

Birds of Bhawal National Park, Bangladesh

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The present status of the avifauna of Bhawal National Park, a secondary Sal forest located in central Bangladesh, is documented. Of the 146 bird species recorded in Bhawal, 115 were encountered during fieldwork in 2013, 2014 and 2015, including three globally threatened species: Greater Spotted Eagle *Clanga clanga*, Grey-headed Fish Eagle *Icthyophaga ichthyaetus* and Red-breasted Parakeet *Psittacula alexandri*. Restoration of native undergrowth and trees, preservation of dead wood and regular monitoring are needed to conserve the existing avifauna at Bhawal.

INTRODUCTION

Until the middle of the twentieth century, the deciduous Sal *Shorea robusta* forests of north-central and north-west Bangladesh were well known for their populations of Indian Peacock *Pavo cristatus*, Tiger *Panthera tigris*, Leopard *Panthera pardus* and Sambar *Rusa unicolor*. However, these species all unfortunately disappeared, either before or soon after the independence of Bangladesh in 1971 (Kabir & Ahmed 2005). To preserve this important ecosystem, Bangladesh Forest Department has, since the 1980s, declared several protected areas, mostly in small remaining areas of Sal forest. The avifauna of the oldest of these protected places areas, Bhawal National Park, has not been well documented and very little attention has been paid to faunal surveys there, although several publications have highlighted management issues in the park (Sarker & Fazlul Huq 1985, Kabir & Ahmed 2005, Rahman & Vacik 2009, Hasan & Bahauddin 2014). This paper presents a complete checklist of the avifauna, focuses on status during the monsoon, and highlights some present threats to the birds of Bhawal National Park.

STUDY AREA

Bhawal National Park (known locally as Bhawal Sal forest or Rajendrapur Gajari forest) is located in Gazipur district (24.017°N 90.333°E), 40 km north of the city of Dhaka. It is classified as a Protected Landscape under the IUCN Protected Areas Category System (Kabir & Ahmed 2005). The park was established in 1974 and was officially declared a National Park in 1982 under the Bangladesh Wildlife Act 1974. The dominant native tree here is Sal. Before the area was officially declared a national park, from 1925 it was managed by felling and allowing coppice regeneration until, in 1938, attempts were made to diversify the forest by planting other tree species (Rahman & Vacik 2009). During the Bangladesh independence war in 1971, the forest was largely destroyed, with most of the trees being felled. Since then no formal management practices have been implemented, except that exotic trees have been planted in a few areas (mostly *Acacia* sp. and *Eucalyptus* sp.), as well as some fruit trees, and Sal trees have been allowed to grow back from their roots (Bangladesh Forest Department unpubl. data).

At the time of designation, it was declared that Bhawal National Park covered 5,022 ha; however, unpublished Forest Department data indicate that the two forest ranges that comprise the national park cover over 10,000 ha. For management purposes, Bhawal is divided into two zones—a core zone and a buffer zone. The core zone of about 950 ha is the area where protective measures are taken, and here conversion to industrial use, the extraction of forest products and planting of exotic species are supposed to be prohibited. Currently the national park area is actually honeycombed with villages and rice-fields. The topography is characterised by low hillocks (known locally as *chala*) about 3 to 4.5 m higher than the adjacent low-lying areas (known locally as *baidis*) that are now all converted to paddyfields. Average annual rainfall is 2,500 mm and the temperature ranges from 10–37°C (Bangladesh Forest Department unpubl. data). Sal is again

the dominant tree species, with stands of trees re-growing from the roots of trees coppiced in the past. Other species of tree have been planted in bare areas and around rest-houses and offices. Of 221 plant species recorded in the area, 46 species are trees (including 3 species of palm), 24 climbers, 19 shrubs, 105 herbs and 27 grasses (Womersley 1979, Sarker & Fazlul Huq 1985).

MATERIALS AND METHODS

Observations were made using 8x42 binoculars and digital cameras (Canon PowerShot SX50 HS and Nikon P35) to identify birds. As the landscape is complex, locations were verified as being within the study area (the 'core' of the park) using GPS (Garmin eTrex 30x). Most fieldwork was carried out from dawn to dusk, supplemented by some night visits to search for nocturnal birds. Field visits to investigate the monsoon season avifauna were carried out between 15–17 August 2013, 8–10 August 2014 and 7–9 September 2015. The same survey route (a total distance of about 23 km) was followed on each occasion; it included about 6 km on paved road and 5 km on unpaved road as well as paths inside the forest. Two short winter visits were also made—a half day on 21 November 2013 and a full day on 2 February 2014, using the same trails.

