

Threatened Birds of Asia:

The BirdLife International Red Data Book

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JERDON'S BABBLER

Chrysomma altirostre

Critical —

Endangered —

Vulnerable A1c; A2c; C1



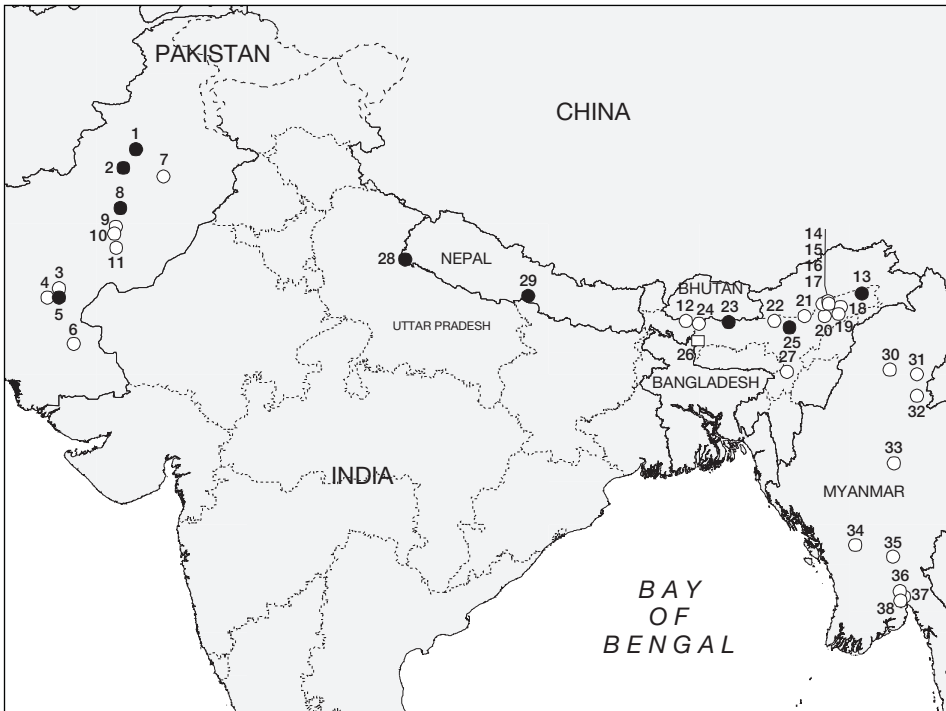
This species's small population is inferred to be rapidly declining as a result of extensive loss of its tall, wet grassland habitat, primarily due to drainage and conversion to cultivation. It therefore qualifies as Vulnerable.

DISTRIBUTION Jerdon's Babbler (see Remarks 1) occurs in the Indus valley of Pakistan, the plains and Brahmaputra valley of north-east India, and the terai of Nepal, historically from Myanmar and possibly from Bangladesh (see Remarks 2). There are three disjunct populations each represented by a separate subspecies.

