>Upupa epops</i>)	+	
PICIFORMES: Picidae			
79	Rufous Woodpecker (<i>Micropternus brachyurus</i>)	+	
80	Streak throated Woodpecker (<i>Picus xanthopygaeus</i>)	+	
81	Black rumped Woodpecker (<i>Dinopium benghalense</i>)	+	
PICIFORMES: Ramphastidae			
82	Brown-headed barbet (<i>Psilopogon zeylanicus</i>)	+	+
83	Bluethroated Barbet (<i>Psilopogon asiaticus</i>)	+	
84	Coppersmith Barbet (<i>Psilopogon haemacephalus</i>)	+	
CORACIIFORMES: Meropidae			
85	Green Beeeater (<i>Merops orientalis</i>)	+	+
86	Bluetailed Beeeater (<i>Merops philippinus</i>)	+	+

87	Chestnut headed bee-eater (<i>Merops leschenaulti</i>)		+
CORACIIFORMES: Coraciidae			
88	Indian Roller (<i>Coracias benghalensis</i>)	+	
CORACIIFORMES: Alcedinidae			
89	Common Kingfisher (<i>Alcedo atthis</i>)	+	+
90	Pied Kingfisher (<i>Ceryle rudis</i>)	+	+
91	Storkbilled Kingfisher (<i>Pelargopsis capensis</i>)	+	+
92	Whitethroated Kingfisher (<i>Halcyon smyrnensis</i>)	+	+
FALCONIFORMES: Falconidae			
93	Common Kestrel (<i>Falco tinnunculus</i>)	+	
94	Red-headed falcon (<i>Falco chicquera</i>)		+
PSITTACIFORMES: Psittaculidae			
95	Roseringed Parakeet (<i>Psittacula kramera</i>)	+	
96	Alexandrine Parakeet (<i>Psittacula eupatria</i>)	+	
PASSERIFORMES: Campephagidae			
97	Blackheaded Cuckooshrike (<i>Lalage melanoptera</i>)	+	
PASSERIFORMES: Oriolidae			
98	Blackhooded Oriole (<i>Oriolus xanthornus</i>)	+	
99	Indian Golden Oriole (<i>Oriolus kundoo</i>)	+	
PASSERIFORMES: Artamidae			
100	Ashy Woodswallow (<i>Artamus fuscus</i>)	+	
PASSERIFORMES: Aegithinidae			
101	Common Iora (<i>Aegithina tiphia</i>)	+	
PASSERIFORMES: Dicruridae			
102	Black Drongo (<i>Dicrurus macrocercus</i>)	+	+
103	Whitebellied Drongo (<i>Dicrurus caerulescens</i>)	+	
PASSERIFORMES: Rhipiduridae			
104	Whitebrowed Fantail (<i>Rhipidura aureola</i>)	+	
PASSERIFORMES: Laniidae			
105	Brown Shrike (<i>Lanius cristatus</i>)	+	
106	Longtailed Shrike (<i>Lanius schach</i>)	+	
PASSERIFORMES: Corvidae			
107	Rufous Treepie (<i>Dendrocitta vagabunda</i>)	+	
108	House Crow (<i>Corvus splendens</i>)	+	
109	Large-billed Crow (<i>Corvus macrorhynchos</i>)	+	+
PASSERIFORMES: Monarchidae			
110	Blacknaped Monarch (<i>Hypothymis azurea</i>)	+	
PASSERIFORMES: Dicaeidae			
111	Pale-billed flowerpecker (<i>Dicaeum erythrorhynchos</i>)	+	

