

THE BIRDS OF BARANDABHAR, CHITWAN

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INTRODUCTION

The Barandabhar Bird Corridor, mostly sal forest, stretches from the Royal Chitwan National Park (RCNP) in the south to the Mahabharat Range in the north bisecting the Chitwan District in: 1) East Chitwan, and 2) West Chitwan. The forest south of the Mahendra Highway is under the management of the RCNP Buffer Zone and rest of the forest is under District Forest Office. The forest area includes sal forest, riverine forest, mixed forest, shrub, and wetlands (stream, lake, canal, and water holes). The forest is common habitat for many species of mammals, birds, reptiles, and insects including rhino, tiger, deer, python, marsh mugger, monitor lizard, and grey-headed fish eagle.

This survey is a part of continued monitoring program of the forest bird that started in 1998 with Resources Himalaya and Bird Education Society. Under the joint program, funding and design of the research are made through Resources Himalaya and field surveys are carried by Bird Education Society. In this survey, birds with their habitats were assessed.

METHODOLOGY

Four bird observers were split into two teams: team A (Rupendra Karmacharya and Dadi Ram Sapkota) and team B (Rajendra Adhikari and Yogesh Adhikari). Survey area was divided into 6 sections: 1) Gairibari, 2) Gairibari - Jutpani, 3) Jutpani - Sagun Tol, 4) Sagun Tol - Tikauli, 5) Tikauli - Bis Hazari Tal, and 6) Bis Hazari Tal - Khorsor. Starting from Gairibari, each section was surveyed by both teams. Team A went approx. 200 m. and team B went approx. 3 km deep into forest from the side of the forest. Starting from February 22, 2000, total 6 days were spent, each day comprising each section.

Each bird was noted along with their habitat types, habitat quality (condition as per human influence), and spatial relation between their occurrence and landuse types (forest, village, farm, and river). Mammals were also noted. Evidences of habitat destruction (forest product collection, pollution, fishing etc.) and habitat change during last two years were also noted.

Bird related information were verified and derived from various published bird references.

RESULT

Total 165 species of birds were observed under 1301 occasions with total population of 3748 during 67.05 hours of field survey. Bird species such as house sparrow, tree sparrow, common myna, and house crow are excluded from the analysis because these birds are abundantly found and restricted in village and urban areas.

Some 10 species of mammals were observed. Of these, Spotted Deer, Barking Deer, and Common Langur are commonly seen and Common Mongoose, Crab-eating Mongoose, Five-striped Palm Squirrel, Hoary-bellied Himalayan Squirrel, Hog Deer, Wild Pig, and Asiatic Jackal are rarely seen.

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Table 1. Total time spent, total observations, and bird species of birds in different sections.

Section	Location	Time spent (hr)	Total observations	Bird species
1	Gairibari	5.50	67	39
2	Gairibari - Jutpani	11.90	153	53
3	Jutpani - Sagun Tol	11.45	202	59
4	Sagun tol - Tikauli	15.80	381	78
5	Tikauli - Bis Hazari Tal	12.10	216	70
6	Bis Hazari Tal - Khorsor	10.30	282	91

Near Gairibari village, some 10 bighas of forest areas have been encroached by human activities during last two years. So forest near the village represents poor bird observation. However bird sightings are relatively good as one goes uphill because of less-disturbed forest.

Gairibari - Jutpani forest areas are heavily destroyed by illegal timber supplies (evidences noted), firewood collection, and stone collection in Bung Khola and Than Khola. Less diversity and poor bird observation also suggest the forest degradation.

Hardwood sal forests of sections 3-4 are primarily good habitats for many birds including hornbills, galliformes, and woodpeckers. But these forests have suffered immensely from forest clearings for Padampur settlement threatening the survival of numerous bird and mammal species.

Some forest areas of section 4 lie under Padampur settlement. Sal Forest west of Khageri stream represents poor bird observation. It is possibly due to disturbances (sand collection and fishing) in Khageri stream. This section has a large area and the longest transect and perhaps these are the reasons why it shows high bird observations.