■ **PAKISTAN** The subspecies *C. a. scindicum* is confined to the Indus river and its tributaries (Harington 1914–1915, Roberts 1991–1992). Historically, it probably occupied suitable habitat all along the Indus, but it now occurs as three (or four) separate subpopulations (Roberts 1991–1992, Showler and Davidson 1999): (1) south-east Sind (Sanghar and Thar Parkar districts) along the Eastern Narra (Eates 1940–1950); (2) northern and central Sind, from around Sukkur southward to Nawabshah, and (3) south-west Punjab northward to southern North-West Frontier Province (Waite 1933). Recent records from Dera Ismail Khan district (Kylänpää 1997, Showler and Davidson 1999) represent range extensions on the Indus floodplain. It appears that suitable habitat currently exists along the Indus between Taunsa and Chasma (Showler and Davidson 1999). Records are from: ■ **North-West Frontier Province** west of **Chashma barrage**, Dera Ismail Khan district, undated (Kylänpää 1997), groups of 3–5, February 1996 (Showler and Davidson 1999); Bridge lake, immediately south-east of **Dera Ismail Khan**, up to 12 birds from March 1992 (Kylänpää 2000), 15–20 in February 1996 (Showler and Davidson 1999), but the site was destroyed in 1998 (Kylänpää 2000); ■ **Sind Mangrani**, between Sukkur and Shirkepur, November 1876 (Blanford 1877, specimen in BMNH); **Duber**, 1930s (Eates 1940–1950, also Roberts 1991–1992); just south of **Khairpur**, on the Rohri canal, Sukkur district, March 1981 (Roberts 1991–1992, B. F. King verbally 1998), and two, February 1988 (Hirschfeld *et al.* 1988); **Sanghar district**, on the Eastern Narra, breeding near the Junejo rest house, September 1930 (Eates 1940–1950, BMNH egg data), and presumably in this region at Jainabwah (untraced), 1930s (Eates 1940–1950, also Roberts 1991–1992), and Rajhuja (untraced), 1930s (Eates 1940–1950, also Roberts 1991–1992); ■ **Punjab** near **Bhamb**, Mianwali district, three, December 1943 (three specimens in BMNH, Waite 1962); near **Taunsa barrage**, Indus river, a flock of four, February 1996 (Showler and Davidson 1999); near **Kot Chutta** (Chulta), close to the Indus river, Dera Ghazi Khan district, November 1932 (Waite 1933, 1962); **Jampur**, Dera Ghazi Khan district, by the Indus river, “half a dozen”, November 1932, six more in February 1937 (six specimens in BMNH, Waite 1933, 1962); near **Khanwah**, Muzaffargarh district, by the Indus river, one, 1937 (Waite 1962).

■ **INDIA** The subspecies *C. a. griseigularis* occurs only in the sub-Himalayan plains from the Buxa duars (West Bengal), through the Bhutan duars to the extreme east of Assam, apparently with an isolated population in the Cachar plains (Harington 1914–1915, Choudhury 2000c). Given the population in Royal Chitwan National Park, Nepal, the species presumably ranged westwards through the terai of Bihar to Uttar Pradesh, but there are no records from these states. Records are from:

■ **West Bengal** Buxa duars, centred around **Buxa Duar**, undated (Ingليس *et al.* 1920);
 ■ **Assam Dibru-Saikhowa National Park**, at Amarpur (outside the boundary of the park), “a few” in 1993–1994 (Choudhury 2000c), several small parties of 2–3, March 1998 (Allen 1998a, 1999, Hornbuckle 1998a), and at Dighaltarang, three, March 1998 (Hornbuckle 1998a); **Hassemara** (Hessamara), January 1905, December 1905–January 1906 (Stevens 1914–1915, six specimens in AMNH, BNHS and USNM); **Gagaldubi** (Gogaldubie) and **Bhimpoora bhil**, January 1905 (Stevens 1914–1915, two specimens in AMNH and BNHS); **Lilabari**, November 1905 (Stevens 1914–1915, male in AMNH); **Burhi Dihing river** (Buridihing), Tinsukia district, 500 m, February 1877 (female in BMNH); **Sibsagar**, undated (Hume 1888; see Remarks 3), and at “Themlabari, Sibsagar”, September 1905 (male in AMNH); **Komolabari**, 1901–1911 (Stevens 1914–1915); Bishnath plain, up to the base of the **Dafla hills**, including the “embouchement of the Burroi river”, undated (Godwin-Austen 1876a,b,c), April, pre-1895 (male in BMNH), the specimen (in BMNH) labelled “Miri hills”, pre-1895, presumably coming from this area; **Darrang**, pre-1888, pre-1895 (two specimens in BMNH); **Manas National Park**, 1987 (Rahmani *et al.* 1988; also Anon. 1990b); **Bhutan duars** (a region centred in western Assam but including adjacent West Bengal), January 1873, January 1876 (two specimens in BMNH, *Stray Feathers* 5 [1877]: 100–117, Harington 1913); **Kaziranga National Park**, undated



