

# A review of the breeding birds of Bhutan

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Based on data collected during a stay in Bhutan from 1990 to 2000, we present a review of all presently recognised breeding birds of Bhutan. Our review builds on *Birds in Bhutan, status and distribution* by P. Spierenburg (2005). Additional information and updates are presented on the breeding status of 64 species. We list species found breeding in Bhutan for the first time and species for which breeding has only occasionally been reported. Based on literature and recent tour reports, an additional 13 changes to the breeding list are presented and discussed. Ten species are added to the list of confirmed breeders, among which are Snow Pigeon *Columba leuconota*, Plain-backed Thrush *Zoothera mollissima*, Hodgson's Redstart *Phoenicurus hodgsoni* and Wallcreeper *Tichodroma muraria*. Ten probable breeders are also added, including Savanna Nightjar *Caprimulgus affinis*, White-breasted Waterhen *Amauornis phoenicurus* and Dark-breasted Rosefinch *Carpodacus nipalensis*. The total number of confirmed breeders now stands at 184, probable breeders at 156 and possible breeders at 40. In addition to the status review, we provide data on the breeding biology of a number of species.

## INTRODUCTION

Spierenburg (2005) was the first to formally categorise the status of birds occurring in Bhutan. Earlier publications, like Ali *et al.* (1996), gave only rough indications of the (breeding) status. No detailed lists of the number of breeding birds in Bhutan have been published. Although Spierenburg's (2005) assessments of breeding status sometimes need interpretation, a count from his book yields the following numbers of species: confirmed breeding species 138, formerly breeding 2, probably breeding 176 and possibly breeding 44. This comes to 360 breeding species overall. Groombridge and Jenkins (1995) and Earth Trends (2006) state that Bhutan has, respectively, 448 and 209 breeding birds, without listing them or giving any further details.

During a stay in Bhutan from 1990 to 2000, we made regular bird observations. This led to quite a number of additions to the overall bird checklist for the country and

to new breeding records. Here, the new breeding records are presented, i.e. species found breeding in Bhutan for the first time or species for which breeding has only occasionally been reported. In addition, data on breeding biology are provided for various species. We have also added recent new records from the published literature and from tour reports in order to make the list of breeding birds (Appendix 1) up to date. We also re-examined historical data from Ludlow and Kinnear (1937) and Ali *et al.* (1996), which led to some previously overlooked species being added to the breeding list.

## OBSERVATIONS

Data were collected from May 1990 to June 2000, except for the whole of 1992. Observations concentrated in the western dzongkhags (=districts) of Bhutan (Fig. 1) and especially around our house at Tashi Pelkhil estate in

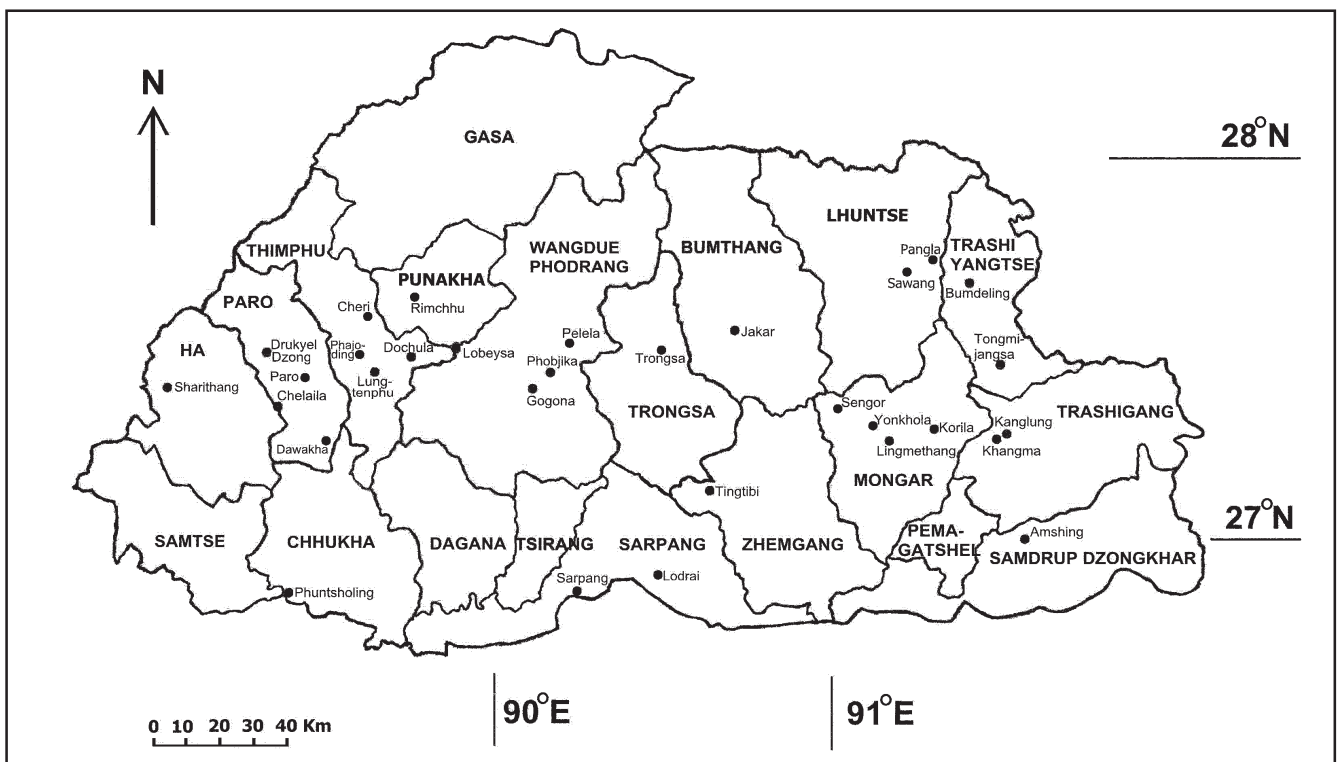


Figure 1. Map of Bhutan, showing districts and the locations of major observation sites.

**Table 1.** Criteria for assigning breeding status (adapted from Hagemeyer and Blair 1997, Spierenburg 2005).

Category	Description
Possible breeding	<ol style="list-style-type: none"> <li>1. Species observed in breeding season in possible nesting habitat</li> <li>2. Singing male(s) present (or breeding calls heard) in breeding season</li> </ol>
Probable breeding	<ol style="list-style-type: none"> <li>3. Pair observed in suitable nesting habitat in breeding season</li> <li>4. Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two different days, a week or more apart, at the same place</li> <li>5. Courtship and display</li> <li>6. Visiting probable nest-site</li> <li>7. Agitated behaviour or anxiety calls from adults</li> <li>8. Brood-patch on adult examined in the hand</li> <li>9. Nest-building or excavating nest-hole</li> </ol>
Confirmed breeding	<ol style="list-style-type: none"> <li>10. Distraction-display or injury-feigning</li> <li>11. Used nest or eggshells found</li> <li>12. Recently fledged young (nidicolous species) or downy young (nidifugous species)</li> <li>13. Adults entering or leaving nest-site in circumstances indicating occupied nest (including high nests or nest-holes, the contents of which cannot be seen) or adult seen incubating</li> <li>14. Adult carrying faecal sac or food for young</li> <li>15. Nest containing eggs</li> <li>16. Nest with young seen or heard</li> <li>17. Dissection of female indicating that she was ready to lay an egg</li> </ol>

Lungtenphu along the Thim Chhu River. This was where we recorded the more systematic data on breeding biology of various species. Lungtenphu (2,300 m) is a small settlement in the Thimphu valley a few kilometres downstream from Thimphu. The valley is here c.1 km wide, with steep mountains rising to 4,000 m on both sides. The area is now urbanising, but it was a rice-growing area during our stay there. There are also apple and walnut orchards, while the mountain slopes are covered with blue pine *Pinus wallichiana*. The Thim Chhu River flows through a gorge on the northern part and widens out near Babesa, where sewerage ponds were created in 1996. These ponds attract many migrating ducks. Along the riverbank is a remnant of riverine shrubs and trees. Dominant species are mulberry *Morus australis* and *Ligustrum indicum*, with the climbing Himalayan musk rose *Rosa brunonii* covering large parts of the shrubs.

Besides the records around Lungtenphu, regular data were collected in other locations in the Thimphu Valley, including the Gidakom forests, the high altitudes around Phajoding, the forests north of Thimphu and the area around the Dochula ('la' = mountain pass). Other western birding areas visited with some regularity were the Chelaila between Ha and Paro, the Paro Valley, the Punakha-Wangdue Valley and Phobjika Valley. In addition, more than 50 trips of 1–2 weeks were made to the central, eastern and southern districts of Bhutan. Major locations visited are listed in Appendix 2. We also did some preliminary tape playbacks.

In addition to our own observations, we also compiled records from published literature and tour reports in recent years, leading to additions or status changes. Breeding status was accorded following the criteria and terminology of Hagemeyer and Blair (1997, cf. Spierenburg 2005). These criteria are described in Table 1. We added criterion 17 to allow for data obtained from dissected birds as recorded in older literature, like Ludlow and Kinnear (1937). Scientific names are presented only for species not listed in Appendix 1.

## RESULTS

During our stay in Bhutan, we collected data relevant to the breeding status of 64 species (see Breeding records, 1990–2000, below). Recent published and unpublished observations of others led to an additional 13 changes to the breeding list (see Further additions to the breeding list, below). We also found five previously overlooked confirmed breeding records from Ludlow and Kinnear (1937) and Ali *et al.* (1996). A complete list of birds breeding in Bhutan is presented in Appendix 1. This list describes the present status and status changes and also the criteria on which the assessments were based.

As compared with Spierenburg (2005), the following ten species were added to the list of confirmed breeding birds: Greater Coucal, Snow Pigeon, Plain-backed Thrush, Hodgson's Redstart, White-throated Redstart, White-bellied Redstart, Siberian Stonechat, Chestnut-tailed Starling, Wallcreeper and Grey-crested Tit. In the category probable breeders, ten species were added: Pale-headed Woodpecker, Savanna Nightjar, White-breasted Waterhen, Eurasian Blackbird, Sapphire Flycatcher, Blue-capped Redstart, Black-faced Laughingthrush, White-browed Scimitar Babbler, Great Parrotbill and Dark-breasted Rosefinch.

Thirty-one species were upgraded from probable breeding (Spierenburg 2005) to confirmed breeding: Hill Partridge, Blyth's Tragopan, Grey-capped Pygmy Woodpecker, Crested Kingfisher, Blue-bearded Bee-eater, Eurasian Cuckoo, Lesser Cuckoo, Plaintive Cuckoo, Mountain Scops Owl, Eurasian Sparrowhawk, Amur Falcon, Peregrine Falcon, Eurasian Jay, Lesser Racket-tailed Drongo, Gould's Shortwing, White-browed Shortwing, Rufous-gorgeted Flycatcher, Little Pied Flycatcher, Slaty-blue Flycatcher, Pale Blue Flycatcher, Oriental Magpie Robin, Blue-fronted Redstart, Little Forktail, Rusty-flanked Treecreeper, Rufous-fronted Tit, Common Tailorbird, Striated Laughingthrush, Rufous-vented Yuhina, Oriental Skylark, Yellow-breasted

**Table 2.** Summary of numbers of breeding birds in Bhutan in three categories, according to the strength of evidence for breeding.

	Breeding birds			Total
	Possible	Probable	Confirmed	
In Spierenburg (2005)	44	176	140	360
Added to	0	10	10	20
Upgraded to	- 4	- 30	34	0
New totals	40	156	184	380

Greenfinch and White-browed Rosefinch. Upgraded from possible breeding (Spierenburg, 2005) to confirmed breeding were the Tawny Fish Owl, White-browed Wagtail and Scaly-breasted Munia. Upgraded from possible breeding to probable breeding was the Yellow-bellied Warbler. The additions and status changes as compared with Spierenburg (2005) are summarised in Table 2.

## BREEDING RECORDS, 1990–2000

In this section, we present information on breeding of various species that we collected during 1990–2000. The 64 species listed include species found breeding in Bhutan for the first time, species for which the evidence points to an upgraded breeding status and species for which breeding has only occasionally been reported. For various common breeders, including Ibisbill, Oriental Turtle Dove, Black Bulbul, Eurasian Cuckoo and Brown Dipper new information is provided on breeding biology. Our observations are preceded by a summary of information on that species given by Spierenburg (2005; here referred to simply as ‘Spierenburg’) and other authors.

### HILL PARTRIDGE *Arborophila torqueola*

Abundant, but sight records are rare, and there are no confirmed breeding records (Spierenburg). We regularly heard it calling in western and central Bhutan in relatively wet hemlock *Tsuga dumosa* or fir *Abies densa* forests, on north-facing hills, between 2,800 and 3,400 m. A local hunter in Tongmijangsa (Trashi Yangtse) told us in 1996 that it is a common breeding gamebird. On 7 July 1996, we saw a group of at least 12, including half-grown juveniles, running for cover on the trail to Lungchuusi, Dochula, Thimphu (3,200 m) in mixed forest. This confirms breeding.

### DARJEELING WOODPECKER *Dendrocopos darjellensis*

Spierenburg describes it as a resident bird, with records of displaying birds in March and May, while a pair was seen excavating a nest hole on 28 April at 2,200 m. We have a record of a pair feeding vocal young birds in a nest hole, about 3 m high, on 4 June 1993, in mature Hemlock forest near Daji Dzong, Thimphu at 2,400 m. The breeding status is confirmed.

### PALE-HEADED WOODPECKER *Gecinulus grantia*

Baker (1927) states that this species is found in almost any kind of forest or jungle, but prefers mixed bamboo and scrub jungle, or the secondary growth found in abandoned rice fields. According to Ali (1977), it is resident, not uncommon, but local, up to 1,000 m in bamboo and mixed moist-deciduous secondary forest. However, Ali *et al.* (1996) give only one record for Batase,

Zhemgang, 1,375 m, on 6 March 1967. Spierenburg considers it an uncommon or rare resident between 600 and 1,400 m. He regards the link with bamboo pockets as essential.

On 4 June 1996, we saw a pair drumming and displaying in chir pine *Pinus roxburghii* forest above Lobeysa (Wangdue) at 1,300 m. This indicates probable breeding in the area. Although some bamboo occurs in the area, the pine forest habitat was rather different from the habitat described by earlier authors. In the same tree, we again saw a pair on 1 November 1996. These are unusual records; however, the birds were seen at close range and the characters (size, red-brown wings and upperparts, olive-green underparts, pale bill and reddish crown in male) exclude other possible species.

### CRESTED KINGFISHER *Megaceryle lugubris*

A common altitudinal migrant; no confirmed breeding records, but the widespread presence of pairs in March–April suggests that it is a regular breeder (Spierenburg). Woodall (2001) describes the nest site in Japan to be a tunnel of 2–3 m long, in a vertical bank at least 2 m high. In Lungtenphu, a pair was always present from 1990 to 2000, although most of our observations were of single birds. Most calling was heard in February. On 1 April 1997, a displaying pair was seen sitting on a stone in the river, with their tails cocked and crests erect. On 3 and 5 March 1998 a pair was seen repeatedly entering a crack in a vertical rock, c.3 m above the river. This rock was located at the foot of a steep, south-facing rock, with some high grass, low bushes and dispersed blue pine. On 25 March 1998, a single bird was seen entering the same crack, and remained inside. The nesting site could not be reached, but from the behaviour of the kingfishers it was clear that this was the nest site, which confirms breeding. We saw another displaying pair on 7 December 1997 along the Mo Chhu River at Punakha (1,400 m) calling and chasing each other. Although a striking bird, this kingfisher can be quite secretive and difficult to observe.