PASSERIFORMES: Nectariniidae			
112	Purple Sunbird (<i>Cinnyris asiaticus</i>)	+	+
113	Purplerumped Sunbird (<i>Leptocoma zeylonica</i>)	+	+
PASSERIFORMES: Irenidae			
114	Jerdon's Leafbird (<i>Chloropsis jerdoni</i>)	+	
PASSERIFORMES: Ploceidae			
115	Baya Weaver (<i>Ploceus philippinus</i>)	+	
PASSERIFORMES: Emberizidae			
116	Grey-necked bunting (<i>Emberiza buchanani</i>)	+	
PASSERIFORMES: Estrildidae			
117	Red Avadavat (<i>Amandava amandava</i>)	+	+
118	Indian Silverbill (<i>Euodice malabarica</i>)	+	
119	Scalybreasted Munia (<i>Lonchura punctulate</i>)	+	
120	White rumped munia (<i>Lonchura striata</i>)		+
PASSERIFORMES: Passeridae			
121	House Sparrow (<i>Passer domesticus</i>)	+	
PASSERIFORMES: Motacillidae			
122	Paddyfield Pipit (<i>Anthus rufulus</i>)	+	+
123	Richard's Pipit (<i>Anthus richardi</i>)	+	
124	Grey Wagtail (<i>Motacilla cinerea</i>)	+	
125	Whitebrowed Wagtail (<i>Motacilla maderaspatensis</i>)	+	
126	Citrine Wagtail (<i>Motacilla citreola</i>)	+	
127	White Wagtail (<i>Motacilla alba</i>)	+	
PASSERIFORMES: Alaudidae			
128	Oriental Sky Lark (<i>Alauda gulgula</i>)	+	
PASSERIFORMES: Cisticolidae			
129	Plain Prinia (<i>Prinia inornate</i>)	+	
130	Common Tailorbird (<i>Orthotomus sutorius</i>)	+	
PASSERIFORMES: Acrocephalidae			
131	Clamorous Reed Warbler (<i>Acrocephalus stentoreus</i>)	+	
PASSERIFORMES: Hirundinidae			
132	Redrumped Swallow (<i>Cecropis daurica</i>)	+	
PASSERIFORMES: Pycnonotidae			
133	Redwhiskered Bulbul (<i>Pycnonotus jocosus</i>)	+	+
134	Redvented Bulbul (<i>Pycnonotus cafer</i>)	+	+
135	Whitebrowed Bulbul (<i>Pycnonotus luteolus</i>)	+	
PASSERIFORMES: Phylloscopidae			
136	Common Chiffchaff (<i>Phylloscopus collybita</i>)	+	

PASSERIFORMES: Leiothrichidae			
137	Jungle Babbler (<i>Turdoides striata</i>)	+	+
PASSERIFORMES: Sturnidae			
138	Rosy Starling (<i>Pastor roseus</i>)	+	
139	Asian Pied Starling (<i>Gracupica contra</i>)	+	+
140	Brahminy Starling (<i>Sturnia pagodarum</i>)	+	+
141	Chestnuttailed Starling (<i>Sturnia malabarica</i>)	+	
142	Common Myna (<i>Acridotheres tristis</i>)	+	+
143	Jungle Myna (<i>Acridotheres fuscus</i>)	+	
PASSERIFORMES: Muscicapidae			
144	Indian Robin (<i>Saxicoloides fulicatus</i>)	+	
145	Oriental Magpie Robin (<i>Copsychus saularis</i>)	+	+
146	Taiga Flycatcher (<i>Ficedula albicilla</i>)	+	
147	Pied Bush Chat (<i>Saxicola caprata</i>)	+	



Parenting behaviour in Indian Peafowl - Pune, Maharashtra

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Abstract:

This observational study was carried out on the Indian Peafowl family living in Pashan hill-stretch (18.5416° N, 73.8024° E) Pune, for a span of last three years. The main observation of the study shows biparental mode of care in the Indian peafowl residing in an urban setting. The observations were made for two to three days in a week for three years. The two main skills of livelihood in birds, survival skills and foraging skills were developed in the peachicks by the peacock and peahen respectively but in a well co-ordinated manner. This is similar to the parental care in humans and could be a result of the urban surroundings the Peafowl lived in. It was noted that the family stayed together in harmony through all seasons and the peacock looked after the family's safety. The street dogs in the area were the main threat to the Peafowl.

Introduction:

Pune is a district (GPS range: 18.5204° N, 73.8567° E) in the state of Maharashtra. Due to presence of many open spaces, hillocks and lakes within the city as well as on its outskirts, Pune is a delightful place for every bird-watcher. The Sinhagad Valley, Vetar Tekdi, Parvati and Taljai Hills, Mulshi, Bhigwan, Kumbhargaoon, Veer Dam, Diveghat, Pashan Lake and Pashan Hill are a home to various species of birds. Ornithologists record sightings of several birds in and around the city right from drongos, sunbirds, cuckoos, treepies, wagtails, Indian Paradise Flycatcher to the migratory winter visitors Greater Flamingo, Bar-headed Geese and Demoiselle Cranes, etc. One of the most important yet comparatively less studied birds, Blue Peafowl (*Pavo cristatus*), the National Bird of India also inhabits the region. The Peafowl families staying in the suburbs of Pashan area and on Pashan hills (18.5416° N, 73.8024° E) in Pune were observed for a period of three years in this study.

