

Black Francolin *Francolinus francolinus* in Bangladesh: breeding biology, status, threats and conservation

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Three species of francolin *Francolinus* have been recorded in Bangladesh, Black *Francolinus francolinus*, Swamp *F. gularis* and Grey *F. pondicerianus*, but only the first of these is considered to survive in the wild and there are few records (Siddiqui *et al.* 2008). Black Francolin is legally protected under the Bangladesh Wildlife Act (1974) 2012, and nationally classified as Critically Endangered (IUCN Bangladesh 2000), although globally it is classified as of least concern (BirdLife International 2013). Its range formerly extended over Chittagong, Dhaka and Rajshahi divisions (Siddiqui *et al.* 2008), but it has disappeared from most of these areas owing to habitat loss and hunting. Now it is only found in Kazipara and Sharial villages (26.489°N 88.336°E) Tentulia sub-district, Panchagarh district, in the far north-west of Bangladesh, along the international border with India. According to local people, Black Francolins formerly occurred in the adjacent Thakurgaon and Dinajpur districts in cultivated lands. This paper summarises past records and the results of recent fieldwork to better document the range and size of the remnant population in Bangladesh.

Between 2009 and 2013, seven field visits were made to Kazipara village, Tentulia sub-district, during the breeding and non-breeding seasons, making opportunistic sightings, walking transects and interviewing local people. A total of 120 ha of cropland associated with tea gardens, scrub and smallholdings, including the border area, were surveyed. Transects were walked in suitable habitats in the morning and afternoon when the birds are most active. Numbers of birds seen (by sex) and heard calling were recorded. Breeding behaviour, habitat condition, threats and other biological data were noted.

The Tentulia area lies at just under 50 m above sea-level in the extreme north-west of Bangladesh, and is bordered on three sides by West Bengal, India, with the Darjeeling district to the north, Siliguri, Jalpaiguri and Cooch Behar districts to the north-east, and West Dinajpur and Purnea districts to the west. The soil is sandy and alluvial, and has a close affinity with the soil of the old Himalayan basin, with an underground layer of pebbles. The area surveyed is mostly cultivated with maize, sugarcane, rice, wheat, sesame *Sesamum indicum* and pulses. There are a few scrubby bush and bamboo patches adjacent to crop fields and homesteads. Wild shrubby bushes such as 'satordron' *Leucas aspera*, 'bhant' *Clerodendrum viscosum* and 'datarnga' *Melastoma malabathricum*, mango orchards, tea gardens and crop fields form the feeding, nesting and roosting grounds of the Black Francolin. A few streams flow through the tea gardens, and just over the international border are more tea gardens and a small patch of sal forest *Shorea robusta*. Black Francolins appear to be well adapted to cultivated crops. During the winter they often shelter in sugarcane fields. In addition, throughout the year the birds forage in the tea gardens. Without the tea gardens the species would not have survived in Bangladesh. It forages (chiefly on seeds and insects) on the ground or in low bushes and low tree branches at dawn and dusk. Large fields are used as feeding grounds very early in the morning and at dusk, when people are not working in them. The species is also reported to occur in the villages of Paschim Dangapara, Purba Dangapara, Bara Dangapara, Fatahabad and Juropani, just across the international border in Siliguri, India, close to the Mohanonda River, mostly in tea plantations. Francolins were seen to move between India and Bangladesh on every day that I observed them.

In Tentulia, Black Francolin breeds from April to July. The breeding season starts with the loud creaking calls of the male, given from low bushes or tea gardens: *chick... cheek... cheek...*

keraykek. The people of Tentulia term the call *pan-bere-sigarate*. The male is usually more obvious during this period, and birds which call continuously for most of the day may be unmated. However, females are shy and silent, but were observed foraging with males. The nest is in a hollow on the ground and is made from a little grass and lined with the female's own feathers plus crop leaves from the vicinity.

I observed a few fights between males during the study, but territorial conflict seems to be rare. I observed one active nest with five eggs (Table 2). During the incubation the male foraged alone in the area but was never seen to come near the nest and took no part in incubation. The female appeared to settle in the afternoon and presumably incubated throughout the night. In the morning when the ground was bathed in sunlight, the female left the nest to feed for 25–30 minutes in adjacent habitat such as sugarcane fields. This was repeated 3–4 times a day. In case of danger such as human disturbance, the female left the nest. No chicks were observed. Local people rarely observe chicks but said they have collected eggs from nests and incubated them under domestic hens, but the chicks are not adaptable and escape if they get an opportunity.

The loud ringing call of the male Black Francolin can be heard in the morning and evening, and even most of the day during the breeding season (April–July), when the birds nest in fields of maize, sugarcane, rice, wheat and sesame, and in patches of tall grass. This makes it susceptible to hunting at these times. Local people hunt francolins, despite their protected status, using net traps, and when they find nests while weeding and harvesting crops they return at night to catch the female and collect the eggs. Even if a nest escapes human detection or is left intact, the female will not brood and hatch the eggs if the vegetation cover protecting the nest is cleared. During the rice harvest in 2011, a local farmer found and left a nest with four eggs, but the female never returned to the nest in my five days of observation. Collection of tall grasses from fallow lands and fodder from the periphery of cropland is also responsible for diminishing breeding habitat. The same threats also affect Barred Buttonquail *Turnix suscitator* and Yellow-legged Buttonquail *T. tanki*, two other species of ground-dwelling bird that occur in this area.