The distribution of Jerdon's Babler *Chrysomma altirostre*: (1) Chashma barrage; (2) Dera Ismail Khan; (3) Mangrani; (4) Duber; (5) Khairpur; (6) Sanghar district; (7) Bhamb; (8) Taunsa barrage; (9) Kot Chutta; (10) Jampur; (11) Khanwah; (12) Buxa Duar; (13) Dibru-Saikhowa National Park; (14) Hassemara; (15) Gagaldubi; (16) Bhimpoora bhil; (17) Lilabari; (18) Burhi Dihing river; (19) Sibsagar; (20) Komolabari; (21) Dafla hills; (22) Darrang; (23) Manas National Park; (24) Bhutan duars; (25) Kaziranga National Park; (26) Dhubri district; (27) Cachar plains; (28) Royal Sukla Phanta Wildlife Reserve; (29) Royal Chitwan National Park; (30) Indawgyi lake; (31) Ayeindama; (32) Bhamo; (33) Maymyo; (34) Thayetmyo; (35) Toungoo; (36) Paghein; (37) Myitkyo; (38) Waw.

○ Historical (pre-1950) ● Fairly recent (1950–1979) ● Recent (1980–present) □ Undated

(Barua and Sharma 1999), 2–3 pairs on a river island on the south side of the Brahmaputra, March 1998 and April 1999 (K. D. Bishop *in litt.* 1999); **Dhubri** (Dhuburi) **district**, listed by Datta (1995), possibly hypothetically or on the basis of historical records from neighbouring districts; **Cachar plains**, undated (Baker 1901, 1922–1930, Harington 1914–1915), although no details are provided.

■ **NEPAL** The subspecies *C. a. griseigularis* has occurred in two localities as follows: **Royal Sukla Phanta Wildlife Reserve**, at Rani Tal grasslands, two, May 1998 (*Danphe* 7, 1–2 [1998]: 11–12); **Royal Chitwan National Park**, three near Gaida Camp, November 1989 (Baral and Eames 1991), six at Dumariya, December 1989 (Baral and Eames 1991), three at Lami Tal, April 1990 (Baral and Eames 1991), three at Megghauli, near Tiger Tops, January 1991 (Watts and Pope 1991), at Kachuwani, near Gaida Camp, March 1993 (*Nepal Birdwatching Club Newsletter* 2, 2 [1993]: 2), and by various observers (*in litt.* 1999) until the present.

■ **MYANMAR** The nominate subspecies *C. a. altirostre* is confined to the Irrawaddy/Sittang plains (Harington 1914–1915), where it was widely distributed in vast areas of tall grassland in the late nineteenth century, apparently ranging along the Irrawaddy (=Ayeyarwady) from Bhamo in the north to around Pegu (=Bago), and northward up the valley of the Sittang “nearly up to Tonghoo” (Oates 1882, 1883, Ali and Ripley 1968–1998). In the Sittang valley it apparently reached the Pegu–Toungoo road in the west and the Sittang river in the east (Oates 1883). Confirmed records are from: near **Indawgyi lake**, undated (Stanford and Ticehurst 1938–1939); **Ayeindama**, on right bank of the Irrawaddy, undated (Stanford and Ticehurst 1938–1939); **Bhamo**, February and June, undated (Harington 1909a, 1914–1915); **Maymyo**, at the foot of the hills, breeding, April or September 1914 (five eggs in BMNH, Baker 1922–1930); near **Thayetmyo**, on an island in the Irrawaddy, 1862 (specimen in BMNH, Jerdon 1862; see Godwin-Austen 1876a); the Sittang valley near **Toungoo**, undated (Oates 1883); **Paghein**, Pegu, August 1880 (four specimens in BMNH); **Myitkyo** swamp, Pegu, February 1878 (male in BMNH), small party in July 1941 (Smith 1942); between Pegu and Toungoo, undated (Oates 1882), around the Pegu–Sittang canal and the village of **Waw**, c.1880 (Oates 1883a), this probably being the area 23 km from Pegu mentioned by Oates (1877b).

POPULATION Although the size of the Jerdon’s Babbler population is unknown, it is inferred to be small and declining as a result of the severe reduction in tall wet grassland habitat throughout its range. It has clearly shown a serious range contraction during the twentieth century.