The Indian Peafowl is classified as: Class: Aves, Order: Galliformes, Family: Phasianidae, *Pavo cristatus*

There are a total of three species of the Peafowl found in the world, Burmese peafowl (*P. muticus*) from

eastwards to Sumatra, African peafowl/Congo peafowl (*A. congensis*) in Belgian Congo, Indian Peafowl or blue peafowl (*Pavo cristatus*) in Indian subcontinent (Kushwaha & Kumar 2016). The distribution range of the Indian Peafowl is restricted to the lower plain frequently less than 600m (Baker 1930). This in part makes them a victim of the urbanization. The peacock is widely distributed in the Indian sub-continent and the whole of the Indian peninsula (R Sabesh 2010). The peak breeding season in peacocks is April to June. After mating the female makes a nest by raking up a hollow in the ground lining it with leaves, sticks and other debris and lays eggs into it. While, there are reports that the female incubates the eggs and raises the chicks, the males are thought to play no role in the same (Kushwaha & Kumar 2016). There are four different modes of parental care recorded in birds, Brood paraticism/geothermal heat, males only/females only, biparental care (about 81% of birds show this mode of care) and co-operative breeding (Carol M. Vleck and David Vleck 2011; Cockburn 2006). Several parental strategies may co-exist in a suitable milieu and parental co-operation is highly variable across birds. Gebes, woodpeckers, and sparrows are characterized by extensive parental co-operation, whereas others like ducks, pheasants and grouse, and owls exhibit low co-operation. On the other hand, snipes, sandpipers and allies, and Old World warblers exhibit high interspecies variation in parental co-operation (Remes et al. 2015). Striking within- and between-species diversity in incubation rhythms in biparentally incubating shorebird species, where parents synchronize to achieve continuous coverage of developing eggs has also been reported (Bulla et al. 2016).

Although, there are many reports of parental care patterns in various birds, parental care in the Indian peafowl remains understudied. Hence, this study was

carried out to obtain more information on how our National Bird raises its offspring. The present study also focuses on how the roosting habitat of the Peafowl matters in the health of the Peafowl family.

Materials and Methods:

Figure 1 (a) Google map Pashan Hill stretch, (b) Google Satellite image of Pashan Hill stretch, Figure 2 (a) Peafowl family during foraging around shrubs, (b) Peafowl family roosting habitat, (c) Male parent Peafowl teaching Peachicks

The family was observed for a period of three years from January, 2016 to December, 2018. The main parameters considered for observation were, a) peafowl roosting habitats, b) foraging techniques, c) parenting behaviours, d) threats to the peafowl family and how they protected themselves from the same. Observations were recorded on a daily basis. The images and videos were captured using Samsung Note 8 mobile camera and Sony cybershot camera for further analysis. The peafowl were not harmed and their natural habitat was not interfered with during the span of this study.

Results:

The Peafowl parents had well-distributed the chores of raising their Peachicks. The most important life-skills, surviving and finding food were separately taught by the two different parents. However, the interesting observation noted was that both the male and the female parent properly co-ordinated this parental-care.

Skills for survival: The male parent was responsible for teaching the survival skill set and imbibing the need of struggle for existence. He elaborated hopping techniques to the peachicks and how to spot a predator. He showed to make way through the woods taking slow, steady and careful steps. The male Peafowl explained the dancing and attracting female techniques to the

The study was carried out on a family of peafowl (male parent, female parent, 2 female peachicks, 1 male peachick) residing on the trees and shrubs in and around the Pashan Hills (18.5416° N, 73.8024° E).



Fig. 1(a)

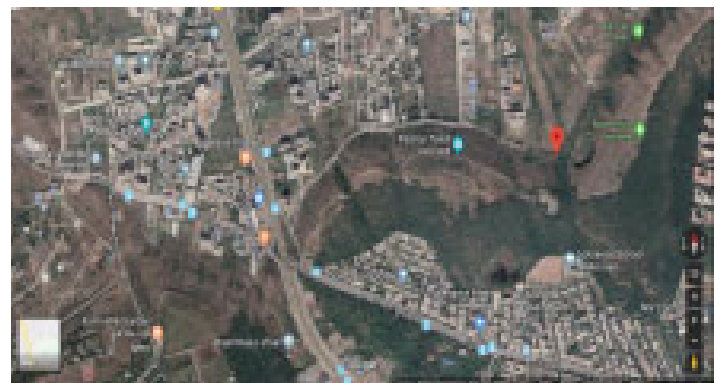


Fig. 1(b)



Indian Peafowl in its habitat
Fig. 2(a)



Fig. 2(b)



Fig. 2(c)

male Peachick. The male Peafowl also took up the responsibility of the family's safety and security. The father with his keen eyesight and strong ears monitored the bushes continuously and alerted the family of any approaching danger by way of loud shrieking cries and honks. It was noted that when street dogs came to the Peafowl terrain, the male parent wandered them off as far from the family as possible. The dogs were one of the biggest threats to the peacocks in the modern setting and often the male parent had to put up a one to one fight with these predators. The male also taught how to hide in the bushes to avoid any contact with the humans. Humans have also known to poach Peacocks for their attractive and colourful plumage, therefore making them a significant threat. [These observations were made two to three times in a week for three years in the study area.](#)

Foraging techniques: The female parent took up the responsibility of feeding the young ones in the initial days of the first year of observation teaching them how to eat the food she got them. Later, she enabled them to forage for themselves. Peafowl are known to be omnivorous and were seen eating anything ranging from small insects like ticks, termites, ants, locusts to mice, scorpions, reptiles, worms and frogs, as well as the green shoots of plants, flower petals, seeds, vegetables, grasses, etc. The peachicks rested and fed on the ground with their mother, but roosted high up in trees, ascending before sunset when the light started to fade.