### BLUE-BEARDED BEE-EATER *Nyctyornis atheni*

An occasionally recorded resident, but no confirmed breeding so far. A displaying pair was seen on 3 April at 1,800 m (Spierenburg). On 16 September 1994, we found a nest hole in sandy soil, in a roadside hill 3 m above the road, at Trongsa Viewpoint (2,100 m), a place surrounded by shrub vegetation and agricultural land. Both adults were entering the hole several times with food, which confirmed breeding. One week later, the birds were still feeding their young in the nest hole. Holmes (1996) found Blue-bearded Bee-eaters feeding their young in a nest 40 km west of Mongar in May 1996. McFadden (2005) recorded on 5 April 2005 a pair of Blue-bearded Bee-eaters perched close to their nest hole in a sandy road embankment between Sengor and Yonkhola. According to Grimmett *et al.* (1998), these bee-eaters breed from February to August. Our (late) September record extends this breeding period.

### EURASIAN CUCKOO *Cuculus canorus*

This species is a common summer visitor, with birds maintaining territories in spring; no hosts are described from Bhutan (Spierenburg). On 3 June 2000, we saw a copulating pair of Eurasian Cuckoos at Lungtenphu. Juvenile cuckoos were seen on various occasions. From 18

to 25 June 1995, a cuckoo attended by Black Bulbuls was observed. On 14 June 1998, another young cuckoo, also brought up by Black Bulbuls, was seen. On 25 June 1996, a young cuckoo was found in the nest of a Grey-backed Shrike, which confirms the breeding status. Many fights between cuckoos and Black Bulbuls defending their nest were noted. Fights occurred over several days and the feathers of the female cuckoo suffered visibly. In Kanglung (2,000 m), we saw a Red-vented Bulbul chasing a cuckoo on 27 April 1994. On 9 June 2000, a cuckoo was chased out of the territory of a White-collared Blackbird at Lungtenphu.

Ali and Ripley (1987a) described the Brown Dipper as 'frequently' brood-parasitised by the Eurasian Cuckoo. Ali (1967) lists two cases of Brown Dippers parasitised by cuckoos (at least once Eurasian Cuckoo) in Kashmir. In Europe, the Eurasian Cuckoo very rarely selects a dipper as host (Tyler and Ormerod 1994). In Lungtenphu, we never noted interactions between the Brown Dipper and Eurasian Cuckoo. The Eurasian Cuckoo arrives in the Thimphu Valley in the second half of April, after the main breeding season of the Brown Dipper.

We heard the Eurasian Cuckoo calling in a variety of habitats, but mostly in areas with agricultural land and orchards. Several times a cuckoo was seen feeding on large caterpillars of the wild silk moth *Bombyx mandarina* in mulberry trees. Other birds were not seen feeding on these caterpillars. The Eurasian Cuckoo leaves Thimphu valley before the end of August. A late record was on 15 September 1999 in Jakar, Bumthang at 2,600 m.

#### PLAINTIVE CUCKOO *Cacomantis merulinus*

Uncommon, but quite widespread (Spierenburg). On 1–2 October 1991, we saw a recently fledged juvenile at Trashigang, in the garden of the Kelling Lodge (1,200 m), which confirmed breeding. It was sitting rather forlornly in the bushes and did not move around much during the two days that we saw it. This species is known as a parasite of the Common Tailorbird, which was breeding in the same locality. The lodge lies on a dry and sunny cliff with grass, shrubs, bamboo and ornamental trees. At the same location, an adult was seen on 18–19 May 1995. We saw another individual in the forest of Khangma on 17 April 1996.

#### DRONGO CUCKOO *Surniculus lugubris*

A common summer visitor, whose calls reach a peak from late April to mid-May (Spierenburg). We observed a mating pair early in the morning in the forest above Khangma (2,200 m) on 21 April 1996. This indicates probable breeding. The forest is in the upper region of the warm broadleaf forest and, although exploited for food and firewood, is still rich in birdlife.

#### GREATER COUCAL *Centropus sinensis*

Uncommon resident with a scattered distribution (Spierenburg). On 12 September 1990, we heard several individuals calling in a rice-growing area near Lodrai, Sarpang at 300 m. On 1 October 1991, a recently fledged juvenile Greater Coucal was seen in a mandarin orchard at Rongthung, Trashigang (2,000 m). It was perched in a tree and was observed for quite some time. It did not look ready yet to fly over any distance. This confirms breeding. Grimmett *et al.* (1998) state that the Greater Coucal can breed almost all year round. In the same

location, an adult was seen and heard calling on 1 November 1994. On 20 June 1993, an adult was seen at Lungtenphu and on 27 April 1994, another was seen in a forest (1,300 m) near Amshing, Samdrup Dzongkhar.

#### GREY NIGHTJAR *Caprimulgus indicus*

Frequent throughout the temperate zone, but no confirmed breeding records (Spierenburg). From early March to early July we heard this species calling at night at Lungtenphu. In March, the calling was most frequent and birds were heard calling almost all night long. This indicates probable breeding. Cleere (1999) says that breeding in the Himalaya occurs from March to June. Breeding most likely took place on the dry grassy slope above the apple orchard, but no nest could be found. Once, a Grey Nightjar was flushed during the daytime. At night, we saw the birds hunting over the river or following each other low over the road. There appeared to be several present at once, but it was hard to count actual numbers as they would fly up and down a track continuously. Other calling records were from Lobeysa, Jakar and Trashigang.

#### SAVANNA NIGHTJAR *Caprimulgus affinis*

Rare in Bhutan (Spierenburg). On 30 April 1996, and also on other occasions in April–May, this species was regularly heard calling at night in the forests of Pemagatshel District (1,200–1,600 m). This indicates probable breeding. The habitat consisted of forest and open woodland interspersed with arable land and orchards. Cleere (1999) says that breeding in the Himalayas occurs from April to August.

#### SNOW PIGEON *Columba leuconota*

A common altitudinal migrant, but no confirmed breeding records (Spierenburg). We found a nest above Dawakha, Paro, on a steep overhanging cliff, c.3 m above the road, on 30 April 2000, at 3,400 m in an area with open hemlock and rhododendron forest. The adult remained brooding on the nest, which was made of grass. Its breeding status is now confirmed.

#### ORIENTAL TURTLE DOVE *Streptopelia orientalis*

An abundant species, but only two breeding records (Spierenburg). We found many nests at Lungtenphu. The doves arrived in February (first date: 5 February), mostly alone, but sometimes in a group. Breeding started in March (first date: 7 March). The nests were constructed in blue pines or mulberry bushes, c.3 m above the ground, with the branches often overhanging the river. Nests consisted of a small number of twigs. The doves nested throughout the summer. The last record for a nest with eggs was on 18 September, when a nest with two eggs was found, two being the usual number of eggs. This breeding period considerably extends earlier reported periods, e.g. May to July in Grimmett *et al.* (1998). From the first week of November, the doves left. This corresponded to an increase in numbers in the Wangdue Valley, which lies 1,000 m lower.

#### WHITE-BREASTED WATERHEN *Amaurornis phoenicurus*

A rare resident (Spierenburg). On 27 April 1994 at Kanglung, we heard a White-breasted Waterhen calling. In the period 8–21 May 1995, a waterhen was heard calling in a marsh at Kanglung College, while another was heard calling in a village pond in Khangma (2,100 m). Calling

was loud and prolonged and heard on most days, indicating probable breeding. We have two records for this bird in Lungtenphu, one seen on 26 April 1997 and another on 1 June 1997 between the rocks along the Thim Chhu River.

**BLACK-TAILED CRAKE** *Porzana bicolor*

Uncommon resident; local residents have reported nests (Spierenburg). We found it common in the rice fields and little ponds around Lungtenphu and Semtokha. A clear indication of breeding at Lungtenphu was the regular calling at night in spring.

**RUDDY-BREASTED CRAKE** *Porzana fusca*

Rare resident, known from Thimphu, Paro and Lingmethang. Young were seen at Tashichho Dzong and a dead juvenile was found at Babesa (Spierenburg). On 20 August 1990, we saw a parent and two pulli (1–2 days old) at Semtokha. The species appeared to be not uncommon in this rice-growing area. In spring, we heard it calling in Lungtenphu, mostly at night. Towards the end of May, it was also heard calling during the day, in dense vegetation at the riverside. In October 1999, a young bird was regularly seen near the sewerage ponds at Babesa, where we also found a dead juvenile. In eastern Bhutan, we heard the species calling in Khangma (2,100 m) on 16 May 1996, also during the day. It was seen in Khangma on 18 April 1996. On 8 November 1996, we saw this crane in Kanglung in a marshy area.

**COMMON SANDPIPER** *Actitis hypoleucos*

Common winter visitor and migrant (Spierenburg). One breeding record in Bumdeling, where young were seen on 2 May 2000 (Sherub 2000). We found it breeding at Lungtenphu, where it was seen all year round, except for June and July when the river was in flood. On 20 April 1991 at Babesa, we searched in vain on gravel banks for the nests of two pairs giving a broken-wing display. This confirmed breeding for the area. At the time, the sewerage ponds at Babesa were not yet created, while the marshy areas and gravel banks were more extensive. On 8 May 1991, one individual was seen giving a broken-wing display in front of a cat at Lungtenphu. We thought the bird might be nesting in the bushes near the rocky riverbank, but could find no nest. On 4 May 1994, we again failed to find a likely nest in the same spot as in May 1991. Courtship display was seen at Babesa on 30 January and 19–20 February 2000.

**IBISBILL** *Ibidoryncha struthersii*

Knystautas (1996) gives an elevational breeding range of 500–4,400 m for this species, with wintering birds being found down to 100 m. For pair formation, March–April is given, after which breeding territories are formed. Knystautas states that egg-laying was observed from April to mid-May and hatching from mid-May to June, while birds stay on the breeding ground until October. However, Spierenburg (2005) named the Ibisbill as an early breeder, with chicks observed from late March to mid-May. We found that Ibisbills were present year-round, although numbers declined in the summer. In Babesa, numbers increased again from October; birds occurred in family groups until early December. During December and January, Ibisbills gathered in loose group of up to 20 individuals. Courtship display was seen from mid-January

to mid-February. At this time, individuals, rather quietly, showed off their colours, which are brightest from end-December until end-February. The Ibisbill is a rather silent bird, but calling was heard from December to July, especially from March to May. We also heard calling at night. Ibisbills are secretive during the breeding season, and easily overlooked. Some individuals did not flush until approached to 3 m. At Babesa, the first behaviour indicating breeding was noticed at the end of January. On 30 January 2000, three pairs tried to distract us. Distraction behaviour, including attacking, continued during February and March. Late dates on which distraction behaviour was noted were between 29 April and 17 May. On 28 March 2000, a pair with two almost fully grown chicks was seen at Babesa. This is clear proof that laying can already start in the second half of January and confirms Spierenburg's views. A juvenile, not yet fully fledged, was noted on 2 June 1995. Therefore, the breeding season of the Ibisbill at Babesa is prolonged and it is possible that an unsuccessful nesting attempt is followed by a second brood. On 20 April 1991, we saw a man collecting Ibisbill eggs near Babesa, while the adults followed him, displaying and calling. Most (but not all) Ibisbills leave their breeding grounds in June, returning in October. The species is sensitive to disturbance. During the construction of the sewerage system at Babesa, the Ibisbills moved away, but they returned towards the end of 1997.

**RED-WATTLED LAPWING** *Vanellus indicus*

Uncommon summer visitor, with a first record of a pair with chicks in August 2003 (Spierenburg). On 18 February 1999, we saw for the first time a Red-wattled Lapwing at Babesa sewerage ponds, chasing River Lapwings. On 7 March 1999, we saw six individuals, again chasing River Lapwings. Two pairs were territorial, but only one pair remained on the site. On 16 May 1999, we tried to find a nest or juveniles. The male and female called loudly and tried to lead us away. This was on the dry, northern bank, c.20 m above the river, in a rocky area with low bushes. The following year, one pair returned to the same place on 20 February, and on 28 March two pairs were present. It appears that this species is expanding its breeding range to the higher-altitude Thimphu Valley.

**EURASIAN SPARROWHAWK** *Accipiter nisus*

Common; displaying birds were seen in the central valley in April, giving it probable breeding status (Spierenburg). In Lingmethang, Mongar (600 m), we recorded one juvenile on 21 May 1995. On 7 October 1997, one adult with two begging juveniles was seen near the Motithang radio mast (2,800 m) in open blue pine forest. This confirms breeding. At Lungtenphu, this species was seen all year round, hunting birds and mice. Nesting likely occurred higher up on the mountain slope. On 1 May 1999, a Eurasian Sparrowhawk with a Hoopoe in its talons flew over the river towards a rocky area with sparse trees where we assumed its nest was. Grimmett *et al.* (1998) recorded breeding in the northern, mountainous regions of the subcontinent from April to June. Second broods have not been reported, but replacement broods are not uncommon (Glutz *et al.* 1971, Roberts 1991). Especially at higher altitudes breeding can be later in the season, as exemplified by a nest with eggs on 23 June in Gilgit (Roberts 1991), fresh eggs on 19 June and nestlings on 10 August (Glutz *et al.* 1971). Parents feed the young until

one month after they leave the nest. Our October record is very late but is consistent with previous records.

#### BLACK EAGLE *Ictinaetus malayensis*

One record of a Black Eagle carrying nest material in October and one eagle seen on a nest in April (Spierenburg). On 9 October 1993, we saw one juvenile at the Pelela, in Wangdue. On 6 July 1997, at Cheri, Thimphu (2,600 m), an adult was seen bringing prey to a nest on a high ridge above cool broadleaf forest. The eagle landed on a nest structure consisting of many branches, and partly hidden between rocks and trees. Breeding is now confirmed. In Lungtenphu, we regularly saw a Black Eagle hunting. This is likely to have been the same bird as the one breeding at Cheri because it had the same primaries missing on its wings. The distance between the two locations is c.15 km. On 7 November 1999, one adult and two juveniles were seen at Phajoding Gonpa, Thimphu (3,700 m) hunting above weeping blue juniper *Juniperus recurva* and *Rhododendron* forest. Thiollay (1994) says the clutch size is one, rarely two. Grimmett *et al.* (1998) give November to April as the breeding period. Roberts (1991) records a nest for 29 April.

#### AMUR FALCON *Falco amurensis*

Rare autumn passage migrant; one pair probably breeding at Drukyl Dzong in 2000–2001 (Spierenburg). On 18 August 1990, we found a nest with young birds in a tall weeping cypress (*Tsenden tree*) *Cupressus corneyana* at Drukyl Dzong (Paro, 2,400 m) and on 17 April 1994, a nest with young birds was seen again at the same location. On 26 April 1997, we heard young falcons at Drukyl Dzong. Breeding is now confirmed. We made additional confirmed records of male and female Amur Falcons in this location in 1993 (August), 1994 (September), 1995 (June), 1996 (October), 1999 (January) and 2000 (April). Isolated breeding records exist for north-eastern India (Grewal *et al.* 2002), but are disputed (Naoroji 2006). Thiollay (1994) gives May–June as the breeding period, so our records are both early and late. Naoroji (2006) gives late April for nests with eggs in north-eastern India.

#### PEREGRINE FALCON *Falco peregrinus*

Frequently recorded, one pair probably breeding near Zhemgang (Spierenburg). We found a nest on 1 November 1996, high up on the western side of the temple of the Natural Resources Training Institute, above Lobeyasa (1,300 m). The area is surrounded by chir pine forest and is close to the Sunkosh River. Breeding was confirmed as both parents were seen bringing food to their noisy young. Grimmett *et al.* (1998) give December–May as breeding period for the Indian subcontinent, so our observation of nestlings on 1 November constitutes a very early record. This might be linked to the fact that, in autumn, prey like doves and waterfowl are abundant in the area.

#### EURASIAN JAY *Garrulus glandarius*

Common altitudinal migrant, no confirmed breeding records (Spierenburg); juveniles collected on 1 July (Ludlow and Kinnear 1937). We noted three unaccompanied juveniles eating kitchen waste in Lungtenphu on 21 October 1994. On 21 February 1999, a group of 20 adults was seen at Luwari, Dochula, Thimphu, displaying noisily. On 18 May 2000 at Dochula

(3,000 m) and on 11 June 2000 at Gidakom (Thimphu, 2,800 m), family groups, including recently fledged juveniles were seen. In spring, we heard singing jays on several occasions in cool broadleaf forest as well as in Hemlock forests in West Bhutan. This species is now a confirmed breeder, as our observations of recently fledged juveniles in May and June (and even Ludlow's 1 July record) can only refer to local breeding. In addition, Farrow (2007) recorded a pair of the *interstinctus* subspecies collecting nest material at the roadside near Trongsa in April 2007.