Pakistan Historical records from Pakistan are scarce, suggesting that the species has always been very rare and locally distributed (Roberts 1991–1992), although the inaccessibility of its favoured riverine marshlands presumably contributes to this impression. On the basis of Blanford’s (1877) record, Ticehurst (1922–1924) searched for the species in Sind but couldn’t find it, concluding that it was “very local and skulking”. It was later found in the 1930s at a few sites along the Eastern Narra (K. R. Eates in Roberts 1991–1992), but when this area was revisited in 1964–1965 it was not relocated despite extensive searching (Holmes and Wright 1968–1969). In Punjab, it was found only once in a three week period in Dera Ghazi Khan district and was considered very local (Waite 1933). In 1996, groups of up to 20 birds were recorded at Bridge lake near Dera Ismail Khan, North-West Frontier Province, with further individuals encountered at Chasma barrage, implying that where suitable habitat remains the species is not uncommon locally or seasonally (Showler and Davidson 1999). However, this conclusion needs to be verified by further fieldwork (T. J. Roberts verbally 1998), particularly as Kylänpää (2000), who spent much more time in the same area, concluded that the species was “rare and very local”. There are no recent records from Sind and the current stronghold in Pakistan appears to be the remnant reedbeds fringing the Indus river between the Taunsa and Chasma barrages (Showler and Davidson 1999).

India Jerdon's Babbler was, on the basis of early reports, "locally common" in north-east India (Ali and Ripley 1968–1998). It was, for example, found to be "very common and breeding in great numbers" in the plains of North Lakhimpur north of the Brahmaputra (Baker 1922–1930), and "by no means uncommon" further west on the Bishnath plain at the foot of the Dafla hills (Godwin-Austen 1876b). However, another early observer found "only odd pairs" along hill rivers in upper Assam and considered that in the plains of Assam it was "locally distributed" (Stevens 1914–1915). The species was probably uncommon in the Bhutan duars, where L. Mandelli's collectors found it, but neither H. V. O'Donel nor C. M. Inglis (1951–1969) met with any success. More recently its status was described as "uncertain" with "no recent published records" (Grimmett *et al.* 1998). Early in the 1990s, however, the species had been re-found at Amarpur, near Dibru-Saikhowa National Park (Choudhury 2000c), where it was later described as "common" (Allen 1998a). Other records in Kaziranga National Park soon came to light, indicating that it was "an uncommon resident" in the park (Barua and Sharma 1999). The evidence suggests that it is now very local in Assam, but perhaps overlooked.

Nepal Having been recorded from only two sites, the species is clearly very sparsely distributed in the country. Its present population is estimated at around 30 individuals (H. S. Baral *in litt.* 1998), although it seems possible that numbers might be slightly higher given the area of grassland remaining.

Myanmar There have been no recent records and it is unclear if the species survives in the country. It was discovered at Thayetmyo on the Irrawaddy in 1862 (Jerdon 1862), but Godwin-Austen (1876a) remarked that it had "not turned up again, notwithstanding that this place has since been well worked by Mr Oates, Captain Feilden, and others" and suspected that Jerdon might in fact have obtained the specimen in Assam, especially as he twice named the nearby river "Burrampootra" (i.e. Bhramaputra) rather than "Irrawaddy". Oates (1877b) then shot it near Pegu and declared it a "rare bird" in Myanmar, only later realising that it was "very abundant in the Rangoon and Shwegyin districts", having found it numerous along both sides of the Pegu–Sittang canal and towards Toungoo (Oates 1882). It was also considered "very common" around Bhamo by Harington (1909–1910, 1914–1915), who suspected that it was "probably to be found inhabiting similar localities throughout northern Myanmar". Although it was evidently still present in July 1941 in the small remnants of the Myitkyo swamp near the entrance to the Pegu–Sittang canal, it could not be found elsewhere (Smith 1942). There have been no further records in the country, leading to the conclusion that it has probably become extinct (Peters 1931–1987). Given the chronic lack of fieldwork in the country, however, it may well survive in suitable habitat fragments (C. R. Robson verbally 1998).