A full species list for the national park was compiled, based on our observations and others made since the 1970s—either reported by reliable observers to, or made by, PMT.

SPECIES ACCOUNTS

A total of 115 avian species were recorded in the core study area during this study, of which two (Greater Spotted Eagle *Clanga clanga* and Greater Racquet-tailed Drongo *Dicrurus paradiseus*) had not previously been recorded there; including these species, a total of 146 species have been recorded in Bhawal since the late 1970s. A list of all species recorded and details of survey data are given in Appendix 1. Of the 115 species that we recorded, 52 were passerines and 63 were non-passerines. This study reported 100 species during the monsoon period surveys, including two species known to be summer visitors (Jacobin Cuckoo *Clamator jacobinus* and Indian Pitta *Pitta brachyura*), whilst 15 species were only seen during the winter period visits. In addition, 31 species previously recorded were not seen during our surveys. Details of locally important species and threatened species are provided below.

Orange-breasted Green Pigeon *Treron bicinctus*

On 17 August 2013 three individuals of this locally rare species (which is more typical of evergreen forest) were seen resting and preening on top of a tree about 27 m high near Jasmin Rest House (24.093°N 90.405°E).

Green-billed Malkoha *Phaenicophaeus tristis*

Although this species is considered locally common in Sal forest (Halder 2010), only one individual was seen, on 7 September 2015, in the planted fruit-tree patches about 0.5 km inside the National

Park gate, and it appears to be rare in Bhawal. However, it is reluctant to fly unless approached very closely, which may result in it being under-recorded. The patch where it was seen has several old fruit-trees, including Mango *Mangifera indica*, Jackfruit *Artocarpus heterophyllus* and figs *Ficus* sp., and was a preferred location for several frugivorous species, including Red-vented Bulbul *Pycnonotus cafer*, Red-whiskered Bulbul *P. jocosus*, and a large flock of up to 49 Yellow-footed Green Pigeon *Treron phoenicopterus*, as well as other species such as Common Tailorbird *Orthotomus sutorius* and Oriental Turtle Dove *Streptopelia orientalis*.

Brown Fish Owl *Ketupa zeylonensis*

This generally scarce species of wooded areas was only recorded once, when we heard one call three times *phi.....phi.....phi.....* at night on 9 August 2014, adjacent to the Jasmin Rest House. A similar call, recorded in Thailand by Marc Anderson, is on xeno-canto (www.xeno-canto.org/191580).

White-rumped Vulture *Gyps bengalensis* CR

There have been no recent records of this Critically Endangered species, although small groups could be seen over the area in the 1980s; the species was last seen on 18 June 1988 by PMT when two groups comprising over 20 birds in total were present.

Indian Spotted Eagle *Clanga hastata* VU

Although there are several previous records of this Vulnerable species (BirdLife International 2017) from Bhawal, and it is presumed to be resident, none were seen during this study.

Greater Spotted Eagle *Clanga clanga* VU

The first record for Bhawal of this Vulnerable species (BirdLife International 2017) was one flying slowly over the pond adjacent to Jasmin Rest House on 2 February 2014.

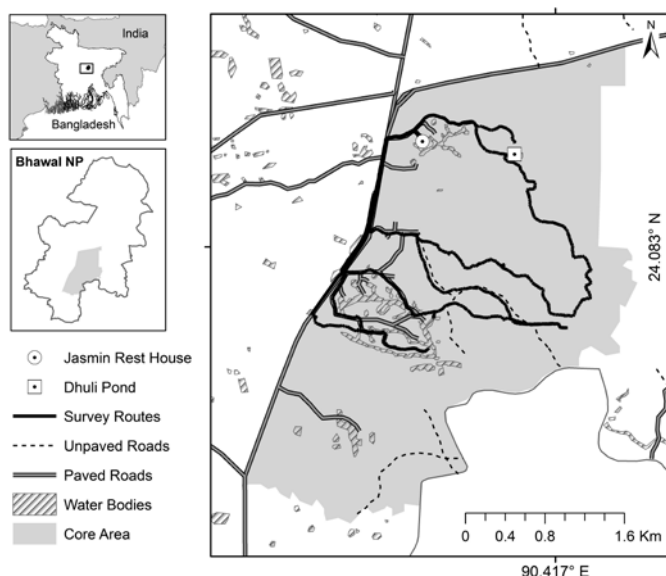
Grey-headed Fish Eagle *Ichthyophaga ichhyaetus* NT

The only record of this widespread but scarce species, considered Near Threatened (BirdLife International 2017), was one perched on a branch opposite the lake near Jasmin Rest House on 17 August 2013.