Barandabhar forest south to Mahendra Highway (sections 5-6) has rich bird diversity than that of north (sections 1-4) suggesting that the forest is good for bird habitats. Comparatively rich bird diversity in section 6 than 5 suggests that section 6 is less disturbed than section 5. Bird population was found decreased in Bis Hazari Tal area when compared with 1998 bird data. This could be attributed to enormous disturbances in Bis Hazari Tal caused by people and vehicles as this area is gaining popularity for picnic groups. Firewood collection and fishing are also widespread within this area. This section is significant especially for wetland-dependant birds.

The survey area was classified into 7 habitat types: 1) sal forest, 2) riverine forest, 3) mixed forest, 4) sissou forest, 5) shrub, 6) farm, and 7) wetlands (stream, lake, canal, and water holes) (Table 2).

Table 2. Observation frequency of birds in different habitat types.

Habitat types	Frequency %
Sal forest	39.12
Riverine forest	37.20
Mixed forest	1.07
Sissoo forest	1.46
Shrub	3.45
Farm	2.84
Wetlands (stream, lake, canal, and water holes)	14.83

Hardwood sal trees predominantly occupy Chitwan's forest, which is favored by many bird species including hornbills, woodpeckers, wood shrikes, and drongos. Sal forest is spread all the way from south to north in Barandabhar. Because of there economic values these forests are vulnerable to human activities. Although the survey covered small fraction of riverine forest, the bird observation was high in these forests suggesting that these forests hold good habitats for many bird species.

Of the total observation in wetlands, most birds were observed in surrounding areas of Bis Hazari Tal, which are very significant for many resident and migratory birds that are associated with water.

In terms of human influence all 7 habitat types were grouped into: 1) intact, 2) moderately degraded, 3) degraded forest, and 4) areas where level of human influence could not be measured such as rivers and shrub areas (Table 3 and 4).

Table 3. Observation frequency of birds in different disturbed habitats.

Habitat degradation	Frequency %
Intact forest	0.76
Moderately degraded forest	47.42
Degraded forest	30.74
Not applicable (stream, shrub etc.)	21.06

Some northern part of forest in Gairibari is intact and rest of areas in the Barandabhar is influenced by human activities. The survey covered only small areas of intact forest. More bird observations in moderately degraded and degraded forest suggest that forest areas be continually suffered from human influences.

It is difficult to generalize the migratory status of birds because of inconsistency in their migratory status. In some cases, resident birds are augmented by another flock of migrants of same species. Many resident birds are also altitude migrants and/or passage migrants. However, some 25 % of Barandabhar birds are generally migratory birds (summer, winter, and passage migrants).

With regard to abundance of birds, all birds observed were categorized in: 1) common, 2) occasional, and 3) scarce (Table 4). Status related information are derived from *A Guide to the Birds of Nepal*, Inskipp and Inskipp, 1985 and *Birds of Nepal*, Flemings and Bangdel, 1979. It should be noted that status mentioned here refers to national status and some birds mentioned as occasional are locally common.

Table 4. Bird status and their diversity in different disturbed habitats.

Status of forest	Bird species			Total
	Common	Occasional	Scarce	
Intact	4	0	0	4
Moderately degraded	43	10	3	56
Degraded	38	5	1	44
Not applicable (stream etc.)	47	14	0	61

Scarce birds includes: Great Hornbill, Grey-headed Fish Eagle, Long-tailed Broadbill, and Yellow-wattled Lapwing, some of which are listed in *Threatened Birds of Nepal*, BCN, 1996 as endangered and vulnerable species (Table 5). Endangered species has a very high risk of becoming extinct/extirpated in the near future and vulnerable species has a very high risk of becoming extinct/extirpated in the medium-term future.

Table 5. Threatened birds of the Barandabhar.

S.N.	Common	Status	Section(s)	Observed frequency
1	Lesser Adjutant	Endangered	5	4
2	Grey-headed Fish Eagle	Endangered	5	1
3	Lesser Spotted Eagle	Endangered	5	2
4	Great Hornbill	Endangered	2	1
5	Black Stork	Vulnerable	4, 6	2
6	Red-headed Vulture	Vulnerable	4	1
7	Long-tailed Broadbill	Vulnerable	3	1
8	Hill Myna	Vulnerable	1, 2, 3	3

Appendix - 1

A bird list* of the Barandabhar Corridor.