ECOLOGY Habitat Across its range it occurs in tall riverine grasslands of a variety of types. The western race *scindicum* occurs in areas of dense tall grassland (largely comprising *Phragmites karka* and *Saccharum bengalense*) subject to annual monsoon flooding (Roberts 1991–1992). It has also been described from a similar *Phragmites–Saccharum–Typha* assemblage up to 4.5 m tall, with *Imperata cylindrica* also sometimes present but not dominant (Showler and Davidson 1999). It apparently favours dense stands of *P. karka* or *T. angusta*, the latter often being a dominant component at localities for the species (Showler and Davidson 1999), and it prefers these stands relatively unbroken ("if the grass is eaten down by cattle or grows in separate clumps one is not likely to come across it") (Waite 1933). In India, *griseigularis* occurs in grasslands from 0.6–5 m high including "ekra" *Erianthus ravaneeae* or elephant grass (a generic term for tall grassland), sun grass (possibly *Imperata*) and vegetation along rivers in the Himalayan foothills (Baker 1922–1930, Ali and Ripley 1968–1998). In Nepal, it frequents extensive riverine patches of tall grassland mainly comprising *Saccharum bengalense* (= *munja*) but also *S. spontaneum*, *Imperata cylindrica*, *Themeda* and *Phragmites karka* (H. S. Baral *in litt.* 1999, N. B. Peet *in litt.* 2001). Recent sightings from Royal Sukla Phanta Wildlife Reserve were from wet *Phragmites–Saccharum* grassland (H.

S. Baral *in litt.* 1999). In Myanmar, the nominate race also occurs in tall, dense stands of *Erianthus ravaneae* and kaing/kine/elephant grass in swampy, low-lying plains (Oates 1882, 1883, Harington 1914–1915, Baker 1922–1930, Smith 1942) and has also been found on grassy islands in the Irrawaddy river (Jerdon 1862).

The species is found most often in pairs (Oates 1882, Baker 1922–1930), or groups of 2–3 (Godwin-Austen 1876b,c), but at other times in small parties of 6–12 birds (Ali and Ripley 1968–1998, Roberts 1991–1992), with the largest groups in Pakistan containing 20 individuals (Showler and Davidson 1999). Whether this variation is geographical or seasonal is not clear. As “an inveterate skulker [which] flies so seldom” (Baker 1922–1930) it is generally very difficult to see, especially as it often stays low amongst grasses (Oates 1882). Similarly, Godwin-Austen (1876b) found it a “very hard bird to shoot, from its rapid dodgy flight in the grass, and the quick way in which it would hide at once”; these traits presumably in some part underlie its perceived rarity. The species is more easily observed when singing from grass-tops at dawn and dusk (Baker 1922–1930, Roberts 1991–1992, Showler and Davidson 1999; see Remarks 4), or during high flood events when birds have been seen perching at the top of grasses (Oates 1882).

Food Jerdon’s Babbler is mainly insectivorous although small seeds also feature in its diet (Ali and Ripley 1968–1998). During the wet season in Myanmar it reportedly fed chiefly on grasshoppers that were then abundant in flooded land (Oates 1882), and this information was repeated by Baker (1922–1930) who claimed that birds feed “in great part on grasshoppers, large and small”. Specimens have been found to contain “small seeds and vegetable substance” (Stevens 1914–1915) and “ants and small coleoptera” (Jerdon 1862). It sometimes feeds by perching almost perpendicular to vertical stems, grasping leaves at their base and vigorously ripping downward, presumably to expose small invertebrate prey items; the resulting crackling of leaves, although quiet, is audible up to c.30 m (Showler and Davidson 1999).