Discussion:

The pattern of parental care in Indian Peafowl was found to be biparental, unlike previously noted as to

be female oriented (Kushwaha & Kumar 2016). This could be a result of the evolution in parental care in birds (Moller & Cuervo, 2000). The male parent tutored the chicks the essentials for survival and the female parent trained them in foraging. The feeding behaviour of peafowl was observed to be omnivorous as it could eat everything from insects, reptiles, small mammals to berries, fruits and leaves in the bushes. This observation was synchronous to all previously noted observations (Johansingh and Murali 1980; Sathyanarayana 2005). The peafowls were observed roosting on dominant tree species in their terrains during their inactive periods (noon after foraging and late evenings) similar to the observations made by Chopra and Kumar in 2012. The biggest threat to the peafowl muster in the Pashan area was the domestic dogs. This observation supported the previous findings that Adult peacocks living near human habitations are sometimes hunted by domestic dogs and chicks are somewhat more prone to predation than adult birds (Gurjar *et al.* 2013; R Sabesh 2010). The interesting observation made in this study was that the male parent took the responsibility of keeping the peachicks and the female parent safe from these predators. Another important observation made was that due to living near a manmade habitat rather than a faraway forest, the urban life expectancy of these peafowls significantly reduced. Their life expectancy is about 15 years and some records also show that they can live upto 20 years in captivity (Bastida 2017). However, living near human habitations took a toll on the peafowl family in this study as it was noted that the family of five was reduced to four in the second year of observation due to death of one peahen chick. The third year of observation saw the female parent disappearance.

It was not clear whether the family migrated to better shelters after the last year of observation.

Conclusion:

The biparental mode of care was observed in the Indian Peafowl with different skills taught by a different parents.

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First record of Smooth-coated Otter *Lutrogale perspicillata* at Hatnur dam back waters, Jalgaon district, Maharashtra

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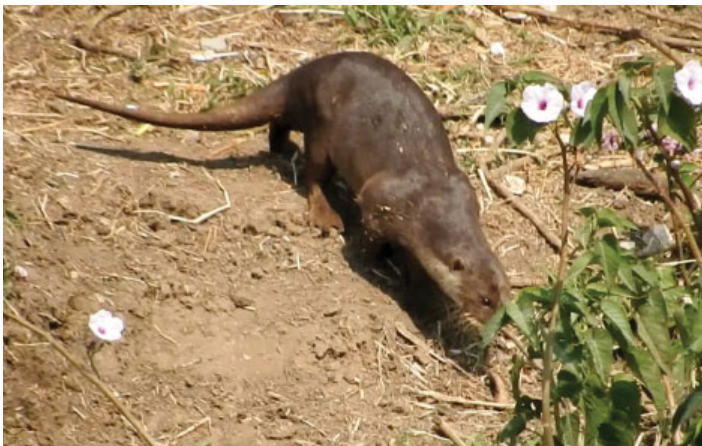


Abstract

Existence and growing population of Tigers *Panthera tigris* in Wadhoda forest ranges of Jalgaon forest division have underlined healthy ecosystem of Jalgaon region. Hatnur dam has been drawing thousands of migratory birds every winter from Siberia, Pakistan, China, Europe, Mongolia, Africa, Turkistan, northern parts of India etc., resulting in allotment of important bird area status to Hatnur dam by BNHS. Back water of Hatnur dam is surrounded by Muktai-Bhavani tiger conservation reserve on eastern side and most of the banks of Tapi and Purna rivers, dam's catchment areas are surrounded by banana, cotton, sugarcane, jowar and wheat fields. Hatnur dam reservoir along with Muktai- Bhavani tiger conservation reserve have become biodiversity hotspots as many rare species of birds, plants, mammals are seen flourishing here (Rahmani et al, 2013). Present report deals with rare sighting of Smooth-coated Otter *Lutrogale perspicillata* I. Geoffroy, a vulnerable species of aquatic mammal, at Hatnur dam reservoir highlighting importance of conservation of this area.