#### WHITE-THROATED DIPPER *Cinclus cinclus*

Common altitudinal migrant; a juvenile observed on 1 June at Lhuntse (3,650 m) is the only evidence for breeding (Spierenburg). On 19 May 1996 in the Phobjika valley (2,800 m), we found a White-throated Dipper behaving as if it had a nest. The assumed nest site was along a small stream with overhanging banks almost 1 m high. The overhanging parts consisted of dense grassy vegetation; we failed to locate the nest between rocks just under this overhang. The stream was bordered by low but dense vegetation of *Rhododendron thomsonii* and dwarf bamboo *Arundinaria maling*, which covers large parts of the Phobjika valley. During the time that we were searching for the nest, the dipper kept circling around, returned several times and then disappeared again.

#### BROWN DIPPER *Cinclus pallasii*

Apparently double-brooded; six territorial pairs at Taba along 1.5 km river (Spierenburg). Most of the 20 nests we found from 1990 to 2000 at Lungtenphu and Babesa were inside retaining walls, in holes under the bridge or in cracks in rocks. Four nests were inside holes in sandbanks, but we did not see the birds digging these tunnels. In Lungtenphu, Brown Dippers used much deeper nest holes than recorded elsewhere or for other dipper species. As nesting material, dippers used green algae *Prasiola formosana*, grass and other leaves. Nest building took a few days. We saw dippers wetting the grass in the river, before bringing it to the nest. We noted this behaviour also with strips of a woven polypropylene cement bag. A bird was seen tearing it loose from the bag with some effort; then it went to the river and wetted it several times before taking it into the hole. Brown Dippers bred during late winter, when nest material is usually dry and not easy to bend. Wetting of nest material (moss) is also mentioned by Roberts (1992) for Brown Dippers in Pakistan and by Tyler and Ormerod (1994) for White-throated Dippers in Wales. Tyler states that in Europe the White-throated Dipper mainly uses moss and rarely bits of polythene and paper. Three of the four nests in sandbanks were found in Babesa, one in 1999 and two in 2000. The fourth one was found on 9 March 2000 in Lungtenphu. The latter nest was in a new tunnel, c.1 m above the river on a steep slope. The tunnel was 70 cm deep, with a slight bend upwards. At the end was a small chamber with three young dippers on a shelf with some grass. We visited the nest again on 19 March, noting that the young ones had grown considerably. The nest was different from the large, globular structure recorded for all five dipper species by Ormerod and Tyler (2005). Baker (1932) describes the nests of two subspecies of the Brown Dipper, *C. p. tenuirostris* and *C. p. marila*, as large structures like wren nests, placed in clefts of moss- and fern-covered rocks. The significance of the aberrant

nests around Lungtenphu (placed deep in retaining walls or sandy embankments with, in the latter case, no globular structure) is not clear. Our lowest record for a Brown Dipper nest was at the Baso Chhu, Wangdue at 1,100 m.

Earliest nest-building activities were recorded in mid-December. Most nest-building was done in January–February, and building was not seen after early March. First observations of feeding of young (in the nest) were in early February, while the last observations are from mid-April. Spierenburg (2005) describes one case of freshly fledged young on 16 February. Ormerod and Tyler (2005) state that Brown Dippers had one brood in Japan and were ‘not uncommonly double-brooded in other areas’. We found no evidence that the Brown Dipper was double-brooded along the Thim Chhu River. Food becomes scarce for this species when the river is in flood and this appears to be the main reason that they leave the area. Young dippers and their parents left the area within two days after leaving the nest. One male was found to have two females in nest holes less than half a metre away from each other, under the bridge at Lungtenphu. The male left the area with the female and young from the first nest, leaving the second female to take care of the second brood on her own. While the female of the first nest managed to rear five juveniles, the female of the second nest managed only one. Brown Dippers were feeding their young mostly with aquatic insects, pupae of the globeskimmer *Pantala flavescens*, stoneflies (Plecoptera) and caddisflies (Trichoptera). However, just before and after leaving the nest, green algae *Prasiola* are fed to the young. Other birds recorded feeding on these algae include Blue Whistling Thrush and White-capped Water Redstart. These freshwater algae are also eaten by the Bhutanese people.

#### PLAIN-BACKED THRUSH *Zoothera mollissima*

Resident; occasionally recorded (Spierenburg). On 21 March 1999, we saw five Plain-backed Thrushes in Hemlock-Rhododendron forest at the Dochula, not far below the pass on the Wangdue side. On 28 March 1999, we heard several individuals singing in the same area. On 11 June 2000, we found a nest on the ground with three eggs in the Gidakom forest (Thimphu) on a slope below some bushes. The incubating adult left the nest only when approached very closely. The eggs were exactly as Ali (1962) described them: white, covered with specks, spots and blotches of blood red and reddish brown. This find adds the Plain-backed Thrush to the list of confirmed breeders. The forest was of mixed mature Himalayan spruce *Picea spinulosa* and oak *Quercus semecarpifolia* at an altitude of 2,750 m.

#### WHITE-COLLARED BLACKBIRD *Turdus albocinctus*

Abundant resident in the temperate zone and in the high west. Particularly common in the Thimphu and Paro valleys, where it finds favoured habitat in abundance (Spierenburg). The distribution of this species appears to have changed over the years. Ludlow and Kinnear (1937) described it as common in summer between 9,000 and 12,000 feet (c.2,700–3,700 m). He found numerous nests in May and June. For 1990 and 1991, we had only six records, five at the higher (2,600–3,000 m) areas of the west and one at the Korila, Mongar. In May 1993, we saw our first male in Lungtenphu (2,300 m). After that, the species rapidly became more abundant in Thimphu valley.

In 1994, a pair probably bred at Lungtenphu. In March 1995, we noticed for the first time daily evening roost gatherings of small groups of White-collared Blackbirds in the blue pine forest at Lungtenphu. From 1995 to 2000, it was a common breeding bird in Thimphu valley in town gardens as well as in the blue pine forests surrounding the valley. No nest was found along the Thim Chhu River in Lungtenphu, as the nest site was in impenetrable mulberry and *Ligustrum indicum* bushes, overgrown with Himalayan musk rose. This species appears to be double brooded in Lungtenphu. Around 11 June 1998, we saw several recently fledged juveniles in our garden. On 15 June, the male started singing again and on 15 August again a recently fledged juvenile was seen in the same location. Grimmett *et al.* (1998) and Collar (2005) give the breeding period as March to July and do not mention second broods. Our observations extend the breeding period to August. We observed that this species mainly ate earthworms; other items in its diet included kitchen waste, fruits of *Cotoneaster* sp., *Elaeagnus parvifolia* and Siberian crabapple *Malus baccata*, old rosehips of Himalayan musk rose, insect larvae and nectar.

#### GREY-WINGED BLACKBIRD *Turdus boulboul*

Common resident; occupies lower altitudes than the White-collared Blackbird; two breeding records (Spierenburg). We found it to be more common towards the east with a clear preference for the more humid broadleaf forests. During the breeding season, we found it at altitudes as high as 2,800 m (Zelega, Wangdue), 3,400 m (Lawala, Phobjika, Wangdue) and 2,500 m (Gidakom, Thimphu). In Khangma (2,100 m), we found it in the same habitat as White-collared Blackbird, both species having territories near the guesthouse. In April–May 1995 and 1996, singing males and pairs were regularly seen in and around Khangma in mixed forest (2,100 m).

#### EURASIAN BLACKBIRD *Turdus merula*

Uncommon winter visitor (Spierenburg). Ali (1977) called it ‘resident, subject to vertical movements. Breeds between 3,600 and 4,500 m, descending to 2,000 m in winter’. On 17, 18 and 21 April 1996, we saw several blackbirds deep in the forest near Khangma (2,100 m). During prolonged observation of one pair, we found that the male was following the female closely, hopping through the rich undergrowth of the forest. This behaviour was similar to the customary behaviour of Eurasian Blackbird males in Europe, and suggests probable breeding at lower altitudes. Additional records of blackbirds in or close to the breeding season are for the Dochula (2,600–3,300 m, 2 in March, 2 in April, 1 in May), Jemina (2,500 m, 1 in May), Kabisa (2,600 m, 1 in May), Motithang (2,800 m, 1 in July), Kanglung (2,000 m, 1 in March) and Mongar-Korila (1,800–2,200 m, 1 each in March and April).

#### WHITE-BROWED SHORTWING *Brachypteryx montana*

Common altitudinal migrant; no definite breeding records for Bhutan, but Ludlow collected a juvenile in Trashigang on 3 September (Spierenburg). On 10 October 1999, we saw a family group above Phajoding, in *Rhododendron cinnabarinum* scrub on an alpine meadow at 3,700 m. Although the juveniles were not recently fledged, they were still fed and dependent on their parents. Spierenburg (2005) states that the breeding areas are more commonly above 3,000 m and occupied from mid-

April until mid-October. It is unlikely that this family group migrated into the area, so we consider breeding confirmed for the species.

**RUFIOUS-GORGETED FLYCATCHER** *Ficedula strophilata*  
Abundant altitudinal migrant; no confirmed breeding records; juveniles appear by mid August (Spierenburg). On 21 May 2000 at the Dochula (3,300 m), in hemlock-rhododendron forest, we heard singing males in two different spots. In a third spot, we saw an individual repeatedly flying with food in its bill towards a nest hidden at ground level in dense undergrowth. This latter observation confirmed breeding. On that day, the damp forest was full with large clouds of crane flies (Tipulidae), suggesting ample food supplies.

**LITTLE PIED FLYCATCHER** *Ficedula westermanni*  
Spierenburg recorded it as common near Zhemgang, with nest building in May. Grimmett *et al.* (1998) write that it breeds in broadleaf forests. We did not find it common in western Bhutan and, in summer, we only found it present in open Blue Pine forest on dry slopes. At Lungtenphu, a pair was present every year on the hill in Blue Pine forest near the water channel. On 29 August 1999, a parent with a recently fledged bird was seen at 2,350 m, which confirms breeding. Outside the breeding season, we found this species at lower elevations in broadleaf forests.

**SLATY-BLUE FLYCATCHER** *Ficedula tricolor*  
No confirmed breeding records, but Ludlow collected juveniles on 17 July (Spierenburg). Ludlow and Kinnear (1937) collected one juvenile on 17 July 1933 and one female and a juvenile on 26 August 1933, so these were collected well before autumn migration (for which we have 11 records in September–October). The juveniles collected by Ludlow provide evidence to confirm breeding. On 12 May 1997, we saw several flycatchers at the forest edge of the Phobjika Valley at 3,000 m; they showed no territorial behaviour and presumably were on their way to breeding areas higher up. On 13 May 1997 in the forest near the Lawala, Phobjika, 3,400 m, a singing and displaying male was observed. The singing was recorded and the male reacted strongly to tape playback. The forest on the Lawala is dark and wet with Himalayan birch *Betula utilis*, *Rhododendron barbatum*, *R. hodgsonii*, *R. keysii*, *R. camelliiflorum*, *Viburnum nervosum*, *Enkianthus deflexus* and clumps of bamboo, all much overgrown with mosses and lichens.

**SAPPHIRE FLYCATCHER** *Ficedula sapphira*  
Uncommon altitudinal migrant (Spierenburg). On 11 April 2000, we saw a female with nest material in a pear tree at Lungtenphu. She was sitting several metres away; we observed her well for ten minutes, while she hesitated to fly to her presumed nest in a large Chinese arbor-vitae *Thuja orientalis*. The size of the tree made it impossible to look for the nest. The location was in a mature garden, with densely planted old fruit trees and huge conifers like weeping cypress and many *Thuja*. Before this, we recorded only one bird at Cheri, Thimphu (2,600 m) in broadleaf forest on 15 September 1991. Farrow (2005) noted for the second half of April 2005 'At least three males were seen along the Lingmethang Road, all high in the tops of big trees, but calling continually.' The Sapphire Flycatcher should now be considered a probable breeder.

**PALE BLUE FLYCATCHER** *Cyornis unicolor*  
Common in Zhemgang, probably overlooked earlier to some degree. Spierenburg (2005) recorded one case of birds carrying nest material, at 600 m and considered the Dochula the western limit for this species. We found a pair (the male with food in his bill) with two recently fledged birds on 17 October 1999 in Rimchhu, Punakha (1,400 m) in warm broadleaf forest. This confirms breeding. This species also occurs at Ha, where we saw a female on 2 May 1999, at 2,600 m in cool broadleaf forest. A displaying pair was observed in the broadleaf forest near Khangma (2,200 m) on 21 April 1996.

**ORANGE-FLANKED BUSH ROBIN** *Tarsiger cyanurus*  
Common altitudinal migrant; a large influx sometimes occurs at lower elevations. No breeding records according to Spierenburg, although he mentions territorial males and one juvenile collected by Ludlow on 1 September (1933). Ludlow's record was from close to the border with Tibet (China). We recorded a female building a nest near the Chelaila (Paro), on 23 April 2000 at 3,800 m in *Rhododendron hodgsonii* and fir forest. The female was calling loudly while collecting nest material. She flew repeatedly with nest material to a spot on the ground hidden in vegetation. We retain breeding status as probable. This species was a regular winter visitor at Lungtenphu. On 30 March 1998, during heavy snowfall, several came down to Lungtenphu, together with other high mountain species. As soon as the weather improved, they departed. They were, no doubt, breeding higher up the mountain, which reaches 4,000 m in elevation.

**ORIENTAL MAGPIE ROBIN** *Copsychus saularis*  
Abundant, but absent from western valleys; Spierenburg states 'no confirmed breeding records', although Ludlow collected a juvenile on 23 June. We found the species to be common at 1,400 m and below, but in eastern Bhutan it was also found at higher elevations. We recorded it breeding in buildings in places like Wangdue (1,200 m), Punakha (1,300 m), Lobeysa (1,300 m), Mongar (1,800 m), Trashigang (1,200 m), Pemagatshel (1,800 m), Kanglung (2,000 m) and along the Kuri Chhu (600 m). It also occurs along the road down to Phuntsholing, but there are no records for Thimphu. We have one record of a nest-building pair on 18–20 May 1995 under the open roof of Kelling Lodge at Trashigang (1,200 m). The female was building with plant material and feathers, while the male was singing on the roof and was also seen chasing other males away. On May 20, when the nest looked quite finished, the male went to the nest and took out a large piece of maize leaf. This he took with him onto the roof, where he let it go. Then he started singing in a different spot on the roof. The female took the discarded piece of nest material and started building a new nest, with material from the first attempt, at the spot where the male was now singing. Local people knew the species as a regular breeder at Kelling Lodge, and we saw, at the same place, recently fledged juveniles on several occasions. We consider its breeding status to now be confirmed.

**BLUE-CAPPED REDSTART** *Phoenicurus coeruleocephalus*  
A rare visitor or resident (Spierenburg). On 12 May 1997, we found two males and one female in the Gogona valley at 3,200 m in mature upper montane forest with species



like hemlock, weeping blue juniper, Himalayan birch, fir, Sikkim larch *Larix griffithiana* and dense undergrowth of *Daphne*, *Viburnum* and *Rhododendron* spp. The males were fighting, while the female was sitting close by, which indicates probable breeding. According to distribution data in Grimmett *et al.* (1998), the present record considerably extends the breeding range eastwards, the normal breeding grounds in Nepal being, for instance, in the northwest. They give the breeding period as May to August. Spierenburg (2005) records three recent observations in Bhutan in the period late March to late April. We place this redstart among the probable breeders.