Breeding Breeding has been recorded in September in Pakistan, where the species is thought to nest during the rains (Roberts 1991–1992), and in April and July in north-east India (Baker 1922–1930). A nest of *scindicum*, found in Pakistan, was sited c.1.4 m up in a thick clump of *Saccharum bengalense* (= *munja*) growing on a flood-protection embankment covered with reeds and bushes (Roberts 1991–1992). The nest was shallow and frail, resembling that of a Reed Warbler *Acrocephalus scirpaceus*, and consisted of dried reed leaves lined with vegetable fibre and down, woven around several vertical stems (Roberts 1991–1992). Elsewhere, the nest structure has been described as a neat cup of tightly drawn grass, plastered with cobwebs and lined with fine fibres, generally built on a single stout stem at the junction of leaf-blades, or sometimes embracing several thin stems (Ali and Ripley 1968–1998). Nests found in Assam were apparently “facsimiles of the neat, compact cups of the Yellow-eyed Babbler” *Chrysomma sinense* although “less often shaped like inverted cones, having the bottom rounded off” (Baker 1922–1930). A clutch of two eggs, found in Pakistan, was thought to be incomplete (Roberts 1991–1992), while another sent to Baker (1922–1930) from Myanmar comprised five eggs. Both parents apparently attend to nest building and provisioning of food to the nestlings (Roberts 1991–1992).

Migration The species is presumably resident (King *et al.* 1975, Ali and Ripley 1968–1998, Roberts 1991–1992). The span of months in dated records for each country under Distribution does not demonstrate conclusively that birds remain on site throughout the year, but this is wholly likely.

THREATS Jerdon’s Babbler is amongst a group of species threatened by a huge decline in the area and quality of grasslands across South Asia (Roberts 1991–1992, Bell and Oliver 1992, Peet *et al.* 1999b). Virtually all remaining grasslands within the species’s range are subject to intense pressures (detailed below by country). In many regions grasslands of conservation value are practically confined to protected areas where, however, they continue

to suffer degradation (Bell and Oliver 1992, Peet 1997). Moreover, grassland habitats are generally poorly represented in protected-area systems (Rahmani 1988b, 1992c, Baral 1998c). This species is particularly susceptible to habitat degradation or fragmentation, as it prefers intact stands of tall grassland and tends to avoid more open or degraded areas (Waite 1933, Roberts 1991–1992, Showler and Davidson 1999).

Pakistan Grassland has long been under pressure for human use in Pakistan. Ticehurst (1922–1924) noted that suitable habitat for the species in Sind was “much cut and at times burnt”, and was therefore difficult to find. The grasslands along the Indus river also appear to have deteriorated greatly since the 1930s (Showler and Davidson 1999): the “sea of khan” (probably *Saccharum bengalense*) described by Waite (1933) has been lost. Two major factors underlie the deterioration in quality and reduction in extent of habitat. (1) It is cleared and harvested by people. The burgeoning human population in Pakistan has led to ever-increasing demands for land and resources, and tall riverine grasslands are being increasingly reclaimed and exploited (Roberts 1991–1992). They are cut to provide fodder for livestock, building material (thatch for roofs and wattle for walls), weaving materials for baskets, and for paper-making or to make way for settlement, cultivation or grazing land (Roberts 1991–1992, Showler and Davidson 1999). Locally, fire is deliberately used to burn *Saccharum*-dominated grasslands to stimulate fresh growth, as cattle feed on the young shoots that appear after annual burning (T. J. Roberts verbally 1997). Whilst annual fires may help to prevent succession to forest (Peet *et al.* 1999b), burning several times a year may alter the species composition of grassland, rendering it unsuitable for this species (Dabadghao and Shankarnarayan 1973, Showler and Davidson 1999). In addition, burning is frequently used to remove all cover to make room for cultivation or alternative land uses (Roberts 1991–1992, Showler and Davidson 1999), and the effect of this on the species’s populations is clearly deleterious. Near Dera Ismail Khan, for example, a known site for Jerdon’s Babbler was “burnt and ploughed” in 1998, “causing the birds to disappear” (Kylänpää 2000). (2) Barrages are constructed across the Indus and its tributaries, controlling the annual floods that once maintained broad swathes of riverine grassland (Showler and Davidson 1999), and thereby leading to increased cultivation in riverine areas and the steady contraction of suitable habitat for the species (T. J. Roberts verbally 1997). However, this loss may have been partly offset by the development of *Phragmites* and *Typha* swamps along new irrigation canals, around reservoirs and in the seepage zones of barrage headponds (Roberts 1991–1992, Showler and Davidson 1999); such newly developed swamp grasslands may be critical to the survival of *scindicum* in the long term.