Red-breasted Parakeet *Psittacula alexandri* NT

This Near Threatened species (BirdLife International 2017) was seen in very small numbers on two out of three monsoon visits and is much scarcer in Sal forest than in eastern Bangladesh.

Figure 1. Map of the study area in Bhawal National Park, Bangladesh.



White-throated Fantail *Rhipidura albicollis*

This widespread but localised species was only recorded twice, in areas of low shrubs on 19 August 2014 and 9 September 2015, both times about 1 km inside the park gates.

Greater Racquet-tailed Drongo *Dicrurus paradiseus*

The first record for Bhawal was one bird moving from tree to tree calling on 8 August 2014; it had presumably wandered from eastern forests.

Pin-striped Tit Babbler *Mixornis gularis*

Although we had only one sighting, in low bushes on 8 September 2015, calls were heard many times in the forest in all three years. In Bhawal this species is not seen easily, owing to its secretive understory habits, but appears to be quite common.

DISCUSSION AND CONCLUSION

The core area of Bhawal National Park is heavily used by visitors, mostly from Dhaka during dry season weekends (September to March)—over 300,000 in each of 2012 and 2013, and over 200,000 in each of 2014 and 2015 (Forest Department unpubl. data). There are six main walking trails used by visitors, the busiest being mainly around a 28 ha permanent waterbody. However, the diversity and numbers of birds were found to be greater along the trail starting at Jasmin Rest House (near gate 6) and passing Dhuli Pond; this trail had lower numbers of visitors because it had a reputation for robbery and other misconduct during the three-year study period, which deterred visitors; the survey team was always accompanied by forest guards on this trail.

Currently, illegal logging, extensive collection of wood for fuel, encroachment for industry and agriculture, planting of exotic trees as monocultures, loss of dead trees and lack of natural diversity threaten the avifauna of Bhawal.

The Forest Department has planted fast-growing exotic trees such as acacia, eucalyptus and also bamboo and canes over the last 20 years as part of re-forestation and to combat encroachment. However, it was observed that these exotic plants were avoided by most birds for foraging and nesting. Exotics should be seen as a threat to forest biodiversity, and native trees should be planted instead. For example, the Forest Department has planted some native fruiting trees over the last 20 years in patches near rest-houses and park buildings in Bhawal, and these are preferred areas for a number of species.

Many species prefer to perch on old or dead trees, which have disappeared in Bhawal due to illegal logging by local people. During the survey, especially in an area surrounding Dhuli Pond (24.092°N 90.405°E), several species were seen, often at the same time, perching on three dead trees. They included two raptor species (Shikra *Accipiter badius*, Changeable Hawk Eagle *Nisaetus cirrhatus*), passerines (Ashy Woodswallow *Artamus fuscus*, Black Drongo *Dicrurus macrocercus*, Rufous Treepie *Dendrocitta vagabunda*, Indian Cuckooshrike *Coracina macei*, Chestnut-tailed Starling *Sturnia malabarica* and Red-vented Bulbul) and non-passerines (Common Kingfisher *Alcedo atthis*, White-breasted Kingfisher *Halcyon smyrnensis*, Stork-billed Kingfisher *Pelargopsis capensis*, Asian Green Bee-eater *Merops orientalis*). There are few dead trees because the Forest Department and local people often misguidedly remove them, citing aesthetic reasons. The removal of old, dying or dead trees and certain tree species containing a high number of cavities, has led to decreased availability of nest-sites for cavity-nesting birds and is presumed to limit populations of these species in Bhawal, as it does elsewhere (Newton 1994). Dead trees are important for many birds and invertebrates, and forest management policy should prioritise leaving standing dead trees, as well as fallen