#### HODGSON'S REDSTART *Phoenicurus hodgsoni*

Abundant winter visitor (Spierenburg). It breeds from May to August in the mountains of eastern Tibet and Sichuan, between 2,900 and 4,200 m (Ali and Ripley 1987a). Our observations now show that there are cases of this species breeding in its winter range in Bhutan between February and April, before their return to summer breeding areas. In October, the Hodgson's Redstart returned to Lungtenphu. We observed territorial fighting from the end of October to February, mostly between males. For instance, on 13 January 2000 we noticed two males fighting for the possession of a newly dug flowerbed. This fighting continued daily up to 16 February, when we found one male dead with blood on bill and breast.

Courtship behaviour was seen from the end of December onwards. Males and females clapped their wings and held each other's beaks while making short upward fluttering flights. Singing and calling was heard during October and February. In March, few females were seen, but in April the females were again noted more frequently. We saw males and females carrying food in March and April. Our first records of a female with young are from 12 to 22 April 1995. From 30 March to 9 April 1996, we observed a male and a female bringing food to a nest hidden on a steep slope near our house. In 2000, a pair started building a nest in an outbuilding. They flew in through a gap under the door. However, the gardener, while repairing the door, disturbed this attempt. These are the first breeding records for the Indian subcontinent and Hodgson's Redstart is now a confirmed breeding bird for Bhutan. Given the lack of breeding records elsewhere south of the Himalayas, the cases presented here might be interpreted as rather exceptional extra-limital breeding.

From May to October, no Hodgson's Redstarts were observed in the Thimphu valley. In October and mid-March, we noted migration of this species along the Thim Chhu. Numbers of these redstarts would suddenly increase to 30 or 40 along 2 km of riverbank. These birds were not territorial, and would leave again after a few days. About 7–8 winter territories of male Hodgson's Redstart were counted along a 2 km stretch of river on rocky, grass-covered slopes, under mulberry and *Ligustrum indicum* bushes. Hodgson's Redstarts shared their winter territories with Plumbeous Water Redstart, but few agonistic interactions were observed. On the other hand, Hodgson's Redstart appears to not tolerate winter territories of Blue-fronted Redstart close to the river, and individuals of the latter species kept their distance.

Hodgson's Redstart catches mainly small insects, while hovering high above the river. It eats a wide range of insects, especially small Diptera, but also larger insects like stoneflies and mayflies. It is able to catch insects from

the surface of the river and searches on compost or firewood stacks for insects and spiders. Fruits of *Asparagus* sp., *Lonicera quinquelocularis*, Siberian crabapple, *Berberis* sp. and *Ligustrum indicum* are also eaten.

#### WHITE-THROATED REDSTART *Phoenicurus schisticeps*

Frequent winter visitor; a specimen taken on 1 September at 3,500 m and a pair seen around 20 October at 4,800 m perhaps were birds still in their summer range (Spierenburg). The 1 September 1933 record from Hamo Chhu Valley, Eastern Bhutan (Ludlow and Kinnear 1937) represented, in fact, a juvenile, for which Ludlow and Kinnear stated 'Although the bird we secured must have been bred in the locality whence it was obtained, it is certainly a rare bird in summer along the Himalayan range, and the large numbers of this beautiful Redstart which annually visit the southern slopes of the main range in winter must, I think, breed well to the north of the Himalayas.' On 11 November 1999, we saw a group of about 20 males, females and juveniles in the Gogona valley (3,200 m), in *Rhododendron cinnabarinum* shrubs in pastureland bordering rhododendron-fir forest. Based on Ludlow's record and observations, we classify White-throated Redstart as a confirmed breeder.

#### BLUE-FRONTED REDSTART *Phoenicurus frontalis*

Abundant altitudinal migrant; no confirmed breeding records. Ludlow collected juveniles in August (Spierenburg). In Lungtenphu, we observed that the species arrived in November and left in April. We mainly recorded males with territories some distance from the river. The breeding area was apparently higher up on the same mountain (4,000 m), because during bad weather in spring, several, including females, would come down to the Thim Chhu River. We found a nest with four eggs and a breeding male on 2 May 1999 at the Chelaila, (4,000 m) in an area with high rhododendron shrub with *Rhododendron cinnabarinum*, *R. hodgsonii*, *R. wallichii* and *R. wightii*. The nest was built of moss and the inside was lined with a thick layer of down feathers. The nest was on the ground at the foot of a rhododendron bush. The male only left the nest when almost stepped upon. At Phajoding (3,700 m) on 8 August 1999, on alpine meadow with clumps of *Berberis* bushes, we saw a male together with three juveniles, while on 10 October 1999 in the same area we saw a pair with two recently fledged young. In both cases, the parents were busy feeding the young. In Gogona Valley, Wangdue (3,200 m), many females with juveniles were seen on 11 November 1999. Ludlow and Kinnear (1937) collected juveniles on 2 and 22 August 1933, but he also recorded for 30 May 1933 (for Sharithang) 'a bird building its nest in a hole in a dead conifer 25 feet (c.7.5 m) from the ground—rather an unusual site for this Redstart.' The breeding status is now confirmed. Grimmett *et al.* (1998) gave as breeding period May to August. Ludlow's and our records indicate that the breeding season is prolonged and that this species could well be double-brooded.

#### WHITE-CAPPED WATER REDSTART

##### *Chaimarrornis leucocephalus*

Abundant; summer range from 1,800 to 3,600 m. One record of a bird carrying nest material at 3,500 m on 6 May (Spierenburg). We found indications that some individuals first breed at lower altitude before moving to

breeding areas at higher altitude. Tyler and Ormerod (1993) discuss the possibility of a similar strategy in the Plumbeous Water Redstart. At Lungtenphu, no nests were found, perhaps because they were well hidden, as also indicated by Roberts (1992). Territories were large, with only three in a stretch of c.2 km. We observed these birds eating insects, green algae, kitchen waste and berries of *Lonicera quinquelocularis*. At the Pelela, they were seen feeding on seeds of *Aconogonum* sp. White-capped Water Redstarts arrived in Lungtenphu in the last week of September. Singing, calling and fighting started in October and diminished in December. We saw displays from January to April. Singing resumed in January, and lasted until the end of March. On 23 January 2000, a pair was seen along the riverbank, apparently searching for nest sites. In January, territorial fighting was seen again, and this sometimes continued up to April. From March to May, a particular call was heard, which Roberts (1992) calls a contact call used between partners to keep in touch during the breeding season. Plumbeous Water Redstarts use a similar call, by which the male warns the breeding female of danger, and both male and female similarly warn their young in the nest. At the end of May, the last individuals left Lungtenphu. We saw no young birds, and have few records for this species during the summer at Lungtenphu. During summer, we saw the species regularly in the higher mountains near small streams, where it probably breeds from May to August. Roberts (1992) records it as double-brooded in Pakistan.

#### LITTLE FORKTAIL *Enicurus scouleri*

No confirmed breeding records; the potential breeding season is unclear; pairs seen in April (Spierenburg). On 13 April 1996, close to the waterfall near Thinleygang (1,500 m), in warm, broadleaf forest, we observed a displaying and copulating pair. Webster and Rowlett (2004) found a pair with a nest beside a waterfall above the Mo Chhu in April 2004 and saw the adults bring food to the nest, although they could not see the young. Webster (2007) described an encounter with a male and female, both working on a nest under a bank above Namling on 16 April 2007. The pair was seen carrying moss to the stream, wetting it, and then carrying the soggy material to the nest. We now upgrade the breeding status from probable to confirmed.

#### SIBERIAN STONECHAT *Saxicola maura*

Common winter visitor (Spierenburg). We regularly saw the subspecies *S. m. indica* in Lungtenphu. An individual male was often seen in the same location for weeks, sitting on a bush on the banks of the Thim Chhu River. Most were seen in March and April, indicating possible breeding. On 5 May 2000, we saw a juvenile at Lungtenphu in the bushes along the river. It was barely able to fly and had clearly just left its nest. This confirms breeding. Other subspecies recorded in Lungtenphu, sitting in bushes along the riverbanks, were *S. m. maura* and *S. m. przewalskii*, but those were passage migrants, staying only a day or two in the area. *S. m. maura* was observed on passage from December to February, while *S. m. przewalskii* was observed on passage from March to April and again from September to November. For the English name Siberian Stonechat and the treatment of the Common Stonechat complex, we follow Urquhart (2002), who gives the breeding range for *S. m. indica* as northern

Baluchistan and North-West Frontier Province in Pakistan and through the Himalayas from eastern Kashmir to Nepal, then through Sikkim, Bhutan, Arunachal Pradesh and Western Assam.

#### CHESTNUT-TAILED STARLING *Sturnus malabaricus*

A frequently recorded altitudinal migrant, but it is unclear whether it breeds in Bhutan (Spierenburg). On 27 May 1990, we found a nest with three eggs and a breeding male in Sarpang, inside a house (320 m). The nest was located on a ridge and some electricity wires 2.5 m above the ground. The male was very noisy when disturbed. Breeding is now confirmed. In India, breeding inside houses (especially ventilation holes) seems to be common (e.g. Ali and Ripley 1987b, Jaman and Sahreen 2004).

#### WALLCREEPER *Tichodroma muraria*

Breeds in the Himalayas mostly above 3,300 m, possibly down to 2,700 m (Ali and Ripley 1987a). Frequently recorded winter visitor to Bhutan; no indication of summer presence (Spierenburg). On 5 May 1995, we noted a Wallcreeper regularly flying in and out of a hole in the retaining wall of the old bridge over the Sunkosh River, at Wangdue Phodrang (1,220 m), taking food inside. This is the first confirmed case of breeding for Bhutan. In Lungtenphu, it was a common winter visitor. On 10 March 1998, we saw a displaying pair; one bird was singing and fluttering, while the other was skipping around on a rock, both showing off their red wing spots. On 20 February 2000, we again saw display at Babesa. Both birds perched on a sandy wall with their wings showing the red spots. However, after March we have no more records for this area. A late spring record was for Trashigang where we saw several Wallcreepers at the roadside, along the Drangme Chhu (700 m) on 29 April 1996.

#### RUSTY-FLANKED TREECREEPER *Certhia nipalensis*

Frequently recorded altitudinal migrant; a juvenile was collected at 3,000 m on 8 July by Ludlow (Spierenburg). On 21 May 2000, we saw a bird alarm-calling with food in its bill, in hemlock-rhododendron forest on the Dochula (3,000 m). This observation upgrades the breeding status to confirmed. Grimmett *et al.* (1998) give May–June as the breeding period.

#### RUFOUS-VENTED TIT *Parus rubidiventris*

Common altitudinal migrant; one nest was found with young on 1 June at 3,650 m and a juvenile was collected on 19 July at 3,200 m by Ludlow (Spierenburg). On 30 May 2000, we found a nest at the Pelela (3,000 m) in a hole in a fallen tree in *Rhododendron kesangiae* and fir forest. The parents were flying in and out of the nest hole, bringing food to young birds.

#### GREY-CRESTED TIT *Parus dichrous*

Abundant altitudinal migrant; no confirmed breeding records (Spierenburg). On 21 June 1998 and 18 May 2000 on the Dochula (at 3,000 m and 3,300 m respectively) in *Tsuga*, *Rhododendron arboreum* and *R. triflorum* forest, we observed a family with several recently fledged young. This confirms breeding. On 11 April 1999 at Motithang (2,500 m) in *Pinus wallichiana* and *Rhododendron arboreum* forest, we observed a male feeding a begging female. The breeding period is April to June (Grimmett *et al.* 1998).

**RUFIOUS-FRONTED TIT** *Aegithalos iouschistos*

Common altitudinal migrant; two records of nest building in April and May (Spierenburg). Ludlow and Kinnear (1937) extracted an egg from the oviduct of a female collected on 24 May 1933 in Sharithang, Ha (3,350 m). On 14 May 1997, at Phobjika (3,400 m) in Hemlock forest with *Rhododendron triflorum* and *R. arboreum* undergrowth, we saw one Rufous-fronted Tit feeding several young birds. On 9 April 2000, in Hemlock forest above the Dochula (3,400 m), on the trail to the Lungchuusi monastery, we saw several individuals flying around with nest material. Breeding is now confirmed. In fact, Ludlow's record already confirmed breeding. The breeding period is April to July (Grimmett *et al.* 1998).

**BLACK BULBUL** *Hypsipetes leucocephalus*

Abundant altitudinal migrant. Birds building a nest and carrying food have been observed (Spierenburg). No information is available on incubation and nesting periods (Fishpool and Tobias 2005). The Black Bulbul was a common breeding bird at Lungtenphu. The first individuals would arrive single or in a group of up to 20 birds in mid-March. In Lungtenphu, the birds would initially group together, singing and calling. At night, they moved to a communal roost in the forest. In the second half of April, territorial fights took place and the bulbuls would disperse. Nest building and breeding started at the end of April. We saw young birds from May to August. When we could ascertain the number of young ones in family groups, we counted a single juvenile (once), two juveniles (on four occasions) and three juveniles (once). In the lower valleys, we noted young birds as early as April (e.g. Lobeyisa, 1,300 m, 22 April 1991). In the higher ranges, parents feeding young birds were seen until quite late (Drukyl Dzong, 2,600 m, on 11 September 1994 and Bumthang, 2,600 m, on 12 September 1999). At Lungtenphu, the Eurasian Cuckoo regularly targeted nests of this species.

Black Bulbul was double brooded at Lungtenphu. Shortly after the first brood had left the nest, the parents started on a second brood. The first brood remained in the territory while the second brood was being raised, but we did not observe them helping to raise their siblings; instead, they would join their younger siblings in begging. Nests were mostly well hidden in *Ligustrum indicum* and mulberry bushes overgrown with Himalayan musk rose. However, we found one nest 3 m high in a Siberian crabapple, and were able to observe this nest from above. Nest building was completed within two days. The nest was a small, neat bowl, surprisingly small for the size of the bird. In the morning of 24 June 1995, the female laid an egg. The egg was brown with spots. On 26 June, a second egg was laid and incubation started. Only the female incubated. On 3 July, a Grey Bushchat landed on the rim of the nest while it was temporarily unoccupied, but the returning parent chased it away almost immediately. The first egg hatched on 7 July and the second the next day. On 8 July, the female still brooded the young birds, while the male brought small worms and larvae. From 9 July onward, both parents were observed bringing food. Food of the Black Bulbul consisted of berries of *Elaeagnus parvifolia*, *Prinsepia utilis*, *Ligustrum indicum* and mulberry. Insects were caught on flowering trees. Nestlings were fed with small insects, while later on big caterpillars were given. In Bumthang (2,600 m), we saw a pair feeding their young

with honeybees, which were caught with great ease. The last Bulbuls left Lungtenphu by early October. In Wangdue, feeding on nectar from *Acrocarpus fraxinifolius* was observed in winter.

**ORIENTAL WHITE-EYE** *Zosterops palpebrosus*

Abundant resident; only one nest with young was found, on 19 July at 1,900 m (Spierenburg). We found a pair feeding recently fledged birds on 9 August 1998 at the Dochula (3,000 m), in the garden of the teahouse, close to cool broadleaf forest mixed with Hemlock. Grimmett *et al.* (1998) give the breeding period to be February–September and say that 2,400–2,700 m is the upper altitude in the breeding season.

**COMMON TAILORBIRD** *Orthotomus sutorius*

Common resident; no indication of breeding (Spierenburg). According to Grimmett *et al.* (1998), the Common Tailorbird breeds throughout the year (mainly in the monsoon), while Ali and Ripley (1987a) say that the breeding season is March–December. On 3–4 November 1994, we saw a group with juveniles in Trashigang, in the garden of Kelling lodge (1,200 m). The birds were confiding (which is common for this species) and could be observed for long periods. The juveniles had recently fledged and had very short tails. This observation confirms the breeding status. Although this species typically occurs in pairs, we more often saw small groups of Common Tailorbirds in Trashigang and in Mongar (1,400 m) in other months. Webster and Rowlett (2004) saw a pair displaying near Tingtibi (Zhemgang) in April 2004.

**STRIATED LAUGHINGTHRUSH** *Garrulax striatus*

Abundant and widespread; no breeding records (Spierenburg). On 19 September 1994, we observed from close by a pair with three recently fledged juveniles at Khaling, Trashigang (2,300 m), in shrub vegetation on marshy, natural pastureland, surrounded with broadleaf forests. The juveniles were begging while following their parents. This confirms breeding in Bhutan. Collar and Robson (2007) give as breeding period April to August and the clutch size as 2–3 eggs.