Introduction

Jalgaon district is blessed with diverse habitats viz. tropical dry deciduous, moist deciduous, scrub and thorny forests, wetlands, grasslands etc... Jalgaon district has been adorned with two wildlife sanctuaries and a conservation reserve. Many large and small species of mammals are found in the forest near Hatnur dam, including Tiger *Panthera tigris*, Leopard *Panthera pardus*, Spotted deer *Axis axis*, Barking deer *Muntiacus muntjak*, Wild boar *Sus scrofa* Four-horned antelope *Tetracerus quadricornis*, Common langur *Semnopithecus entellus* etc. (Rahmani et al, 2013). Hatnur dam, one of the major dams of district, built on Tapi-Purna river confluence, has been attracting thousands of migratory birds every winter. At many



All Photos: Prasad Sonawane

places *Prosopis juliflora*, *Eichhornia crassipes*, *Ipomoea carnea* have formed pure stands along bank of this reservoir. Even though considered nuisance, these plants are proving boon in disguise for the fauna of the region. They are providing hide and shelter to waterfowls, waders and animals. Back waters of Hatnur dam have created a good quality habitat for various aspects of biodiversity, which is visible in occurrence of vivid flora and fauna at Hatnur dam and adjoining areas. One such important finding from backwaters of Hatnur dam is rare sighting of Smooth-coated Otter *Lutrogale perspicillata*, which strengthens our demand for declaration of Hatnur dam as protected area.

Materials and Methods

Data was gathered by wildlife study team through field surveys. Field observations were made using binoculars and digital camera was used to take record shots and videos. Field guides and literature were used to confirm identity of the animal and to confirm known range of its distribution. Nearest GPS co-ordinates were fixed using Google maps and GPS enabled digital cameras. Time and Date of discoveries were recorded by observers and were also extracted from photographic data. Present survey was carried on 28th January 2019 at Hatnur dam back waters and adjoining areas.

Result

Hatnur dam back waters and vegetation in its environs have been providing shelter to many rare species of flora and fauna. Hence visit to Hatnur backwaters is fairly common among birdwatchers, wildlife researchers, nature lovers and enthusiasts. Even though Jalgaon district had inadequate rain in the monsoon of 2018 and entire district facing drought, January 2019 has been coldest as compared to last few years. Hence we were keeping watch on migratory birds at different reservoirs of Jalgaon district, as such cold waves draw large number of migratory birds to wetlands, marshes at water reservoirs of the region from colder places. On one such birding expedition on 28th January 2019 we visited Hatnur dam backwaters of Mehun and adjoining areas. Mehun is famous for its Sant Muktai temple. Here *Ipomoea carnea*, *Ipomoea aquatica* have covered much of the water ways. Along with these, submerged aquatics *Ottelia alismoides*, *Hydrilla verticillata*, *Vallisneria spiralis* etc., free floating



aquatics *Eichhornia crassipes*, *Nymphaea pubescens*., *Pistia stratiotes*., *Azolla sp.*, *Marsilea quadrifolia* etc. have created a unique ecosystem supporting aquatic as well as terrestrial life. During birding Prasad Sonawane while driving, at 1.03 pm spotted some unusual activity on dirt track surrounded by *Ipomoea carnea* vegetation. We stopped driving and started looking in the direction of the activity. A mongoose like animal was rolling in the dirt. PS took out his camera and started taking pictures of the animal. It was very difficult to photograph it, as it was constantly moving. After taking few snapshots of the animal PS started recording video of the animal. Though looking like a mongoose from far, its size was more than mongoose which suggested that it might be something else. To avoid attracting attention of the animal towards us we refrained from making any unwanted movement. While recording video PS observed the animal and exclaimed that the animal is an Otter. Slowly Otter entered the nearby *Ipomoea carnea* thickets. Upon observing video, images and going through field guide (Menon V. 2014) we came to the conclusion, animal we saw is Smooth-coated Otter *Lutrogale perspicillata*. We could see only one individual on the dirt track leading to the bank of river, which was surrounded by *Ipomoea carnea* vegetation. Even though it was afternoon, temperature was quite low, because of which Otter might have been taking sunbath. The Otter individual observed had paddle-like flattened tail, grey brown upper side and lighter underside, confirming its identity as Smooth-coated Otter.

Smooth-coated Otter is a threatened species of otter belonging to the family Mustelidae and subfamily Lutrinae. This is the most common otter species of India. This aquatic mammal has dark brown to rusty coat with lighter (normally grey) underside and short limbs (David R. et al 2017). The lips, cheek, throat and chest are light colored. The smooth-coated otter clearly differs from Eurasian Otter (*Lutra lutra*) in having V-shaped nostrils set on a dusky nose pad that has a flat or a very

slightly convex upper margin, and a tail that is clearly flattened towards the tip like a paddle. The feet are well webbed on all digits bearing strong claws. Its paws are brown but lighter than the body (Menon V., 2014). Observed smooth-coated otter was rolling on the grassy bank of the river which is a usual behavior of otters after defecation. These social carnivores are skilled at catching fish and crustaceans. They are mainly diurnal with short lull in activity during midday. Fish comprise major part of their diet but they also feed on reptiles, frogs, insects, crustaceans and small mammals. It is essentially a creature of plains inhabiting lakes, rivers, dams, canals and swamps preferring sloping banks with vegetative cover.