S.N.	Common name	Scientific name	Observed frequency
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>	13
2	Ashy Drongo	<i>Dicrurus macrocercus</i>	1
3	Ashy Woodswallow	<i>Artamus fuscus</i>	5
4	Asian Barred Owlet	<i>Glaucidium cuculoides</i>	2
5	Asian Openbill	<i>Anastomus oscitans</i>	6
6	Black Bulbul	<i>Hypsipetes leucocephalus</i>	23
7	Black Drongo	<i>Dicrurus macrocercus</i>	28
8	Black Ibis	<i>Pseudibis papillosa</i>	3
9	Black Kite	<i>Milvus migrans</i>	1
10	Black Stork	<i>Ciconia nigra</i>	2
11	Black-backed Forktail	<i>Enicurus immaculatus</i>	2
12	Black-crested Bulbul	<i>Pycnonotus melanicterus</i>	9
13	Black-hooded Oriole	<i>Oriolus xanthornus</i>	51
14	Black-rumped Flameback	<i>Dinopium benghalense</i>	5
15	Black-winged Cuckooshrike	<i>Coracina melaschistos</i>	4
16	Blue Whistling Thrush	<i>Myophonus caeruleus</i>	1
17	Blue-bearded Bee-eater	<i>Nyctyornis athertoni</i>	1
18	Blue-throated Barbet	<i>Megalaima asiatica</i>	5
19	Brahminy Starling	<i>Sturnus pagodarum</i>	5
20	Bronzed Drongo	<i>Dicrurus aeneus</i>	7
21	Bronze-winged Jacana	<i>Metopidius indicus</i>	9
22	Brown Shrike	<i>Lanius cristatus</i>	1
23	Cattle Egret	<i>Bubulcus ibis</i>	1
24	Chestnut-bellied Nuthatch	<i>Sitta castanea</i>	28
25	Chestnut-shouldered Petronia	<i>Petronia xanthocollis</i>	1
26	Chestnut-tailed Starling	<i>Sturnus malabaricus</i>	5
27	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	1
28	Citrine Wagtail	<i>Motacilla citreola</i>	1
29	Collared Falconet	<i>Microhierax caerulescens</i>	2
30	Common Babbler	<i>Turdoides caudatus</i>	1
31	Common Chiffchaff	<i>Phylloscopus collybita</i>	2
32	Common Greenshank	<i>Tringa nebularia</i>	4
33	Common Hawk Cuckoo	<i>Heirococyx varius</i>	19
34	Common Hoopoe	<i>Upupa epops</i>	3
35	Common Iora	<i>Aegithina tiphia</i>	14
36	Common Kingfisher	<i>Alcedo atthis</i>	2
37	Common Moorhen	<i>Gallinula chloropus</i>	6
38	Common Redshank	<i>Tringa totanus</i>	1
39	Common Rosefinch	<i>Carpodacus erythrinus</i>	1
40	Common Sandpiper	<i>Actitis hypoleucos</i>	3
41	Common Stonechat	<i>Saxicola torquata</i>	6
42	Common Tailorbird	<i>Orthotomus sutorius</i>	11
43	Common Woodshrike	<i>Tephrodornis pondicerianus</i>	3
44	Crested Serpent Eagle	<i>Spilornis cheela</i>	11
45	Crested Treeswift	<i>Hemiprogne coronata</i>	7
46	Crimson Sunbird	<i>Aethopyga siparaja</i>	3
47	Dark-throated Thrush	<i>Turdus ruficollis</i>	22