**RUFIOUS-VENTED YUHINA** *Yuhina occipitalis*

Found in pairs in the breeding areas; family groups aggregate in December in larger flocks; no confirmed breeding records (Spierenburg). Grimmett *et al.* (1998) give April–June as the breeding period. On 21 June 1998, we saw several families with parents feeding recently fledged juveniles near the Dochula (3,100 m) along a forest trail to Lungchuusi in mixed conifer and rhododendron forest. This observation upgrades the status of this species from probable to confirmed breeder.

**ORIENTAL SKYLARK** *Alauda gulgula*

Common both as breeder and winter visitor; presence of singing birds establishes it as a probable breeder in Bhutan (Spierenburg). On 15 May 1995, at the abandoned Yongphula airstrip (Trashigang 2,700 m), we found a nest on grassland with rocks and some *Rhododendron maddenii* bushes. The parent stayed on the three dark-brown and spotted eggs until we were very close. The nest was made of grass, partially covered with a neat roof of woven grass and protected by an overhanging rock.

This species was very common on the grassland surrounding the airstrip. On 18 May 1996 in Phobjika (2,800 m) we noticed many breeding individuals in the valley. We failed to find a nest, but saw parents collecting insect larvae for their young. One lark that we observed was able to find numerous larvae within five minutes. The species preferred the low-cropped pastureland in the lower part of the valley. Spierenburg (2005) says that the open Phobjika and Bumthang valleys are well-known sites for singing birds in spring and summer. Breeding is now confirmed for Bhutan.

**WHITE-BROWED WAGTAIL** *Motacilla maderaspatensis*  
Uncommon resident; a singing bird at Phuntsholing is the only evidence of breeding in Bhutan (Spierenburg). Grimmett *et al.* (1998) give as breeding period March to October. At Babesa, we saw several juvenile birds on 1 August 1996. On 31 May 1997, on the stony bank of the Thim Chhu River at Babesa, we observed a pair behaving as if they had a nest. They tried to distract us while we carried out a fruitless search for the nest. At some distance, a pair of White Wagtails was simultaneously feeding their fully grown young. On 13 April 2000, at the rocky banks of the Torsa River near Phuntsholing (300 m), a pair of White-browed Wagtails and three juveniles were seen, well on the Bhutanese side of this broad river. Farrow (2005) observed a female feeding two fully grown juveniles on the riverbank at Punakha in the second week of April 2005. White-browed Wagtail is now categorised as a confirmed breeder.

**OLIVE-BACKED PIPIT** *Anthus hodgsoni*  
Ludlow reported numerous nests at 2,400–3,600 m. Singing birds have been noted at 2,000–4,100 m (Spierenburg). On 19 May 1996, we found it to be a common breeding bird in Phobjika valley (2,800 m). We easily found one nest in natural grassland, a bit sheltered between rocks. It contained two young birds of about ten days old. A parent brought insects and spiders to feed the young. A dead nestling lay outside the nest.

**SCALY-BREASTED MUNIA** *Lonchura punctulata*  
Occasionally reported; no confirmed breeding records (Spierenburg). We found it common in Kanglung (2,000 m), with nests in creepers on the veranda of a bungalow on 10 October 1993. Nests were large structures of joined old and new nests; around ten nests were occupied. It was also common in Trashigang, breeding in trees and creepers in the Dzong grounds on 18 September 1994. Grimmett *et al.* (1998) say that it breeds throughout the year, mainly May–September. Breeding is now confirmed for Bhutan.

**YELLOW-BREASTED GREENFINCH** *Carduelis spinoides*  
Common, but no breeding records (Spierenburg). In Lungtenphu, we saw a pair with three juveniles on 5 September 1991, while on 2 July 1993, a nest with a breeding parent was found in a Chinese arbor-vitae in a garden. At the end of summer, small groups including juveniles were regularly seen collecting seeds from sunflowers and other plants. Breeding is now confirmed. Grimmett *et al.* (1998) give June–October as the breeding period.

**DARK-BREASTED ROSEFINCH** *Carpodacus nipalensis*  
Frequently recorded altitudinal migrant (Spierenburg).

We recorded a pair behaving as if they had a nest with young or fledglings at an alpine meadow above Phajoding (3,800 m) in *Rhododendron cinnabarinum* bushes on 8 August 1999. The parents were nervously flying around and had food in their beaks. This indicates probable breeding. Grimmett *et al.* (1998) do not give a breeding period but birds in breeding condition were collected in June–July. Ali and Ripley (1987a) say that the breeding period is ‘apparently July–August.’

**WHITE-BROWED ROSEFINCH** *Carpodacus thura*  
Common altitudinal migrant; in April–September it occurs in its breeding quarters at 3,000–4,200 m (Spierenburg). Grimmett *et al.* (1998) say that the breeding period is July–August. We found the species common from May to October on the alpine meadows near the Chelaila (4,000 m) and above Phajoding (3,800 m). From our observation of the behaviour of these birds, it was clear that groups in August included juveniles. Juveniles are difficult to distinguish from females or even males. Ludlow and Kinnear (1937) comment that ‘males are constantly found in female plumage.’ We therefore studied the groups more closely and found that on 8 August 1999, in a group of 20 individuals on an alpine meadow above Phajoding, parents were constantly feeding their young. This food included seeds of species of Compositae. We now upgrade the breeding status from probable to confirmed.

**COLLARED GROSBEAK** *Mycerobas affinis*  
Records are few; breeding evidence is lacking (Spierenburg). Nest and eggs are unknown (Ali and Ripley 1987a). We only have 11 records, agreeing well with the data on distribution given by Ali and Ripley (1987a). Our highest record was for three birds seen on 7 November 1999 above Phajoding, along the trail to Pomela at 3,700 m, in juniper bushes. The lowest was at Trongsa, on 19 September 1999 at 1,800 m in broadleaf forest. A female observed in bushes along the river at Lungtenphu on 3 March 2000 might have been a passage migrant. We saw our first indication of breeding behaviour on 21 March 1999 in the Dochula area, at 2,800 m in rhododendron forest (*R. keysii*, *R. arboreum*, *R. barbatum*) with *Pieris formosa*, *Daphne bholua*, *Viburnum grandiflorum* and *Dodecadenia grandiflora*. A displaying pair was observed, following each other through the undergrowth of the forest, apparently unconcerned or unaware of our presence. On 23 April 2000 at the Chelaila, in fir and *Rhododendron hodgsonii* forest at 3,900 m, several Collared Grosbeaks were seen displaying in the trees, while also calling loudly. These observations provide strong evidence for this species being a probable breeder in Bhutan.

A general observation concerns single-species parties occurring in spring before breeding starts. For Brown Dipper, such groups could number up to 17 birds during December–January. At these gatherings, they were singing and displaying. Later the dippers dispersed and started breeding. Black Bulbuls would arrive in Lungtenphu in a group of up to 20 birds in mid March. In Lungtenphu, the bulbuls would initially act together as a group, often singing loudly. At the end of March, territorial fights started and the breeding season would begin. The Eurasian Jay also formed single species parties before starting to breed. Grey-crested Tit was seen forming mixed bird

parties at other times of the year, but on 5 March 2000, two single species parties of 20 and 50 birds were seen at the Dochula. The tits were noisily displaying. Single species parties were also discussed by Inskipp and Inskipp (2000) and Spierenburg (2005).

### FURTHER ADDITIONS TO THE BREEDING LIST

In recent years, a number of additions or status changes have been recorded in the published literature or in tour reports. Also four previously overlooked records from Ludlow and Kinnear (1937) that confirm breeding are presented, as is another record from Ali *et al.* (1996). Based on these records, the following additions and status upgrades can be made.

#### BLYTH'S TRAGOPAN *Tragopan blythii*

Rare resident (Spierenburg). Ali *et al.* (1996) note a female collected on 30 March 1966 on the Yonpu La (2,621 m). Biswas (1968) described the collecting place as above the Bulfai Pass (elevation c. 2,621 m, c.77°14'N 91°31'E, Manas Valley, eastern Bhutan). Ali *et al.* noted that 'the bird was about to lay. Its ovary was well developed, and it had incubation patches.' From a somewhat ill-defined status as probable breeder, this rare tragopan should now be regarded as a confirmed breeder.

#### SPECKLED PICULET *Picumnus innominatus*

Pairs are found from late March to June and breeding territories have been observed. Copulation has been observed in late March and early April but there is no further evidence of breeding (Spierenburg). Webster and Rowlett (2005) state 'we found one, which we watched go to its nest hole near Zhemgang' in April 2005. The breeding status remains at probable.

#### GREY-CAPPED PYGMY WOODPECKER

##### *Dendrocopos canicapillus*

Common resident at 200–1,200 m; no indications of breeding other than observations of pairs in the breeding season (Spierenburg). Farrow (2006, 2007) recorded a pair that had a nest hole in Tingtibi in April 2006, while on 28 April 2007 in Samdrup Dzongkhar, a pair was observed feeding a young one. Grimmett *et al.* (1998) give the breeding period to be April–July, so the Bhutan records are somewhat early. The status is now upgraded from probable to confirmed breeding.

#### LESSER CUCKOO *Cuculus poliocephalus*

Occasional summer visitor, calling May to late July (Spierenburg). Ludlow and Kinnear (1937) collected a juvenile on 15 August 1933 in Sawang, Lhuntse (2,130 m). He stated 'This single specimen, just out of the nest, is in the dark phase' and so the Lesser Cuckoo qualifies as a confirmed breeder.

#### MOUNTAIN SCOPS OWL *Otus spilocephalus*

Common, calling from February until September (Spierenburg), with breeding period March–June (Grimmett *et al.* 1998). Ludlow and Kinnear (1937) collected one female and two juveniles on 1 August 1933 in Trashi Yangtse (2,300 m) in thick deciduous forest. The juvenile records confirm breeding for this species in Bhutan.

#### TAWNY FISH OWL *Ketupa flavipes*

Uncommon resident; pairs noted in April–May (Spierenburg). Grimmett *et al.* (1998) give a breeding period of December–February in Assam. Holt *et al.* (1999) give November–February as the egg-laying period. Farrow (2006, 2007) recorded one adult with two juveniles on 7 April 2006 in forest along the Mo Chhu in Punakha at a roost high up a slope, and also saw a pair with one juvenile around 13 April 2007 in the same area. The status is hence upgraded from possible to confirmed breeder.

#### LESSER RACKET-TAILED DRONGO *Dicrurus remifer*

Common resident; singing birds noted from March to early June; breeding pairs noted but no confirmed breeding records (Spierenburg). Webster (2006) confirmed breeding for the country by spotting a bird on a nest below Yongkhola on 18 April 2006.

#### GOULD'S SHORTWING *Brachypteryx stellata*

Uncommon altitudinal migrant, mainly known from specimens collected by Ludlow. Those collected in September were probably still on the breeding grounds as suggested by the presence of juveniles (Spierenburg). In fact, Ludlow and Kinnear (1937) collected one juvenile on 14 August 1933 (Pang La, 4,250 m) and another at Shingbe (3,900 m) on 25 August 1933. He described the latter specimen as 'a juvenile which had just left the nest.' The breeding period is reported to be end-May to July by Grimmett *et al.* (1998). Ludlow and Kinnear said that eggs are probably laid in June–July. This bird is now categorised as a confirmed breeder.

#### WHITE-BELLIED REDSTART *Hodgsonius phaenicuroides*

Uncommon altitudinal migrant. In May–June it has been noted at 3,200–4,200 m (Spierenburg). Grimmett *et al.* (1998) give May–August as the breeding period. In Ha (3,350 m), on 13 June 1933, Ludlow and Kinnear (1937) recorded a female 'shot off a nest containing three eggs which was placed near the ground amidst long grass at the base of a small tree.' A male was shot four days later. The breeding status should now be considered as confirmed.

#### YELLOW-BELLIED WARBLER *Abroscopeus supercilialis*

Altitudinal migrant; singing birds occupying territories from April–August form the only indication of breeding (Spierenburg). Grimmett *et al.* (1998) say that the breeding period is April–June and indicate that nests are placed in a hollow in a bamboo stem. Webster and Rowlett (2005) recorded 'Good views of a pair, one of which was working, piculet-like, on an apparent nest hole in a bamboo stalk above Tingtibi' in April 2005. The breeding status is now upgraded from possible to probable.

#### BLACK-FACED LAUGHINGTHRUSH *Garrulax affinis*

Abundant; in summer it occurs at 2,200–4,200 m (Spierenburg). Grimmett *et al.* (1998) say that breeding occurs in April–June. Prett and McManiman (2005) saw a pair collecting nest material on the Yotongla (3,275 m) on 17 April 2005. This species has now been added as a probable breeder.

#### WHITE-BROWED SCIMITAR BABBLER

##### *Pomatorhinus schisticeps*

Local, but frequently recorded (Spierenburg). Breeding March–August (Grimmett *et al.* 1998). While going north

along the Zhemgang road (1,650 m) in April 2005, Farrow (2005) saw a White-browed Scimitar Babbler carrying nest material. This species is added to the list as a probable breeder.

#### GREAT PARROTBILL *Conostoma oemodium*

Uncommon resident (Spierenburg), breeding from May to July (Grimmett *et al.* 1998). Farrow (2006) recorded four birds on the Yotongla in April 2006, including a bird carrying nest material to a dense patch of bamboo. The Great Parrotbill is added as a probable breeder.

## DISCUSSION

Spierenburg's (2005) book is an invaluable contribution to the checklist of Bhutan birds; apart from adding our own field observations, we have only considered it necessary to reassess records by Ludlow and Kinnear (1937), as some of Ludlow's observations had been overlooked or had not led to the correct breeding classification. On their own, Ludlow's records confirmed breeding for four additional species: Lesser Cuckoo (juvenile just out of the nest), Mountain Scops Owl (female and 2 juveniles collected on 1 August), Gould's Shortwing (juvenile which had just left the nest) and White-bellied Redstart (female shot off a nest containing three eggs). For another seven species, Ludlow's records provide additional or primary evidence for status as confirmed breeder: Eurasian Jay (juvenile on 1 July), White-browed Shortwing (juvenile on 3 September, where previous migration can be excluded), Slaty-blue Flycatcher (juveniles collected well before the autumn migration), White-throated Redstart ('must have been bred in the locality whence it was obtained'), Blue-fronted Redstart (records of juveniles and of 'a bird building its nest in a hole'), Rusty-flanked Tree-creeper (juvenile collected on 8 July) and Rufous-fronted Tit (egg extracted from the oviduct of a female collected on 24 May). One more addition to the list of confirmed breeders that comes from the older literature is that of Blyth's Tragopan by Ali *et al.* (1996) who collected a female and noted 'the bird was about to lay. Its ovary was well developed, and it had incubation patches.'

Taken together, the data presented here lead to an increase in the total number of breeding birds of Bhutan from 360 (Spierenburg 2005) to 380 for the three categories distinguished (possible, probable and confirmed breeders). The number of confirmed breeders increased from 140 to 184, while those for possible and probable breeders now stand at 40 and 156, respectively. Just over half of the 380 breeding birds remain to be confirmed. In addition, there is a large group of potentially breeding birds known to occur in the 'breeding season' in Bhutan (see Spierenburg 2005). However, because no information is available on whether these species occur in 'possible nesting habitat' and no singing or calling has been recorded, they do not yet qualify to be classified as possible breeders. Clearly, the number of breeding species in Bhutan is likely to be substantially higher than 380. Equally clearly, there are still considerable gaps in our knowledge of breeding birds in Bhutan. This is partly explained by the relatively low number of professional and amateur birdwatchers involved in data collecting. The reliance on information by non-resident birdwatchers

is likely to have led to biases in time and space as suggested by Spierenburg (2005). An increase in observations during the monsoon period, in the high altitude areas and in districts like Samtse, Sarpang, Pemagatshel and Samdrup Dzongkhar will, no doubt, lead to considerable further increases in the checklist of breeding birds. We hope that Bhutanese birdwatchers will take the lead in this.