The smooth-coated otter is listed as vulnerable species in IUCN red data list (de Silva et al 2015). Their range and population are shrinking due to loss of wetlands and contamination of water due to human activities. Major threats to otter population are due to overfishing, habitat destruction, pollution, poaching, illegal captivity for fishing purpose, contamination of waterways by pesticides, declining prey base for sustaining otter population etc.. All these factors have contributed to decline in population of Otters globally.

Conclusion

We have gone through all pertinent literature published till today on faunal diversity of Jalgaon district to find out the occurrence, distribution and habitat of Smooth-coated Otter (*Lutrogale perspicillata*). We found that, no scientific documentation of faunal diversity of Jalgaon district has been taken place till date. Checklist of Birds and mammals of Jalgaon district (Uzagare 2014) is the only checklist published till date of mammals of Jalgaon district. Smooth-coated Otter or any other Otter species is not reported in any of the checklist of mammals of Jalgaon district and more over Khandesh (Dhule, Nandurbar and Jalgaon districts) region. This species is not even reported in Gazetteer of Khandesh (Campbell 1880). Its distribution range is shown in Jalgaon district or nearby areas (Menon V. 2014) but no otter species is recorded from Jalgaon region. Its nearest records are from Melghat tiger reserve in Rangubeli region and Tapi river, Amravati (Kulkarni et al). This clearly reveals that, this species is very rare to Jalgaon district and Khandesh on the whole. There have been no records of this species from this region hence this is a new record to the fauna of Jalgaon district of Maharashtra state.

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Sighting of Grey-headed Canary Flycatcher *Culicicapa ceylonensis* at Pimpri-Chinchwad, Pune, Maharashtra.

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Photos:

Both photos of Grey-headed Canary Flycatcher from PCMC STP Lake at Chinchwad by Umesh Vaghela

Pimpri-Chinchwad, Pune district is an industrial hub with automobile, foundry, pharmaceutical, paper and phemical Industries. While bird watching on evening of 24th December 2016 and on morning of 25th December 2016, we sighted (ebird 2016) sighted a Grey-headed Canary Flycatcher *Culicicapa ceylonensis* in the foliage of Bamboo species and Subabul or White Leadtree *Leucaena leucocephala* at PCMC (Pimpri Chinchwad Municipal Corporation) STP (Sewage Treatment Plant) Lake at Chinchwad 18°39'50.0"N 73°48'04.8"E (GPS 18.663895, 73.801340). The STP Lake is a well wooded area with native and introduced trees and surrounded by densely populated residential area. The lake's approximate size is of 160.02x156.67 meters. This lake and surrounding woodland supports many migratory and native waders, water-birds, flycatchers and common garden birds. We have recorded 194 species of birds from Pimpri-Chinchwad area (Times of India, 2014).

The Grey-headed Canary Flycatcher was searching insects in tree foliage. Meanwhile the bird was also uttering melodious notes, and was also busy in preening. We followed the bird, photographed and observed it more than two hours on both days. Its population trend is stable and status is Least Concern (BirdLife International 2016). The Grey-headed Canary Flycatcher is resident to Central India, North-East hill states, Bangladesh, East and Western Ghats and Sri Lanka. It winters in the Indian subcontinent, with some records in Pune district within few pockets of Western Ghats (Ali et al. 1978; Ali et al. 1979; Grimmet et al. 2001 and Kazmierczak 2000). There are records from Deccan at Nasarapur, Pune District (Gay 1972); Jaikwadi dam, Paithan, Aurangabad district (Vyawahare & Kulkarni 1986); Ahmednagar (Fairbank 1876). The present record of Grey-headed Canary Flycatcher is probably the first reported sighting at Chinchwad in PCMC area.

Note:

‘ALIVE’ trust formerly known as ‘Swastishree’ is working for Nature Conservation through Awareness, Education, Research, Documentation and fieldwork. We are documenting birds within Pimpri Chinchwad Municipal Corporation area since 2007.

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Sighting of 100+ Chestnut-tailed Starlings *Sturnia malabarica* at Chinchwad, Pune.