India Huge areas of grassland have been lost in India as a result of conversion to agriculture and forestry plantations, edaphic grasslands have been altered as flooding regimes have been changed by dam and irrigation schemes, and many remaining grasslands are subject to high grazing pressure from domestic stock and intensive harvesting by local communities, often associated with grassland burning (Javed and Rahmani 1991, Bell and Oliver 1992). A general account of threats to Indian grasslands is provided in the equivalent section under Bengal Florican *Houbaropsis bengalensis*. At Amarpur, Assam, tall grasslands are often burned and cleared to make way for agriculture and most grassland areas in nearby Dibru-Saikhowa National Park are overgrazed such that habitat is no longer suitable for the species (Allen 1998). Grasslands in Kaziranga and Dibru-Saikhowa National Parks are also threatened by the severe erosion caused by the increasing magnitude of flood events along the Brahmaputra, presumably as a result of deforestation in its catchment (Choudhury 1995, 1997d, *Oriental Bird Club Bull.* 25 [1997]: 61–69). In Manas National Park, grasslands have been degraded through encroachment by domestic stock while an adverse security situation prevented enforcement of park regulations (N. B. Peet *in litt.* 2001).

Nepal Grasslands in the terai of Nepal have declined in area and quality, particularly since the virtual eradication of malaria in the terai in the 1950s (Peet 1997). Since this period

the human population has grown rapidly and large areas of habitat have been settled, converted to agriculture or forestry, or disrupted by flood control (Bell and Oliver 1992, Peet 1997). Outside protected areas virtually no grasslands capable of supporting threatened birds remain, as most are heavily grazed by domestic livestock, harvested for cane or thatch, and subject to overwhelming levels of human disturbance (Peet 1997). Tall grasslands (up to 5 m tall) dominated by the genera *Erianthus*, *Narenga*, *Saccharum*, *Phragmites* and *Themeda*, and shorter grasslands dominated by *Imperata cylindrica*, remain in Royal Chitwan and Royal Bardia National Parks, and Royal Sukla Phanta and Kosi Tappu Wildlife Reserves (Peet *et al.* 1999a, Lehmkuhl 1994, Baral 2000b). Within these protected areas grasslands remain threatened by a variety of factors, and these are discussed more fully in the equivalent section under Bengal Florican.

Myanmar Reclamation of the huge marshes that covered much of the Irrawaddy–Sittang plains in the late nineteenth century has undoubtedly destroyed most if not all of the population of this babbler (see Smith 1942).

MEASURES TAKEN Pakistan None is known.

India The species occurs in Dibru-Saikhowa, Kaziranga (430 km², with new areas of grassland recently added: Choudhury 2000c) and Manas (391 km²) National Parks.

Nepal It occurs in both Royal Chitwan National Park (932 km², although only c.20% of this area is covered by grassland: N. B. Peet *in litt.* 2001) and Royal Sukla Phanta Wildlife Reserve (155 km²), where recent studies have examined grassland succession, grassland management and grassland bird communities (Peet 1997, Baral 2000).

Myanmar None is known.

MEASURES PROPOSED The conservation requirements of Jerdon's Babbler should be viewed in combination with the needs of a variety of other threatened grassland birds within its range, so that a programme of habitat management and research can be implemented with benefits to each of these species (see Measures Proposed under Bengal Florican). With grasslands currently so restricted in area and distribution, further research must be coupled with direct action to strengthen the measures that ensure their protection (Peet *et al.* 1999b). Survey work is also needed to clarify the status and distribution of this species. The judicious use of recorded vocalisations to elicit responses from wild birds during visits to potential sites would aid this process (see Remarks 4 and equivalent section under Marsh Babbler *Pellorneum palustre*). More detailed accounts of measures proposed for the protection or regeneration of grasslands in India and Nepal are presented under Bengal Florican and Swamp Francolin *Francolinus gularis*.

Pakistan As the extent of remaining suitable habitat in Pakistan is not known, there is a need to map and assess it through LANDSAT imagery and to identify areas with large tracts of suitable habitat for protection and management. Where possible, flood regimes should be controlled to maximise the size of important areas of habitat.