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## REFERENCES

- Ali, R. (1967) The Brown Dipper (*Cinclus pallasii*) as a host of a Cuckoo (*Cuculus* sp.). *J. Bombay Nat. Hist. Soc.* 64: 561.
- Ali, S. (1962) *The birds of Sikkim*. New Delhi: Oxford University Press.
- Ali, S. (1977) *Field guide to the birds of the Eastern Himalayas*. New Delhi: Oxford University Press.
- Ali, S. and Ripley, S. D. (1987a) *Compact handbook of the birds of India and Pakistan*. 2nd edn. New Delhi: Oxford University Press.
- Ali, S. and Ripley, S. D. (1987b) *Handbook of the birds of India and Pakistan, together with those of Bangladesh, Nepal, Bhutan, and Sri Lanka. Volume 5. Larks to the Grey Hypocolius*. 2nd edn. New Delhi: Oxford University Press.
- Ali, S., Biswas, B. and Ripley, S. D. (1996) *The birds of Bhutan*. Rec. Zool. Survey India, Occ. Pap. 136.
- Baker, E. C. S. (1927) *The fauna of British India including Ceylon and Burma*. Vol 4, 2nd edn. London: Taylor & Francis.
- Baker, E. C. S. (1932) *The nidification of the birds of the Indian Empire*. Vol. 1. London: Taylor & Francis.
- Biswas, B. (1968) The female of Molesworth's tragopan, *Tragopan blythi molesworthi* Baker. *J. Bombay Nat. Hist. Soc.* 65: 216–217.
- Cleere, N. (1999) Family Caprimulgidae. Pp. 302–387 in J. del Hoyo, A. Elliott and J. Sargatal, eds. *Handbook of the birds of the world*. Vol. 5. Barn-owls to Hummingbirds. Barcelona: Lynx Edicions.
- Collar, N. J. (2005) Family Turdidae (Thrushes). Pp. 514–811 in J. del Hoyo, A. Elliott and J. Sargatal, eds. *Handbook of the birds of the world*, Vol. 10. Cuckoo-shrikes to Thrushes. Barcelona: Lynx Edicions.
- Collar, N. J. and Robson, C. (2007) Family Timaliidae (Babblers). Pp. 70–291 in J. del Hoyo, A. Elliott and D. A. Christie, eds. *Handbook of the birds of the world*, Vol. 12. Picathartes to Tits and Chickadees. Barcelona: Lynx Edicions.
- Earth Trends (2006) Biodiversity and protected areas—Country profile: Bhutan. Available at <http://earthtrends.wri.org/text/biodiversity-protected/country-profile-22.html>. Accessed on 16 June 2008.
- Farrow, D. (2005). Bhutan 13 April–2 May 2005 tour report. Available at <http://www.shortwing.co.uk/pages/tripDetails.asp?id=60>. Accessed on 16 June 2008.
- Farrow, D. (2006). Bhutan 4 April–23 April 2006 tour report. Available at <http://www.shortwing.co.uk/pages/tripDetails.asp?id=68>. Accessed on 16 June 2008.
- Farrow, D. (2007). Bhutan 10–29 April 2007 tour report. Available at <http://www.birdquest.co.uk/pdfs/report/BHUTAN%2007.pdf>. Accessed on 17 June 2008.

- Fishpool, L. D. C. and Tobias, J. A. (2005) Family Pycnonotidae. Pp. 124–250 in J. del Hoyo, A. Elliott and D. A. Christie, eds. *Handbook of the birds of the world*. Vol. 10. Cuckoo-shrikes to Thrushes. Barcelona: Lynx Edicions.
- Glutz von Blotzheim, U. N., Bauer, K. M. and Bezzel, E., eds. (1971) *Handbuch der Vögel Mitteleuropas*. Band 4. Wiesbaden: Falconiformes Akademische Verlagsgesellschaft.
- Grewal B., Harvey B. and Pfister O. (2002) *A photographic guide to the birds of India, including Nepal, Sri Lanka, The Maldives, Pakistan, Bangladesh and Bhutan*. London: Christopher Helm.
- Grimmett, R., Inskipp C. and Inskipp, T. (1998) *Birds of the Indian subcontinent*. London: Christopher Helm, London.
- Groombridge B. and Jenkins M., eds (1995) *Biodiversity data sourcebook*. Cambridge, UK: World Conservation Press.
- Hagemeijer, E. J. M. and Blair M. J., eds (1997) *The EBCC atlas of European breeding birds: their distribution and abundance*. London: T. & A.D. Poyser.
- Holmes, J. (1996). Bhutan, May 1996. Unpublished tour report. Available at <http://www.kingbirdtours.com/reports/bhutanre.html>. Accessed on 16 June 2008.
- Holt, D. W., Berkley, R., Deppe, C., Enríquez Rocha, P. L., Petersen, J. L., Rangel Salazar, J. L., Segars, K. P. and Wood, K. L. (1999) Tawny Fish-owl. Pp. 193–194 in J. del Hoyo, A. Elliott and J. Sargatal, eds. *Handbook of birds of the world*, Vol. 5: Barn-owls to Hummingbirds. Barcelona: Lynx Edicions.
- Inskipp, C. and Inskipp, T. (2000) Single species bird flocks. *Druk Bja Yigsel* 2: 1–3.
- Jaman, M. F. and Sahreen, N. (2004) Ecology and breeding biology of Chestnut-headed Starling, *Sturnus malabaricus* (Gmelin, 1789). *EcoPrint* 11: 27–34.
- Knystautas, A. J. (1996) Family Ibisoridae (Ibisbill). Pp. 326–331 in J. del Hoyo, A. Elliott, and J. Sargatal, eds. *Handbook of the birds of the world*. Vol. 3. Hoatzin to Auks. Barcelona: Lynx Edicions.
- Ludlow, F. and Kinnear, N. B. (1937) The Birds of Bhutan and adjacent territories of Sikkim and Tibet. *Ibis* (14) 1:1–46, 249–293, 467–504.
- McFadden, C. (2005) Bhutan, 29 March–15 April 2005. Unpublished tour report. Available at [http://www.surfbirds.com/trip\\_report.php?id=684](http://www.surfbirds.com/trip_report.php?id=684). Accessed on 16 June 2008.
- Naoroji, R. (2006) *Birds of prey of the Indian subcontinent*. London: Christopher Helm.
- Ormerod, S. J. and Tyler, S. J. (2005) Family Cinclidae. Pp. 332–355 in J. del Hoyo, A. Elliott and D. A. Christie, eds. *Handbook of the birds of the world*. Vol. 10. Cuckoo-shrikes to Thrushes. Barcelona: Lynx Edicions.
- Prevett, P. and McManiman, C (2005) A birding trip to Bhutan, April 7–26, 2005. Unpublished tour report. Available at <http://www.birdtours.co.uk/tripreports/bhutan/bhutan2/Bhutan-Narrative-2005.htm>. Accessed on 16 June 2008.
- Roberts, T. J. (1991) *The birds of Pakistan*. Vol. 1: Non-Passeriformes. Karachi: Oxford University Press.
- Roberts, T. J. (1992) *The birds of Pakistan*. Vol. 2: Passeriformes. Karachi: Oxford University Press.
- Sherub (2000) Report of avifauna survey of Bumdeling Wildlife Sanctuary May–June and September 2000. Unpublished report.
- Spierenburg, P. (2005) *Birds in Bhutan, status and distribution*. Bedford, UK: Oriental Bird Club.
- Thiollay, J. M. (1994) Family Accipitridae. Pp. 52–205 in J. del Hoyo, A. Elliott and J. Sargatal, eds. *Handbook of the birds of the world*. Vol. 2. New World Vultures to Guinea-fowl. Barcelona: Lynx Edicions.
- Tyler, S. J. and Ormerod, S. J. (1993) The ecology of river birds in Nepal. *Forktail* 9: 59–82.
- Tyler, S. J. and Ormerod, S. J. (1994) *The Dippers*. London: T & A.D. Poyser.
- Urquhart, E. (2002) *Stonechats, a guide to the genus Saxicola*. London: Christopher Helm.
- Webster, R. (2006) Bhutan April 7, 2006 to April 27, 2006. Unpublished trip report. Available at <http://www.fieldguides.com/2006weblists/bhu06LIST.pdf>. Accessed on 16 June 2008.
- Webster, R. (2007) Bhutan April 6, 2007 to April 26, 2007. Unpublished trip report. Available at <http://www.fieldguides.com/2007weblists/bhu07LIST.pdf>. Accessed on 16 June 2008.
- Webster, R. and Rowlett, R. A. (2004) Bhutan April 2, 2004 to April 22, 2004. Unpublished trip report. Available at <http://www.fieldguides.com/2004weblists/bhu04LIST.pdf>. Accessed on 16 June 2008.
- Webster, R. and Rowlett, R. A. (2005) Bhutan April 1, 2005 to April 21, 2005. Unpublished trip report. Available at <http://www.fieldguides.com/2005weblists/bhu05LIST.pdf>. Accessed on 16 June 2008.
- Woodall, P. F. (2001) Family Alcedinidae. Pp. 130–249 in J. del Hoyo, A. Elliott and J. Sargatal, eds. *Handbook of the birds of the world*. Vol. 6. Mousebirds to Hornbills. Barcelona: Lynx Edicions.

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## APPENDIX 1

List of birds breeding in Bhutan with current and previous (Spierenburg 2005) status. To assign breeding status we adapted the criteria of Hagemeijer and Blair (1997) and Spierenburg (2005) (see Table 1 for numeric codes). Occasionally, observations published did not fully fit a particular criterion; the number is then placed between brackets.

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
SNOW PARTRIDGE <i>Lerwa lerwa</i>	1, (12)	probable
TIBETAN SNOWCOCK <i>Tetraogallus tibetanus</i>	1, (12)	probable
TIBETAN PARTRIDGE <i>Perdix hodgsoniae</i>	12	confirmed
COMMON QUAIL <i>Coturnix coturnix</i>	formerly breeding: 15	confirmed, taxonomic status disputed
JAPANESE QUAIL <i>Coturnix japonica</i>	4	probable

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
HILL PARTRIDGE <i>Arborophila torqueola</i>	probable: 4	confirmed: 12
RUFIOUS-THROATED PARTRIDGE <i>Arborophila rufogularis</i>	4	probable
CHESTNUT-BREASTED PARTRIDGE <i>Arborophila mandelli</i>	3,4	probable
BLOOD PHEASANT <i>Ithaginis cruentus</i>	12, 15	confirmed
SATYR TRAGOPAN <i>Tragopan satyra</i>	4	probable
BLYTH'S TRAGOPAN <i>Tragopan blythii</i>	probable: (3)	confirmed: 8, 17
HIMALAYAN MONAL <i>Lophophorus impejanus</i>	12, 15	confirmed
RED JUNGLEFOWL <i>Gallus gallus</i>	12	confirmed
KALIJ PHEASANT <i>Lophura leucomelanos</i>	12	confirmed
GREY PEACOCK PHEASANT <i>Polyplectron bicalcaratum</i>	4	probable
RUDDY SHELDUCK <i>Tadorna ferruginea</i>	12	confirmed
GADWALL <i>Anas strepera</i>	1	possible
EURASIAN WIGEON <i>Anas penelope</i>	1	possible
YELLOW-RUMPED HONEYGUIDE <i>Indicator xanthonotus</i>	4, 6	probable
SPECKLED PICULET <i>Picumnus innominatus</i>	3, 4, 5	probable: 9
WHITE-BROWED PICULET <i>Sasia ochracea</i>	2	possible
GREY-CAPPED PYGMY WOODPECKER <i>Dendrocopos canicapillus</i>	probable: 3	confirmed: 14
FULVOUS-BREASTED WOODPECKER <i>Dendrocopos macei</i>	3	probable
RUFIOUS-BELLIED WOODPECKER <i>Dendrocopos hyperythrus</i>	5, 9	probable
CRIMSON-BREASTED WOODPECKER <i>Dendrocopos cathpharius</i>	12	confirmed
DARJEELING WOODPECKER <i>Dendrocopos darjellensis</i>	5, 9	confirmed: 16
RUFIOUS WOODPECKER <i>Celeus brachyurus</i>	1	possible
LESSER YELLOWNAPE <i>Picus chlorolophus</i>	3, 5, 9	probable
GREATER YELLOWNAPE <i>Picus flavinucha</i>	12	confirmed
GREY-HEADED WOODPECKER <i>Picus canus</i>	4	probable
PALE-HEADED WOODPECKER <i>Gecinulus grantia</i>		probable (added): 5
BAY WOODPECKER <i>Blythipicus pyrrhotis</i>	16	confirmed
GREAT BARBET <i>Megalaima virens</i>	3, 4	probable
GOLDEN-THROATED BARBET <i>Megalaima franklinii</i>	3, 4, 9	probable
BLUE-THROATED BARBET <i>Megalaima asiatica</i>	4, 9	probable
COPPERSMITH BARBET <i>Megalaima haemacephala</i>	13	confirmed
ORIENTAL PIED HORNBILL <i>Anthraceros albirostris</i>	13	confirmed
RUFIOUS-NECKED HORNBILL <i>Aceros nipalensis</i>	13	confirmed
COMMON HOOPOE <i>Upupa epops</i>	12, 16	confirmed
RED-HEADED TROGON <i>Harpactes erythrocephalus</i>	3, 4	probable
WARD'S TROGON <i>Harpactes wardi</i>	3, 4	probable
INDIAN ROLLER <i>Coracias benghalensis</i>	1	possible
DOLLARBIRD <i>Eurystomus orientalis</i>	6	probable
COMMON KINGFISHER <i>Alcedo atthis</i>	13	confirmed
RUDDY KINGFISHER <i>Halcyon coromanda</i>	3	probable
WHITE-THROATED KINGFISHER <i>Halcyon smyrnensis</i>	13	confirmed
CRESTED KINGFISHER <i>Megaceryle lugubris</i>	probable: 3	confirmed: 13
BLUE-BEARDED BEE-EATER <i>Nyctornis athertoni</i>	probable: 3, 5	confirmed: 16
CHESTNUT-WINGED CUCKOO <i>Clamator coromandus</i>	4	probable
LARGE HAWK CUCKOO <i>Hierococyx sparverioides</i>	12	confirmed



Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
COMMON HAWK CUCKOO <i>Hierococcyx varius</i>	4	probable
HODGSON'S HAWK CUCKOO <i>Hierococcyx fugax</i>	4	probable
INDIAN CUCKOO <i>Cuculus micropterus</i>	4	probable
EURASIAN CUCKOO <i>Cuculus canorus</i>	probable: 4	confirmed: 16
ORIENTAL CUCKOO <i>Cuculus saturatus</i>	4	probable
LESSER CUCKOO <i>Cuculus poliocephalus</i>	probable: 4	confirmed: 12
BANDED BAY CUCKOO <i>Cacomantis sonneratii</i>	4	probable
GREY-BELLIED CUCKOO <i>Cacomantis passerinus</i>	4	probable
PLAINTIVE CUCKOO <i>Cacomantis merulinus</i>	probable: 4	confirmed: 12
ASIAN EMERALD CUCKOO <i>Chrysococcyx maculatus</i>	4	probable
DRONGO CUCKOO <i>Surniculus lugubris</i>	4	probable: 5
GREATER COUCAL <i>Centropus sinensis</i>		confirmed (added): 12
ALEXANDRINE PARAKEET <i>Psittacula eupatria</i>	6	probable
HIMALAYAN SWIFTLET <i>Collocalia brevirostris</i>	13	confirmed
WHITE-THROATED NEEDLETAIL <i>Hirundapus caudacutus</i>	6	probable
ASIAN PALM SWIFT <i>Cypsiurus balasiensis</i>	6	probable
FORK-TAILED SWIFT <i>Apus pacificus</i>	16	confirmed
DARK-RUMPED SWIFT <i>Apus acuticauda</i>	13	confirmed
HOUSE SWIFT <i>Apus affinis</i>	13	confirmed
MOUNTAIN SCOPS OWL <i>Otus spilocephalus</i>	probable: 4	confirmed: 12
ORIENTAL SCOPS OWL <i>Otus sumia</i>	4	probable
COLLARED SCOPS OWL <i>Otus bakkamoena</i>	4	probable
TAWNY FISH OWL <i>Ketupa flavipes</i>	possible: (2)	confirmed: 12
BROWN WOOD OWL <i>Strix leptogrammica</i>	4	probable
TAWNY OWL <i>Strix aluco</i>	4	probable
COLLARED OWLET <i>Glaucidium brodiei</i>	4	probable
ASIAN BARRED OWLET <i>Glaucidium cuculoides</i>	4	probable
JUNGLE OWLET <i>Glaucidium radiatum</i>	3, 4	probable
BROWN HAWK OWL <i>Ninox scutulata</i>	4	probable
GREY NIGHTJAR <i>Caprimulgus indicus</i>	4, 5	probable
SAVANNA NIGHTJAR <i>Caprimulgus affinis</i>		probable (added): 4
ROCK PIGEON <i>Columba livia</i>	9, 13	confirmed
HILL PIGEON <i>Columba rupestris</i>	1	possible
SNOW PIGEON <i>Columba leuconota</i>		confirmed (added): 13
SPECKLED WOOD PIGEON <i>Columba hodgsonii</i>	3, 4	probable
ORIENTAL TURTLE DOVE <i>Streptopelia orientalis</i>	12	confirmed: 15, 16
SPOTTED DOVE <i>Streptopelia chinensis</i>	15	confirmed
BARRED CUCKOO DOVE <i>Macropygia unchall</i>	3, 4	probable
EMERALD DOVE <i>Chalcophaps indica</i>	3	probable
PIN-TAILED GREEN PIGEON <i>Treron apicauda</i>	3, 9	probable
WEDGE-TAILED GREEN PIGEON <i>Treron sphenura</i>	12	confirmed
MOUNTAIN IMPERIAL PIGEON <i>Ducula badia</i>	13	confirmed
WHITE-BREASTED WATERHEN <i>Amaurornis phoenicurus</i>		probable (added): 4
BLACK-TAILED CRAKE <i>Porzana bicolor</i>	15	confirmed
RUDDY-BREASTED CRAKE <i>Porzana fusca</i>	12	confirmed

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
EURASIAN WOODCOCK <i>Scolopax rusticola</i>	15	confirmed
SOLITARY SNIPE <i>Gallinago solitaria</i>	1	possible
WOOD SNIPE <i>Gallinago nemoricola</i>	2	possible
COMMON SANDPIPER <i>Actitis hypoleucos</i>	12	confirmed: 10
EURASIAN THICK-KNEE <i>Burhinus oedicephalus</i>	1	possible
GREAT THICK-KNEE <i>Esacus recurvirostris</i>	11, 12	confirmed
IBISBILL <i>Ibidorhyncha struthersii</i>	12	confirmed: 10, 15
LITTLE RINGED PLOVER <i>Charadrius dubius</i>	12	confirmed
RIVER LAPWING <i>Vanellus duvaucelii</i>	12	confirmed
RED-WATTLED LAPWING <i>Vanellus indicus</i>	12	confirmed
SMALL PRATINCOLE <i>Glareola lactea</i>	16	confirmed
ORIENTAL HONEY-BUZZARD <i>Pernis ptilorhynchus</i>	5	probable
PALLAS'S FISH EAGLE <i>Haliaeetus leucoryphus</i>	16	confirmed
HIMALAYAN GRIFFON <i>Gyps himalayensis</i>	1	possible
CRESTED SERPENT EAGLE <i>Spilornis cheela</i>	3, 5	probable
CRESTED GOSHAWK <i>Accipiter trivirgatus</i>	5	probable
SHIKRA <i>Accipiter badius</i>	5	probable
BESRA <i>Accipiter virgatus</i>	5	probable
EURASIAN SPARROWHAWK <i>Accipiter nisus</i>	probable: 5	confirmed: 12
NORTHERN GOSHAWK <i>Accipiter gentilis</i>	5	probable
UPLAND BUZZARD <i>Buteo hemilasius</i>	4	probable
BLACK EAGLE <i>Ictinaetus malayensis</i>	13	confirmed: 12, 14
GOLDEN EAGLE <i>Aquila chrysaetos</i>	1	possible
BONELLI'S EAGLE <i>Hieraaetus fasciatus</i>	12	confirmed
RUFIOUS-BELLIED EAGLE <i>Hieraaetus kienerii</i>	3, 5	probable
MOUNTAIN HAWK EAGLE <i>Spizaetus nipalensis</i>	12	confirmed
COMMON KESTREL <i>Falco tinnunculus</i>	12	confirmed
AMUR FALCON <i>Falco amurensis</i>	probable: 3, 5	confirmed: 16
EURASIAN HOBBY <i>Falco subbuteo</i>	16	confirmed
PEREGRINE FALCON <i>Falco peregrinus</i>	probable: 3	confirmed: 16
LITTLE EGRET <i>Egretta garzetta</i>	1	possible
WHITE-BELLIED HERON <i>Ardea insignis</i>	12	confirmed
CATTLE EGRET <i>Bubulcus ibis</i>	13	confirmed
INDIAN POND HERON <i>Ardeola grayii</i>	1	possible
BLACK-CROWNED NIGHT HERON <i>Nycticorax nycticorax</i>	1	possible
BLUE-NAPED PITTA <i>Pitta nipalensis</i>	4	probable
HOODED PITTA <i>Pitta sordida</i>	4	probable
LONG-TAILED BROADBILL <i>Psarisomus dalhousiae</i>	13	confirmed
ORANGE-BELLIED LEAFBIRD <i>Chloropsis hardwickii</i>	3, 4	probable
LONG-TAILED SHRIKE <i>Lanius schach</i>	12	confirmed
GREY-BACKED SHRIKE <i>Lanius tephronotus</i>	12	confirmed
EURASIAN JAY <i>Garrulus glandarius</i>	probable: 3	confirmed: 12
YELLOW-BILLED BLUE MAGPIE <i>Urocissa flavirostris</i>	13	confirmed
COMMON GREEN MAGPIE <i>Cissa chinensis</i>	4	probable
GREY TREEPIE <i>Dendrocitta formosae</i>	12	confirmed

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
BLACK-BILLED MAGPIE <i>Pica pica</i>	11	confirmed
SPOTTED NUTCRACKER <i>Nucifraga caryocatactes</i>	12	confirmed
RED-BILLED CHOUGH <i>Pyrrhocorax pyrrhocorax</i>	16	confirmed
YELLOW-BILLED CHOUGH <i>Pyrrhocorax graculus</i>	6	probable
HOUSE CROW <i>Corvus splendens</i>	3	probable
LARGE-BILLED CROW <i>Corvus macrorhynchos</i>	12	confirmed
COMMON RAVEN <i>Corvus corax</i>	3	probable
ASHY WOODSWALLOW <i>Artamus fuscus</i>	13	confirmed
EURASIAN GOLDEN ORIOLE <i>Oriolus oriolus</i>	1	possible
SLENDER-BILLED ORIOLE <i>Oriolus tenuirostris</i>	2	possible
MAROON ORIOLE <i>Oriolus traillii</i>	12	confirmed
BLACK-WINGED CUCKOOSHRIKE <i>Coracina melaschistos</i>	4	probable
GREY-CHINNED MINIVET <i>Pericrocotus solaris</i>	13	confirmed
LONG-TAILED MINIVET <i>Pericrocotus ethologus</i>	3	probable
SHORT-BILLED MINIVET <i>Pericrocotus brevirostris</i>	12	confirmed
SCARLET MINIVET <i>Pericrocotus flammeus</i>	12	confirmed
BAR-WINGED FLYCATCHER-SHRIKE <i>Hemipus picatus</i>	13	confirmed
YELLOW-BELLIED FANTAIL <i>Rhipidura hypoxantha</i>	12	confirmed
WHITE-THROATED FANTAIL <i>Rhipidura albicollis</i>	4	probable
BLACK DRONGO <i>Dicrurus macrocercus</i>	4	probable
ASHY DRONGO <i>Dicrurus leucophaeus</i>	16	confirmed
BRONZED DRONGO <i>Dicrurus aeneus</i>	(13)	confirmed
LESSER RACKET-TAILED DRONGO <i>Dicrurus remifer</i>	probable: 4	confirmed: 13
SPANGLED DRONGO <i>Dicrurus hottentottus</i>	8	probable
LARGE WOODSHRIKE <i>Tephrodornis gularis</i>	13	confirmed
WHITE-THROATED DIPPER <i>Cinclus cinclus</i>	12	confirmed
BROWN DIPPER <i>Cinclus pallasi</i>	12, 14	confirmed: 16
BLUE-CAPPED ROCK THRUSH <i>Monticola cinclorhynchus</i>	12, 14, 15	confirmed
CHESTNUT-BELLIED ROCK THRUSH <i>Monticola rufiventris</i>	3	probable
BLUE WHISTLING THRUSH <i>Myophonus caeruleus</i>	13	confirmed
PLAIN-BACKED THRUSH <i>Zoothera mollissima</i>		confirmed (added): 15
LONG-TAILED THRUSH <i>Zoothera dixonii</i>	2	possible
SCALY THRUSH <i>Zoothera dauma</i>	14	confirmed
LONG-BILLED THRUSH <i>Zoothera monticola</i>	12	confirmed
TICKELL'S THRUSH <i>Turdus unicolor</i>	2	possible
WHITE-COLLARED BLACKBIRD <i>Turdus albocinctus</i>	12, 14	confirmed
GREY-WINGED BLACKBIRD <i>Turdus boulboul</i>	14, 15	confirmed
EURASIAN BLACKBIRD <i>Turdus merula</i>		probable (added): 3
GOULD'S SHORTWING <i>Brachypteryx stellata</i>	probable: 3	confirmed: 12
RUSTY-BELLIED SHORTWING <i>Brachypteryx hyperythra</i>	2	possible
LESSER SHORTWING <i>Brachypteryx leucophrys</i>	4	probable
WHITE-BROWED SHORTWING <i>Brachypteryx montana</i>	probable: 4	confirmed: 12
DARK-SIDED FLYCATCHER <i>Muscicapa sibirica</i>	16	confirmed
FERRUGINOUS FLYCATCHER <i>Muscicapa ferruginea</i>	12	confirmed
RUFIOUS-GORGETED FLYCATCHER <i>Ficedula strophiatea</i>	probable: 4	confirmed: 14

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
WHITE-GORGETED FLYCATCHER <i>Ficedula monileger</i>	4	probable
SNOWY-BROWED FLYCATCHER <i>Ficedula hyperythra</i>	15	confirmed
LITTLE PIED FLYCATCHER <i>Ficedula westermanni</i>	probable: 3, 4, 9	confirmed: 12
ULTRAMARINE FLYCATCHER <i>Ficedula superciliaris</i>	12, 15	confirmed
SLATY-BLUE FLYCATCHER <i>Ficedula tricolor</i>	probable: 3	confirmed: 5, 12
SAPPHIRE FLYCATCHER <i>Ficedula sapphira</i>		probable (added): 9
VERDITER FLYCATCHER <i>Eumyias thalassina</i>	14	confirmed
LARGE NILTAVA <i>Niltava grandis</i>	4, 9	probable
SMALL NILTAVA <i>Niltava macgrigoriae</i>	14	confirmed
RUFIOUS-BELLIED NILTAVA <i>Niltava sundara</i>	12	confirmed
PALE BLUE FLYCATCHER <i>Cyornis unicolor</i>	probable: 4, 9	confirmed: 12
BLUE-THROATED FLYCATCHER <i>Cyornis rubeculooides</i>	4	probable
PYGMY BLUE FLYCATCHER <i>Muscicapella hodgsoni</i>	3, 4	probable
GREY-HEADED CANARY FLYCATCHER <i>Culicicapa ceylonensis</i>	12	confirmed
INDIAN BLUE ROBIN <i>Luscinia brunnea</i>	15	confirmed
ORANGE-FLANKED BUSH ROBIN <i>Tarsiger cyanurus</i>	4	probable: 9
GOLDEN BUSH ROBIN <i>Tarsiger chrysaeus</i>	13	confirmed
WHITE-BROWED BUSH ROBIN <i>Tarsiger indicus</i>	14	confirmed
RUFIOUS-BREASTED BUSH ROBIN <i>Tarsiger hyperythrus</i>	15	confirmed
ORIENTAL MAGPIE ROBIN <i>Copsychus saularis</i>	probable: 4	confirmed: 12
WHITE-RUMPED SHAMA <i>Copsychus malabaricus</i>	1	possible
BLUE-CAPPED REDSTART <i>Phoenicurus coeruleocephalus</i>		probable (added): 5
HODGSON'S REDSTART <i>Phoenicurus hodgsoni</i>		confirmed (added): 12, 13, 14
WHITE-THROATED REDSTART <i>Phoenicurus schisticeps</i>		confirmed (added): 12
BLUE-FRONTED REDSTART <i>Phoenicurus frontalis</i>	probable: 4	confirmed: 15
WHITE-CAPPED WATER REDSTART <i>Chaimarrornis leucocephalus</i>	(13)	confirmed
PLUMBEOUS WATER REDSTART <i>Rhyacornis fuliginosus</i>	16	confirmed
WHITE-BELLIED REDSTART <i>Hodgsonius phaenicuroides</i>		confirmed (added): 15
WHITE-TAILED ROBIN <i>Mylomela leucura</i>	4	probable
BLUE-FRONTED ROBIN <i>Cinclidium frontale</i>	2	possible
GRANDALA <i>Grandala coelicolor</i>	16	confirmed
LITTLE FORKTAIL <i>Enicurus scouleri</i>	probable: 3	confirmed: 14
BLACK-BACKED FORKTAIL <i>Enicurus immaculatus</i>	12, 14	confirmed
SLATY-BACKED FORKTAIL <i>Enicurus schistaceus</i>	12	confirmed
SPOTTED FORKTAIL <i>Enicurus maculatus</i>	4, 5	probable
PURPLE COCHOA <i>Cochoa purpurea</i>	3, 4	probable
GREEN COCHOA <i>Cochoa viridis</i>	1	possible
SIBERIAN STONECHAT <i>Saxicola maura</i>		confirmed (added): 12
GREY BUSHCHAT <i>Saxicola ferrea</i>	14, 15	confirmed
SPOT-WINGED STARLING <i>Saroglossa piloptera</i>	3, (12)	probable
CHESTNUT-TAILED STARLING <i>Sturnus malabaricus</i>		confirmed (added): 15
COMMON MYNA <i>Acridotheres tristis</i>	16	confirmed
BANK MYNA <i>Acridotheres ginginianus</i>	4	probable
JUNGLE MYNA <i>Acridotheres fuscus</i>	3	probable
WHITE-VENTED MYNA <i>Acridotheres cinereus</i>	1	possible