✓48	Darter	<i>Anhinga melanogaster</i>	7
49	Emerald Dove	<i>Chalcophaps indica</i>	3
50	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	3
51	Eurasian Thick-knee	<i>Burhinus oedicephalus</i>	2
52	Eurasian Wryneck	<i>Jynx torquilla</i>	1
53	Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i>	18
54	Gadwall	<i>Anas strepera</i>	1
55	Garganey	<i>Anas querquedula</i>	1
56	Golden-fronted Leafbird	<i>Chloropsis aurifrons</i>	5
57	Great Cormorant	<i>Phalacrocorax carbo</i>	3
58	Great Egret	<i>Casmerodius albus</i>	3
✓59	Great Hornbill	<i>Buceros bicornis</i>	1
60	Great Tit	<i>Parus major</i>	42
61	Greater Coucal	<i>Centropus sinensis</i>	1
62	Greater Flameback	<i>Chrysocolaptes lucidus</i>	5
63	Green Bee-eater	<i>Merops orientalis</i>	2
64	Green Sandpiper	<i>Tringa ochropus</i>	11
65	Green-billed Malkoha	<i>Phaenicophaeus tristis</i>	6
66	Greenish Warbler	<i>Phylloscopus trochiloides</i>	1
67	Grey Wagtail	<i>Motacilla cinerea</i>	4
68	Grey-backed Shrike	<i>Lanius tephronotus</i>	10
69	Grey-breasted Prinia	<i>Prinia hodgsonii</i>	17
70	Grey-capped Pygmy Woodpecker	<i>Dendrocopos canicapillus</i>	11
✓71	Grey-headed Fish Eagle	<i>Ichthyophaga ichthyaetus</i>	1
72	Grey-headed Woodpecker	<i>Picus canus</i>	3
73	Grey-winged Blackbird	<i>Turdus boulboul</i>	1
74	Hill Myna	<i>Gracula religiosa</i>	3
75	Himalayan Bulbul	<i>Pycnonotus leucogenys</i>	4
76	Himalayan Flameback	<i>Dinopium shorii</i>	9
77	Indian Peafowl	<i>Pavo cristatus</i>	12
78	Indian Pond Heron	<i>Ardeola grayii</i>	12
79	Indian Roller	<i>Coracias benghalensis</i>	28
80	Intermediate Egret	<i>Mesophoyx intermedia</i>	5
81	Jungle Babbler	<i>Turdoides striatus</i>	25
82	Jungle Myna	<i>Acridotheres fuscus</i>	24
83	Jungle Owlet	<i>Glaucidium radiatum</i>	1
84	Jungle Prinia	<i>Prinia sylvatica</i>	1
85	Large Cuckooshrike	<i>Coracina macei</i>	41
86	Large Woodshrike	<i>Tephrodornis gularis</i>	7
87	Large-billed Crow	<i>Corvus corone</i>	10
✓88	Lesser Adjutant	<i>Leptoptilos javanicus</i>	4
89	Lesser Racket-tailed Drongo	<i>Dicrurus remifer</i>	1
90	Lesser Spotted Eagle	<i>Aquila pomarina</i>	2
91	Lesser Whistling-duck	<i>Dendrocygna javanica</i>	1
92	Lesser Yellownape	<i>Picus chlorophus</i>	4
93	Lineated Barbet	<i>Megalaima lineata</i>	5
94	Little Egret	<i>Egretta gazetta</i>	7
95	Little Ringed Plover	<i>Charadrius dubius</i>	4
96	Long-tailed Broadbill	<i>Psarisomus dalhousiae</i>	1
97	Long-tailed Shrike	<i>Lanius schach</i>	13
98	Mallard	<i>Anas platyrhynchos</i>	1
99	Nepal House Martin	<i>Delichon nipalensis</i>	1