India Effective protection of Manas National Park is required, along with continued searches for the species in potentially suitable areas so that further protected areas can be established for this and other grassland species. The Amarapur grasslands, near Dibru-Saikhowa National Park, contain important tracts of natural habitat; they should not be cleared for agriculture (Allen 1998a), and deserve inclusion within the national park or some other form of protection (Choudhury 1998). In addition, cattle numbers should be reduced and succession to forest controlled by management (Allen 1998a). If possible the area should be managed for thatch production on a rotational system so that areas of uncut and unburnt grassland are always available (Allen 1998a).

Nepal Remaining grasslands require effective protection from grazing by domestic stock and encroachment by people. Any plans to dam or further control flooding on the rivers

feeding Royal Chitwan National Park or Royal Sukla Phanta Wildlife Reserve would lead to a loss of tall riverine grassland (Peet 1997), and should be opposed. Ecological studies, particularly related to habitat utilisation when grasslands are cut and burnt are required. Further surveys are also needed in suitable habitat, particularly at Kosi Tappu Wildlife Reserve and Royal Bardia National Park.

Myanmar Survey work should identify the largest populations of the species remaining in Myanmar and the sites at which these survive should be protected from any further habitat alteration.

REMARKS (1) This species previously appears under the synonyms *Pyctorhis altirostris* and *Timalia altirostris*, and the north-eastern Indian form was separated as *Pyctorhis griseigularis* (*Stray Feathers* 5 [1877]: 100–117, Sharpe 1883). (2) Historically, Jerdon's Babbler (*C. a. griseigularis*) was believed to have occurred in the Surma (Barak) valley and the adjacent perennially flooded depressions (i.e. the Haor basin) (Baker 1922–1930; and thereafter Ali and Ripley 1968–1998, Ripley 1982). Although the Chittagong region is mapped for the species by Ali and Ripley (1968–1998) on the basis of data provided by Rashid (1967) and repeated by Ripley (1982), the source material is largely hypothetical (see Remarks 2 under Manipur Bush-quail *Pedicula manipurensis*), and therefore discounted here. As there are no recent records (Harvey 1990) and only one weakly supported historical claim, further proof that the species occurs in Bangladesh is desirable. The only record is from: Sylhet plains (not mapped), undated (Baker 1922–1930); no further details were provided and, as the record may have relied on the assumption that a species inhabiting the plains of Cachar must extend into the adjacent and ecologically similar region of Sylhet it is not accepted here. (3) The record from Sibsagar, undated (Hume 1888) is possibly the specimen (in BMNH) labelled “Naga hills”, as the foot of these hills (where the specimen was almost certainly taken) adjoins Sibsagar district (which was at that time much more extensive than it is today). (4) Its vocalisations are apparently given frequently, highly distinctive and the best means of locating the species (Smith 1942, Roberts 1991–1992); they should therefore be listened for (or broadcast judiciously) during surveys. These have been described variously as a “peculiar series of notes” (*altirostre*) (Oates 1883), “a sweet little song of some dozen notes” (*griseigularis*) (Baker 1922–1930), “mournful, rather feeble and tremulous consisting of eight notes, the first six uttered rather quickly on the same key and the seventh and eighth slower and dropping in pitch” (*altirostre*) (Smith 1942), or a group-territorial call (*scindicum*) consisting of a series of 4–8 notes, starting rapidly and ending more slowly, plaintive and falling in tone, e.g. *tew-tew-tew-tew-tew chew*, the final note often more drawn out, with some phrases similar to Yellow-eyed Babbler *Chrysomma sinense* (Roberts 1991–1992, Showler and Davidson 1999). The song of male *scindicum* is also described as more melodious and variable than that of the Yellow-eyed Babbler and without its rapid trills, comprising instead “a short fairly quick repetition of rising and falling two-toned whistles” (Roberts 1991–1992). The apparent variation in song should be investigated to see whether consistent differences between (sub)species are involved. Tape-recordings of songs are available for *griseigularis* (D. Allen verbally 1999) and *scindicum* (D. Showler verbally 2000).