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Status and distribution:

Chestnut-tailed Starling *Sturnus malbaricus* is an uncommon winter migrant, more common in the Konkan (Monga 2001, Ali & Abdulali 1937a, Vidal 1880). While Resident in NE Indian subcontinent and SW Indian Hills, it is a winter visitor to Central and West India. (Grimmet et al 2009). The records of *S. m. malabaricus* away from the Konkan region are: NDA, Pune (Ingalhalikar & Gole 1987); Panshet, Pune district (Gole 1988); Pune University, 1 on 13/3/1987 (Bradbeer 1987); Pune, uncommon (Mahabal & Lamba 1987, Ingalhalikar et al. 2000-01); Malshej Ghat, Thane district, small parties on 23-24/6/1984 (Monga & Rane 1986); Satpuras, Dhule district, small flocks in April (Davidson 1882); Mumbai, market, bird dealers 'assert that they come from Khandalla,' (Barnes 1889a).

The Rosy Starling *Sturnus roseus* on the other hand is a fairly common winter visitor to peninsular India. It is date, reported from Aurangabad on 14th April (Ali & Whistler 1933a); on 20/8/1939 from Bhyander, Bombay; although most flocks arrived in January (Abdulali & Ali 1940). Both starling species are included in the IUCN Red data list. The status is Least Concern (BirdLife 2016).

Observations and Results:

On 22nd March 2019 while visiting a construction site at Udhyog Nagar Chinchwad, Pune (18°38'31.8"N 73°47'15.2"E, GPS 18.642179, 73.787564) at 1700 hrs, one flock of birds settled on a dry tree and attracted my (UV) attention. In a few minutes groups of 20 to 25 birds started arriving on an adjacent Banyan tree *Ficus benghalensis* with ripe figs. UV identified the flock as a mixed flock of Rosy Starlings *Pastor roseus* and Chestnut-tailed Starlings *Sturnia malabarica*. I was not having binoculars or camera hence I called my Prashant Pimpalnerkar from Chinchwadgaon to come immediately with binocular and camera. After



Chestnut-tailed Starlings at Chinchwad on 23 May 2019

All Photos: Ninad Raote



Chestnut-tailed Starlings on a Banyan tree at Chinchwad

observing we (UV & PP) photographed and confirmed the mixed flock of Rosy Starlings and Chestnut-tailed Starlings. The flock was busy feeding on Banyan figs. At around 1815 hrs the entire flock of Rosy starling moved to another dry tree and subsequently the flock moved eastwards. The flock of Chestnut-tailed Starling remained and continued feeding on figs. At 1835 hrs the Chestnut-tailed Starlings headed in North-West Direction, perhaps to roosting place, and we estimated the population to around 100 to 130 birds.

On the next day, (23rd March 2019 at 1635 hrs) we (UV & NR) visited the same site. At 1655 hrs the flock of Rosy Starling and Chestnut-tailed Starlings came to the same tree to feast on figs. At 1815 hrs Rosy Starling flock left the tree and headed eastwards to their roosting place. Now there was only a flock of Chestnut-tailed Starling feeding on figs. A group of five Indian Grey Hornbill *Ocyeros birostris* arrived on the Banyan tree from west to feast on figs. Later the Grey Hornbills moved in the East direction one by one. There were 4 to 5 Coppersmith Barbets *Megalaima Haemacephala* also. At dusk groups of 6 to 10 Chestnut-tailed Starlings

started leaving the Banyan tree and headed in the North-West direction. The groups constituted of 4 to 12 birds and rarely 7 to 11 birds. Total of 98 Chestnut-tailed Starling were counted on that day.

Though there are earlier records of Chestnut-tailed Starling from Pune region, those were of small number of birds (5 to 6) along with big flock of Rosy Starlings and Brahminy Starlings *Sturnia pagodarum*. This is to our knowledge a unique record for our region where a flock of 100+ Chestnut-tailed Starlings was seen. They were moving as an independent flock. Further study and observations are needed for a better understanding of their flocking behavior.

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Sighting of Leucistic Large Grey Babbler (*Argya malcolmi*) in Jejuri, Taluka Purandar, District Pune, Maharashtra

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- **Name of Species:** - Large Grey Babbler
- **Scientific Name.** – *Argya malcolmi*
- **Status:** - Resident
- **Date of sighting:-** 12 June, 2019
- **Time of sighting:-** 12.43 pm
- **Weather parameters:** - Sunny
- **Number of times sighted:** - Once
- **Number of birds:** - Single
- **Gender of bird:** Unknown.
- **Locality:** - A/p Jejuri, Tal Purandar, Dist Pune (18°16'21.0"N 74°09'07.9"E).
- **Habitat description:** -; Rural, Agricultural.
- **Distance from human habitation:-**0 km.
- **Any other bird/animal associates:** Red-vented Bulbul, House Crow, Brahminy Starling, and House Sparrow.
- **Bird Behaviour:** - Foraging.
- **Threats to the habitat:** - Habitat modification.
- **Photographs:** - Attached.
- **Previous records:** - No