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
HILL MYNA <i>Gracula religiosa</i>	6	probable
CHESTNUT-BELLIED NUTHATCH <i>Sitta castanea</i>	16	confirmed
WHITE-TAILED NUTHATCH <i>Sitta himalayensis</i>	12, 14	confirmed
BEAUTIFUL NUTHATCH <i>Sitta formosa</i>	3, 4	probable
WALLCREEPER <i>Tichodroma muraria</i>		confirmed (added): 13
EURASIAN TREECREEPER <i>Certhia familiaris</i>	1	possible
RUSTY-FLANKED TREECREEPER <i>Certhia nipalensis</i>	probable: 4	confirmed: 14
BROWN-THROATED TREECREEPER <i>Certhia discolor</i>	4	probable
WINTER WREN <i>Troglodytes troglodytes</i>	9	probable
FIRE-CAPPED TIT <i>Cephalopyrus flammiceps</i>	16	confirmed
RUFIOUS-VENTED TIT <i>Parus rubidiventris</i>	16	confirmed: 14
COAL TIT <i>Parus ater</i>	14	confirmed
GREY-CRESTED TIT <i>Parus dichrous</i>		confirmed (added): 12
GREEN-BACKED TIT <i>Parus monticolus</i>	12, 14	confirmed
YELLOW-CHEEKED TIT <i>Parus spilonotus</i>	14	confirmed
YELLOW-BROWED TIT <i>Sylviparus modestus</i>	2	possible
SULTAN TIT <i>Melanochlora sultanea</i>	3, 4, 6	probable
BLACK-THROATED TIT <i>Aegithalos concinnus</i>	12, 13	confirmed
RUFIOUS-FRONTED TIT <i>Aegithalos iouschistos</i>	probable: 3, 9	confirmed: 12, 17
BARN SWALLOW <i>Hirundo rustica</i>	16	confirmed
RED-RUMPED SWALLOW <i>Hirundo daurica</i>	13	confirmed
ASIAN HOUSE MARTIN <i>Delichon dasypus</i>	16	confirmed
NEPAL HOUSE MARTIN <i>Delichon nipalensis</i>	13	confirmed
STRIATED BULBUL <i>Pycnonotus striatus</i>	9	probable
RED-VENTED BULBUL <i>Pycnonotus cafer</i>	12	confirmed
WHITE-THROATED BULBUL <i>Alophoixus flaveolus</i>	9	probable
MOUNTAIN BULBUL <i>Ixos maclellandii</i>	3, 4	probable
BLACK BULBUL <i>Hypsipetes leucocephalus</i>	14	confirmed: 16
STRIATED PRINIA <i>Prinia criniger</i>	4	probable
HILL PRINIA <i>Prinia atrogularis</i>	4	probable
GREY-CROWNED PRINIA <i>Prinia cinereocapilla</i>	1, (15)	confirmed, but identification and location disputed
RUFESCENT PRINIA <i>Prinia rufescens</i>	12	confirmed
ORIENTAL WHITE-EYE <i>Zosterops palpebrosus</i>	16	confirmed: 12, 14
CHESTNUT-HEADED TESIA <i>Tesia castaneocoronata</i>	12	confirmed
SLATY-BELLIED TESIA <i>Tesia olivea</i>	4	probable
GREY-BELLIED TESIA <i>Tesia cyaniventer</i>	4	probable
BROWNISH-FLANKED BUSH WARBLER <i>Cettia fortipes</i>	4	probable
CHESTNUT-CROWNED BUSH WARBLER <i>Cettia major</i>	(4)	probable
ABERRANT BUSH WARBLER <i>Cettia flavolivacea</i>	4	probable
YELLOWISH-BELLIED BUSH WARBLER <i>Cettia acanthizoides</i>	4	probable
GREY-SIDED BUSH WARBLER <i>Cettia brunnifrons</i>	9, (11)	confirmed
SPOTTED BUSH WARBLER <i>Bradypterus thoracicus</i>	(3), (12)	probable
RUSSET BUSH WARBLER <i>Bradypterus mandelli</i>	4	probable
MOUNTAIN TAILORBIRD <i>Orthotomus cuculatus</i>	2	possible

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
COMMON TAILORBIRD <i>Orthotomus sutorius</i>	probable: 4	confirmed: 12
TICKELL'S LEAF WARBLER <i>Phylloscopus affinis</i>	9, (11)	confirmed
BUFF-BARRED WARBLER <i>Phylloscopus pulcher</i>	2	possible
ASHY-THROATED WARBLER <i>Phylloscopus maculipennis</i>	2	possible
LEMON-RUMPED WARBLER <i>Phylloscopus chloronotus</i>	4	probable
GREENISH WARBLER <i>Phylloscopus trochiloides</i>	15	confirmed
LARGE-BILLED LEAF WARBLER <i>Phylloscopus magnirostris</i>	15	confirmed
BLYTH'S LEAF WARBLER <i>Phylloscopus reguloides</i>	14	confirmed
YELLOW-VENTED WARBLER <i>Phylloscopus cantator</i>	4	probable
GOLDEN-SPECTACLED WARBLER <i>Seicercus burkii</i>	4	probable
WHISTLER'S WARBLER <i>Seicercus whistleri</i>	15	confirmed
GREY-HOODED WARBLER <i>Seicercus xanthoschistos</i>	9, (11)	confirmed
WHITE-SPECTACLED WARBLER <i>Seicercus affinis</i>	2	possible
GREY-CHEEKED WARBLER <i>Seicercus poliogenys</i>	4	probable
CHESTNUT-CROWNED WARBLER <i>Seicercus castaniceps</i>	4, 9	probable
BROAD-BILLED WARBLER <i>Tickellia hodgsoni</i>	2	possible
RUFIOUS-FACED WARBLER <i>Abroscopus albogularis</i>	2	possible
BLACK-FACED WARBLER <i>Abroscopus schisticeps</i>	3, 4	probable
YELLOW-BELLIED WARBLER <i>Abroscopus superciliaris</i>	possible: 2	probable: 6
WHITE-THROATED LAUGHINGTHRUSH <i>Garrulax albogularis</i>	13	confirmed
WHITE-CRESTED LAUGHINGTHRUSH <i>Garrulax leucolophus</i>	4	probable
STRIATED LAUGHINGTHRUSH <i>Garrulax striatus</i>	probable: 4	confirmed: 12
RUFIOUS-NECKED LAUGHINGTHRUSH <i>Garrulax ruficollis</i>	2	possible
RUFIOUS-CHINNED LAUGHINGTHRUSH <i>Garrulax rufogularis</i>	4	probable
SPOTTED LAUGHINGTHRUSH <i>Garrulax ocellatus</i>	4	probable
GREY-SIDED LAUGHINGTHRUSH <i>Garrulax caerulatus</i>	3, 4	probable
STREAKED LAUGHINGTHRUSH <i>Garrulax lineatus</i> also known as BHUTAN LAUGHINGTHRUSH <i>Strophocincla imbricata</i> (Collar and Robson 2007)	3, 9	probable
BLUE-WINGED LAUGHINGTHRUSH <i>Garrulax squamatus</i>	4	probable
SCALY LAUGHINGTHRUSH <i>Garrulax subunicolor</i>	3	probable
BLACK-FACED LAUGHINGTHRUSH <i>Garrulax affinis</i>		probable (added): 9
CHESTNUT-CROWNED LAUGHINGTHRUSH <i>Garrulax erythrocephalus</i>	3	probable
RED-FACED LIOCICHLA <i>Liocichla phoenicea</i>	4	probable
PUFF-THROATED BABBLER <i>Pellorneum ruficeps</i>	4	probable
RUSTY-CHEEKED SCIMITAR BABBLER <i>Pomatorhinus erythrogenys</i>	14	confirmed
WHITE-BROWED SCIMITAR BABBLER <i>Pomatorhinus schisticeps</i>		probable (added): 9
STREAK-BREASTED SCIMITAR BABBLER <i>Pomatorhinus ruficollis</i>	3, 4	probable
CORAL-BILLED SCIMITAR BABBLER <i>Pomatorhinus ferruginosus</i>	3	probable
SLENDER-BILLED SCIMITAR BABBLER <i>Xiphirhynchus superciliaris</i>	3, 4	probable
LONG-BILLED WREN BABBLER <i>Rimator malacoptilus</i>	4	probable
SCALY-BREASTED WREN BABBLER <i>Pnoepyga albiventer</i>	4	probable
PYGMY WREN BABBLER <i>Pnoepyga pusilla</i>	4	probable
RUFIOUS-THROATED WREN BABBLER <i>Spelaornis caudatus</i>	4	probable
BAR-WINGED WREN BABBLER <i>Spelaornis troglodytoides</i>	4	probable
SPOTTED WREN BABBLER <i>Spelaornis formosus</i>	4	probable

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
WEDGE-BILLED WREN BABBLER <i>Sphenocichla humei</i>	4	probable
RUFIOUS-CAPPED BABBLER <i>Stachyris ruficeps</i>	14	confirmed
GOLDEN BABBLER <i>Stachyris chrysaea</i>	4	probable
GREY-THROATED BABBLER <i>Stachyris nigriceps</i>	4	probable
SILVER-EARED MESIA <i>Leiothrix argentauris</i>	4	probable
RED-BILLED LEIOTHRIX <i>Leiothrix lutea</i>	4	probable
CUTIA <i>Cutia nipalensis</i>	4	probable
BLACK-HEADED SHRIKE BABBLER <i>Pteruthius rufiventer</i>	2	possible
WHITE-BROWED SHRIKE BABBLER <i>Pteruthius flaviscapis</i>	16	confirmed
BLACK-EARED SHRIKE BABBLER <i>Pteruthius melanotis</i>	4	probable
RUSTY-FRONTED BARWING <i>Actinodura egertoni</i>	17	confirmed
HOARY-THROATED BARWING <i>Actinodura nipalensis</i>	4	probable
BLUE-WINGED MINLA <i>Minla cyanouroptera</i>	14	confirmed
CHESTNUT-TAILED MINLA <i>Minla strigula</i>	2	possible
RED-TAILED MINLA <i>Minla ignotincta</i>	2	possible
GOLDEN-BREASTED FULVETTA <i>Alcippe chrysotis</i>	1	possible
YELLOW-THROATED FULVETTA <i>Alcippe cinerea</i>	9	probable
RUFIOUS-WINGED FULVETTA <i>Alcippe castaneiceps</i>	(13)	confirmed
WHITE-BROWED FULVETTA <i>Alcippe vinipectus</i>	9	probable
NEPAL FULVETTA <i>Alcippe nipalensis</i>	3, 4	probable
RUFIOUS-BACKED SIBIA <i>Heterophasia amnectans</i>	17	confirmed
RUFIOUS SIBIA <i>Heterophasia capistrata</i>	12	confirmed
LONG-TAILED SIBIA <i>Heterophasia picaoides</i>	1	possible
WHITE-NAPED YUHINA <i>Yuhina bakeri</i>	4, 9	probable
WHISKERED YUHINA <i>Yuhina flavicollis</i>	14	confirmed
STRIPE-THROATED YUHINA <i>Yuhina gularis</i>	16	confirmed
RUFIOUS-VENTED YUHINA <i>Yuhina occipitalis</i>	probable: 3	confirmed: 12
BLACK-CHINNED YUHINA <i>Yuhina nigrimenta</i>	12	confirmed
WHITE-BELLIED YUHINA <i>Yuhina zantholeuca</i>	9	probable
FIRE-TAILED MYZORNIS <i>Myzornis pyrrhoura</i>	12	confirmed
GREAT PARROTBILL <i>Conostoma oemodium</i>		probable (added): 9
BROWN PARROTBILL <i>Paradoxornis unicolor</i>	3	probable
GREY-HEADED PARROTBILL <i>Paradoxornis gularis</i>	9	probable
FULVOUS PARROTBILL <i>Paradoxornis fulvifrons</i>	9	probable
ORIENTAL SKYLARK <i>Alauda gulgula</i>	probable: 4	confirmed: 15
FIRE-BREASTED FLOWERPECKER <i>Dicaeum ignipectus</i>	4	probable
SCARLET-BACKED FLOWERPECKER <i>Dicaeum cruentatum</i>	12	confirmed
MRS GOULD'S SUNBIRD <i>Aethopyga gouldiae</i>	11	confirmed
GREEN-TAILED SUNBIRD <i>Aethopyga nipalensis</i>	14	confirmed
BLACK-THROATED SUNBIRD <i>Aethopyga saturata</i>	4, 9, (11)	confirmed
HOUSE SPARROW <i>Passer domesticus</i>	11	confirmed
RUSSET SPARROW <i>Passer rutilans</i>	11	confirmed
EURASIAN TREE SPARROW <i>Passer montanus</i>	12	confirmed
WHITE WAGTAIL <i>Motacilla alba</i>	12	confirmed
WHITE-BROWED WAGTAIL <i>Motacilla maderaspatensis</i>	possible: 2	confirmed: 14

Species	Previous status (if different from current status) and criterion code(s)	Current breeding status and new criterion code(s)
PADDYFIELD PIPIT <i>Anthus rufulus</i>	4	probable
OLIVE-BACKED PIPIT <i>Anthus hodgsoni</i>	16	confirmed
ALPINE ACCENTOR <i>Prunella collaris</i>	(12)	probable
RUFIOUS-BREASTED ACCENTOR <i>Prunella strophiatea</i>	(12)	probable
MAROON-BACKED ACCENTOR <i>Prunella immaculata</i>	1	possible
BAYA WEAVER <i>Ploceus philippinus</i>	13	confirmed
WHITE-RUMPED MUNIA <i>Lonchura striata</i>	3	probable
SCALY-BREASTED MUNIA <i>Lonchura punctulata</i>	possible: 1	confirmed: 13
YELLOW-BREASTED GREENFINCH <i>Carduelis spinoides</i>	probable: 3	confirmed: 13
DARK-BREASTED ROSEFINCH <i>Carpodacus nipalensis</i>		probable (added): 7
COMMON ROSEFINCH <i>Carpodacus erythrinus</i>	2	possible
WHITE-BROWED ROSEFINCH <i>Carpodacus thura</i>	probable: (3)	confirmed: 12
SCARLET FINCH <i>Haematospiza sipahi</i>	12	confirmed
BROWN BULLFINCH <i>Pyrrhula nipalensis</i>	2	possible
RED-HEADED BULLFINCH <i>Pyrrhula erythrocephala</i>	2	possible
COLLARED GROSBEAK <i>Mycerobas affinis</i>	(3)	probable: 5
CRESTED BUNTING <i>Melophus lathami</i>	3, 4	probable

## APPENDIX 2

### Gazetteer of major locations mentioned in the text

Location	District	Coordinates	Altitude (m)	Habitat
Babesa	Thimphu	27°26'N 89°39'E	2,300	riverine shrub, paddy fields, sewerage ponds, gravel banks
Chelaila	Paro	27°22'N 89°20'E	3,800–4,200	alpine pass, meadows, rhododendron shrubs, fir forest
Cheri	Thimphu	27°36'N 89°38'E	2,600–2,800	cool broadleaf forest
Dawakha	Paro	27°15'N 89°29'E	3,400	mixed forest
Dochula	Thimphu	27°29'N 89°45'E	3,000–3,400	mountain pass, mixed forest
Drukyl Dzong	Paro	27°30'N 89°19'E	2,400–2,500	orchards, arable land, pine forests
Gogona	Wangdue Phodrang	27°26'N 90°06'E	3,000–3,300	alpine valley, pasture land, mixed forest
Jakar	Bumthang	27°33'N 90°45'E	2,600	arable land, orchards, pasture, interspersed with pine forest
Kanglung	Trashigang	27°17'N 91°32'E	2,000	arable land, broadleaf forest
Khangma	Trashigang	27°16'N 91°29'E	2,100–2,200	arable land, broadleaf forest
Lingmethang	Mongar	27°16'N 91°10'E	600–800	arable land, subtropical forest
Lobeysa	Wangdue Phodrang	27°30'N 89°53'E	1,300–1,400	arable land, chir pine forest
Lungtenphu	Thimphu	27°27'N 89°39'E	2,300	riverine shrub, arable land, orchards, pine forest
Phajoding	Thimphu	27°29'N 89°34'E	3,400–3,700	alpine meadows, rhododendron shrubs, junipers
Phuntsholing	Chhukha	26°52'N 89°23'E	200–300	township, river with gravel banks, subtropical forest
Phobjikha	Wangdue Phodrang	27°27'N 90°11'E	2,800	arable land, marches, dwarf bamboo, meadows, pine forests
Rimchhu	Punakha	27°39'N 89°47'E	1,400	orchards, paddy fields, warm broadleaf forest
Sarpang	Sarpang	26°52'N 90°16'E	300	arable land, subtropical wet forest
Tingtibi	Zhemgang	27°09'N 90°42'E	600	arable land, subtropical forest
Tongmijangsa	Trashigang	27°27'N 91°32'E	1,800–2,600	arable land, temperate mixed forest
Trashigang	Trashigang	27°20'N 91°33'E	1,200	township, gardens
Trongsa viewpoint	Trongsa	27°30'N 90°30'E	2,100	arable land, broadleaf forest