The local village children also hunt francolins, destroy nests and collect eggs. In addition, stone collection by local people directly damages habitat, and even the noise of stone-carrying vehicles may disturb the birds. Other contributory factors are burning of rice stubble reducing food items and ground cover, and the use of agricultural pesticides. Lastly, this study found small Asian mongoose *Herpestes javanicus*, golden jackal *Canis aureus* and domestic dogs in the area, which are all likely to be nest predators.

Table 1 summarises the known Black Francolin records from Bangladesh up to September 2009—the highest count was 10 at Kazipara in September 2009 (Choudhury 2011). Table 2 summarises the number of birds seen and heard during the seven field visits I made to Kazipara between October 2009 and May 2013. Owing to the detectability of calling males and secretive behaviour of females, more males than females were recorded. The Kazipara area population appeared to be about 50 adults in 2012 during the breeding season.

Conversion of bushy vegetation to agriculture has compounded the problem of hunting to reduce the population and range of the Black Francolin in Bangladesh. The dense scrub-bush in which it takes cover when disturbed is disappearing day-by-day. Tentulia is probably the last surviving habitat of the birds in Bangladesh, but there is no effective conservation initiative for

Table 1. Published Black Francolin records in Bangladesh (1882–2009).

Year	Number and location	District/division	Observer/reference
1882	Number not recorded	Dhaka	Simson (1882)
1888	Number not recorded	Sylhet	Hume (1888)
1972	Savar area, one killed by local hunter, specimen preserved at Dhaka University Zoology Department	Dhaka	Khan (1987)
1988	Number not recorded, Tentulia	Panchagarh, Rangpur division	Khan (1987)
1999	One; Modhupur National Park	Dhaka	Enam Ul Haque in Thompson & Johnson (2003)
2006	One; Sangu Valley	Bandarban district, Chittagong Hill Tracts	R. Halder in Thompson <i>et al.</i> (2014)
2009	10; Kazipara, Tentulia	Panchagarh, Rangpur division	Chowdhury (2011)

Table 2. Black Francolin records at Kazipara, Tentulia during seven field visits between October 2009 and May 2013.

Period	Date	Calling (male) ^a	Directly visible	Nests	Total male	Total female
Non-breeding	1–3 October 2009		5 males + 1 female		5	1
	8 January 2010		2 pairs		2	2
	7–8 October 2011		1 pair + 1 male		2	1
Breeding	20–22 April 2012	15	3 pairs + 9 males	1 abandoned nest with 4 eggs	15+12=27	3
	4–6 May 2012	35	11 pairs + 6 male		35+17=52	11
	25–26 May 2012	6	8 male + 1 female	1 active nest with 5 eggs	6+8=14	1
	23–5 May 2013	13	8 male + 1 female		13+8=21	1

^a Male call is the most reliable indicator for population estimation during the breeding period.

this species there. In 2013, during the breeding season, I used my own resources to place 1,000 posters on houses, schools and other institute walls in Kazipara and Sharial villages and the nearby market areas, in order to make local people aware of the need to conserve these birds. The recovery of the population will need a strong programme of activities to preserve and perhaps extend an appropriate matrix of habitats and to eliminate the hunting of the species through awareness campaigns, legal enforcement and, if necessary, the development of alternative sources of protein.

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Range expansion of Lemon-bellied White-eye *Zosterops chloris* and Sooty-headed Bulbul *Pycnonotus aurigaster* to south-east Sulawesi, Indonesia

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Introduction

This note makes use of specimen collections and observations to document the spread of Lemon-bellied White-eye *Zosterops chloris*, a well-established native in other parts of mainland Sulawesi, to the south-east peninsula and the spread of the introduced Sooty-headed Bulbul *Pycnonotus aurigaster* in the same area. In January 2007 a team from Indonesia Museum Zoologicum Bogoriense (MZB) surveyed the avifauna of Block Debbie, an area of woodland replanted from 2002 and managed by a nickel mining company following its mining operations near Saroako (Sorowako), South Sulawesi province. Located in the north of the south-east peninsula, Block Debbie is classified as 'regeneration forest' and succession to

secondary forest is taking place. Subsequently, between 2009 and 2011, personnel from MZB and the University of California, Davis Museum of Wildlife and Fish Biology (MWFB), undertook a series of collaborative research expeditions further south in South-East Sulawesi province, with the primary objective to survey and document biodiversity in the Masembo river drainage, Mekongga mountains, North Kolaka district, South-East Sulawesi. In 2011 four areas were surveyed: the Mangolo river near Mangolo, Kolaka district; two separate areas of Rawa Aopa Watumohai National Park (Rawa Aopa): Morowali district in the north and South Konawe district in the south; and Haluoleo University campus in Kendari on the south-east coast. At these sites, mist-nets and air guns (guns