100	Olive-backed Pipit	<i>Anthus hodgsoni</i>	8
101	Orange-headed Thrush	<i>Zoothera citrina</i>	2
102	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>	4
103	Oriental Magpie Robin	<i>Copsychus saularis</i>	5
104	Oriental White-eye	<i>Zosterops palpebrosus</i>	5
105	Osprey	<i>Pandion haliaetus</i>	1
106	Paddyfield Pipit	<i>Anthus rufulus</i>	4
107	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>	1
108	Pale-chinned Flycatcher	<i>Cyornis poliogenys</i>	3
109	Peregrine Falcon	<i>Falco peregrinus</i>	1
110	Pied Bushchat	<i>Saxicola caprata</i>	4
111	Pied Kingfisher	<i>Ceryle rudis</i>	3
112	Plain Leaf Warbler	<i>Phylloscopus neglectus</i>	1
113	Plumbeous Water Redstart	<i>Rhyacornis fuliginosus</i>	1
114	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	16
115	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	2
116	Purple Sunbird	<i>Nectarinia asiatica</i>	1
117	Red Collared Dove	<i>Streptopelia tranquebarica</i>	2
118	Red Junglefowl	<i>Gallus gallus</i>	16
119	Red-billed Blue Magpie	<i>Urocissa erythrorhyncha</i>	3
120	Red-breasted Parakeet	<i>Psittacula alexandri</i>	17
121	Red-headed Vulture	<i>Sarcogyps calvus</i>	1
122	Red-throated Flycatcher	<i>Ficedula parva</i>	12
123	Red-vented Bulbul	<i>Pycnonotus cafer</i>	64
124	Red-wattled Lapwing	<i>Vanellus indicus</i>	10
125	Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	31
126	River Lapwing	<i>Vanellus duvaucelii</i>	1
127	Rose-ringed Parakeet	<i>Psittacula krameri</i>	19
128	Rosy Pipit	<i>Anthus roseatus</i>	3
129	Ruddy Shelduck	<i>Tadorna ferruginea</i>	10
130	Rufous Treepie	<i>Dendrocitta vagabounda</i>	28
131	Rusty-tailed Flycatcher	<i>Muscicapa ruficauda</i>	1
132	Sand Lark	<i>Calandrella raytal</i>	1
133	Sand Martin	<i>Riparia riparia</i>	8
134	Scaly Thrush	<i>Zoothera dauma</i>	2
135	Scarlet Minivet	<i>Pericrocotus flammeus</i>	38
136	Shikra	<i>Accipiter badius</i>	3
137	Slaty-backed Forktail	<i>Enicurus schistaceus</i>	1
138	Slaty-headed Parakeet	<i>Psittacula himalayana</i>	2
139	Small Minivet	<i>Pericrocotus cinnamomeus</i>	6
140	Smoky Warbler	<i>Phylloscopus fuligiventer</i>	1
141	Spangled Drongo	<i>Dicrurus hottentottus</i>	97
142	Spotted Dove	<i>Streptopelia chinensis</i>	35
143	Stork-billed Kingfisher	<i>Halcyon capensis</i>	2
144	Streak-throated Woodpecker	<i>Picus xanthopygaeus</i>	2
145	Striped Tit Babbler	<i>Macronous gularis</i>	1
146	Temminck's Stint	<i>Calidris temminckii</i>	1
147	Tickell's Leaf Warbler	<i>Phylloscopus affinis</i>	1
148	Tickell's Thrush	<i>Turdus unicolor</i>	1
149	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	1
150	Velvet-fronted Nuthatch	<i>Sitta frontalis</i>	5
151	Verditer Flycatcher	<i>Eumyias thalassina</i>	5

152	White Wagtail	<i>Motacilla alba</i>	11
153	White-bellied Drongo	<i>Dicrurus caeruleus</i>	24
154	White-bellied Yuhina	<i>Yuhina zantholeuca</i>	2
155	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	4
156	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	1
157	White-capped Water Redstart	<i>Chaimarrornis leucocephalus</i>	1
158	White-eyed Buzzard	<i>Butastur teesa</i>	1
159	White-rumped Shama	<i>Copsychus malabaricus</i>	10
160	White-tailed Stonechat	<i>Saxicola leucura</i>	3
161	White-throated Fantail	<i>Rhipidura albicollis</i>	1
162	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	15
163	Woolly-necked Stork	<i>Ciconia episcopus</i>	2
164	Yellow-bellied Fantail	<i>Rhipidura hypoxantha</i>	1
165	Yellow-wattled Lapwing	<i>Vanellus malarbaricus</i>	1

*Nomenclature follows *Birds of Indian Subcontinent* by Richard Grimmett, Carol Inskipp, and Tim Inskipp (1998).

Appendix - 2

A list of mammals observed in the Barandabhar.

S.N.	Common name	Scientific name	Observed frequency
1	Asiatic Jackal	<i>Canis aureus</i>	2
2	Barking Deer	<i>Muntiacus muntjack</i>	6
3	Common Langur	<i>Presbytis entellus</i>	6
4	Common Mongoose	<i>Herpestes edwardsi</i>	1
5	Crab-eating Mongoose	<i>Herpestes urva</i>	1
6	Five-striped Palm Squirrel	<i>Funambulus pennanti</i>	1
7	Hoary-bellied Himalayan Squirrel	<i>Callosciurus pygerythrus</i>	1
8	Hog Deer	<i>Axis porcinus</i>	1
9	Spotted Deer	<i>Axis axis</i>	14
10	Wild Boar	<i>Sus scrofa</i>	1