Species	Status	Monsoon season visits			
		A	B		
		Aug 2013	Aug 2014	Sept 2015	
Brown Boobook <i>Ninox scutulata</i>	u		0	1	0
Spotted Owllet <i>Athene brama</i>	c		2	1	1
Collared Scops Owl <i>Otus lettia</i>	u		1	1	0
Brown Fish Owl <i>Ketupa zeylonensis</i>	r		1	0	0
Black-winged Kite <i>Elanus caeruleus</i>	u		1	1	0
Crested Serpent Eagle <i>Spilornis cheela</i>	u		1	1	1
White-rumped Vulture <i>Gyps bengalensis</i>	r	✓			
Changeable Hawk Eagle <i>Nisaetus cirrhatus</i>	r		1	0	0
Indian Spotted Eagle <i>Clanga hastata</i>	3	✓			
Greater Spotted Eagle <i>Clanga clanga</i>	1		1		
Tawny Eagle <i>Aquila rapax</i>	1	✓			
Pied Harrier <i>Circus melanoleucos</i>	1	✓			
Shikra <i>Accipiter badius</i>	u		4	6	2
Besra <i>Accipiter virgatus</i>	1	✓			
Eurasian Sparrowhawk <i>Accipiter nisus</i>	2	✓			
Grey-headed Fish Eagle <i>Ichthyophaga ichthyaetus</i>	r		1	0	0
Brahminy Kite <i>Haliastur indus</i>	c		2	5	3
Black Kite <i>Milvus migrans</i>	c		2	1	1
White-eyed Buzzard <i>Butastur teesa</i>	u		1	0	1
Common Hoopoe <i>Upupa epops</i>	u		0	3	0
Asian Green Bee-eater <i>Merops orientalis</i>	c		4	2	3
Indian Roller <i>Coracias benghalensis</i>	c		2	3	2
Common Kingfisher <i>Alcedo atthis</i>	c		3	4	3
Pied Kingfisher <i>Ceryle rudis</i>	u		1	1	1
Stork-billed Kingfisher <i>Pelargopsis capensis</i>	r		1	0	0
White-breasted Kingfisher <i>Halcyon smyrnensis</i>	u		2	2	2
Coppersmith Barbet <i>Psilopogon haemacephalus</i>	c		3	1	1
Lineated Barbet <i>Psilopogon lineatus</i>	u		0	0	1
Eurasian Wryneck <i>Jynx torquilla</i>	r		1		
Black-rumped Flameback <i>Dinopium benghalense</i>	c		2	3	2
Rufous Woodpecker <i>Micropternus brachyurus</i>	u		2	1	1
Streak-throated Woodpecker <i>Picus xanthopygus</i>	u		1	1	1
Grey-capped Woodpecker <i>Picoides canicapillus</i>	u	✓			
Fulvous-breasted Woodpecker <i>Dendrocopos macei</i>	c		1	1	1
Common Kestrel <i>Falco tinnunculus</i>	1	✓			
Eurasian Hobby <i>Falco subbuteo</i>	1	✓			
Red-breasted Parakeet <i>Psittacula alexandri</i>	u		2	1	0
Rose-ringed Parakeet <i>Psittacula krameri</i>	c		4	6	2
Indian Pitta <i>Pitta brachyura</i>	u		0	1	0
Black-hooded Oriole <i>Oriolus xanthornus</i>	c		2	3	2
Small Minivet <i>Pericrocotus cinnamomeus</i>	c		17	16	5
Indian Cuckooshrike <i>Coracina macei</i>	c		4	4	2
Black-headed Cuckooshrike <i>Lalage melanoptera</i>	c		1	1	0
Ashy Woodswallow <i>Artamus fuscus</i>	u		2	4	2
Common Wood Shrike <i>Tephrodornis pondicerianus</i>	c		14	19	12
Common Iora <i>Aegithina tiphia</i>	c		2	3	3
White-throated Fantail <i>Rhipidura albicollis</i>	u		0	1	1
Black Drongo <i>Dicrurus macrocerus</i>	c		9	10	9
Ashy Drongo <i>Dicrurus leucophaeus</i>	u	✓			
Bronzed Drongo <i>Dicrurus aeneus</i>	c		12	16	8
Hair-crested Drongo <i>Dicrurus hottentottus</i>	u		0	1	0
Greater Racquet-tailed Drongo <i>Dicrurus paradiseus</i>	1		0	1	0
Black-naped Monarch <i>Hypothymis azurea</i>	u		1	1	0
Brown Shrike <i>Lanius cristatus</i>	c		1		
Long-tailed Shrike <i>Lanius schach</i>	c		1	2	1