Camera trap record of predation of the nest of Barred Buttonquail (*Turnix suscitator*) by juvenile Changeable Hawk-Eagle (*Spizaetus limnaeetus*) in Pingori, District Pune, Maharashtra

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Citation: Pawar, Rajkumar, Rahul Lonkar, Satish Karmalkar and Satish Pande (2019). Camera trap record of predation of the nest of Barred Buttonquail (*Turnix suscitator*) by juvenile Changeable Hawk-Eagle (*Spizaetus limnaeetus*) in Pingori, District Pune, Maharashtra.

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- **Names of Species:** Barred Buttonquail and Changeable Hawk Eagle
- **Scientific Name:** *Turnix suscitator* and *Spizaetus limnaeetus*
- **Status:** Least concern, ICUN 2012
- **Date of sighting:** 23rd July 2018
- **Time of sighting:** 10.57 AM
- **Weather:** Cloudy
- **Number of times sighted:** Once
- **Number of birds:** Two
- **Gender of bird:** Female quail and juvenile eagle of unknown gender
- **Locality:** Kavadewadi near Pigori, Tal. Purandar, District Pune, Maharashtra
- **Habitat description:** Agricultural.
- **Distance from human habitation:-**1 km.
- **Any other bird/animal associates:** None.
- **Bird Behaviour:** A nest of Barred Buttonquail was found on the bund of agricultural farm in a grass tussock on 18th July 2018. 3 eggs were seen in the nest. The quail was incubating the eggs. The nest was located after spraying of weedicide in the field, after the grass had dried and the nest was exposed. A trap camera (Reconyx) was placed opposite the nest at a distance of 12 feet. A juvenile Changeable Hawk Eagle was recorded predated upon the incubating female and the nest was found to be empty on subsequent inspection. This is the first such incidence when eggs of a small grassland bird were consumed by a top predator (photos attached).
- **Threats to the habitat:** Habitat modification and spraying of insecticides and weedicides.
- **Photographs:** Attached.
- **Previous records:** No documented record of quail egg predation by an eagle were from the region or from any other locality could be found. This appears to be the first record of the predation of an active nest of the Barred Buttonquail by a Changeable Hawk Eagle.

A report of cross-billed Common Kingfisher *Alcedo atthis* from Indore, Madhya Pradesh

Ritesh Khabia

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Citation: Khabia, Ritesh (2019) A report of cross-billed Common Kingfisher *Alcedo atthis* from Indore, Madhya Pradesh.

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- **Name of Species:** Common Kingfisher
- **Scientific Name:** *Alcedo atthis*
- **Status:** - Resident. Least Concern.
- **Date of sighting:** 8th May, 2019
- **Time of sighting:** 08.23 am.
- **Weather parameters:** Sunny.
- **Number of times sighted:** Four times.
- **Number of birds:** Single
- **Gender of bird:** Male; adult.
- **Locality:** Sirpur Lake, Indore, Madhya Pradesh.
- **Habitat description:** Wet Land and Lake.
- **Distance from human habitation:** 0 km.
- **Any other bird/animal associates:** Painted Snipe, White-breasted Waterhen.
- **Bird Behaviour:** Perching. Diving for food and flying.
- **Threats to the habitat:** Pollution, human activity.
- **Photographs:** - Attached.
- **Previous records:** - No. This is the first record of a Common Kingfisher with a cross-billed shape of the beak tip. In spite of this deformity the kingfisher was diving and successfully catching fish. It will be a good study to compare the success rate of hunting of this individual with that of other normal individuals of the same species.



Sighting of Leucistic House Sparrow (*Passer domesticus*) in Kolvihire, Taluka Purandar, District Pune, Maharashtra.

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- **Name of Species:** - House Sparrow
- **Scientific Name.** – *Passer domesticus*
- **Status:** - Resident
- **Date of sighting:-** 19 May, 2019
- **Time of sighting:-** 11.05 am
- **Weather parameters:** - Sunny
- **Number of times sighted:** - Three
- **Number of birds:** - Single
- **Gender of bird:** Female
- **Locality:** - A/p Kolvihire, Tal Purandar, Dist Pune (18°16'01.9"N 74°12'14.2"E)
- **Habitat description:** -; Rural, Agricultural.
- **Distance from human habitation:-**0 km.
- **Any other bird/animal associates:** House Crow, and Common Myna
- **Bird Behaviour:** - Perching
- **Threats to the habitat:** - Habitat modification.
- **Photographs:** - Attached.
- **Previous records:** - No



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