Species	Status	Monsoon season visits			
		A	B		
		Aug 2013	Aug 2014	Sept 2015	
Grey-backed Shrike <i>Lanius tephronotus</i>	r		1		
Rufous Treepie <i>Dendrocitta vagabunda</i>	c		3	4	4
House Crow <i>Corvus splendens</i>	c		4	5	7
Large-billed Crow <i>Corvus macrorhynchos</i>	c		2	2	1
Grey-headed Canary Flycatcher <i>Culicicapa ceylonensis</i>	u		1		
Great Tit <i>Parus major</i>	u		3	2	3
Bengal Bushlark <i>Mirafra assamica</i>	u		0	1	0
Rufescent Prinia <i>Prinia rufescens</i>	1	✓			
Grey-breasted Prinia <i>Prinia hodgsonii</i>	c		6	16	12
Common Tailorbird <i>Orthotomus sutorius</i>	c		4	2	1
Blyth's Reed Warbler <i>Acrocephalus dumetorum</i>	u		1		
Red-rumped Swallow <i>Cecropis daurica</i>	u	✓			
Barn Swallow <i>Hirundo rustica</i>	c		0	0	1
Sand Martin <i>Riparia riparia</i>	1	✓			
Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	u		5	5	0
Red-vented Bulbul <i>Pycnonotus cafer</i>	c		8	6	5
Yellow-browed Warbler <i>Phylloscopus inornatus</i>	c	✓			
Dusky Warbler <i>Phylloscopus fuscatus</i>	u		2		
Siberian Chiffchaff <i>Phylloscopus tristis</i>	1	✓			
Tickell's Leaf Warbler <i>Phylloscopus affinis</i>	r	✓			
Greenish Warbler <i>Phylloscopus trochiloides</i>	c		1		
Yellow-vented Warbler <i>Phylloscopus cantator</i>	1	✓			
Blyth's Leaf Warbler <i>Phylloscopus reguloides</i>	u	✓			
Western Crowned Leaf Warbler <i>Phylloscopus occipitalis</i>	1	✓			
Oriental White-eye <i>Zosterops palpebrosus</i>	u		3	3	2
Pin-striped Tit Babbler <i>Mixornis gularis</i>	r		0	0	1
Jungle Babbler <i>Turdoides striata</i>	c		24	12	16
Velvet-fronted Nuthatch <i>Sitta frontalis</i>	u	✓			
Asian Pied Starling <i>Gracupica contra</i>	c		4	4	2
Chestnut-tailed Starling <i>Sturnia malabarica</i>	c		14	8	8
Common Myna <i>Acridotheres tristis</i>	c		6	11	9
Jungle Myna <i>Acridotheres fuscus</i>	c		4	2	0
Orange-headed Thrush <i>Geokichla citrina</i>	u		2	2	3
Black-breasted Thrush <i>Turdus dissimilis</i>	r	✓			
Tickell's Thrush <i>Turdus unicolor</i>	2	✓			
Oriental Magpie Robin <i>Copsychus saularis</i>	c		6	3	4
White-rumped Shama <i>Kittacincla malabarica</i>	1	✓			
Verditer Flycatcher <i>Eumyias thalassinus</i>	u	✓			
Siberian Rubythroat <i>Calliope calliope</i>	1	✓			
Blue Whistling Thrush <i>Myophonus caeruleus</i>	1	✓			
Red-throated Flycatcher <i>Ficedula albicilla</i>	c		2		
Golden-fronted Leafbird <i>Chloropsis aurifrons</i>	u	✓			
Pale-billed Flowerpecker <i>Dicaeum erythrorhynchos</i>	c		0	1	2
Purple-rumped Sunbird <i>Leptocoma zeylonica</i>	c		3	1	1
Purple Sunbird <i>Cinnyris asiaticus</i>	c		2	1	1
Baya Weaver <i>Ploceus philippinus</i>	u		16	7	0
Scaly-breasted Munia <i>Lonchura punctulata</i>	c		3	4	4
Chestnut Munia <i>Lonchura atricapilla</i>	u		0	2	0
House Sparrow <i>Passer domesticus</i>	c		7	6	5
Forest Wagtail <i>Dendronanthus indicus</i>	u	✓			
Olive-backed Pipit <i>Anthus hodgsoni</i>	u		1		
Paddyfield Pipit <i>Anthus rufulus</i>	c		0	1	1
Grey Wagtail <i>Motacilla cinerea</i>	r	✓			
Citrine Wagtail <i>Motacilla citreola</i>	u		1		
White Wagtail <i>Motacilla alba</i>	c		1		